AIDE MEMOIRE ON INFRASTRUCTURE FINANCING

3rd Enlarged Revised Edition



ICMAI
THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
भारतीय लागत लेखाकार संस्थान
Statutory Body under an Act of Parliament
(Under the jurisdiction of Ministry of Corporate Affairs)

Banking, Financial Services and Insurance Board (BFSIB)

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Behind every successful business decision, there is always a *CMA*

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"The CMA professionals would ethically drive enterprise globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

Vision Statement

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprise globally."

The Institute of Cost Accountants of India is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, organises professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants are increasingly contributing toward the management of scarce resources and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

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(3rd Edition)

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PRESIDENT'S MESSAGE

The Union Budget 2025–26 has reaffirmed the Government of India's unwavering commitment toward achieving the vision of Atmanirbhar Bharat and the long-term goal of Viksit Bharat @2047 by allocating an impressive □ 11.21 lakh crore for the infrastructure sector. This substantial investment underlines the pivotal role infrastructure plays as the growth engine of the Indian economy.

The budget's policy focus extends beyond public investment, encouraging private sector participation through fiscal incentives, including tax benefits and enabling frameworks. Such measures are crucial to unlocking the multiplier effect that infrastructure development brings, boosting productivity, creating employment, attracting foreign capital, and strengthening India's global competitiveness. With abundant natural resources and a vast human capital base, India is poised to emerge as a goldmine for infrastructure investment.

In this context, the release of the Third and Enlarged Edition of the "Aide Memoire on Infrastructure Financing", published by the Banking, Financial Services & Insurance (BFSI) Board of the Institute of Cost Accountants of India, is a noteworthy initiative.

The first two editions, released in 2022 and 2024, garnered appreciation from both industry leaders and government ministries. These editions addressed critical subjects such as project finance, credit appraisal mechanisms, key performance indicators, risk identification and mitigation strategies, and the crucial role of Cost Accountants (CMAs) in infrastructure project monitoring and performance auditing.

The third edition builds meaningfully upon its predecessors, featuring an expanded and inclusive scope. Highlights of this edition include:

- Public-Private Partnerships (PPPs) from both the lender's and the government's perspectives
- Sector-specific case studies, particularly in airports and ports
- Analysis of projects affected by cost and time overruns
- A dedicated chapter on Climate Taxonomy, emphasizing the integration of sustainable finance into infrastructure development

This edition offers a comprehensive and updated view of infrastructure financing, tackling both emerging trends and persistent challenges, while further reinforcing the indispensable role of CMAs in ensuring transparency and accountability in project execution.

Encouraging responses from stakeholders to earlier editions have been instrumental in inspiring the BFSI Board to present this enhanced and insightful version.

Heartfelt congratulations are due to CMA Chittaranjan Chattopadhyay, Chairman of the BFSI Board, and all the dedicated BFSI board members involved, for their exemplary contribution in conceptualizing and publishing this edition. I also appreciate the endeavor of Shri C M Khurana, Former CGM -CFO, Oriental Bank of Commerce and Former CGM (Credit), IIFCL who took pain to develop the consecutive editions of the Aide Memoire on Infrastructure Financing for being the resource person of the publication. I also congratulate the Department for their continuous efforts in updating the publication as per the requirement of all the stakeholders. Their efforts stand as a valuable step toward supporting India's infrastructure vision and economic aspirations.

Jai Hind!

CMA TCA Srinivasa Prasad
President
The Institute of Cost Accountants of India



VICE PRESIDENT'S MESSAGE

India's infrastructure outlook remains robust—marked by the execution of megaprojects, geographical diversification across aviation, road, rail, energy, and digital networks, and strong funding mechanisms. With ambitious timelines set for 2025–2026, the nation is firmly positioned for transformational growth. The Union Budget 2025–26 has allocated □ 50.7 lakh crore (US$603 billion) for infrastructure, with □ 2.9 trillion earmarked for highways and □ 2.6 trillion for railways. Additionally, the Pradhan Mantri Awaas Yojana–Gramin (PMAY-G) targets the construction of 49.5 million rural homes by 2029.

This colossal investment is aimed at accelerating GDP growth, supporting the Government's objective of building an Atmanirbhar Bharat, and aligning with the vision of a Viksit Bharat by Amrit Kaal (2047). As the world's most populous country, India's demographic dividend is set to bolster its position as a hub of manpower and human capital. With the twin strengths of soft infrastructure and hard infrastructure, the nation's growth trajectory appears highly positive, and India is poised to emerge as the world's third-largest economy.

The Institute has been a committed partner in this journey. We commenced our flagship publication Aide Mémoire on Infrastructure Financing in 2022, and we are now proud to release the third and enlarged volume. This edition incorporates new chapters on performance audit and the critical role of Cost and Management Accountants in ensuring the efficient execution of infrastructure projects. It also expands coverage to ports, railways, and airports—sectors integral to the broader definition of infrastructure.

This voluminous publication is not only a resourceful guide but also a collector's edition. I congratulate the Banking, Financial Services and Insurance Board, under the able leadership of CMA Chittaranjan Chattopadhyay, Chairman of the Board, for their relentless efforts. My sincere thanks to CMA T.C.A. Srinivasa Prasad, President of the Institute, for his visionary leadership and for enabling this publication to reach policymakers and stakeholders as a credible facilitator of the Government's development

agenda. I also extend my appreciation to the authors and reviewers whose scholarly contributions have shaped this work into an invaluable reference on infrastructure financing.

I am confident that future editions—including the forthcoming fourth, abridged version—will further strengthen this knowledge initiative. I wish the Department continued success in its earnest endeavours to support the nation's growth story.

With Warm Regards,

CMA Neeraj D.Joshi
Vice-President
The Institute of Cost Accountants of India



FOREWORD

India has recently surpassed Japan to become the world's fourth-largest economy, marking a historic milestone in its ascent as a global economic powerhouse. According to NITI Aayog, India is now poised to overtake Germany and claim the third position within the next 2.5 to 3 years. This remarkable progress underscores the urgent need to build a robust and future-ready infrastructure ecosystem that can support the nation's dynamic growth trajectory.

As the most populous country, India must develop a state-of-the-art infrastructure framework, spanning both physical infrastructure like roads, ports, airports, and bridges, and soft infrastructure such as digital connectivity and power systems, to unlock the next phase of sustainable and inclusive development.

India currently contributes only 1% of global trade, but its potential to scale this share is immense. The Government of India's focused thrust on infrastructure development, complemented by conducive policy measures, is propelling the nation toward becoming a global manufacturing hub. These strategic efforts are not only essential for economic expansion but are equally significant for enhancing the ease of living and ease of doing business.

It is in this transformative context that I am pleased to announce the release of the 3rd and revised edition of the "Aide Memoire on Infrastructure Financing", published by the Banking, Financial Services & Insurance (BFSI) Board of the Institute of Cost Accountants of India. Building on the success of its maiden edition, which earned wide appreciation from infrastructure leaders, regulatory authorities, and government institutions, this updated edition is both timely and impactful.

The publication offers a comprehensive analysis of infrastructure financing, covering financial methodologies, credit appraisal frameworks, and project-specific performance indicators. The key highlights of this edition include chapters on:

- ESG and Sustainable Finance
- Urban Infrastructure Development
- Preventive Vigilance and Risk Management
- Loan Syndication Mechanisms

- Key Performance Indicators
- Sector-specific Case Studies

Of particular significance is the spotlight on the vital role played by Cost Accountants (CMAs) in the planning, evaluation, and audit of infrastructure projects across diverse sectors, ranging from roads, transportation, ports, and airports to oil & gas pipelines, warehousing, water supply, and sanitation.

This publication also explores practical themes such as project financing strategies, cost structures, Non-Performing Assets (NPAs), performance audits, and Public-Private Partnership (PPP) models. The inclusion of scenario analysis further enhances its relevance by addressing emerging risks in infrastructure financing.

More than just a technical compendium, this edition is a collector's pride and a valuable resource for professionals, policymakers, regulators, and stakeholders in the infrastructure and financial services ecosystem. It will be made available online for members and disseminated to key government and industry decision-makers.

I extend my heartfelt congratulations and deep appreciation to CMA Chittaranjan Chattopadhyay, Chairman of the BFSI Board, for his visionary leadership in conceptualizing and delivering this landmark publication. His dedication and foresight, especially amid an era of global disruption and rapid transformation, have made this work both relevant and indispensable.

CMA Bibhuti Bhusan Nayak

Immediate Past President, ICMAI



PROLOGUE

Comprehensive development of Infrastructure is considered to be an essential prerequisite for the holistic and steady growth of the economy.

Covering a vast range of sub sectors under Harmonized Master List of infrastructure, the development of Roads, Power digital and social infrastructure etc provides linkages with the rest of the economy, acting as an enabler for growth productivity and prosperity.

The financing of the infrastructure therefore assumes utmost importance. In the present economic scenario, financing of infrastructure has become an amalgamation of science and art. This requires deep understanding of the basic concepts, the most suitable specific PPP structure and the regulatory framework. The financial tools of appraisal and risk assessment along with the efficient mechanism of risk mitigation are an integral part of infrastructure financing while understanding the nuances involved and ground level nitty gritty. Effective cost evaluation and monitoring are also fundamental to the infrastructure financing.

Finance professionals in today's changing environment needs to upgrade their skills and be aware of the latest developments in the economy and in the world of finance as a part of professional development. In this direction our Institute has played a prominent role by constantly bringing out publications and other material for the benefit of fellow members, academicians, bankers and policy makers.

"Aide Memoire on Infrastructure Finance ' is one of the pioneering publication of the Institute brought out by the BFSI Board. This has proved to be a ready reckoner on infrastructure financing in the hands of the reader, combining theory, practical framework, case studies and policy initiatives. The third enlarged and revised edition of the book with additional case studies on Airport and Port sector and due coverage of latest developments in the field of ESG including BRSR core and climate Finance Taxonomy will add further value to the publication.

I convey my heartiest congratulations to CMA Chittaranjan Chattopadhyay Chairman, BFSI Board and his entire dedicated team for this priceless contribution towards skills and professional development for all the stakeholders.

CMA M K Anand
Council Member,
Chairman
Professional Development Committee, ICMAI



FOREWORD

It is our proud privilege to present to you the third enlarged and revised edition of our prestigious publication 'Aide Memoire on Infrastructure Financing '.

In our fruitful journey towards a VIKSIT BHARAT, the comprehensive development of the infrastructure sector is of utmost importance, since it plays a critical positive role with its multiplier effect, across various sectors of the economy. The Financing of infrastructure sector is a niche area which is evolving overtime with constant constructive developments.

While acknowledging the positive response and encouraging feedback to the previous two editions of the book, this revision and updation of the book is an attempt to place before the readers, the current trends and initiatives taken by the government in the field of infrastructure along with latest policy guidelines of the regulator and the forward looking approach to achieve our coveted goals.

Two additional case studies on the contemporary important sectors of financing Airport and Sea Port projects have been included in the present edition. In addition, a case study on the restructuring of infrastructure projects has also been covered in line with extant guidelines and with detailed discussion on the challenges faced by way of cost overrun and time overrun of infrastructure projects.

Taking into account the overwhelming support of the government to infrastructure sector, the government perspective in the appraisal of projects, with specific reference to PPP requirements and the viability gap funding have been covered more elaborately in this edition. Needless to add, the latest developments in field of ESG and sustainable financing, including the 'Climate Finance Taxonomy' and BRSR Core have been made a part of this revised edition.

The updated status of the government schemes/ programs and initiatives of various public sector agencies along with the new announcements in the budget relating infrastructure sector have been duly covered.

We hope the above additions in the enlarged edition will be useful and meet requirements of the readers.

The contribution of Mr. C. M Khurana, Former CGM - CFO of Oriental Bank of Commerce and Former CGM (credit) IIFCL, as the resource person for this revised publication needs a special mention and acknowledgement.

I also place on record the support and valuable inputs provided by Shri Pawan Kumar, Chief Adviser cost, Ministry of Finance and Shri Lalit Wadhwa, Director, Office of the Chief Advisor Cost ,Department of Expenditure,Ministry of Finance, Government of India.

I would also like to thank our President and Vice President for their invaluable support.

We are sure this enlarged and revised edition will further add value to the utility of the book for all our members of the institute as also for all other professionals and stakeholders associated with the important task of infrastructure development of the country.

CMA Chittaranjan Chattopadhyay

Chairman, BFSIB, ICMAI



Prologue

India stands at the launchpad of an unprecedented transformation, fuelled by the ambitious vision of achieving 'Viksit Bharat' by 2047. At the heart of this colossal aspiration lies the development of robust infrastructure, recognized as an indispensable pillar for long-term inclusive growth. This journey is not merely about building physical structures; it is about forging the very backbone of a nation's economic and social advancement, driving productivity, enhancing the quality of life, and unlocking immense opportunities for its diverse population. From vast networks of roads and railways, bustling ports and airports, to the intricate systems of energy generation and distribution, water supply, sanitation, and digital connectivity, infrastructure development is the engine that will power industrial growth, attract investments, facilitate trade, and create countless employment opportunities.

World-class infrastructure is the keystone of economic growth, productivity, and global competitiveness. To achieving this, India needs innovative financing mechanisms that go beyond traditional public expenditure. Public-Private Partnerships (PPPs), GSS+ bonds, infrastructure investment trusts (InvITs), and ESG-aligned global capital flows will be essential to bridge the funding gap. Government of India has taken significant initiatives in the recent past including setting up a Task force for the National Infrastructure Pipeline (NIP).

The learning from implementation of PPP infrastructure projects in the period 2000-2014 was that the private sector was not well placed in investing in greenfield projects due to significant project cycle risks. One of the shifts in Infrastructure policy than occurred post 2014, after the difficulties experienced by the private sector in implementing PPP infrastructure projects, has been to raise budget financing of large greenfield infrastructure projects to a significant measure. In 2025-26 the allocation for capex has been raised to Rs 11.11 lakh crores. As a means of recycling resources, Government launched the National Infrastructure Monetisation Pipeline as means of ploughing back the investments in budgetary financing of infrastructure through bidding out commissioned operating assets to the private sector. Between 2022 and 2025, Rs 5.5 lakh cr worth of infra assets have been monetised. Hon'ble Finance Minister has set a target of Rs 10 lakh cr for Infra Asset Monetisation for the period 2025-2030.

At this juncture, this book, "Aide Memoire on Infrastructure Financing," by ICMAI serves as an essential compass in this dynamic and complex landscape. It is meticulously compiled to be a single, comprehensive reference point for all professionals and stakeholders. The tone is one of urgent purpose and insightful guidance.

Readers will find insights into the emerging paradigms of Climate Risk and Sustainable Finance, underscoring their growing importance in the infrastructure ecosystem. A cornerstone of modern infrastructure development, especially in India, is the Public Private Partnership (PPP) Model. The book meticulously charts the life cycle phases of a PPP project, and also highlights government support mechanisms like the Viability Gap Funding (VGF) scheme, which provides crucial financial aid to economically justified but commercially unviable projects, ensuring that vital infrastructure is not stalled due to profitability gaps. Central to the success of any project is the art and science of Credit Appraisal. This publication meticulously breaks down the comprehensive assessment process.

Furthermore, the book elucidates Key Performance Indicators (KPIs), both financial and non-financial, as vital tools for assessing project strength and viability. Non-financial indicators, such as capacity utilization, and critically, adherence to Environmental, Social, and Governance (ESG) compliances and Business Responsibility and Sustainability Reporting (BRSR) are highlighted as increasingly integral to project evaluation.

A significant portion is dedicated to Risk Management, acknowledging that risks are an inherent part of any commercial venture, especially long-term, capital-intensive infrastructure projects. It provides a meticulous framework for risk identification, classification, and detailed assessment of various risks.

This book is more than a compilation of facts; it is a strategic guide, empowering every stakeholder to understand, navigate, and decisively act within India's monumental infrastructure journey. It is a call to action for collective effort, innovation, and ethical stewardship to build a 'Viksit Bharat' for generations to come.

This book is an invitation to everyone— policy makers, researchers, thinktanks, industrialists, finance professionals, investors, engineers, developers, ESG analysts and the like to rise to the occasion, going beyond just mundane deal-chasing into contribute to the cause of institution-building. The book is truly an engaging read and an enlightening experience.

Shri K Rajaraman

Chairperson

International Financial Services Centres Authority



Prologue

Aide Memoire on Infrastructure Financing 3rd Edition

The economic history of modern nations shows that countries which achieved high-income status invariably invested heavily in infrastructure. The United States invested in physical infrastructure in the 1960s and 1970s, China in the 1980s, and Japan in the years following the Second World War. It is therefore natural that the nation's vision of becoming Viksit Bharat by 2047 places strong emphasis on infrastructure development.

Infrastructure is an essential, though unpaid, factor of production. In its absence, economic growth faces serious constraints. Recognizing this, the Government of India has increasingly sought private sector participation through effective public–private partnership models. The National Infrastructure Pipeline (NIP) is a key initiative in this direction.

Currently, the NIP includes 14,144 projects worth $2.6 trillion across 62 sectors. Of these, 1,120 projects are currently under implementation. The pipeline features both greenfield and brownfield projects, including stressed assets and potential opportunities for various categories of investments. In addition, as of June 2025, there are 1,595 centrally sponsored projects under execution.

Delivering infrastructure assets of such scale and value requires highly efficient financing mechanisms. Project finance, unlike corporate finance, relies on different approaches to manage risk. The residual risks in project finance are harder to hedge due to the number of stakeholders involved and long gestation period. Time and cost overruns have been a challenge in infrastructure projects across the world, and a key objective is to minimize these risks.

India's journey in project financing has evolved over decades. Until the 1990s, infrastructure investment was almost entirely government-driven. Post-reforms, public–private partnerships became the preferred model. By the early 2000s, efforts were made to develop corporate bond markets and encourage banks to finance infrastructure. Specialized NBFCs emerged to provide funding for projects with long gestation periods.

It soon became clear that dedicated institutions capable of handling long-term project risks were essential. This led to the creation of the National Investment and Infrastructure Fund (NIIF) in 2015 as a sovereign-linked alternative asset manager. On the debt side, National Bank for Financing Infrastructure and Development (NaBFID) was established in 2021 to provide long-term, non-recourse financing for infrastructure projects. SEBI's introduction of Real Estate Investment Trusts (REITs) and Infrastructure Investment Trusts (InvITs) also enabled greater foreign participation. Today, India has a range of financing avenues that can mobilize both domestic and global capital for infrastructure.

However, infrastructure financing remains a specialized field that requires deep expertise. Risk assessment, monitoring, syndication, and expeditious resolution in case of project failure demand years of experience. While technology has progressed significantly, it cannot fully replace human judgment in infrastructure finance. At the same time, the very definition of infrastructure has expanded to include digital infrastructure, data centers, and other assets vital for the digital economy with each of them requiring their own financing models.

It is in this context that this publication, Aide Memoire on Infrastructure Financing by The Institute Of Cost Accountants Of India, assumes significance. It brings together decades of collective experience in project financing in India, documenting its progress, challenges, and lessons learned over almost three decades.

This book will serve as a valuable reference for scholars, researchers, policymakers, bankers, public sector undertakings, and private sector participants in infrastructure. It is both a practical guide for professionals and a training resource. The latest edition also addresses emerging themes such as sustainable finance, and urban infrastructure, while enriching the discussion through relevant case studies.

I am sanguine that like earlier editions, the current one too will receive widespread acceptance. I wish the Institute Of Cost Accountants Of India continued success in its mission of sharing knowledge in the field of infrastructure financing in India.

Challa Sreenivasulu Setty

Chairman, State Bank of India

Chairman, Indian Banks' Association



FOREWORD

I am delighted to note that ICMAI is bringing out an updated and consolidated version of their compilation titled "Aide Memoire on Infrastructure Financing".

It is really surprising that Infrastructure finance exists before corporate finance and was implemented in 1299 AD when the English Crown financed the exploration and development of Devon Silver Mines, the Crown basically used the anticipated output of the mines to repay loan from an Italian merchant bank.

Infrastructure is the backbone of any nation's economic and social development. In the context of India, a rapidly growing economy with a vast and diverse population, infrastructure plays a pivotal role in driving inclusive growth, enhancing productivity, and improving the quality of life. It encompasses a wide range of sectors, including transportation (roads, railways, ports, and airports), energy (power generation and distribution), water supply, sanitation, and digital connectivity. The development and modernization of infrastructure are essential to support industrial growth, attract investments, facilitate trade, and create employment opportunities.

India's ambitions to become a US$5 trillion economy and a global manufacturing hub depend heavily on the strength and efficiency of its infrastructure. For instance, improved road and rail connectivity can reduce logistics costs and time, thereby boosting competitiveness in domestic and global markets. Similarly, reliable power supply is vital for industries, while digital infrastructure supports the expanding services sector, particularly IT and FinTech. Moreover, well-planned urban infrastructure is crucial in managing the challenges of urbanization, ensuring sustainable cities, and delivering basic services like water, housing, and sanitation to all citizens. Given the scale of India's development needs, infrastructure investment requirements are enormous. According to estimates, India needs to invest trillions of dollars over the next decade to bridge the infrastructure gap. However, traditional sources of public funding, such as government budgetary allocations, may not be sufficient to meet these requirements. This brings into focus the critical importance of infrastructure financing.

Infrastructure financing refers to the methods and mechanisms used to raise funds for the development, maintenance, and expansion of infrastructure assets. It includes a mix of public expenditure, private investment, multilateral financing, and innovative financial instruments like infrastructure bonds, Real Estate Investment Trusts (REITs), and Infrastructure Investment Trusts (InvITs). Public-Private

Partnerships (PPPs) have also emerged as a key model for financing and managing infrastructure projects, allowing the private sector to bring in capital and efficiency while sharing risks with the public sector. The importance of infrastructure financing lies not just in mobilizing adequate resources but also in ensuring the long-term sustainability and viability of projects. Infrastructure projects are typically capital-intensive, long-gestation ventures with complex risk profiles. Hence, structured financing, robust regulatory frameworks, and institutional capacity are crucial to attract and manage investments effectively.

Recognizing these needs, the Indian government has launched initiatives like the National Infrastructure Pipeline (NIP), PM Gati Shakti, Bharatmala, Sagarmala, Power for All, the waterways development program and the National Monetisation Pipeline (NMP) to boost infrastructure development and financing which have been suitably covered in this compilation. These programs aim to coordinate planning, encourage private participation, and optimize asset utilization, thereby creating a more enabling environment for infrastructure growth.

Infrastructure is a fundamental driver of India's socio-economic progress, and its development is intrinsically linked to effective and sustainable financing. Bridging the infrastructure deficit through innovative and inclusive financing models will be key to realizing India's long-term growth aspirations. I believe this compilation will be useful for scholars, researchers, Government officials, banks, PSUs and others who have an interest in this field.

CMA Pawan Kumar
Chief Adviser (Cost)
Department of Expenditure,
Ministry of Finance



Prologue

India's ambition to achieve 'Viksit Bharat by 2047' goal requires sustained high economic growth over the coming decades. Amidst a backdrop of geopolitical tensions and increasing protectionism, developing quality infrastructure that improves logistics efficiency and productivity is not just essential - it forms the very foundation of the nation's growth journey. However, a substantial gap persists between the level of infrastructure spending required to achieve aspirational growth and the financial resources currently available.

Traditionally, the government has been the principal source of infrastructure financing, driving the sector's expansion. Private sector including bond market, banks and non-banking financial companies (NBFCs) have also played an important role, contributing approximately one-fifth of the total infrastructure funding. There have been multiple initiatives to address constraints hindering growth of the sector, including streamlining inter/intra ministerial coordination resulting in faster land acquisition, environmental clearances, regulatory approvals, better contract writing, etc. Creation of strong counterparties like NHAI, SECI, IREDA, etc. have helped build trust in public-private partnership. Further, the government set-up an infrastructure focused development financial institution, namely National Bank for Financing Infrastructure and Development in April 2021 to foster an enabling ecosystem for infrastructure financing by focusing on innovation and sustainability.

Supported by regulatory enablers and innovative financing tools, infrastructure has evolved into a stable asset class over the years, rekindling investor interest. Mechanisms such as Infrastructure Investment Trusts (InvITs) and Real Estate Investment Trusts (REITs) have facilitated risk diversification and attracted institutional capital of insurance, pension, provident funds, and sovereign wealth funds, etc. into long-term productive investments. This trend is only going to strengthen, going forward, with private sector expected to take center stage in infrastructure spending. Infrastructure financing opportunities will grow exponentially, especially in last-mile urban development and bridging regional imbalances.

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Infrastructure will remain the key enabler of India's economic and social progress as the country embarks on a transformative growth phase. Addressing the infrastructure financing gap by attracting diverse sources of capital is crucial to sustaining India's growth momentum. The handbook covers all important domains of infrastructure financing, with rich coverage of regulations, structures and government initiatives. It will serve a ready reference for all stakeholders including scholars, researchers, policymakers, financial institutions, and general readers with an interest in infrastructure development.

With best regards,

(Rajkiran Rai G.)

Managing Director

National Bank for Financing Infrastructure and Development (NaBFID)

Palash Srivastava
Managing Director (Additional Charge)

आई आई एफ सी एल
I I F C L



27th October, 2025

Prologue

India's infrastructure sector has undergone a remarkable transformation over the past decade. From bridging basic connectivity gaps, we've advanced to building world-class assets—expressways replacing potholes, seamless telecom networks connecting every corner, and state-of-the-art airports becoming gateways to progress.

But today, we are at a crucial inflection point.

The next phase of growth will be shaped not just by what we build, but **how we finance it**. As traditional public funding reaches its limits, innovation in financial instruments—such as blended finance, green bonds, asset monetisation structures, and sustainable investment frameworks—will define the future of infrastructure.

Urban infrastructure and smart cities will play a defining role in shaping India's development trajectory. As cities become engines of economic growth and innovation, the need for efficient transit systems, climate-resilient utilities, digital infrastructure, and inclusive public services will only intensify. Yet, the full potential of urban transformation can only be unlocked by strengthening the financial capabilities of Urban Local Bodies (ULBs). Tapping municipal funds, enhancing creditworthiness, and enabling access to capital markets—through mechanisms like municipal bonds—are critical steps toward empowering cities to build, manage, and maintain next-generation infrastructure.

Equally important is **collaboration**. Financial institutions, public and private, must join forces to pool capital, share risks, and build resilient financing ecosystems that can support ambitious national programs like the National Infrastructure Pipeline, Gati Shakti, and the journey to Net Zero.

In short, the foundation has been laid. Now, **financial innovation and institutional partnerships will be the engines that drive India's infrastructure revolution forward**—faster, smarter, and more sustainably than ever before.

पलाश!

PALASH SRIVASTAVA
Managing Director (Additional Charge)
IIFCL

रजनीश कर्नाटक
एमडी एवं सीईओ

Rajneesh Karnatak
MD & CEO

बैंक ऑफ़ इंडिया
Bank of India



22 September 2025

Prologue

Infrastructure has always been at the heart of a nation's economic progress. For a country as vast and geographically diverse as India, roads, railways, power, ports, airports, and urban facilities are not only necessary for economic expansion but also essential for inclusive growth.

Over the last decade, India has made remarkable strides in building a modern and connected infrastructure ecosystem. Programs such as PM Gati Shakti, Smart Cities Mission, AMRUT, Bharatmala, Sagarmala, and the National Infrastructure Pipeline have transformed India's infrastructure.

Between 2014 and 2025, our railways saw major modernisation, with over 45,000 km of tracks getting electrified and a dedicated freight corridor nearing completion. To support a growing urban population, our metro network was expanded fourfold, from just five cities a decade ago to twenty-three cities today. Our metro network is now the third largest globally.

The number of operational airports in India has more than doubled, from 74 in 2014 to 162 by 2025, and the country has become the third-largest domestic aviation market. In the maritime sector, cargo handling capacity at major ports has surged by 87% in the last decade.

Regarding road infrastructure, between 2014 and 2025, the length of national highways expanded from about 91,000 km to over 1,46,000 km, with construction speeds nearly tripling to 34 km per day. As a result of these efforts, India's World Bank Logistics Performance Index (LPI) ranking improved by 16 places from 54 in 2014 to 38 in 2023.

Our urban infrastructure is also transforming. Through the Smart Cities Mission, over ₹1.5 lakh crore has been invested in our major cities. But investments are not limited to iconic projects alone. To strengthen inclusivity, under the Pradhan Mantri Gram Sadak Yojana, 7.8 lakh km of rural roads have been built, and another 25,000 unconnected habitations are set to receive all-weather road connectivity by 2029.

A notable feature of today's infrastructure landscape is the growing emphasis on sustainability and clean energy finance, an area where sustainable finance and green bonds are gaining traction. India ranks 4th globally in renewable energy installed capacity, which touched 234 GW in June 2025, and the National Green Hydrogen Mission is poised to take off with an investment outlay of ₹8 lakh crore.

This scale of our infrastructure expansion is monumental and has been enabled by a strong financial foundation. For FY26, the Centre's infrastructure capex is pegged at ₹11 lakh crore, while that of the states is at ₹8 lakh crore. Regarding infrastructure credit, as of July 2025, bank credit to the infrastructure sector stood at over ₹13.25 lakh crore, which is around 42% of the overall infrastructure credit. The remaining 58% share was contributed by NBFCs & AIFIs.

The share of bank credit to infrastructure within their overall loan books has moderated to below 8%, though they continue to play a pivotal role in early-stage project funding. Meanwhile, innovative financing channels are gaining traction. AUM of REITs and InvITs has grown nearly twelvefold in just five years to over ₹9 lakh crore and is expected to reach ₹25 lakh crore by 2030. Regarding foreign direct investments, inflows into infrastructure crossed $78 billion between FY15-25. Today in the infrastructure sector, funding is not only being supported by traditional bank lending, but also through bonds, REITs and InvITs, private equity and public capital, as well as a mix of debt and equity instruments.

Looking ahead, India will require USD 2.2 trillion in investments in infrastructure to become a USD 7 trillion economy by 2030. The challenge lies not only in mobilising this capital but also in ensuring the availability of a sufficiently large and skilled talent pool that can underwrite projects of this scale.

Despite our well-grounded understanding, infrastructure financing remains a complex field, marked by long project cycles, cost and time overruns, multiple stakeholders, and evolving regulatory frameworks. This complexity calls for highly skilled professionals who can underwrite projects, assess risks, and structure deals in a manner that balances growth and financial discipline. Developing such talent is critical for ensuring that infrastructure growth is financially viable and sustainable.

This third edition of the "Aide Memoire on Infrastructure Financing" reflects these developments. It includes updated case studies in sectors such as airports and ports, analysis of cost and time overruns, climate finance taxonomy and other recent policy initiatives. The book continues to serve its purpose of providing practitioners, students, and policymakers with a comprehensive resource on the nuances of infrastructure finance in India.

I sincerely acknowledge the role of the BFSI Board of the Institute of Cost Accountants of India in bringing out this valuable resource. I am confident that this updated edition will not only deepen understanding of infrastructure financing but also help nurture the next generation of professionals who will carry forward India's infrastructure growth story with competence, diligence, and vision.

Best wishes

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पंजाब एण्ड सिंध बैंक
(भारत सरकार का उपक्रम)

Punjab & Sind Bank
(A Government of India Undertaking)

आजादी का अमृत महोत्सव

G20 भारत 2023 INDIA

स्वरूप कुमार साहा
प्रबंध निदेशक एवं
मुख्य कार्यकारी अधिकारी

Swarup Kumar Saha
Managing Director &
Chief Executive Officer



Date: 28.10.2025

Foreword

Infrastructure financing stands at the heart of a nation's growth and resilience. The third edition of the "Aide Memoire on Infrastructure Financing" published by ICMAI is designed to be a timely and practical guide for practitioners, policymakers, and all those interested in shaping India's infrastructure landscape amid continual change. This volume captures the expanding complexity of the sector, combining advanced financial solutions, modern risk management, and emerging global standards.

The compilation covers a broad array of topics critical to today's environment. It delves into alternative funding sources, including Infrastructure Investment Trusts, securitization, and syndication models, alongside robust methodologies for pricing, sanctioning, and monitoring infrastructure loans. This edition places special emphasis on compliance, documentation, regulatory reforms, and audit mechanisms essential for efficiency and good governance.

The book reflects new national priorities with detailed chapters on initiatives such as Atmanirbhar Bharat, Make in India, and the National Logistics Policy, acknowledging the increasing role of digital infrastructure and urban transformation. Themes of ESG and sustainable finance are addressed at length, recognizing the need for climate responsibility and forward-looking investment strategies.

May this edition serve as a practical reference and a source of inspiration for all invested in building the infrastructure of tomorrow.

With Best Wishes!

(Swarup Kumar Saha)
Managing Director & CEO

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Foreword

Infrastructure development is a cornerstone of economic growth and social progress. It determines the efficiency with which goods and services move, the opportunities available to citizens, and a nation's ability to compete globally. In recent years, India has undertaken an unprecedented scale of infrastructure expansion such as in airports, highways, ports, power plants, and urban transit systems, demonstrating the combined determination of government, industry, and financiers to meet the demands of a rapidly developing economy.

However, the journey from concept to commissioning in such projects is seldom straightforward. Financing large-scale infrastructure requires more than capital. It demands well-structured financial models, robust risk allocation, stakeholder alignment, and constant adaptation to evolving policy, market, and technological conditions. The Public Private Partnership framework has emerged as a key enabler in this regard, facilitating risk-sharing and leveraging private sector efficiencies, but also presenting unique challenges in structuring, monitoring, and ensuring long-term sustainability.

Against this backdrop, the third edition of the book is both timely and relevant. This edition captures the latest developments in policy, financing instruments, and implementation strategies. It offers comprehensive insights to readers on the infrastructure financing ecosystem.

The inclusion of detailed case studies on varied infrastructure projects provides practical illustrations of structuring and managing complex, capital-intensive ventures. These cases cover critical aspects such as risk factors & mitigation, sensitivity analysis, and revenue modelling.

The book's focus on cost and time overrun analysis is another notable feature. Cost escalation and project delays are not only financial concerns but can also erode stakeholder confidence. The strategies outlined here, ranging from contractual safeguards to strengthened monitoring mechanisms, are actionable tools for mitigating such risks.

Equally forward-looking is the coverage of contemporary themes such as ESG, Climate Finance Taxonomy, and sustainability-linked financing. As infrastructure increasingly aligns with global climate and ESG goals, the ability to access climate-aligned capital and integrate sustainability criteria into financing decisions will be vital for both competitiveness and compliance.

In addition, the book addresses government initiatives, including the National Infrastructure Pipeline and asset monetisation strategy, which open new avenues for

investment and public–private collaboration. Its sectoral depth spanning across transportation, energy, water, and urban infrastructure ensures relevance for diverse stakeholders, from policymakers to project developers.

I commend The Institute of Cost Accountants of India for its commitment to knowledge dissemination and skill enhancement in the critical domain of infrastructure financing. By updating and enlarging this edition, the Institution has ensured that it remains a trusted reference and practical guide for those engaged in planning, financing, and executing infrastructure projects.

I hope that this book will equip the readers with the insights and tools necessary to contribute effectively to India's infrastructure growth story, delivering projects that are financially sound, operationally efficient, and sustainable for generations to come.

Shri G M Rao
Group Chairman,
GMR Group



FOREWORD

I am pleased to note that the Institute of Cost Accountants of India (ICMAI) is bringing out an updated edition of its distinguished publication, *Aide Memoire on Infrastructure Financing*. This compendium arrives at a time when India's infrastructure sector stands at the intersection of growth, sustainability and innovation — where financial architecture and national development converge to shape the vision of *Viksit Bharat 2047*.

Infrastructure financing today extends far beyond traditional funding. The emergence of blended finance, PPP structures, InvITs, REITs, Green Bonds, and ESG-linked instruments has transformed how capital is mobilized and deployed. The inclusion of comprehensive chapters on PPP models, project appraisal, risk mitigation and alternate funding sources in this volume underscores the growing sophistication of India's financial ecosystem. Equally insightful are the analyses on cost and time overruns and the emphasis on post-completion monitoring — both critical to improving the financial discipline and return on investment in infrastructure projects.

NBCC (India) Limited, as a Navratna CPSE under the Ministry of Housing and Urban Affairs, has long demonstrated that innovative financial structuring can drive sustainable infrastructure creation. Our *self-sustaining redevelopment model* exemplifies the principle of asset recycling — transforming underutilized public land into vibrant, modern and financially self-reliant urban spaces without direct budgetary burden. Projects such as East Kidwai Nagar and 7GPRA colonies at Sarojini Nagar, Nauroji Nagar and Netaji Nagar illustrate how sound project economics and strategic financing can yield long-term value for citizens and the government alike. The World Trade Centre at Nauroji Nagar is a shining example of redevelopment that combines commercial viability with global infrastructure standards.

The inclusion of an exclusive chapter on ESG and Sustainable Finance in this edition is particularly timely. At NBCC, we align our development strategy with climate-responsive design, GRIHA and IGBC green building standards and digital project management tools that enhance transparency, efficiency and sustainability. These initiatives mirror India's commitment to the UN Sustainable Development Goals and the nation's journey toward a Net Zero economy.

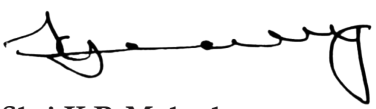
As India continues to build its infrastructure pipeline — supported by the National Infrastructure

Pipeline (NIP), National Monetisation Pipeline (NMP), PM Gati Shakti and NaBFID — the role of finance professionals becomes pivotal. They are the architects of fiscal prudence, risk management and sustainable value creation that underpin every successful infrastructure story.

The *Aide Memoire on Infrastructure Financing* is, therefore, not just a reference book — it is a blueprint for the next generation of financial innovation and infrastructure governance. It bridges policy, practice and purpose, enabling a deeper understanding of how finance can serve as the backbone of sustainable nation building.

I congratulate the Institute of Cost Accountants of India for this insightful and forward-looking publication. It will undoubtedly serve as an invaluable guide for policymakers, financiers, developers and practitioners engaged in shaping the infrastructure landscape of a self-reliant and resilient India.

With best regards,



Shri K.P. Mahadevaswamy
Chairman and Managing Director,
NBCC (India) Limited

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23rd August, 2025

Prologue

Our nation is steadily progressing on its transformative journey towards becoming a self-reliant and developed economy, with unwavering commitment and focus. A key driver of this progress has been infrastructure development, which has significantly contributed to sustaining high GDP growth in recent years. Infrastructure acts as a catalyst for holistic economic advancement through its strong backward and forward linkages with other sectors. Consequently, the availability and effective financing of infrastructure assumes critical importance.

Traditionally, infrastructure financing relied primarily on government budgetary resources. However, with the growing need for fiscal consideration, alternative funding avenues have evolved. Innovative mechanisms such as Public-Private Partnerships (PPP) and asset monetization have emerged as game changers, reshaping the landscape of infrastructure financing and development.

The National Highways Authority of India (NHAI), as the nodal agency under the Ministry of Road Transport and Highways, has established itself as a premier autonomous institution in highway development. In the true spirit of partnership, NHAI has consistently adapted to changing needs and acted as a key enabler of growth and strengthened the sector comprehensively through continuous reforms. The success of the Hybrid Annuity Model (HAM) under PPP is well recognized, while innovative funding models such as InvIT and TOT are creating new benchmarks for success.

Against this backdrop, the Aide Memoire on Infrastructure Financing, published by the Institute of Cost Accountants of India (ICMAI), has already proven to be a valuable resource for professionals and stakeholders. I am delighted to note that ICMAI is now releasing the Third Enlarged and Revised Edition of this useful publication. With expanded coverage of contemporary issues, insightful case studies, and a strong emphasis on addressing cost and time overruns, this edition will serve as a comprehensive and updated reference on infrastructure financing.

I extend my best wishes to the authors, contributors, and publishers for this timely and impactful initiative. I also congratulate CMA Chittaranjan Chattopadhyay, Chairman, BFSIB, for his dedication in bringing this enhanced edition to fruition.

(N R V V M K Rajendra Kumar)
Member (Finance)

PROLOGUE



Charting the Course for India's Infrastructure Renaissance

A Guide for Practitioners and Scholars

In the present world a nation's economic growth and development is highly dependent and linked to the inclusive Infrastructure development across the length and breadth of the country from village panchayat to the district of a city and linking all the states in the country.

Our country India is moving in that direction and developing the Infrastructure for the last 25 years as per the infrastructure harmonised list which is commonly used by all the nation policy makers, developers and regulators for all aspects of the Infrastructure development which in turn is complimenting the growth and development of Manufacturing Industry and Agriculture Sectors and enhancing the country GDP.

As we are all aware the arteries of a nation's progress is in its Infrastructure provisioning and its development for the ease of doing business and speed of doing business by the corporates and the feel good factor and happiness index for all the citizens with accessibility, affordability and quality infrastructure services like roads, ports, power generation, power grids, digital telecom networks, data centres and urban ecosystems which forms the bedrock upon which economic vitality, social equity, and sustainable growth are built.

It may also be observed and it's a fact that the Indian economic growth in terms of GDP is moving north ward with an average GDP growth rate of above 6% year on year and climbed to the 4th position in the world and marching ahead with various innovative policies and initiatives for the Make in India and Vikasit Bharat, and all of these are aiding and made possible with the inclusive Infrastructure development.

Yes, the above infrastructure development needs huge financing and more so the innovative financing instruments and models for meeting the ambition of Vikasit Bharat 2047, and trillions of dollars' worth of transformative infra projects demands more capital in the form of equity and debt to maintain a GDP growth of above 6% and needs at least 4-6% infra spend of GDP in the coming years. In this line the Govt of India had come out with NIP 2.0 with an outline of Rs 111 Lakh Crores and Gati Shakti for the next 5 years, and every year the budget allocations are being made in phases for the inclusive national infra development in the country.

Hence it is very much necessary and required by all the professionals, policy makers, developers and students for mastery over a complex, dynamic, and often high-stakes discipline like Infrastructure Project financing. This *Aide Memoire on Infrastructure Financing* 541 page book is very well crafted as your indispensable compass in this critical journey.

Professionals and Students : Navigating Complexity with Confidence

For professionals like the bankers, project financiers, policymakers, consultants, and developers shaping India's infrastructure destiny, this book is your tactical field manual and like a hand book which can guide you in the landscape you navigate daily in your work. This book provides you the intricate regulatory frameworks viz; RBI's Infrastructure and Project Finance Directions, Climate Risk & ESG and SEBI disclosures. Enumerating the evolving infra models like PPP's, HAM, TOT, InvIT's and critical project risks in development, construction, operations, revenue volatility, force majeure and other related areas of risks in infrastructure project financing.

In this book, you will find not just theory, but *actionable intelligence in chronological way for Infrastructure project development and financing from concept to execution and these are well explained in detail in 27 chapters in a structured manner* :

- **Structured Rigor:** The first three chapters are explained very comprehensively about the various PPP infrastructure financing models like BOT, BOOT, BOO and other project structuring in use for various infra sectors. In chapter 4 and13 explained about the consortium lending mechanics and loan syndication as the infra projects are highly capital intensive and need multiple lenders and equity investors. These inter creditor agreements are well documented and interlinked as project and finance documentation which is very important for the smooth operations and sustainability of the infra projects in long term as explained in the Chapter 17 along with the terms and conditions of the project financial assistance sanction & disbursements.
- **Appraisal Excellence:** The chapter 5 & 6 discusses to master the multidimensional credit appraisal process of the infra project such as the management and promoter capability, technical analysis and validation, market demand, project cost estimation and financial viability. In chapter 7, as a part of the project appraisal process and due-diligence the project cost estimations head wise and means of finance are well enumerated with various financial instruments. The chapter 8 highlights the key performance indicators such as critical financial ratios DSCR, IRR, NPV and other ratios interpretations were well explained with sensitivity analysis and other tools. To get a feel the case studies are well explained in chapter 10 with examples in road, solar power, airport and port sectors to get a better understanding of the infra project financing.
- **Risk Management in Action:** Moving beyond project identification development to proactive management in Chapter 9 and 11 provides sector-specific risks identification during development, construction and operations by appropriate risk allocation, matrices and mitigation blueprints for various infra sectors. Similarly to minimize the risks during project operations the project monitoring and follow-up is explained in detail in the chapters 18 & 19 by monitoring the escrow account and the early warning signals, and while Chapters 20-21 confront the realities of stress, restructuring and NPA resolution head-on, including post-COVID realities and IBC mechanisms, and in chapter 22 the periodic performance audit of infra projects and its benefits are highlighted very well.
- **Future-Proofing Finance:** As we all are aware the infrastructure projects need huge capital in

the form of various debt and equity instruments from other alternate finance sources also apart from simple loans to meet the NIP2.0 implementation by both Govt and Private sector. These vanguard of funding are explored by InvITs, IDFs, Securitization, Bonds and the role of global capital and All India Developmental Financial Institutions like NIIF, IIFCL, NaBFID, EXIM and others which are well explained in Chapters 12 & 23.

- **Sustainable Finance :** The world is moving towards Net Zero Climate Action as per the COP resolutions. In line with those environmental needs and to understand the non-negotiable integration of ESG, Climate Risk and BRSR disclosures into core infra finance strategy is well explained in the chapter 25 with its challenges and opportunities along with the role of the government.
- **Real-World Context:** The book Immerse you in diverse case studies like Road HAM&TOT, Solar Power, Airports, Ports and sectoral deep dives like Waste-to-Energy, Water, Railways and Urban Infra bridging classroom concepts to tangible projects.
- **Exposure to Innovation and Atma Nirbhar Bharat :** One can engage with cutting-edge topics and initiatives such as Green Finance, ESG integration , digital infrastructure in chapter Ch.24, and the transformative government initiatives like NIP, NMP, PM Gati Shakti reshaping India's future.

The Unifying Vision:

Overall this comprehensive compendium emerges at a pivotal moment for the India's National Infrastructure Pipeline, Gati Shakti Master Plan, and ambitious decarbonization goals demanding a new calibre of financial acumen. Whether you are structuring a billion-dollar port concession, appraising a solar park, studying sovereign wealth fund flows, climate finance or ensuring vigilance in Chapter 27 in public expenditure, the principles within these chapters are universal and very useful.

The book bridge the gap between policy intent like GoI's Atma Nirbhar Bharat initiatives and bankable execution and linking between academic models and the gritty realities of project case studies and finance and escrow monitoring, and adding new dimensional thoughts from traditional lending to the frontiers of sustainable finance.

I recommend all the professionals and students **to Embrace this volume not merely as a reference, but as a catalyst** and let it sharpen your edge in a competitive arena. For the students, let it ignite your passion for shaping the physical backbone of the world's fastest-growing major economy. The challenge of financing India's infrastructure renaissance is immense, but so is the opportunity. May this *Aide Memoire* empower you to meet it with knowledge, confidence and vision.



Dr Emandi Sankara Rao

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Acronyms

AADT	– Annual Average Daily Traffic
AD	– Appointed Date
ADB	– Asian Development Bank
ADSR	– Average Debt Service Coverage Ratio
ADT	– Average Daily Traffic
AIFIs	– All India Financial Institutions
AKAM	– Azadi Ka Amrit Mahotsav
AM	– Asset Monetization
AMC	– Asset Management Company
AMRUT	-Atal Mission for Rejuvenation and Urban Transformation
ANB	-Atmanirbhar Bharat
APSPDCL	– Andhra Pradesh Southern Power Distribution Corporation Limited
AQR	- Asset Quality Review
ARC	– Asset Reconstruction Company
ARR	- Average Revenue Rate
ASCL	– Aggregate Sanctioned Credit Limit
ASEPL	– Automation System Engineers Private Limited
ATNW	–Adjusted Tangible Net Worth
BEP	– Break Even Point
BFR	– Bankable Feasibility Report
BIFR	– Board for Industrial & Financial Reconstruction
BG	– Bank Guarantee
BOLT	– Build-Operate-Lease-Transfer
BOO	– Build-Own-Operate
BOOT	– Build-Own-Operate-Transfer
BOT	– Build-Operate-Transfer
BPC	– Bid Project Cost
BPLR	– Benchmark Prime Lending Rate
BRSR	- Business Responsibility & Sustainable Report
CA	– Chartered Accountant
CoA	– Concession Agreement

CC – Cash Credit

CCEA – Cabinet Committee on Economic Affairs

CCF – Credit Conversion Factor

CEF – Credit Enhancement Fund

CEI – Credit Enhancement Institution

CERSAI – Central Registry of Securitisation Asset Reconstruction and Security Interest of India

CF – Cash Flows

CIBIL – Credit Information Bureau (India) Limited

CIRP - Corporate Insolvency Resolution Process

CMA – Cost & Management Accountant

COD – Commercial Operation Date

COP - Conference of the Parties

COVID - Corona Virus Disease

COVID-19 – Corona Virus Disease 2019

CMIE - Centre for Monitoring Indian Economy

CPCB – Central Pollution Control Board

CPI – Consumer Price Index

CPM – Critical Path Method

CR – Current Ratio

CRE – Commercial Real Estate

CRERH – Commercial Real Estate Residential Housing

CRM – Credit Risk Mitigation

CSD – Central Securities Depository

CSS Centrally Sponsored Schemes

CUF – Capacity Utilization Factor

DBFOT – Design Build Finance Operate Transfer

D/E – Debt Equity Ratio

DCCO – Date of Commencement of Commercial Operations

DCF – Discounted Cash Flow

DEA – Department of Economic Affairs

DFC - Dedicated Freight Corridor

DFI – Development Financial Institution

DFR – Detailed Feasibility Report
DPIIT - Department for Promotion of Industry and Internal Trade
DPR – Detailed Project Report
DRT – Debt Recovery Tribunal
DSCR – Debt Service Coverage Ratio
DSRA – Debt Service Reserve Account
DU – Dwelling Unit
EBIT – Earnings before Interest & Tax
EBITDA – Earnings before Interest, Taxes, Depreciation and Amortization
EC – Expert Committee
ECB – External Commercial Borrowing
ECGC – Export Credit Guarantee Corporation of India
EIA – Environment Impact Assessment
EIRR – Economic Internal Rate of Return
EOI – Expression of Interest
EPC – Engineering, Procurement & Construction
ESG – Environmental, Social and Governance
EV - Electric Vehicles
EWS – Economically Weaker Section
FACR – Fixed Asset Coverage Ratio
FAR – Floor Area Ratio
FB – Fund Based
FDI – Foreign Direct Investment
FGD – Flue-Gas Desulfurization
FIs – Financial Institutions
FoF - Funds of Funds
FITL – Funded Interest Term Loan
FSA – Flexible Spending Account
FSA – Fuel Supply Agreement
FSI – Floor Space Index
FTA – Fuel Transportation Agreement
FY – Financial Year
GIM - Green India Mission

GOI – Government of India
GST – Goods & Services Tax
GSTIN – Goods & Services Tax Identification Number
GW - Giga Watt
HAM – Hybrid Annuity Model
HFC – Housing Finance Company
HML – Harmonized Master List
HPO – Hydrogen Purchase Obligation
IBA – Indian Banks' Association
IBBI - Insolvency & Bankruptcy Board of India
IBC – Insolvency & Bankruptcy Code
ICA – Inter Creditor Agreement
ICD – Inland Container Depot
ICE – Independent Credit Evaluation
ICMA – International Capital Market Association
ICR – Interest Coverage Ratio
IDC – Interest During Construction
IDFC – Industrial Development Finance Corporation
IDRCL – India Debt Resolution Company Limited
IECV – Initial Estimated Concession Value
IFS – Infrastructure Finance Secretariat
IFSC - International Financial Services Centre
IICA - Indian Institute of Corporate Affairs
IIPDF - India Infrastructure Project Development Fund
InvITs – Infrastructure Investment Trust
IRAC – Income Recognition and Asset Classification
IRDAI – Insurance Regulatory and Development Authority of India
IREDA - Indian Renewable Energy Development Agency
IRR – Internal Rate of Return
ISIN – International Securities Identification Number
ISRO – Indian Space Research Organization
IT Act – Income Tax Act
ITR – Income Tax Return

JJM - Jal Jeevan Mission
KPI – Key Performance Indicators
KYC – Know Your Client / Know Your Customer
LC - Letter of Credit
LCN – Lenders' Credit Note
LCV – Light Commercial Vehicle
LD – Liquidated Damages
LEF – Large Exposure Framework
LIA – Lenders' Insurance Adviser
LIC - Life Insurance Corporation
LIE – Lenders' Independent Engineer
LIFE – Life style for the Environment
LIG – Low Income Group
LLC – Lenders' Legal Counsel
LLP – Limited Liability Partnership
LOA – Letter of Allotment /Letter of Award
LTA – Look-Through Approach
MAV – Medium Commercial Vehicle
MCA – Ministry of Corporate Affairs
MCLR – Marginal Cost of Funds based Lending Rate
MDB - Multilateral Development Banks
MMR – Major Maintenance Reserve
MNRE – Ministry of New and Renewable Energy
MOC – Ministry of Coal
MOEF – Ministry of Environment & Forests
MOHUA – Ministry of Housing and Urban Affairs
MORTH – Ministry of Road Transport & Highways
MOSPI - Ministry of Statistics and Programme Implementation
MOU – Memorandum of Understanding
MTM – Mark-to-Market
MW - Mega Watt
NABARD – National Bank for Agriculture and Rural Development
NaBFID – National Bank for Financing Infrastructure and Development

NARCL – National Asset Reconstruction Company Limited
NASA – National Aeronautics and Space Administration
NBFC – Non-Banking Finance Company
NCD – Non-Convertible Debentures
NDCF – Net Distributable Cash Flows
NESL – Nagpur Environmental Services Limited
NFB – Non-Fund Based
NGFS – Network for Greening the Financial System
NHAI – National Highways Authority of India
NHB – National Housing Board
NIIF - National Investment and Infrastructure Fund Limited
NIP – National Infrastructure Pipeline
NITI -National Institution for Transforming India
NMC – Nagpur Municipal Corporation
NMP – National Monetization Pipeline
NPA – Non-Performing Asset
NPLL – Normally Permitted Lending Limit
NPV – Net Present Value
NREL – National Renewable Energy Laboratory
NRI – Non-Resident Indian
NW – National Waterways
O&M – Operation & Maintenance
OMDA – Operation, Management and Development Agreement
OD – Overdraft
OECD – Organization for Economic Co-operation and Development
OMT – Operate-Maintain-Transfer
OSV – Open-Source Vehicle
PAN – Permanent Account Number
PAT – Profit after Tax
PBT – Profit before Tax
PCU – Passenger Car Units
PERT – Project Evaluation Review Technique
PFC - Power Finance Corporation

PFRDA	– Pension Fund Regulatory and Development Authority
PHF	– Peak Hour Factor
PIM	– Preliminary Information Memorandum
PIS	– Portfolio Investment Scheme
PLF	– Plant Load Factor
PLR	– Prime Lending Rate
PMC	– Project Management Contract
PMG	- Project Monitoring Group
PMS	– Project Management Services
PPA	– Power Purchase Agreement
PPP	– Public-Private Partnership
PPPAC	– PPP Appraisal Committee
PRIRP	– Pre Packaged Insolvency Resolution Process
PSA	– Project Sponsoring Authority
PSC	– Public Sector Comparator
QCCP	– Qualifying Central Counterparties
RBI	– Reserve Bank of India
RE	– Regulated Entity
REIT	– Real Estate Investment Trusts
RERA	- Real Estate Regulation and Development Act/ Real Estate Regulatory Authority
R&R	– Resettlement and Rehabilitation
RFP	– Request for Proposal
RFQ	– Request for Qualification
ROB	– Road Over Bridge
ROC	– Registrar of Companies
ROI	– Return on Investment
ROW	– Right of Way
RP	– Resolution Plan
RTL	– Rupee Term Loan
SARFAESI	– Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act
SBCF	– Standby Credit Facility
SBI	– State Bank of India

SBLC – Stand-by Letter of Credit
SCBs – Scheduled Commercial Banks
SEBI – Securities & Exchange Board of India
SECI – Solar Energy Corporation of India
SEZ – Special Economic Zone
SFC – Standing Finance Committee
SMA – Special Mention Account
SPE – Special Purpose Entity
SPV – Special Purpose Vehicle
SR – Security Receipt
SSA – State Support Agreement
SWERA – Solar and Wind Energy Resource Assessment
S4A – Scheme for Sustainable Structuring of Stressed Assets
TAN – Tax Deduction Account Number
TDR – Transferable Development Right
TEV – Techno-Economic Viability Report
TIN – Tax Identification Number
TNW – Tangible Net Worth
TOL – Total Outside Liabilities
TOT – Toll-Operate-Transfer
TPC – Total Project Cost
UDIN – Unique Document Identification Number
UNIDO – United Nations Industrial Development Organization
VFM – Value For Money
VGF – Viability Gap Funding
WACC – Weighted Average Cost of Capital
WASH - Water Sanitation and Hygiene
WCC – Working Capital Cycle
WCDL – Working Capital Demand Loan
WCTL – Working Capital Term Loan
WPI – Wholesale Price Index

NAVIGATION OF AIDE MEMOIRE ON INFRASTRUCTURE FINANCING

Chapter No.	Chapter Heading	Salient Features
1	Introduction	Definition of Infrastructure- Harmonized Master list as announced by DEA, Ministry of Finance. Definition as per Companies Act and Income Tax Act. RBI Guidelines on Infrastructure Financing. RBI(Project Finance)Directions 2025 RBI discussion paper on Climate Risk and Sustainable Finance. Draft disclosure Framework on Climate Related Finance Risk.
2	Elements of Public Private Partnership (PPP) in Financing Infrastructure Project	Basic Elements of PPP Models. Why PPP. Life Cycle Phases of PPP project procurement. Types of PPP Models. Key Institutional initiatives for PPP based Projects by Government of India. Comparison of Corporate Finance and Project Finance.
3	Project Structure for Financing	Project Structure for Financing. Project Execution Flow chart. Applicable Project Documents with important features of each document. Ensuring compliance of specific contractual obligation under each document.
4	Financing Structure – Consortium / Syndication	Broad features of consortium lending and syndication. Roles and responsibilities of lead lender and RBI guidelines for information sharing. Periodic obtaining of certificates from qualified professionals for compliances in respect of large borrowers under consortium.
5	Credit Appraisal Process – I	What is Appraisal? Management appraisal-Ownership structure. Basic features and essential requirements in management appraisal with specific reference to experience, capabilities and ability to fund with adequate resources and due diligence. Government Perspective in Appraisal of projects. Principles of PPP Project Appraisal Environment Impact Assessment. Economic appraisal- UNIDO/OECD approach for cost benefit analysis. Risk Reward Balance.
6	Credit Appraisal Process – II	Marketing Appraisal. Forecasting of demand. Salient features of Toll (Road Projects) / Tariff (Power Project). Emphasis on properly capturing revenue assessment. Technical appraisal- basic feature with comparison of available technologies and efficiency thereof. PERT & CPM techniques. Detailed visit report for appraisal of relevant parameters. Bid Parameters. Scheme for Viability Gap Funding

Chapter No.	Chapter Heading	Salient Features
7	Cost of the Project / Means of Finance	Detailed components of cost of project with proper assessment of each head - Item wise. Government Perspective on Cost of project and other Appraisal aspects of viability. Appraisal of RFQ/RFP. Appraisal of draft concession agreement. Detailed components of means of finance with concepts of Equity, quasi-Equity, Debt/Term Loan, Sub-Debt, Deferred Credits, etc. the need and mechanism for verification of each component of cost with detecting over valuation or under invoicing, if any. Funding of construction contractors. Funding of DSRA.
8	Key Performance Indicators	Financial ratios as a tool of financial appraisals. Relevance of loan coverage ratios, leverage ratios from project point of view and other financial ratios from overall financial strength point of view. Specific role of DSCR, D/E, NPV, IRR and their interpretation. Non-Financial performance indicators like capacity utilization, ESG compliances, BRSR, sensitivity analysis, etc.
9	Risk Management-Key risks and their mitigation	Risk Identification, classification and detailed assessment each kind of risk – construction risk, sponsor/promoters' risk, revenue risk, regulatory risk, financing risk, operational risk, force majeure etc. Possible risk management/mitigation with sector-wise illustrative formats. Salient features of PPA/ CA/ EPC/ O&M etc. to be incorporated in appraisal, if applicable. Types of Risks in PPP contracts. Risk matrix for PPP project.
10	Case studies on Appraisal	Case Study I - Hybrid Annuity Model (HAM) - Road Project; Case Study 2 - Toll Operate Transfer (TOT) - Road Project; Case Study 3 - Solar Power Project Case Study 4 – Air Port Project Case Study 5 – Port Sector Project All aspects relating to comprehensive appraisal are covered with projected financial statements, sensitivity analysis, and risk mitigation, along with the salient aspects of terms and conditions, as applicable to each case.
11	Sector-wise risk mitigation case studies	Risk Assessment & Mitigation Steps for the following three sectors by way of illustration I) Waste to Energy Sector II) Water Supply Project III) Railway Station Redevelopment

Chapter No.	Chapter Heading	Salient Features
12	Alternative source of Funding	The new emerging avenues of funding like infrastructure Debt Fund, Infrastructure Investment Trusts (In-VITs), TOT model, credit enhancement, securitization along with strengthening of the bond market.
13	Loans Syndication Mechanism	Loan syndication framework
14	Methodology for the Pricing of Loans	External Benchmark Lending Rate (EBLR) / Culmination of the process of interest rate deregulation; the Base Rate System & RBI guidelines on Base Rate; External Benchmark Based Lending.
15	Structuring/Regulatory changes related to Large Credit delivery	Revised Large Exposure framework for large Borrowers. Loan Delivery System.
16	Consultants in Infrastructure projects	The relevant roles & responsibilities of external service provides (consultants) are elaborated. These include - Lenders Independent Engineers, - Lenders Insurance Adviser, and - Lenders Legal Counsel Specific activities to be undertaken by each, phase – wise with underlying need for coordination among various consultants.
17	Documentation – Terms & Condition of Sanction	This Forms an important aspect of creating contractual obligations of the of the respective stakeholders covering pre commitment conditions, pre-disbursement conditions & other conditions keeping the risk mitigation steps. Documentation includes finance documents, and transaction documents.
18	Monitoring, Supervision & follow up	The aspects relating to disbursement of terms loan towards Supervision & Follow construction and completion of the project in timely manner with proper end use of funds. Detail of site visit during the construction phase. Cost Escalation/Time overrun. Project Performance Evaluation Formats. Trends in cost and time overrun. Reasons for cost and time overrun. Monitoring of Escrow Account. Role of Cost & Management Accountants suggesting broad areas for performance & credit monitoring.
19	Post Completion-Project Monitoring	The operations of the project after completion need to be monitored with reference to capacity utilization and revenue generation and repayment of the loan. The stress if any in the account need to be monitored as per the framework provided by RBI in this respect including Early Warning Signals. Details of visit after completion of construction.

Chapter No.	Chapter Heading	Salient Features
20	Management of weak Accounts and Restructuring	The framework for management of weak accounts and restructuring including the additional guidelines relating to post Covid-19 scenario. Need for robust mechanism and action points. Summary of past guidelines. Prudential Norms for Resolution. Provisioning for DCCO deferred standard Assets. Role of Asset Reconstruction Company, Project Monitoring Group/IPMD details case study on Restructuring of road project under Harmonious Substitution Clause.
21	Learning Points of NPA Accounts and Mitigation	The current status of NPAs and detailed analysis of the causes thereof both covering External and Internal factors. Possible Mitigation steps and strengthening of the mechanism. Setting up of Bad (Assets) Bank, NARCL and IBC Mechanism. Discussion paper on Expected Credit Loss Framework.
22	Performance Audit of infrastructure projects	Performance Audit of infrastructure projects - its objectives, Infra Projects characteristics, benefits, and performance measurement & assessment tools.
23	Infrastructure thrust by the Government of India	Broad features of the scheme covering the sector –wise details and the funding mechanism. National Infrastructure Pipeline - National Monetization Pipeline - Revitalizing Asset Monetization - Infrastructure Investment Thrust - Trends and Progress in Capital expenditure and performance highlights - Budget initiatives - NHAI – MORTH - RAILWAYS - CIVIL AVIATION - PORTS & Shipping - TELECOM - POWER - Role of Specialized Financial Institution - IIFCL - NABFID - NIIF - IREDA

Chapter No.	Chapter Heading	Salient Features
24	Atma Nirbhar Bharat Initiatives	Government Initiatives relating to holistic development with foreign funding (FDI) and other proactive steps towards infra-development, global sovereign wealth fund & global pension funds – focus on Atma Nirbhar Bharat PLI Scheme Make in India Mission PM Gati shakti Master plan National Logistics Policy Government Project Funding: Role of Public Investment Board Budgetary Initiatives Gift City Digital Infrastructure Reforms for New India - Sabka Saath Sabka Vikas Ministry of Cooperation
25	ESG & Sustainable Finance	ESG Risks and Mitigation measures Role of Financial Sector Role of Government Climate Finance Taxonomy Challanges and Opportunities Energy Transition Progress on India's Climate Actions ESG Disclosers- BRSR Core Value Chain Implementation and Assurance.
26	Urban Infrastructure – The Way Forward	Smart Cities Mission, Namami Gange, Jal Jeevan Mission, Water Management, AMRUT. Desalination Urban Housing Affordable Housing RERA Initiatives Urban Transports/ Metro. Funding Scenario
27	Preventive Vigilance	Vigilance requirements & RBI guidelines
28	Infrastructure Sector Reforms - A need for forward looking approach	Need and Suggestions for Reforms and the Way forward

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CHAPTER - 1

INTRODUCTION

INTRODUCTION

In its quest for the coveted goal of 'VIKSIT BHART' by 2047, the country is making consistent efforts with utmost commitment. 'Development of Infrastructure' is an integral part of the well-conceived comprehensive strategy to achieve long term inclusive growth. Infrastructure development not only acts as a catalyst of growth but also provides a multiplier effect . It facilitates growth across various sectors with its backward and forward linkages for creation of demand as also streamlining and strengthening the supply chain. 'Financing of Infrastructure' assumes a critical importance in the entire ecosystem as an enabler of building a robust infrastructure of the country .Apart from the conventional mechanism of funding through budgetary resources, the Public Private Partnership (PPP) has emerged as a successful model to take the infrastructure of the economy to the next level.

Over the period of time the government has played a pragmatic role with a supportive approach in creating the requisite ecosystem for development of infrastructure in a holistic manner with an eye on the challenging issue of tackling the climate change risk. Several policy level reforms have been initiated with enabling provisions to take forward the successful implementation of the National Infrastructure Pipeline of Rs. 111 lac crore and National Monetization Pipeline of Rs. 6 lac crore.

In the recent years the budgetary allocations for CAPEX have been increased consistently .In the Budget 2025-26, Rs. 11.21 lac crore has been allocated for capital expenditure. The budget further envisages that each infrastructure- related ministry will come up with a 3-year pipeline of projects that can be implemented in PPP mode. States will also be encouraged to do so and would be eligible for support from the IIPDF (India Infrastructure Project Development Fund) scheme to prepare PPP proposals. The budget 2025-26 has also announced that building on the success of the first asset monetization plan ,the second plan for 2025-30 will be launched to plough back capital of ₹10 lac crore in new projects.

While COP 29 has made some headway towards mobilization of resources for handling the climate related issues India needs to focus and intensify it's efforts for creating new avenues for mobilization of resources particularly in the field of energy transition.

To achieve a sustained rise in living standards, the Indian economy will need to grow by around 8 per cent in real terms every year for at least a decade. Achieving this growth will require an increase in the investment rate to around 35 per cent of GDP from the current level of around 31 per cent. It is deemed desirable, in general, for the investment rate to rise so that a higher GDP growth rate is achieved.

The government through its various Ministries/Departments is working out strategies and programmes towards achieving our desired goals with collaboration and seamless implementation in the spirit of the Gati Shakti Program of the Government of India. All the stakeholders of the financial world need to gear up and contribute their might in creating initial success stories and then replicate them at larges scales towards the achievement of our challenging targets. The Banks and NBFCs will continue to play pivotal role in this effort while making the best use of the emerging new avenues in the shape of Invits, private equity, green bonds, disaster bonds etc.

While charting our own course towards the multifaceted development of infrastructure with sustainability in mind, the institutions like NHAI, SECI, IREDA, NIIF, IIFCL and NAFBID etc. shall continue to play an important role. However, issues relating to urban development, waste management, water resources, e-mobility, and our efforts towards de-carbonization shall underline the future challenges and opportunities in the field of infrastructure.

We propose to take up here the entire gamut of infrastructure financing with an objective to present a single reference point by way of this third revision of the Handbook for guiding and assisting all fellow professionals and stakeholders like developers, financial and government agencies, in respect to infrastructure finance. Taking into account a critical role of infrastructure funding the aspects relating to the government perspective in the PPP projects have also been covered in a comprehensive manner in the respective chapters of the book.

A. Definition of Infrastructure sector as per Ministry of Finance

The infrastructure sector covers a vast range of subsectors contributing towards the development of nation. In order to have a uniform approach, the Department of Economic Affairs, Ministry of Finance brings out from time to time, the Harmonised Master List of Infrastructure sub-sectors. Over the years, keeping in view the new opportunities and emerging requirements of the diversified economy, new sub-sectors have been added to the list. Realignment of subsectors has also been done.

Prior to 1st December 2016, Reserve Bank of India was also announcing periodically the list of eligible sub-sectors for the financing of infrastructures, based on the extant applicable notification of the Department of Economic Affairs, Ministry of Finance. However, with effect from 1.12.2016 in terms of notification number RBI/2016-17/168 dated 1.12.2016, the RBI, inter-alia has notified as under:

"The Government of India has further updated the Harmonised Master List of Infrastructure sub-sectors vide Gazette Notifications dated October 13, 2014, April 8, 2016, and August 1, 2016. In this regard, it is advised that for the purpose of the definition of 'Infrastructure Lending', banks and select All India Term-Lending and Refinancing Institutions may henceforth be guided by the Gazette Notifications issued by the Department of Economic Affairs, Ministry of Finance, Government of India, from time to time."

Accordingly, now the list of sub-sectors eligible for funding in terms of RBI guidelines automatically gets updated, whenever there is a new notification from the Ministry of Finance in this respect on the Harmonised Master list of infrastructure sub-sectors.

The latest applicable harmonized list notified vide F. No. 13/1/2017-INF dated 11th October, 2022 is reproduced below.

MINISTRY OF FINANCE

(Department of Economic Affairs)

(POLICY AND PLANNING UNIT)

(Ipp Division)

NOTIFICATION

New Delhi, the 11th October, 2022

F. No. 13/1/2017-INF.—With the approval of the Competent Authority, an updated Harmonized Master List of Infrastructure sub-sectors (Annexure-I) is hereby notified. The new list incorporates the following change to the notification dated 26th April, 2021:

i. "Data Centres" is included in the Harmonized Master List of Infrastructure sub-sectors by insertion of a new item in the category of 'Communication', with a footnote defining Data Centres.

ii. "Energy Storage Systems (ESS)" is included in the Harmonized Master List of Infrastructure subsectors by insertion of a new item in the category of 'Energy', with a footnote defining Energy Storage Systems (ESS).

PEEYUSH KUMAR, Jt. Secy.

Annexure-I

Updated Harmonized Master List of Infrastructure Sub-sectors

S. No.	Category	Infrastructure sub-sections
1.	Transport and Logistics	• Roads and bridges • Ports 1 • Shipyards 2 • Inland Waterways • Airport • Railway track including electrical & signalling system, tunnels, viaducts, bridges • Railway rolling stock along with workshop and associated maintenance facilities

		• Railway terminal infrastructure including stations and adjoining commercial infrastructure • Urban Public Transport (except rolling stock in case of urban • road transport) • Logistics Infrastructure 3 • Bulk Material Transportation Pipelines 4
2.	Energy	• Electricity Generation • Electricity Transmission • Electricity Distribution • Oil/Gas/Liquefied Natural Gas (LNG) storage facility5 • Energy Storage Systems (ESS)6
3.	Water and Sanitation	• Solid Waste Management • Water treatment plants • Sewage collection, treatment and disposal system • Irrigation (dams, channels, embankments, etc.) • Storm Water Drainage System
4.	Communication	• Telecommunication (fixed network)7 • Telecommunication towers • Telecommunication & Telecom Services • Data Centres8
5.	Social and Commercial Infrastructure	• Education Institutions (capital stock) • Sports Infrastructure9 • Hospitals (capital stock)10 • Tourism infrastructure viz. (i) three-star or higher category • classified hotels located outside cities with population of • more than 1 million, (ii) ropeways and cable cars • Common infrastructure for Industrial Parks and other parks • with industrial activity such as food parks, textile • parks, Special Economic Zones, tourism facilities and • agriculture markets • Post-harvest storage infrastructure for agriculture and • horticultural produce including cold storage • Terminal markets • Soil-testing laboratories • Cold Chain11 • Affordable Housing12 • Affordable Rental Housing Complex13 • Exhibition-cum-Convention Centre14

1 Includes Capital Dredging

2 "Shipyard" is defined as a floating or land-based facility with the essential features of waterfront, turning basin, berthing and docking facility, slipways and/or ship lifts, and which is self-sufficient for carrying on shipbuilding/repair/breaking activities.

3 "Logistics Infrastructure" means and includes Multimodal Logistics Park comprising Inland Container Depot (ICD) with minimum investment of ₹ 50 crore and minimum area of 10 acre, Cold Chain Facility with minimum investment of ₹ 15 crore and minimum area of 20,000 sft, and/or Warehousing Facility with investment of minimum ₹ 25 crore and minimum area of 1 lakh sq ft.

4 Includes Oil, Gas, Slurry, Water supply and Iron Ore Pipelines

5 Includes strategic storage of crude oil.

6 Includes dense charging infrastructure and grid scale Energy Storage Systems (ESS) with a minimum qualifying capacity of 200 MW-Hr, provided that ESS is not being established on merchant basis.

7 Includes optic fibre/wire/cable networks which provide broadband / Internet.

8 Data Centre housed in a dedicated/centralized building for storage and processing of digital data applications with a minimum capacity of 5 MW of IT load.

9 Includes the provision of Sports Stadia and Infrastructure for Academies for Training/Research in Sports and Sports-related activities.

10 Includes Medical Colleges, Para Medical Training Institutes and Diagnostics Centres.

11 Includes cold room facility for farm level pre-cooling, for preservation or storage of agriculture and allied produce, marine products and meat.

12 "Affordable Housing" is defined as a housing project using at least 50% of the Floor Area Ratio (FAR)/Floor Space Index (FSI) for dwelling units with carpet area@ of not more than 60 square meters.

13 "Affordable Rental Housing Complex" means a project to be used for rental purpose only for urban migrant/poor (EWS/LIG categories) for a minimum period of 25 years with basic civic infrastructure facilities such as water, sanitation, sewerage/ septage , road, electricity along with necessary social/ commercial infrastructure and the initial rent fixed by Local Authority/ Entities based on local survey of surrounding area wherein the project is situated.

Project means a listed project having at least 40 Dwelling Units of double room or single room or equivalent Dormitory Units or a mix of all three in any ratio but not more than one third of total built up area under double bedrooms units.

Dwelling Units (DUs) means a unit comprising of double bed room with living area, kitchen, toilet

and bathroom of up to 60 square meters carpet area@ or single bed room with living area, kitchen, toilet and bathroom of up to 30 square meters carpet area@.

Dormitory Units means a set of 3 Dormitory Bed with common kitchen, toilet and bathroom in 30 square meters carpet area@ meaning 10 square meters carpet area@ per Dormitory Bed.

@ "Carpet Area" shall have the same meaning as assigned to it in clause (k) of section 2 of the Real Estate (Regulation and Development) Act, 2016.

14 "Exhibition-cum-Convention Centre" is defined as Exhibition and Convention Centre Projects with minimum built-up floor area* of 100,000 square metres of exclusively exhibition space or convention space or both combined.

* Built up floor area includes primary facilities such as exhibition centres, convention halls, auditoriums, plenary halls, business centres, meeting halls etc.

- Post-harvest storage infrastructure for agriculture and horticultural produce including cold storage
- Terminal markets
- Soil-testing laboratories
- Cold Chain[9]
- Affordable Housing[10]
- Affordable Rental Housing Complex[11]
- Exhibition-cum-Convention Centre[12]

As stated earlier, over a period of time , fresh additions to the sub-sectors have been made, according to the needs of the developing economy. The additions in this list over the last 6 years include important contemporary sub-sectors like logistics, affordable housing, affordable rental housing complex, convention centres etc. In keeping with the announcement made by the Hon'ble Finance Minister in the 2022 budget, two very important subsectors have been included in the above list in October, 2022 which relate to Energy Storage Systems and Data Centres as respectively mentioned in the sub-category of energy and communication as above. Both of them are very crucial in the current context of digitalization of the economy and the much needed usage of new technologies for sustainable development by leveraging the energy transition routes. The Government had announced in the Budget 2023-24 to set up an expert committee to review the "Harmonized Master List of Infrastructure" for recommending the Classification and Financing framework for our journey towards VIKSIT BHARAT. As announced in the 2025-26 budget speech, Large ships above a specified size will be included in the infrastructure harmonized master list (HML). Shipbuilding Clusters will be facilitated to increase the range, categories and capacity of ships. This will include additional infrastructure facilities, skilling and technology to develop the entire ecosystem. Similarly, it has been announced in the budget that Top 50 tourist destination sites in the country will be developed in partnership with

states through a challenge mode. Land for building key infrastructure will have to be provided by states. Hotels in those destinations will be included in the infrastructure HML.

There is, however, need for further revision of the list on an ongoing basis to take into account the current requirements and emerging opportunities. Similarly, to further promote the smart city program of the government, specific activities forming a part of the smart city ecosystem can also be included over a period of time in future, based on the needs of addressing the issues arising out of the climate change also.

B. Definition - Under Companies Act, 2013

The Companies Act 2013 has also given list of infrastructure projects or infrastructure facilities in Schedule VI. This Schedule has relevance to the provisions contained in section 55 and 186.

Section 55 of the Companies Act 2013 relates to issuance of preference shares. It provides that a company can issue preferences shares for a period exceeding twenty years but not exceeding 30 years for infrastructure projects subject to the redemption for a minimum of 10% of such preference shares per year from 21st year onwards of earlier, on proportionate basis, at the option of the preference shareholders. It also provides that for the purpose of this section, the term "infrastructure projects" means the infrastructure projects specified in Schedule VI.

Section 186 of the Companies Act 2013 provides for the loans and investments that can be made by a company. It states that a company cannot make investments through more than two layers of investment companies. It also states that a company cannot directly or indirectly, give loan to any person or body person, exceeding 60% of its paid-up share capital, free reserves and securities premium account or one hundred percent of its free reserves and securities premium account, whichever is more. However, to encourage investments in infrastructure sector and to provide requisite flexibility, the above stipulations have been exempted and the clause is not applicable with respect to a loan made, guarantee given or security provided by a banking company or an insurance company or a housing finance company in the ordinary course of its business or accompany engaged in the business of financing of companies or of providing infrastructural facilities. It further explains that the expression "infrastructure facilities" means the facilities specified in Schedule VI.

For ready reference, Schedule VI of the Companies Act 2013 is given below.

SCHEDULE VI (Notified from 01/04/2014)

The term "infrastructural projects" or "infrastructural facilities" includes the following projects or activities:

(1) Transportation (including intermodal transportation), includes the following:

(a) roads, national highways, state highways, major district roads, other district roads and village roads, including toll roads, bridges, highways, road transport providers and other road-related services;

(b) the rail system, rail transport providers, metro railroads and other railway-related services;

(c) ports (including minor ports and harbours), inland waterways, coastal shipping including shipping lines and other port-related services;

(d) aviation, including airports, heliports, airlines and other airport-related services;(e) logistics services.

(2) Agriculture, including the following, namely:

(a) infrastructure related to storage facilities;

(b) construction relating to projects involving agro-processing and supply of inputs to agriculture;

(c) construction for preservation and storage of processed agro-products, perishable goods such as fruits, vegetables and flowers including testing facilities for quality.

(3) Water management, including the following, namely:

(a) water supply or distribution;

(b) irrigation;

(c) water treatment.

(4) Telecommunication, including the following, namely:

(a) basic or cellular, including radio paging;

(b) domestic satellite service (i.e., satellite owned and operated by an Indian company for providing telecommunication service);

(c) network of trunking, broadband network and internet services.

(5) Industrial, commercial and social development and maintenance, including the following, namely:

(a) real estate development, including an industrial park or special economic zone;

(b) tourism, including hotels, convention centres and entertainment centres;

(c) public markets and buildings, trade fair, convention, exhibition, cultural centres, sports and recreation infrastructure, public gardens and parks;

(d) construction of educational institutions and hospitals;

(e) other urban development, including solid waste management systems, sanitation and sewerage systems.

(6) Power, including the following:

(a) generation of power through thermal, hydro, nuclear, fossil fuel, wind and other renewable sources;

(b) transmission, distribution or trading of power by laying a network of new transmission or distribution lines.

(7) Petroleum and natural gas, including the following:

(a) exploration and production;

(b) import terminals;

(c) liquefaction and re-gasification;

(d) storage terminals;

(e) transmission networks and distribution networks including city gas infrastructure.

(8) Housing, including the following:

(a) urban and rural housing including public/mass housing, slum rehabilitation, etc.;

(b) other allied activities such as drainage, lighting, laying of roads, sanitation and facilities.

(9) Other miscellaneous facilities/services, including the following:

(i) mining and related activities;

(ii) technology-related infrastructure;

(iii) manufacturing of components and materials or any other utilities or facilities required by the infrastructure sector like energy-saving devices and metering devices;

(iv) environment related infrastructure;

(v) disaster management services;

(vi) preservation of monuments and icons;

(vii) emergency services (including medical, police, fire and rescue).

(10) such other facility service as may be prescribed.

C. Under the Income Tax Act, 1961

Section 80-IA of the Income Tax Act provides a tax deduction for certain industrial undertakings or enterprises engaged in infrastructure development. It provides for tax exemption for profits & gains obtained by enterprises engaged in the business of developing, operating, or maintaining the following:

- Infrastructure Facilities
- Telecommunication Services
- Industrial Parks and Special Economic Zones
- Power Generation, Transmission and Distribution.
- Distribution of Natural Gas

Provisions relating to these sectors have been explained in the succeeding paras.

Infrastructure Facilities

The infrastructure facilities include toll roads, bridges or rail systems and housing and other activities that are related to highway projects. Water projects like water treatment system, irrigation project, sanitation, and sewerage system or solid waste management system and travelling means including a port, airport, inland waterway or inland port or navigational channel in the sea can also avail this deduction.

Requirements

- The deduction for the infrastructure facilities is applicable to a company that is owned by an Indian company or a company that is owned by an authority, board, corporation or institution that comes under the Central or State Act.
- For a new infrastructure facility, there should be an agreement made to the Government, local authority or statutory body for developmental purposes.

Deduction Amount

100% profits and gains obtained from the businesses for a time period of 10 consecutive years out of 15 years from the date of its commencement.

Telecommunication Services

Telecommunication services include all agencies that provide telecommunication services such as basic or cellular for radio paging, domestic satellite service or network of trunking, broadband network, and internet services.

Requirements

There are two kinds of limitations for the requirements of telecommunication services.

1. It is not developed by splitting up or reconstruction of a business that has already been in use.
2. The second kind of limitation is not developed by the transfer of machinery or plant that has already been in use.

Deduction Amount

100% profits from the first 5 assessment years is permitted as a deduction and 30% for the next 5 assessment years for a total of 15 years from the year of its commencement.

Industrial Parks and SEZ

The Industrial Parks consist of companies that develop, maintains, and operates an industrial park that is recognized by the Central Government.

Requirements

The company operates according to the rules of the Central Government. For SEZ, it is from 1st April 1999 to 31st March 2006 and for Industrial parks, it is from 1st April 1999 to 31st March 2011.

Deduction Amount

100% profits and gains obtained from the businesses for a period of 10 consecutive years out of 15 years from the date of its commencement.

Generation, Transmission and Distribution of Power

A Power Plant established in India for generation and distribution of power during 1st April 1999 to 31st March 2011. The power plant offers restoration and improvement of the network for the duration of 1st April 2004 to 31st March 2011.

Requirements

There are two kinds of limitations for the requirements of telecommunication services.

1. It is not developed by splitting up or reconstruction of a business that has already been in use.
2. It is not developed by the transfer of machinery or plant that has already been in use.

Deduction Amount

100% of profits from the first 5 assessment years is permitted as a deduction. 30% for the next 5 assessment years for a total of 15 years from the year of its commencement.

Reconstruction of Power Plants

According to Section 80IA, the reconstruction of a power plant should be carried out to initiate the revival of a power generating plant that is owned by an Indian company.

Requirements

The Power Plant should have been developed before 30th November 2005. It should have been recognized by the Central Government before 31st December 2005. It should start to generate, transmit or distribute power before 31st March 2011.

Deduction Allowed

100% profits and gains obtained from the businesses for a period of 10 consecutive years out of 15 years from the date of its commencement.

Distribution of Natural Gas

The distribution of natural gas is initiated by laying pipelines to distribute the gas across the country.

Requirements

There are five limitations that are applicable as follows:

1. Business is not developed by splitting up or reconstruction of a business that has already been in use.
2. Business is not developed by the transfer of machinery or plant that has already been in use.
3. It should be recognized by the Petroleum and Natural Gas Regulatory Board. An Indian company should maintain the company.

4. 1/3 of the pipeline capacity should be ready to be used for common carrier basis by any common man.

5. It should have started functioning on or after 1st April 2007.

Deduction Allowed

Section 80IA allows a deduction of 100% of profits obtained from the businesses for a time period of 10 consecutive years out of 15 years from the date of its commencement.

As revealed from above, the list of infrastructure sub-sectors is overlapping under various Acts/ Regulations. We will primarily concentrate on the list as announced and updated by DEA, Ministry of Finance from time-to-time which is applicable for financing as per RBI guidelines.

In addition to the benefits / deductions allowed under the Companies Act 2013 / Income Tax Act 1961, there will be a need for setting up of a detailed mechanism of incentives and penalties for various sub-sectors to facilitate and encourage a focus in the direction of the specific industries and sectors which need to be promoted, keeping in view our Panchamrit targets and overall sustainable development.

RBI guidelines on Infrastructure Financing

The RBI guidelines on infrastructure financing are broadly covered under Master circular issued by Reserve Bank of India on 1st July 2015 relating to Loans and Advances - Statutory and other restrictions.

The said circular inter alia covers the following guidelines on infrastructure financing:

Criteria for Financing Banks/FIs are free to finance technically feasible, financially viable and bankable projects undertaken by both public sector and private sector undertakings subject to the following conditions:

(i) The amount sanctioned should be within the overall ceiling of the prudential exposure norms prescribed by RBI for infrastructure financing.

(ii) Banks/ FIs should have the requisite expertise for appraising technical feasibility, financial viability, and bankability of projects, with particular reference to the risk analysis and sensitivity analysis.

(iii) In respect of projects undertaken by public sector units, term loans may be sanctioned only for corporate entities (i.e. public sector undertakings registered under Companies Act or a Corporation established under the relevant statute). Further, such term loans should not be in lieu of or to substitute to the budgetary resources envisaged for the project. The term loan could supplement the budgetary resources if such supplementing was contemplated in the project design. While such public sector units may include Special Purpose Vehicles (SPVs) registered under the Companies Act set up for financing infrastructure projects, it should be ensured by banks and financial institutions that these loans/investments are not used for financing the budget of the State Governments. Whether such financing is done by way of extending loans or investing in bonds,

banks and financial institutions should undertake due diligence on the viability and bankability of such projects to ensure that revenue stream from the project is sufficient to take care of the debt servicing obligations and that the repayment/servicing of debt is not out of budgetary resources. Further, in the case of financing SPVs, banks and financial institutions should ensure that the funding proposals are for specific monitor able projects. It has been observed that some banks have extended financial assistance to State PSUs which is not in accordance with the above norms. Banks/FIs are, therefore, advised to follow the above DBR– MC on Loans & Advances Statutory & Other Restrictions – 2015/29 instructions scrupulously, even while making investment in bonds of sick State PSUs as part of the rehabilitation effort.

(iv) Banks may also lend to SPVs in the private sector, registered under the Companies Act for directly undertaking infrastructure projects which are financially viable and not for acting as mere financial intermediaries. Banks may ensure that the bankruptcy or financial difficulties of the parent/ sponsor should not affect the financial health of the SPV.

Types of Financing by Banks

In order to meet financial requirements of infrastructure projects, banks may extend credit facility by way of working capital finance, term loan, project loan, subscription to bonds and debentures/ preference shares/ equity shares acquired as a part of the project finance package which is treated as "deemed advance" and any other form of funded or non-funded facility.

Take-out Financing Banks

May enter into take-out financing arrangement with financial institutions or avail of liquidity support from FIs. A brief write-up on some of the important features of the arrangement is given in paragraph 2.3.7.7(i). Banks may also be guided by the instructions regarding take-out finance contained in Circular No.DBODBP.BC.144/21.04.048/2000 dated February 29, 2000.

Inter-institutional Guarantees

Banks are permitted to issue guarantees favouring other lending institutions in respect of infrastructure projects, provided the bank issuing the guarantee takes a funded share in the project at least to the extent of five (5) percent of the project cost and undertakes normal credit appraisal, monitoring and follow-up of the project. For detailed instructions on inter-institutional guarantee, please see paragraph 2.3.8. DBR– MC on Loans & Advances – Statutory & Other Restrictions – 2015/30

Financing promoter's equity

In terms of Circular No.DBOD.Dir.BC.90/13.07.05/ 98 dated August 28, 1998, banks were advised that the promoters' contribution towards the equity capital of a company should come from their own resources and the bank should not normally grant advances to take up shares of other companies. In view of the importance attached to the infrastructure sector, it has been decided that, under certain circumstances, an exception may be made to this policy for financing the acquisition of the promoters'

shares in an existing company, which is engaged in implementing or operating an infrastructure project in India.

The conditions, subject to which an exception may be made, are as follows:

(i) The bank finance would be only for acquisition of shares of existing companies providing infrastructure facilities. Further, acquisition of such shares should be in respect of companies where the existing foreign promoters (and/ or domestic joint promoters) voluntarily propose to disinvest their majority shares in compliance with SEBI guidelines, where applicable.

(ii) The companies to which loans are extended should, inter alia, have a satisfactory net worth.

(iii) The company financed and the promoters/ directors of such companies should not be a defaulter to banks/ FIs.

(iv) In order to ensure that the borrower has a substantial stake in the infrastructure company, bank finance should be restricted to 50% of the finance required for acquiring the promoter's stake in the company being acquired.

(v) Finance extended should be against the security of the assets of the borrowing company or the assets of the company acquired and not against the shares of that company or the company being acquired. The shares of the Borrower Company / company being acquired may be accepted as additional security and not as primary security. The security charged to the banks should be marketable. Debt-Burden Ratio– Master Circular on Loans & Advances – Statutory& Other Restrictions - 2015 31

(vi) Banks should ensure maintenance of stipulated margins at all times.

(vii) The tenor of the bank loans may not be longer than seven years. However, the Boards of banks can make an exception in specific cases, where necessary, for financial viability of the project.

(viii) This financing would be subject to compliance with the statutory requirements under Section 19(2) of the Banking Regulation Act, 1949.

(ix) The banks financing acquisition of equity shares by promoters should be within the regulatory ceiling of 40 per cent of their net worth as on March 31 of the previous year for the aggregate exposure of the banks to the capital markets in all forms (both fund based and non-fund based).

(x) The proposal for bank finance should have the approval of the Board.

Appraisal

(i) In respect of financing of infrastructure projects undertaken by Government owned entities, Banks/Financial Institutions should undertake due diligence on the viability of the projects. Banks should ensure that the individual components of financing and returns on the project are well defined and assessed. State Government guarantees may not be taken as a substitute for satisfactory credit appraisal and such appraisal requirements should not be diluted on the basis

of any reported arrangement with the Reserve Bank of India or any bank for regular standing instructions/periodic payment instructions for servicing the loans/bonds.

(ii) Infrastructure projects are often financed through Special Purpose Vehicles. Financing of these projects would, therefore, call for special appraisal skills on the part of lending agencies. Identification of various project risks, evaluation of risk mitigation through appraisal of project contracts and evaluation of creditworthiness of the contracting entities and their abilities to fulfil contractual obligations will be an integral part of the appraisal exercise. In this connection, banks/ FIs may consider Debt-Burden Ratio (DBR) – Master Circular (MC) on Loans & Advances – Statutory & Other Restrictions – 2015/32 constituting appropriate screening committees/special cells for appraisal of credit proposals and monitoring the progress/performance of the projects. Often, the size of the funding requirement would necessitate joint financing by banks/FIs or financing by more than one bank under consortium or syndication arrangements. In such cases, participating banks/ FIs may, for the purpose of their own assessment, refer to the appraisal report prepared by the lead bank/FI or have the project appraised jointly.

Prudential requirements

(i) Prudential credit exposure limits Banks may be guided by DBR Master Circular on Exposure Norms dated July 1, 2015.

(ii) Assignment of risk weight for capital adequacy purposes Banks are required to be guided by the Guidelines on 'Basel III Capital Regulations' as amended from time to time in the matter of capital adequacy.

Asset-Liability Management

The long-term financing of infrastructure projects may lead to asset – liability mismatches, particularly when such financing is not in conformity with the maturity profile of a bank's liabilities. Banks would, therefore, need to exercise due vigil on their asset-liability position to ensure that they do not run into liquidity mismatches on account of lending to such projects.

Administrative arrangements

Timely and adequate availability of credit is the pre-requisite for successful implementation of infrastructure projects. Banks/FIs should, therefore, clearly delineate the procedure for approval of loan proposals and institute a suitable monitoring mechanism for reviewing applications pending beyond the specified period. Multiplicity of appraisals by every institution involved in financing, leading to delays has to be avoided and banks should be prepared to broadly accept technical parameters laid down by leading public financial institutions as stipulated in RBI Master Circular on Loans & Advances – Statutory & Other Restrictions - 2015. Also, setting up a mechanism for an ongoing monitoring of the project implementation will ensure that the credit disbursed is utilised for the purpose for which it was sanctioned.

Take-out financing/liquidity support

(i) Take-out financing arrangement

Take-out financing structure is essentially a mechanism designed to enable banks to avoid asset-liability maturity mismatches that may arise out of extending long tenor loans to infrastructure projects. Under the arrangements, banks financing the infrastructure projects will have an arrangement with IDFC (since merged with IDFC Bank) or any other financial institution for transferring to the later the outstandings in their books on a predetermined basis. IDFC (since merged with IDFC Bank) and SBI have devised different take-out financing structures to suit the requirements of various banks, addressing issues such as liquidity, asset-liability mismatches, limited availability of project appraisal skills, etc. They have also developed a Model Agreement that can be considered for use as a document for specific projects in conjunction with other project loan documents. The agreement between SBI and IDFC (since merged with IDFC Bank) could provide a reference point for other banks to enter into somewhat similar arrangements with IDFC (since merged with IDFC Bank) or other financial institutions.

National Bank for Financing Infrastructure and Development (NaBFID) has been incorporated as a statutory body to commence operations as Development Financial Institution (DFI) to address risky nature of infrastructure financing. NaBFID has been set up with a view to support the development of long-term non-recourse infrastructure financing in India including development of the bonds and derivatives markets necessary for infrastructure financing and to carry on the business of financing infrastructure, including take-out financing also.

In respect of existing project loans, it has been permitted by RBI vide their circular RBI/2014-15/167 dated 7.8.2014 that banks may refinance project loans by way of full or partial take-out financing, even without a pre-determined agreement with other banks/FIs, and fix a longer repayment period, and the same would not be considered as restructuring in the books of the existing as well as taking over lenders provided certain terms as stipulated by RBI are fulfilled

(ii) Liquidity support from IDFC (since merged with IDFC Bank)

As an alternative to take-out financing structure, IDFC (since merged with IDFC Bank) and SBI have devised a product, providing liquidity support to banks. Under the scheme, IDFC (since merged with IDFC Bank) would commit, at the point of sanction, to refinance the entire outstanding loan (principal+ unrecovered interest) or part of the loan, to the bank after an agreed period, say, five years. The credit risk on the project will be taken by the bank concerned and not by IDFC (since merged with IDFC Bank). The bank would repay the amount to IDFC (since merged with IDFC Bank) with interest as per the terms agreed upon. Since IDFC (since merged with IDFC Bank) would be taking a credit risk on the bank, the interest rate to be charged by it on the amount refinanced would depend on

the IDFC's (since merged with IDFC Bank) risk perception of the bank (in most of the cases, it may be closed to IDFC's (since merged with IDFC Bank) PLR). The refinance support from IDFC (since merged with IDFC Bank) would particularly benefit the banks which have the requisite appraisal skills and the initial liquidity to fund the project – ref. DBR– Master Circular on Loans & Advances – Statutory & Other Restrictions - 2015.

Issue of Long-Term Bonds by Banks – Financing of Infrastructure and Affordable Housing

In response to the Budget announcement on July 10, 2014, RBI has allowed banks to issue long term bonds with a minimum maturity of seven years to raise resources for lending to (i) long term projects in infrastructure sub-sectors, and (ii) affordable housing with exemptions from certain regulatory pre-emptions. Detailed instructions in this regard are given in circular DBOD.BP.BC. No.25/08.12.014/2014-15 dated July 15, 2014. The investment will be subject to guidelines on cross holding.

Reserve Bank of India (Project Finance) Directions 2025

The RBI has come out with a notification dated 19 th June 2025 relating to various aspects of project financing.The directions cover a wide range of issues by way of general guidelines on the definition of project finance, phases of projects, prudential conditions relating to sanction, disbursement and monitoring.The circular also covers resolution of stress, provisionig for standard assets,those with extended DCCO (Date of Commencement of Commercial Operations)and non performing assets .These directions shall come into effect from October 1 2025 and are applicable toBanks ,NBFCs and All India Financial Institutions.

Salient features of the directions are discussed in brief as under :-

"Project" – means ventures undertaken through capital expenditure (involving current and future outlay of funds) for creation/expansion/upgradation of tangible assets and/or facilities in the expectation of stream of cash flow benefits extending far into the future. Projects usually have the characteristics of a long gestation period ,irreversibility and substantial outlays.

"Project Finance"– refers to the method of funding a project in which the revenues to be generated by the funded project serve as the primary security for the loan, and also as a source of repayment. Project finance may take the form of financing the construction of a new capital installation (greenfield), or financing an improvement/enhancement in the existing installation (brownfield).

For the purpose of these Directions, an exposure shall qualify as a project finance exposure only if the following conditions are satisfied: (i) The pre-dominant source of repayment as envisaged at the time of financial closure (i.e., atleast 51%) must be from cash flows arising from the project which is being financed. (ii) All the lenders have a common agreement with the debtor. Explanation: A common agreement may have different loan termsfor each of the lender provided the same has been agreed upon by the debtor and all the Lender(s) to the project.

Phases of Projects- For the purpose of application of prudential guidelines contained in these Directions, Projects shall be broadly divided into three phases namely:

(a) Design phase – This is the first phase which starts with the genesis of the project and includes, inter-alia, designing, planning, obtaining all applicable clearances/approvals till its financial closure.

(b) Construction phase – This is the second phase which begins after the financial closure and ends on the day before the actual DCCO.

(c) Operational Phase –This is the last phase which starts with commencement of commercial operation by the project on the day of the actual DCCO and ends with full repayment of the project finance exposure.

Prudential Conditions Related to Sanction- The credit policies of a lender shall incorporate suitable clauses for sanction of project finance exposures, taking into account inter alia the provisions under these Directions.

For all projects financed by a lender, it shall be ensured that: (a) Financial closure has been achieved and original DCCO is clearly spelt out and documented prior to disbursement of funds. (b) The project specific disbursement schedule vis-à-vis stage of completion of the project is included in the loan agreement. (c) The post DCCO repayment schedule has been realistically designed to factor in the initial cash flows.

Provided that, the original or revised repayment tenor, including the moratorium period, if any, shall not exceed 85% of the economic life of a project.

For a given project, original/extended/actual DCCO, as the case may be, shall be same across all lenders to the project. 1

In under-construction projects where the aggregate exposure of the lenders is up to ₹1,500 crores, no individual lender shall have an exposure which is less than 10% of the aggregate exposure. For projects where aggregate exposure of all lenders is more than ₹1,500 crores, the exposure floor for an individual lender shall be 5% or ₹150 crores, whichever is higher.

Provided that, the above minimum exposure requirements shall not apply post actual DCCO and lenders may freely acquire from or sell exposures to other lenders, in compliance with guidelines contained in the Master Direction on Transfer of Loan Exposures as updated from time to time. Prior to actual DCCO, lenders may acquire from or sell exposures to other lenders under a syndication arrangement provided the share of individual lenders is in adherence to the above limits.

A lender shall ensure that all applicable approvals/clearances for implementing/constructing the project are obtained before financial closure. An indicative list of such pre-requisite approvals/ clearances includes environmental clearance, legal clearance, regulatory clearances, etc., as applicable to the project.

Approvals/clearances which are contingent upon achievement of certain milestones in terms of project completion would be deemed to be applicable only when such milestones are achieved. For

example, consent to operate a boiler can only be applied for after the construction of a boiler. Hence, the same would not be treated as an applicable mandatory pre-requisite at the time of financial closure.

Prudential Conditions Related to Disbursement and Monitoring

A lender shall ensure availability of sufficient land/right of way for all projects before disbursement of funds, subject to the following minimum requirements: (a) For infrastructure projects under PPP model – 50% (b) For all other projects (non-PPP infrastructure, and non-infrastructure including CRE & CRE-RH) – 75% (c) For transmission line projects – as decided by a lender.

In case of infrastructure projects under PPP model, disbursement of funds shall begin only after declaration of the Appointed date or its equivalent, for the project. However, in cases where non-fund based credit facilities may be mandated by the concession granting authority as a pre-requisite for declaration of appointed date, a lender may sanction such credit facilities, in adherence with the extant regulatory instructions on non-fund based facilities.

Further, in respect of the exposures mentioned a above, the original DCCO documented in the financial closure document may be modified to reflect any change in the 'Appointed Date' by the Concession granting authority prior to disbursement of funds by way of a supplementary agreement between a lender and the debtor subject to reassessment of project viability and obtention of sanction from appropriate authorities. A Techno-Economic Viability (TEV) study shall be required for this purpose for all projects where the aggregate exposure of all lenders is ₹100 crores or more.

A lender shall ensure that disbursal is proportionate to the stages of completion of the project as also to the progress in equity infusion and other sources of finance, agreed as part of financial closure and receipt of remaining applicable clearances. The lender's Independent Engineer (LIE)/Architect shall certify the stages of completion of the project..

A project finance account may be classified as NPA during any time before actual DCCO as per record of recovery, in terms of Master Circular - Prudential norms on Income Recognition, Asset Classification and Provisioning pertaining to Advances dated April 01, 2025, as updated from time to time or the relevant instructions as applicable to specific category of lenders.

The directions interalia enteil the following :-

- Adoption of a principle-based regime for resolution of stress in project finance exposures, harmonised across REs.
- Rationalization of permissible 'date of commencement of commercial operations' (DCCO) extensions with an overall ceiling of three and two years for infrastructure and non-infrastructure sectors, respectively.
- Flexibility to REs in extending the DCCO within the above ceilings, based on their commercial assessments.
- Rationalisation of standard asset provisioning requirement to 1% for projects under construction, which shall gradually increase for each quarter of DCCO deferment. The requirements for under construction CRE exposures will be however, slightly higher at 1.25%.

- Under construction projects where financial closure has already been achieved shall continue to be guided by the extant provisioning norms to facilitate a seamless implementation.
- During operational phase, the standard asset provisioning requirement shall stand reduced to 1% for CRE, 0.75% for CRE-RH and 0.40% for other project exposures, respectively.

The new guidelines ,as per above RBI directions,relating to the Prudential norms for resolution of stress and provisioning etc are covered in the subsequent chapter number 20 of the book.

RBI Discussion Paper on Climate Risk and Sustainable Finance

The Reserve Bank of India had come out with a comprehensive Discussion paper on 'Climate Risk and Sustainable Finance in July 2022. Subsequently the 'Framework For Acceptance of Green Deposits' was announced by RBI in April 2023 and a Draft Disclosure Framework on climate Related Financial Risks, was brought out in February 2024. In addition, the report on Currency and Finance 2023 by RBI- Towards a Greener Cleaner India, covered the issues relating to climate change in a comprehensive manner. The paper provides important insights and broad approach on the role our financial sector needs to play in addressing the mitigation challenge. The discussion paper inter alia covers broad guidance and good practices for Banks/NBFCs relating to governance, disclosures, strategy, processes ,and the risk management structure. The risk management will need to take care of both physical and transition risks which in turn impact the credit risk, market, liquidity and operational risks thereby integrating climate risk into existing risk management framework. Based on the feedback/suggestions of the discussion paper and the emerging practices at the global level, RBI is expected to come out with detailed guidelines on handling the sustainable finance portfolio.

Summary

In this chapter, we have studied specific subsectors covered in the infrastructure sector and a broad comparison of the list prepared by Department of Economic Affairs (DEA), Ministry of Finance in comparison to the definition prevailing under Companies Act and Income Tax (IT) Act respectively. The updating of the list over a period of time as per the requirement of the economy has been underlined.

Further, broad guidelines issued by Reserve Bank of India on infrastructure financing have been discussed underlining the fundamental importance of detailed appraisal along with various types of facilities applicable and ideal structure best suited for the infrastructure financing. Going forward, the further guidelines issued by RBI on the subject of "Climate Risk" and "Sustainable Finance" shall become and integral part of the Infrastructure financing ecosystem.

As revealed from above, infrastructure financing requires a special structure, namely setting up of a Special Purpose Vehicle (SPV) and specified appraisal skills. We propose to discuss the same in the subsequent chapters in detail.

CHAPTER - 2

ELEMENTS OF THE PUBLIC PRIVATE PARTNERSHIP (PPP) MODEL IN FINANCING INFRASTRUCTURE PROJECTS

ELEMENTS OF THE PUBLIC PRIVATE PARTNERSHIP (PPP) MODEL IN FINANCING INFRASTRUCTURE PROJECTS

Infrastructure Project Finance – PPP Model

Traditionally the infrastructure projects have been funded by the Government both at the Centre and the State level through budgetary resources. In view of the enormous amount of funds required for the infrastructure sector and due to limited resources available through the budgets, a necessity was felt to develop an eco-system of encouraging private developers to come forward and invest in this crucial sector. In 2006, the Government of India took steps to create and develop the Public-Private Partnership (PPP) which is a commercial structure involving contractual arrangements among several participants or stakeholders to initiate, construct and operate an infrastructure project. The PPP structure was initiated to enable private participation in the construction of infrastructure assets and finance by commercial banks etc. The primary participants of this partnership are the government agency that conceptualizes and initiates the project and grants permission to a private developer to build and operate the project on a commercial basis. Simultaneously there arises the role of banks and other financial institutions to finance the project as a part of the opportunity to develop this sector after going into the commercial viability of each project.

The Government of India, Infrastructure Finance Secretariat, Department of Economic Affairs, Ministry of Finance has come out with a, "Reference Guide for PPP Project Appraisal" in June 2023. This comprehensive Reference Guide covers various aspects relating to infrastructure finance. We shall be relying upon the contents of the said reference guide in the relevant chapters of this book, which shall provide the Government perspective and approach for Development of infrastructure projects.

A PPP is a partnership between the public sector and the private sector for the purpose of delivering a project or a service which is traditionally provided by the public sector. PPP recognizes that both parties have certain advantages relative to the other in the performance of specific tasks. The fundamental characteristic of PPP is that each party is obligated to do what it does best and thereby maximizes

utility of public services and infrastructure delivery in the economically most efficient manner.

Such collaborations where public and private sector join forces for a shared objective of infrastructure development are termed as Public Private Partnership or PPP. Depending on the model of PPP, the private player may be required to arrange the finance, mobilize resources for the project, improve the effectiveness, efficiencies and quality standards of infrastructure project, etc.

The overall aim of PPP is to structure the relationship between the parties in such a way that risks are borne by the respective party best able to manage them and increased value is achieved through the exploitation of private sector skills and competencies. Thus, the main characteristics of PPPs include sharing rights and duties along with risk and reward between both public and private players. PPPs also act as an important channel to improve service delivery and innovation in infrastructure sectors.

PPPs are undertaken in multifarious forms such as DBFOT, BOT (HAM), BOT (Annuity), etc. according to the nature and requirement of the project. As compared to the traditional public procurement contracts, PPPs are complex in nature and therefore, necessitate careful design, structuring and implementation of the project.

Definition of PPPs by Department of Economic Affairs, Ministry of Finance

Public Private Partnership or "PPP" is a form of fixed-term contractual arrangement between a public entity on one side and a private entity on the other, for the provision of public assets and/or public services through investments being made and/or management being undertaken by the private entity, may or may not require payment of fee by users, for a specified period of time, where there is well defined allocation of risk between the private entity and the public entity and the private entity's performance is contractually obligated to conform (or are benchmarked) to specified and pre-determined performance standards.

Primarily, the following three agencies are involved in successful execution of a project: -

1. **Government Agencies**

The infrastructure facilities/services like roads, ports etc. are public services traditionally provided by the government as sovereign function to the people. The public services are those services that the state is obligated to provide to the citizens. Public assets are those assets inherently linked to the delivery of a public service or those assets that utilise or integrate government setup to deliver public services.

Under the PPP structure, a government agency decides to assign the project of building and operating a particular infrastructure asset and allots it to a private promoter known as sponsor/developer of the project. The assignment of responsibilities and rights is done through a contractual document called 'concession agreement' which, inter alia, contains detailed terms and conditions on which the private developer is required to work.

2. **Private Promotor/Developer entity**

The private entity which agrees to take up the responsibility of construction, operation, maintenance and providing other services of the infrastructure project is called the developer. The selection of the developer is done through open and transparent mechanism with commercial consideration in mind. Viability of project becomes relevant as the funding is done through promoter's contribution and arranging debt from banks and other lending institutions.

The arrangement of PPP envisages financial investment by the private sector and the intent of the arrangement is to bring in cost-effective efficiency in the construction and delivery of services to the ultimate users/consumers.

3. **Banks / Financial Institutions**

While the primary mandate for starting a project is provided by the concerned Government agency and the private promoter/developer entity brings in the private investment, the banks / financial institutions have a significant role to play in financing the project, the infrastructure financing is a specialized activity inter alia involving, proper appraisal and assessment of the project with identification of the risks involved and arriving at the final decision relating to the technical feasibility and economic viability of each project on its merits. Over the period the financing activities have evolved with added sophistication and fine tuning of risk mitigation mechanism.

Why PPP?

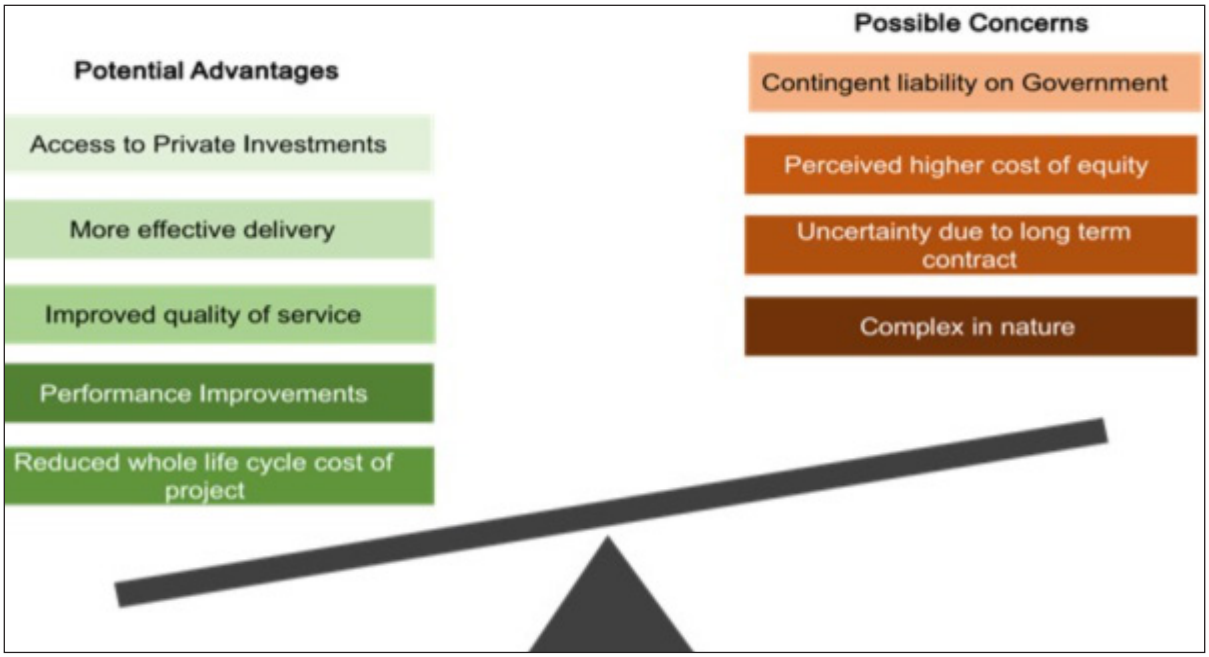
PPP arrangements are not only driven by limitations in public funds to cover investment needs but also by efforts to increase the quality and efficiency of public services. There is a growing acceptance that PPP arrangements can be used to meet infrastructure and service needs in a wide variety of sectors. Success of PPP projects, increasing availability of private sector funds, private sector capacity to adopt a higher risk profile; and a generalized global trend to utilize private efficiencies in infrastructure service provision has resulted in attempts to introduce the PPP concept in all sectors of infrastructure

by the Centre and States.

Therefore, PPPs can be used as an effective tool in improving the quality and delivery of infrastructure services. When structured appropriately and implemented in a balanced policy and regulatory environment, PPPs can bring greater efficiency and sustainability to the provision of public services. PPPs allow for better allocation of risk between public and private entities. PPPs involve investments by private sector which help in reducing burden on government spending and improve fiscal management.

PPP projects would be successful only if there is an effective implementation structure and the objectives of all parties can be met within the partnership. In order to reap maximum benefit from PPP, all potential participants must enhance their understanding of the different approaches and the optimal methods to structure such arrangements.

Potential Advantages and Possible Concerns in a PPP Mode of implementation



Source: Reference Guide for PPP Project Appraisal-MOF-GOI

The following are the chief characteristics of PPP model:

1. SPV Structure under Infrastructure Finance

To fully appreciate the nuances involved in infrastructure financing, we should understand that infrastructure funding is a specialised kind of project finance whereby Special Purpose Vehicle (SPV) is generally used for implementation of a project. The SPV is a separate legal entity, generally, a

company registered under the Companies Act 2013, which is given, assigned and vested with the rights to implement a project. A separate SPV is set up to take care of special kind of requirements involved in the ownership, construction, and operations of the infrastructure project, SPV structure is more suited, since under the said structure, financing is specifically done against the cash flows of the project. For each project, a separate SPV is setup to take care of efficient risk management (by de-risking the project from the promoters' balance sheet), tax aspects and to ensure better exit options on completion of the concession period.

2. Specific time-bound project

The arrangement is for a clearly defined specific period, where after the project assets are required to be transferred back to a government agency as per the terms of the concession agreement.

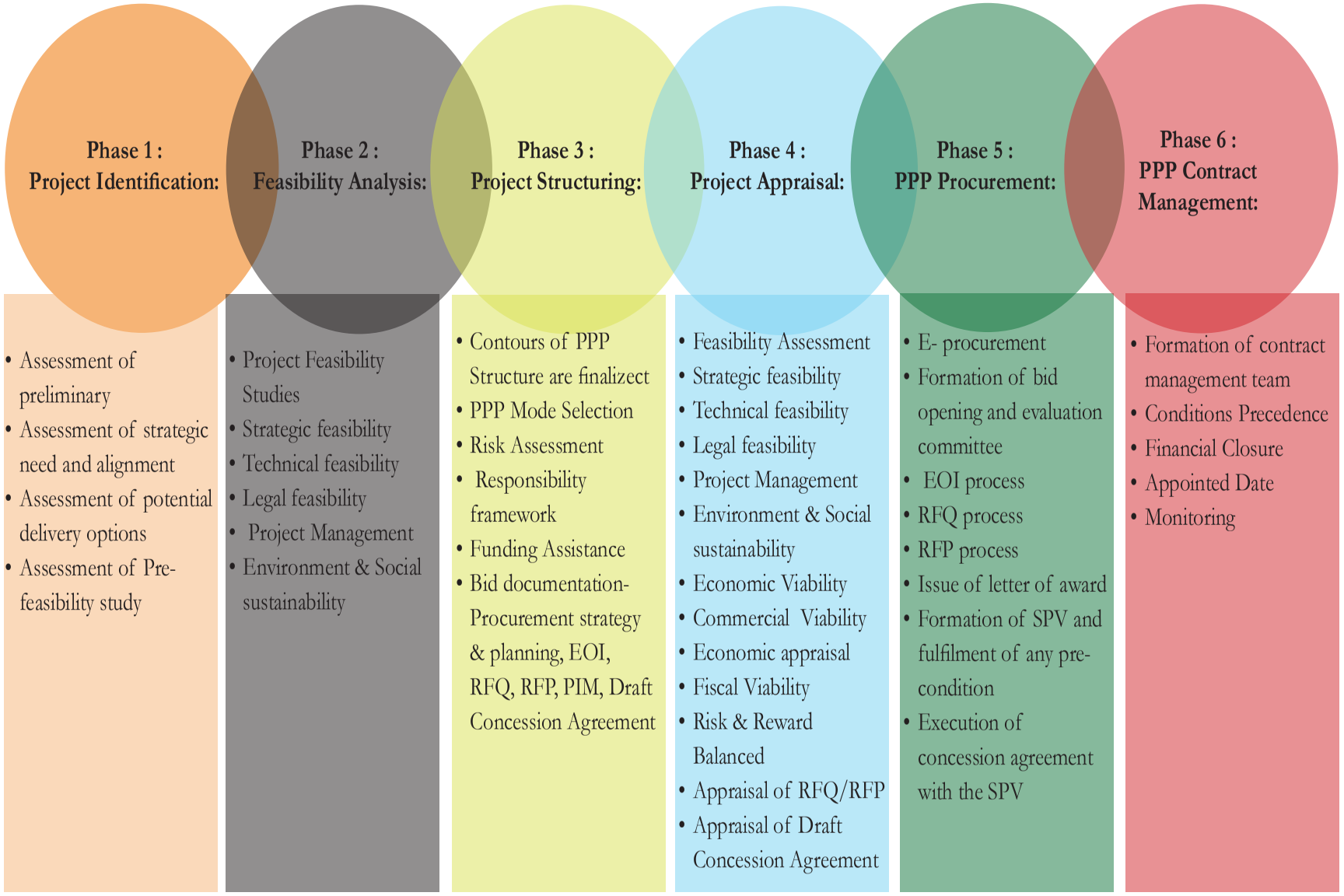
3. Allocation of risks

The spirit behind the PPP structure is that the allocation of risks in done in an optimal manner. In such projects, the operational risk, financial risk, regulatory risk etc. need to be allocated to the party best suited to provide cost-effective efficiency and good quality services to the ultimate users of such infrastructure/public services.

4. Incentive and penalty-based structure

The central focus is on performance with payments linked to it. The structure has to be incentive and penalty based to ensure that the private sector provide the services as per the benchmark stipulated in the concession agreement.

Life Cycle Phases of a PPP Project Procurement



Source: Reference Guide for PPP Project Appraisal-MOF-GOI

Types of PPP Project Models

Nomenclature	Full Name	Broad Features
I BOO	Build-Own-Operate	Private sector finances, constructs, own and operates the facilities, e.g. new airports at Hyderabad & Kochi.
II BOOT	Build-Own-Operate-Transfer	Private sector finances, constructs, own, operates the facilities and transfers the ownerships upon expiration contract period, e.g. power generation projects.
III BOT	Build-Operate-Transfer	Private sector finances, constructs and operates the facility and transfer to Govt. after the expiration of the contract period, e.g. road projects.
IV BOLT	Lease-Build-Operate-Transfer	Private sector leases, contracts, operates the facility and transfers the ownership upon expiration of contract period, e.g. renovation & modernization (R&M) of old power generation stations.

Hybrid Annuity Model (HAM)

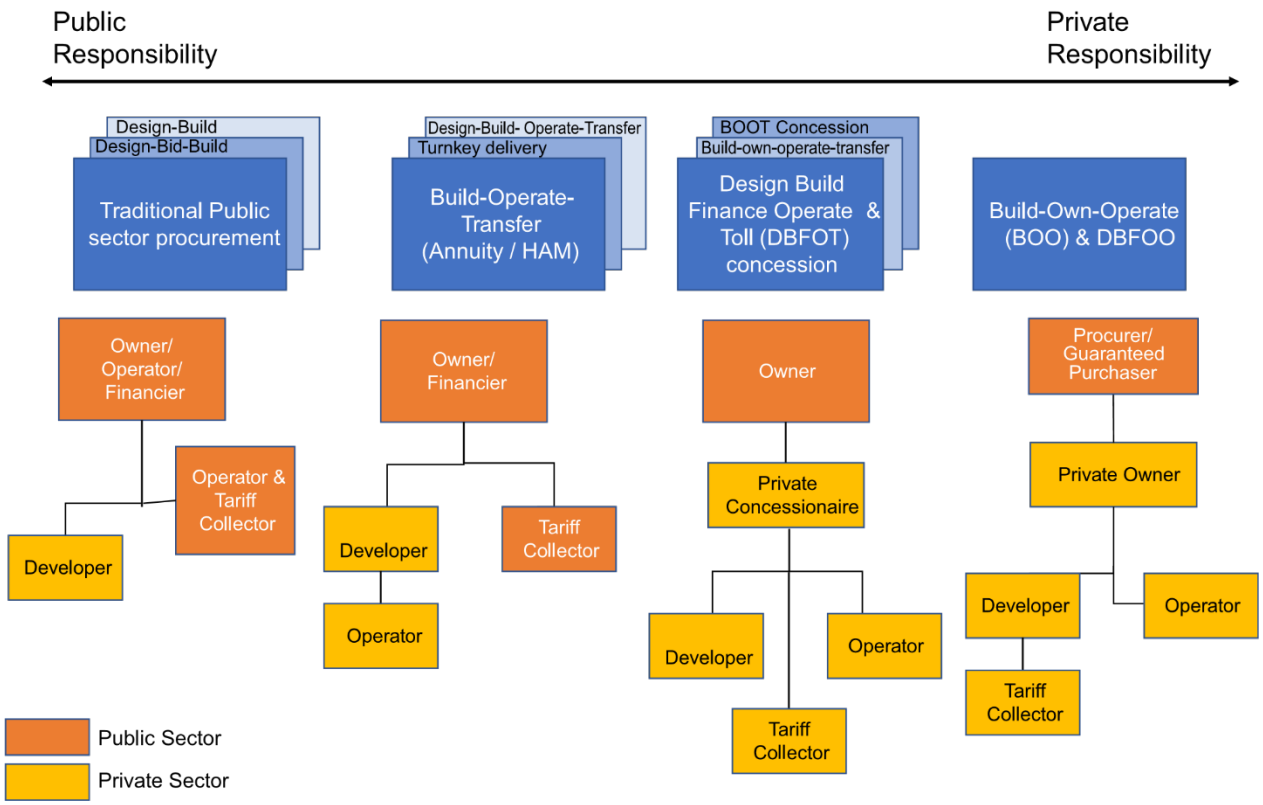
It is the subsequent but significant entrant in PPP models. It consists of a realignment of risk-sharing wherein, the government accepts revenue/ toll collection risk, along with partial sharing (40% of Bid Project cost) of financial risk by way of construction support and assigns the contractors to continue managing execution, operational and maintenance risk. By doing so, the features of the BOT (Annuity) model and EPC contract risks strategies have been combined. This model has emerged as a successful mechanism of taking forward the gigantic program of National Highways development in the country, and indicates proactive development oriented approach adopted by NHAI. Over the period suitable modifications have been made in the HAM model taking into account the emerging requirements. These inter-alia relate to the provisions in respect of more frequent payment of its contribution by NHAI and the interest rate being paid on the annuities (which has been illustratively covered in the case study, subsequently discussed in the book).

Toll-Operate-Transfer (TOT)

In order to mobilize funds, as a measure, NHAI decided to auction its operational highways to private investors for maintenance and toll collection. A private player is expected to operate and maintain the highway and collect toll for 30 years after making an upfront payment, without having to build the highway. The funds generated through auctioning would be spent on the development of new road projects.

A more detailed pictorial description of the various PPP models is as under :-

Various modes of PPPs for undertaking an infrastructure project



Source: Reference Guide for PPP Project Appraisal-MOF-GOI

Key Institutional initiatives for PPP based Projects by Government of India

The infrastructure programme of the government supports a variety of PPP models like build operate-transfer (toll and annuity), design-build-finance-operate-transfer, hybrid annuity model and toll-operate-transfer. The government has instituted many de bottlenecking and facilitatory mechanisms like the National Infrastructure Pipeline, National Monetisation Pipeline and PM-Gati Sakti that have made progress. Financial market regulators have introduced reforms to encourage private participation. Yet, the uptake of private enterprise is limited in many core sectors.

The strategy to step up private participation needs coordinated action of all stakeholders involved - governments at different tiers, financial market players, project management experts and planners, and the private sector. Capacities to conceptualise projects, develop sector-specific innovative strategies for execution, and, develop high-expertise areas such as risk and revenue sharing, contract management, conflict resolution and project closure need to improve substantially. The efforts of the Union Government would need to be supplemented with wholehearted acceptance of the need for public-private partnerships in infrastructure across the country.

Composition of PPPAC



Note: The Committee may co-opt experts, as necessary.

Source: PPPAC Guidelines.

Source: Reference Guide for PPP Project Appraisal-MOF-GOI

PPPAC Appraisal / Approval Stages



Source: Reference Guide for PPP Project Appraisal-MOF-GOI

Key Initiatives of IFS, DEA to strengthen the PPP Ecosystem of the country:-

Department of Economic Affairs (DEA) has laid greater thrust on improving infrastructure development in the country by encouraging private sector participation in building adequate and quality infrastructure.

Over the past decade, DEA has been actively engaged in developing the appropriate policy framework for encouraging PPPs in infrastructure development. Public Private Partnerships (PPPs) are being encouraged for execution as well as operation and maintenance of infrastructure assets. Besides, new

schemes, measures and initiatives are being introduced to provide financial and technical support to the private sector wherever necessary.

Some of the key initiatives/measures undertaken/being undertaken by the Department for improving the development and implementation of PPP projects are elaborated below:

1. Empanelment of Transaction Advisers: The DEA has empanelled 12 TAs in order to create an enabling environment for stepping up private investment in Infrastructure and to cater state government' s and its agencies' demand for an enabling framework to eliminate delays in appointment of transaction advisors/consultants for preparing a shelf of bankable projects. This TA panel is made available to all Central Ministries, state governments, Statutory Bodies, Public Sector Enterprises ("PSE") and other such undertakings within the purview of Ministries/ Departments of government of India and state governments intending to undertake PPP transactions.

The Panel will help to make the process of appointment of transaction advisors/consultant:

Effortless: By streamlining the tendering process for the engagement of transaction advisors for PPPs.

Efficient: By enabling fast access to firms that have been pre-qualified against relevant criteria.

Effective: By ensuring transparency and accountability through clear definition of the processes, role and responsibilities of the agencies and the private sector, leading to preparation of bankable PPP projects.

Further, to support and guide the Central, state, and Local government level, Project Sponsoring Authorities to effectively utilize the services of the empaneled TAs in an efficient & time bound manner to save upon the time of the PSA, DEA has developed a Manual on Transaction Advisers for PPP projects for the use of the panel. This manual is a step-by-step guide that can be referred by the project sponsoring authorities to on-board a transaction adviser from DEA empaneled TAs for their PPP project. The notified panel of Transaction Advisers for PPPs and the manual for the use of the panel is available on the website www.dea.gov.in and www.pppinindia.gov.in.

2. VGF Grant Support: For providing financial support to PPP projects in Infrastructure which are economically justified but commercially unviable, the DEA, through the Viability Gap Funding (VGF) scheme, provides financial support in the form of grants, one time or deferred, to infrastructure projects undertaken through PPPs with a view to make them commercially viable. Under the VGF scheme, economic sector projects are eligible for VGF up to 40% of the TPC. The VGF Scheme includes higher provisions of VGF grant for projects to be undertaken in social sectors i.e., Health, Education, Water Supply, Waste Water Treatment, Solid Waste Management, etc. Social sector projects are eligible for VGF up to 60% of the TPC. Further, for pilot/demonstration projects from health/ education sectors, VGF of up to 80% of the TPC along with up-to 50% of Opex for 5 years after Commercial Operation Date (COD) are being provided. A more detailed discussion on VGF scheme has been covered in the subsequent chapter 6.

3. IIPDF: The DEA has notified the India Infrastructure Project Development Fund Scheme (IIPDF Scheme) for development of quality PPP projects by providing necessary funding support to the project sponsoring authorities, both in the Central and state governments. The objective of the scheme is creating a shelf of bankable viable PPP projects for achieving the vision of modern infrastructure for the country. It supports Project Sponsoring Authority in sourcing funding to cover the PPP transaction costs, thereby reducing the impact of costs related to procurement of TAS on their budgets.

Under the IIPDF Scheme, the cost of consultants /transaction advisors of a PPP project can now be funded up to Rs. 5 Crores per project.

Funding under the IIPDF Scheme may include the expenses incurred by the Project Sponsoring Authority in respect of feasibility studies, environment impact studies, financial structuring, legal reviews and development of project documentation, including concession agreement, commercial assessment studies (including traffic studies, demand assessment, capacity to pay assessment), grading of projects etc. required for achieving Technical Close of such projects, on individual or turnkey basis, but would not include expenses incurred by the Project Sponsoring Authority on its own staff.

4. Development of Model RFQ/RFP for PPP Projects: Standardized documents enable project authorities to save on the time and costs involved in structuring and awarding complex PPP projects. In addition, they afford protection to individual entities and officials against making errors. Such standard documents typically lay down the norms, principles and parameters to be followed for PPP projects and enable project authorities to adopt them with considerable ease for meeting the specific requirements of individual projects.

Also, fair and competitive selection of the private partner is of utmost importance in the entire bid process since cost and quality of service to users would depend on the performance of the private partner. In line with this objective, DEA has prepared the Model Request for Proposal (RFP) for single stage bid process.

5. PPP Procurement Manual: To ensure that PPP procurements are made by following a systematic, efficient, and cost-effective procedure and to ensure fair and equitable treatment of bidders/ contractors, the DEA has Prepared procurement manual which aims to bring together at one place the step-by-step procedures for undertaking PPPs.

The proposed PPP Procurement Manual will provide understanding of PPP project development practices among Center/states and various Project Implementing Agencies. Procurement manual will provide detail on the steps for stages of Procurement, its types and selection mod, etc.

This manual for procurement embodies the best practices for PPP procurement and aims to provide a guiding document for PPP procurement.

6. Model Concession Agreements for Nascent Sectors: Model Concession Agreements form the

baseline of PPP projects. It acts as a tool to spell out the desired policy, regulatory and institutional framework for a PPP project in a sector and allocate the necessary risks to the party that is best suited to manage them.

The DEA has undertaken an exercise to study the PPP landscape and make the concession agreements stronger. DEA has undertaken deep dive assessment of six sectors inter alia including Health, Education, Water, solid Waste and Sports. Draft MCAs for the solid waste management and multi sports stadium have been prepared and given to the concerned Ministries for approval as MCA.

7. Project Structuring Toolkits: PPP structuring Toolkit is a web-based resource that has been designed to improve the decision-making by the PSA and to improve the quality of the PPP projects. The DEA has revamped the PPP structuring toolkits for its alignment with the current regulations and guidelines and to make them relevant with the current developments/scenarios. It will help in improving project implementation and providing guidance during the lifecycle of the PPP projects. PPP Structuring toolkit would help the PSAs in identifying appropriate PPP variant, financial viability, risk allocation etc.

The toolkit covers five infrastructure sectors, namely:

- Roads
- Water and Sanitation
- Ports
- Solid Waste Management
- Urban Transport

8. Capacity Building Initiatives: Capacity building plays a crucial role in understanding the complex PPP structuring and its nitty-gritties. Understanding this, the DEA is regularly conducting workshops, seminars, conferences for stakeholders in order to build the capacity. The DEA has engaged with Capacity Building Commission to develop a Capacity Enhancement Plan- (CEP) to address the key requirements of implementing infrastructure projects. DEA has also engaged with premier management institutes including from both public and private institutes such as such as Indian Institutes of Management (IIMs), Indian Institute of Technology (IITs), ISB, NITIE Mumbai, SPJIMR etc. Additionally, DEA has also identified professional bodies, organizations, institutes, and Centre of Excellence established under aegis of the Ministries such as IIBF, AJNIFM, ICAI, AIMA, etc. for conducting offline/online trainings and developing self-learning courses on infra-focused areas, creation of infrastructure-suitable compendium of knowledge resources across sectors, etc.

PPP procurement process(Summary)

The project preparation activities of the project can be divided into three phases – project identification, project development and approval (feasibility studies, detailed technical studies and final approval) and project procurement.

The procurement process is the process of selection of private partner. It is important that the process of selection of the private partner is transparent, non-discriminatory, and timely to ensure project success. While competitive procurement processes have been the overarching theme for PPP procurement in India, the procurement steps and regulations covering the same vary across agencies.

The procedure for PPP procurement may be divided into the following four stages:

I. **Request for Qualification** - The objective of this stage is to gather information on the capacities of applicants and short listing based on requirements to deliver on the project outcomes.

II. **Request for Proposal** - Financial bids from qualified applicants (after the RFQ stage) for undertaking the PPP project.

III. **Bid Evaluation and Award** - Evaluation of the RFP submissions by the private sector bidder sand selecting the best proposal based on the pre-determined criteria.

IV. **Commercial Close** - Last stage in procurement process where the private sector partner enters into a formal contract with the public sector agency for the implementation/ management of the PP project.

Comparison of Corporate Finance and Project Finance

The conventional corporate finance relates to the funding of businesses of a particular corporate entity by looking at entire assets and liabilities on the balance sheet of that corporate that are captured as a part of the overall funding mechanism. Under project finance like infrastructure project, on the other hand, we have non - recourse or limited recourse landing where we are normally dealing with project set up with a specific purpose. For example, setting up of a road or a power plant, having specific characteristics in relation to construction, operations, and the cash flow generation. The bringing of the equity by promoters and debt finance shall, therefore, be for limited purpose till the life span of the specific project as against the permanent and infinite time horizon in a corporate finance structure.

The financial structure for each project would be specific and unique for a particular project cash flows as against mechanism in a balance sheet based corporate funding which can be replicated as the company progresses and expands over the period of time on an ongoing basis.The primary basis of credit evaluation in the case of corporate finance is with the focus on the balance sheet; while in case of, project funding, parameters specific to the project like the techno-economic feasibility focus on project assets and the capacity to generate cash flows to service the interest, repayment of debt etc. become relevant. With higher costs of capital in relation to the normal corporate funding, infrastructure funding thus becomes relatively niche area with a limited number of participants as project funding and implementation requires adequate capabilities. On the lending front also, lending institution needs to have abilities to assess credit risks involved for specific project and the possible risk mitigation steps.

The normal traditional kind of funding is, 'assets-based funding', where banks provide finance for the purchase of goods and creation of physical assets which also form the primary security of the loan. Project Finance on the other hand involves funding whose security and repayment is primarily

dependent on the cash flows generated from the implementation of the project itself.

Elements	Project Finance	Corporate Finance
Financing Vehicle	Single-Purpose Project	Multi-Purpose Project
Type of Capital	Finite-Time Horizon matches life of Project	Permanent and indefinite time horizon for equity
Dividend policy and reinvestment decisions	Fixed individual policy immediate pay-out: no reinvestment allowed	Corporate management makes decisions autonomous from investors and creditors
Capital investment decisions	Highly Transparent to creditors	Opaque to creditors
Financial Structures	Highly - tailored structures which cannot generally be re-used	Easily duplicated: common forms
Transaction costs for financing	Relatively higher costs due to documentation and longer gestation period	Low costs due to competition from providers; routinized mechanisms; and short turnaround time
Size of financing	Might require critical mass to cover high transection costs	Flexible
Basis of credit evaluation	Technical and economic feasibility: focus on project's assets, cash flow and contractual arrangement	Overall financial health of corporate entry: focus on balance sheet and cash flow
Cost of capital	Relatively higher	Relatively lower
Investors/lender base	Typically, smaller group: limited secondary markets	Typically, broader participation deep secondary markers

PPPs vis-à-vis Traditional/Conventional Project

For any appraisal of a PPP project, it must be recognized that a PPP project is significantly different from a conventional project including: PPP projects are different from conventional projects in terms of mechanism of project development, implementation, and management, Unlike conventional projects which are public funded and viability of the project is not a success criterion, a PPP project is possible only when a robust business model with reasonable return on investment can be developed, Unlike conventional projects which focus primarily on asset development, the focus of a PPP project is on delivering specified infrastructure services at defined quantity, quality and levels, Unlike conventional projects wherein entire risk is borne by the government entity, the risk allocation between the public - private partners is at the heart of any PPP and this makes execution of a PPP much more complex than a conventional project, While conventional projects are construction oriented with limited life span and little or no interaction between government entity and private sector, PPPs have much longer tenure making management of the relationship between the PSA (Project sponsoring Authority) and the private party vital for its success.

Source: Reference Guide for PPP Project Appraisal-MOF-GOI

CHAPTER - 3

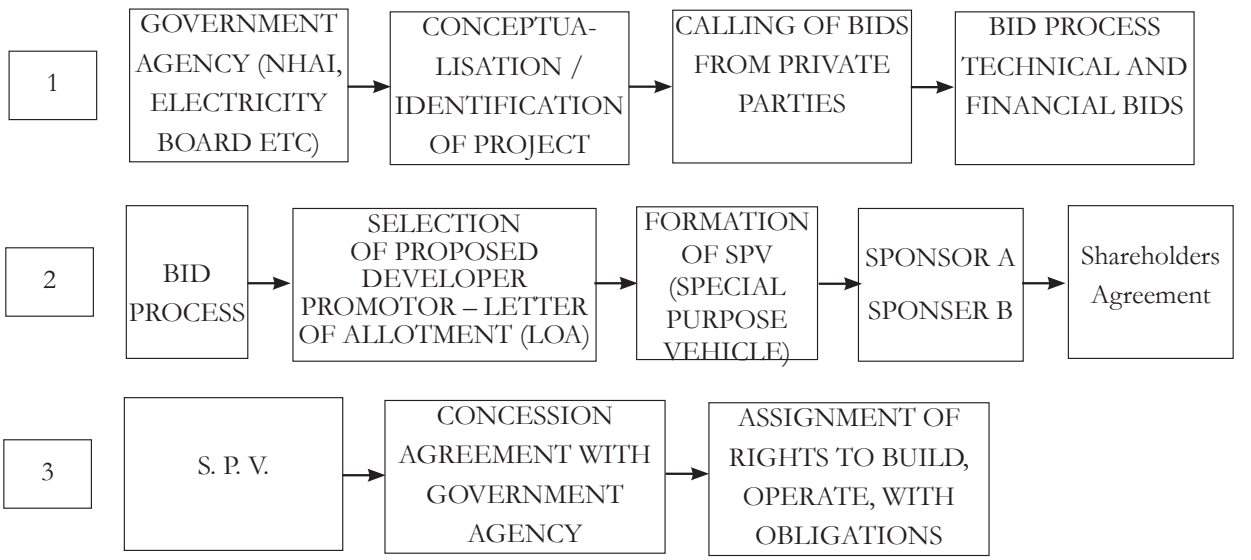
PROJECT STRUCTURE FOR FINANCING

PROJECT STRUCTURE FOR FINANCING

Project Structure for Financing

After understanding the basic structure and various models of PPP, we shall now go into the project structure and financing of infrastructure project. The following flow chart summarises the broad outlines of the project structure.

Project Structure - With Flow Chart

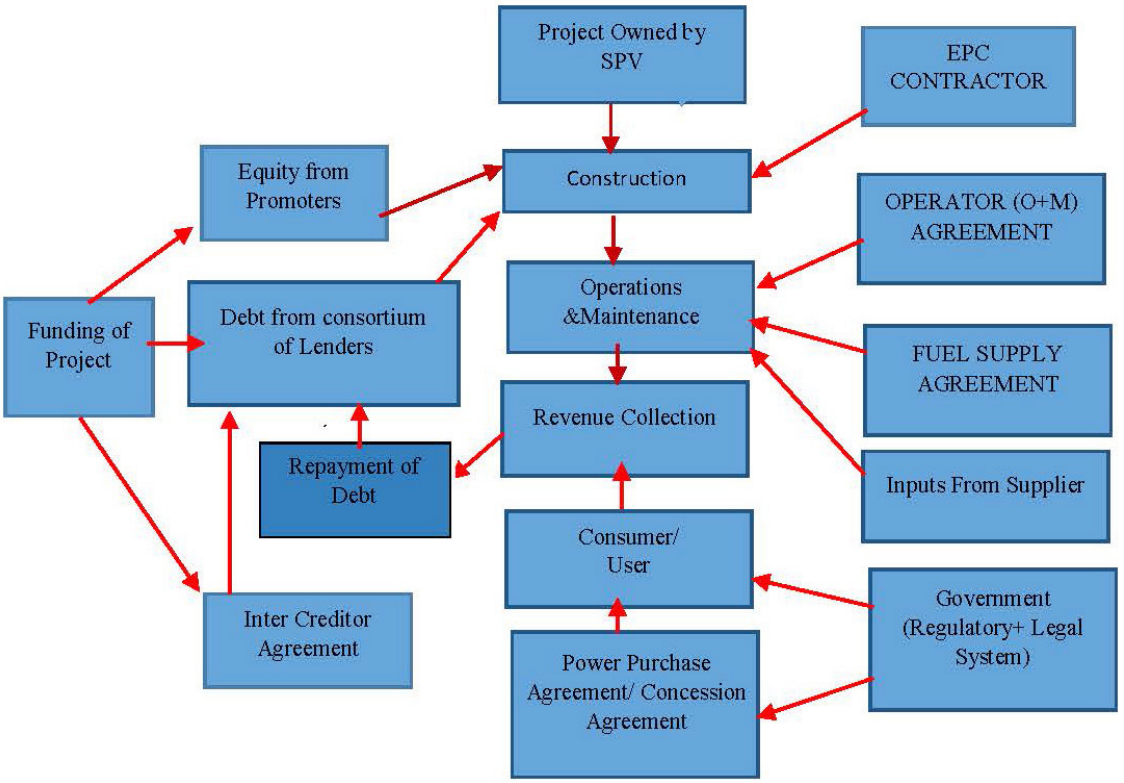


As revealed from the above diagram, we can see that the infrastructure project is conceptualized by the concerned government authorities which is proposed to be constructed under the public-private partnership structure. The government agency normally follows bid process for selection of the proposed developer of the project. The bid criteria vary from project to project and sub-sector to sub-sector. For example, in case of road project, the lowest project cost at which the project will be completed is treated as the selection criteria. In case of a power project, lowest tariff to be charged by the promoter for supply of power shall be the criteria of selection. As a part of the selection process, both technical and financial aspects are examined in detail as per the prescribed criteria mentioned in the RFP (Request for Proposal) floated by the concerned agency. After thorough analysis and proceedings of the pre bid meetings, the successful bidder is selected on the basis of prescribed norms. Initial Letter of Allotment (LOA) is offered to successful bidder/promoter. In order to execute the project, the normal process is initiated for the formation of a separate Special Purpose Vehicle (SPV) as discussed earlier. Depending upon the size of the project and the financial strength of the

promoters, sponsors/promoters enter into an agreement called the shareholder agreement for brining in the equity/promoters' contribution for the project with inter-se roles and responsibility of all the promoters/group.

Once the SPV is formed, a **concession agreement** is executed between the concerned Government authority and the proposed SPV clearly bringing out the detailed terms and conditions applicable for construction, finance and execution of the project. We shall now study the execution flow chart in detail for funding of the project which broadly covered the activities as under: -

Execution Flow chart for Funding of the Project



The above chart depicts aspects involved in the project execution and respective roles of various stakeholders. To fund the project, lenders generally form a consortium taking into account the large amount of debt involved and single borrower/group exposure norms as prescribed by the RBI/ Lender's our credit policy. As funding is done on the basis of non-recourse lending, the documentation and contracts need to be very clear and robust to ensure proper allocation roles and responsibilities and due servicing of debt through the cash flows of the project. The following are the broad set of project documents, which we need to understand in respect to project execution.

Project Documents

A. Concession Agreement (CoA)

This is an agreement which the government agency like NHAI (National Highway Authority of India) will sign with the proposed developer of the project for the implementation as per the terms and

conditions mentioned there in. The salient points which are illustratively covered in case of a road project in the concession agreement are as under:

1. **Scope of the Project** - This includes broad details relating to the geographical/physical specifications of the project i.e. location, length in kilometres, number of lanes, the number of bridges underpasses, utilities, toll plazas etc.
2. **Rights and obligations of project developer/concessionaire -** This includes the developer's obligations for construction and operation of the road project, proper maintenance thereof, collection of toll charges on prescribed terms and conditions with obligations to be met in the course of the entire period of the concession.
3. **Rights and obligations of the Concession Authorities -** This includes the obligation to provide support in procuring applicable permits, providing the right of way at the site of construction free of encumbrances etc. and other obligations of the authority relating to payments, tariff determination etc.
4. **Appointment of Independent Engineer to monitor -** The public authority appoints an independent engineer to monitor the construction of the project and submit regular reports on periodic basis to review the project status and issues certificate covering the detailed physical parameters which are checked and compared at various stages till completion of the project.
5. **Commercial Operation Date (COD) -** Upon completion of construction work as stipulated, the independent engineer issues completion certificate (which also determines the DCCO i.e. date of commencement of commercial operations as required under RBI guidelines for asset classification).A provisional certificate may be issued in certain circumstances with stipulation to complete the remaining work as per the list called the PUNCH LIST in a time bound manner, after which final completion certificate is issued.
6. **Toll/Tariff Collection -** This provides for collection of toll/ fee at prescribed rates which may be revised as per the terms and conditions agreed to with built in exemptions for local user of the road etc.
7. **Substitution -** In the event of financial default, there is a provision for 'substitution' of the concessionaire by a new nominated company selected by the lenders for completion and operation of the project in certain circumstances whereby the new nominated company steps into the shoes of the original promoters of the project (who cease to be further associated with the project).
8. **Termination -** In the event of default by the concessionaire or the concession authority, termination clause becomes applicable. To secure the project lenders, there is a provision to make termination payment up to 90 % of debt due after COD is achieved.

9. **Escrow Account -** A separate account is required to be opened with a bank relating to inflows and outflows of funds of the project. This is a very important clause in the concession agreement from lenders' perspective and is backed by an 'Escrow Agreement' discussed subsequently in the chapter.

10. **Dispute Resolution -** In respect of any dispute between the parties, there is a provision for conciliation, arbitrate on, or adjudication by regulatory authority with detailed process to be followed in this respect. We now have an international arbitration centre in India also and accordingly disputes involving international parties/ international issues can also be resolved in India itself under the applicable rules and law.

11. **Force Majeure -** This provides for certain enablers in the case of occurrence of a Force Majeure events like Act of War, strike, civil commotion, change of Law etc.

As seen above, the concession agreement governs the heart and soul of the project with the terms of the proposed project and roles and responsibilities of the various parties thereto. It becomes a reference point for all the stakeholders, including the financiers for all future issues in the course of funding and operations. In addition, to the concession agreement, the following contracts and agreements are also relevant for the entire process.

B. Share Holders Agreement

This agreement is signed among the promoters /sponsors and various investors relating to infusion of funds and management of the project entity i.e. the SPV. This Inter-alia contains the percentage share of ownership of various promoters, and their inter-se rights and responsibilities towards bringing the equity/promoters' contributions over the period of time. The terms relating to the final exit/closure on completion of the project concession period, is also covered in the agreement. This will also include safeguards for inter-se disputes if any and overall conduct of various stakeholders/investors of the project.

C. EPC Contract

The Engineering, Procurement and Construction contract is signed by the SPV and the proposed contractor who will be undertaking the actual construction. The selection of a reputed Engineering Company well versed in construction work is to be done after taking into account the specifications of the civil work involved and relative competence of the various contractors in the field. Generally '**a fixed cost fixed time**' agreement is signed to take care of the time overrun and cost overrun aspects. As per the specifications of the concession agreement, the terms of the EPC agreement need to be studied, majorly in order to ensure back-to-back compliance of various conditions and the requirements of the concession agreement. Provision for 'Performance Guarantee' and stage wise payment as per the milestones are normally incorporated to take care of interests of the SPV who appoints the EPC contractor.

In several cases in respect of road projects, the EPC contractor maybe a group concern of the promoter itself. In such cases, the lenders need to be extra careful to avoid any 'diversion or misappropriate on' of funds by the contractors and an 'arm's Length' approach with absolute transparency needs to be kept in mind. Traditionally in India with the onset of PPP model, initially most of the developers were erstwhile EPC contractors and such issues were faced by the lenders as the process evolved. The "cost of project" aspects have been duscussed in details subsequently in the chapter on Appraisal.

D. O&M Contract

This is an agreement between the project SPV and proposed contractor for operation and maintenance of the project facility created and the terms and conditions thereof have to be in conformity with the original concession agreement. As stated above, in several cases O&M contactor is also a subsidiary/ group concern of the original promoter itself and the safeguards similar to the EPC contract need to be taken care of. In case of a third-party vendor/contractor, performance capability and time bound compliances need to be taken care of.

E. Bulk supply contract or Bulk off/take contract/Power purchase Agreement

In case of projects like a power plant, output being produced needs to be sold through the distribution agency like state **discoms** (state electricity distribution company or private distribution company as applicable).An agreement in this respect needs to be signed by way of a power purchase agreement, which will cover various terms of supply and payments.

This is a very crucial document as revenue is dependent upon the conditions incorporated there in, and financial strength of the state discoms/purchasing agency become a very important criteria from lender perspective. In case of road projects, the concession agreement itself provides rights and obligations with respect to toll collection, which is a substitute for such off take agreement, since in this case the toll is to be paid by the actual users whenever they are making use of the infrastructure project road. In case of airports/ports, with regard to basic service charges, agencies like Airport Authority of India or the concerned port authorities are involved and charges are paid depending upon the footfalls of passengers or the cargo handled etc. by the air line/shipping company concerned.

F. Inter Creditor Agreement

The consortium of lenders to the project, consisting of commercial banks, NBFCs and other financial institutions, enter into an agreement among themselves called the Inter Creditor Agreement. This is primarily to regulate the manner in which the lenders would exercise their rights and enforce the security provided by the company. A lenders' representative (consortium leader) is chosen to represent and act on behalf of all the lenders vis-à-vis all other stakeholders/parties to other contracts.

G. Escrow Agreement

This is a very critical agreement entered into among the four parties as under:

- The concessionaire, Project developer

- Lenders' representative
- Escrow Bank
- Concession Authority /Government Agency

The Escrow Bank is appointed by the concessionaire to act as a trustee for the other three parties i.e. Authority, concessionaire, and lenders' representative. The deposits into the accounts i.e. inflows and withdrawals i.e. outflows are regulated in a well-defined manner in order to ensure proper utilisation of all funds, including equity, grant, debt collection and repayments of debt. Illustrative important clauses are as under:

Deposits by concessionaire - The concessionaire agrees and undertakes that it shall deposit into and/or credit the Escrow Account with:

(a) All monies received in relation to the Project from any source, including the Senior Lender, Lenders of Subordinated Debt and the Authority;

(b) All funds received by the Concessionaire from its shareholders, in any manner or form;

(c) All Fee Levied and collected by the Concessionaire; and

(d) Any other revenues, rentals, deposits, or capital receipts, as the case may be.

Deposits by authority - The Authority agrees and undertakes that, as and when due and payable, it shall deposit into and/or credit the Escrow Account with:

(a) Grant and any other monies disbursed by the Authority to the concessionaire;

(b) Revenue Shortfall Loan;

(c) All fee collected by the Authority in exercise of the rights under the Concession Agreement; and

(d) Termination Payment;

Provided that the Authority shall be entitled to appropriate from the aforesaid amounts, any concession Fee due and payable to it by the Concessionaire, and the balance remaining shall be deposited into the escrow account, subject to other clauses of the agreement.

Deposits by senior lenders - The lenders' representative agrees, confirms and undertakes that the senior lenders shall deposit into and/or credit the Escrow Account with all disbursements made by them in relation to or in respect of the project, provided that notwithstanding anything to the contrary contained in this agreement, the senior lenders shall be entitled to make direct payments to the EPC contractor under and in accordance with express provisions contained in this behalf in the Financing Agreements.

Withdrawals during concession period- Waterfall mechanism - At the beginning of every month, or at such shorter intervals as the Lenders' representative and the Concessionaire may by written instructions determine, the Escrow Bank shall withdraw amounts from the Escrow Account and

appropriate them in the following order by depositing such amounts in the, relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay-out there from on the Payment Date(s):

a) All taxes due and payable by the Concessionaire for and in respect of the Project Highway;

b) All payments relating to construction of the Project Highway, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;

c) O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;

d) O&M Expenses incurred by the Authority, provided it certifies to the Escrow Bank that it had incurred such expenses in accordance with the provisions of the Concession Agreement and that the amounts claimed are due to it from the Concessionaire;

e) Concession Fee due and payable to the Authority;

f) Monthly proportionate provision of Debt Service due in an Accounting Year;

g) Premium due and payable to the Authority;

h) All payments and damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including repayment of Revenue Shortfall Loan; and

i) Monthly proportionate provision of debt service payments due Accounting Year in respect of Subordinated Debt.

As revealed from above, this mechanism is called WATERFALL mechanism to prioritise the payments.

H. Fuel Supply Agreement

This is a critical agreement in case of infrastructure projects like power generation plants based on fuels like coal, diesel, gas etc. Regular, timely and the right quantity & quality of fuel supply needs to be ensured for efficient operations and such an agreement with a credible supplier is an essential requirement from lenders' perspective. The arrangement for fuel supply should broadly bind the fuel supplier in line with the terms of off take agreement/PPA in order to safeguard the interest of the developer/ lenders.

I. Regulatory Clearances/Approvals

(Illustrative for Power Sector – the requirements shall vary on project-to-project basis for other sub-sector likes Roads, Ports etc.)

Environmental and other regulatory clearances from the respective Government agencies are an essential part of the infrastructure financing. These are broadly covered as under:

1. **Statutory clearance Approvals and permits** (depending on specific sectors)
    - Approval from Central Electricity Authority of India(CEA) for cost of the project.

- Techno-economic clearance from Central Electricity Authority of India (CEA).
- Techno-economic clearance from State Electricity Board.
- Notification to be issued under Sec. 29(3) of Indian Electricity (Special) Act, 1948.
- Water availability from the Central Water Commission / State Government.
- Pollution clearance (Water and Air) from State and Central Pollution Control Boards.
- Environment and Forest Clearance from Ministry of Environment & Forests / State Government.
- Civil Aviation clearance for the height of chimney from the National Airport Authority.
- Rehabilitation and resettlement of displaced families from Land & Acquisition Department Ministry of Environment and Forests / State Government.

2. **Non- Statutory Clearances**

- Allotment of project
- Power Purchase Agreement / MOU
- Land availability and Allotment of Land from State Govt.
- Concession Agreement
- Fuel linkage from Ministry of Petroleum and Natural Gas / Ministry of Coal
- Sales Agreement for fuel from suppliers i.e. petroleum Companies / Coal field
- Fuel Transportation Agreement.

3. **Other Clearances** (on case-to-case basis)

- RBI Clearance for foreign investment
- Foreign exchange permission from RBI for ECB
- Permission for license for capital goods import from Ministry of Petroleum / MOC.
- Approval for handling and storage facilities of fuel from the Chief Controller of Explosive.
- Approval for Power Evacuation, Borrow Earth Permit, Permission for installation of Crusher, Asphalt Plant, License for use of explosives, License for setting up Batching Plant and approval of the Railway authorities in the form of a general arrangement drawing that would enable the Concessionaire to construct road over bridges/ under bridges at level crossings on the Project Highway etc should be in order.

J. State Support Agreement (SSA)

For smooth functioning of a project under PPP, the overall public support by the state Government machinery assumes critical importance. Without the underlying state support, the project is likely to face a series of issues right from construction to operations stage. As such, the concession authority is required to arrange a state support agreement. The scope of the same can be general in nature with

broad assurances for support in facilitating the project construction and operations and issues like land acquisition, clearances etc. NHAI for example has entered into such agreements with several states. In cases like Airport /civil aviation, specific support of the state is required on issues similar to those covered in a concession agreement.

In case of road projects, State Support Agreement (SSA) is the agreement between Ministry of Road Transport and Highways (MORTH), Government of India and respective State Government where the project is being executed. It is a common agreement which is applicable to all the projects being undertaken by the MORTH on PPP model in that state.

The essence of this agreement is that respective State Government acknowledges implementation of such projects which require their support in form of granting certain rights to the Concessionaire and support from their authorities to successfully implement the project in the State. SSA requires and obligates the respective State Government to support, co-operate, and facilitate for land acquisition, law and order and security in National Highways projects in the respective State. The support from respective State Government is defined by compliance of following obligations.

- Enable continued access to the site and Right of way to the Concessionaire without any hindrance from any Government Agency or persons claiming their rights on it.
- Subject to compliance of applicable laws, assist the Concession are in obtain in applicable permits to the extent any Government Agency is entitled to issue it.
- Assist the Concessionaire in procuring such applicable permits as GOI can grant.
- Facilitate issuance of all applicable permits from any municipal, local authorities including Panchayats in the state for implementation and operation of Project.
- Assist the Concessionaire in procuring access to all necessary infrastructure facilities and utilities, including water, and electricity on terms which are applicable to similar commercial customers.
- Ensure and procure shifting of utilities in accordance with applicable laws and provisions of CoA.
- Ensure that local authorities do not put any barriers or other obstructions on the Project Highway or impose any local taxes.
- In accordance with the applicable laws, grant the Concessionaire, authority to regulate traffic on Project Highway.
- Provide Concessionaire with Police Assistance in accordance with applicable laws and rules for regulation of traffic, removal of trespassers and security of Project Highway.
- Establish and operate traffic aid posts and mobile police squads in accordance with respective State Government policies.
- Establish and operate medical aid posts and ambulance services in accordance with respective State Government policies.

- Not to do or omit to do any act, deed or thing which may be violative of Concessionaire or any provisions of CoA.
- Support, co-operate and facilitate concessionaire or NHAI in implementation and operation in accordance with provisions of CoA.
- Observe and comply with all its obligations set forth in SSA.

Apart from the above obligations of respective State Government, it is also bound under the agreement to following restrictions.

a. Development of Competing Roads as per definition of CoA.

b. Construction of Additional Toll way which is in violation of provisions of CoA.

c. Levy of local taxes, toll, or charge on the use of any part of the Project Highway.

Ensuring Compliance of State Support under the Agreement

The key tenet of this agreement is that respective State Government acknowledges that Concessionaire has the right to seek specific performance of this agreement and in case, respective State Government is in breach of these obligations or provisions of CoA applicable to it, then the Concessionaire has recourse to compensation and termination payments from respective State Government as per applicable provisions of CoA. Also, in case Concessionaire is in breach of this agreement or any other provisions of CoA causing additional costs to be incurred by respective State Government, it shall be liable to pay such damages to respective State Government. Therefore, this provides balance to rights and responsibilities of both the parties. The Agreement comes into force from the date of execution and continues to be in force irrevocably until termination of all Concession Agreements for Projects within the State.

PPP model --The Way Forward

In order to further strengthen the PPP mechanism ,a committee was set up under the chairmanship of Dr Vijay Kelkar , which submitted its detailed report on Revisiting and Revitalising of PPP model on Infrastructure.The committee recommended a wide range of reforms and steps to be taken to make the system more robust.This interalia included the need for fostering trust between private and public sector partners.The framework is required to be based on an equitable partnership between various stakeholders .The mechanism needs to aim at optimal allocation of risks in a manner that best delivers services to the citizens.The committee also emphasized the requirement of structured capacity building and criticality of setting up of independent regulators in sectors that are going in for PPPs . Considering the long term nature of such projects, Developing a framework for Renegotiation of PPP Contracts may also be required.A full-fledged legislation on PPP is the need of the hour to enable it to provide an eco - system which facilitates smooth implementation of PPP projects.

CHAPTER - 4

FINANCING STRUCTURE – CONSORTIUM/SYNDICATION

FINANCING STRUCTURE – CONSORTIUM/SYNDICATION

Financing Structure

As discussed previously, Infrastructure Projects are generally very large in size with substantial cost of the project and as such, funding thereof generally will not be done by a single lender by itself but by a consortium of lenders joining together. The Reserve Bank of India guidelines relating to the single Borrower and group exposure coupled with credit policy of respective banks also need to be taken into account and accordingly more than one bank will generally be required for funding of such projects. The single borrower norms for lending at present stipulate a ceiling of 20% of the Tier-1 Capital of the bank and similarly the ceiling of the group exposure is 25% of the Tier-1 Capital of the bank.

Types of Lending

(I) Consortium Lending

Traditionally, RBI regulations stipulated specific guidelines regarding Consortium funding. With effect from October 1996, the guidelines relating to the formation of the consortium for lending were substantially relaxed by introducing flexibility in the credit delivery system and to facilitate smooth flow of credit. Subsequently, however, a need was felt to have a collaborative approach particularly for monitoring of the accounts and sharing of information on borrowers. Therefore, the spirit behind the consortium lending was re-emphasised and fresh guidelines were issued as a part of overall lending norms vide **RBI** notifications dated 19-09-2008 and 10-02-2009. These guidelines inter-alia stipulated three formats to be obtained& used for sharing of information.

- Annexure I relates to declaration from the borrower in respect of the existing borrowing arrangements from the other Banks.
- Annexure II relates to exchange of information about the conduct of the borrower's account with other banks.
- Annexure III relates to certification by a professional regarding compliance of various statutory prescriptions that are in in vogue. This certification was initially prescribed preferably from a Company Secretary. However, vide notification dated 10 Feb 2009, RBI clarified that in addition

to Company Secretaries, Banks can also accept the certification by Chartered Accountants & Cost Accountants. (Relevant annexure placed in the Appendix-I of the handbook).

(II) Syndication

Infrastructure lending by the banks is more amenable to the concept of syndication whereby one single banker comes forward and underwrites the entire amount of loan required for the project and thereafter down sells part of the total loan amount to other landers who become the members of the consortium. As per the terms of concession agreement, generally the financial closure i.e. the sanction of total project loan by all lenders is required to be completed in a time bound manner (initially 180 days from award of project).

Depending upon size and complexity involved in the funding structure of the project, achieving the timely financial closure within 180 days is generally a challenging task and therefore, the promoter tends to rely upon the syndication process by approaching one large lender initially who underwrites the entire project loan and then invite other prospective lenders to participate.

Lending Process

(I) Preliminary Information Memorandum

The project company or developer prepares initial report relating to the project which has been allotted to it and this memorandum is called PIM (Preliminary Information Memorandum). The promoter may prepare the PIM on its own or may take the help of some outside consultancy firm engaged in providing such services to assists in preparation of the PIM.

The preliminary information memorandum is based on the broad features of the project as originating from the RFP (Request for proposal) floated by the concession authority and includes an overview of the viability/bankability of the project inter alia covering the essential information required for consideration of the lenders to assess and appraise the project from the lenders' perspective. The PIM is then shared with the prospective lenders. After going through the information memorandum, bankers form an initial view about the project. As soon as one of the prospective lenders, depending upon the strength of the project, agrees to take up the project funding as syndicator/ lead lender, the mechanism is taken forward for initiating the process of sanction of 'in-principle' approval by other lenders.

The formal mandate is signed by promoter with the syndicating Bank detailing therein the terms and conditions and the fees payable to the syndicating bank for underwriting and other service charges. After completion of this process, the 'term sheet' and a 'project summary sheet' in the form of a flyer/ teaser is also prepared relating to the project, which is shared with the prospective lenders for the in - principle approval.

(II) In- principle Approval

Most of the lenders have mechanism of providing in-principle approval for a large projects, particularly infrastructure projects. Banks generally have internal mechanism called New Business Group/ New Business Committee or similar nomenclature where such large projects are initially assessed and scrutinised for deciding in-principle approval. Project is considered suitable for funding taking into account broad benchmarks relating to the promoter experience/suitability, group exposure, specific subsector of the project etc. Based on the summary sheet and the term sheet as received from syndicator/promoter the request is processed and an internal note prepared and placed before the competent authority based on the discretionary power chart of the respective Bank/ financial institution, for considering the in-principle approval.

(III) Detailed Appraisal

Once the in-principle approval is conveyed, the detailed project report along with other relevant documents/ papers/ information are obtained from the borrower for examining and assessing the proposal in its entirety. This includes the basic information relating to the due diligence / KYC process in terms of regulatory guidelines.

The internal policy guidelines issued by the respective banks need to be complied with including the initial screening of the memorandum and article of association of company with regard to the objective clause and borrowing powers etc.

The additional information and reply to the queries is sought from the borrowers to examine/ assess and arrive at the viability of the project. The risk factors involved are identified with proper analysis of strengths and weaknesses. The risk mitigates and terms and conditions accordingly incorporated to best safeguard the interest of lenders.

After detailed processing by the respective banks, individual sanctions are conveyed and then formal consortium of lenders is formed. Generally largest lender becomes the lead bank and second largest lender becomes the second lead. The lead bank is also called lender's representative and is required to comply with the following requirements.

(IV) Role and responsibilities of lead lender /lenders representative

The lead bank/lender is responsible for joint documentation/inter-se agreement:

- supervising the compliance by the borrower of the terms and conditions of the financing documents and the security documents;
- act as the communication channel for all communications and requests between the borrower and the lenders, including conveying the decision of the majority lenders;

- review the status of the borrower and the project;
- implement decisions taken in the joint meetings of the lenders;
- ensure that the insurance risk cover agreed to between the lenders and the borrower is obtained and maintained by the borrower in accordance with the terms of the finance and security documents;
- conduct such investigations and appoint such consultants as may be necessary to ensure verification of data and for monitoring and supervision of the project; and undertake all necessary actions as agreed to between the lenders in the event of any breach by the borrower.

CHAPTER - 5

CREDIT APPRAISAL PROCESS–I

CREDIT APPRAISAL PROCESS–I

What is Appraisal?

Project appraisal is the evaluation of the project proposal in an organized and structured manner aimed at enhancing the overall ability of the project to succeed and remain feasible during the concession period, and at the same time ensuring optimum risk allocation. The appraisal of the project forms the basis for the decision to undertake the project.

The credit appraisal comprises comprehensive assessment of the proposal/ Project from various angles and the relevant parameters can be broadly divided into 5 sub-heads as under:

(I) Management Appraisal

(II) Economic Appraisal

(III) Marketing / Commercial Appraisal

(IV) Technical Appraisal

(V) Financial Appraisal

We propose to take up the above parameters one by one in course of current Chapter and the next three Chapters. The Management appraisal and Economic appraisal are discussed in the present Chapter, while marketing appraisal /commercial appraisal and technical appraisal shall be discussed in Chapter 6. The Financial appraisal is proposed to be covered in Chapters 7 and 8.

Management Appraisal

One very important aspect of the credit appraisal is with regard to the Management Assessment of the proposed promoters of the project. Resourcefulness, capability and competence of the promoters is assessed to ensure smooth construction of the project and operations thereafter.

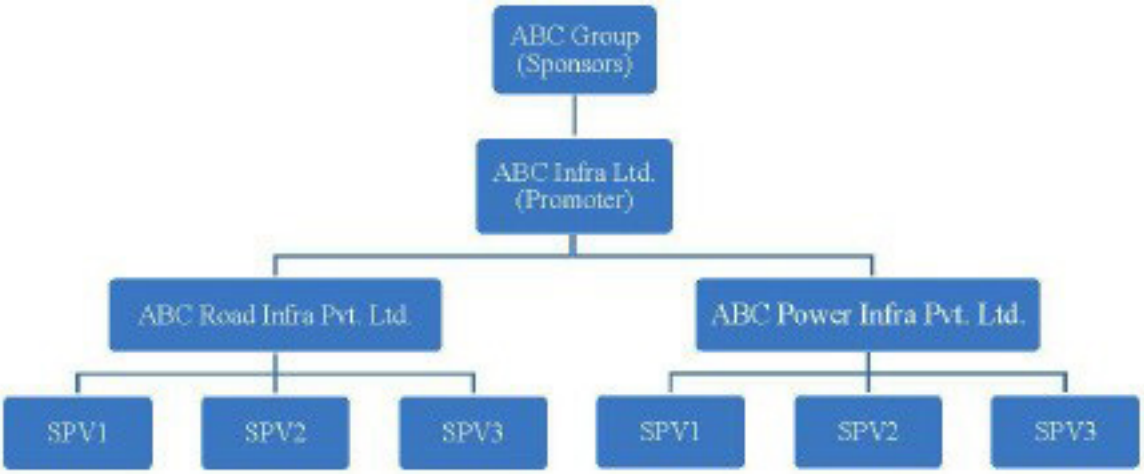
The following parameters are examined broadly in this respect. In most of the cases the promoters of the projects are erstwhile companies or groups who were engaged in construction activities or EPC work for similar projects prior to availing the opportunities as developer under the PPP model.

In most cases, the promoter group sets-up a SPV company specifically for taking up an infrastructure project and the depending up on expansion, separate sector-wise subsidiaries are set-up to take up the projects; for example, separately for road projects and power projects etc. For each specific project, a separate special purpose vehicle SPV is setup as explained earlier, to take care of, efficient risk

management by de-risking the project from the promoters' balance sheet, tax aspects and to ensure better exit options on completion of the concession period.

Typical group structure for infrastructure ownership will look like as under: -

Ownership Structure



As revealed from above diagram, a separate SPV is formed for each project, to delink it from other projects and entities of the same promoters. Normally large groups form separate holding company for investments in Infrastructure projects and then incorporate sector-wise subsidiaries, which in turn invest in individual SPVs. To that extent each project is de-risked from any likely adverse position of the other group entities. This also facilitates easier exit on completion of the concession period of each project or in a situation of obtaining refinance/undertaking a securitisation deal since the specific project's cash flows and financials are easier to deal with in comparison to a large multiple project balance sheet.

It is to be noted that in most of the individual SPVs generally the directors appointed are the technical and professional individuals and not the actual promoters / owners themselves. It is therefore important that in such cases, the availability of adequate capital for the SPV by way of promoters' contribution is available. This has to be ensured for each one of the SPVs existing as well as those projects which are in pipeline or proposed to be started in near future by the promoter group.

This aspect needs to be studied in depth as it is observed that the projects got delayed or were stranded because of the lack of adequate capital from the promoters' group as too many projects had been bid aggressively by such groups. Overall strength of the promoter group thus becomes very relevant while assessing the management aspect.

Obligor structure is sometimes adopted when the promoter group is having more than one projects in a particular sector to fall back upon the strength and cash flows of other projects of the promoter, which shall be subsequently discussed in the chapter on security charging and documentation.

Broadly the identification of Key Management Person (KMP) relevant from lenders perspective are as lenders: -

a) Honesty & Integrity
b) Involvement in the project
c) Financial resources
d) Competence
e) Risk-taking
f) Initiative
g) Intelligence
h) Drive and energy
i) Self-confidence
j) Frankness
k) Patience

KYC due diligence Process

This is an important aspect while considering any new borrower account from regulatory angle as well as managerial appraisal angle.

Check List on Due Diligence

SL. NO	PARTICULARS	REMARKS/ OBSERVATION
1.	Name of the Borrower / Applicant	
2.	Existing / Proposed Activity	
3.	Type of borrower for whom due diligence is being done. (New / Existing)	
4.	Financing Arrangement	
5.	Name of Promoter(s), Guarantors(s) and Group, if any	
6.*	Details of Existing Banker(s) and dealing since * Details of Key Management Persons (KMP)	
7.	Credit information report from respective lead bank(s) as per RBI / IBA format for the following : 1. SPV 2. Promoter Company 3. Sponsor Company (In case of any adverse features the same to be properly commented upon and verification / scrutiny of respective statement of accounts may be undertaken	
	(a) CIC's / other Credit Information Bureau Report (Consumer/ Commercial both) – For directors of SPV & also director of Promoter / Sponsor Company / Guarantor	
	(b) CERSAI search SPV (Mention CERSAI search reference no.)	

	(c) RBI defaulters/caution list	
	(d) ECGC-Specific Approval List (if CSD Circular has it)?	
	(e) Obtaining information from public domain such as Google and other search engine/information available with BSE / NSE / SEBI and newspaper etc.	
8.	Observations made by External Rating Agencies in the Credit Risk Rating Report of the borrower / promoter.	
9.	Observation on Tax Registration/Tax payments by the borrower such as PAN / GSTIN / TAN / of Promoter / Sponsor Company (as applicable). (Tax payment as applicable to the borrower in the past shall be scrutinized for being in line with the business activity of the borrower.)	
10.	Details of Passport of each Promoter/Guarantors/ Director be obtained	
11.	Remarks (if any)	

Certificate that all documents have been verified from the relevant sources as per banks' guidelines.

1.	**In Case of the Company/LLP**	
	Verification of ROC records (Master Data/Index of Charges/Signatory details/Companies, Directors under Prosecution/Director Master Data)(Through website: www.mca.gov.in)	
	<u>Verification of Audited Financial statements</u> Audited Financial Statements submitted to the bank have been compared/verified with the last available financial statement filed with ROC. Major variations (if any) shall be analyzed along-with the reasons and shall be reported to the sanctioning authority. The matter shall be taken up with the Company/LLP.	YES / No
	<u>Verification of Shell Company Status of the Borrower Company / Concern:</u> The status of borrow Company/ Concern verified with MCA / ROC records to confirm that Company/ Concern has not been identified as shell Company.	YES / No
	<u>Verification of Financial Documents/ Reports/ Certificates issued/certified by Chartered Accountant/ Cost Accountants with UDIN</u> Financial Documents/ Reports/ Certificates issued / certified by CA has been crossed check with UDIN through**<u>https://udin.icai.org/?mode=searchudin</u>**	Yes/No/N.A.

2.	The Income Tax Return (ITR- submitted online) / Net Worth Certificate of the Borrower/Promoter Director / Directors/ Guarantors has been obtained by us **OR** The Income Tax Return (ITR) of the borrower/ Sole Proprietor/ Partner/Promoter Director/ Guarantors has been generated. (Tick whichever is applicable)	Yes/No At the Branch Office / cluster Office _____ OR In the presence of ……. (name of the authorized Bank Official) on___/___/20____
3.	The letter to Statutory Auditor of the borrower has been sent by Speed post for obtaining the confirmation regarding Capital, Net profit, Turnover, Sundry Debtors, Sundry Creditors, Stocks and Fixed Assets.	Yes/No/N.A. Speed post No. _____ on……./……/20…..

Management Experience

Management Experience is the most critical factor that has a direct impact on the outcome of the project. Some of the features of a project it may affect would be like technological feasibility, timely completion of the project, foreseeing the possible hindrances in the project implementation and their ability to make suitable arrangement for same, their ability to address issues relating to concerns raised by lenders and other parties to the project, management experience in the projects of similar nature, better utilisation of resources, better financial management etc.

The ability to understand, analyse, assess and make arrangements for contractual obligations, logistics, designs, technology and placement of foreseeable contracts (Operation and Management, Insurance etc.) give the project a natural advantage for timely completion.

The strengths/ weaknesses of the promoter/ management KMP & successors are critical for any project during construction and operations phase.

Past Track Record

Past track record mainly reflects on the performance of the promoter/company in past in various projects, in relation to defaults in payments, managing contractual obligations, ability to handle adverse situations, track record in dealing with Banks/FIs, ability to fund cost overruns, timely completion of project, capability to handle similar scale/ size/ technology/ vendor arrangements, Project Management Services (PMS), trained manpower availability.

Order Book Size

It reflects on the ability to execute large scale orders and possibility of the good revenue visibility, solvency & liquidity position of the promoter

Geographic Location of the Project

This would have a direct impact on the ability of the management to carry out the work as per schedule. Management experience with projects in similar or nearby geographic location would be an advantage for the developers providing faster access to economies of scale, using the same labour, easier execution with government, faster clearances and similarly having experience in carrying out projects in locations with difficult terrain or areas which are politically disturbed, would again be an advantage.

Third Party Contracts (Outsourced Contracts)

This would affect the ability of the management to deal with the major contractors for the project, specially negotiating with them at the time of entering into the contracts. Apart from this, if the contractors in the project are the companies of the promoters itself, then this will be a direct reflection on the engineering capabilities of the promoter group and their experience in handling the project through EPC Contractors, O&M Contracts, and Traffic& Toll Management etc. It needs to be ensured that the EPC contractor has requisite experience, good track record and reputation.

Accordingly, for the oral management appraisal, the background, creditworthiness, track record and managerial / financial resourcefulness of the promoters and their past dealings with institutions/ banks should be ascertained. A proper evaluation of management is crucial part of the overall appraisal of a project. Applications for assistance may be received either from first generation / new promoters for setting up as new project or from existing promoters for new project or for expansion/ diversification / modernization. In case of first generation / new promoters, the size of the project vis-à-vis resourcefulness of the promoters and other sources of funds should be critically examined. Promoters' experience, resourcefulness and ability to infuse equity to be examined critically at the time of sanction. An indicative checklist to facilitate management appraisal is given below:

- Memorandum and Articles of Association objects, whether the proposed activity is included in the main object clause.
- Authorized share capital
- Borrowing Power, whether the company has powers to borrow the proposed amount of loans against suitable securities
- Directors and board of directors
- Nominee directors, whether suitable provisions for appointment of institutional nominee have been incorporated
- Board resolutions and authorizations
- Shareholder's agreement (agreement among promoters for promoting the project) o Salient features o Capital structure o Promoters inter-se contributions, representation on the Board, etc o Term of appointment of directors by each promoter o Sharing of responsibilities
- Credit Opinion report as per RBI format for the SPV and also for the Promoters/ Sponsors to be obtained from the respective lead bank(s).

Government Perspective in Appraisal of the Projects

From government perspective, additional points need to be examined over and above the appraisal aspects taken care of by the bankers/financial institutions. The same are discussed in the subsequent paragraph based on the Reference Guide for PPP Project Appraisal of the Ministry of Finance, Government of India.

Why PPP Projects require Appraisal?

Due to the high infrastructure investment requirement, infrastructure development will necessitate inflow of private investment in addition to the public investment, thereby increasing the need for more PPP projects. PPP projects need appraisal as any other major public investment project. However, PPP projects are complex in nature. The high initial investments, transfer of public assets to the private sector partner for a concession period, the need to balance the divergent interests needs and risks of the stakeholders, etc. make designing and managing a PPP arrangement difficult.

Given the high level of unpredictability involved in PPPs, PSAs need to focus on balancing and off-setting different kinds of risks inherent in the project, along with promoting ways for financial viability of the project. Thus, it is important that the risk is allocated to the party which is best suited to handle it at the lowest cost.

Implementing a project as a PPP only makes sense if the project itself is sound. Further, PPP projects run for a long duration, with capital tied up as debt from banks/financial institutions/multilateral agencies. Not highlighting and correcting risk allocation at the initial stages could cause projects to fail - making capital and efforts go down the drain. Also, increasing failure of PPP projects tends to dampen private sectors' confidence and thus hamper private investments in infrastructure sectors. Thus, developing capacity for end-to-end assessment and appraisal of PPP projects becomes paramount to ensure success of PPPs.

In PPP projects, there is a need for due diligence and systematic rigorous appraisal as these projects typically involve:

i. Transfer of public assets, including land (e.g., an existing road or airport facility);

ii. Delegation of governmental authority to collect and appropriate user charges that are levied by force of law and must therefore be reasonable;

iii. Provision of services to users in a monopoly or semi-monopoly situation, which imposes a special obligation on the government to ensure adequate service quality ; and,

iv. Sharing of risks and contingent liabilities by the government, e.g., when claims are made under the respective agreements or when the Central Government has to provide a backup guarantee for non-performance by the entity granting the concession. Even where an explicit guarantee for non-performance by the entity granting the concession. Even where an explicit guarantee is not included there is a danger that non-performance on part of the State Governments could attract claims under bilateral investment promotion agreements.

v. Disputes arising out of project terms which could lead to significant payouts by the government.

Appraising a project involves seeking answers to a fundamental set of questions about the project:

- Is it sensible, from an economic perspective, to implement the project?
- Is it practical to procure the project as a PPP? How much will it cost?
- Is it affordable from the government's perspective?
- Is there adequate market interest and capability to deliver this project and can they be overcome in a cost-effective manner?

The Appraisal Phase serves to filter out projects that do not meet the feasibility criteria, keeping them from being launched as PPPs and avoiding an expensive waste of resources or a failure to deliver the service.

Who to Appraise?

Since PPP projects are complex in nature and involve multi-sectoral issues, the following key principles should be kept in mind while finalizing the organizational structure of the PPP Project Appraisal Authority to be set up for project appraisal:

- It may be a multi-departmental body involving representation from different ministries/departments; Typically, a PPP Appraisal Committee may have (principal) secretaries from the following:
  - Administrative Department (sponsoring the project)
  - Finance Department
  - Department of Law
  - Planning Department
  - Any other department as required
  - Co-opted members or experts
- It may be headed by a departmental secretary in which the PPP unit is located; It may be supported by a PPP Unit having appropriate expertise in handling PPP projects. Such PPP unit shall serve as the secretariat of such PPP appraisal authority;
- For sake of efficiency and effectiveness, depending on the size/total project cost of the projects, there may be more than one appraisal authority. The threshold may be decided as per requirement and vision of the state.
- Post appraisal and recommendation by the Appraisal authority, there may not be any requirement for any further appraisal by any other authority.

Principles of PPP Project Appraisal

Typically, the Appraisal Phase serves to identify probable issues in the projects which may lead to failure of the project during its lifetime. Thus, appraisal phase filters out projects, ensuring that quality projects are launched as PPPs and thus avoiding an expensive waste of resources or a failure to deliver the service.

THREE Overarching Principles for PPP Project Appraisal:

- the PPP project should be Feasible;
- the PPP project should be Economically Viable;
- the PPP project should be Risk & Rewards Balanced.

Assessing the feasibility of the project concept - The first and foremost principle of project appraisal is to understand whether the underlying project makes sense, irrespective of the procurement model and whether the underlying project is feasible to be undertaken on the PPP mode. The feasibility of a PPP project has to be seen from multiple standpoints like strategic, technical, financial, environmental and social, institutional/project management and legal. Following feasibility assessments are undertaken by the PSA during project structuring. The appraising agencies need to understand the nuances of these feasibility assessments so as to appraise them as part of the appraisal process.

- Strategic feasibility: Whether the project fits in with government's development and sector strategies, policy, priorities, and sector and infrastructure plans?
- Technical feasibility: Whether the project is technically feasible without unreasonable technical risks and the technology is easily available in the market?
- Legal feasibility: Are there any legal barriers to the project preventing the government to enter into a PPP contract?
- Environmental and social sustainability: Does the project comply with national environmental and planning standards on managing environmental and social risks?
- Project management: Whether the PSA has the authority, capacity, and fiscal resources to prepare and tender the project, and to manage the contract during its term?

Considering the relative importance in the current context, we shall study the environmental and social sustainability in more detail as under:-

Appraisal of the environmental and social sustainability

This checks for any environmental and social impact that the project may have and how to minimalize its negative effects.

The 'environmental impact assessment' is a key document for examining environmental risks. Similarly, social impact analysis (or social feasibility assessment) is an important part of the general appraisal of PPP projects, since infrastructure initiatives may cause adverse impact on communities surrounding the project implementation sites.

The objective is to identify the key environmental and social impacts of a project beforehand. Solutions/strategies to mitigate the adverse impact are formulated and all associated costs are incorporated. The concession agreement should clearly provide for the responsibility of maintenance of requisite environmental standards. The following aspects need to be examined in detailed:-

Question	Comments/Clarification
Whether Environment Impact Assessment study has been conducted?	To ensure that impact on environment and society arising out of the project activities are clearly identified beforehand.

Whether mitigations strategies/solutions have been identified? Also, if costs of such mitigation measures have been incorporated and who will bear the same?	Once the adverse impacts are identified, mitigation strategies/solutions must be formulated to address these, and any associated costs are incorporated in the Total Project Cost.
Has the land requirement been identified? Whether land is available with the PSA or to be procured/acquired? Who will bear the land cost?	Land acquisition requirements are identified beforehand, and the Concession Agreement has relevant Clauses specified ensuring its allocation and associated costs, if any. Generally, in PPP, Land cost is not part of the PPP and to be provided at a nominal cost.
Is there any rehabilitation and resettlement (R&R) requirement? If yes, what is the cost and plan for R&R? Who is bearing the cost of R&R, if any?	To identify all R&R requirements beforehand, and the Concession Agreement may provide for its allocation. Usually, R&R is taken care of by the P SA itself.

The above needs to be taken care of to ensure that the proposed project, its design, and technology caters to/meets all environmental requirements and full-fills societal aspirations. The project does not get stuck due to any environmental or social impact/concerns which may result in time and cost overruns.

Appraisal of Project management feasibility

Appraisal of the Project management feasibility is carried out to assess whether the PSA has the capacity and fiscal resources to structure and tender the project and to manage the contract during its term/concession period. For a PPP project to be successful, the private sector will need counterparts in the public sector who are knowledgeable and competent co-managers of contracts.

Source: Reference Guide for PPP Project Appraisal-MOF-GOI

Assessing the economic viability of the project –

Economic appraisal for social cost benefit analysis of an infrastructure project assumes great importance due to its inherent nature as the setting up of any new project is directly linked to the overall welfare that it is going to provide to society at large and the actual users besides creating extra potential for employment and economic growth. The projects under the PPP model are setup after examining in detail social benefits and economic viability.

In the Economic Appraisal-Social Cost-Benefit Analysis, broadly the relevant points are as under:

1) Ratios for economic Appraisal
2) Economic rate of return - OECD method &UNIDO method
3) Exchange rate of the Project or domestic resources cost
4) Comparative study of financial rate of return and economic rate of return

Various approaches like UNIDO approach or OECD approach are used while examining the social cost benefit analysis and analysing the economic rate of return. The UNIDO approach makes a comparison of the financial profitability of the project measured at market prices and net benefit of the project measured in terms of economic prices, beside adjustment for the impact of the project whose social value differ from the economic value.

From economic point of view, it is considered necessary to calculate the economic rate of return from financial projections prepared on the basis of shadow prices, which may reflect socially desirable use of each input and output. UNIDO and OECD have evolved certain principles to decide shadow prices. According to UNIDO method, shadow prices are decided on the basis of willingness to pay as measured by consumer surplus. According to the OECD method, border prices (on imports) provide the basis to decide the shadow prices. The use of local inputs, employment generation and development of backward areas are also aspects which need to be seen.

In the current context taking into account the global concerns about the climate change, all projects are required to be examined from ESG (Environment social & governance) angle and the necessary compliances and approvals need to be ensured, which has been subsequently discussed in separate chapter.

Taking into account the Government perspective, assessing the economic viability of the project further involves the assessment of whether the PPP project is a good public investment decision based on an economic analysis. This involves assessment of Commercial Viability, Economic Viability and Fiscal Viability of the project. The importance of economic desirability also lies in the fact the if a project is commercially unviable, but economically desirable, then such a project can be made commercially viable by providing various external support like giving additional revenue sources or VGF, etc. The nuances of Commercial Viability, Economic viability and Fiscal Viability of the project are discussed below:

- Commercial viability - whether the project is attractive to sponsors and lenders with reasonable financial returns. This is subsequently confirmed by the tender process.
- Economic appraisal - whether the project is cost-benefit justified, and represents the least-cost approach to delivering the expected benefits?
- Fiscal viability - whether the project's overall revenue requirements are within the capacity of users and the public authority to pay for the infrastructure?

Assessing risk & rewards balance - This principle involves the evaluation of project bid documents to ensure whether the PPP project provides a balanced structure for sharing risk and reward for both the public and private partners. The guiding cardinal principle is that risk may be allocated to the party that is best suited to handle it. The appraising agencies need to understand the nuances of balancing risk and rewards so as to appraise them as part of the appraisal process. Since, the bidding documents (RFP and the DCA) primarily lay down the terms of allocation of the risks and rewards between the parties and form the foundation of the bidding process; these must be appraised carefully, clearly and

thoughtfully. The risk and reward balance is achieved by having:

- Clear terms and conditions - It is critically important that these terms are clear and well understood. This gives bidders clarity on the requirements of the project and satisfies them that the public partner is credible and well organized.
- Identification of relevant KPIs and Risks - All this will make both the parties - public as well as private to better prepared to devote resources to the bid. It will also reduce the likelihood of failure and litigation in implementing the project.

It is evident that a proper appraisal of PPP project involves assessment of overall project feasibility and viability; risks mitigation and balancing; and balancing of rights and obligations of the stakeholders involved in the PPP project.

Assessing risk & rewards balance –

Before starting a PPP project, a very important factor that needs to be analyzed is assessing risk and reward balance**.** This principle involves the evaluation of project bid documents to ensure whether the PPP project provides a balanced structure for sharing risk and reward for both the public and private partners. The guiding cardinal principle is that risk may be allocated to the party that is best suited to handle it. The appraising agencies need to understand the nuances of balancing risk and rewards so as to appraise them as part of the appraisal process. Since, the bidding documents (RFP and the DCA) primarily lay down the terms of allocation of the risks and rewards between the parties and form the foundation of the bidding process; these must be appraised carefully, clearly and thoughtfully. The risk and reward balance is achieved by having:

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It is evident that a proper appraisal of PPP project involves assessment of overall project feasibility and viability; risks mitigation and balancing; and balancing of rights and obligations of the stakeholders involved in the PPP project. Thus, a Reference Guide for PPP project appraisal is essential and important for supplementing and supporting the project appraising authorities for undertaking a systematic and robust appraisal of PPP projects.

Illustrative format of information to be obtained from the borrowers in the application form, to compile necessary particulars for detailed appraisal, are given in Appendix-II.

CHAPTER - 6

CREDIT APPRAISAL PROCESS – II

CREDIT APPRAISAL PROCESS – II

Marketing Appraisal/ Commercial Appraisal

The importance of commercial appraisal is all the more great in case of infrastructure projects since main security is the 'cash flows' of the project itself under the non-recourse model. Detailed study looking into all aspects of demand and generation of future revenue is undertaken prior to funding of any such projects. The traffic study in case of a road project is important. Similarly the supply-demand gap needs to be understood in case of port projects to examine if sufficient cargo to be handled will be forthcoming. We will briefly cover the fundamental features of the marketing appraisal and also illustratively discuss the determination of toll/ tariff as applicable to infrastructure projects.

Fundamental Features of Marketing Appraisal

The basic features involved in marketing/ commercial appraisal inter-alia cover the following points:

1. **Demand** – Parallel High Tech Projects, Product uses, the consumers, actual consumption / usage likely consumption /usage in future, market segment, geographical segment. Demand-Techniques of Forecasting include
   a. Past trend method
   b. End-use method
   c. Correlation and regression-based projections
2. **Supply** – Production capacity, actual production, capacity utilisation, likely future capacity/ additional supply / availability. Supply side shall also analyse depth of competition.
3. **Distribution** – Channels of distribution involved, the cost of distribution and mode of transport / transmission
4. **Pricing** – Domestic and international prices trends, control on prices, duties and taxes. Pricing policy will take into account inflation and ability and willingness to pay.
5. **External Forces** – Technological obsolescence - Government policies, collaborations, etc.

Life cycle of the product / project are also relevant in the overall marketing appraisal. The lenders normally take the help of outside agencies/consultants having expertise in the activity of assessing the projected demand. The projected toll tariff structure therefore needs to be understood and the following aspects are required to be examined.

Toll / Tariff

The infrastructure projects have some guiding policy to decide the toll rate or tariff that a project would be allowed to charge as incorporated in the concession agreement. As the revenue from the project would largely depend on the tariff or toll that the project would be allowed to charge and the volume of traffic that the project is expected to cater to, apart from just the tariff/ toll policy regime, the traffic study becomes critical to projections of revenue in a project. The following tariff characteristics may be evaluated:

- Average Daily Traffic (ADT)
- Hourly variation and Peak Hour Factor (PHF)
- Directional distribution
- Traffic composition
- Toll Exempted Vehicles including local traffic
- Annual Average Daily Traffic (AADT)

In this context, the travel characteristics in terms of origin and destination will consider the local and through traffic on the project road; and potential divertible traffic to /from project road to various alternatives routes. Further, it is desirable to ascertain the different categories of toll tickets as mentioned below:

(i) Traffic paying normal toll rates (single trip)

(ii) Traffic paying return journey rates

(iii) Traffic paying monthly pass rates

(iv) Traffic paying local concessional rates

(v) Exempt traffic

The above points have been discussed primarily with respect to the road project. Additional points will need to be taken into account on project-to-project basis for each subsector. For example, in case of Rail and Airports the passenger traffic and cargo traffic need to be analysed. In the context of power project, the transmission aspects with respect to cost and grid connectivity vis-à-vis with specific geographical demand will need to be examined. Similarly in case of housing projects, the consumer preferences with respect to multi-storey building, independent houses, and ownership v/s rental houses need to be analysed while appraising the marketing aspects.

Scenario Analysis

For toll road projects, revenue streams are generally based on the assessment of the traffic volume (base and future) crossing the toll plazas and the applicable toll imposed on the user of the road. There is an inherent element of uncertainty of any forecast, which is not possible to measure risks in a strictly statistical sense as many of the risks are largely or partly unknown.

One very important aspect is with regard to the willingness of the users to pay for the services. In case of road projects, we have now an efficient mechanism through the online tag payments system. In case of power projects, the payment are to be made by the distributing companies, state owned or otherwise, purchasing the power from the generating plant and supplying to ultimate consumer. The financial strength of the respective dis-com/ distribution company becomes relevant as instances of having some delays on the part of these distributors has been seen effecting the commercials of the power plant projects. Past experience & sensitivity analysis plays crucial role in this.

Another aspect which is partly disturbing the commercial viability is with regard to negotiation of the PPAs already entered into, which need to be given due sanctity of contract. Such cases of attempting to cancel previous power purchasing agreements need to be avoided in order to ensure proper viability of the projects and to prevent such accounts becoming NPA on account of extraneous factors.

Technical Appraisal

Each project needs to be examined from the technical viability angle as a part of appraisal depending upon the sector /sub-sector. Relevance of Technical aspects varies from project-to-project. For example, in case of road project, the typical construction aspects need to be examined include competence and technical knowhow available with EPC contractor. Further, in case road project that involves construction of tunnels/underpass/elevated roads and bridges, deeper examination of the designing needs to be considered.

Salient features

In the technical appraisal the lenders mainly rely upon technical reports of external agencies appointed for this purpose inter alia covering following aspects: for a project like power plant –

- Manufacturing Process/Technology - Alternate processes and technologies need to be studied and compared to choose most efficient and cost effective best suited process and technology.
- Technical Arrangements – Foreign collaboration, consultancy organisation and tie-up arrangement for the entire life of the project.
- Size of the Plant – this need to be determined in respect to the existing capacities and the demand which need to be catered to.
- Product-mix – This is relevant with respect to the market segmentation and geographical segmentation wherever applicable in relation to the total demand
- Selection of Plant and Machinery– Availability of various alternatives, credentials of the machinery suppliers etc. need to be examined.
- Procurement of Plant and Machinery–Cost effective procurement with absolute transparency and proper comparison needs to be ensured.
- Plant Layout - The following aspects needs to be seen o Land

- o Raw Material o Market o Labour o Utilities such as water, power, fuel etc.
- o Effluent disposal in compliance of regulatory requirement o Transportation o Community infrastructure o Development of other industries
- o ESG

The other features and relevant aspects which need to be seen vis-à-vis plant and machinery, technical know-how, engineering and consultancy etc. are also subsequently covered wherever required in Chapter 7 while discussing the cost of the project.

Over the period, technology has improved in most of the sectors bringing about more efficiencies and economy and better productivity. From the lenders point of view utilisation of the latest technology need to be examined.

In case of power projects, the plant layout, availability of raw material (FSA), effluent disposal transmission facilities need to be examined in detail from technical angle. In the recent past, lot of technological improvements have happened in the field of renewable energy that has resulted in substantial reduction in the cost of projects thereby improving the viability. Similarly in case of ports, cargo handling technologies and processing have improved over time, such aspects need to be duly taken into account.

The developer needs to adopt mechanism of CPM (Critical Path Method) and PERT (Project Evaluation Review Technique) to ensure timely and smooth construction of the project.

Project Evaluation and Review Technique (PERT) and Critical Path Method (CPM)

Both PERT and CPM are essentially project management techniques. Network flow and diagrams forms basis of any project management technique. CPM was developed by Remington Rand and Dupont in 1957 and PERT charts were first created by the U.S. Navy's Special Projects Office in 1950s to guide the Polaris Fleet Ballistic Missile project. Over time, these project review techniques found greater application in Industry particular for project implementation. By following any of these techniques of project management, the project developer can reduce the unproductive time in a project. In critical path method, the critical path of the project is longest path through the project network and special attention is given to the activities on critical path so that project is completed on time. The main objective is to estimate the total project time and starting and finishing time to all the activities in the project. PERT focusses completion time based on optimistic time, pessimistic time and most likely time. Objective of both methods is reducing the project redundancies and complete project in an optimum time frame.

Initial Visit Report (Pre-Appraisal) - Appraisal aspects to be seen in initial visit report of the site by the concerned officials are expected to examine detail, particular/data/information as under:

A. GENERAL INFORMATION

a)	Name of the Company / SPV		
b)	Promoter Group / Sponsor		
c)	Date of Site Visit		
d)	Project Location & Description		
e)	PPP/Public Sector/ Private Sector / Others		
f)	Independent Engineer (If already appointed)		
g)	Concessionaire		
h)	EPC Contractor		
i)	Total Project Cost (As per DPR / PIM)		
j)	Means of Finance	Debt :	Equity :
k)	Construction Period		
LEAD BANK			

B. THE PROJECT BACKGROUND

Illustrative Table for Road Sector:

S. No.	Particular	Details
1.	Project Length	
2.	Project Start	
3.	Project End	
4.	Service Roads	
5.	Elevated structures of length	
6.	Vehicular Under Pass (VUP)	
7.	Light Vehicular Under Pass (LVUP)	
8.	Pedestrian Under Pass (PUP)	
9.	Cattle Under Pass (CUP)	
10.	Pipe Culverts	
11.	Box Culverts	
12.	Minor Bridges	
13.	RCC Drain & Footpath	
14.	Toll Plaza	
15.	Truck Bay	
16.	Bus Bays	
17.	Minor Intersections	
18.	Major Intersections	
19.	Shoulder & Footpath	
20.	Realignments	
21.	Grade Separated Intersections	
22.	Elevated Roads Pillars	

Illustrative Table for Power Sector:

S. No.	Particular	Details
1.	Type of Project	
2.	Capacity of the Project- Mega Watt (MW)	
3.	Interconnection Substation	
4.	Auxiliary Consumption	
	Sale to Distribution Company (DISCOM)	
5.	Boiler Capacity	
6.	Boiler (Make)	
7.	Turbine (Make)	
8.	Generator (Make)	
9.	Coal Handling Plant	Yes / No
10.	Ash Handling Plant	Yes / No
11.	Switch Yard in Place	Yes / No
12.	Evacuation System	Complete / Partial
13.	Ash Disposal Linkage	
14.	Flue-Gas Desulfurization (FGD)	Yes / No
	If FGD installed, share technology	
15.	Water Linkage	Yes / No
16.	Quoted Tariff	
17.	Power Purchase Agreement Period	_____ Years

**This is illustrative in nature and may be suitably modified for other sectors like ports, airports etc.*

C. COST OF THE PROJECT

Rs. In Crores

Particulars	(As per DPR / PIM)
Land and Site Development	
Civil Works	
Plant & Equipment	
Preliminary & Pre-Operative Expenses	
Interest During Construction	
Contingency Provision	
Margin money for Working Capital	
DSRA	
TOTAL COST	

Rs. In Crores

Means of Finance	Scheduled (As per DPR / PIM)	Actual (As on Date of Visit)
Promoter's Contribution • Pure Equity • Other equity instruments including unsecured loans		
Rupee Term Loan (Proposed)		
TOTAL PROJECT MEANS OF FINANCE		

The actual position on the above points as on the date of visit should be noted for comparison.

Schedule I (Pre-Appraisal)

Broad points relating to infrastructure project have been covered in this illustrative format. Specific points / issues need to be covered depending upon each project on case-to-case basis.

*Road Sector	
1.	Status of right of way
2.	Sources of aggregates / details of mining rights
3.	Source Of Water
4.	Level of work safety (Adequate / requires safety measures)
5.	Resources Mobilized
	i. Labor ii. Crusher plant iii. Batching plant Etc. iv. Other resources as applicable
6.	Any other observation relating to implementation status which needs to be taken into account at appraisal stage.
*Power Sector (Thermal)	
1.	Status of land acquisition
2.	Land duly leveled / demarcated and boundary wall constructed or not
3.	Status of equipment BTG (boiler turbine generator), panels etc.
4.	Status of coal handling plant
5.	Status of ash handling plant
6.	Sources of water
7.	Status of FSA and PPA
8.	Substation and other civil works
9.	Sources mobilized including labor etc.

**This is illustrative in nature and may be suitably modified for other sectors like ports, airports etc.*

The individual details as above shall form part of the assessment of the project.

Bid Parameters and Concession Period used in some of the PPP Modes:

Project	PPP Mode	Bid Parameter	Concession Period (years)
Roads	Hybrid-Annuity-Model (HAM)	Bid Project Cost	18
	Toll-Operate-Transfer (TOT)	Initial Estimated Concession Value	20
	Build-Operate-Transfer (Annuity)	Amount of Annuity	15-20
	BOT (Toll)	Grant/Premium	15-20
Airports	Operation, Management and Development Agreement (OMDA)	User fee per passenger	50
Ports	DBFOT	Revenue share/Royalty	30- Single phase 45 - full phase
Multi-Model Logistics Park	DBFOT	Minimum guaranteed revenue share	45
Tourism	DBFOT	Annual Concession Fee/Lowest Grant (capex+operational)/Premium	30-45
Food grain Storage Silos	DBFOT	Annual Fixed Storage Charge 31.5	31.5
Medical College & Hospital	DBFOT	Grant/Premium	33+33
Ropeway	HAM	Bid project cost	15-20
Public Metro Transport	DBFOT	Premium/Grant	30
Public Transport City Bus	Gross Cost Contract / Net Cost Contract Model	Net Cost Contract- Revenue Sharing/Annual Concession Fee	8-10
Multi-level Car Parking	DBFOT	Revenue Sharing/Annual Concession Fee/Grant/Premium	20-30
Renewable energy	DBFOT	Lowest Tariff	20-25

The Relevant bid parameters as above under each category of PPP projects and the various subsectors are critical to be taken care of as discussed above. The selection of potential developer as PPP partner is to be done based on the commercial viability and repayment capacity of each project.

SOURCE: Reference Guide For PPP Project Appraisal

Scheme for Financial Support to Public Private Partnerships in Infrastructure

Viability Gap Funding

In cases where the project is not found to be commercially viable, but is economically desirable, the government of India has come out with a special scheme for viability Gap Funding. The salient features of the same as under:-

Introduction

The Central Government has notified a Scheme for financial support to infrastructure projects that are to be undertaken through Public Private Partnerships (PPPs).

The procedure to be followed for submission, appraisal and approve of financial support under this Scheme is specified below.

Applicability

- These guidelines will apply to PPP projects proposed by the Central Ministries, State Governments and Statutory Authorities, as the case may be, which own the underlying assets.
- Proposals to be made under this Scheme shall be considered for providing Viability Gap Funding (VGF), one time or deferred, with the objective of making a PPP project commercially viable.
- The proposal shall relate to a Public Private Partnership project which is based on a contract or concession agreement between a Government/statutory entity on the one side and a private sector company on the other side, for delivering an infrastructure service on payment of user charges.
- This Scheme will apply only if the contract/concession is awarded in favour of a private sector company.
- A private sector company or Concessionaire shall be eligible for VGF only, if it is selected on the basis of open competitive bidding and is responsible for financing, construction, maintenance and operation of the project during the Concession Period.
- The project should provide a service against payment of a pre-determined tariff or user charges.

Eligibility

Projects availing of VGF under this scheme shall provide a service against payment of a pre-determined tariff or user charge.

The concerned Government/statutory entity should certify, with reasons:

a. That the tariff/user charge cannot be increased to eliminate or reduce the viability gap of the PPP;

b. That the project term cannot be increased for reducing the viability gap; and

c. That the capital costs are reasonable and based on the standards and specifications normally applicable to such projects and that the capital costs cannot be further restricted for reducing the viability gap.

Viability Gap Funding under this Scheme except Sub-scheme 2 will normally be in the form of a capital grant at the stage of project construction. Proposals for any other form of assistance may be considered by the Empowered Committee and sanctioned with the approval of the Finance Minister on a case-by-case basis.

Procurement Process for PPP Projects

1. The Private Sector Company shall be selected through a transparent and open competitive bidding process. The criterion for bidding shall be the amount of Viability Gap Funding required by a Private Sector Company for implementing the project where all other parameters are comparable.
2. The Government or statutory entity proposing the project shall certify that the bidding process conforms to the provisions of this Scheme and convey the same to the Empowered Committee prior to disbursement of the Grant.
3. In case, the Government or statutory entity proceeds with bidding process with substantial alterations to the bidding documents and provisions approved by the Empowered Committee without taking prior approval of the Empowered Committee, the Empowered Committee may decline the final approval to the project.

Source: Scheme and Guidelines for financial Support to Public Private Partnership in Infrastructure –MOF Government of India.

Disbursement of Grant

1. A Capital Grant under this Scheme shall be disbursed only after the Private Sector Company has subscribed and expended all the equity contribution required for the project and will be released in proportion to debt disbursements by Lead Financial Institution. However, in case of sub-scheme 2, Operational grant shall be disbursed annually for the first five years post achieving COD based on audited annual accounts and shall be subject to the lower of the annual O&M cost quoted by the concessionaire at the time of the bid and actual O&M cost incurred.

   In case, a project under Sub-scheme 1 & 2 is funded completely by equity, Capital Grant VGF shall be disbursed after the equity contribution is expended by the concessionaire and in accordance

1. In case of Sub Scheme 1 and 2, if the project is entirely funded through equity, then the Tripartite Agreement shall be entered into by the Empowered Committee, the Project Sponsoring Authority (Owner of the asset) and the Private Sector Company.

with the project milestones achieved (lower of physical or financial progress).

2. The Empowered Committee will release the Grant to the escrow account only after the recommendations of the Sponsoring Authority.

3. The Empowered Committee, the Lead Financial Institution and the Private Sector Company shall enter into a Tripartite Agreement (as prescribed by the Empowered Committee from time to time) for the purposes of this Scheme as given at Annexure V[1].

Composition of Empowered Committee

1. The composition of Empowered Committee will be as follows:

   (a) Secretary (Economic Affairs)

   (b) CEO, NITI Aayog

   (c) Secretary (Expenditure)

   (d) Secretary of the line Ministry dealing with the subject

   (e) Joint Secretary, DEA- Member Secretary

2. The Empowered Committee will:

   i. Sanction Viability Gap Funding up to ₹ 200 crore (Rupees two hundred crore) for each project subject to the budgetary ceilings indicated by the Finance Ministry. Amounts exceeding ₹200 crore may be sanctioned by the Empowered Committee with the approval of Finance Minister.

Role of Lead Institution

The lead institution has the following Role and Responsibilities as per the scheme:-

The Concessionaire and the Lead Institution acknowledge that the Lead Institution is only acting as trustee for the Empowered Committee in respect of the VGF Grant and has no rights to the VGF Grant in any manner whatsoever.

In performing its functions and duties under this Agreement, the Lead Institution shall act in trust for the benefit of, and as agent for the Empowered Committee or its nominees, successors or assigns, in accordance with the provisions of this Agreement.

The Lead Institution shall maintain accurate account of all VGF Grant disbursements made by it pursuant to this Agreement and shall by the 15th day of every month furnish a copy thereof as at the close of the immediately preceding month, duly certified under the hands of an officer of the

Lead Institution duly authorised in this behalf, to the Empowered Committee together with statement showing the tentative disbursement schedule of the balance of the VGF Grant remaining to be disbursed.

In discharge of its duties and obligations hereunder, the Lead Institution:

a. May, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by and on behalf of the Concessionaire by an officer of the Concessionaire duly authorised in this behalf by the Board of Directors of the Concessionaire;

b. May, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;

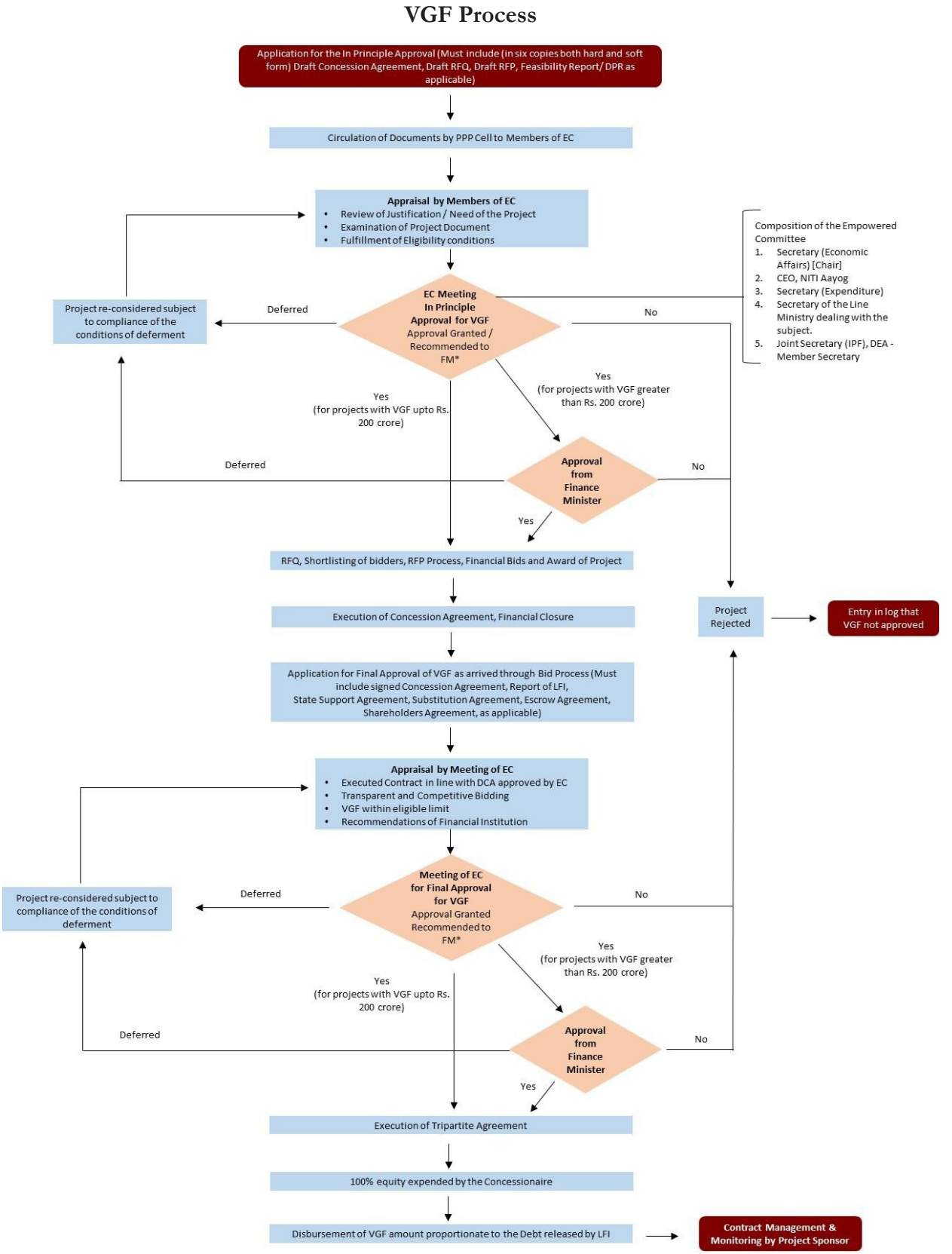
c. Shall, within 5 (five) business days of its receipt, deliver to the Empowered Committee a copy of any notice or document received by the Lead Institution in its capacity as the trustee for the Empowered Committee from the Concessionaire or any other person hereunder or in connection herewith; and

d. Shall, within 5 (five) business days of its receipt, deliver to the Concessionaire a copy of any notice or document received by the Lead Institution from the Empowered Committee in connection herewith. The Lead Institution agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to any amount of the VGF Grant pending disbursement to the Concessionaire. For the avoidance of doubt, it is hereby acknowledged and agreed by the Lead Institution that the monies, if any, received from the Empowered Committee and held by the Lead Institution on account of the VGF Grant and awaiting disbursement to the Concessionaire shall not be considered as part of the assets of the Concessionaire and being trust property held in trust for the Empowered Committee, and shall, in the case of bankruptcy or liquidation of the Lead Institution, be wholly excluded from the assets of the Lead Institution in such bankruptcy or liquidation and shall be made over to the Empowered Committee or its nominee.

Recovery of VGF in case of terminated projects

If the project is terminated at any point of time during the concession period, the VGF may not be recovered from the Authority (Owner) if it is re-bid and continued as PPP. However, if the project is terminated at any point of time during the concession period and not continued as PPP project, then 90% of Capital Grant disbursed under this scheme may be payable by the Authority (Owner) to the Ministry of Finance.

VGF Process Flow



*Only projects where VGF sought is greater than ₹ 200 crores will be recommended to the Finance Minister for approval.

As discussed, the above scheme is of critical importance for such projects which are economically desirable for the country and can be run on viable term with support under the scheame.

Source: DEA–MoF, Government of India.

CHAPTER - 7

COST OF THE PROJECT / MEANS OF FINANCE

COST OF THE PROJECT / MEANS OF FINANCE

In a typical infrastructure project, major components of project cost primarily include construction cost and the financial cost. On every important aspect with regard to infrastructure sector is comparatively long construction period and therefore, significant portion of the cost of the project will be the interest charged on debt during the construction period. This amount is to be capitalised and becomes a part of the cost of project. EPC cost i.e. Engineering, Procurement and Construction form the largest component. This includes the payments to be made to the construction contractor, sub-contractors, besides plant and machinery, equipment etc.

Since the infrastructure lending primarily depends upon the re-payment through the future cash flows and there can be extraneous factors leading to uncertainty, there is a concept of creation of the DSRA [Debt Service Reserve Account] used for repayment of loan instalments in case of any adverse eventualities. In very large projects on case-to-case basis lenders also agree to finance the component of DSRA itself in ratio of contribution from the promoters as well as the lenders. In such cases DSRA becomes a part of the cost of project.

The significant aspects to be taken in to account in the cost of project are as under:

COST OF THE PROJECT

₹ In Crores

Particulars	As per Detailed Project Report/ Project Information Memorandum
Land and site Development	
Civil works	
Plants & Equipment	
Preliminary & Pre-operative Expenses	
Interest during construction	
Contingency Provision	
Margin money for Working capital	
DSRA	
Total Cost	

Means of Finance*	Scheduled (As per DPR/PIM)
Promoter's Contribution a) Pure Equity b) Other Equity Instruments including unsecured loans	
Rupee Term Loan (Proposed), ECB etc.	
TOTAL PROJECT MEANS OF FINANCE	

*The subheads are discussed in detail subsequently in the chapter.

Details of Project Capital Cost Evaluation

Items to be included		Evaluation mechanism/ Documents
A. Land & Site Development	I. Cost of Land II. Legal Charges for registration III. Cost of leveling IV. Cost of laying roads V. Cost of fencing VI. Cost of gates	I. Ascertain from plant layout and proposed construction of building that land is sufficient for the project. II. Agreement for purchase of land III. Rates of legal charges Registration Fee IV. Total area of roads and cost per square meter V. Total area of fencing and the basis on which provision has been made
B. Building	I. Main Factory Buildings II. Ancillary factory buildings III. Administrative Building IV. God owns V. Canteen, guest houses etc. VI. Quarters for essential staff VII. Silos, tanks, wells etc. VIII. Garages IX. Cost of sewers draining etc. X. Architect fees	I. Design of building II. Different types of construction and area under each type of construction. III. Ascertain from plant layout whether proposed construction of buildings is sufficient and also no unnecessary construction is done. IV. Rate per square meter of each construction V. Agreement with building contractor, if any VI. A note on past record of building contractor and Architect
C. Plants & Machinery 1. Imported Plants	I. F.O.B. value of plant to be imported II. Shipping Freight and insurance III. Import duty IV. Clearing and loading and transportation charges	I. Ensure that proposed import of plant necessary II. Ensure that necessary stores III. Quotation of plants to be imported IV. Orders, if already placed, of plants to be imported V. Import license VI. Report of an independent engineer, if second-hand plant is being imported VII. Exchange Fluctuations & Hedging Cost

2. Indigenous Plants	I. Main plant and other machineries II. Machinery stores and Spares III. GST IV. Transportation charges V. Foundation and Installation charges	I. List of main of machinery to be Purchased- Ensure that all items are included and they have proper balance of capacity II. Quotations received from various machinery suppliers III. Cross-check with some reputable Potential suppliers from whom the Promoters could have asked, but have not asked to bid or quote IV. Selection should be done from various quotations on the basis of not only price but also technical sophistication, reputation of suppliers delivery dates, credit terms, etc. V. Orders for machinery, if placed. VI. Contract entered between the company and machinery suppliers.
D. Engineering and consultancy Fee	I. Expenses of foreign technicians II. Expenses of training for Indian technicians III. Technical know-how fee IV. Expenses on drawing V. Consultancy fee for preparing project report	I. Contract between the company and foreign collaborators II. Contract between the company and consultants III. A note on past record of consultants IV. Relationship, if any, between promoters of a project and consultants
E. Miscellaneous Fixed Assets	I. Furniture II. Office machinery and equipment III. Vehicle, cars, trucks etc. IV. Cost of electric installation V. Equipment and pipes for distribution of water air and stream VI. Laboratory Equipment VII. Workshop equipment VIII. Firefighting equipment IX. Effluent collaboration, treatment, and disposal arrangement X. Mixed fixed assets.	I. Details of various items of furniture, office machinery equipment, etc. and cost thereof II. Ascertain whether it is necessary to invest in vehicles for the project. Estimate cost of maintaining vehicles and compare with transportation charges to be paid, if outside vehicles are hired. III. Contract regarding electric installation, piping etc. IV. Price list of laboratory equipment, workshop equipment etc.

F. Preliminary and preoperative expenses	I. Brokerage & commission on capital issue II. Other capital issue expenses III. Commitment charges IV. Interest on term loans during construction period V. Mortgage expenses VI. Misc expenses during construction period VII. Cash losses, if any	I. Find the total amount of capital issue and calculate charges thereon II. Find the construction period and calculate interest for that period III. Calculate the amount of mortgage expenses IV. Calculate the other expenses during construction period
G. Provision for contingencies	I. Probable increase in cost due to new additions II. Probable increase in cost due to rise in prices, GST, excise duty, transportation charges, fluctuation in foreign exchange rates etc.	I. Divide total cost estimates into two groups- considered firm and non-firm II. Make Provision for contingencies on non-firm items of cost depending on inflationary trend and period of project implementation. Longer the I implementation period higher the contingencies required.
H. Margin for working capital	Total amount of margin money required from the promoter to avail the working capital facility.	Calculate total requirement of working capital as per the applicable method of calculation as prescribed from time to time depending upon size/ Sector. as margin money for working capital.

Check on Over Valuation / Over Estimation of Cost

Cost of the project needs to be studied and assessed in detail. Any instances of overestimation of the cost or underestimation need to be avoided. Possibility of over funding or diversion of funds is there in case of over valuation. Similarly, underestimation of the cost is also to be avoided which may otherwise lead to frequent cost over runs. Both over invoicing and under invoicing instances thus need to be detected and prevented in future.

The reasonableness of the cost of the project as submitted by the borrower should be thoroughly examined. Realistic estimates based on the industry trends and past similar projects comparisons should be used so as to conserve scarce resources and prevent cost over-runs and check over projection of cost / over-invoicing. The scrutiny of the cost of project needs to be comprehensive and meticulous with specific reference to cases where the EPC contractor / vendor is a group / allied concern. Salient points are recapitulated as under: -

Land and Site Development

The cost of land must include conveyance charges and should be based on actual as per the agreement with the vendors. Other costs to be examined are premium on lease hold land, development charges, etc. The copy of sale/ lease deed should be obtained and examined for ascertaining the sale consideration. The prevailing prices in nearby area could be obtained. Land Registration Department

of the Panchayat/ Village Officer/ Corporations Development expenses must include cost of levelling of land. Laying of roads and gates etc. Assessment of land cost should include costs involved viz, roads, railway sidings, etc. For large projects like hydro power projects there are other costs involved in selection of certain sites in terms of resettlement of displaced inhabitants. This should be accounted for in the project cost.

Buildings

The cost of proposed buildings should include the cost of factory/plant building, administrative building, housing, civil work for effluent treatment plant, godown, railway siding, boundary walls, garages, sewers, water tanks, drainage, architect/consultant fees, etc. The cost should be based on the architect's estimates. The rate (per sq.m.) of construction should be compared with the cost of like structures in case of similar projects. This may, however, vary depending on site conditions and other meteorological and geological factors. In the case of infrastructure projects with implementation schedules exceeding one year, the current cost estimates should be suitably adjusted for escalation during the period of implementation.

While assessing the cost of civil works, the following aspects might also be kept in view:

- Adequacy/reasonableness of built-up area of various sections.
- Obtaining competitive bids for civil contracts with arms-length relationship between parties concerned.
- Adequate provision for housing in respect of projects located in remote/rural areas should be made in the project cost estimates.
- The EPC contract is to be examined in detail for key clauses including the mobilization advances. In case of any unfavourable/unreasonable terms, the contract to be modified to take care of the concerns of lenders.

Plant & Machinery

Estimates of plant and machinery should be based on quotations / purchase contracts entered into between the applicant and the suppliers. These contracts should, have been finalized after obtaining competitive quotations from alternate suppliers and selection should be done not merely on the basis of price alone, but also technical evaluation, reputation of suppliers, delivery period, terms of payment etc. For large sized projects, international competitive bidding procedure or limited competitive bidding procedure should be followed. The cost estimates should be scrutinized to ensure that erection and commissioning charges, taxes and duties, insurance, freight charges, etc. are included and detailed break up thereof should be given. Provision should be made for foundation, installation, spares, electrical, piping, insulation needs, etc. Some of the main points to be noted in this regard are:

- Wherever latest quotations with firm prices are available, the same (after due scrutiny) may be relied upon in the case of equipment and no further escalation in cost be provided.

- Where the quotation is not firm, but escalation clause is provided in supply contracts, the cost of equipment might be worked out taking into account the impact of escalation clause.
- Where the quotations/prices are only indicative/budgetary, suitable escalation on account of inflation should be provided.
- There should be a mechanism to verify, and counter check the antecedents of supplier of equipment regarding their capacity, life of the equipment, maintenance etc.

Technical Know-How & Engineering Fees

The reasonableness of technical know-how fees should be examined and the contract terms with the consultants / supplies of know-how should be scrutinized. Besides the main fees, the expenses for visiting technicians should be provided for based on the agreement entered into between the company and the consultant/supplier of know-how.

Miscellaneous Fixed Assets

This would normally include furniture, office equipment, tools, vehicles, equipment for distribution of water, steam, power and lighting, laboratory and workshop equipment, effluent disposal plant, firefighting equipment, etc. It is necessary to ensure that all necessary items are reckoned in the cost estimation.

Preliminary & Preoperative Expenses

In the case of new concerns, preliminary expenses incurred by the promoters in connection with incorporation/formation of the concern and other related legal expenses may be reckoned in the cost estimates. The concern would need to incur certain essential expenses during the implementation period, viz, capital issue expenses, expenses for raising equity, finance charges on borrowings during construction period, establishment expenses, guarantee commission, commitment charges/front-end fees, startup expenses, security deposit with Electricity Boards for power connection, margin for bank guarantee, where applicable, under the Export Promotion Capital Goods scheme, etc. Proper estimation and provision for such expenses should be ensured.

Contingencies

This is intended to provide for unforeseen expenses over and above the project cost estimates due to additions or increase in duties, taxes, transportation charges, minor project scope / design changes etc. While there can be no hard and fast rule regarding the quantum to be provided, normally it should be 5% of the firm costs and 10% of the non-firm costs. The extent of provision will vary from project to project.

A comparative study of the aggregate cost becomes essential in comparison to similar projects appraised by the institutions.

Government Perspective:

Appraisal of commercial viability

Commercial viability of the project is crucial to attract private investments and it will determine project biddability and bankability as well as long-term success. To ensure if the revenues earned from the project are adequate to cover capital costs and operations and maintenance costs.

Appraisal of the commercial viability is necessary to determine whether the project has stable revenue streams to generate reasonable returns. While the return may not be a super profit, it may also not be too meagre so as to cause disinterest for the private sector.

Additional points as applicable are as under :-

Question	Comments/Clarifications
What is the break-up of Total Project Cost (TPC)?	To ensure that TPC is calculated correctly and includes all major components of costs such as interest during construction, financing cost, contingencies costs (if any). It also helps in deciding the technical and financial capacity and Bid/Performance security with reference to the TPC
Whether phasing of capex considers inflation calculations?	Since capex is phased over the construction period, it may be indexed to consider inflation.
Whether the project has clear identifiable revenue streams?	Revenues accruing from the project may be clearly identified and defined in the concession agreement. The party to whom the revenue will accrue may also be defined.
Will the project have pre-determined user charges/tariffs?	To understand if the user charges or tariffs to be collected by the concessionaire are pre-determined by the authority with the escalation rate and specified in the concession agreement.
Who will fix the tariff/user charges? Whether escalation rate has been specified?	To understand that in absence of pre-determined user charges or tariffs, who will fix the tariff/user charge? From time to time, will it be decided by the PSA or by regulator or left to the concessionaire.
What is the debt-equity ratio used in the financial model? If it is different from the standard 70.30, what are the reasons?	Proposed Debt-equity ratio of the project to be specified- Variations if any from the generally accepted ratio of 70:30 needs to be duly explained and justified.
What is the basis of the rate of interest used?	For example, whether SBI MCLR rate has been used or any other rate.
Is the Project IRR (PIRR) greater than WACC?	The PIRR may be greater than the Weighted Average Cost of Capital (WACC) in order to cover the cost of capital.

Is the Equity IRR >= 15%? If not then whether a lower EIRR is justified for the sector	To understand the viability of the project and ensuring bidder's interest.
Whether the NPV of Project Cash flow and eqity Cash flow has been calculated at the Starting point of the construction period and the rate of discounting adopted is reasonable?	Since cash flows start from the beginning of the construction period, it is important to calculate the NPV from the starting point. Ideally, the NPV for Project Cash flow and Equity Cash flow may be calculated using WACC as the discount rate.
Whether economic life, depreciated life of the asset and concession period is same or different?	To understand whether the economic life of the asset is co-terminus with the concession period or will there be a need of mid-term major upgradation. In case of mid- term major upgradation, the costs and responsibility may clearly be identified and fixed.

It is important to ensure adequate return on investment for the private partner. It is important to ensure that the PIRR/EIRR of the project is good enough to attract private participation in the context of risk of the project. In case it is not up to the desired level, support provisions can be made to enhance it. A lower PIRR/EIRR could result in lower bid response/less private sector interest. PIRR/EIRR lower than WACC will result into negative NPV of project cash flows and will make the project unviable.

Economic Appraisal

As already studied earlier , to recapitulate, an infrastructure project is not only providing infra services and direct benefits for that sector, but it is also promoting and pushing various other economic activities. Many a times, the infrastructure projects investment doesn't bring the sector specific benefits commensurate with the investment. Therefore, the economic appraisal tries to see whether the project is cost-benefit justified, and represents the least-cost approach to delivering the expected benefits? The economic appraisal evaluates the project's effect in terms of overall economic gain that investment is bringing.

The objective is to ensure that infra and PPP projects are cost-benefit justified by delivering overall economic benefits vis a vis the costs. In case a project is commercially unviable but provides substantial economic benefits in the form of services, employment, time savings, reduction in accidents, positive impact on environment, economic development, social development, enhancing ease of living, ease of doing business, etc. The project should maximize returns to the economy and justify the use of scarce resources like capital, management and labor, material inputs, utilities, etc. Economic appraisal is more required if the project itself is commercially unviable.

Question	Comments/Clarifications
What is the economic IRR?	To assess if the project is economically desirable even if commercially unviable.
In case of project being commercially unviable but economically viable then whether viability of the project can be enhanced by various support mechanism like VGF, non-farebox revenues, minimum revenue guarantee, revenue shortfall loan, etc.?	If project is commercially unviable but economically viable, commercial viability of the project may be enhanced by providing additional support.
Does the project need funding assistance from the Government?	Generally, VGF may be the last sweetener after exhausting other possible supports.
Whether Value for Money (VFM) Analysis has been carried out?	VFM analysis is intended to analyze whether it is better to undertake an infrastructure project under the PPP mode than traditional public procurement
Whether Public Sector Comparator(PSC) analysis has been carried out?	The PSC is a tool to evaluate VFM. It estimates the hypothetical risk-adjusted cost if a project were to be financed, implemented, and operated by the public sector with the cost of the project if financed, implemented, and operated by private sector.

It may be noted that every project may not require the calculation of EIRR. If the project is commercially viable without requirement for grant/financial support, then economic appraisal may not be required.

The economic analysis strengthens the case for taking up the infrastructure project itself and ensure that the decision to take up a project aligns with the broader economic development objectives. Even if such a project is not commercially viable, then government could look at options to make it viable.

Appraisal of Fiscal viability

Appraisal of the Fiscal viability broadly assesses the ability of a project to generate sufficient cash flows to financially sustain the project over the concession period and meet all the debt obligations in time.

The objective is to ensure liquidity of the project during its lifetime and sanctity of financial modelling. It helps track the cash flow and make informed and strategic decisions regarding paying off debt. To ensure that the operating cash flow can cover the annual interest and principal obligations. To have this clarity, all the probable revenues and costs of the project should be analyzed and estimated.

Question	Comments/Clarifications
Whether financial model including Cash flow Statement, Balance Sheet and Profit & Loss Account have been prepared for the entire concession period?	This question is posed to understand the financial assumptions, ensure all investments, costs, revenue sources, as well as analytical parameters such as cost of loans, cost of equity, taxes, depreciation, IRR, NPV are accurately derived.
Is the DSCR greater than 1? Has a provision for Debt Service Reserve Account (DSRA) been made.	If DSCR is less than 1, then the debt obligations may not be met and debt servicing will not be done in time. The DSRA is a safety valve/measure that gives the borrower time to deal with a lack of cash flow available to service debt and prevents them from defaulting.
What is the Debt Repayment Schedule?	To ensure that the concessionaire repays the debt well before the end of the concession period.

To ensure that the project is generating sufficient income to meet its debt obligations on a periodical basis well as over the concession period and that there is no mismatch in the cash inflow and outflow since it may adversely impact project viability and may lead to bankruptcy of the concessionaire.

Risk & Reward Balance

Bid process documents including Request for Proposal and Draft Concession Agreement (DCA) need appraisal to ensure:

Clear demarcation of roles and responsibilities of both the parties;

Unambiguity in bid parameter and bid evaluation criteria;

Clearly spelt out revenue sources and revenue sharing mechanism (if any);

Clearly defined Conditions Precedent clauses to define all significant points that need to be dealt with prior to declaration of Appointed Date;

Conditions for ensuring timely approvals and clearances;

Quantifiable Key Performance Indicators and Realistic Penalty structure;

Clearly defined events of default and termination payments;

Mutually agreed upon time lines and payment mechanism;

A robust mechanism for dispute resolution;

Well defined liability and indemnity clauses to provide for management of risk of losses.

Source: Reference Guide for PPP Project Appraisal-MOF-GOI

The financial ratios above have been discussed taking into account the Government perspective. A detailed discussion on key performance indicators, including the financial rations from the Bankers/financial institutions point of view is taken up in the next chapter.

Appraisal of RFQ/RFP

Appraisal of the RFQ/RFP seeks to ensure a well-structured RFP which provides bidders with clarity on the requirements of the project and satisfies them that the public partner is credible and well organized. It also reduces the likelihood of delays to the bidding process because of subsequent changes to the RFP.

The objective is to achieve standardization and discipline in the bid process. It is to encourage use of Model RFP for standardization of bidding terms. All risks elements are identified, and appropriate clauses are incorporated to balance the risk. To ensure there is a balance between widening bidder universe and serious bidders having wherewithal to execute the project

Question	Comments/Clarifications
Whether there is a Model RFP or RFQ for the sector and the same is being used for this project?	To encourage standardization and discipline. This would increase biddability of the projects by boosting investor confidence regarding application of time-tested terms and conditions of the bid.
Is short-listing to be done in single stage or two stages ?	To ensure that the PSA understands the rationale behind using a single-stage or two-stage bidding process.
Whether the technical capacity criteria and financial capacity criteria are restrictive to limit participation and competition?	To ensure that the technical and financial capacity criteria are prescribed keeping in mind the requirements of the project. The criteria are of nature to ensure greater participation and at the same time ensure involvement of serious players.
Whether any O&M specifications/ qualifications are provided? Whether such O&M obligations are necessarily required in-house or can be procured from market by means of contract by the bidders?	If the project has O&M requirements, then the specifications/qualifications/criteria for the O&M player may be clearly provided in the RFP. Whether such O&M condition must be met at the time of bidding or procured later needs to be specified.
Whether the bid process is to be carried out on an online procurement portal or in a physical mode? If online procurement portal is available, then rationale for selecting of physical mode of bid process (if proposed) may be informed.	The idea is to encourage online procurement methodology as it ensures transparency and wider project publicity. However, for cogent reasons, the authority may go in for an offline procurement methodology.
Whether there is a clear unambiguous bid parameter?	To ensure that the selected bid parameter takes into account the project contours without unnecessarily burdening the PSA or private partner with additional compliances.

Whether the Bid Security is as per the applicable government guidelines?	To ensure that the bidder is not burdened with higher bid security demand.
Whether the bid process is to be carried out on an online procurement portal or in a physical mode? If online procurement the RFP. portal is available, then rationale for selecting of physical mode of bid process (if proposed) may be informed.	To ensure clarity of project requirements to the bidder and save the projects from going through multiple amendments in the RFP.

Question	Comments/Clarifications
Whether the mode of project implementation is in sync with the Project Implementation Mode Selection Framework? State reasons for any deviation.	To ensure that the optimal project implementation mode is selected.
Whether provisions for tie bid breaker are included?	To ensure that standard clauses/ provisions for PPP Concessions have been used The bid process/documents comply with certain standards and discipline.
Whether Change in consortium permissible between bid submission and appointed date?	
Whether change in ownership is permitted? What are the specific conditions?	
Whether standard clauses of Model RFP regarding conflict of interest are followed?	

Appraisal of Draft Concession Agreement

Question	Comments/Clarifications
Is the Concession Agreement based on a duly approved MCA?	To ensure sector-specific MCAs are used. This boosts investor confidence and fast tracks project execution.
Have any deviations from MCA been proposed? If yes, please provide reasons for deviations	To ensure that deviations are not without cogent reasons.
Whether the scope of work is in line with the objective of the project?	To ensure that the scope of work is aligned with the proposed project outcomes. Any mismatch would lead to non-fulfilment of the KPIs/expected outcomes and/or disputes at a later stage.
Given the project contours, who is better equipped to handle construction risks and to whom the construction risks are assigned?	The idea is to assign the mentioned risk to the party best suitable to handle it. To ensure that each party has clarity on the risk assigned and must incorporate the associated cost in the financial model.
Given the project contours, who is better equipped to handle operations risks and to whom the operations risks are assigned?	
Given the project contours, who is better equipped to handle financial risks and to whom the financial risks are assigned?	

Whether the nature of the project is as such which warrants de-scoping? If so, whether appropriate provision has been built in the concession agreement?	In case some part of the project is non-achievable or there are issues/delays in getting land/clearances for the same, then the concession agreement may provide for appropriate clauses to allow for de-scoping. This will ensure that the entire project does not get into litigation. or is delayed due to issue pertaining to some part of the project.
Whether stakeholder consultations have been conducted to understand the market feedback?	The achievement of scope of work depends upon understanding of the scope of work by the stakeholders and the market feedback regarding its achievability Thus, feedback from stakeholders/ market may be Incorporated in the project to ensure its smooth implementation and identify in advance any risk elements and adopt mitigation measures/solutions from experience in the past, if any.
Whether standard clauses for Change in scope, Change in Law, Force Majeure, Representations & Warranties, audit & certification, laws and courts for jurisdiction, substitution rights, insurance, escrow account etc., are included in the Concession Agreement? Any deviations need to be explained.	To ensure that all standard clauses/provisions for PPP Concessions have been included in the concession agreement to ensure clarity on roles and responsibilities, payment mechanisms and terms and conditions of the PPP agreement such that any disputes and time delays could be avoided.
Whether Conditions Precedent (CPs) are clearly laid down? Whether timelines have been stated for fulfilment of CPs?	It is important that the conditions to be met before the commencement of the construction work on the project in the form of CP for each party is clearly defined in the document, timeline for meeting the CP is specified and penalty/appropriate charges for non-fulfilment is specified. Since meeting all CPs result in timely commencement of construction work on the project, it is important that these conditions are unambiguous and are binding on both parties.

Question	Comments/Clarifications
Whether performance security is as per the latest government notification?	To ensure that the bidder is not burdened with higher performance security without cogent reasons.
Whether obligations of the Concessionaire and PSA are clearly defined?	To ensure that each party has clarity on the obligations that it must arrange for and procure, at its own cost and risk.
Whether all requirements for permits and rights related to the project site have been clearly laid down?	To ensure timely commencement and completion of construction works.
Whether a provision has been made for timely transfer of rights/permits to the Concessionaire?	To ensure that all rights and permits to be obtained by the PSA are transferred/provided to the Concessionaire within the stipulated timeline to avoid time and cost overruns.
Whether duties and functions of the Independent Engineer have been clearly stated in the document?	To ensure timely monitoring and supervision of the project.
Whether clauses for monitoring of construction, operation and maintenance have been clearly stated?	To ensure that the Operational Plan and Performance Standards are set out in the agreement.
Whether there are provisions for handover of project site to the PSA at the end of concession period?	To ensure that the project is trasferred back to the PSA at the end of the concession period on "as is where is basis" in accordance with the terms agreed by the two parties.
Whether tariff determination mechanism is clearly defined? Is there any regulator for determining tariff?	The mechanism for determination of tariff may be clearly defined in the concession agreement. The tariff determining body and the terms/rate of escalation (If required) may be known to both the parties before. signing the concession agreement.
Whether key performance indicators (KPIs) for the Concessionaire have been defined?	To ensure that the Concessionaire/private party meets the performance standards and is penalized/incentivized in case of shortfall/ higher achievement.
Whether termination clauses and events of default have been clearly defined?	To ensure that adequate safeguards are in place to protect the financial interest of each party in the agreement.
Whether adequate provision has been made for compensation for breach in the agreement?	The intent of the termination clause is to reassure either party of the security of their investment.
Whether adequate provision has been made for liability of defects after termination?	
Whether a dispute resolution process/mechanism has been defined/laid down in the concession agreement?	To ensure that the project runs smoothly without unresolved disputes and achieve the purpose.

To ensure that the DCA is standardized with clarity on issues related to risks. All standard clauses/ provisions for PPP Concessions have been included in the concession agreement to ensure clarity on roles and responsibilities, payment mechanisms and terms and conditions of the PPP agreement such that any disputes and time delays could be avoided. MCAs are adopted for ensuring standardization in clauses and terms. All this would boost investor confidence and fast track project execution. It is also to ensure that any deviation from the same is not without cogent reasons.

Source:-Reference Guide For PPP Projrcts

Post Appraisal Process

Based on the appraisal of the PPP project, a decision must be made by the Appraisal Committee whether to recommend the project proposal to the competent authority for approval as good to go to the market or make suggestions/recommendations to be incorporated/justification to be provided before going for bidding, or the project needs major re-designing/re-thinking. This decision must be taken by the Appraisal Committee and conveyed to the PSA. Basis the recommendations of the Appraisal Committee; the PSA needs to seek approval of the competent authority for going ahead with the project.

The above aspects have been discussed here from the perspective of the government appraisal and assessment process. The detailed discussion on key Performance indicators and other financial ratios is discussed in the chapter 8 from the Banker's/ Financial institution's perspective. The detailed discussion on various types of risks involved has been taken up in chapter 9.

Sources of Finance

The proposed means of financing of a project proposal, as regards its adequacy and availability must similarly be examined. The means of financing should conform to a financially sound capital structuring of the company. Few important sources of finance for an infrastructure project and the issues thereof are briefly set out below.

Share Capital / Promoters Contribution

It is necessary to strike a proper mix between share capital (which is essentially the risk capital - promoters' contribution) and debt. The share capital envisaged should be reasonable and a realistic assessment should be made whether the same can be mobilized in the given economic / capital market environment during the implementation period within a reasonable period of time. The right mix of share capital to debt is prudent.

The equity by the promoters is to be assessed some of the sources for illustration purpose are as follows :-

- Pure equity from promoters
- Quasi equity through structured products like sub-debt, Partly Convertible Debentures (PCD)/ NCD etc.
- Resource raising by Private Equity and strategic investors - Initial Public Offering (IPOs) etc.

Promoters' Contribution

A certain percentage of capital cost of a project should be met by the promoters to ensure that they have reasonable stake in and commitment to the project. Efforts should be made to maximize the promoters' contribution. Normally, it should be in the form of pure equity. Where for any reason, the promoters are not in a position to bring in their contribution by way of pure equity at the direction of lenders.

At the stage of initial sanction/appraisal, requisite details of source of equity/promoters' funds be obtained and analysed. The details of equity requirement for all projects proposed to be/ being undertaken by the promoter/group to be obtained and examined, irrespective of whether IIFCL is participating or not.

Equity shall mean the promoters contribution representing the paid up equity share capital of the concessionaire for meeting the equity component of the total project cost, and shall include various instruments or other similar forms of capital contribution including subordinated loans from promoters etc. Such loans shall not be repaid during the tenor of the loan facility and interest thereof if any on such loans may be accrued but shall not be payable to the promoter etc. during the tenor of the facility. The pure equity portion out of the total promoter's contribution shall be mentioned as a part of appraisal for comparison.

Internal Accruals (from existing promoter / sponsor Companies)

In case of existing concerns of the promoter / sponsor, internal accruals invariably form a part of the means of financing. While examining this source, it should be ensured that the concern's projected cash generation, based on current realization and working as also future prospects- during the period of implementation of the project, is realistic and adequate enough to meet the proposed cost of the project. It should be net of apporpriation of Profit i.e., Dividend etc.

Debt/ Term loan

This forms major component of the funding sources. Generally debt-equity ratio is at the discretion of lenders. The main sources of debt funding are Banks and other Financial Institutions at initial stage of funding of new (greenfield) projects. This part of the loan is also called senior debt. The present handbook mainly deals with the appraisal and sanction of this component of the debt.

Subsequently, after completion of the project, part of the debt may get replaced by refinance and other debt instruments like bonds, Infrastructure Investment Trusts (InvITs), etc. which we will study in later Chapters.

Sub-debt

The concept of funding by way of loans given which are subservient to the main term loan is called sub-debt. This debt is less secured and is repayable once the main/senior debt instalments are serviced over the period of loans. Normally sub debt will be granted at a higher rate of interest as this loan carries higher risk.

As mentioned earlier viability gap funding may also be provided by concerned authorities to ensure that the project is commercially viable on case-to-case basis depending upon the projected cash flows.

Mezzanine Financing

Mezzanine financing provided by specialised agencies is a hybrid of debt and equity that gives the lender the right to convert their loan to equity if the loan is not fully paid back in time. It is generally subordinated to that provided by senior lender such as banks etc. Mezzanine financing is usually unsecured and thus expensive, still it is treated like equity making it easier to obtain standard bank financing.

Debt Securitisation

Securitization is a financial transaction in which assets are pooled and securities representing interest in the pool are issued. It is a process whereby a pool of homogenous cash-flows is packaged into a single large cash flow. These packages are sold to various investors securities collateralised by the underlying assets and the associated income stream.

Securitisation of a portfolio of say power project related loans could be carried out which will enable the financing Bank to raise cash so it can issue more loans. For the bank, it makes capital available and gets the loans off its balance sheet, so it can issue new loans.

When the term loan is proposed to be sourced from different lenders, it should be ensured that the other lenders are properly tied up, since any gap in the means of financing will adversely affect the project.

Deferred Credit from suppliers

In case of large-scale plant and machinery, particularly imported plant and machinery, there is a scope for funding through suppliers' credit. In this respect, foreign supplier itself provides the plant and machinery on credit terms with payment of machinery to be made over a period of time say 3-5 years. This is normally available at lower rate of interest since interest rates in international market are lower compared to the Indian market. Such mechanism is prevalent in case of solar plant and machinery as also large port cargo equipment. The developer has the option to go in for the suppliers' credit for the initial period of the availability and then utilize the local credit from banks and institution in due Course.

Global Level Funding

While the primary source of debt discussed here is by way of term loan from local banks / institutions, in case of very large global level infra projects, foreign funding may be involved in multiple currencies. In such cases, due to fluctuation in exchange rate, there is an inherent financial risk which is required to be mitigated by way of hedging and derivative products. The same shall be discussed as part of an overall risk mitigation in Chapter 9.

Efficient financing of the project can help in reducing the life time cost of the infrastructure project through a mix of direct finance at the initial stage and refinance at lesser cost and better terms after completion of the project. Several alternate Avenues are now available and emerging like securitization, INVITS, IDF, credit enhancement etc. which shall be further discussed in a separate chapter. The challenges faced by institutional investors and their mitigation will also be covered in broad terms in our discussions in our subsequent chapters on Risk Management and enabling environment being created by Government through thrust on Infrastructure and Atmanirbhar Bharat Initiative.

Working Capital Funding/Term finance for Construction Contractors

As we have studied above, the construction contractor firms form an integral part of the infrastructure creation process. In most of the cases, (particularly, the road sector), the EPC contractors and the developer SPVs are belonging to the same group. In such cases, the EPC contractors are given the responsibility of ensuring the timely completion of the project. Relevant points of their inter-se relationship have been covered in our previous Chapters. Here we will broadly discuss certain aspects relating to the funding of the construction contractor business itself, since, availability of adequate liquidity / timely financing to the EPC contractors is equally important from point of view of timely completion of the project within the envisaged cost.

Working Capital Finance

The EPC contractors generally require more non fund based facilities in the shape of bank guarantees and small portion by way of cash credit facility (against stocks and receivables). Primarily, the following types of non-fund based guarantee facilities are required by the construction contractors:

Types of Bank Guarantees

1. Financial Guarantees
2. Performance Guarantees
3. Deferred Payment Guarantees
4. Advance Payments Guarantees
5. Bid Bond Guarantee (tender bid Bonds).

Bank guarantees (BG) comprise both Performance Guarantees (PG) and Financial Guarantees (FG) and are structured according to the terms of agreement viz margin, security, maturity, and purpose. Banks confine themselves to the issuance of FG/PG and exercise due caution with regard to this business. Bank guarantees normally extend upto 10 years. Banks may issue guarantees (BGS) for periods beyond 10 years taking into account the impact of very long duration guarantees.

By issuing guarantees, bank act as intermediaries between the buyer and the seller, the provider and the recipient of services, the contractor and the beneficiary of the contract. Bank Guarantees are non-funded exposures, which are gaining greater importance in Banking.

Appraisal

Like any other credit decision, the issuance of guarantees also involves an associated risk. Guarantees contain inherent uncertainties as the Bank issuing a guarantee undertakes the obligation to meet the liability in the event of default by its constituent, the guarantee then, in effect, becomes and advance i.e., a funded liability and till then it is booked as a contingent liability. Even though guarantees are, non-fund business, but need to be treated as any other credit exposure, and the pros and cons pragmatically appraised in detail.

The salient features of the bank guarantee business especially in the context of EPC contractors are discussed hereunder:

Guarantees are issued by the bank, inter-alia, for the following purpose:

I. In lieu of security deposit/Earnest Money Deposits (EMD) of participating in tenders. As discussed in previous chapters, the SPV / developer / EPC contractor / promoter needs to initially bid in the tendering process for taking of any project for infrastructure development and at that stage the bid bond guarantee may be required for participating in the tender.

II. Mobilization advance/advance money before commencement of Project by the contractor and for money to be received in various stages like plan layout, design/drawings in Project Finance. This guarantee is required for obtaining the advance payment and corresponding to the work completed, the guarantee against the work to be done stands reduced.

III. In respect of raw material to be supplied and for Advance amounts to the sellers by the buyers.

IV. In respect of due performance specific contracts by the borrowers and for obtaining full payment of the bills.

V. Performance guarantee for the warranty period on completion of contract which would enable the supplier to realize the proceeds without waiting period to be over.

VI. To allow sub-contractors to draw funds from time to time from the concerned contractors against part execution of contracts etc.

The issue of bank Guarantees is to be treated more or less as funded exposure and Banks take necessary precautions accordingly. Whenever an application for the issue of Bank Guarantee (or sanction of Bank Guarantee limit) is received, the bankers examine and satisfy by them thoroughly about the following aspects:

I. Purpose: For genuine business requirements.

II. Need for the Bank guarantee: it is related to the applicant's normal trade/business is it on an ad hoc or continuous basis. A scrutiny of partnership deed or the Memorandum and Articles of Association will reveal whether the purpose of guarantee is within the usual course of business of the applicant.

III. Nature of bank Guarantee; Financial or Performance.

IV. Amount of Bank Guarantee: Be for specific amount only. While assessing the overall limit, the amount of advance payment likely to be received during the year, the cash/funds flow position also be looked into, to ascertain if the applicant will be in a position to meet the commitments on due dates or in case of invocation of guarantee.

V. Applicant's financial strength /capacity (through an analysis of his financial statements and opinion reports) to meet the liability/obligation under the Bank Guarantee in case of invocation.

VI. Past record of the applicant in respect of bank guarantee issued earlier: Was a guarantee issued on behalf of the applicant (s) invoked at any time. If so, the reasons thereof. How did the customer respond to the invocation . Did they make good the money within a reasonable time and without creating complications.

VII. Present outstanding on account of Bank Guarantee already issued.

Margins: Cash margins act as a security buffer and provide a cushion against development.

From time to time, Reserve Bank of India issues instructions / guidelines on the non-fund based limits/ guarantee facility limit exposure and the same needs to be kept in view for necessary compliance. Just like the fund-based facilities, this facility is also subjected to the single borrower exposure and group exposure limits besides the risk weights for calculation of capital adequacy.

Retention Money Guarantee Limit

One very important aspect of the guarantee facility requirement particularly for EPC contractors associated with infrastructure projects relates to the problem of retention money guarantee. In a large number of cases, the matter relating to contractual obligation has gone into arbitration because of a dispute between the Government authorities and the contractors. The matter is prolonged in most of the cases and the arbitration awards are also challenged in various court of law. To take care of the liquidity constraints being faced by the construction contractors, the government came out with a scheme for releasing of 75% of the amount under the arbitration award against bank guarantees. Challenge of the award, in most cases, defers the payment of the arbitral award pending the decision in challenge/appeal, which process then takes years to attain finality. This is seen to cause severe liquidity constraints in the construction sector as the large sums of money raised by contractors/ concessionaires for the execution of projects get blocked -stressing their balance sheets.

The foregoing then causes a ripple effect throughout the financial ecosystem, directly impacting the projects.

In cases where the ministry/department has challenged an arbitral award and, as a result, the amount of the arbitral award has not been paid, 75 per cent of the arbitral award (which may include interest

up to date of the award) shall be paid by the ministry/department to the contractor/concessionaire against a bank guarantee," as per the Government announcement in October 2021. The payment shall be made into a designated escrow account with the stipulation that the proceeds will be used first for payment of lenders' dues. Thereafter, it can be used for the completion of the project and then for the completion of other projects of the same ministry/ department as mutually agreed/ decided.

However, this provision only partly helps the contractors. Banks make their own independent assessment of the sanction of guarantee facilities since the same involve the credit risk at par with the fund based facility risk and all aspects relating to funding including the collateral security aspects need to be taken into account.

To settle contractual disputes of government and government undertakings, wherein arbitral award is under challenge in a court, a voluntary settlement scheme with standardized terms will be introduced. This will be done by offering graded settlement terms depending on pendency level of the dispute.

Fund Based Credit Facilities for Contractors

As stated above, primarily the EPC contractors require guarantee facilities of various natures discussed above. However, to meet the day to day expenditure, some portion of fund based facilities is also required by the contractors. Since in most of the cases the stock and inventory are lying at various geographical locations/ construction sites and quickly utilized towards construction, the traditional way of funding against stocks is not considered ideal and the "Cash Budget Method" of assessing working capital facilities is more suited for construction contractors. The gap between monthly expenditure and receivables needs to be identified and suitably funded to ensure smooth operations of the work.

Term Finance for Assets purchase by EPC Contractors

The construction contractors may also require funding for purchase of various equipments like road rollers, trawlers, bulldozers, cranes etc. These are typically financed by way of a medium tenure term loan, depending upon the life of each equipment, the assessment of the same shall be done on the basis of normal 25% margin, contribution by the borrowers on the purchase price of the equipment. The debt service coverage ratio (DSCR) needs to be also calculated to suitably fix the repayment schedule, just like any other project loan.

Funding of DSRA:-

Normally DSRA is not to be funded by Financial Institution or Bank by treating it as component of cost of project. It should be built up by apportioning cash flow out of revenue proceeds after COD. DSRA is a buffer for repayment of interest and instalment which Banks/FIs do not fund. Moreover, Interest During Construction (IDC) is funded as cost of project during construction period. Sometimes Banks

can also consider little longer moratorium period so as to offset this deduction towards DSRA from initial revenue, to accumulate DSRA. Since IDC is funded as project cost and adequate moratorium is given till project achieves Break Even period and reasonable DSCR is achieved, there seems no justification for funding DSRA . However, some Banks/FIs do permit DSRA as cost of project as extra safety net and consider funding it in exceptional circumstances.

CHAPTER - 8

KEY PERFORMANCE INDICATORS

KEY PERFORMANCE INDICATORS

As a part of credit appraisal, key performance indicators need to be studied in detail. Key financial ratios are examined to assess and analyse the financial strength and weakness of the project. This is done specifically in relation to the profitability, leverage, liquidity, and debt servicing capabilities of the project as also that of the promoters. Similarly non-financial ratio indicators are also relevant in relation to the overall likelihood of the success of the project.

Financial Ratios

For the calculation of the financial ratios, primarily profit and loss statement, balance sheet and cash flow/funds flow estimates are studied and examined in detail. The simple illustrative formats of these financial statements are attached in Appendix III.

In case of an infrastructure projects following ratios are usually considered but not limited to. They are:

Profitability Ratios

Profitability ratios measure the ability of a company to generate returns for its shareholders and also helps in assessing the strength to repay the debt.

i) Gross Profit Margin = Gross Profit / Net Sales or Income

This ratio measures the ability of the company to generate an acceptable surplus from business operations. It is most useful when compared to a similar computed ratio for comparable industry/ sector standard.

ii) Net Profit Margin = Net Profit / Net Sales or Income

This ratio measures the ability of the company to generate profits after tax. It is also most useful when compared to an industry/sector standard.

Loan Coverage Tests

Three financial ratios are widely used to measure a project's ability to service its debt:

Interest coverage ratio

$$\text{Interest coverage} = \frac{\text{PBT} + \text{Depreciation} + \text{Interest}}{\text{Interest}}$$

It measures the project's ability to cover interest charges. Interest charges represent interest that must be paid in cash, whether or not it is capitalized for accounting purposes. An interest coverage ratio below 1.00 would indicate that a project cannot cover its interest charges fully out of operating income.

Fixed charge coverage ratio

The *fixed charge coverage ratio* takes into account these other fixed charges like lease payments, etc.

$$\text{Fixed charge coverage} = \frac{(\text{EBIT} + \text{Other Fixed Charges})}{(\text{Interest} + \text{Other Fixed charges})}$$

Debt service coverage ratio

The *debt service coverage ratio* accounts for all debt service payment obligations:

$$\text{Debt service coverage} = \frac{\text{PAT} + \text{Interest} + \text{Depreciation and other non - cash expenses}}{\text{Interest} + \text{Principal Repayments}}$$

Where EBITDA denotes earnings before interest, taxes, depreciation, and amortization. The debt service coverage ratio is interpreted similarly to the other two coverage measures. It is the most comprehensive measure of the three. When debt service coverage falls below 1.00, the project cannot fully service its debt out of projected cash flow and will have to borrow funds or seek equity contributions to obtain funds to cover the shortfall.

The debt service coverage ratio is particularly useful in designing the amortization schedule for project debt. For example, requiring the debt service coverage ratio never to fall below, say, 1.00would indicate how much cash flow would be available after making required interest (and rental) payments to pay down principal.

Both minimum and average DSCR (according to the total repayment period) are to be calculated. Minimum DSCR each year should not be below 1:1.

Average DSCR benchmark traditionally for project finance was considered to be 2:1. However, in infrastructure finance we have typically capital-intensive long tenure projects and average DSCR of 1.5:1 is also considered acceptable. In case of less risky projects where annuity payments are assured from concession authorities DSCR up to 1.25 may also be accepted on case-to-case basis.

Cash Flow available for debt service

$$\frac{\text{Cash Flow from Operations}}{\text{Interest} + \text{Principal Repayments}}$$

This ratio indicates the project's ability to cover debt obligations along with interest charges. It equals cash flow from operations available to pay interest and debt repayment, divided by interest charges along with principal repayments. The method for calculation along with the interpretation of the ratio is similar to that of debt service coverage ratio.

Rate of Return Ratios

Here we measure the surplus generated in relation to the funds /assets deployed in the project.

i) Return on Net Worth = Net Profit / (Common Stockholder's Equity + Reserves and Surplus)

This ratio measures the after-tax return on investment to the equity capital providers of the company.

ii) Return on Capital Employed = (Operating Profit + Non-operational income + interest + lease rentals) / (Net fixed assets + lease rentals payable + investments + current assets – provisions – creditors)

This ratio measures the earning capacity of the assets deployed.

Leverage / solvency and Gearing ratios

These ratios essentially indicate the promoter's induction of own funds vis-à-vis the long-term debt and total debt/outside liabilities.

Debt Equity Ratio

Debt / Equity Ratio = Long-Term Debt/Shareholders' Equity

A broader version used in project finance is long-term debt/tangible net worth. The lower the number, the more attractive the project from lenders perspective.

Total Outside Liabilities (TOL) / Tangible Net Worth (TNW)

= Total Outside Liabilities / Tangible Net Worth (Including subordinated interest free borrowings from promoters).

This ratio takes care of all external liabilities of the company whether long term or short-term including Sunday creditors. The value of denominator does not include any intangible assets.

Effective TOL to Effective TNW = Effective Total Outstanding Liabilities/Effective Total Net Worth

This ratio gauges the total credit risk of the company including fund and non-fund-based limits. Apart from the total external liabilities the numerator will also include the credit equivalent of non-fundbased limits of the account. The denominator, effective total net worth will include paid up share capital and reserves & surpluses, while investments in sister / associate concerns along-with intangible assets will be deducted.

Fixed Assets to Net Worth Ratio = Fixed Assets/ Total Net Worth

This ratio shows fixed assets compared to total equity. Generally the higher the percentage, the more vulnerable a concern becomes to unexpected hazards and business climate changes.

Asset cover: Fixed Asset Coverage Ratio (FACR)

$$FACR = \frac{\text{(Net Fixed Assets+ Capital Work in Progress)}}{\text{(Deferred Credit+TermLoan+Debentures secured by first charge + ECB + Foreign Suppliers Credit+Working Capital Term Loan+ Deferred Interest)}}$$

Activity Ratios and liquidity ratios

These ratios are more relevant from working capital management angle and liquidity angle. It shall be assessed for the parent /promotor company in relation to capacity to plough in funds for the SPV. Activity ratios, also known as efficiency ratios, provide an indication as to how efficiently the company is using its assets.

Accounts Receivable Turnover = Annual Sales / Average Accounts Receivables

Accounts receivable turnover measures the efficiency with which the company manages the collection side of the cash cycle.

Days Outstanding in Accounts Receivables = 365 / Accounts Receivable Turnover

The average number of days outstanding of credit sales measures the effectiveness of the company's credit extension and collection policies.

Inventory Turnover = Cost of Goods Sold / Average Inventory

Inventory turnover measures the efficiency with which the company manages the investment / inventory side of the cash cycle. A higher turnover indicates that the company is converting inventory into accounts receivable at a faster pace, thereby shortening the cash cycle and increasing the cash flow available for shareholder returns.

Sales to Net Working Capital= Sales / Average Net Working Capital

Sales to net working capital measure the ability of company management to drive sales with minimal net current asset employment. A higher measure indicates efficient management of the company's net working capital without sacrificing sales volume to obtain it.

Total Asset Turnover= Sales / Average Total Assets

Total asset turnover measures the ability of company management to efficiently utilize the total asset base of the company to drive sales volume.

Fixed Asset Turnover= Sales / Average Fixed Assets

Sales to fixed assets measure the ability of company management to generate sales volume from the company's fixed asset base.

Liquidity Ratios

Liquidity ratios measure a company's ability to meet short-term obligations with short-term assets. These ratios also help identifying an excess or shortfall of current assets necessary to meet operating expenses.

Current Ratio = Current Assets / Current Liabilities

The current ratio is the most commonly used liquidity ratio as it also indicates the level of net working capital available at a point of time for expansion purpose.

Quick (Acid-Test) Ratio = (Cash + Cash Equivalents + Short Term Investments + Accounts Receivables) / Current Liabilities

The quick ratio is a more conservative ratio in that it measures the company's ability to meet current obligations with only those assets that can be readily liquidated. As with the current ratio, industry norms generally serve as the base for drawing analytical conclusions.

The above-mentioned ratios may have limited applicability in case of infrastructure projects SPV itself but need to be examined for the parent company to assess its overall strength.

Contingent Liability

As part of Appraisal, details of contingent liability of borrower (of SPV) and also that of the promoter Company needs to be examined from respective Balance Sheets.

Estimating the Borrowing Capacity of a Project

The borrowing capacity of a project is defined as the amount of debt the project can fully service during the loan repayment period.

Lenders to a project typically estimate the borrowing capacity of a project by testing the ability of the project entity to meet its debt service payment obligations year by year. In a particular project, lenders are generally willing to lend an amount that does not exceed some specified fraction of the stream of cash flow expected to be available for debt service during the loan repayment period. They also establish certain coverage benchmarks that must be satisfied.

Financial Appraisal of the project – NPV and IRR calculations

Projects typically involve the purchase / acquisition of capital assets - long-lived tangible assets such as land, plant, and machinery, rights over assets, etc. When considering a proposed project that would involve investing in capital assets, the sponsors should evaluate the expected future cash flows in relation to the amount of the initial investment.

Discounted cash flow techniques are available to facilitate the evaluation process. The objective is to find projects that are worth more to the sponsors than they cost - projects that have a positive net present value (NPV). A sponsor's evaluation of a proposed project is not unlike an individual's investment decision. The steps are the same as indicated below:

1. Estimate the expected future cash flows from the project. This is like estimating the coupon payments for a bond or the dividend stream for a stock, and a maturity value or terminal sale price.
2. Assess the risk and determine a required rate of return (cost of capital) for discounting the expected future cash flows.

3. Compute the present value of the expected future cash flows.

4. Determine the cost of the project and compare it to what the project is worth. If the project is worth more than it costs, i.e. if it has a positive NPV, it is worth undertaking.

Net Present Value Analysis

The net present value (NPV) of a project is the difference between what the project costs and what it is worth. The best we can do in advance is estimate a project's NPV. We will not know its true market value, or what it is really worth, until the project is completed, and the returns are collected.

The Procedure

The NPV of a capital investment project is the present value of all the after-tax cash flows (CF) connected with the project—all its costs and revenues, present and in the future. We estimate the value of a project by using discounted cash flow (DCF) analysis and computing the present value of all the cash flows connected with ownership. This procedure is similar to discounting the interest payments on a bond or dividends on a stock, and it is the essence of the net present value method.

$$NPV = CF_0 + CF_1 / (1 + r) + CF_2 / (1 + r)^2 + \ldots + CFn /(1 + r)^n$$

Where CF_0 is cash out flow at inception

CF_1 is cash flow at end of year 1, and so on

r = cost of capital

n = Number of Years

The decision rule to follow when applying NPV is, under take the capital investment project if the NPV is positive.

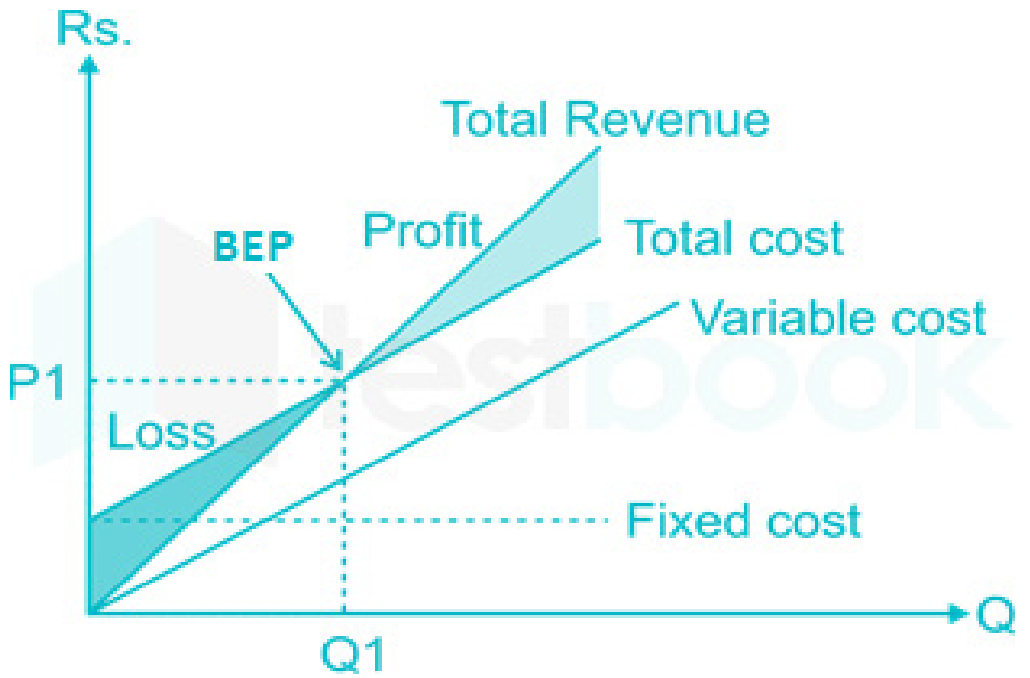
Internal Rate of Return Analysis

Another method of evaluating a proposed project is called the internal rate of return method. The internal rate of return (IRR) is the capital investment project's expected rate of return. If the weighted cost of capital (required rate of return) equals the IRR (internal rate of return), the NPV would equal zero. But because of the uncertainty connected with risky cash flows, the realized rate of return will almost surely be different from the IRR. The IRR for a project is the discount rate that makes the NPV zero. A project is viable if IRR for the project exceeds the cost of the capital.

Financial projections need to be analysed in depth are profitability estimates, cash flow estimates, and projected balance sheet. The illustrative simple formats of the above statements are given in Appendix III.

From Lenders perspective, in case of infrastructure finance, as stated above, the debt coverage ratios and debt equity ratios are more commonly useful. The NPV mechanism and IRR ratios are also calculated since they are relevant from the promoter's perspective for selection of duly viable projects.

BEP (Break Even Point)



The break-even point is relevant from the point of view of assessing the minimum capacity utilization/ Revenue generation level required to attain a "No profit-No loss situation", i.e. the project will earn profit only if the capacity utilization is more than the Breakeven point. The formula of calculation of break-even point is as under: -

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Sales Price Per Unit - Variable Cost Per Unit}}$$

Feasibility of projections/estimates in terms of Cost, Sales and Profit

Profitability estimates, projected cash flow and balance sheet should be prepared both for the specific project(s) and for the concern as a whole. The projections should cover the entire duration of the loan. These financial projections should be scrutinized with reference to cost of project, means of financing thereof and the underlying assumptions relating to schedule of implementation, capacity utilization, cost of production, administrative expenses, sales realization specific tax benefits etc. If the assumptions are unrealistic, the projections should be suitably modified. Based on the projections, various ratios such as Debt-Equity Ratio, Fixed Asset Coverage Ratio, Gross profit, Operating Profit &Net Profit Ratios, Debt Service Coverage Ratio and IRR should be worked out and analysed to ensure whether they are satisfactory and conform to norms (wherever applicable). The underlying assumptions for arriving at the projected profit ability estimates should be examined carefully to avoid overstating or understating of the position.

Non-Financial Indicators

Apart from financial ratios discussed above, non-financial indicators are also relevant from lender's perspective for example capacity utilization, vis-a-vis installed capacity needs to be examine in case of power project with the following points in mind:

Environmental, Social, and Governance (ESG)

Environmental, Social, and Governance (ESG) is an approach followed by the economists, governmental organisations, corporations, investment funds, and financial institutions to address the society's environmental, social and governance concerns and find their value drivers in asset management. The term ESG is often used interchangeably with sustainability, and green or ethical investment as the three domains of environmental, social and corporate governance are intimately linked to the concept of Responsible Investment (RI). Globally, while the Rating Agencies have start measuring the ESG compliance; the Banks, investment funds, and financial institutions have also started evaluating business proposals with ESG index.

Environmental goals include Conservation of the natural world; Ecosystem; Climate change and carbon emissions; Air and water pollution; Biodiversity; Deforestation; Energy efficiency; Waste management; Water scarcity, etc.

Social goals include Consideration of people & relationships; Customer satisfaction; Data protection and privacy; Gender and diversity; Employee engagement; Community relations; Human rights; Labour standards; Animal welfare, etc.

Governance include Standards for running a company; Ownership & control, Board composition & diversity; Audit committee structure; Bribery and corruption; Executive compensation; Transparency; Business ethics; Lobbying; Political contributions; Whistle-blower schemes, etc.

Numerous institutions, such as the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), and the Task Force on Climate-related Financial Disclosures (TCFD) are working to form standards and define materiality to facilitate incorporation of ESG into the investment process and ESG disclosures.

ESG Risks & Mitigation Measures

Global sustainability challenges such as global warming, flood risk and rising sea levels, privacy and data security, social & demographic shifts, the loss of biodiversity, water scarcity, corruption & social tensions, and regulatory pressures, are introducing new risk factors. In addition, the economic pressure caused by COVID-19 pandemic on some industries has affected their exposure to ESG risks and their ability to manage them. Therefore, not only the corporate world, but the global economies are now focussing more & more on addressing these ESG risks. India is by far no exception; though it is comparatively in a nascent stage. So far, only nine ESG-focused Funds have been launched. India's share in ESG themed investment is estimated at 7% but poised to increase to 30% by 2030, equal to over ₹ 20 lakh crore.

Further, we are aware of the imminent threats of climate change on all future lives on this planet. Hence, our dependence on fossil fuels must be given a go by to ensure environmental sustainability. That is why our Hon'ble Prime Minister made a pledge to become carbon neutral or cut its emissions to net zero by 2070. Driving Electronic Vehicles (EVs) and focussing on natural sources of energy is a step in that direction. Combating ESG with technology, the Indian tech firms are expected to drive growth in next decade. The upcoming real estate sector in India, which is expected to reach a market size of US$1 trillion by 2030, has major ESG concerns as it is responsible for a quarter of the total emissions Therefore the concept of green buildings is becoming a preferred option as these are climate-resilient, consume less energy & water, provide adequate ventilation & air quality, and ensure healthier living. Other major examples of environmental transformations taking place globally as well as in India are shift towards non-renewable energy, and electric vehicles; digital communication replacing paper; promoting use of recyclable materials [shunning use of single use plastics]; reducing pollution; and conserve biodiversity, forests & wildlife.

Business Responsibility and Sustainability Report (BRSR)

In India, with the increasing investor focus on ESG, the SEBI has changed its Business Responsibility Report (BRR) to Business Responsibility and Sustainability Report (BRSR). In this regard, SEBI's press release said

The BRSR is an initiative towards ensuring that investors have access to standardized disclosures on ESG parameters. Access to relevant and comparable information, will enable investors to identify and assess sustainability-related risks and opportunities of companies and make better investment decisions. At the same time, companies will be able to better demonstrate their sustainability objectives, position and performance resulting into long term value creation. Overall, higher standards of ESG disclosures and transparency, will help in attracting more capital and investment.

The BRSR shall be applicable to the top 1000 listed entities (by market capitalization). In order to give time to companies to adapt to the new requirements, the reporting of BRSR shall be voluntary for FY 2021 –22 and mandatory from FY 2022 –23. However, companies are encouraged to be early adopters of the BRSR, thus being at the forefront of sustainability reporting.

These aspects have been discussed in detail subsequently in a separate chapter on 'ESG and sustainable Finance'.

Capacity Utilization, Production Efficiency and Cost

In case of new unit, any sharp build-up of capacity utilization within one year may be unrealistic. While higher level of capacity utilisation during the optimum year of operation may sometimes be projected, these projections should be compared with the actual capacity utilisation being achieved in the industry/ Sector.

For an existing concern, taking up an installed capacity of plant should be assessed and finalized on the basis of section-wise capacities of the plant & machinery.

Similarly other non-financial indicator like compliance with ESG (Environment, social & Governance) norms is relevant in the current context after our commitments under the Paris accord and Glasgow agreement recently signed by our country. India has reiterated its commitment to climate action at the United Nations Climate Change Conference (COP26) in November 2021 at Glasgow. In line with this resolve, and showcasing its solidarity with the NGFS, monitoring compliance with ESG is an important requirement.

The level and standard of upkeep and maintenance of the infrastructure assets as per the stipulated norms can be also examined as one of the non-financial performance indicators.

Sensitivity Analysis

While appraising a project the critical parameters of risks shall be identified and sensitivity analysis to be done. This is to be done by calculation of aforesaid financial ratios under different scenario with variations relevant input factors e.g.

- Increase in rate of interest on borrowings by X percentage.
- Reduction in traffic by X percentage in case of road project.
- Reduction in PLF (Plant Load Factor)/CUF (Capacity Utilization Factor) in case of power projects.
- Increasing price of basic raw material coal / gas by X percentage in case of power project.

In respect of existing concerns seeking financial assistance, their past record of operational/financial performance should be examined. An analysis should be made of the financial statements viz., profit & loss account and balance sheet for the past 3 years as available (or since inception in case of less than 3-year-old concerns), of the concern read with the schedules, notes, significant accounting policies, the director's report, auditor's report, contingent liabilities etc. Abnormal variations in any item during the years of review, inter-group company transactions, investments in unrelated activities etc. to be scrutinized. Wherever possible, inter-firm comparison may be made to assess relative performance.

A detailed analysis of the projected estimates and profit with respect to the operating cycle, capacity utilization, and key cost contribution analysis need to be considered while doing the sensitivity analysis and overall appraisal. One very important factor which has now become relevant is the compliances relating to the climate change commitment and ESG (Environment Social & governance Factor), and United Nations' Sustainable Development Goals (SDGs) & sustainability code. The cost of each project may undergo change while aiming at ensuring these compliances. All these need to be factored in and the project viability should take care of all these additional costs. The uncertainties arising out of the current geo political scenario also need to be seen with respect to the linkages relating to the timely availability of machinery know how and operational support over the life span of the project. The relevant risks identified need to be mitigated which we will study in the next Chapter.

CHAPTER - 9

RISK MANAGEMENT- KEY RISKS & THEIR MITIGATION

RISK MANAGEMENT- KEY RISKS & THEIR MITIGATION

Risks are an inherent part of any commercial venture. Infrastructure projects are also prone to risks due to their very basic feature of being long term in nature and having high capital costs.

Risks are primarily in the shape of circumstances or situations, the existence or recurrence of which is likely to have an adverse impact on the implementation and operations of the project. A very significant aspect of financing of infrastructure projects relates to risk identification and its mitigation.

In the context of the Financial Sector,bankers are well versed with the Basel iii norms which provide the framework for handling various types of risks .The three pillars of Minimum Capital Requirement , Supervisory Review and Market discipline encompass various aspects of risk identification, measurement and mitigation. The Minimum capital Requirement covers ,Credit Risk , Market Risk and Operational Risk .In the context of Infrastructure Financing a similar approach is required to handle various risks involved.

Identification of Risks

Specific steps involved in the identification of risks can be broadly classified as under:

1. Search for the sources of uncertainties or unforeseen events relating to the project that can have a potential adverse impact and steps that can be undertaken to mitigate the same.
2. Classification of risks to assess the party or entity best suited to take measures for mitigation.
3. Expected impact of each risk to be classified as having a high medium or low impact.
4. Structuring of the risk based on the likelihood or probability of its occurrence.

For proper identification and analysis of each risk, all aspects of the project need to be examined in detail. The risk applicable will vary from project to project depending upon the sub-sector as also will depend upon factors like the physical development stage of the project over its life span, geographical location, the economic and political scenario, etc.

Some of the typical characteristics of infrastructure projects taken into account while identifying the risks are as under:

- Large capital costs
- Long gestation periods
- Assets are not easily transferable and may be inadequate
- Services provided are not yet fully tradable

- Revenues only in local currency, borrowings could be in foreign currency
- Vulnerability to regulatory & policy changes
- User charges are politically sensitive issues
- Social aspects like displacement of people, ecological impact, pollution etc.
- Dependence on supportive infrastructure, which may be under Government or other controls.

Keeping in view the above, the risk can be broadly categorised as under.

Construction Risk

The construction risk broadly covers factors that adversely affect the project with respect to the time frame schedule, the projected cost, and compliance of the standards specified concession agreement. This will include the risks relating to the availability of land, availability of raw material/aggregates, electricity and availability of work force etc. In case of road projects, availability of right-of-way (ROW) free from encumbrances on which the road is to be constructed is an essential and critical factor leading to major Risk.

The construction risk in turn leads to delays in completion i.e. time overrun, penalties and termination of the project by the authorities. Time over run in invariably also leads to cost overrun since the interest on borrowed funds is an ongoing expense and forms an important part of the cost of the project.

This risk essentially needs to be borne by the promoters/contractor for work to whom EPC contact has been assigned. Drafting of such contracts e.g. fixed cost fixed time contacts with suitable penalties and guarantees become relevant in this respect.

Sponsor Risk / Promotor Risk

This relates to the financial strength, experience, past conduct, and project management skills of the promotors. Promotors' commitment for capital to be infused and its capability to bring-in additional funds in case of cost overrun /time overrun and other eventualities like change in scope of the project.

Revenue Risk

The uncertainty in respect to the revenue expected to be generated from the proposed project is critical and needs to be evaluated thoroughly. Reasonability of project assumptions, project ratios like DSCR and IRR are relevant for this to be examined. The risk is far lower in case of an annuity-based project where the concessions authorities assure a stipulated payment irrespective of the number of passengers or the volume of traffic.

Similarly a well drafted PPA with a financially strong power distributor at a reasonable tariff reduces the revenue risk. General willingness of users to pay is also relevant.

From a lenders' perspective, the revenue stream generated from the operations of an infrastructure project, needs to be under the complete control of the concessionaire to be capable of being treated as a distinct and exclusive security for the lenders. This is generally done through the escrow account mechanism as discussed earlier.

Regulatory Risk/Policy Risk

This risk primarily depends on

a. The government policy applicable for an industry /sub sector during each stage of the project.

b. Relationship between the Centre and the State, availability of State Support Agreements, favourable PPP laws and presence of a PPP cell for effective monitoring and control.

Execution/Maintenance /Operations Risk

Depends upon

a. Financial closure/ tying up of funds, and flexibility of the promoters to raise additional resources.

b. The number of clearances obtained for the project and the expected hurdles in obtaining the remaining clearances if any.

c. Construction period (more the construction period, greater the risk).

d. Land acquisition - This is the single most critical factor that could delay any project.

e. Transparency in the bidding process (both tariff based and bidding process).

f. Reputation of the design consultant to have an idea of quality of the design done.

g. Technology proposed to be used for the project. Additionally, the technology risk can also be assessed by identifying the strengths/weakness/reputation of the consultant/ sponsor engaged for the design of the project.

h. Contractors' (EPC and O&M) creditworthiness (as construction involves high risk and possibility of losses to the contractors/ slippage from commitments etc.) and its experience in the projects of similar nature.

i. Safeguards in the contracts available for the lenders.

j. The reputation, capability, past track record and credibility of the O&M contractor.

k. Operating efficiency – various factors like efficiency in toll collections in roads; plant load factors, fuel risk etc. for power sector; Pricing ability impacting aeronautical revenue for Airports; and labour productivity, average ship turnaround, berth throughput etc. for ports etc.

l. External risk - Presence of any competitive/ alternate routes/ ports etc. In case of roads, the feeder roads or connection roads that may have to be linked to the project road so as to enable commercial operation of the road forms a key external risk to the project. This risk can be mitigated if the control over construction of such roads is with the project sponsors.

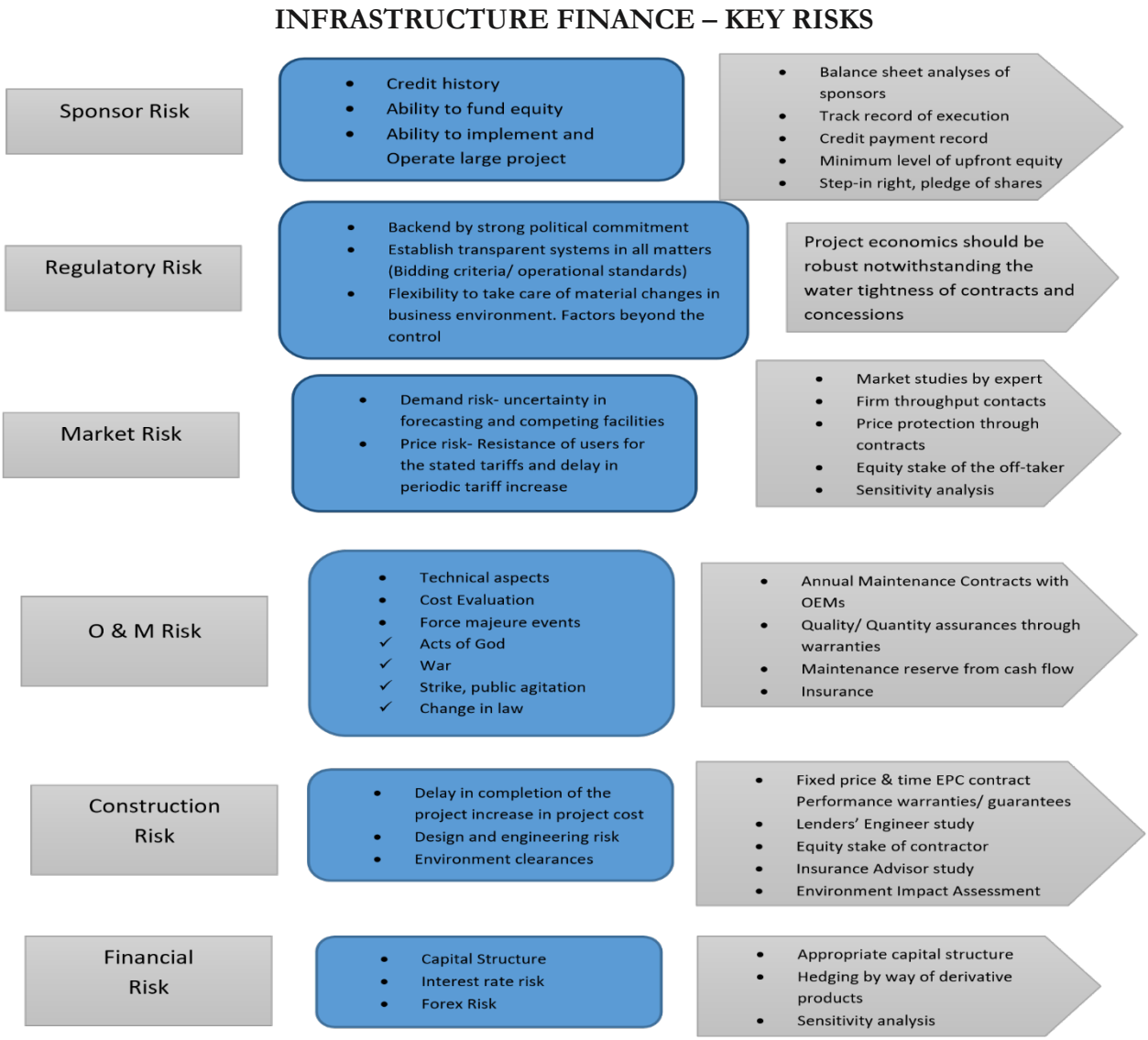
Force majeure

These risks are regarding events that are outside the control of any party and cannot be reasonably prevented by the concerned party. These risks are primarily due to extraneous causes and a clause relating to this is incorporated in most of the contracts and project documents. They inter alia in clued natural force majeure events like floods, earthquake, direct political force majeure events, indirect force majeure events, etc.

Design Risk/Technology Risk

Any defect in design of the infrastructure facility or design parameter requirements stipulated in project may arise.

Risks with regard to new or unproven technology need to be taken care of. The role of independent engineers/ consultants etc. becomes relevant here. For example, in case of a solar power project, the solar irradiation level and anticipated deterioration of photovoltaic module needs to be seen.



Risk Management/Risk Mitigation

Risk management primarily implies minimising of the possible loss due to undertainties associated. It consists of combination of lost control or loss prevention and mitigation of loss through its funding by way of insurance etc.

Loss prevention mechanism and techniques aim at formulating structures for reducing the frequency of loss or the severity of loss. In infrastructure projects, risk transfer tools are more relevant. These mainly relates to partial transfer of risk to various other parties involved in the implementation of the project. This is done through entering into various contracts and agreements which assign or transfer responsibilities to other parties and stakeholders on given terms and conditions. A project developer/ promoter will for example try to shift part of the construction risk to the main EPC contractor, who in turn will aim at transferring the same partly on to the sub contactors through entering into suitable agreements.

On the other hand, insurance is the mechanism that enables the management of risk by reducing the expected exposure to a loss from the occurrence of said event e.g. fire earthquake etc. A premium however needs to be paid to the insurance company (which leads to increase in cost) according to the nature and quantum of risk.

The steps taken for risk mitigation shall accordingly vary from project to project depending on the inherent attributes of the sub-sector and specific terms of the concession agreement, PPA, FSA etc. For this proper risk matrix needs to be arrived at with proper risk identification allocation and mitigation clearly delineated. We give below by way of illustration the likely risks and their possible mitigating steps for major sectors, taking into account the specific intricacies of the respective sectors

Project Credit Risk Mitigants

1. Technical Warranties/ Guarantees
2. Performance Guarantees
3. Fixed Price Lump Sum Contract
4. Sales Warranties
5. Off-Take Agreements
6. Cost over-run Mitigation Measures
7. Insurance
8. Hedging
9. Government /State support Agreement
10. Disbursement and monitoring
11. DSRA
12. Seek Recourse
13. First Charge
14. Cross Collateralization and Cross Default Clauses

Financial Covenants

The mitigation steps as mentioned above are stipulated as a part of terms& conditions of the sanction of the project term loan, as we will examine below and in the individual case studies and in the Chapter on documentation.

Important Parameters to be kept in view while stipulating the mitigation steps are indicated in succeeding paras.

Promoters Assessment

- Experience of the promoters/sponsors in the field, resourcefulness and capability to arrange finance, implement and run power plant of this magnitude etc.

Technical Assessment

- Process details including special features, operational advantage of the plant, etc.
- Balancing of sectional capacities to achieve overall installed capacity.
- Background of EPC contractor / consortium of EPC contractors, their financial strength, banker's evaluation, rating from credit agency, etc. Details of similar assignments handled in the past and performance certificate from the users.
- Terms of EPC including penalty clause in respect of delay in implementation/ lower performance, performance guarantee, etc.
- Sources of supply of the major plant & machinery, assessment of their past performance, performance guarantee, terms of supply, etc.
- Background of operation and maintenance (O&M) contractor, details of similar contracts executed by them and the performance report for evaluation of the O&M contractor, terms of the contract, including bonus/ penalty clause.
- Details of the power purchase (PP) agreement covering capacity charge, variable charge, security package, letter of credit, Escrow Account, State Govt. Guarantee, implementation schedule, Force Majeure clause, etc. entered into with the State Electricity Board (SEB).
- Arrangement in respect of evacuation of power, terms including deemed generation and other penalty clauses, right to terminate PPA etc.
- Scope of work, period, fee to be paid, etc. to owners / Lenders engineers.
- Railway siding existing / proposed transport facilities and other infrastructure facilities.

Input of Production

i. Fuel Supply Agreement (FSA), with the supplier including LDs for non-supply of fuel. Fuel Transportation Agreement (FTA), approval of fuel allocation by Govt. terms and condition of supply, modes of transportation of fuel, cost of fuel etc.

ii. Tie-up in respect of other utilities like start-up power, water, etc.

Salient features of PPA/ CA/ EPC/ O&M etc. to be incorporated in appraisal, as applicable on case to case basis

Power Projects:

Type of Risk	Allocated to	Mitigation Measures
Pre-Construction delay risk		
Finalization of key contracts	Project Company	Signing of all key contracts made a condition precedent.
Approvals and permits	Project Company/ Contractor / EPC Promoters	Obtaining all approvals and clearances to be made a condition precedent.
Construction Risk		
Land Availability / ROW	Project Company	Signing of land lease agreement to be made a pre commitment condition.
Cost overrun	Project Company/ Contractor / EPC Promoters	Fixed Price Turnkey contracts on a completed cost basis, risk on non EPC cost to be borne by Project Co / Promoters.
Time overrun	Project Company/ Contractor / EPC Promoters	Liquidated damages for non-completion for EPC contracts.
Delay in transmission agreements	Project Company / Off-taker	Entering into suitable contract made as pre-disbursement condition.
Damage / Construction	Project Company / EPC Contractor / Insurance Company	Commercial insurance coverage sought for all associated risks.
Operational Risk		
Equipment underperformance	EPC Contractor / Equipment Supplier / Project Company	Reputed EPC Contractor, equipment vendor, experienced power plant sponsor.
Environmental requirements	EPC Contractor / Equipment Supplier / Project Company	Clearance from MOEF required.
Fuel Supply Risk	Fuel Supplier / Project Company	Fuel Supply Agreement for committed supply of fuel, liquidated damage in case of short supply of fuel.

Fuel Price Risk	Fuel Supplier / Project Company	Fuel Supply Agreement for longer tenor with renewal option. Price fixed during initial agreement period with provision for price increase linked to reputed price benchmark. In case of imported fuel, proper arrangement to cover currency exchange risk.
Fuel Transportation risk	Fuel Supplier / transporter / Project Company	Fuel Transportation agreement with pre-determined freight rate with provisions for periodical increases. In case of imported fuel, arrangement for port facility should be tied up.
Evacuation Risk	Off taker	Payment of deemed generation charges by the off taker in case it is unable to evacuate power.
Payment risk	Power Off taker / Project Company	Credit enhancement mechanism like Letter of Credit (LC), Escrow etc.
Force Majeure Risk	EPC Contractor / Project Company / Insurer	Covered by suitable insurance arrangements.
Equity infusion risk	Promoters	Higher upfront equity infusion by the promoters before debt draw down. Tie up of entire equity required for the project and set time frame for bringing the same. Balance to be brought in proportion to the debt drawdown.
Termination risk	Promoters / Project Company	The project will be bought out by other promoters at a buyout price covering outstanding dues of existing lenders.

Road Projects:

Risk Factor	**Responsibility**	**Mitigation**
Project Development Phase		
Land acquisition	Licensor	Land to be in possession. If any balance land remains to be acquired, follow-up with NHAI and remedial steps of action to be taken.
Project Construction Phase		
Project completion risk	Promoters, Company & EPC Contractor	Good track record of EPC Contractor, transparent bidding process. Fixed-time contract with adequate Liquidated Damages and Fixed price with cap on the escalation.

Cost increase risk	Project Company / Promoters	Construction and O&M contract on a fixed price basis and with limited escalation clause. Adequate contingency provision and insurance cost for unforeseen circumstances to be built into the project. Strict monitoring by the project company through appointment of independent Engineer.
Inflation risk	Project Company	EPC Contract to be fixed price and provide sufficient contingency.
Operation Phase		
Price risk	Project Company/ Licensor	Toll rates should be linked to inflation as per Concession Agreement.
Shortfall in Traffic	Project Company/ Licensor	Traffic studies done by reputed traffic consultants for Bank/ NHAI/Company. A cushion of 4-5 years (gap between ending of repayment period and concession period) is desirable. Otherwise credit enhancements need to be put in place. Credit enhancements in the form of DSRA etc may be explored.
Leakage of toll revenue	Licensor	Licensor (generally the govt.) to provide legal support to penalize the non-payers. Existing alternative routes and possibilities for traffic diversion need to be investigated before sanction.
O& M risk	Project company	O&M cost to be frozen.
Force Majeure risk	Project Company / Insurer	Comprehensive insurance coverage Provision in Concession Agreement to increase the concession period equal to the period of the event.

Accordingly, the vital aspects considered during appraisal are the various risks involved in financing of the project, promoter's capability, assumptions based on which the financials of the project SPV are estimated, the external rating risk perspective, adherence to exposure limits, and other factors such as:

- Sponsor's integrity/ reputation, financial strength, experience and execution capabilities;
- Current risk profile and its sensitivity to changes in environment;
- Track record of the sponsor for debt servicing with financial institutions / banks;
- Cash flow projections for capacity to repay;
- Legal capacity to assume the liability; adequacy and enforceability of the tangible securities/ guarantees under various scenarios;
- Regulatory risk and approvals/ compliances; and
- Terms and conditions proposed to take care of the future risk profile.

While the risk assessment and mitigation aspects from the banker/financial institution point of view have been discussed above, a similar analysis taking into account the Government perspective is discussed below:-

Type of Risks in PPP Contracts

Type of Risks and Its Preferred Allocation

Risk Type	Sensitivity to project success	Period of the concession during which the risk may precipitate	Preferred Risk Allocation
A. Pre-operative Task Risks			
Delays in land acquisition	High	0-5 years	Public Sector
External linkages	Low	0-5 years	Public Sector
Financing risks	Medium	0-5 years	Private Sector
Preferred Risk Allocation	High	0-5 years	Public Sector
B. Construction Phase Risks			
Design Risk	Medium	0-5 years	Private Sector
Construction Risk	Medium	0-5 years	Private Sector
Subsequent Approvals	Low	0-5 years	Shared
C. Operations Phase Risk			
Technology Risk	Low	Throughout	Private Sector
Operation & Maintenance Risk	Medium	Throughout	Private Sector
D. Handover Risk Events			
Handover Risk/ Terminal Value Risk	Medium	Penultimate 3 years	Private Sector
E. Other Risks			
Change in Law	Low	Throughout	Public Sector
Force Majeure	High	Throughout	Shared
Payout to Concessionaire for Concessionaire Event of Default	Medium	Throughout	Private Sector
Payout to Concessionaire for PSA 's Event of Default	Medium	Throughout	Public Sector

Major Risks assessed for classification of PPP models

A wide spectrum of PPP models have emerged over the years. However, the underlying connotation of each PPP model is the type and extent of major risk borne by the either party. Basis the devolvement and the degree of the major risks, various PPP models can be broadly categorized. It may be understood that though there are myriad risks in PPPs, the classification of PPP modes is suggested here basis varying degrees of the following major risks identified as the 'Four Cardinal Risks':

- Ownership Risk-risks associated with the Ownership of asset;
- Finance Risk - risks associated with the ability of the project to provide reasonable return on its investment (equity and debt). This covers both, ability to raise inexpensive project finance and earn revenues sufficient service debt and provide return on equity;
- Design/Construction Risk - risk associated with the design meeting the KPIs and risk of time and cost overrun during construction phase;
- Operation Risk - risk associated with the operation and maintenance of the asset during the concession period so that KPIs are met.

The other risks are an offshoot/variation of these basic Cardinal Risks. Basis the above 'Four Cardinal Risks' the PPP models can be classified into the following Three broad categories in order of increasing involvement and assumption of risks by the private sector vis-à-vis the PSA.

The table below shows various structures of PPP Process with allied risks/responsibilities :-

Type	Sub Type	Main Activity	Owner-ship Risk	Design/ Construc-tion risk	Finance risk	Operation risk	Indicative Concession period (years)
Limited Private Participa-tion	Service Contract	Performing specific work assigned	Public	Public	Public	Private	Few months to few years
	O&M Contracts	Operation and Maintenance	Public	Public	Public	Private	3-5
	Lease	Operation and Maintenance	Public	Public	Shared	Private	5-15
Integrated Project Develop-ment and Operation Opportun-ities	BOT-Annuity	Build, Operate and Transfer	Public	Private	Public	Private	15-20
	BOT-HAM		Public	Private	Public	Private	15-20

Partnership Project Development and Investment Opportunities	OMDA	O&M plus Develop-ment/ Expansion	Public	Shared	Shared	Private	30-50
	DBFOT	Design, Build, Finance Operate and Transfer	Public	Private	Private	Private	30-45
	DBFOO	Design, Build, Finance Operate and Own	Private	Private	Private	Private	30-45

Risk Matrix for PPP projects

Category of risk	Description and likely effect	Mitigation measures by Partner to who the risk allocated	Preferred Allocation
Develop-ment risk	Insufficient preparatory tasks and project planning leading to delays in procurement and financial close	– Good feasibility study (that includes comprehensive analysis of risks, possible effects and how to address them as well as de-risking to the extent possible) – Institutional due diligence – Competent transaction advisor	PSA
Sponsor risk	Insufficient Financial capacity to fulfill its financial commitment to the Project	– Credit references and rating – Minimum level of equity stake – Bank guarantee and undertaking – Bid bond from banker(s) – Track record – Financial statement analysis – Ensure adequacy of finance under loan facilities – Use of non-financial evaluation criteria and due diligence on private parties	PSA
Cost overrun risk	During the design and/or construction phase, the actual project costs exceed the estimated cost	– xed price and fixed time EPC contract – Review by lender's engineer – Contingency provisions; standby debt facilities/additional equity commitments (commitments are needed upfront) – Equity stake of EPC contractor	Concessionaire

Time overrun Risk	Takes longer time complete the project	– ensuring minimum technical competence and experience of Concessionaire or its EPC contractors and – subcontractors – Retainage, completion bond penalty regime	Concessionaire
Input supply risk	Raw materials and inputs not supplied in time or of less in quantity or of low quality, price escalation of inputs	– Establish clear unambiguous – Adage KPIs Contractual framework – (provisions for liquidated damages) – Secured supply source Relief may be considered if failure or shortage not attributable to any private party	Concessionaire

Category of risk	Description and likely effect	Mitigation measures by Partner to whom the risk is allocated	Preferred Allocation
Operating risk	Factors negatively impacting operations and available capacity such as, unreliable/ untested technology; increased cost of operation, lower capacity; nature and cost O & M; inefficient operation	– Proven technology, technology transfer – Clear output specification – Independent/lender's engineer report – Guarantee by technology provider, EPC contractor – O & M contract – Sinking fund, maintenance reserve – Maintenance bond – Contractual framework (penalty regime) – Substitution right	Concessionaire
Demand/ revenue risk	Insufficient demand and/or revenue (due to low demand, leakage, competing facilities, capacity, price setting, augmentation)	– Realistic demand studies, sensitivity analysis – Regular monitoring – Contractual framework for specific relief (alteration in concession period/revenue shortfall loan, etc.) – Automatic linked Price indexation – ong term off take contracts	Shared

Change in tax rates	Changes in tax law or policy that have negative effect on the private party, its assets, or the project	– Sensitivity analysis to test the robustness of financial return – Compensation clause if such effects are discriminatory/ unforeseeable	Concessionaire for foreseeable and non-discriminatory changes, otherwise PSA
Force Majeure Natural Events	Flood, Earthquakes, cyclone etc; closure of operation and assets and project	– Robustness of cash flow – Provisions of reserves – Contractual provisions to with stand effect of such periods – Relief for short term close down	Shared
Force Majeure Political events	Changes in law, expropriation, revocation of licences, permits etc, civil disturbance, war, non-default termination of contract	– Insurance political risks – Contractual framework – Provision of Compensation	PSA
Dispute between parties	Non-compliance of contract provisions, or difference in interpretation of provisions	– Establishment of Contract management framework and formalization of management responsibilities well defined dispute – Resolution mechanism spelt out in contract – Appropriate regulatory mechanism – Termination contract	Shared

Notes: The table merely shows examples of the common risk and their typical mitigation measures that may be considered. It does not provide any exhaustive list of risks, their nature or mitigation measures. Many mitigation measures shown in the third column may also apply to other risks identified in the second column.

Although the general principles of allocating risks is that the party who is the best position to manage may assume the risk applies to all situations, the party in the best position to manage a particular risk may vary from one situation to another. Many risks are project and situation specific.

A relief event is incident that temporarily prevents the private company's SPV from completion or operation of the project. The private company is not penalized but also does not receive any compensation.

Some risk may remain unallocated to any specific party. These residual risk would have to be Implicitly assumed by the Concessionaire and the lenders.

SOURCE: Reference Guide For PPP Projects MOF Government of India

Concluding Note: As is revealed from the detailed discussion in the above chapters covering the appraisal aspects, risk assessment framework and the financial ratios discussed as per the lenders perspective as well as the Government perspective are largely aligned to each other. The objective is to support viable and economically desirable projects, to create necessary infrastructure assets for the holistic development of the economy. The government initiatives and emerging opportunities for lenders are discussed in the book in the select subsequent chapters.

CHAPTER - 10

CASE STUDIES ON APPRAISAL

CASE STUDIES ON APPRAISAL

Based on the credit appraisal parameters discussed in Chapters 5 To 8 and the Risk Management Techniques studied in previous Chapter, we will now examine case studies relating to the following sub sectors as illustrations of the actual appraisal intricacies and mechanism of assessment.

1) **Case Study 1** - Road sector HAM model for green field - new project
2) **Case Study 2 -** Road sector TOT model for monetisation of existing running project
3) **Case Study 3 -** Solar power project
4) **Case study 4 -** Airport project
5) **Case study 5 –** Port project

The Illustrative data /information relating to five respective projects is placed in this chapter for the reader. These are close illustrations based on actual cases ,meant for purely academic purpose to understand the broad contours of each specific project, without any intent to breach or violate any privacy or privileged information or data ownership rights or copy rights in any manner.

Case Study 1 - Road sector HAM model

Project Brief	4 Lining of 60 KM stretch in Uttar Pradesh under hybrid annuity model of NHAI.

Salient Features of the project as per Concession Agreement

Design Length	60. km
Major Bridges	2 nos.
Minor Bridges	Total 16 nos.
	On Main Carriageway (11 Nos)
	On Service Road (5 Nos)
Culverts	119nos.
Culverts on Cross roads	33 nos.
Flyover /Elevated Viaduct	01 no at Km 301/297
ROB/RUB	01 nos. at Km 277/999
VUP	Total:12
VUP Grade-II	Total:8
FOB	Total: 02
Major Junctions	Nil

Minor junctions	33 nos.
Length of Service Road/Slip Road	30.859 km Service Road (Length Including Both sides)
	13.918 km Slip Road (Length Including Both sides) = 44.777
Toll Plaza	1 No at Existing Ch. Km. 286.405
	(Design Ch. Km. 299.507)
Re-alignment	Nil
Bypass	03 nos. Total =14.790 Km
Bus bays with shelter	10 nos.
Truck lay Byes	02 nos.
Rest Area	02 nos. at Truck lay byes

Brief highlights of Hybrid Annuity Model are given below:

Hybrid Annuity Model	
Key areas Terms	**As per the Concession Agreement**
Bidding and concession period	1. Bidders will quote construction cost as the bid variable - called "Bid Project Cost/BPC". (In this case Rs.1330.00 Crore).
	2. Bidders Also to Quote O&M payments required. (In this case quoted Rs.18.00 Crore per annum).
	3. Successful Bid is decided upon considering lowest NPV of both BPC & O&M bids
Payments during construction	4. 40% of the BPC to be given as construction support by NHAI during construction
	5. Payments linked to physical progress milestones (10%, 30%, 50%, 75% & 90% respectively)
	6. 10% (of BPC) as mobilization advance (interest bearing) to be paid by NHAI against Bank guarantee (of 110% of the advance amount). Will be adjusted against periodic payment of NHAI construction support on achievement of specified progress milestones in construction period.
	7. BPC to be indexed on each payment milestone (with 70% of WPI and 30% of CPI) till COD of the project. Payment to the extent of 40% of the inflation due to this indexation is paid on Milestone dates along with construction support.
Payments during operations	8. 60% of the BPC (increased for inflation indexation till COD to the extent of 60% of the same) is to be paid in biannual annuities over 15 years post COD.
	9. The annuity payments will be ballooning i.e quantum is changed over a period of time on periodic basis
	10. Annuities to carry interest @ 'RBI bank rate + 3% on reducing balance. (Presently 6.75%+3%=9.75%)
	O&M grant shall be paid as per Bid which is ₹18.00 crore per annum duly increase for inflation index.

Bonus Payment	In the event that the Concessionaire shall achieve COD on or more than 30 (thirty) days prior to the Scheduled Completion Date, the Authority shall pay to the Concessionaire a bonus equal to 0.5% (Zero point five per cent) of [60 % (Sixty per cent)] of the Bid Project Cost for the first 30 (thirty) days by which COD shall precede the Scheduled Completion Date. The Bonus shall be due and payable to the Concessionaire along with the 1st(first) Annuity Payment.
Hybrid Annuity Model	
Key areas Terms	**As per the Concession Agreement**
Mobilization advance	The authority shall, on request of the concessionaire, made at any time after expiry of 60 days from the Appointed Date, and upon the Concessionaire furnishing a Bank Guarantee for a tenure of 24 months (of 110% of the advance amount) in a form satisfactory to the Authority, make an advance payment in a sum not exceeding 10% of the Bid Project cost (the "Mobilization Advance"). NHAI will charge interest rate at the prevailing bank rate.
Procurement of the site	Without prejudice to the provisions of Clause 10.3.1, on or prior to the Appointment Date, the Authority shall have granted vacant access and Right of Way such that the Appendix shall not include land which shall in any manner prevent the Concessionaire from undertaking construction of the project to the extent of at least 80% (eighty percent) of the length thereof, and in the event Financial Close is delayed on account of delay in grant of such vacant access and Right of Way, the Authority shall be liable to pay damages to concessionaire solely under the provisions of Clause 4.2.
Provisional Certificate	Provisional Certificate under this Clause 14.3 may, upon request of the Concessionaire to this effect, be issued for operating part of the Project, if the Concessionaire has completed construction of 100% of the site made available to the Concessionaire up to 180 days from the Appointed Date. Upon issue of such Provisional Certificate, the provisions of Article 15 shall apply to such completed part, and the rights and obligations of the Concessionaire for and in respect of such completed part of the Project shall be constructed accordingly.

No toll collection right is part of the revenue arrangement – As the government retains the right to collect toll after completion of the project road. The concessionaire is not entitled to any toll collection rights.

Bid Project Cost (BPC) & Total Project Cost (TPC)

Bid Project Cost (BPC) for the project is ₹1330.00 Crore. The Bid Project Cost (BPC) & Total Project Cost (TPC) is same in the captioned project.

The break-up of project development cost is below: **(₹ In Crore)**

PROJECT COST	AMOUNT
EPC Cost Non-EPC Cost (IC, Pre-Operative Expenses, Financing,	1220.00
Insurance, legal, Administration & other consultancy costs)	30.00
Total Project Development Cost excluding IDC	1250.00
Operational Cost for first 06 months	23.00
Interest During Construction (IDC)	57.00
Total Project Cost	**1330.00**

The Project Cost of Rs.1330.00 Crore is to be funded by way of construction support from NHAI (40% of BPC i.e. ₹ 532Crore) and remaining 60.00% is to be funded in a suitable debt equity ratio.

NPV of O&M expenses quoted by bidders were used for evaluating the bids. However, O&M expenses are not funded by the lenders.

NHAI Construction Support

As per concession agreement, 40% (forty per cent) of the Bid Project Cost – ₹532.00 Crore shall be funded by NHAI as construction support fund.

Bid Project Cost

As per LOA, "Bid Project Cost" (BPC) is ₹1330.00 Crore (L-1)

S. No	Name of Bidder	Bid Project Cost	1st Year O&M Cost	Bid Price (NPV)	Rank
1	**ABC**	**1,330.00**	**18.00**	**1,353.00**	**L-1**
2	XYZ	1,583.00	4.50	1,454.70	L-2
3	YYY	1,657.00	11.00	1,580.72	L-3

NHAI's Estimated Project Cost: ₹1187.74 Crore. From the lenders perspective it is important to assess that the bid project cost quoted by the borrower is realistic and not too divergent from the nhai estimated project cost and the bid quotes of other competitor bidders. any deviation needs to be analysed and justified.

PROJECT COST & MEANS OF FINANCE:

7.1 Project cost –DETAILS

Bid Project Cost (BPC) is the cost bid by the developer and is also the lowest cost on which the project is awarded. The Bid Project Cost for the Project is ₹1330.00 Crore as per the Concession Agreement.

The borrower company has estimated its own Total Project Cost (TPC) - the cost at which the project is estimated to be completed by concessionaire. The Total Project Cost for the Project is estimated at ₹1,330.00 Crore including EPC cost of ₹1,220.00 Crore as vetted by an independent consultant.

The project cost includes EPC base capital expenditure consisting of site preparation works, structure, pavement etc. The other components of the project cost include preliminary & pre-operative expenses, financing costs, and interest during construction. A summary of the cost components is presented below:

7.1.1. Break up of EPC Cost:

Civil Construction Cost for this Project is ₹1,220.00 Cr. (inclusive of GST), the abstract of which is presented in tabular form below. The following abstract of cost is based on Cost study findings of a report of a Reputed Consultants. The summarized findings of various items forming part of EPC cost is as under:

Abstract of Construction Cost

S. No.	Description	Amount (₹ in Crore)	Percent (%)
1	Site Clearance and Dismantling	2.40	0.02
2	Earth Work	105.10	8.61
3	Granular Sub-Base and Base Courses	279.00	22.87
4	Pavement Works	199.53	15.85
5	Culverts	54.32	4.45
6	Minor Bridge	48.26	3.96
7	Major Bridge	27.53	2.26
8	Flyover / ROB	20.48	1.92
9	Vehicular Under Pass (VUP)/ Pedestrians Under Pass (PUP) / Cattle Under Pass(CUP)	220.28	18.06
10	Drainage / Protection works	150.81	12.61
11	Traffic Signal, Toll Plaza, Markings & other Road Apparatus	42.30	3.47
12	Toll Plaza Canopy and Admin Building	38.64	3.17
13	Passenger Oriented way side Amenities	9.42	0.77
14	Environmental Plan	6.18	0.51
15	Miscellaneous Items	14.00	1.16
16	Maintenance of Road during Construction	1.60	0.15
	Total Cost for Civil Works (₹ in Crore)	**1220.00**	100.0

Break-up of Non-EPC cost **(₹ in Crore)**

Particulars	Amount (₹ in Crore)	Percent (%)
Pre-bid activities, preliminary design, initial DPR, charges towards legal/ technical feasibility, final detailed design, construction drawings.	12.00	
Legal formalities such as SPV registration, incorporation and other regulatory compliance related charges.	1.00	
Financing costs, insurance costs and fees paid to consultants.	3.00	
Establishment expenses and activities viz. monitoring the progress of construction, draw down of debt, co-ordination and liaison with various entities viz. the Authority, IE, contractors, lenders etc.	14.02	
Total	**30.00**	

Means of Finance	**Means of Finance (₹ In Crore)**	**TPC (₹ In Crore)**	**%age Share**
	NHAI support (under HAM)	532.00	40.00%
	Promoters' Contribution	148.00	11.00%
	Rupee Term Loan	650.00	49.00%
	Total	**1330.00**	**100%**
	D/E Ratio (including NHAI support) (Excluding NHAI support)	 0.96:1 4.40:1	
Scheduled COD	730th day from the Appointed Date		
Concession Period	17.00 Years (including construction period of 2.00 years)		
Repayment Period	**Term Loan** Total Term Loan of ₹650.00 Crore be repaid in 28 ballooning half yearly instalments (mapped with the structured annuity payment of NHAI) Till receipt of Annuity from NHAI the Operational Cost for first 06 months has been considered as a component of total project cost.		
Financial Indicators	D/E Ratio (excluding construction support from NHAI)		**4.40:1**
	D/E Ratio (including construction support from NHAI)		**0.96:1**
	Minimum DSCR		**1.23**
	Average DSCR		**1.35**
	Project IRR		**10.12%**
	Equity IRR		**15.04%**

The project structure entails Capital Support to be received from NHAI (being 40% of Bid Project Cost) in five instalments, linked to progress milestones, over the construction period of 2.0 years.

The traffic study has been undertaken by NHAI and projected traffic is 11626 PCU [passenger car units] for 1st stretch and 17005 PCU for 2nd stretch over the 60 KM total stretch as such the separate independent study not undertaken since assured annuity payment from NHAI available after completion of the project and accordingly market risk reduced to that extent.

Balance 60% cost has to be funded through debt and equity. The BPC shall be adjusted for price multiple index as applicable on the reference index date preceding the date of achievement of each milestone (10%, 30%, 50%, 75% & 90%). Operation period of the project is 15 years after the completion of the implementation Period of 2.0 years. The Company will receive 30 Semi-annual Annuities (60% of BPC) from NHAI starting after 6 months from COD over the tenure of 15 years.

The Company will receive Interest at the rate of RBI Base Rate + 3% p.a. On the Unpaid Annuities from COD to be paid along with each annuity payment. O&M Revenue will be received/reimbursed from NHAI during the Operation Period of 15 years based on bid O&M cost for Operation and Maintenance of Road. Revenues (Annuity, interest on annuities and O&M) are linked to Price Multiple Index which is constituted by using 70% WPI and 30% CPI.

NHAI Support

As per concession agreement, 40% (forty per cent) of the Bid Project Cost (₹1330.00 Crore) – ₹532.00 Crore shall be funded by NHAI as construction support fund in 5 equal instalments during construction. Payments from NHAI shall be linked to physical progress milestones (10%, 30%, 50%, 75% and 90%).

Performance Security Bank Guarantee

As per the concession agreement, the Performance Security is to be furnished within 30 days from execution of concession agreement which shall remain in force and effect for a period of one and half year from the Appointed Date. However, the same shall be released earlier upon the concessionaire spending on Project construction an aggregate sum of not less than 30 % of the Bid Project Cost.

Mobilization advance Bank Guarantee

In accordance with clause 23.8 of the Concession Agreement which inter-alia provides release of Mobilization Advance up to 11% of BPC i.e. ₹146.52 Crore by NHAI upon furnishing a Bank Guarantee.

Mobilization advance from NHAI shall carry interest at the prevailing bank rate and the advance shall be gradually recovered from 5 milestone payments to the concessionaire on achievement of stipulated milestone as per the concession agreement.

EPC Contractor

The contract would be fixed time contract i.e. for 2.00 years from the appointed date. Any bonus payable under concession agreement for early completion shall be passed on to EPC contractor on receipt of the same from NHAI.

SUMMARY OF PROJECTED FINANCIALS

(₹ in crore)

Financial Year	1	2	3	4	5	6	7	8
Months of operation	5.10	12	12	12	12	12	12	12
Annuity for BPC	0.00	34.13	36.36	38.60	40.92	43.48	46.11	48.99
Interest on BPC due from NHAI	31.39	72.36	69.10	65.63	61.96	58.05	53.91	49.51
Payment towards O&M	8.35	20.26	20.87	21.49	22.14	22.80	23.49	24.19
Net Income	**39.75**	**126.75**	**126.33**	**125.73**	**125.01**	**124.33**	**123.51**	**122.70**
Routine maintenance	2.73	2.81	2.90	2.99	3.07	3.17	3.26	3.36
Major maintenance Reserve	0.00	8.23	8.23	8.23	8.23	8.23	8.23	8.23
PBDIT	**37.01**	**115.71**	**115.21**	**114.52**	**113.71**	**112.94**	**112.02**	**111.11**
Less: depreciation	0.00	33.07	35.23	37.40	39.65	42.13	44.68	47.47
Less: Interest on debt	25.64	59.77	57.20	54.18	51.09	47.77	44.37	40.60
Add: Interest on Cash Surplus	0.25	1.22	3.07	4.92	6.90	9.02	11.28	13.50
Profit Before Tax	**11.62**	**24.24**	**25.98**	**28.00**	**30.02**	**32.21**	**34.39**	**36.68**
Corporate tax/MAT (as applicable)	3.35	6.99	7.49	8.08	8.66	9.29	9.92	10.58
Profit After Tax	**8.27**	**17.25**	**18.49**	**19.92**	**21.37**	**22.92**	**24.47**	**26.10**
Cash Accruals from Operations	8.27	50.31	53.72	57.33	61.01	65.04	69.15	73.57
Repayment of debt	0.00	26.11	32.63	32.63	35.90	35.90	39.16	45.69
Net Cash Accrual	**8.27**	**24.21**	**21.09**	**24.69**	**25.12**	**29.15**	**29.99**	**27.88**

HIGHLIGHTS OF THE FINANCIAL PROJECTIONS

Financial Year	9	10	11	12	13	14	15	16
Months of operation	12	12	12	12	12	12	12	6.90
Annuity for BPC	51.95	55.14	58.58	62.10	65.85	67.93	73.13	75.92
Interest on BPC due from NHAI	44.85	39.89	34.64	29.05	23.14	16.93	10.45	3.51
Payment towards O&M	24.92	25.66	26.43	27.23	28.04	28.88	29.75	17.63
Net Income	**121.71**	**120.70**	**119.65**	**118.38**	**117.04**	**113.75**	**113.33**	**97.07**
Routine maintenance	3.46	3.56	3.67	3.78	3.89	4.01	4.13	4.26
Major maintenance Reserve	10.12	10.12	10.12	10.12	10.12	10.12	10.12	0.00
PBDIT	**108.13**	**107.02**	**105.86**	**104.48**	**103.02**	**99.62**	**99.08**	**92.81**
Less: Depreciation	50.33	53.43	56.76	60.17	63.81	65.82	70.86	73.57
Less: Interest on debt	36.37	32.00	27.17	22.26	17.06	11.55	5.43	0.00
Add: Interest on Cash Surplus	12.29	14.56	16.94	19.54	22.27	25.10	27.68	28.18
Profit Before Tax	**33.89**	**36.33**	**39.05**	**41.76**	**44.61**	**47.53**	**50.66**	**47.42**
Corp. Tax/MAT(as applicable)	9.77	10.48	11.26	12.04	12.87	13.71	14.61	13.68
Profit After Tax	**24.12**	**25.85**	**27.79**	**29.72**	**31.74**	**33.82**	**36.05**	**33.75**
Cash accruals from operations	74.45	79.28	84.55	89.89	95.55	99.64	106.90	107.31
Repayment of debt	45.69	52.21	52.21	55.48	58.74	62.00	78.32	0.00
Net Cash Accrual	**28.76**	**27.07**	**32.34**	**34.41**	**36.81**	**37.64**	**28.58**	**107.31**

Projected DSCR **(₹ in Cr.)**

Computation of Debt Service Coverage Ratio	1	2	3	4	5	6	7	8	9	10
Cash Accruals from Operations	**8.27**	**50.31**	**53.72**	**57.33**	**61.01**	**65.04**	**69.15**	**73.57**	**74.45**	**79.28**
Debt Interest	25.64	59.77	57.20	54.18	51.09	47.77	44.37	40.60	36.37	32.00
Total (A)	**33.91**	**110.08**	**110.93**	**111.51**	**112.10**	**112.81**	**113.53**	**114.17**	**110.83**	**111.28**
Debt repayment	0.00	26.11	32.63	32.63	35.90	35.90	39.16	45.69	45.69	52.21
Debt interest	25.64	59.77	57.20	54.18	51.09	47.77	44.37	40.60	36.37	32.00
Total (B)	**25.64**	**85.88**	**89.84**	**86.82**	**86.99**	**83.67**	**83.53**	**86.29**	**82.06**	**84.21**
DSCR (A/B)	**1.32**	**1.28**	**1.23**	**1.28**	**1.29**	**1.35**	**1.36**	**1.32**	**1.35**	**1.32**

Computation of Debt Service Coverage Ratio	11	12	13	14	15
Cash Accruals from Operations	**84.55**	**89.89**	**95.55**	**99.64**	**106.90**
Debt interest	27.17	22.26	17.06	11.55	5.43
Total (A)	**111.72**	**112.15**	**112.61**	**111.19**	**112.34**
Debt repayment	52.21	55.48	58.74	62.00	78.32
Debt interest	27.17	22.26	17.06	11.55	5.43
Total (B)	**79.38**	**77.74**	**75.80**	**73.55**	**83.76**
DSCR (A/B)	**1.41**	**1.44**	**1.49**	**1.51**	**1.34**

The above projections indicate that DSCR is acceptable level with minimum DSCR of more than 1 each year. The annuity payment is assured payment from NHAI which is increasing overtime under the ballooning mechanism. Corresponding to that the repayments are also structured ballooning as depicted above.

FINANCIAL INDICATORS

Financial Indicators	
Debt Equity (Net of NHAI construction support)	4.45:1
Minimum DSCR	1.23
Average DSCR	1.35
Project IRR	10.12%
Equity IRR	15.04 %

Sensitivity Analysis

There are no critical factors affecting the profitability projections except interest on Term Loan; Income is protected being annuity project and maintenance (O&M) expenses are also protected being a fixed quote by the concessionaire in this case. Hence, sensitivity analysis has been carried out for the case when there is no change in Rate of Interest post COD:

Particulars	Avg. DSCR	Min DSCR	Project IRR	Equity IRR
Base scenario	1.35	1.23	10.12%	15.04%
Interest during operation increased by 50 Basis Points (bps)	1.32	1.20	10.14% (post tax)	13.83%
Interest during operation increased by 100 Basis Points(bps)	1.29	1.17	10.15% (post tax)	12.61%

Being an annuity project, scope for increased revenue is nullified. Hence, the range of DSCR & IRR is also not so high. However, the above check on the financial parameters due to increased RoI establishes the fact that the project shall be able to generate sufficient cash for debt repayment.

Risk Assessment

RISK FACTORS	RISK LEVEL & RISK LIES WITH	MITIGATION / COMMENTS
1. SPONSOR RISK		
Sponsor Experience & Execution Capability	Low with sponsor	• Sponsor has the requisite experience in development, construction and operations of infrastructure projects of this magnitude. In the recent past sponsors has successfully completed Design, Build, Finance, Operate & Transfer (DBFOT) (Toll) Project –Further there has been consistent upgrade in the external rating of the sponsors (in spite of weak industry sentiments) reflects the overall acceptable credentials of the sponsors. • To optimize the risks allocation during both construction as well as operation stage, SPV would take the necessary inputs from sponsors, technical consultants and advisors.
2. DEVELOPMENT RISK		
I. Pre-construction Risk		
Finalization of key contracts / agreements	Low/ medium With concessionaire	• Concession agreement with the Authority has already been executed on May 31st 2018. • EPC agreement shall be drawn up on a fixed price, time bound and turn-key basis and will be executed shortly. With a clause of passing any variation in the BPC on the ground of indexing to be received by NHAI to the EPC contractor.

Impact on Environment	Low with Authority	• Environmental approval in not required for the project. • Stage -1 Forest clearance is in place and compliance are in process.
Approval/Consents/ Permits	Low with Authority and concessionaire	• All required permits and approvals have been applied for and are under progress. • State Support Agreement is also in place.

Funding Risk	Medium With lenders and concessionaire	• At the end of construction, the overall project debt-equity ratio is proposed to be 1:1 (Including Construction Support amount as Equity). • The project sponsor is resourceful and has a demonstrated track record of meeting its investment commitments. • Fifty per cent of the envisaged equity contribution from promoters is proposed to be brought in as up-front by the sponsors before seeking any disbursements from the lenders. • Forty per cent of the Bid Project Cost shall be received in the form of construction support from NHAI. • Ten per cent mobilization advance is also receivable from NHAI adjustable against the Construction Support amount to cater to initial funding risk due to delay in disbursement from lenders and/or delay in equity infusion by the sponsor.
II. Construction Risk		
Land Acquisition	Low with Authority and concessionaire	• According to the Concession Agreement, the Authority is under obligation to hand over at least 80 per cent of the Right of Way, free from all encumbrances for the project site before Appointed Date and balance within 90 days of Appointed Date. Land acquisition status is as follows:

Area in Hectare	
Total Land Required	320.051
Land Already Available	284.198
Land To be Acquired	35.853
Government Land Out of Land to be acquired	10.870
Private Land out of Land to be acquired	137.802

		Out of 148.672 Hectare the status of land acquisition is as follows (Area in Hectare) Section 3(G) completed (Award in progress) — 112.819 Section 3 (A) in progress — 35.8530 Hence Total Availability of Land (Including where section 3(G) has been over) = 171.379 + 112.819 = 284.198 Hectare which constitutes approximately. 88.79 per cent Land availability upfront.
Performance of Construction Contractors	Medium with concessionaire	• The EPC work will be executed solely by Peparent company, which is also the promoter for the project and has satisfactory contract execution record. • NHAI shall appoint an Independent Engineer to oversee the activities of SPV during design, construction, operation and maintenance of the Project Highway.
Increase in cost	Low with concessionaire	• Fixed price, fixed time turnkey EPC/construction contracts covering major portion of capital expenditure have been envisaged. • The entire Bid Project Cost shall be paid by NHAI to the concessionaire 40 per cent during construction the balance 60 per cent in the form of bi-annual annuity post COD. The same shall be adjusted with variance in Price Index while making such payment. Hence, any cost escalation due to inflation is also being covered. • Proven sponsor's track record delivering results under BOT schemes
Force Majeure	Low with Authority and concessionaire	• Comprehensive insurance package during construction / operation envisaged. An insurance adviser will be appointed for the purpose. • The Concession Agreement covers termination payment under various Force Majeure/Default Events • The Concession Agreement provides for the termination payment prior to COD on the basis of physical progress made in the project as per Clause 28.9.

3. OPERATIONAL RISK		
Underperformance of Facility	Low with Lenders and concessionaire	• Adequate O&M arrangements would be put in place so as to meet the standards set out in the concession agreement. An O&M manual is already in place according to which the maintenance procedures shall be carried out. • Operations to be carried out as per industry practices.
Insurance Risks	Low with Concessionaire	• SPV proposes to obtain a comprehensive insurance package covering various insurable risks relating to the construction and operations of the project.
Revenue Risks	Low with Authority, Lenders and Concessionaire	• The revenue is payable in the form of annuity semi-annually beginning from 6 months after COD in 30 instalments as devised in the annuity payment schedule laid down in the CoA. The same shall also be adjusted to the change in Price Index before payment. • In addition to the above interest shall be due and payable on the reducing balance of Completion Cost at an interest rate equal to the applicable Bank Rate plus (three per cent). Such interest shall be due and payable biannually along with each instalment specified in CoA. • In addition to the above the parties acknowledge and agree that all O&M expenses shall be borne by the concessionaire and in lieu thereof; a lump sum financial support in the form of biannual payments shall be due and payable by the Authority, which shall be computed on the amount quoted by the selected bidder under its O&M Bid, in accordance with the provisions of the CoA (the "O&M Payments").
Force Majeure	Low with Lenders and Concessionaire	• Force majeure events will be insured by SPV to the extent possible. • The Concession Agreement covers termination payment under various Force Majeure/Default Events.

Risk of Material Default	Low with Authority and concessionaire	• The Authority, SPV and Senior Lenders would enter into the Substitution Agreement under which the Senior Lender would have the right to substitute SPV in case of any committal of material breach of the terms of the Concession Agreement, or in case of any material default in payment under the Financing Documents. • Concession agreement provides for a grace period before the contract would be terminated in case of default.

Observations related to above case

- Project is awarded under on the basis of Lowest cost basis referred as Bid Project Cost. Under clause 23.1 of the CA," NHAI acknowledges BPC as the basis of payment of construction support during construction period and annuity payments during operation period, irrespective of the estimated project cost" i.e. Appraised Project cost for this project. So, the NHAI construction support shall flow in on the basis of BPC and has been so considered as part of MOF. As an exercise towards prudence we propose to stipulate as a pre-disbursement condition the taking on record of our appraised cost and means of finance by NHAI at the time of financial closure as a separate communication acknowledged by NHAI.
- Under Hybrid Annuity Model, 40 per cent of Bid Project Cost is being met by authority during construction period and balance 60 per cent of BPC in the form of annuity shall be provided by the authority post COD; The Authority will also be providing interest at RBI Bank Rate + 3 per cent on reducing completion cost.
- As per Concession Agreement 80 per cent ROW (Right of Way) shall be provided by the Authority prior to Appointed Date and the balance 20 per cent within 90 days from the appointed date. As per the concession agreement, there is provision for termination payment during construction in case of concessionaires' default.

It is to be noted that over a period of time NHAI and Ministry of Road Transport & Highways (MORTH) have been proactively bringing improvements in the Hybrid Annuity Model to ensure speedier and smoother implementation, The number of milestone payments out of the 40 percent contribution by NHAI have been increased from earlier 5 to 10 to improve liquidity position of the developer. Similarly, the payment has been rationalised and linked to MCLR of top 5 scheduled commercial banks, instead of Reserve Bank rate. The concession agreements have been modified to make them more suitable and business oriented and standard operating procedures have also been evolved to act as a facilitator for smooth implementation.

Case Study 2 - Road sector TOT model for monetisation of existing running project

Concession Highlights	• Project is **"Tolling, Operation, Maintenance & Transfer of NH-27 in the State of Gujarat under Toll, Operate and Transfer mode"** for a concession period of 20 years from the appointed date. • Tolling rights to concessionaire from the appointed date till concession end date with provision for revision of concession period linked to collection of actual fee on Target Point 1 and Target Point 2 in comparison with pre estimated target fee at Target Point 1 and Target Point 2. • Partial road development works to be carried out as prescribed. • The right of way (ROW) would be made available by NHAI free from all encumbrances on or before AD (Appointed Date).
	• Selected bidder, together with its associates to hold 51 per cent paid up share capital of the SPV up to 2 years from AD. • Provision of Substitution Agreement and Escrow Agreement, for additional comfort to the lenders. • Termination Payments under Events of Default and Force Majeure Events are provided for in the Concession Agreement, during the Concession Period.

Project Summary

Particulars	₹ Crore	In % terms
Bid Concession Fee	1251.00	84.53%
Road Construction Works-	216.32	14.62%
Insurance Cost 1st Year	1.73	0.12%
Financing and Legal Costs	5.40	0.36%
Contingency	1.50	0.10%
Working capital for 2 months O&M expenses	4.05	0.27%
Total COP	**1480.00**	**100.00%**
Means of Finance		
Equity	300.00	20.27%
Debt (Term Loan)	1180.00	79.73%
Total MOF	**1480.00**	**100.00%**

Key Financial Indicators for the Project

Minimum DSCR	1.30
Average DSCR	1.55
Project IRR % (Pre-Tax)	15.12%
Equity IRR % (Pre-Tax)	23.80%
Project IRR % (Post Tax)	13.99%
Equity IRR % (Post Tax)	21.87%

Debt tenure	Door to door tenure of debt is15 years comprising Nil Moratorium Period and repayment period of 15 years.
Rate of Interest (Construction Period)	1 Year MCLR of lead lender prevailing on the date of 1st disbursement + applicable spread, being 8.25% p.a. with Monthly rest.
Performance security BG Limit	Performance security BG limit of ₹16.00 Crores till 3 Years from the Appointed Date.
Investment rationale	The Project Highway is a part of East-West Corridor at new numbered NH-27 (part of old NH14 and NH15), which passes through the State of Gujarat. This road provides important link.

Bidders Name	Ranking	Bid Concession Fee (₹ Crore)
ABC	L – 1	1251
XYZ	L – 2	1043
YYY	L – 3	944

As per the provisions of RFP and CoA, bids would be evaluated based on Highest Bid Concession Fee. The Bid Concession Fee is the lump sum upfront inconsideration of grant of concession by NHAI. Bid Concession Fee quoted by ABC was the highest one and hence was accepted by NHAI and accordingly Project was awarded to ABC.

Grant of Concession – Concession Period

As per Article 3 of CoA, concession period is for a period of 20 years commencing from the AD subject to change in concession period. Article 24 of the CoA deals with the change in the concession period with variation in toll collection.

Performance Security

As per Article 9 of the CoA, SPV is required to provide the performance security amounting to ₹14.77 Crore to NHAI within 45 days from the date of signing of the CoA. The performance security shall be renewed annually 3 months prior to its expiry and shall increase every year by the increase in (70 per cent WPI+30 per cent CPI increase). The performance security shall remain valid till issue of vesting certificate by Authority and till 2 months from end of defects liability period.

Bid Concession Fee

In consideration of grant of concession, SPV shall pay lump sum upfront Bid Concession Fee of ₹1251 crores to NHAI.

Provision of User Fee and Discounted Fee Types

From AD till the transfer date, SPV shall have the sole right to collect fees from users as per Schedule M of the Concession Agreement which provides for toll rates to be computed as per National Highway Fee (Determination of Rates and Collection) Rules, 2008 as amended from time to time . Vehicle wise

Base Toll Rates per Km for single journey for the base year 2007-08 are provided below.

Sr. No.	Vehicle Name	Toll rates/Km for 2007-08
1	Car / Local Jeep	0.65
2	Van	0.65
3	LCV	1.05
4	Minibus	1.05
5	Bus	1.05
6	Truck-2 Axle	2.20
7	Truck-3 Axle	2.40
8	MAV	3.45
9	OSV	4.20

The above rates shall be increased without compounding by 3 per cent each year with effect from 01.04.2008 and the rates shall be revised annually to reflect increase in WPI but such revision shall be restricted to 40 per cent. The final rate arrived for each year shall be multiplied with the toll-able length of the road stretch to get the Toll Rate for the year.

Priority of payments from Escrow Account

Article 23 A.3 and Article 23 A.4 of CoA specifies the priority of payments from the Escrow Account during the concession period as provided below, which cannot be modified except with the prior approval of NHAI and Lenders.

Table No. 18: Priority of payments from the Escrow Account

During Concession period	In the event of Termination
All taxes due and payable by SPV in respect of the project	All taxes due and payable by the SPV in respect of the project
All payments related to the construction of Project in accordance with the financing agreements	Payment to lenders
O & M expenses	Outstanding payment due to NHAI
O & M expenses and other costs and expenses incurred by NHAI	All payments and Damages certified by the Authority as due and payable to it by SPV
Monthly proportionate provision of debt service payments due in an Accounting Year	Retention and payments relating to the liability for defects and deficiencies
All payments and damages certified by the Authority as due and payable to it by SPV	Incurred or accrued O&M expenses
Balance in accordance with the instructions of SPV	Any other payments required to be made under CoA

Substitution Agreement

Article 29.4 of CoA provides that SPV, NHAI and lenders representative to enter in to a Substitution Agreement (Schedule – P of CoA), lenders being recognized as f would have the right to substitute SPV with another nominated company on the occurrence of Financial default. The substitution agreement empowers the lenders to substitute SPV TOT with a nominated company for the remaining concession period.

Traffic Numbers

As per Schedule A CoA, traffic for the base year 2019 is given in the following table:

Vehicle Type	Stretch 1	Stretch 2
Total Tollable Traffic (Vehicles)	5322	6878

Bid Concession Fee

Bid Concession Fee is the upfront Concession Fee payable to NHAI amounting to ₹1251.00 Crores in consideration of right of grant of concession. The right of grant includes tolling, operation, management, maintenance and transfer of project SPV.

Road improvement capex

Capital expenditure had been computed in accordance with construction plan and Schedule-B of CoA. A provision of ₹216.32 Crores for road improvement works has been provided.

Insurance Cost

Provision of ₹1.73 Crores had been provided for Insurance cost as required by clause 25.1 of CoA to cover third party claims and force majeure events.

Financing and Legal Costs

SPV has made a provision of ₹5.40 Crores for financing and legal cost, for raising required debt for the project.

Contingency

SPV has made a provision of ₹ 1.50 Crores for contingency.

Funds for Working Capital

Funds requirement of ₹4.05 Crores towards meeting two months O&M expenses from the Appointed Date.

Means of Finance

The Total Project Cost is proposed to be financed by debt and equity. The proposed components of financing are as follows.

Table No. 41: Means of Finance

Means of Finance	Amount (₹ in Crore)	% age	Remarks
Equity	300.00	20.27%	Equity contribution towards Total Project Cost from Promoter company and Directors of Promotor Company and their relatives.
Debt	1180.00	79.73%	Financial assistance by the Lenders for the Project. Total Project Cost minus Equity is the amount of Debt.
Total	1480.00	100.00%	

Debt and Equity Infusion Mechanism

Stage wise induction of funds

1. Will bring up front equity of ₹200 Crores by way of deposit to be maintained with Senior Lender.
2. Balance of equity of ₹100 Crores to be brought in as required for implementation of the project post spending entire fund of ₹116.32 Crores as envisaged above.

Projected Financial Indicators

Key Project Financials for Concession Period (₹ in Lakhs)

Particulars	1	2	3	4	5	6	7	8	9	10
Toll Revenue	79.52	160.94	174.46	189.61	207.41	225.92	245.98	267.19	291.55	317.24
DSRA and MMRA Int.	2.48	1.37	1.37	2.06	3.50	5.02	3.95	2.06	2.08	2.86
Total Income	81.99	162.31	175.83	191.67	210.90	230.94	249.93	269.25	293.63	320.10
EBITDA	69.20	134.54	148.62	161.85	181.63	196.38	160.35	176.01	261.68	285.53
Interest	50.82	97.04	96.19	94.85	93.27	90.95	87.06	80.98	72.94	64.18
Depreciation	15.84	32.05	34.73	37.74	41.28	44.92	48.87	53.08	57.92	63.02
PBT	2.55	5.46	17.70	29.26	47.09	60.51	24.43	41.95	130.82	158.33
Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PAT	2.55	5.46	17.70	29.26	47.09	60.51	24.43	41.95	130.82	158.33
Cash Profit	18.38	37.50	52.44	67.01	88.37	105.43	73.29	95.04	188.74	221.35
EBITDA Margin	84%	83%	85%	84%	86%	85%	64%	65%	89%	89%
PAT Margin	3.11%	3.36%	10.07%	15.27%	22.33%	26.20%	9.77%	15.58%	44.55%	49.46%
NW	202.55	308.00	325.70	354.97	402.06	462.57	487.00	528.95	659.77	818.10
TTL	1179.17	1173.27	1158.52	1140.82	1120.17	1084.77	1025.77	937.27	831.07	724.87
TTL/NW	5.82	3.81	3.56	3.21	2.79	2.35	2.11	1.77	1.26	0.89

(₹ in Lakhs)

Particulars	11	12	13	14	15	16	17	18	19	20	21
Toll Revenue	343.67	373.48	408.10	444.19	484.19	519.49	556.17	595.22	640.09	595.45	307.71
Interest on DSRA Fund and MMRA	4.33	5.80	6.01	1.96	2.08	0.82	0.00	0.00	0.00	0.00	0.00
Total Income	348.00	379.28	414.11	446.15	486.27	520.31	556.17	595.22	640.09	595.45	307.71
EBITDA	312.75	345.37	340.27	281.78	450.95	460.13	515.65	552.80	596.03	549.70	285.97
Interest	55.42	46.17	36.44	25.73	14.05	2.05	0.00	0.00	0.00	0.00	0.00
The Depreciation	68.27	74.20	81.07	88.24	96.19	103.20	110.49	118.25	127.16	118.29	61.13
PBT	189.06	225.00	222.76	167.81	340.72	354.87	405.16	434.55	468.87	431.41	224.85
Tax	0.00	19.43	73.38	62.13	108.22	113.99	128.80	138.39	149.46	137.94	70.74
PAT	189.06	205.57	149.38	105.68	232.49	240.89	276.36	296.15	319.41	293.47	154.11
Cash Profit	257.33	279.77	230.45	193.93	328.68	344.09	386.85	414.40	446.57	411.77	215.24
EBITDA Margin	90%	91%	82%	63%	93%	88%	93%	93%	93%	92%	93%
PAT Margin	0.54	0.54	0.36	0.24	0.48	0.46	0.50	0.50	0.50	0.49	0.50
NW	1007.15	1212.72	1362.10	1467.79	1700.28	1941.17	2217.53	2513.68	2833.09	3126.57	3280.68
TTL	618.67	500.67	382.67	241.07	99.47	0.00	0.00	0.00	0.00	0.00	0.00
TTL/NW	0.61	0.41	0.28	0.16	0.06	0.00	0.00	0.00	0.00	0.00	0.00

Key Financial Indicators

Project Financials

Indicator	Value
Minimum DSCR for debt	1.30
Average DSCR for debt	1.55
Post Tax Project IRR	13.99%
Post Tax Equity IRR	21.87%

DSCR Statement

Particulars	1	2	3	4	5	6	7	8	9	10	11
Profit After Tax	2.55	5.46	17.70	29.26	47.09	60.51	24.43	41.95	130.82	158.33	189.06
Add: Depreciation	15.84	32.05	34.73	37.74	41.28	44.92	48.87	53.08	57.92	63.02	68.27
Add: Interest on Debt	50.82	97.04	96.19	94.85	93.27	90.95	87.06	80.98	72.94	64.18	55.42
Less: Transfer to MMRA	-	3.44	1.61	18.92	33.65	37.90	31.91	16.27	1.13	23.44	37.89
Add: MM expense	-	3.44	1.61	3.28	1.74	5.99	62.56	65.07	1.13	3.07	2.57
Less: Amount transferred to Opex Fund	-	0.21	0.16	0.16	0.17	-	0.19	0.44	0.11	0.20	0.21
Add : Release of Opex Fund	-	-	-	-	-	0.26	-	-	-	-	-
Total Cash Available for DSCR	69.20	134.33	148.47	146.05	149.56	164.73	190.82	224.37	261.57	264.97	277.23
Total Cash Available till Debt repayment	69.20	134.33	148.47	146.05	149.56	164.73	190.82	224.37	261.57	264.97	277.23
Debt repayment	0.83	5.90	14.75	17.70	20.65	35.40	59.00	88.50	106.20	106.20	106.20
Interest payment	50.82	97.04	96.19	94.85	93.27	90.95	87.06	80.98	72.94	64.18	55.42
Total debt (Interest+ Principal repayments)	51.65	102.94	110.94	112.55	113.92	126.35	146.06	169.48	179.14	170.38	161.62
DSCR	**1.34**	**1.30**	**1.34**	**1.30**	**1.31**	**1.30**	**1.31**	**1.32**	**1.46**	**1.56**	**1.72**

Particulars	12	13	14	15	16	17	18	19	20	21
Profit After Tax	205.57	149.38	105.68	232.49	240.89	276.36	296.15	319.41	293.47	154.11
Add: Depreciation	74.20	81.07	88.24	96.19	103.20	110.49	118.25	127.16	118.29	61.13
Add: Interest on debt	46.17	36.44	25.73	14.05	2.05	-0.00	-0.00	-0.00	-0.00	-0.00
Less: Transfer to MMRA	35.32	43.31	35.32	10.61	10.61	-	-	-	-	-
Add: MM expense	-	38.74	130.89	-	21.22	-	-	-	-	-
Less: Amount transferred to										
Opex Fund	0.20	-	0.31	0.61	0.26	0.32	0.27	0.28	0.29	-
Add : Release of Opex Fund	-	0.27	-	-	-	-	-	-	-	7.92
Total Cash Available for DSCR	290.42	262.60	314.92	331.51	356.49	386.53	414.13	446.29	411.47	223.15
Total Cash Available till										
Debt repayment	290.42	262.60	314.92	331.51	163.11	-	-	-	-	-
Debt repayment	118.00	118.00	141.60	141.60	99.47	-	-	-	-	-
Interest payment	46.17	36.44	25.73	14.05	2.05	-0.00	-0.00	-0.00	-0.00	-0.00
Total debt (Interest+Principal Repayments)	164.17	154.44	167.33	155.65	101.53	-0.00	-0.00	-0.00	-0.00	-0.00
DSCR	1.77	1.70	1.88	2.13	3.51					
Average DSCR										**1.55**
Min DSCR										**1.30**
Max DSCR										**3.51**

It is to be seen that the assessment and project considerations in case of a TOT project is slightly different from a HAM project. As the project is already a running and complete construction risk is reduced. The major cost of the project i.e. the bid project cost is to be paid up front against which toll rights are assigned to the SPV. Unlike HAM project where annuity is assured from NHAI, under TOT project the revenue risk is on the SPV and as such the traffic assessment is very crucial.

In the present case the revenue expected is gradually increasing with increase in traffic and revision of tariff rate over time. The repayment is also accordingly structured ballooning. DSCR calculation as above indicates minimum DSCR of more than 1 throughout. Proper maintenance of the road needs to be assured on periodic basis and the same has been factored in the projections.

Sensitivity:

Sensitivity analysis has been carried out on critical parameters affecting the project viability and the outcome is presented in the table below.

Scenario No.	Particulars	Post Tax Project IRR	Min DSCR	Average DSCR
Base Case Plan	Base Case	13.99%	1.30	1.55
Scenario No. 1	Increase in Rate of Interest by 50 bps	14.03%	1.23	1.52
Scenario No. 2	Increase in MM, RM and Opex by 5%	13.92%	1.29	1.54
Scenario No. 3	Reduction in Toll Revenue by5%	13.20%	1.21	1.47

From the above-mentioned sensitivity analysis, it is observed that in each of such scenarios, key viability parameters like Post Tax Project IRR and DSCR remains within acceptable range. In case

of Scenario No.1, increase in rate of interest by 50 bps not likely to impact much and minimum and average DSCR have reduced marginally to 1.23 and 1.52 from 1.30 and 1.55 respectively. Post Tax Project IRR has increased marginally from 13.99 to14.03 per cent.

In case of scenario no. 2, sensitivity has been carried out assuming increase in Routine Maintenance Cost, Major Maintenance Cost and Operation Cost by 5 per cent at current price. It has been observed that Post Tax Project IRR has reduced from 13.99 to 13.92 per cent and minimum and average DSCR have reduced marginally to 1.29 and 1.54 from 1.30 and 1.55 respectively.

In case of scenario no.3, sensitivity has been carried out as summing reduction in toll revenue by 5 per cent at current traffic. It has been observed that Post Tax Project IRR has reduced from 13.99 to13.20 per cent, and minimum and average DSCR have reduced to 1.21 and 1.47 from 1.30 and 1.55 respectively.

From the above sensitivity analysis, it has been noted that in each of above scenarios, the project financials have seen moderate to marginal impact, but in all such scenarios, the project is able to meet its obligation towards lenders with suitable cover, indicates viability of the project.

RISK FACTORS AND MITIGATION

Various critical risk factors for the Project have been addressed and adequate risk sharing/ mitigation measures have been put in place to ensure smooth implementation and operation of the project.

RISK FACTORS	MITIGATION / COMMENTS
1. SPONSOR RISK	
Sponsor experience & execution capability	• SPV promoter is a leading contracting company with experience of more than 40 years, and having expertise, in various civil engineering projects across highways & roads, bridges /flyovers, airports, water irrigation, institutional buildings, railways, power, mining and heavy earth work projects. • SPV promoter has demonstrated a track record as sponsor to execute large road projects and maintain the same. • SPV promoter is also the O&M contractor for the road improvement works for the project thereby the risk associated with such works gets mitigated due to its dual role of sole sponsor and O&M contractor in totality. • SPV has requisite financial, managerial and implementation capability experience for Toll Projects. • SPV has a strong credit rating of A for long term loan

2. PRE- COMPLETION RISK	
Risk of disruption	• Article 27 of CoA safeguards SPV from any liability which may occur on account of non-performance of its obligations defined in CoA, in an event of disruption due to force majeure events. • Force majeure covers Non-Political Event, Indirect Political Event and Political Event, and such event affects the performance of affected party. The impact of force majeure on dates in CoA and costs incurred are provided below. FORCE MAJEURE EVENT PRIOR TO THE APPOINTED DATE

RISK FACTORS	MITIGATION / COMMENTS
	• The period mentioned in CoA for fulfillment of conditions precedent for achieving appointed date shall be extended by a period equal to the duration of the force majeure Event. NHAI and DPJ-TOT shall meet their respective costs arising out of Force Majeure. Lenders will not have any exposure to the project at this stage, thus risk is not having consequences to the lenders. Force Majeure Event after AD • The Concession Period shall be extended by a period such Force Majeure Event subsists. In the event of partial collection of Fee where daily collection is less than 90 per cent of average daily fee, NHAI shall extend the concession period proportionately.
Site Acquisition and Access risk	• As per CoA, NHAI to hand over the ROW free from all encumbrances on or before AD. • Hence, DPJ-TOT shall not be liable for any delay occurred in providing Site and access to such Site, by NHAI.
Environmental Risk	• Since this is an operational project, there is no risk of various clearances of environment, forest and wild life.
Funding Risk	• SPV promoter has a strong presence in the road sector, and it has steadily grown over the years. • SPV promoter has demonstrated a positive upward trend in income over the years and ploughing back of the profits in the business and has sufficient internal accruals. After meeting its current equity commitments for ongoing projects, SPV promoter has estimated surplus funds in the coming years. With this, the equity contribution SPV promoter funding is not foreseen to be a risk factor.

Cost and Time Overrun	Cost Overrun • SPV-TOT promoter being the sponsor of SPV-TOT and the O&M contractor would ensure meeting up the cost within envisaged level and would put its best endeavor to optimize the same. • Concession fee constitutes a substantial portion of the Total Project Cost. This cost in fixed in nature. • SPV-TOT has entered in to a fixed price fixed time O & M contract with SPV promoter for the road improvement works.

RISK FACTORS	MITIGATION / COMMENTS
	• SPV promoter is are source full company and has demonstrated good track record of successful and timely completion of various road project. • The O&M contractor shall be solely responsible for procuring, providing, and arranging for: ► The skilled, semi-skilled and unskilled services and personnel. ► All equipment, material, and tools. ► All other resources and things as may be required for performing the works. • The O&M contractor shall have the right to use of the site and not part with or create any encumbrances on the site or any part therefore except as permitted under O&M contract. • Any approvals and permits if required shall be arranged by O & M contractor with support from SPV. • The O&M contractor shall discharge his obligations at own cost and expense, and observe, undertake comply responsibilities entrusted under the O & M contract. • The O&M Contractor shall be liable to pay damages to SPV as per the provisions of CoA and O&M Contract, in case, the completion of the project is delayed on account of reasons, as elaborated hereunder, attributable to the O&M contractor. ► On non-achievement of any of improvement proposals with in scheduled completion date as per the completion schedule set forth in Schedule – B of CoA. ► Damages not covered in existing insurance policy for any claim arising for to scope of works of the O&M contractor.

	► Damages certified by Authority for O&M contractor's breach of O&M obligations ► Non-compliance with any other requirements of the CoA. **Time Overrun** • It is a fact that time overrun would result in cost overrun. Therefore, to mitigate this risk, independent engineer and lender's independent engineer would be appointed to review the physical progress of the project in accordance with Schedule–K and in case of any discrepancy, the same would be reported to the NHAI and the lenders. • The above two layers monitoring mechanism would ensure timely completion of the project or reported flag in case of any discrepancy. This reduces the risk of time overrun to a considerable extent.

RISK FACTORS	MITIGATION / COMMENTS
3. POST COMPLETION RISK	
Operation and Maintenance risk	• SPV to operate and maintain the Project Assets for Operation Period of 20 years as per the provisions of CoA. • Road being the primary Project Assets, has a design life. As per industry practice, the flexible road pavement requires periodic major maintenance at a regular interval based on the wear and tear of road. • Therefore, for proper upkeep of the road, SPV shall maintain the Project Highway through itself or through O&M contractor. • During Operation Period, the major cost components are Major Maintenance (MM), Routine Maintenance (RM), Operation and Maintenance (O&M) and Interest payment to Lender. • In financial model, projections for MM, RM and O&M costs have been adjusted for inflation index which will take care of increase in price on account of inflation. Further, SPV has provided for creation of Major Maintenance Reserve out of cash flow available from the Project. This will enable SPV to meet such expenses as and when due. This provides sufficient cushion to SPV in carrying out its maintenance and financial obligations. • The sponsor shall under take to provide additional funds to meet any short fall in MMR to the satisfaction of the lenders.

Insurance risks	• SPV proposes to obtain a comprehensive insurance package covering various insurable risks, in accordance with article 25 of CoA, relating to the project. • Lenders' Insurance Advisor (LIA) shall be appointed to undertake risk review of the Project and suggest adequate insurance coverage to mitigate such risks. • LIA shall also identify significant residual risk that are uninsured and suggest risk mitigation measures for the same.
Revenue risks	• Revenue is by way of collection of User Fee during Operation Period, as detailed in Article 23 of CoA. Hence, projecta have risk pertaining to unexpected fluctuation of traffic. • Article 24 of CoA provides a clause for variation in the concession period. The concession period shall be increased or decreased by 1.5 or 0.75 per cent respectively for every 1 per cent Shortfall/ increase in actual fee over pre-estimated target fee in the year 2028. Provided that such modification shall be made only if variation in the fee collection is 20% or more. • Further, the concession period shall be increased or decreased by 1.5 per cent or 0.75 per cent respectively for every 1 per cent shortfall/ increase in actual fee in the year 2035. Provided that such modification shall be made only if variation in the fee collection is 30 per cent or more. This provides adequate safety towards Revenue Risks. • Further, sensitivity analysis and it is noted that the Project cant ole rate the reduction Toll Revenue by 5% during the entire tenure of loan.
Default risk	• The average and minimum DSCR of the project are 1.55 and 1.30, respectively which suggests that these critical ratios of the project are well within the acceptable benchmark. • Sensitivity analysis has been carried out in the previous chapter 9.3 and it is noted that the project can tolerate increase in rate of interest by 50 bps and increase in expenses by 5 per cent during the entire tenure of the project. • The sponsor shall provide additional funds to SPV, from its own sources and without recourse to SPV' s assets/Project Assets to the satisfaction of the lenders, to meet any shortfall in respect of lender dues in the event of termination of the CoA. This provides adequate safety to the lenders. • Further, the cash flow of the project will be routed through Escrow account to be opened in designated Bank, on which lenders will have first charge. Hence, the lenders will have full control over Project Cash Flow. Further, the water fall mechanism provides priority to debt servicing (after taxes, payments relating to construction of Project Highway and O&M expenses). • In case of the SPV's event of default, the CoA provides for termination payments during concession period which provides additional comfort to the lenders, and the same is detailed here under.

RISK FACTORS	MITIGATION / COMMENTS
Change in-law	CoA provides that in the event of Change in Law, the SPV suffers/benefits an increase/decrease in cost or reduction/increment in post- tax return or any financial burden, the aggregate financial effect of which exceeds higher of ₹1 Crore or 0.5 per cent of realizable fee in any accounting year, the concessionaire may notify NHAI or vice versa, and propose amendments in CoA so as to place the DPJ-TOT in the same financial position, which it would have enjoyed had there been no change in the law.
Debt Service Reserve	• The borrower shall create a Debt Service Reserve (DSR) out of the project cash flow for the ensuing quarter for an amount equal to ensuing quarterly payment of principal and interest. • Adequacy of Debt Service Reserve to be checked on each Debt Repayment Date. **Interest** • Opening DSR for the interest component shall be created out of project cash flows only. • The borrower may provide a bank guarantee / letter of credit in part or in full as acceptable to the lender in lieu of interest and principal DSR. DSRBG shall be without any recourse to the Security/ Project Assets / Project Cash Flows and shall be renewed 30 days prior to the expiry date.
Major Maintenance Reserve (MMR)	The borrower shall create Major Maintenance Reserve (MMR) from the cash flow of the project, as envisaged in the Base Case Business Plan. The borrower has the option of replacing the MMR in part or full by a Bank Guarantee/Letter of Credit (MMR BG) to the extent of MMR required in the respective year as envisaged in the Base Case Business Plan, which can be used to cover any shortfall in creation from cash flow. The MMR BG will fall off post completion of major maintenance. MMR BG shall be without any recourse to the Security/ Project Assets / Project Cash Flows and shall be renewed 30 days prior to the expiry date.
O&M Reserve	The borrower shall create Operations & Maintenance Reserve (OMR) equivalent to O & M expenses for ensuing 2 months and the same is funded from the COP as envisaged in the Base Case Business Plan. Changes if any in OMR in the subsequent year as envisaged in the Base Case Business Plan, will be met through the project cash flows.

Mandatory Cash Sweep	a. Lenders shall have an option of cash sweep of 50 per cent of the surplus cash in case DSCR is 1.20 or above towards prepayment of the debt in the order of maturity. b. Incase DSCR is below 1.20 during any year,100 per cent of the surplus shall be used as Cash Sweep towards prepayment of the debt in the order of maturity. c. Cash sweep amount utilized for pre-payment of the Facility will be with out prepayment premium.
Sponsor Support Undertaking	The sponsor shall severally undertake. a) To bring in the equity required for the project as envisaged in the means of finance. b) They shall arrange to meet any cost overrun and shortfall in sources of the borrower in respect of completion of the Road Development Works. c) They shall arrange to meet any shortfall in respect of lenders dues in the event of termination of the Concession Agreement and till receipt of termination payment. d) They shall arrange to meet any short fall in resources of the borrower in meeting the O&M costs e) They shall arrange to meet any shortfall in resources of the borrower in meeting the M&M costs f) The funds bought in by the sponsor shall be subordinated to the facility. The sponsor shall in the event DSRA is not created or not sufficient or any shortfall at any point of time during the tenor of the facility as envisaged under DSRA terms as mentioned in this term sheet, the sponsor shall bring in additional funds and such funds shall remain in the project till the Project Cash flows are sufficient to replace the same. g) The sponsor may provide an equivalent Bank Guarantee in lieu of DSRA.

Case Study -3

Solar Power Project Appraisal (illustrative)

The financial viability of a solar project primarily depends on the generation capacity the solar radiation, the tariff rate and the terms of payment by the purchaser (Discom). Technology and location of the plant also therefore become important. The case study relates to SPV for 40 mw project of solar energy based on polycrystalline silicone technology, in Andhra Pradesh out of 160 mw projects allotted to be SPV promoter.

Proposed Project

SPV group has been shortlisted as successful bidder for developing and operating solar PV power projects with an aggregate installed capacity of 160 MW under Andhra Pradesh Solar Policy. PPAs for entire power output for 25year tenor have already been signed

Project SPV	Capacity (MW)	Location	Tariff (₹/kWh)*
ABC	40	Chittoor, Andhra Pradesh	5.978

*First year tariff will be escalated @ 3 per cent p.a. till 10th year and thereafter 10th year tariff will be applicable for remaining period of PPA

The selected technology for the proposed projects is mentioned in the table below –

Project SPV	Capacity (MW)	Project Technology
ABC	40	Poly – Crystalline

Project Cost

The total cost for setting up the 160 MW solar power projects is estimated at ₹ 1,317.07 crore. The detailed project-wise break-up of the cost is as given below:

	Cost Component	DSPPL
1	Land & Site Development	1.00*
2	• EPC Contract	303.00
A	Sub Total (1+2) (Hard Cost)	304.00
3	Contingency	6.08
4	Preliminary & Preoperative Expense	6.08
B	Sub Total (A+3+4) excluding Margin Money, IDC & Financing Charges	316.16
5	Interest During Construction (IDC) & Financing Charges	10.42
C	Sub Total (B+5) excluding Margin Money	326.58
6	Margin Money	1.87
D	Total Project Cost (C+6)	328.45

• EPC cost includes the cost of PV modules, invert or other accessories and installation charges

Means of Finance

The company proposes to finance the project cost at a debt-to-equity ratio (DER) of 73:27 as per the following details:

Project Cost	328.45
DER	73:27
Debt	239.77
Equity	88.68

Implementation Arrangement

The projects are proposed to be implemented on fixed time fixed cost basis through turnkey EPC

contracts. The EPC contract would provide for appropriate performance guarantees and liquidated damages for any shortfall in performance and delay in completion of the project. Group company engaged in contractual work has been appointed as the EPC contractor for implementation of the projects. The EPC company has access to equipment servicing and project contracting know-how from foreign collaborator it has already implemented and commissioned solar power projects.

Project Infrastructure and Clearances

Land Status

The total land required for the projects is estimated at 765 acres. Land acquisition is in advanced stages and is expected to be completed by June 2015. Project-wise land required is tabulated below.

Project SPVs	Land Required (acres)
ABC	180

Solar Resource Assessment

The Solar Resource Assessment has been carried out by leading consulting firm having good experience in the line. The study has been conducted using data from Solar Geographic Information System (GIS) database and by carrying out site visit. Solar Geographic Information System (GIS) dataset was selected as the most appropriate for the purposes of an energy yield prediction after comparison with datasets obtained from the NASA and Solar and Wind Energy Resource Assessment (SWERA)/ National Renewable Energy Laboratory (NREL) Climatological Solar Radiation (CSR) databases. As per the assessment, CUF for the projects at P-90 level of generation (excluding degradation rate of modules and auxiliary consumption of the plant) for the 20th year of plant operations works out as below:

Project SPV	Location	Technology/Module Supplier	CUF at P-90
ABC	Shanthipuram, Chittoor	Poly-Crystalline/Trina Solar	21.69%

Power Evacuation

The power from the projects will be evacuated to the respective 132/33 kV grid substations as specified under the Power Purchase Agreement (PPAs).

Operations & Maintenance Arrangement

It is proposed to outsource the operations and maintenance of the projects to ASEPL that has a team of experienced and is presently carrying out operations and maintenance of solar power projects in Gujarat (15 MW), Madhya Pradesh (25 MW) and Rajasthan (100 MW) of Acme group.

Module cleaning Arrangement

A module cleaning infrastructure is also being implemented by way of laying pipelines throughout the plant to carry pressurized water to cover the entire plant locations for cleaning the PV modules.

Proposed Selling Arrangement

The project SPVs have entered into 25-year PPAs with Andhra Pradesh Southern Power Distribution Corporation Limited (APSPDCL) as per the details provided below –

Project SPV	Capacity (MW)	Date of execution of PPA	Tariff (Rs/kWh)*	Weighted Average Tariff (₹/kWh)
ABC	40	December 5, 2014	5.978	7.40

*First year tariff will be escalated @ 3 per cent p.a. till 10th year and thereafter 10th year tariff will be applicable for remaining period of power purchase agreement (PPA). Accordingly, the weighted average tariff for the projects over the PPA period works out to Rs 7.10/kWh.

The salient features of the Power Purchase Agreement (PPA) executed between the respective individual project SPVs and Andhra Pradesh Southern Power Distribution Corporation Limited (APSPDCL) are provided in the Annexure II.

Technology

Crystalline silicon (c-s) modules consist of PV cells of typically 12.5 sq cm - 20 sq cm size connected together and encapsulated between a transparent front (usually glass) and a backing material (usually plastic or glass). Crystalline silicon cells are further divided into two types depending on the crystal structure.

- Mono-crystalline silicon (mc-si)
- Poly-crystalline silicon (pc-si)

Mono- crystalline (also called single crystal) silicon panels use solar cells that are cut from a piece of silicon. Single uniform crystal cells are produced in square or circular form, but due to optimum arrangement of cells on modules, square shape is generally preferred. Usual sizes of mc-Si cells are in the range of (10x10) cm to (15x15) cm.

Economically, poly-crystalline wafers may be made by a variety of techniques. One of the technologies involves carefully controlled casting, of molten polysilicon which is sliced into wafers. These can be much larger than mono-crystalline wafers. Poly-crystalline cells produced in this way are economical as compared to mono-crystalline.

Some of the solar module manufacturing companies manufacturing modules based on this technology include Sun tech Power, Sun Power and JA Solar

Financial Projections

40 MW Solar Power Project

(₹ in Crores)

FY ending 31st March	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue	4	44	45	46	47	48	49	50	51	52	53	53	53	52	52	52	51
EBITDA	3	41	42	43	44	45	46	47	48	49	50	49	48	48	47	47	46
Interest	2	26	25	25	27	26	24	23	21	19	17	14	12	9	6	4	2
Depreciation	1	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
PBT	0	0	2	3	2	4	6	9	12	15	18	20	22	24	27	28	29
PAT	0	0	2	2	1	3	4	6	8	10	12	13	15	16	18	19	19
EBITDA / Sale	81%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	92%	92%	92%	91%	91%	90%

FY Ending 31st March	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PAT/sales	1%	0%	3%	4%	3%	6%	9%	12%	15%	18%	22%	25%	28%	31%	34%	36%	38%
Net worth	89	89	90	92	94	96	101	107	114	124	136	149	163	179	197	215	235
Long term Borrowing	240	233	224	215	207	198	187	174	159	141	121	100	77	54	31	19	7
TOL	245	238	230	222	214	205	195	184	170	155	137	118	98	78	59	51	43
Net Fixed Assets	325	311	296	281	266	251	237	222	207	192	177	163	148	133	118	103	89
TOL/TNW	2.77	2.68	2.55	2.41	2.29	2.13	1.94	1.72	1.49	1.25	1.01	0.80	0.60	0.44	0.30	0.23	0.18
FACR	1.36	1.33	1.32	1.31	1.28	1.27	1.27	1.28	1.31	1.36	1.46	1.63	1.92	2.47	3.83	5.51	12.47
DSCR	1.81	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.26	1.28	1.35	1.46	2.65	2.98
Avg. DSCR	1.40																
Min. DSCR	1.25																

Key Financial Ratios

The projects are expected to have adequate debt servicing capacity on standalone as well as consolidated basis as indicated from the average and minimum DSCR levels tabulated below.

Project SPV	Minimum DSCR	Average DSCR
ABC	1.25	1.40

From the projection as above it is revealed that over the period of time the revenue is increasing with the increase in tariff rate and capacity utilization. The repayment is stipulated accordingly in ballooning instalments.

It is important to note that the solar power sector is going through rapid transformation. The prices of PV modules have reduced overtime and the current quoted tariffs bids are at lower rates ranging around ₹2.25-2.50per unit. The emerging competition is leading to improved efficiencies. Accordinglly, the cost of project needs to be assessed carefully.

Sensitivity Analysis

The impact on the DSCR of the projects on account of variations in key project-related assumptions has been analysed to test the financial robustness of the projects and further establish projects' bankability.

The results of the sensitivity analysis are summarized below

Scenario	DSPPL	
	Avg. DSCR	Min. DSCR
Base Case	1.40	1.25
Dec in CUF	1.34	1.18
Inc in Int Rate	1.39	1.24
Inc in O&M Cost	1.38	1.22

Details of the impact of a variation in key project parameters on the ability of the projects to service their respective debt are provided overleaf.

Decrease in Capacity Utilisation Factor (CUF)

Sensitivity analysis has been carried out for the scenario of the Projects running at a lower CUF i.e. 1% below the base case CUF level. As seen above, the Projects are expected to have satisfactory debt servicing capacity at lower CUF also.

Increase in Interest Rate on RTL

Sensitivity analysis has been carried out for increase in the RTL interest rate by 0.50% over the base case interest rate of 12.25%. It is observed that the Projects are expected to have satisfactory debt servicing capacity with increase in interest rates also.

Increase in O&M Cost

Sensitivity analysis has been carried out for increase in O&M cost by ₹0.5 lakh per MW over the base case value of ₹4.5 lakh per MW. The Projects are expected to have satisfactory debt servicing capacity with increase in O&M cost also.

As can be seen above, the debt service capability of the projects is comfortable even under adverse scenarios considered. Hence, it can be concluded that the proposed solar power projects will be able to withstand adverse circumstances and the debt serviceability satisfactory, even under adverse circumstances.

Salient Features of PPA

Purchase of Delivered energy and Tariff

- All the delivered energy i.e. energy supplied to the interconnection point as per the PPA for sale to DISCOM will be purchased at the tariff stipulated for the respective project capacity.
- The tariff will be escalated at the rate of 3 per cent p.a. for the first ten years of operation. Tariff from 11th year till the term of PPA will be same as in the 10th year without any further escalation.

- The project SPVs are entitled to draw the power for their auxiliary consumption. The cost for the auxiliary consumption would be adjusted by billing only for the net energy delivered at the interconnection point.

Billing and Payment

- The DISCOM will pay the bill on monthly basis through a one-month revolving letter of credit in favour the project SPVs which will be issued not later than 30 days prior to the scheduled COD.
- The DISCOM will be entitled to get a rebate of 1 per cent of the total amount billed in any billing month for payments made before the Due Date of Payment. For any payment made beyond the Due Date of Payment, DISCOM will be liable to pay interest at the prevailing SDI bank rate for the period of delay.
- If APSPDCL defaults in payment and/or fails to establish/ reinstate LC, the company is entitled to sell power to third parties as per the terms of the PPA.

Other Conditions

- The project to achieve COD from 15 months from the data of signing of PPA.

Risk Factors and Mitigation

The risk factor like management experience, resourcefulness of the promoters and construction risk etc. as discussed in the previous two cases are also applicable to this case also. The risks specific to the solar project related to technology and level of radiation are discussed below: -

Post completion risks

Reliable Assessment of solar Radiation	SPVs	The key input for a solar PV project is DM and the project revenues are directly linked to DNI. Hence, assessment of solar resource is highly critical for the projects. The Solar Resource Assessment has been carried out by Sgurr Energy India Private Ltd. Sgurr Energy is a Scotland based engineering consultancy firm. Sgurr Energy has offices in China, India, France, Ireland, Maine and British Columbia. Sgurr Energy has assessed more than 500 solar power projects with cumulative capacity of more than 4 GW. The study has been conducted using data from Solar GIS database and by carrying out visit to the project site. Solar GIS dataset was selected as the most appropriate for the purposes of an energy yield prediction following comparison with datasets obtained from the Meteonorm, NASA and SWERAJNREL (CSR) databases. Solar GIS is a geographical information system which integrates solar resource and meteorological data with tools for planning and performance monitoring of solar energy systems.

SOLAR ENERGY

Technology Risk		
Technology risks/ equipment under performance	SPVs/ EPC contractor	The project would be employ polycrystalline silicon and thin-film technology. Projects with this technology have been in commercial operation for more than 25 years in various countries across the world. The solar PV modules for the projects are proposed to be sourced from Trina Solar and Solar Frontier. Trina Solar is based out of China and is the fourth largest module manufacturer in the world. It specializes in the manufacture of crystalline silicon photovoltaic modules and system integration and has partnerships with leading installers, distributor utilities, and developers in all major PV markets. Trina Solar has shipped around 11GW of solar modules since 2007. Solar Frontier is a Japan-based thin film-based solar module manufacturer and has an annual production capacity of more than 1 GW. Solar Frontier has Shipped more than 2 GW of solar modules based on Thin-film technology. The inverters are proposed to be procured from leading inverter manufacturers such as Hitachi, Schneider & ABB. Shortfall in performance parameters, viz. rated capacity and other associated parameters (such as conversion efficiency and designed facility output) will result in a reduction in profit margins. The SPVs propose to execute the EPC contracts with ACSL with adequate provisions for liquidated damages for the shortfall in guaranteed performance. The EPC contractor would have back-to-back agreement with Trina Solar and Solar Frontier, the supplier of the modules for the projects.

Security

The details of securities chargeable in the project are given in Appendix V/3.2. It should be noted that in the case of power project the land is also taken as security by creation of equitable mortgage / registered mortgage. (In case of road project the land is not chargeable as security as motioned earlier).

Case Study -4

Airports Sector

Broad Features of the various points to be considered in case of an Airport project are listed below. The case study suitably covers these points:-

1. Type of Project-PPP Terms OMDA/ Build on operate or any other
2. Scope of Project (Construction/Operation)
3. Capacity
   I. Passenger
   II. Cargo Handling

4. Concession Period
5. Design for Construction and Cost Estimates
    i. Runway Design
    ii. Taxiway
    iii. Apron
    iv. Terminal
    v. Ancillary Developments
        1. Commercial
        2. Non-Commercial
6. Commercial & Ancillary Infrastructure Development
    I. Permissible Land Use
    II. Framework for Development
    III. Expected Revenue
    IV. Fixed Revenue
    V. Flexible Revenue
7. Environment Impact Analysis
8. Traffic Forecast
    I. Passenger Traffic (foot Falls)
    II. Cargo Traffic
    III. Project Development Schedule
    IV. Status of Approvals
    V. Term of OMDA (Operation Management Development Agreement)

Airport Project

1.	**Project & Purpose**	Development of Phase 1 of the green field international airport at Jewar, Gautam Buddha Nagar district of Uttar Pradesh i.e Yamuna International Airport Private Limited on Design, Build, Finance, Operate and Transfer (DBOT) basis ("Project"). The Concession Agreement (CA) for the Project has been executed on 07 October 2020 which is valid for 40 years w.e.f. the Appointed Date with provision for 30 Year extension on being the successful Bidder at the time of rebidding (Appointed Date is the date before which all the Conditions Precedent (CP) are compiled by both the parties.) The Project shall comprise of the development of an airport with an initial capacity of 12 MPPA, a terminal and a Code E Runway & related infrastructure.

<table>
<tr><td>2.</td><td>Project Location</td><td>The proposed airport project site is located at latitude 28° 09' N and longitude of 77 ° 35' E, North of Jewar Village, in Gautam Buddh Nagar district of Uttar Pradesh.</td></tr>
<tr><td>3.</td><td>Estimated Project Cost</td><td>The estimated cost for Phase 1 of the Project is ₹5730.00 Cr as detailed under:
<table>
<tr><th>Particulars</th><th>Phase 1 Cost</th></tr>
<tr><td>Land Development</td><td>83.00</td></tr>
<tr><td>Airside Development</td><td>785.00</td></tr>
<tr><td>Passenger Terminal Building</td><td>1390.00</td></tr>
<tr><td>Landslide Development</td><td>217.00</td></tr>
<tr><td>Support Facility Building</td><td>98.00</td></tr>
<tr><td>Utilities</td><td>525.00</td></tr>
<tr><td>Vehicles</td><td>56.00</td></tr>
<tr><td>Total Hard Cost</td><td>3154.00</td></tr>
<tr><td>GST Component</td><td>568.00</td></tr>
<tr><td>Design/PMC Cost</td><td>237.00</td></tr>
<tr><td>PoP expenses/Insurance Cost</td><td>438.00</td></tr>
<tr><td>Contingency</td><td>473.00</td></tr>
<tr><td>Inflation Impact</td><td>477.00</td></tr>
<tr><td>IDC</td><td>383.00</td></tr>
<tr><td>Total Project Cost</td><td>5730.00</td></tr>
</table></td></tr>
<tr><td>4.</td><td>D:E Ratio</td><td>65:35</td></tr>
<tr><td>5.</td><td>Project Debt</td><td>Rupee Term Loan of ₹3725.00 Cr
Letter of Credit Limit of ₹400.00 crs (Sub-Limit within Term Loan Limit)</td></tr>
</table>

Means of Finance: The estimated cost for Phase 1 of the Project is envisaged to have funded as under:

	Phase 1 Cost (₹ In Crs)
Term Loan	3725.00
Equity Contribution	2005.00
Total Means of Finance	**5730.00**

Equity Requirement of Jewar airport Project: The total equity contribution required is ₹2005 Cr which shall be infused over a period of 3 years starting from the second half of FY 2022 and till the first half of FY 2025. Besides 75% upfront equity infusion has been stipulated as a pre disbursement condition. The Equity infusion schedule is as shown in the table below;

FY (₹ in Cr)	**2022**	**2023**	**2024**	**2025**
Equity	625	330	499	551
Total cumulative equity	625	955	1454	2005

Share Holding Pattern:

Particulars	Existing	Proposed
Promotors	99.99%	99.99%
Others	0.01%	0.01%

Comments: As per the shareholders agreement, the authority (Noida International Airport Limited) holds one non-transferable equity share of the company (hereinafter defined as the Golden Share).

As per of the Concession Agreement, Golden Share allows the authority to appoint two nominees of the authority on board of directors of the company.

Phase	Traffic Capacity	Trigger for Development
Phase-1	12 MPPA	-
Phase-2	30 MPPA	80% of Phase-1 capacity
Phase-3	50 MPPA	80% of Phase-2 capacity
Phase-4	70 MPPA or more	80% of Phase-3 capacity

Airport Development Plan:

The Airport site, located at a distance of 48 km from Greater Noida and 72 km from Indira Gandhi International Airport (IGIA), is spread across an area of approximately 1,334 hectares. The total capacity of the Airport shall be around 70 MPPA, which is planned to be completed in 4 phases, wherein the Commercial Operation Date (COD) for Phase-1 of the Airport is planned to be October 1, 2024, with a capacity of 12 MPPA. The development of subsequent phases will be triggered as and when 80% of the cumulative capacity of preceding phases is breached, and the same has been provided in the table below:

Aeronautical Tariff Determination Principles: Tariff for the airport shall be determined based on the Hybrid Till methodology, which is being used by the Airport Economic Regulatory Authority (AERA) for all major airports in the country. In the hybrid till model, 30% of aggregate non-aeronautical revenue is available for cross-subsidization while determining the aeronautical tariff.

Airport Tariff Determination Principles:

The major aeronautical charges regulated by AERA include, Landing, parking, and housing charges for international and domestic aircraft, Passenger Service Fees (PSF) and User Development Fees (UDF). The aeronautical activities such as cargo, ground handling, and fuel throughput also form part of the aeronautical activities and are regulated by AERA. The non-aeronautical revenue charges are not directly regulated by AERA; however, some portion of the revenue stream (30%) from non-aeronautical activities is taken into consideration while arriving at the aeronautical charges to be levied by the airport operator.

The methodology followed by AERA to determine these charges considers the following for Aggregate Revenue Requirement (ARR) calculation:

- Fair Rate of Return on the Regulatory Asset Base, which includes the Aeronautical assets alone.
- The Projected Aeronautical Operating Expenses.

- The Projected Depreciation associated with aeronautical assets.
- Taxes associated with aeronautical activities.
- 30% of the Projected Non-Aeronautical revenues (subtracted to arrive at the ARR).

The tariff is determined for a block of 5 years, known as the Control Period. The aeronautical revenues are always determined to ensure that the Net Present Value of the proposed aeronautical revenues is equal to the Net Present Value of the calculated ARR for a Control Period.

Non-Aeronautical Revenue: They are market determined and based on international competitive biddings to appoint suitable sub-concessionaires who will be advancing services such as Retail, F&B, Duty-Free, Car park, Flight Catering, etc.

The revenue to the airport operator shall be in the form of a revenue share (like malls) or minimal annual guaranteed return, whichever is higher. In the case of Noida Airport, the potential Non-Aero revenue has been assessed at ₹267 to ₹334 per passenger (for the first 5 years) by the TEV Consultant, which has been reckoned in the base case scenario.

Regulatory Asset Base (RAB): The Regulatory Asset Base refers to the aeronautical assets amongst the total investment made (Fixed Asset Block dedicated to Aeronautical Assets). In the case of NOIDA airport, the percentage of aeronautical assets has been assumed to be 93%, which is consistent with the aeronautical asset allocation considered by AERA in the tariff order with regard to the expansion projects for major airports such as Bangalore and Delhi recently. Additionally, in the case of Kannur airport, which is a greenfield airport, the aeronautical asset allocation has been considered at 95%.

Fair Rate of Return: It is arrived at by assuming the weighted average of the cost of debt (Actual Cost) and cost of equity (usually considered at 16%) for each of the 5-year block called the control period. In the instant case, the Fair Rate of Return has been calculated considering:

- Cost of Debt @ 9%
- Return on Equity @ 16%

The Fair Rate of Return has been capped at a maximum rate of 14%.

Performance & Financials

Parameter	2025	2026	2027	2028	2029	2030
Net sales	228	600	747	880	1,048	1,518
NWC to Sales	0.13	0.13	0.13	0.13	0.13	0.14
EBIDTA	186	474	602	712	855	1,114
EBIDTA margin	82%	79%	80%	81%	82%	73%
PBT	-78	-55	78	203	371	657
Net Profit	-78	-55	78	203	371	613
Cash accruals	17	136	269	394	561	804
Net Working Capital	30	76	95	112	134	205

Parameter	2031	2032	2033	2034	2035	2036
Net sales	1,714	1,837	1,920	2,092	1,507	1,537
NWC to Sales	0.13	0.13	0.13	0.13	0.12	0.12
EBIDTA	930	869	917	1,042	423	420
EBIDTA margin	54%	47%	48%	50%	28%	27%
PBT	504	474	555	712	121	138
Net Profit	400	372	427	540	94	103
Cash accruals	591	563	618	731	285	294
Net Working Capital	231	244	256	281	182	184
Parameter	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
Net sales	1567	1599	1632	1554	1589	1627
NWC to Sales	0.11	0.11	0.11	0.11	0.11	
EBIDTA	417	411	405	286	280	274
EBIDTA margin	27%	26%	25%	18%	18%	17%
PBT	152	162	169	61	66	67
Net Profit	110	114	116	32	33	32
Cash accruals	301	305	307	223	224	111
Net Working Capital	186	189	191	175	178	180

Comments on Financials:

Airport Revenues: The airport revenues include aeronautical and non-aeronautical revenues. The aeronautical charges are regulated by the Airports Economic Regulatory Authority of India (AERA) based on set tariff determination principles.

The non-aeronautical revenues include the revenues earned from various non-aeronautical sub-concessions entered into by the airport operator with sub-concessionaires for retail, F&B, Duty Free, Flight kitchen, etc., in the form of revenue share or Minimum Annual Guaranteed (MAG) revenue, whichever is higher and are not regulated by AERA.

Break-up of Revenue:

Particulars (₹ Cr)	2025	2026	2027	2028	2029	2030	2031	2032	2033
Aeronautical Revenues	179	446	557	648	769	1,192	1,329	1,399	1,462
Non-aeronautical revenues	49	154	190	232	279	326	385	438	458
Total Revenues	228	600	747	880	1,048	1,518	1,714	1,837	1,920

Particulars (₹ Cr)	2034	2035	2036	2037	2038	2039	2040	2041	2042
Aeronautical Revenues	1,607	1,002	1,012	1,023	1,033	1,044	943	955	967
Non-aeronautical revenues	485	505	525	544	566	588	611	634	660
Total Revenues	2,092	1,507	1,537	1,567	1,599	1,632	1,554	1,589	1,627

Ratio Analysis

Parameters	2025	2026	2027	2028	2029	2030
Liquidity Ratios						
Current Ratio	9.68	8.30	8.94	9.18	9.61	12.91
NWC	30	76	95	112	134	205
NWC/Sales	0.13	0.13	0.13	0.13	0.13	0.14
Coverage Ratios						
Interest Coverage Ratio	1.11	1.42	1.85	2.30	3.00	4.40
DSCR	1.10	1.27	1.30	1.32	1.36	1.69
Operating Cost to Sales (%)	18%	21%	20%	19%	18%	26%
EBITDA/Net Sales	0.82	0.79	0.80	0.81	0.82	0.73
Long Term Loans/EBITDA	20.02	7.78	5.91	4.68	3.50	2.36
Debt/Equity	1.93	1.97	1.82	1.55	1.19	0.84
Interest/Cost of Sales	1.23	1.07	0.99	0.89	0.77	0.45
Turnover Ratios						
PBT/Net Sales%	-34%	-9%	10%	23%	35%	43%
Solvency Ratio						
TOL/TNW	1.95	2.0	1.87	1.59	1.23	0.89
TOL/Adj. TNW	1.95	2.0	1.87	1.59	1.23	0.89
Parameters	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Liquidity Ratios						
Current Ratio	12.91	12.50	12.50	12.98	8.44	8.23
NWC	231	244	256	281	182	184
NWC/sales	0.13	0.13	0.13	0.13	0.12	0.12
Coverage Ratios						
Interest Coverage Ratio*	4.24	4.67	6.01	8.75	4.51	5.45
DSCR, if applicable	1.37	1.34	1.47	1.73	1.35	1.41
Operating cost to Sales (%)	45%	52%	52%	50%	71%	72%
EBIDTA / Net Sales	0.54	0.47	0.48	0.50	0.28	0.27
Long Term Loans / EBIDTA	2.42	2.16	1.65	1.09	2.24	1.82
Debt / Equity	0.64	0.48	0.35	0.23	0.19	0.15
Interest/Cost of Sales	0.24	0.18	0.14	0.11	0.09	0.07
Turnover Ratios						
PBT/Net Sales%	29%	26%	29%	34%	8%	9%
Solvency Ratio						
TOL/TNW	0.69	0.53	0.40	0.28	0.22	0.18
TOL/Adj. TNW	0.69	0.53	0.40	0.28	0.22	0.18
Parameters	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
Liquidity Ratios						
Current Ratio	8.02	7.82	7.62	6.82	6.66	6.51

NWC	186	189	191	175	178	180
NWC/sales	0.12	0.12	0.12	0.11	0.11	0.11
Coverage Ratios						
Interest Coverage Ratio*	6.91	9.42	13.14	14.21	27.84	108.93
DSCR, If applicable	1.46	1.52	2.37	1.84	1.92	1.95
Operating cost to Sales (%)	73%	74%	75%	81%	82%	83%
EBIDTA / Net Sales	0.27	0.26	0.25	0.18	0.18	0.17
Long Term Loans / EBIDTA	1.39	0.95	0.69	0.59	0.20	0.00
Debt / Equity	0.11	0.07	0.05	0.03	0.01	0.00
Interest/Cost of Sales	0.06	0.04	0.03	0.02	0.02	0.01
Turnover Ratios						
PBT/Net Sales%	10%	10%	10%	4%	4%	4%
Solvency Ratio						
TOL/TNW	0.14	0.11	0.08	0.06	0.04	0.03
TOL/Adj. TNW	0.14	0.11	0.08	0.06	0.04	0.03

Cash Flow Analysis

Consolidated Cash Flow	2025	2026	2027	2028	2029	2030
a. Net cash from Operations	156	428	582	696	833	998
b. Net cash from Investments	-1576	0	0	0	0	0
c. Net cash from financing	1346	-442	-491	-568	-656	-587
d. Net increase in cash/cash equivalent	-74	-14	91	128	177	411

Consolidated Cash Flow	2031	2032	2033	2034	2035	2036
a. Net cash from Operations	801	753	778	845	495	383
b. Net cash from Investments	0	0	0	0	0	0
c. Net cash from financing	-573	-550	-518	-476	-266	-267
d. Net increase in cash/cash equivalent	229	204	259	369	229	116

Consolidated Cash Flow	2037	2038	2039	2040	2041	2042
a. Net cash from Operations	372	360	349	273	244	236
b. Net cash from Investments	0	0	0	0	0	0
c. Net cash from financing	-250	-234	-110	-153	-128	-38
d. Net increase in cash/cash equivalent	122	126	238	121	116	198

Comments in brief, if the impact is significant:

As per projections, the company shall have net positive cash flow post commencement of operations except in the first two years of operations i.e. FY 2025 and FY 2026, wherein there is a shortfall of ₹74 Cr and ₹14 Cr, respectively. Since airport operations require a longer gestation period, the overall position may be considered acceptable. Moreover, the sponsor has undertaken to infuse funds to cover for any cash shortfall towards debt service obligations.

Sensitive Analysis:

The company operating in the airport sector wherein the aeronautical tariff is regulating to ensure adequate returns for the investment made. Under the 30% shared revenue till mechanism followed by the economic regulatory authority (AREA) for traffic fixation:

- The expenses associated with aeronautical operations excluding revenue share
- Return on the investment made with respect to aeronautical assets deprecations associated with aeronautical assets less the 30% of the revenues from non-aeronautical operations Shall be recovered as aeronautical tariff which contributes to aeronautical revenues.
- Further the company also gets to collect revenues from non-aeronautical operations which together along with aeronautical revenues from the total revenues from the total revenue of YIAPL. As a result, any increase in costs both fixed and variable if justifiable, can be recovered through aeronautical revenues/increased tariff. Hence any increase in costs shall not impact the EBITA Margin and hence the above-mentioned sensitivity analysis is not applicable.

However, the sensitivity analysis has been carried out for the following scenarios;

Scenarios	Minimum DSCR	Average DSCR
Base Case	1.10	1.47
Increase in Interest rate spread by 50 bps	1.05	1.46
Increase in operating expenditure by 10%	1.08	1.47
Decrease in non-aeronautical revenue by 10%	1.07	1.41

Minimum DSCR under all the scenarios combined is above 1.00 and average DSCR is also above 1.40. The minimum DSCR happens in the first year of operation with the DSCRs in the balance years above 1.25.

Critical risk factors associated with the proposal:

Land acquisition, and Rehabilitation & Resettlement (RR)	**Transfer of land title is awaited by NIAL.** A delay in the transfer could adversely impact the project schedule. **RR could be a delay risk** as the **48 hectares land identified for rehabilitation is not completely prepared**. Work on RR is ongoing at present and is targeted to be complete by **May-2021**. Any delay could impact the **Commercial Operations Date (COD).**	The total land area required for development of the Airport is **1,334 hectares**. The Authority shall provide **100% of the land required for aeronautical assets and terminal building under Phase-1** as part of the CPs to be complied before the Appointed Date. The **Land acquisition for the Airport has been completed by the Government of UP.** However, the development of the **R&R site for the families to be relocated, having an area of 48 hectares, is in progress** and shall be completed by **May 2019**. The **GoUP** has created an extensive **resettlement and rehabilitation package** for the affected families, which includes:

		• Subsistence grants • Transportation costs • Cattle shed/petty shops • Various one-time allowances In our base case model, we have considered the **appointed date as on 1st Oct. 2021**, i.e., **4 months after completion of R&R activities**. Besides, **handing over of entire land to the concessionaire** is one of the pre-disbursement conditions. **Risk Perception: Low**
Approvals	**Delay in obtention of Environment Clearance/ approvals may cause delay in the project.**	As per **CA**, the necessary approvals, clearance, permits, and **NOCs**, including those related to the environment, **are the responsibility of the Authority** and must be obtained before the **Appointed Date**. The **environmental clearance** is currently in the name of the **Directorate of Civil Aviation, UP**, and shall be transferred to the **Yamuna International Airport Private Limited by August 2021**, i.e., before the **appointed date of 1st October 2021**. The **statutory clearance from DGCA has already been obtained** for the project, while some of the approvals—including those from **UP PCB, SEB, Irrigation Department, Fire Department, etc.—must be obtained prior to the start of construction**. The same has been stipulated as one of the **PDCs**. Further approvals, such as **consent to operate/aerodrome license and approval from the civil aviation department**, shall be obtained closer to the **commencement of operations** of the airport project. **Risk Perception: Low**

Project Execution	Large capital-intensive projects, especially infrastructure, are usually plagued by **time and/ or cost overruns** due to various reasons. These end up impacting the financial outcomes and in extreme cases even the viability of such projects.	The **promoters have adequate experience** in developing airport projects successfully, both in **India and abroad**. They have **completed the Greenfield airport project in Bangalore** as part of the **consortium with Siemens and L&T**. The **parent company**, apart from owning and operating a **leading airport in Europe** , is also successfully operating and developing 5 airports in Latin America. The timelines of 3 years is consistent with the development of greenfield airports. The possibility of time overrun, and the associated cost overrun for the project could be minimal given the expertise of the promoter, the importance given to the project by the GoUP and the availability of RoW for development of the project without any possible encumbrances. The company shall enter into fixed price fixed time EPC contracts to ensure the possibility of cost overrun are limited. **Risk Perception: Low**
Project Cost Approval Risk	The **Project Cost** as assessed by the company comes to **₹ 5730 Cr**, which is **higher than the Project cost of ₹ 4588 Cr** mentioned in the CA. The project cost assumes significance as the same forms the **basis for tariff determination by AERA**, which shall provide a **return on the aeronautical portion of the investment made**.	The **difference in project cost** is mainly due to: • **Inflation factor:** ₹ 356 Cr • **GST component:** ₹ 567 Cr • **Pre-operating expenses:** ₹ 438 Cr • **Over-cost assumption in some items:** ₹ 219 Cr The **Company shall do necessary filing and provide justification** during the consultation process to justify any **increase over the benchmark levels** set at the time of tariff determination and same shall be approved by AERA based on justified reasons. As such, the approval of the costs as submitted by the company by the AERA may not be an issue. **Risk Perception: Low**

Financing Closure Risk	Delay in financial closure may lead to delay in implementation of the project.	Total debt requirement for the project based on DE ratio of 65:35 works out to be ₹3725 Cr. SBI has underwritten the entire debt requirement with an option to down sell to the extent of ₹ 1725 Cr. **Risk Perception: Low**
Traffic	**Aviation has been one of the most severely impacted industries due to the COVID pandemic.** Hence, the manner in which the industry emerges and recovers post-COVID will have a bearing on the traffic that NIAL is able to attract. Consolidation among airlines, or market exits, could pose supply-side risks for NIAL.	As per the **Traffic Study Report** conducted by Landrum & Brown, the domestic traffic is expected to recover to pre-COVID levels by FY 2023, whereas international traffic is expected to recover to pre-COVID levels by FY 2024. Thus, the COVID-19 pandemic is expected to have negligible impact on the opening day traffic of the airport, which is envisaged on **1st Oct 2024**. As per the **TEV study**, the traffic projected by the Company is conservative in nature, with **Phase 1 capacity** expected to be achieved much quicker than projected by the Company. For the proposal, a conservative approach has been considered, with the passenger traffic considered in line with the **base case scenario** projected by the Company, which has taken into account the impact of **COVID-19 in the long term**. Also, the passenger traffic considered in the proposal has been capped at **12 MPPA to be attained by FY 2034**. **Risk Perception: Medium**

Revenue Risk	**Due to a lower traffic base**, the **User Development Fee (UDF)** to be recovered from customers will be **higher in the initial years**, particularly in the first control period. **NIAL will predominantly handle domestic traffic in Phase 1**, and its traffic volumes will remain relatively **small**. Converting domestic traffic into **targeted non-aero revenues** may be a challenge initially.	The company also **proposes to levy concessional tariffs** in the first control period, which shall **incentivize airline and passenger traffic**, considering the **availability of slots** and the ability to have a **first-mover advantage** in a developing airport close to the national capital. **Non-aeronautical revenues** are primarily dependent on the **growth in passenger traffic**. Based on the recommendations of the **TEV study** (after factoring in the impact on **consumer behavior due to COVID-19**), **non-aero revenue per pax** in the first year of operations is estimated to be **₹ 267 per pax**, which could be considered **conservative** when compared to **major PPP airports**. This also accounts for the **inflationary effect till FY 2025**. The **Promoter group**, which has been successful in **harvesting non-aero revenue potential and monetizing commercial development** in **a leading airport in Europe**, is confident in tapping into **non-aero potential**. **Risk Perception: Medium**

The economic regulatory framework in India has largely de-risked airport operators and lenders by guaranteeing a return on equity.

- The economic regulatory framework in India has de-risked airport operators to a significant extent, with the ability to true-up the various building blocks of the airport business model, namely:
    1. Operating expenditure
    2. Traffic
    3. Non-aero revenue
    4. The cost of debt

- In order to allow airport operators to achieve the stipulated Return on Equity, the Airports Economic Regulatory Authority (AERA) permits them to levy User Development Fees (UDF). As a result, the permitted Return on Equity (RoE) is guaranteed and is not subject to market dynamics and fluctuations.
- Lenders enjoy a significant degree of comfort to the extent that interest costs are allowed on actuals, and aggregate revenue requirements are met by incorporating statutory instruments such as UDF.
- Lenders' risks are further insulated by the fact that airport operators have the ability to access alternative sources of funds if required, e.g., land monetisation or development fees.

Connectivity to the Airport

- The existing connectivity to the airport is limited, with access to the airport being through the Yamuna Expressway, accessible from Sikandrabad-Jewar Road, Eastern Peripheral Expressway (which is 30 km north of Yamuna Expressway), and the junction of Palwal-Aligarh State Highway 22A and Yamuna Expressway, which is 30 km south of the airport. This impacts the catchment area of the airport, which is limited to regions like Noida, Greater Noida, Palwal, Khurja, and Bulandshahr.
- **Mitigation:** There are several proposals for improving connectivity to the airport in order to reduce travel times from the Delhi-NCR region.

o A Metro Rail to the airport with a proposed extension of the Noida Metro line by 35.64 km from Greater Noida, with 24 stations and at least one station per sector planned. The commencement of this line is expected to coincide with the commencement of airport operations.

o An interchange has been proposed between Yamuna Expressway and Airport Access Road to provide direct connectivity to the airport from Yamuna Expressway.

o A service road on Yamuna Expressway is proposed to be extended to the planned 75m North Boundary Road along the northern boundary of the airport to provide direct connectivity to Greater Noida and YEIDA sectors.

o An interchange at the junction of Yamuna Expressway and Eastern Peripheral Expressway is currently under construction, providing a better route from South and West Haryana.

o A proposed link road from Palwal-Khurja Expressway to bring traffic from the districts of Mewat, Palwal, and Faridabad.

o An 816 km rail corridor from New Delhi to Varanasi has been planned with a stop at the airport.

Summary of the case study-4

The case study has discussed a green field project for the airport sector under PPP model in which the concession agreement has been signed with the selected bidder based on the highest revenue

per passenger of Rs.400.97. The project cost in this case inculdes variety of construction like airside development, landside development as also passenger terminal building. The cost needs to be assessed carefully followed by effective project monitoring the credit profile and past experience of the sponsor is very relevant. Both aero and non- aero revenues are required to be studied in detail. The non-aero yield depends on traffic growth, the profile of passengers, their spending capacities and the commercial arrangements finalised with the retailers. Taking into account the regulatory framework and the expected flow of traffic based on growing demand, and the projected improvements in connectivity to the airport the projected cash flows are arrived at to establish the repayment capacity as per the DSCR.

Case Study -5

Port Sector Project

Broad Features of the various points to be considered in case of a Port project are listed below. The case study suitably covers these points :-

- Location
- Draft of the PORT
- Cargo handling Capacity
- Vassal size (Maximum)
- Maintenance Dredging Required
- User linkages
- Use or Pay agreement
- Captive usage
- Anchor Customers
- Traffic Study
- Primary Hinter land
- Secondary and Tertiary
- Hinter Land
- Proposed Port Operator (Whether a part of SPV)
- Land side Logistics
- Technical Study Comments (Sea bed survey / Oceano graphic study / topographic studies / geotechnical studies)
- Environmental impact analysis
- Whether State support agreement available
- Clearances and approvals
- Relocation & Rehabilitation

Port Project

Industry Scenario — BROAD FEATURES — PORT SECTOR

Indian ports handle 85-90 per cent of the country's EXIM trade in terms of volume and around 65-70 per cent in terms of value. The country depends on ports for sustained economic growth, for expanding its export trade, and also for ensuring timely availability of raw material across industries. There are 12 major and nearly 200 non-major ports/jetties that dot the country's coastline.

- Maritime India Vision-2030 expects cargo volume across cargo categories to nearly double by FY2030 vis-à-vis FY2020 levels.
- Port capacities expected to expand by 1.7x-2.0x by 2030 across the various port clusters.

Case study: Background

Paradip Port is one of the 12 major ports in India and excels and is handling various cargo like crude oil, POL (Petroleum Oil and Lubricants) products, iron ore, thermal coal and coking coal among others. The port is well equipped with various marine and supporting infrastructure along with a steady fleet of vehicles. which included 74.37 MT of Overseas cargo and 41.76 MT of Coastal cargo. This constituted to 16.12% of the total cargo handled by the major ports in FY 2022.

To provide unhindered and world class facilities, including facilities to handle the cape size vessels of up to 2,00,000 DWT(Dead Weight Tonnage) in the inner harbour, augmentation of existing facilities along with mechanisation of berths & construction of deep draft berths is required.

Paradip Port Authority (the Concessioning Authority) has awarded the Project through a Letter of Award. In a consortium, floated as Special Purpose Vehicle by a group which is already functioning in the sectors relating to Steel, Mining and Power.

The consortium of promoters has emerged as the highest bidder by quoting royalty of ₹ 54 per Metric Tonne.

- **Vessel sizes:** The quay structure will be designed to cater ship capsize vessel. The design ship class and sizes are given below:

Ship Class	DWT (T)	Length Overall (m)	Beam (m)	Draft (m)
Cape	200000	290-300	47-48	18.5
Panamax	80000	225-230	32.2	12.2
Handymax	55000	190	32.2	11.3

COST OF THE PROJECT

(₹ In crores)

Description	Amount
Capital Dredging	447.46
Marine, Civil & Structural works	909.31
Mechanical works	1076.90
Electrical works and control system	219.75
Preliminary & Pre-operative cost	159.60
Railway tracks	200.60
Sub-total	**3013.62**
Contingency	123.47
Interest during construction (IDC)	256.10
Total Estimated Project cost	**3393.19**

Marine Civil and Structural cost is as under:

Particulars	Amount
Berth (North side)	175.00
Berth (South Side)	166.00
Berth (West side)	35.00
Slope Protection Works	1.00
Reclamation and stock yard preparation	30.00
Rail siding doe Steel coils/ Products	8.00
Silo for in-motion wagon loading system	36.00
Foundation works for re-claimer, rail loader	83.50
Transfer towers, galleries for conveyor system	165.10
Miscellaneous buildings	12.00
Roads, drainage, dump pond etc	50.00
Water tank and water distribution system	9.00
Civil, Marine & Structural works costs	**770.60**
GST	138.71
Total	**909.31**

Mechanical Works:

Description	Amount
Grab ship Unloaders	180.00
Multipurpose Unloaders	128.00
Stacker/Re-claimers:	213.00
a) Stacker/ Re-claimer for Coal	
b) Stacker/ Re-claimer for Limestone	
c) Stacker for Limestone	
Rail Mounted Gantry Crane at Rail Yard for Steel Products	40.00

a) In-Motion Wagon Loading for Station for Coal	18.00
b) Travelling Wagon Loader for Limestone	20.00
Belt Conveyor System including miscellaneous items:	200.70
(a) Belt width 2200mm Conveyors for Coal	
(b) Belt width 2200/1600/1200 mm Conveyors for limestone	
Installation & Commissioning (10% on mechanical works)	58.70
Freight & Insurance @ 3%	25.00
Statutory Levies: Custom duty GST @18%	 34.50 159.00
TOTAL	**1076.90**

Capital Dredging: Breakup of Estimated Dredging Cost

Particulars	**Amount**
Capital Dredging for approach channel & entrance channel	289.20
Capital Dredging for berth	90.00
GST	68.26
Capital Dredging Cost incl. GST	**447.46**

(₹ in crore)

Particular	**Amount**
Promotor's Contribution	1017.19
Debt/Term Loan	2376.00
Total	**3393.19**
DER Ratio	**2.34:1**

After completion of the project, it can handle 25 MTPA cargo including coal/coke, limestone and steel products. Since the cargo handling requirement for the groups' own steel plants is estimated to be excess of 25 MTPA capacity, the project can reasonably be assumed to operate at full capacity. The company has already entered into a Take or Pay Agreement (ToPA) with the parent group company with minimum guaranteed tonnage (MGT) of 7.5, 11.25 and 17 MTPA in first, second and third year onwards respectively. Based on demand potential in the hinterland along with group's captive traffic, the project had the potential to go beyond the proposed capacity of 25 MTPA.

Capacity Utilization

Financial Year	Installed Capacity	FY 27 *	FY 28	FY 29	FY 30	FY 31	FY 32 Onwards
Total Capacity Utilization		35%	74%	81%	88%	96%	100%
Import							
Coal	12.00	4.24	8.91	9.76	10.61	11.52	12.00
Limestone	8.00	2.83	5.94	6.50	7.07	7.68	8.00
Export							
HRC	5.00	1.77	3.71	4.07	4.42	4.80	5.00
Total	**25.00**	**8.84**	**18.56**	**20.33**	**22.10**	**23.99**	**25.00**
Customers							
Take or Pay*		3.75	11.25	17.50	17.50	17.50	17.50
Others		5.09	7.31	2.83	4.60	6.49	7.50
Total		**8.84**	**18.56**	**20.33**	**22.10**	**23.99**	**25.00**

*half year of operations

Road Connectivity: Paradip was announced as one of the 'Smart Industrial Port Cities' in July 2017. Since then, the city has seen considerable investment in improving road connectivity.

Paradip Port is served by National Highway NH-5A and State Highway SH-12, which connect the port by road to the principal cities of Cuttack and Bhubaneshwar in Odisha.

The port is also connected by bus routes to the steel city of Rourkela, Kolkata and to the holy town of Puri & Konark.

Rail Connectivity: According to the Market Assessment Study carried out by PwC, rail is the dominant mode of transportation with a majority modal share for coal, iron ore and steel. As a result, rail connectivity is crucial and directly influences demand for key commodities in the hinterland.

Howrah-Chennai

Paradip railway station, in the vicinity of the port, connects with the East-Coast Railway via Cuttack on the main line. Paradip Station is at the terminus of the 83 km long double line broad gauge railway link with Cuttack. A new line will connect Paradip to Haridaspur in the Cuttack-Bhadrak route. Additionally, as informed by the Company, upcoming railway lines such as Angul-Sukinda rd., Bimlagarh-Talcher, Gopalpur port - Talcher and other ongoing capacity expansion plans are expected to improve rail connectivity of key industrial clusters (Angul, Kalinganagar, Rourkela, Sambalpur etc.) in the hinterland.

Further, a large number of empty rakes are generated at Paradip by virtue of large quantum of exports/ coastal movement from Paradip Port. These empty rakes can easily carry coal and limestone to Angul & Raigarh.

Thus, connectivity risk is adequately mitigated.

Particulars	Parameters Assumed	Remarks
Operating Days		
Ship unloading days	320 days / annum	Considering 15 days for preventive maintenance period in every 6 months and 15 days loss of time due to unforeseen reasons like cyclone etc. It is a planning criterion for capacity selection and does not mean that the facility being planned cannot be operated for more than 320 days in a year after providing adequate preventive maintenance time. Intention is to avoid equipment abuse which is often observed in practice.
Effective ship operating days	296 days / annum	Considering 20% loss of handling efficiency during 4 months of monsoon.
Wagon unloading days	330 days / annum	

Traffic assumptions:

Promoter will handle movement of 25 MTPA of cargo such as coal, limestone and steel for Group's captive plants primarily situated in Angul (Odisha) and Raigarh (Chhattisgarh), as well as attract external clients for balance surplus capacity.

Revenue assumptions:

Cargo handling forms an essential part of the port functions, and contributes towards a considerable part of the revenue. The Cargo Handling rates for Coal, Limestone and Steel are assessed at ₹300 per tonne, ₹300 per tonne & ₹700 per tonne.

Marketing/ off-take Risk – Moderate The Minimum Guaranteed Tonnage (MGT) of 7.5 MTPA for 1st financial year with TOPA, whereas as per implementation plan, the company proposed to complete the 25 MTPA. The MGT with PPA shall be higher than TOPA for the 1st year.	The docks are primarily meant for handling of coal and limestone which are the main raw materials for steel units. The concessionaire proposes to execute suitable unconditional, irrevocable Take or Pay Agreement (TOPA) with one of its's parent group company. Further, considering expansion plan of the Group in place, it may have its own traffic to utilize the dock over and above the MGT. In addition, in case of any shortfall, it also is hopeful of getting business from other steel plants in the area.

Take or Pay Agreement (TOPA): Salient features of TOPA are as given below:

- Agreement period: 17 years (after 3 years' construction period) and extendable on mutual consent.
- Minimum Guaranteed Tonnage (MGT): The MGT shall be applicable from commissioning of the Project and is valid for each financial year, as per below:
  - 1st Year after Commissioning of Western Dock: 7.5 MTPA
  - 2nd Year after Commissioning of Western Dock: 11.25 MTPA
  - 3rd Year after Commissioning of Western Dock: 17 MTPA

PROJECTED PROFIT AND LOSS ACCOUNT (₹ In crore)

Particulars	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	31-Mar-32	31-Mar-33
Cargo qty	**9**	**19**	**20**	**22**	**24**	**25**	**25**
Revenue							
Berth Hire Charges	29.64	65.27	75.15	85.81	97.59	107.01	112.36
Cargo Handling Charges	408.32	900.13	1,035.03	1,181.41	1,346.87	1,473.76	1,547.45
Storage Income	-	-	-	-	-	-	-
Total Revenue	**437.96**	**965.40**	**1,110.18**	**1,267.22**	**1,444.46**	**1,580.77**	**1,659.81**
Revenue Growth %	**-**	**120.43%**	**15.00%**	**14.15%**	**13.99%**	**9.44%**	**5.00%**
Revenue Rs./ MT	495.43	520.15	546.21	573.53	602.11	632.31	663.93
Total Operating Expenses	215.99	460.42	503.38	549.44	598.63	640.07	667.17
EBITDA	**221.97**	**504.98**	**606.79**	**717.78**	**845.83**	**940.71**	**992.64**
EBITDA Margins %	-	52.31%	54.66%	56.64%	58.56%	59.51%	59.80%
EBITDA ₹/MT	**-**	**272.08**	**298.55**	**324.86**	**352.58**	**376.28**	**397.06**
Depreciation	56.41	112.82	112.82	112.82	112.82	112.82	112.82
EBIT	**165.56**	**392.16**	**493.97**	**604.96**	**733.01**	**827.89**	**879.82**
Interest	107.22	214.27	204.29	192.20	172.05	150.93	129.04
PBT	**58.34**	**177.89**	**289.69**	**412.76**	**560.96**	**676.96**	**750.78**
Tax	-	-	-	59.98	111.36	147.75	172.59
PAT	**58.34**	**177.89**	**289.69**	**352.77**	**449.60**	**529.21**	**578.19**
PAT Margin (%)	**13.32%**	**18.43%**	**26.09%**	**27.84%**	**31.13%**	**33.48%**	**34.83%**

Particulars	31-Mar-34	31-Mar-35	31-Mar-36	31-Mar-37	31-Mar-38	31-Mar-39	31-Mar-40
Cargo qyt	25	25	25	25	25	25	25
Revenue							
Berth Hire Charges	117.98	123.88	130.07	136.58	143.41	150.58	158.11
Cargo handling Charges	1,624.82	1,706.06	1.791.37	1,880.93	1,974.98	2,073.73	2,177.41
Storages Income	-	-	-	-	-	-	-
Total Revenue	1,742.80	1,829.94	1,921.44	2,017.51	2,118.39	2,224.31	2,335.52
Revenue Growth %	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Revenue ₹/MT	697.12	731.98	768.58	807.01	847.36	889.72	934.21
Total Operating Expenses	695.57	725.33	756.53	789.23	823.51	859.46	897.14
EDITDA	**1047.23**	**1,104.61**	**1,164.91**	**1,228.28**	**1,294.87**	**1,364.85**	**1,438.38**
EBITA Margins%	60.09%	60.36%	60.63%	60.88%	61.13%	61.36%	61.59%
EBITA Rs./MT	418.89	441.84	465.96	491.31	517.95	545.94	575.35
Deprecation	112.82	112.82	112.82	112.82	112.82	112.82	112.82
EBIT	934.41	991.79	1,052.09	1,115.46	1,182.05	1,252.03	1,325.56
Interest	107.54	86.03	64.69	43.03	21.52	2.69	-
PBT	826.88	905.76	987.40	1,072.43	1,160.53	1,249.34	1,325.56
Tax	197.21	221.83	246.54	271.59	296.94	322.09	343.72
PAT	629.67	683.93	740.86	800.85	863.58	927.25	981.84
PAT Margin (%)	36.13%	37.37%	38.56%	39.69%	40.77%	41.69%;	42.04%

PROJECTED CASH FLOW STATEMENT & DSCR CALCULATION

Projected Cash Flow Statement

(₹ In crores)

Particulars	31-Mar-27	31-Mar-28	31-Mar- 29	31-Mar-30	31-Mar-31	31-Mar-32	31-Mar-33
Profit Before Tax	**58.34**	**177.89**	**289.69**	**412.76**	**560.96**	**676.96**	**750.78**
Adjustments:							
Depreciation	56.41	112.82	112.82	112.82	112.82	112.82	112.82
Interest Expense	107.22	214.27	204.28	192.20	172.05	150.93	129.04
Operating Profit before Working Capital Changes	**221.97**	**504.98**	**606.79**	**717.78**	**845.83**	**940.71**	**992.64**
GST Credit utilized	41.29	93.77	112.30	99.68			
Change in receivables	-36.50	-3.73	-6.03	-6.54	-7.39	-5.68	-3.29
Change in payables	36.00	2.37	3.58	3.84	4.10	3.45	2.26
Cash for Operations	**262.76**	**597.40**	**716.64**	**814.75**	**842.54**	**938.48**	**991.61**
Income Taxes Paid				59.98	111.36	147.75	172.59
Net Cash Flow from Operating Activities	**262.76**	**597.40**	**716.64**	**754.77**	**731.18**	**790.74**	**819.02**

Capital Expenditure (incl. IDC)	662.06						
	662.06						
Net Cash Flow from Investing Activities							
Equity Infusion	198.46						
Availment of Term Loan	463.59						
Repayment of Term Loan		59.40	118.80	178.20	237.60	237.60	237.60
Interest Paid - P&L	107.22	214.27	204.29	192.20	172.05	150.93	129.04
Net Cash Flow from Financing Activities	**554.84**	**-273.67**	**-323.09**	**-370.40**	**-409.65**	**-388.53**	**-366.64**
Cash & Cash Equivalents (Opening)		155.54	479.26	872.81	1257.18	1578.71	1980.91
Net Increase/ (Decrease)in Cash & Cash Equivalent	**155.54**	**323.72**	**393.55**	**384.37**	**321.53**	**402.20**	**452.38**
Cash & Cash Equivalents (Closing)	**155.54**	**479.26**	**872.81**	**1257.18**	**1578.71**	**1980.91**	**2433.29**

Particulars	**31-Mar-34**	**31-Mar-35**	**31-Mar-36**	**31-Mar-37**	**31-Mar-38**	**31-Mar-39**
Profit Before Tax	**826.88**	**905.76**	**987.40**	**1072.43**	**1160.53**	**1249.34**
Adjustments:						
Depreciation	112.82	112.82	112.82	112.82	112.82	112.82
Interest Expense	107.53	86.03	64.69	43.03	21.52	2.69
Operating Profit before Working Capital Changes	**1047.23**	**1104.61**	**1164.91**	**1228.28**	**1294.87**	**1364.85**
GST Credit Utilized	-	-	-	-	-	-
Change in Receivables	-3.46	-3.63	-3.81	-4.00	-4.20	-4.41
Change in Payables	2.37	2.48	2.60	2.73	2.86	3.00
Cash for Operations	**1046.14**	**1103.46**	**1163.70**	**1227.00**	**1293.53**	**1363.43**
Income Taxes Paid	197.21	221.83	246.54	271.59	296.94	322.09
Net Cash Flow from Operating Activities	**848.94**	**881.63**	**917.15**	**955.42**	**996.58**	**1041.34**
Capital Expenditure (incl. IDC)	-	-	-	-	-	-
Net Cash Flow from Investing Activities						
Equity Infusion	-	-	-	-	-	-
Availment of Term Loan	-	-	-	-	-	-
Repayment of Term Loan	237.60	237.60	237.60	237.60	237.60	118.80
Interest paid – P&L	107.54	86.03	64.69	43.03	21.52	2.69
Net Cash Flow from Financing Activities	**-345.14**	**-323.63**	**-302.29**	**-280.63**	**-259.13**	**-121.49**

Cash & Cash Equivalents (Opening)	2433.29	2937.09	3495.09	4109.96	4784.74	5522.20
Net Increase/(Decrease) in Cash & Cash Equivalents	**503.80**	**558.00**	**614.87**	**674.79**	**737.46**	**919.86**
Cash & Cash Equivalents (Closing)	**2937.09**	**3495.09**	**4109.96**	**4784.75**	**5522.20**	**6442.06**

Projected DSCR Calculation **(₹ In crore)**

Particu lar	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32	Mar-33	Mar-34	Mar-35	Mar-36	Mar-37	Mar-38	Mar-39
PAT	58.34	177.89	289.69	352.77	449.60	529.21	578.19	629.67	683.93	740.86	800.85	863.58	463.63
Depreciation	56.41	112.82	112.82	112.82	112.82	112.82	112.82	112.82	112.82	112.82	112.82	112.82	56.41
Interest	107.22	214.27	204.29	192.20	172.05	150.93	129.04	107.54	86.03	64.69	43.03	21.51	2.69
Total	**221.97**	**504.98**	**606.80**	**657.79**	**734.46**	**792.96**	**820.05**	**850.03**	**882.78**	**918.37**	**956.70**	**997.91**	**522.73**
Debt Service requirement													
Interest	107.22	214.27	204.29	192.20	172.05	150.93	129.04	107.54	86.03	64.69	43.03	21.52	2.69
Repayment	-	59.40	118.80	178.20	237.60	237.60	237.60	237.60	237.60	237.60	237.60	237.60	118.80
Total	**107.22**	**273.67**	**323.09**	**370.40**	**409.65**	**388.53**	**366.64**	**345.14**	**323.63**	**302.29**	**280.63**	**259.13**	**121.49**
DSCR	2.07	1.85	1.88	1.78	1.79	2.04	2.24	2.46	2.73	3.04	3.41	3.85	4.30
Overall	2.46												
Min	1.78												

Sensitivity analysis:

Sensitivity analysis has been carried out to gauge the impact of the following adverse development on the projected financials.

Sensitivity Analysis	Scenario
Scenario I	Decrease in Cargo Traffic by 20%
Scenario II	Decrease in Cargo handling charges and Berth hire charges by 20%
Scenario III	Increase in operational expenses (excl. royalty) by 20%
Scenario IV	Increase in ROI by 5%

In the above scenarios, the DSCR is as follows:

Project Specific	Base	Sc. I	Sc.II	Sc.III	Sc.IV
Overall DSCR	2.46	1.90	1.73	2.25	2.09
Min DSCR	1.78	1.26	1.15	1.60	1.29

Sensitivity analysis indicates that proposed project operations can withstand decrease in cargo traffic by 20%, Decrease in cargo handling charges and berth hire charges by 20%, increase in operational expenses by 20% and Increase in ROI by 5%. However, under each of the adverse scenarios assumed, the company is observed to have DSCR above 1.

Risk Factors and Steps to mitigate

Termination Payment for Concessionaire Default before COD- Moderate	Upon termination on account of Concessionaire Default during the Construction Period, no Termination Payment shall be due and payable for and in respect of expenditure comprising the first 30% of the Total Project Cost and in the event of expenditure exceeding such 30% and forming part of Debt Due, the above provisions shall, to the extent applicable to Debt Due, apply in respect of the expenditure exceeding such 30%. For the avoidance of doubt and by way of illustration, the Parties agree that if the total expenditure incurred prior to termination is 90% of the Total Project Cost, the expenditure eligible for computation of Termination Payment hereunder shall be 60% of the Total Project Cost and the Termination Payment due and payable in such event shall not exceed 54% of the Total Project Cost or 90% of the Debt Due. Mitigation – Obtain gurantee of the parent group company **General Mitigation suggested** **Prior to disbursement:** • It is suggested that LIE to certify the availability of RoW as per Concession Agreement. • LIE to certify the availability of RoW for rail connectivity as per approved Railway DPR. • Vetting of all the approvals/ permissions / clearances. • Opine on compliance of conditions precedent stipulated in Concession Agreement. • Opine on the adequacy of project implementation timelines stipulated in the Concession Agreement duly considering the project configuration. **Post disbursement:** • Submitting Project Implementation and Project Progress Report to the Bank on specified intervals of time. • Reviewing the regular periodic report submitted by IE to Concessioning Authority and advising Bank. **Scope of LLC** **Prior to disbursement:** • Vetting of all project contracts viz. Concession Agreement, supplier contract / agreement, and other project/ technical contracts from lenders perspective. Specifically LLC to comment as to whether the signed CA is in tune with CA along with corrigendum submitted to bank at the time of appraisal. • Vetting of land documents/RoW allotment order.

	Scope of LIA Conduct a risk review of the Project by identifying the major exposures and advising as to how they can be mitigated by insurance cover and arrangements in line with good industry practices. Scope of LIE is suggested to include vetting of hard cost of the project based on the work orders/ contracts awarded by the company. In case of any reduction in the cost of project, term loan to be reduced in the ratio of envisaged DER. Further, in case of any cost overrun, over and above the estimated cost, the same to be borne by the promoters from their own sources. A suitable condition for undertaking by promoters is suggested to be stipulated in this regard.

Case summary

The case study relates to expansion of an existing port under the PPP- BOT model. The project has been bid out on the basis of highest royalty per metric tonne. In case of a port the civil works as well as the mechanical works involve the major cost and need to be examined carefully. The project in the present case is promoted by a group which has its own Production capacity for Steel industry and already using the services like coal handling, transportation of raw material and finished goods etc. The captive use of the port facilities needs to be assessed in relation to the prevailing cost and revenue generation. The capacity utilisation and revenue generation both from Berth hire charges and Cargo handling charges will be depended on the actual demand for these services in future based on the economic development of the domain geographical area. The sensitivity analysis of the project assumes greater relevance in this respect. The mitigation steps have also been discussed.

Summary of the five Cases

Appraisal aspects as brought out in the relevant Chapters of the Hand Book so far have been taken into account in the overall assessment of cases including the management appraisal, commercial appraisal and technical aspects. Financial Projections and the ratio analysis of the respective projects have also been discussed. Further information which is relevant supplemental to the above is given in the respective appendix for further comparison and linkages.

It is clear from the above case studies that the viability of each project needs to be examined in depth based on reasonableness of the assumptions and projections in the financial data as shown above. Risks involved in each case are to be identified and suitable condition are required to be stipulated to manage the identified risk to safe guard the interest of the lenders.

The Illustrative FORMAT for PROCESSING a CREDIT PROPOSAL is given in Appendix four.

Additional relevant information on case studies is given in Appendix v.

CHAPTER - 11

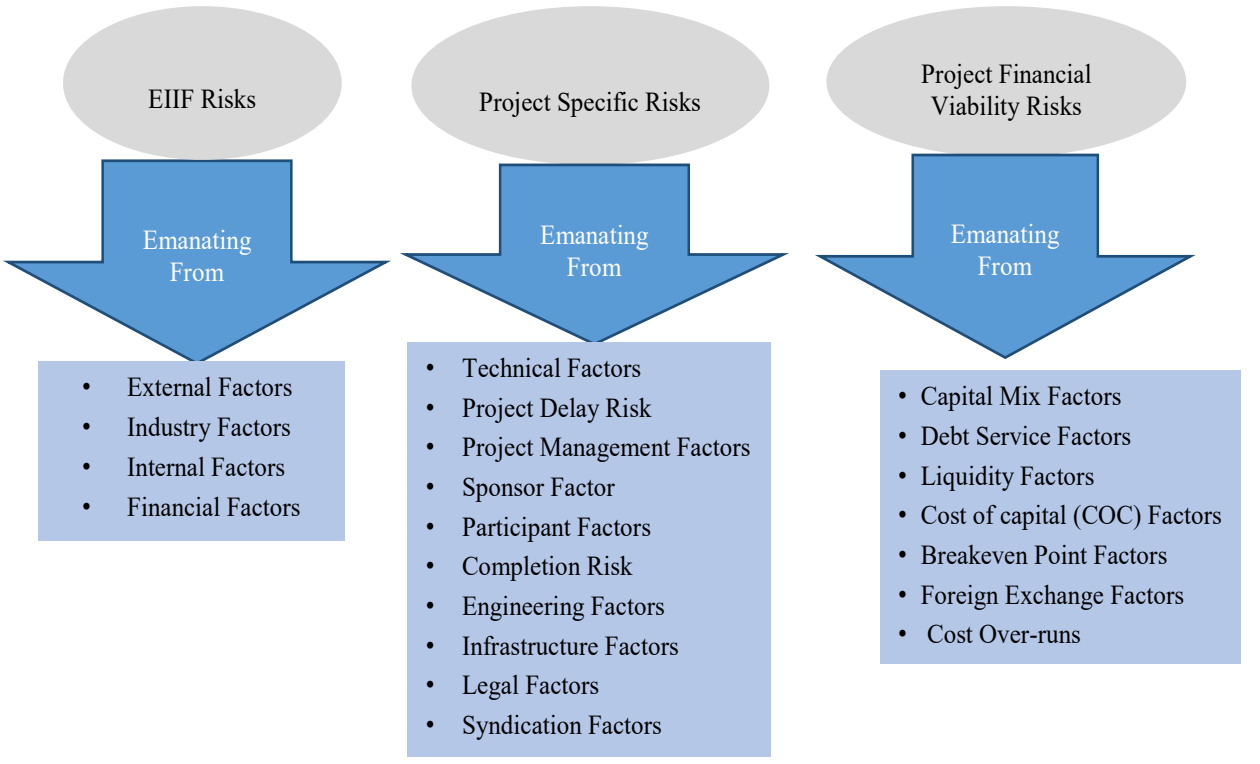
SECTOR WISE RISK MITIGATION CASE STUDIES

SECTOR WISE RISK MITIGATION CASE STUDIES

While the theoretical aspects relating to risk management were examined by us in Chapter 9, the actual case study was put forward in the last Chapter. Considering the criticality of risk identification and mitigation we will now discuss some illustrations of risk mitigation at this stage.

A broad summary of the risk management process is once again presented for revision.

Various project credit risks



Various project credit risks

CATEGORIES OF RISK

Risks	Risk Factors
PROJECT COMPLETION RISK	Completion within schedule & budgeted cost
	Assured supply of construction inputs
	Land acquisition
	Required regulatory clearances
	Quality of workmanship
	Environmental compliance
	Cost & time comparison with other similar projects
TECHNOLOGY RISKS	Risks with new/unproven technology
	Infrastructure support for construction
	Availability of raw materials at assured cost
	Availability of utilities – power, water etc.
MARKET RISKS	Market capacity & potential
	Cyclicality / recessionary trends in demand
	Competition from new entrants
	Competition from imports
	Price Risk: volatility, Product Price Depreciation
	Breakthrough technological using Technological Obsolescence
	Change in user preferences; Product Quality
LEGAL RISK	Collateral & Security strongly enforceable
	Structure of Arbitration Mechanism
FINANCIAL POSITION	Project Debt: Equity
	Project DSCR
	Current ratio
	TOL / TNW
	Contingent liabilities
	Foreign exchange risk
CORPORATE GOVERNANCE, MANAGEMENT QUALITY	Transparency in Related Party Transactions
	Management: Track Record & Competence, Succession Issues
	Financial Discipline: Strict Control on Cash Flows
	Strict Control on more borrowings
	Accounting quality: revenue recognition, depreciation policies, etc.
PROJECT EXTERNAL RISKS	Risks due to Acts/Policies of the Government
	Risks arising due to change in taxation policies
	Risks due to external factors like WTO, Global changes, etc.
	Claims arising due to
	Risks of Disruption due to labour trouble, force majeure events etc.

PROJECT CREDIT RISK MITIGANTS

- Technical Warranties/ Guarantees
- Performance Guarantees
- Fixed Price Lump Sum Contract
- Sales Warranties
- Off-Take Agreements
- Cost over-run Mitigation Measures
- Insurance
- Hedging
- Government /State support Agreement
- Disbursement and monitoring
- DSRA
- Seek Recourse
- First Charge
- Cross Collateralization and Cross Default Clauses
- Financial Covenants

WASTE TO ENERGY SECTOR

Risk Factor	Risk Allocation	Mitigation Measures
Management Risk		
Implementation capability & experience	SPV and sponsor	The Sponsor of the SPVs has track record of successfully developing and operating waste to energy projects. Its first WTE project with a waste processing capacity of approximately 2050 TPD MSW is operational since 2012. The company also has Waste Collection and Transportation activities set up in the towns of Bathinda, Ferozepur & Daman. Processing facilities to generate Compost and Refuse Derived Fuel (RDF) will be set up in these locations during the current financial year. Further, the projects are proposed to be executed based on separate packages for each of the project components. Suppliers to major components viz. Hangzhou Boiler Group Co., Ltd. for boiler supply. Siemens AG for plant turbine, Paharpur Cooling Towers Limited for air cooled condensers etc., have already been identified based on the company's previous experience in setting up project. Overall implementation will be managed by the companies themselves drawing on the experience and strength acquired by the Sponsor personnel in successfully setting up other similar projects. In view of the foregoing, no difficulty is foreseen in successful and timely completion of the Project. **Risk: LOW**

Funding Risk	Promoter/ sponsors	**Equity:** Equity requirement for the 3 projects is estimated at 160 crores. Entire equity contribution for the projects will be brought in by Glebe the promoters and sponsors who have already brought in Rs 50 crores and remaining funds shall be arranged out of net surplus available in existing group companies

WASTE TO ENERGY SECTOR

Risk Factor	Risk Allocation	Mitigation Measures
Funding Risk	Promoter/ Sponsors	Projects are expected to have full support of PR Group's financial strength. **Debt:** Debt requirement for the project, on an aggregate basis, is estimated at around Rs.350 Crores. Considering the project viability parameters, the terms offered for debt and the promoter group's track record in building and operating various infrastructure projects, the project companies do not envisage any issue in sourcing the required debt for the Projects. **Risk: LOW**

WASTE TO ENERGY SECTOR

Pre-completion risk		
Approvals and permits	SPVs	The SPVs are in the process of applying to the statutory authorities for all the major clearances required for the projects. The same are expected to be obtained after entire land acquisition process is completed. A predisbursement condition has been stipulated in the indicative term sheet for ensuring that all the major clearances required for setting up and operating the Waste to Energy projects are in place. **Risk: LOW**
Land acquisition and Resettlement & Rehabilitation	SPVs	As per the DPRs prepared, the land requirement for setting up the projects is around 20 single project (excluding proposed landfills area). 15.85 acres of land has been handed over by Guntur Municipal Corporation (GMC) to ILIWMGL vide a lease agreement. The identified land parcels are un-habited and non-agricultural and do not have any forest cover as well. Hence, they it do not involve any R&R issues or forest clearance. A pre-disbursement condition has been stipulated in the indicative term sheet for acquisition of entire land for the project in favour of SPV, signing of land lease agreements site authorization and for obtaining required approvals/permits, for use of the land for implementation of the projects. **Risk: LOW**

WASTE TO ENERGY SECTOR

Cost and time overrun	SPV	The SPV proposes to implement the project through package wise work orders instead of EPC arrangement. The individual work order contracts with the project component suppliers would include provisions for liquidated damages for delay in implementation so as to protect against cost and time over runs. The sponsor team has acquired required experience and expertise to successfully execute such projects. They have also appointed their technical consultant to Oversee the project. Further, contingency provision has been made in the project cost to take care of any unforeseen expenditure. Hence, the risk associated has been considered as low. A pre-disbursement condition has been stipulated in the indicative term sheet for execution of the fixed time, fixed price package wise work order contracts with all major equipment suppliers. Also. Sponsor undertaking for meeting any cost overruns has been stipulated. **Risk: LOW – MEDIUM**

WASTE TO ENERGY SECTOR

Post completion risks		
Municipal solid waste Availability risks	Urban local body concession authority	Concession Agreements signed by the individual project SPV have incorporated the clause of Assured Quantity of MSW to be supplied to the project by the participating ULBs. The said agreements also provide for a comprehensive -compensation structure (based on Independent Engineer approved Station Heat Rate Values and Tariff applicable for the relevant financial year) to the developer in case the PLF of the plant reduces below 75% due to insufficient quantity of MSW. **Risk: LOW – MEDIUM**
Municipal Solid Waste (MSW) Quality Risks	ULBs	Concession Agreements signed by the individual project SPVs have incorporated the clause regarding variations in MSW quality. This clause stipulates that in case construction and demolition waste is more than 25%, Concessionaire has the right to reject the same and deduct such quantity from the MSW quantity delivered in the next 7 days. Also, as per the sensitivity analysis, all 3 projects are viable even in case the Gross Calorific Value (GCV) of MSW reduces by 10% from the projected numbers over the project operations period. **Risk: LOW – MEDIUM**

Environmental risks	SPVs	The project SPVs will be implementing a comprehensive Environment Management Plan (EMP) to mitigate potential emissions as well as discharge of solid and liquid wastes. Based on the past experience of similar projects, the SPVs shall ensure compliance of all the applicable norms inducing, but not limited to, the Solid Waste Management Rules, 2016. **Risk: LOW**

WASTE TO ENERGY SECTOR

Availability of water	SPVs	As per the project DPRs, total water requirement for the projects is estimated to be approximately 0.32 MLD for one project. Considering the project importance, it is expected that the local authorities would provide timely arrangements for water supply to the projects as per requirement. **Risk: LOW**
Evacuation risks	State power distribution company	Project SPV has entered into 25 year PPA with concerned state discom As per the PPA, the power generated from the projects will be evacuated from the delivery point to the respective nearest grid substation. The PPA also specifies that the DISCOM has to bear the entire cost of the Interconnection Facilities as per the sanctioned estimates. Also, the DISCOM shall own, operate and maintain Interconnection Facilities from Project to grid sub-station from time to time and necessary expenditure shall be borne by the DISCOM. **Risk: LOW**

WASTE TO ENERGY SECTOR

Off risk take	SPVs	Project SPVs have signed PPAs with state discom for sale of entire power generated from their respective projects for a period of 25 years from the date of start of commercial operations. As per the PPAs, all plants shall be treated as 'Must Run' and they shall not be subjected to merit order dispatch. Further as per the PPAs, in case of DISCOM's event of default, the developers (project SPVs) shall be free to sell the contracted capacity to any third party of their choice. In view of foregoing, no difficulty is envisaged in power off-take from the project **Risk: LOW**

Payment risk	SPVs	The SPVs have executed 25-year PPAs with APSPDCL and APEPDCL for sale of entire project capacity. The payment risk is expected to be mitigated by the following payment security provisions in the PPA: • Discom will establish an irrevocable revolving Letter of Credit (LC) for one month's billing value. • If the resolution of any payments dispute requires the DISCOMs to reimburse the project SPV, the amount shall be reimbursed with an additional interest payment at SBI bank rate. • In case of DISCOM's event of default, the project SPVs shall be free to sell the contracted capacity to any third party of their choice. **Risk: LOW**

WASTE TO ENERGY SECTOR

Technology Risks	
Technology risk/ Equipment under performance SPVs	It is proposed to process MSW into Refuse Derived Fuel (RDF), compost & recyclables in the MSW Processing Plants The proposed technology reduces the MSW volume by almost 90% as per the DPRs and would be compliant with the related regulatory provisions. Similar technology has already been tested and successfully implemented by the sponsors in their previous plant. Project SPVs propose to source equipment from reputed companies such as Hangzhou Boiler Group Co., Ltd. (HBG) for Boilers, Siemens Ag for Turbine, Paharpur Cooling Towers Limited for air cooled condensers etc., These companies are well established in their respective fields with many years of expertise and clients across the world. Project Promoter, had sourced similar equipment from the above suppliers for their commissioned project and it is reported that they are performing to the company's satisfaction. It is proposed that individual contracts would be signed with the equipment suppliers for undertaking both supply and erection activities. Also, it is proposed that warranty period will be part of all such contracts and adequate provisions for liquidated damages will be incorporated to ensure that the project SPVs are compensated in case of any shortfall in equipment's guaranteed performances. **Risk: LOW**

WATER SUPPLY PROJECT

Risk Factor	Allocated To	Mitigation Measures
Pre-Construction Risks		
Acquisition of existing water distribution infrastructure	Municipal corporation/ Concession Authority	In accordance with the PPP Contract. MC shall grant to SPV. Such authority, permits, rights of way or easements in any property to enable SPV to perform its obligations.
Statutory Approvals & Clearances	Municipal corporation	As SPV is acting as an agent to MC. it has no obligations to acquire any statutory approval and clearances. These clearances would be responsibility of Municipal corporation.
Rehabilitation / refurbishing Risks		
Execution capability	Promoters	SPV has been promoted in association with a global player in wastewater services It manages the entire water cycle from the source of supply to discharge the natural environment. It manages municipal drinking water and waste water services in Including continents with its decentralized geographical presence. It has offices in more than 64 countries. The Promoter Group handles every step of the water cycle for public authorities, including withdrawing water from nature, producing and piping drinking water. It collects, conveys and treats wastewater. In order to recycle it for irrigate - or release the treated water into the environment. The Promoter Group expertise also includes designing, building and supplying equipment, systems and water treatment facilities.

WATER SUPPLY PROJECT

Risk Factor	Allocated To	
Cost Overruns	MC /SPV	The contract with MC for capital expenditure for the project is fixed. An escalation for the inflation over a period of S years has been considered between 8% to 5% p.a. The project would be executed by way of various sub-contracts for EPC / O&M. etc. which would be fixed & fixed cost contracts with provisions for adequate penalties for non-compliance of their obligations. SPV would provide undertaking for meeting any cost overrun as envisaged in the financing plan of the project.
Time overrun	MC / SPV	The Promoter Group has an expertise in water managements all over the world. In view of the promoter's resourcefulness and competence. no difficulty is envisaged in Completing the project within the stipulated timelines
	SPV	MC is augmenting the supply of water to Nagpur City as per the Master Plan for the next 25 years. A consultant has been appointed to review the Master Plan. The company consultant would also take steps to achieve 98% of the services for municipalities and managing outsourced services in Process water and wastewater for Industry.

WATER SUPPLY PROJECT

Risk Factor	Allocated to	Mitigation Measures
	NMC/ NESL	The contract with NMC / NESL for Capital Expenditure for the project is fixed. An escalation for the inflation over a period of 5 years has been considered between 8 to 5% PA. This escalation would also be treated as a loan to NMC which would be repaid over a period of 10 Years. The project would be executed by way of various sub-contracts for EPC / O&M, which would be fixed time & fixed cost contracts with provisions for adequate penalties for non- Compliance of their obligations. Veolia Water India Lid. And Viswara Environment Pvt Lid would provide a joint & several undertaking for meeting any cost overrun as envisaged in the financing plan of the project.
Times Overruns	NMC/ NESL	The promoters group has expertise in water management all over the world and has also Gained experience in Pench I & IV WTP. Kanhan WTP. It has already set up a demo zone in Nagpur which covers about 10% of the Nagpur city where water is being supplied on 24x7 basis The promoter is also a reputed EPC contractor and has implemented various Road projects within the schedule. In view of the promoter's resourcefulness and competence. no difficulty is envisaged in completing the project Within the stipulated timelines.

WATER SUPPLY PROJECT

Risk Factor	Allocated to	Mitigation Measures
Commercial Risk	SPV	Commercial efficiency i.e. collection of at least 98% of the water supplied to the end customers. Further, as per the PPP contract. MC. Would make the guaranteed minimum payment for 250(100 M1.1)/day. In the first 5 years of the IMP program which is sufficient to meet the operational cost. Water is the basic need for existence. With the growing population and urbanization, there will always be increased demand for water in the city.
Payment of Grant	MC	NMC has received Jawaharlal Nehru Urban Renewal Mission (JNNURM) sanctions for part of rehabilitation and expansion of water supply systems and shall be granted Jawaharlal Nehru Urban Renewal Mission (JNNURM) support for landing rehabilitation of distribution system.
Payment collection from customer	SPV	Under the terms of PPP contract, bill raising and collection is the responsibility of SPV. Operator rate to be delinked to actual tariff being charged to the customer by NMC. The power of disconnection is also with NMC and SPV, is only responsible for providing defaulter list to NMC. Thus, the company is to a great extent protected from collection risk as it would be paid remuneration by NMC based on total volume billed to customer.

WATER SUPPLY PROJECT

Risk Factor	Allocated to	Mitigation Measures
Increase in O and M cost	SPV	The promoter has considerable experience in O&M 1.4 cost water treatment and distribution systems. It is already operating Water Treatment plants of Pench I. Pench II and Kanhan. WTP at Pench IV would also be implemented by them. These WTP world supply pure water to entire Nagpur city. As per the PPP Contract, any Increase in SPV costs as a result of cost overruns or delay caused in the commencement of operations or If SPV has incurred additional costs as is the result or an event of Force Majeure which are not reimbursed by insurance or in the event that any new distribution pipelines and related accessories are required to be laid by SPV at Its own cost. Within or outside the Service Perimeter shall come under the Purview of Extraordinary Service Rates and shall be adjusted and included in the operator's Remuneration.
Withdrawals of Promoters	SPV	A stringent condition has been stipulated that during the Tenor RTL. 51% of the shares held by promoters shall be pledged with the Lenders. The promoters shall also furnish a joint and several undertaking that it shall not reduce the Promoters Shareholding without obtaining the lender's approval and while maintaining management control.
Water Availability	MC	Adequate raw water in available to meet present as well as nature demands. MC shall be obligated to procure and provide raw water to the operator in such quantities as is required by the operator to provide treated water to consumers.
Risk Factor	**Allocated to**	**Mitigation Measures**
		As per the terms of PPP contract, raw water will be provided free of cost.
	NMC/National E-Government Services Limited	Upon termination of the PPP contract following the occurrence of a NESL Event of termination or Force Majeure Event of Termination. NESL shall pay to OCWPL an early termination amount equal to the outstanding amount of all OCWPL's Loans (including pre-payment charges as certified by OCWPL) NESL shell also return the outstanding performance bonds furnished by OCWPL..

Case study 3 Railway station

Risk Analysis and Mitigation

Critical Risk Factors	Risk Carrier (Level of Risk)	Mitigation
Experience and Capability	SPV (Low)	The SPV group concerns have been associated mainly with State and Central Government organizations/departments responsible for civil and infrastructure development and public works department for various diversified civil contracts on EPC basis. The pro concerns have therefore developed required infrastructure in the form of trained Labour and manpower, fleet

		of specialized equipments etc. Thus the promoters are having adequate experience in the civil construction works especially the infrastructure development works. The infrastructure development, construction methodologies and technologies are simple, proven and standardized. Mechanism for Periodic Review / process follow up would be devised to monitor the progress of the project.
Land Acquisition and timely availability of land	Indian Railway Stations Development Corporation (Low)	As per DA, IRSDC would hand over at the ROW free from all encumbrances on or before the Appointed Date. There is a provision of penalty on IRSDC in case of delay in handing over the necessary land / consequent delay in Financial Closure for the Project. As per the general scope of work, the project work will be kept within the existing right of way avoiding land acquisition
Obtaining statutory clearances and approvals	Indian Railway Stations Development Corporation (Low)	The Development Agreement for the proposed Habibganj Railway Station and Ancillary Infrastructure Development project shall be signed between SPV and IRSDC. As per the DA, IRSDC shall provide the Right of Way for the project to SPV for the concession duration. IRSDC has already procured all applicable permits relating to the project including environmental protection and conservation of the site.
O&M Risk	SPV (Low)	The DA specifies the O&M standards and specifications and the manner in which the concessionaire would carry out O&M of the facilities. Since the SPV Group concerns are already into execution of large EPC contracts for road and infrastructure development/ construction activities, it would not be difficult for SPV to carry out O & M activities.
Time Over-run	SPV (Low)	It is noted that sufficient time is envisaged to complete the project as per the market condition coupled with past track record of the Group in completion of the other projects executed: hence time over run is not perceived for the project.
Funding Risk	SPV (Low)	The Promoters' contribution for the project works out to be Rs.133.20 Crores apart from advances/deposits from customers of Rs.46.80 crores. The promoters' contribution to the project will be brought in form of equity and preference capital for the creation of the infrastructure and development work. The promoters shall infuse upfront contribution @20% of Rs.133.20 crores and balance contribution shall be brought in by the promoters in proportion of the term loan sought from the lenders from time to time to cover funding risk.
Cost Over-run	SPV (Low)	It is noted that adequate contingency has been considered while estimating the overall project cost. Further, the promoters has experience in the business line of road construction and development works since over four decades. Hence, cost over not envisaged for the project.

Risk Carrier (Level of Risk)	Mitigation
SPV (Low)	Bhopal Habibganj railway station (Station Code: HBJ) is a railway station in Bhopal City and part of the West Central Railway. It is located in Habibganj, New Bhopal. The Railway Station of Habibganj is located: • 7 km away from Bhopal Main Railway Station • 10 km away from Bhopal Central & • 1 km away from Maharana Pratap Nagar, Bhopal, the commercial area in southern region of the Bhopal city. The Habibganj Railway Station lies on the main Jhansi - Bhopal - Itarsi route line therefore the trains for all the Major Destinations are easily available. Being located near to the B.H.E.L Township, Arera Colony, Saket Nagar, and a few other localities, it is always preferred by the people of these areas to catch trains instead of going to Main Railway Station of Bhopal City. Rail minister has declared in his second railway budget that Habibganj Railway station would be made as a Model station.
	The master plan of converting the Habibganj railway station into the railway hub of central India has been prepared under the policy of vision 2020. This railway station will be developed on the lines of Germany's Berlin railway station and Tianjin west railway station of China. These stations were reviewed and surveyed before the master plan was ready. The proposal includes the construction of infrastructure development including conference hall, business center, Retail shop, Museum, Art gallery, Restaurant along with a center for entertainment and cultural activities. The passengers in this case will not have to wait on platform in case of delayed train as they can pass their time accordingly. The master plan is prepared by the Indian Railway Station Development Corporation (IRSDC) keeping in mind the development of Bhopal in coming 40 years. The revenue collection alone will not be sufficient for covering the capital investment from the Station Development project. MOR has entrusted the land measuring approximately 13809 Sq. Mtrs, and air space measuring 3436 Sq. Mtrs. for Ancillary Infrastructure development at the said for the development/redevelopment by IRSDC to SPV. Bhopal city has been identified under the scheme of Smart City. This shall generate additional demand for various amenities being developed by the company under the proposed project. Considering the features of the project and facilities being developed, there is no threat off-take/ demand from various segments. Hence, there is not much perceived off-take risk.

Critical Risk Factors	Risk Carrier (Level of Risk)	Mitigation
Pricing level and sustainability	SPV (Low)	The pricing for the revenue collection for various categories of services and development works have been considered in line with the present market trend. Hence, pricing and sustainabilityrelated risk is not envisaged for the project.
Competition Risk	SPV (Low)	There is no competition risk for the Project, as the company will have exclusive right on the project for the concession duration.
Force Majeure	SPV/Insurer (Low)	The company to take adequate insurance to cover any eventuality by way of any force majeure risks.

The above two case study illustrations relate to two major sub sectors of Urban infrastructure development. The further details of various aspects of development of urban infrastructure development have been discussed in a separate chapter on 'Urban Infrastructure -The Way Forward '.

SWOT Analysis - Strengths

- Development of Habibganj Railway Station is First Project under Design, Build, Finance, Operate and Transfer (the "DBFOT") basis. The project is awarded by Indian Railway Stations Development Corporation Limited (IRDSC) under PPP Model.
- Rail minister has declared in his second railway budget that Habibganj Railway station would be made as a Model station.
- The master plan of converting the Habibganj railway station into the railway hub of central India has been prepared under the policy of vision 2020. This railway station will be developed on the lines of Germany's Berlin railway station and Tianjin west railway station of China. These stations were reviewed and surveyed before the master plan was ready.
- The master plan is prepared by the Indian Railway Station Development Corporation (IRSDC) keeping in mind the development of Bhopal in the coming 40 years.
- Bhopal Habibganj railway station (Station Code: HBJ) is a railway station in Bhopal City and part of the West Central Railway. It is located in Habibganj, New Bhopal. It is almost in the centre of the map of India.
- The term of the Development Agreement is 45 years from the date of execution of the Development Agreement. The construction, operation and maintenance of the Project as per the Built-up Area of 1,13,494 Sq. Mtrs. of Ancillary Infrastructure development is allowed in the Development Agreement. The company shall operate and maintain the station for 5 years from

the date of completion. The company shall sub-lease, operate and maintain the property for the project period and appropriate the revenues generated there from.

- The maximum repayment period of term loan is 15 years as against the term of the DA for 45 years.
- Promoters Contribution including advances/deposits from customers is 31.58% of total cost of project (₹570 Crs) i.e. ₹180.00 Crores.

CHAPTER - 12

ALTERNATE SOURCES OF FUNDING

ALTERNATE SOURCES OF FUNDING

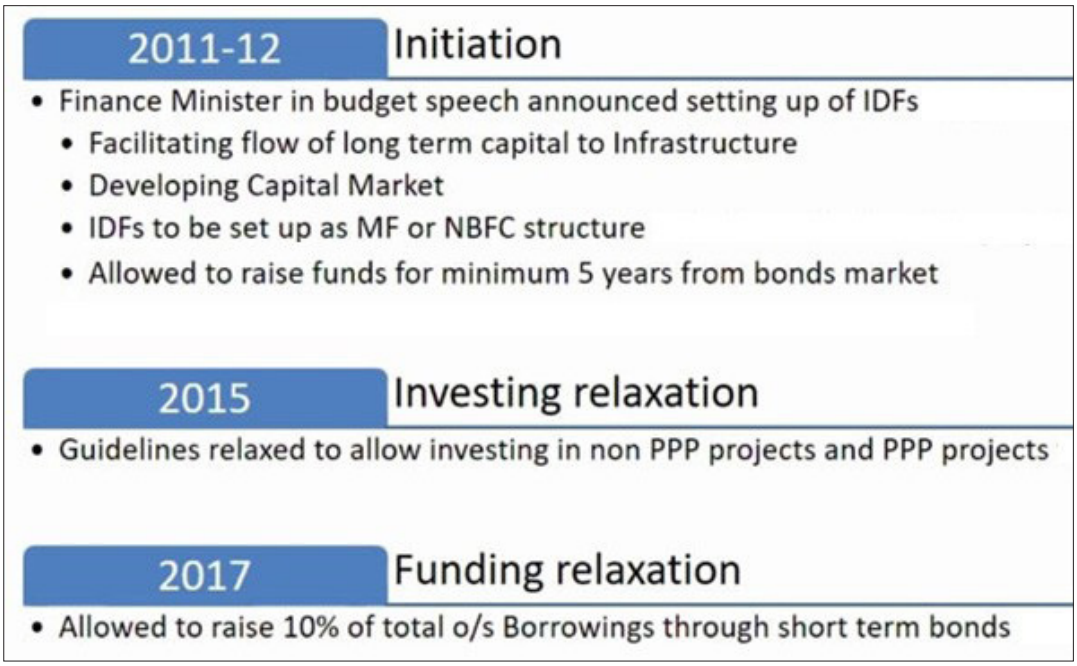
New Avenues for Funding

In the previous Chapters, we have broadly studied the various aspects relating to debt funding by way of long terms loans by the banks, NBFC's and other financial institutions for direct lending to the new infrastructure project. We have also seen that given the large quantum of funds required for the envisaged national infrastructure pipeline, resource shall be required over and above direct lending funds available from banks etc. Therefore, the relevance of alternate avenues of funding is very fundamental to achieve the desire level of finances. In this Chapter, we shall examine these various alternatives a reference of which has been indicated in the previous Chapter on NIP & NMP.

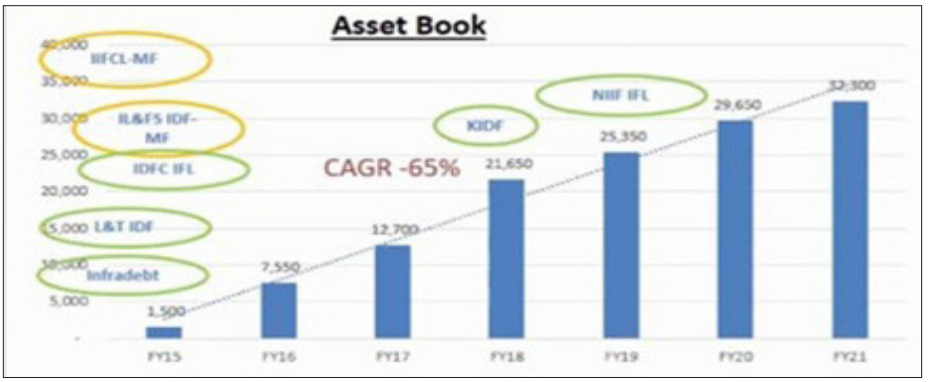
Infrastructure Debt Fund

There are two avenues - either by way of a NBFC company or by way of a Trust. NBFC governed by RBI rules while the Trust functions on Mutual Fund pattern governed by SEBI. Dedicated fund available by way of long-term bonds to replace existing debt. Large number of companies have availed this facility by using funds from various IDFs sponsored by ICICI, IDFC, IIFCL etc.

Evolution of IDFs

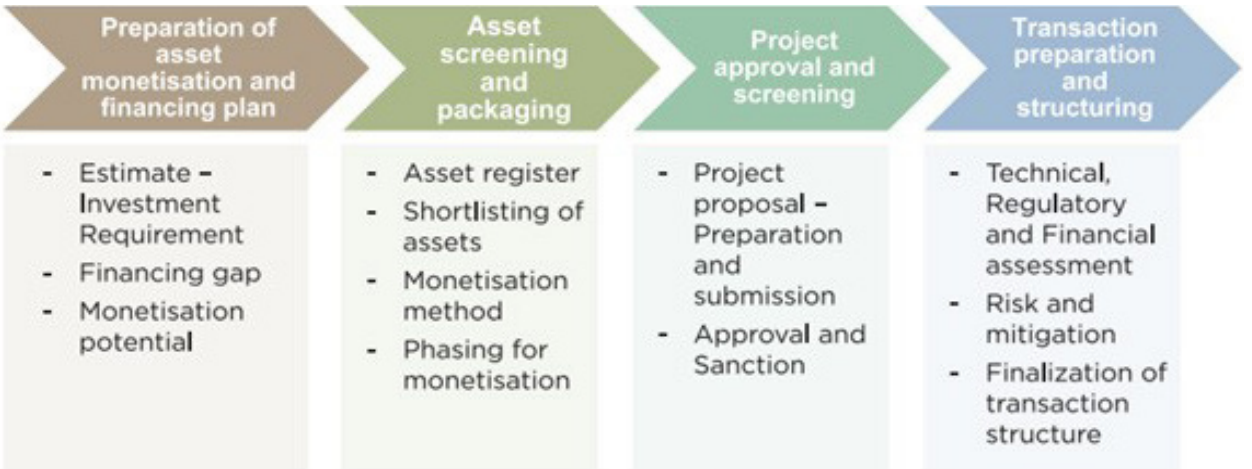


Growth over the years



- NBFC-IDF asset book grew at CAGR of 65% over last 6 years.
- Primary focus in Roads, Renewables & Transmission
- Tripartite exposure as % of book fell sharply over the years, mainly due to
  - Instruments like TOTs and InvITs, where IDFs couldn't participate
  - Lesser availability of completed PPP asset with Authority
  - Easy availability of credit in renewable sector

It is seen that the capital market instruments have the potential to bring in better value considerations, while the PPP concession may be suitable in sectors where the private sector brings in improved standards for operation and maintenance with service to users under a defined framework.

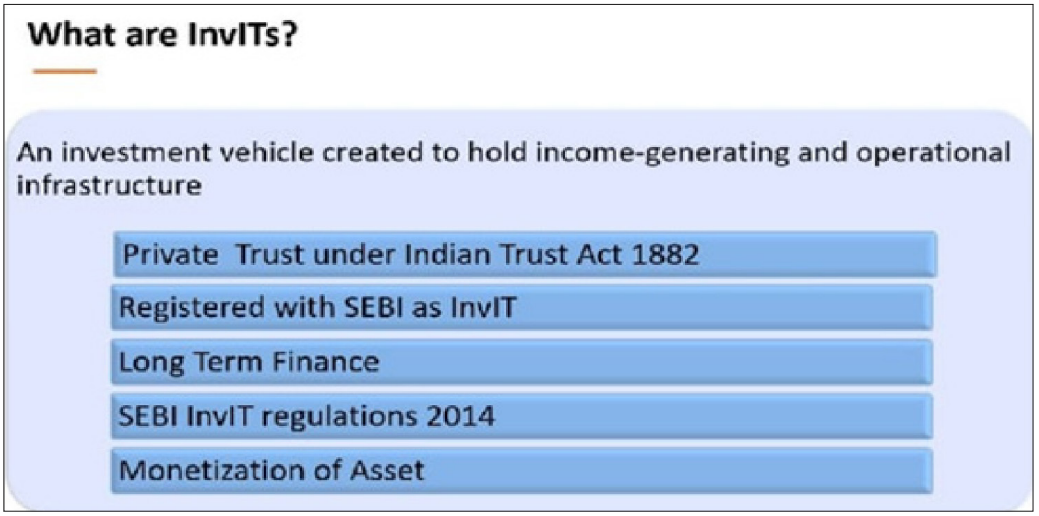


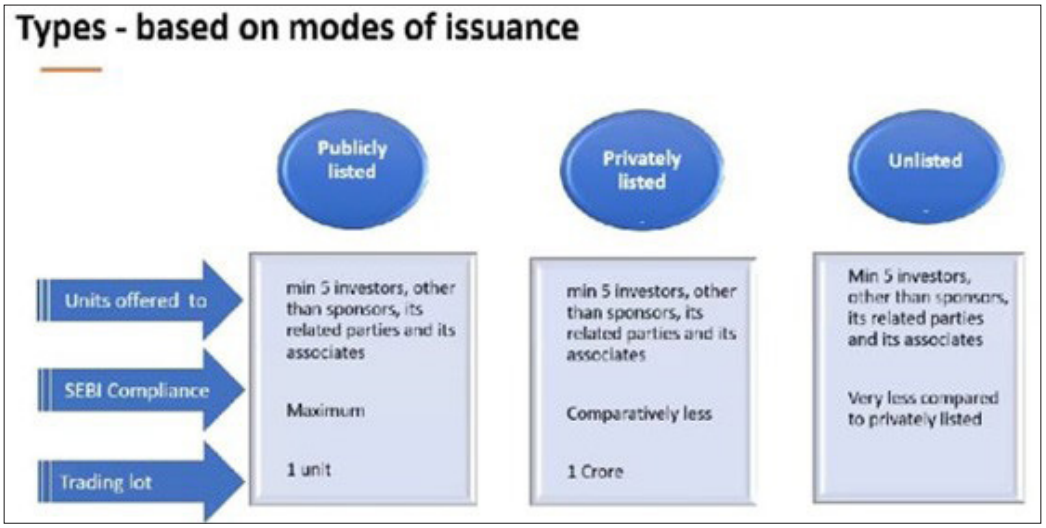
INVITS: Infrastructure Investment Trust

- Works like a Mutual Fund particularly for small investors.
- Dividends is paid out of cash flows.
- More tax efficient mechanism.
- 80% cases of fully complete projects with provision for 20% new projects.

INVITs help developers/NHAI recycle invested capital in mature assets. These can attract and on board the right investors, or patient capital, such as sovereign wealth funds, strategic investors and other long-term investors. These include pension funds, which have their return expectations in-line with the long-term cash flow profile of the underlying assets. This will help finance infrastructure without asset-liability mismatch usually associated with bank financing of infrastructure. Key reforms that may improve investor participation in INVITs are:

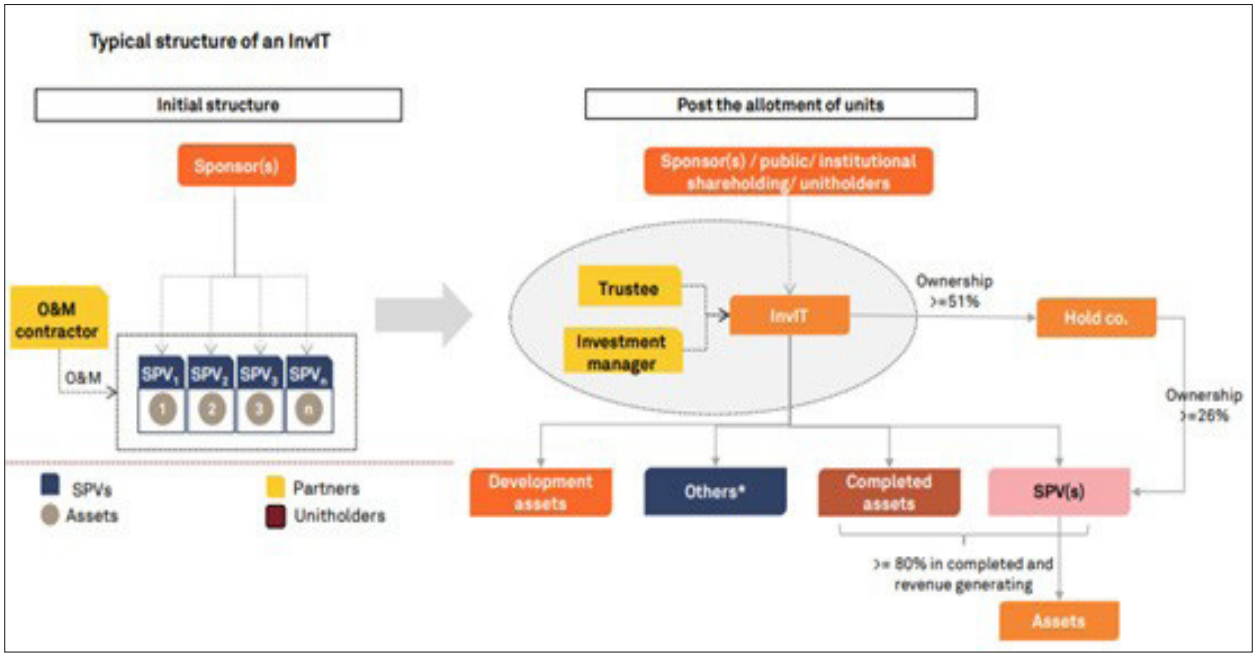
- INVITs suit the investment objectives of insurance companies and pension funds. The Insurance Regulatory and Development Authority of India (IRDAI) should revisit the prescribed cap of 5% for insurance companies' investment in a single INVIT, in line with the limit prescribed by the Securities and Exchange Board of India for mutual funds and its own cap for insurance companies while investing in listed equities
- IRDAI should come out with clear guidelines allowing insurance companies to invest in debt securities issued by INVITs, in line with traditional companies. This will help issuers significantly. Similarly, the Pension Fund Regulatory and Development Authority mandates a minimum credit rating of AA for the sponsor of an INVIT in order to allow participation of pension funds. As INVITs are independent of their sponsors, the rating threshold should be made applicable only to INVITs and not the sponsors.





INVITs and Real Estate Investment Trusts (REITs) - INVITs are trusts holding infrastructure assets, such as operational roads and transmission assets, which have long concession periods and stable cash flows. INVITs are registered with the SEBI and can raise funds by listing on the exchanges and issuing units to investors. The sponsors of the assets may retain operational control of the assets and divest a part of the holding over time to realise the market value and raise significant capital.

INVITs help developers raise capital from a wider investor base, and also help sponsors to tap the market for stake dilution. These are hybrid instruments regulated by SEBI and are mandated to pay at least 90% of distributable cash flows to investors. Such distributions are to be mandatorily made at least on a half-yearly basis. Because of their pass-through status, INVIT units offer tax-efficient returns and are ideally suited for long-term institutional investors.



The key features of INVITs are:

- They derive value only from the cash flows of underlying assets and have no operating income of their own.
- INVITs primarily hold operating infrastructure assets with a specified investment limit for under construction assets (private INVITs have a higher flexibility to invest in under-construction assets compared with public INVITs).
- They require prior approval from the regulator/concessioning authority for asset transfer or sale.
- Upfront advantages for the sponsors (developers), investors (unit holders) and lenders are:
    - Sponsors: Can monetise invested capital, prepay SPV bank debt through INVIT loans raised from fresh issue and/or unlock capital to bid for new projects (freeing-up of capital).
    - Investors: Cash yields derived from dividends, interest on INVIT loans and buyback/capital appreciation of units mandated by the SEBI to distribute at least 90% of distributable cash flows at least once in every six months.

- Lenders: After the SPV loan prepayment, banks would have higher headroom to lend to new projects.

- As per an RBI circular dated October 14, 2019 (RBI/2019-20/83, DBR. No.BP.

  BC.20/08.12.014/2019-20), the central bank has now issued guidelines on bank lending to INVITs. Such bank lending to INVITs would be subject to the following conditions:

  - Banks are required to formulate a board-approved policy on exposure to INVITs covering processes, such as appraisals, loan sanctions, exposure limits, and mechanisms for monitoring.
  - Banks are required to undertake thorough assessment of sufficiency of cash flows at the INVIT level to ensure timely debt servicing.
  - The overall leverage of INVIT and the underlying SPVs together should be within the permissible limits prescribed in the board approved policy of the bank.
  - Banks are required to monitor the performance of underlying SPVs, as the ability of an INVIT to meet debt obligation depends on the performance of the underlying SPVs
  - Banks are required to lend to only those INVITs, where the underlying SPVs have existing debt and are not facing any financial difficulties.

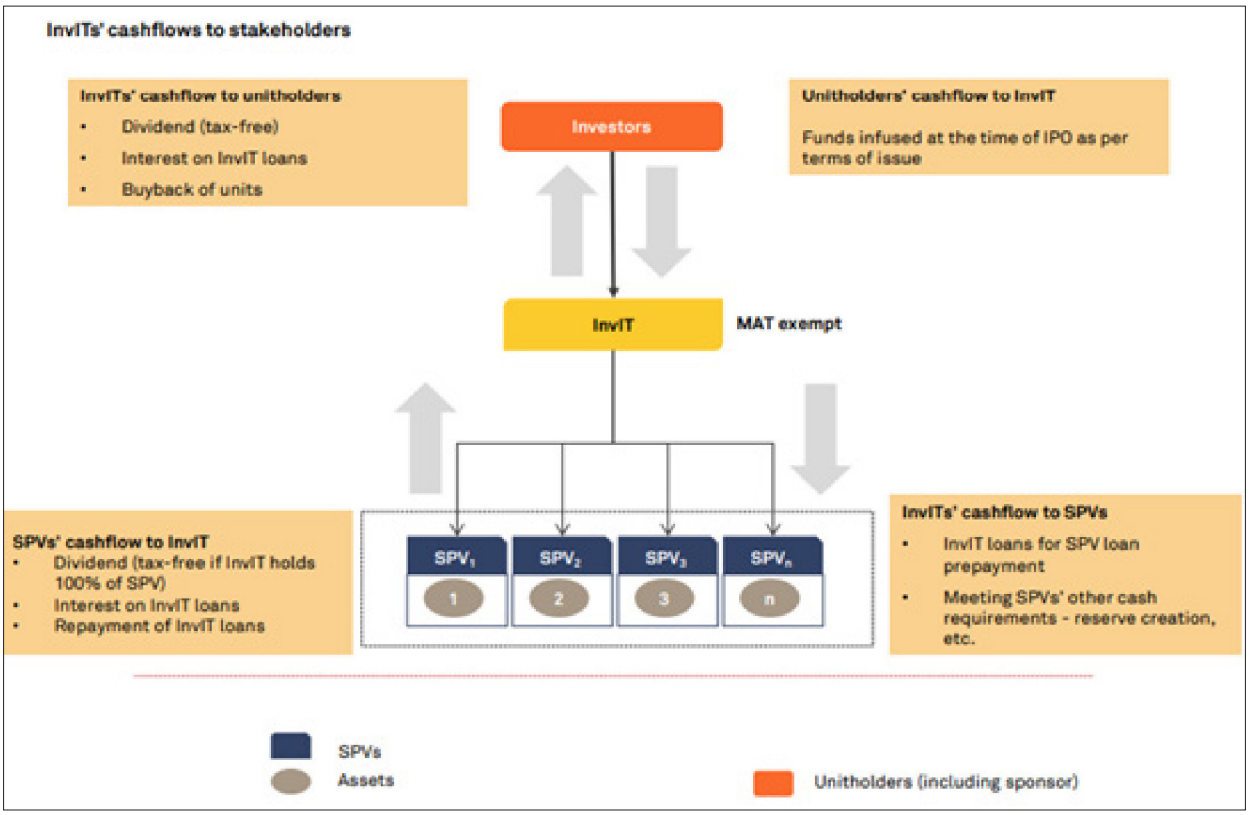
- Bank financing to INVITs for acquiring equity stake in other entities are subject to regulations, such as:

  - Borrowing company should provide infrastructure facilities and should have satisfactory net worth.
  - Borrowing company or its directors/ promoters should not have defaulted on bank/FI loans.
  - Bank financing to be restricted to 50% of the finance required for acquiring the promoter's stake.
  - Tenor of bank loans should not be longer than seven years.
  - Bank financing acquisition of shares by promoters should be within the regulatory ceiling of 40% of their net worth as of March 31 of previous year.
  - In November 2019, Foreign Portfolio Investors (FPIs) were permitted to invest in Debt Securities issued by INVITS and REITS. The guidelines were further liberalized in 2022 for Foreign Investments in INVITS.
  - Board should have approved the proposal for bank finance.

- Compliance with statutory requirement as mentioned under Section 19(2) of the Banking Regulations Act, 1949

Returns and tax implications for INVITs

INVITs are a transparent, tax-efficient investment that provides stable income and diversification benefits to investors.



Toll Operate Transfer (TOT) Model

This has evolved from the operate-maintain-transfer (OMT) model, wherein the concessioning authority securitises the toll receivables by collecting upfront concession fee or initial estimated concession value (IECV). The major revenue source is toll collection and given the established revenue streams in operational assets there is low revenue risk for the concessionaire. Further, minimal construction risk attracts patient capital.

The key success factors of the TOT model include operational asset mix (underlying assets with established cash flows), well-defined contractual framework, and good growth potential. The TOT model allows monetisation of a portfolio of operational road assets at one go.

A reform that could improve investor participation in the model is flexibility in the concession period of the underlying assets. This may encourage more companies to participate in such bids

The key parameters of a TOT model are:

- Source of revenue: Toll collection undertaken by the concessionaire.
- Bidding parameter: Highest upfront fee (IECV) payable to the government authority.
- Concession period: 20-30 years, with 100% exit option after two years. The concession period may be increased or decreased based on the revenue generated at a predefined time period (year 10 and year 20 as per the current TOT model).

- Method of securitisation: The government authority calculates the IECV, which is free cash flow expected to be generated by the project discounted by the weighted-average cost of capital (WACC).
- Target investors: Minimal construction risk allows for investment by pension funds and sovereign wealth funds.

Credit Enhancement

"Credit Enhancement" means a contractual arrangement in which an entity mitigates the credit risk associated with a securitisation exposure and, in substance, provides some degree of added protection to other parties to the transaction so as to mitigate the credit risk of their securitisation exposures.

A Corporation is being formed by Government to provide partial credit guaranty for upgrading the rating so as to eligible for cheaper funds.

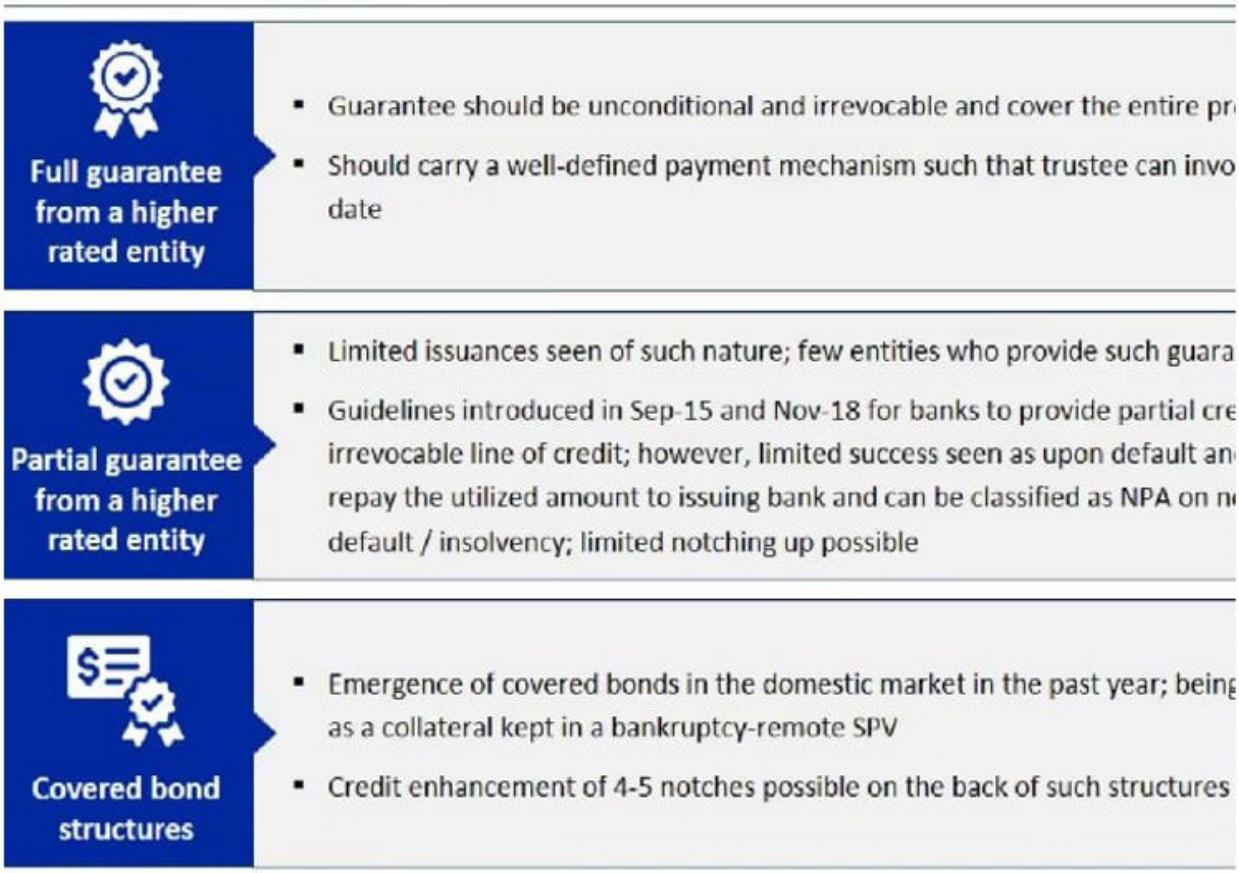
Revitalising the Bond and Credit Markets

Credit Enhancement Institution for infrastructure projects is expected to open up appetite of bond market investors for investing in infrastructure projects. Institutional investors are more suited to fund infrastructure projects given the long-term patient capital requirement of infrastructure projects. However, strict regulatory requirements require these investors to invest only in safe government and public sector bonds and they have limited appetite for lower-rated assets (below AA). As most of the infrastructure projects are rated below AA, it is critical to enhance their rating to augment the access of institutional investors to infrastructure sector through capital market instruments. A well capitalised Credit Enhancement Institution should be set up early. It is also important that long-term resources from the pension and insurance sectors are channelised into the infrastructure bond market; this may require the government to work with IRDA and PFRDA to re-examine existing investment guidelines. Further, growing the pool of pension and insurance assets through sector reforms is a pressing requirement, including potential FDI reforms.

Case for developing the bond market in India

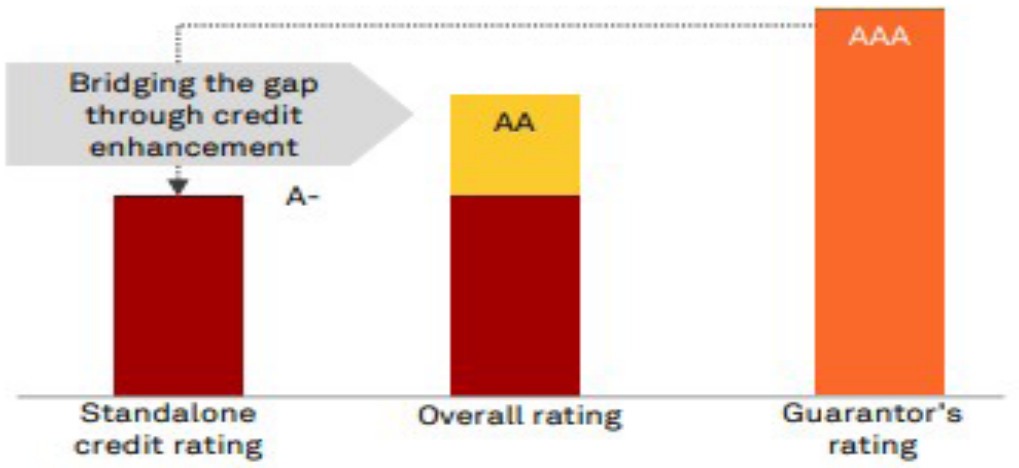
• GoI aims to achieve a US $5 trillion economy by 2024-25
• For sustained GDP growth, large investments are imperative
• As per Economic Survey, India needs to spend 7%-8% of its GDP on infrastructure annually (US $200br are only 50%-55% of the above
• Capital requirements from other sectors of the economy continue to be large
• While traditional banks have met the needs of Indian corporates, capital markets have been playing the main role in bond market over the years.
• Corporate bonds account for ~30% of total credit market
• Yet India's corporate bond market size is small (~16% of GDP) in relation to even Asian countries (Malaj Korea-73%, China-56%, Thailand"47%)

Credit enhancement of bonds



Against this backdrop, it is necessary to enhance the credit rating to augment the access of institutional investors to the infrastructure sector through capital market instruments, such as bonds and derivatives. Although institutional investors are best placed to fund infrastructure assets due to long-term maturity of their liabilities, they are constrained by regulations, as well as internal mandates to avoid the construction risk inherent in infrastructure projects. Institutional investors in India are permitted to invest in infrastructure projects rated AA or above, but most of the ongoing infrastructure projects in India are rarely rated BBB or above, resulting in a significant mismatch between the extent of institutional investor credit available and actual credit requirement for financing infrastructure sector in India. These challenges can be addressed by institutions, such as the Credit Guarantee Enhancement Corporation announced in Union Budget 2019-20. These credit-enhancement entities aid in augmenting the credit ratings of securities of certain above-investment grade operational infrastructure projects through well-defined and robust credit-enhancement structures, improving their attractiveness to institutional investors. There can be a gamut of credit-enhancement structures that could be implemented - the most prominent of them being partial or full credit guarantees. The Task Force recommends that the Credit Guarantee Fund be set up at the earliest to enable greater access to bond markets for infrastructure projects.

Illustration of credit enhancement through partial credit guarantee



Credit Enhancement Facility by NaBFID

NaBFID will set up a 'Partial Credit Enhancement Facility' for corporate bonds for infrastructure. Also add in NaBFID para.

Revitalizing the bond and credit markets

A credit enhancement fund (CEF) can be established specifically for the infrastructure sector. The fund will open-up corporate bond market for funding the infrastructure projects. Institutional investors in the corporate bond market are ideal for financing infrastructure projects, however they have limited appetite for lower rated assets (below AA) and incidentally most of the infrastructure projects are rated below AA as they are set up on a project finance basis.

Recently regulators have taken multiple initiatives for deepening the bond markets and improving the secondary market liquidity. Some of the key measures taken are:

- Regulatory framework for credit enhancement has been defined by the RBI
- Large borrower framework (as mandated by the RBI and SEBI)
- Permitting corporate bonds in liquidity adjustment facility (LAF)
- Exchange-based corporate bond repos

These measures are expected to support growth in the bond markets; however, all of them are expected to bring in results only over a period of time.

Measures like reissuances, limiting number of International Securities Identification Number (ISINs) and trade repository initiatives will help in improving the liquidity of debt markets in the long run. The challenge is that large investors like banks, insurers and pension funds are 'hold to maturity' investors.

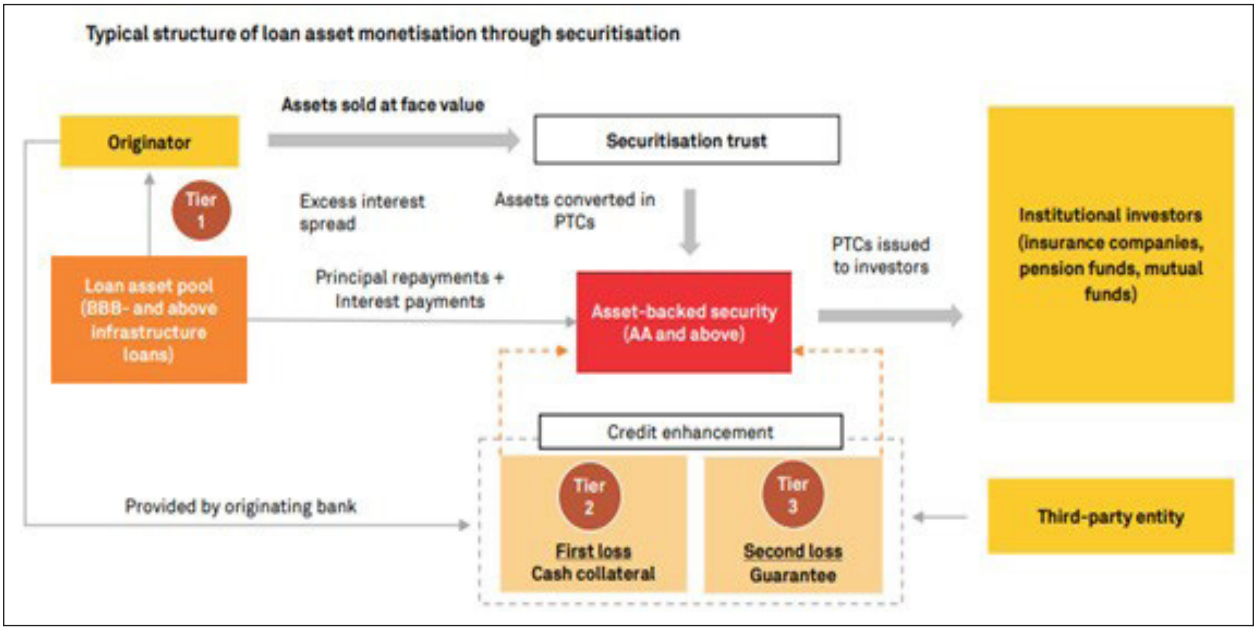
To create a demand for bonds from infrastructure companies, liberalisation of investment patterns along with change in investment behaviour is required. Furthermore, it is noted that most investments under the existing limits for infrastructure companies have been towards infrastructure finance and housing finance companies.

Dedicated vehicles like INVITs can also help in channelling funds to operational projects. However, the funds launched in past few years have seen limited liquidity in secondary market highlighting limited appetite for such products. Timely resolution of cases referred under Insolvency and Bankruptcy Code (IBC) will further enhance investor confidence and can help deepen the bond markets for infrastructure funding. Additionally there exists an arbitrage between bank loans and bonds since bank loans are not valued on a mark-to-market (MTM) basis, making it as a preferred choice for funding. Removal of such arbitrage is critical to channel the funds through bond markets. Additionally, there is a need for MTM valuations like proposed for uniform valuations, to ensure all securities are priced appropriately on daily basis and proper risk monitoring can be done. All these measures can help in deepening of the bond markets. Many developing and middle-income countries have bond market sizes in excess of 30% of the GDP. India's bond market size is about 17% of the GDP. The Department of Economic Affairs is working on measures to deepen bond markets with emphasis on greater number of public issues and liquidity.

Securitization

Master Direction – Reserve Bank of India (Securitisation of Standard Assets) Directions, 2021

Securitisation involves transactions where credit risk in assets are redistributed by repackaging them into tradable securities with different risk profiles which may give investors of various classes access to exposures which they otherwise might be unable to access directly. While complicated and opaque securitisation structures could be undesirable from the point of view of financial stability, prudentially structured securitisation transactions can be an important facilitator in a well-functioning financial market in that it improves risk distribution and liquidity of lenders in originating fresh loan exposures.



To develop a strong and robust securitisation market, the Reserve Bank simplified its structure and aligned existing guidelines with the Basel III guidelines on September 24, 2021. The directions permit only traditional securitisations i.e., securities issued by a special purpose entity (SPE) where the cash flows are from a pool of underlying loans acquired from a lender. Any transaction between an originator and an SPE should be 'strictly on an arm's length basis. Furthermore, credit enhancement facilities may provide additional financial support for securitisation.

"Securitisation" means a structure where a pool of assets are transferred by an originator to a SPE and the cash flow from this pool of assets is used to service securitisation exposures of at least two different tranches reflecting different degrees of credit risk, where payments to the investors depend upon the performance of the specified underlying exposures, as opposed to being derived from an obligation of the originator; Provided that the pool containing a single asset eligible to be securitised is also permitted. Provided further that a securitisation structure may have tranches with different maturities.

Direct Investment

Groups like Renew Power and Green CO have been able to attract foreign investments from groups like Brookfield Canada, GIC Singapore, ADIA Abu Dhabi etc. TATA Power took over assets of Welspun.

While the value of green bonds issued constitutes a small portion of the total bond issuance in India, it occupies the second spot in cumulative emerging market green bond issuance during 2012-2020, as per estimates of International Finance Corporation (IFC) in April 2021.

Financing Infrastructure - Future Trend

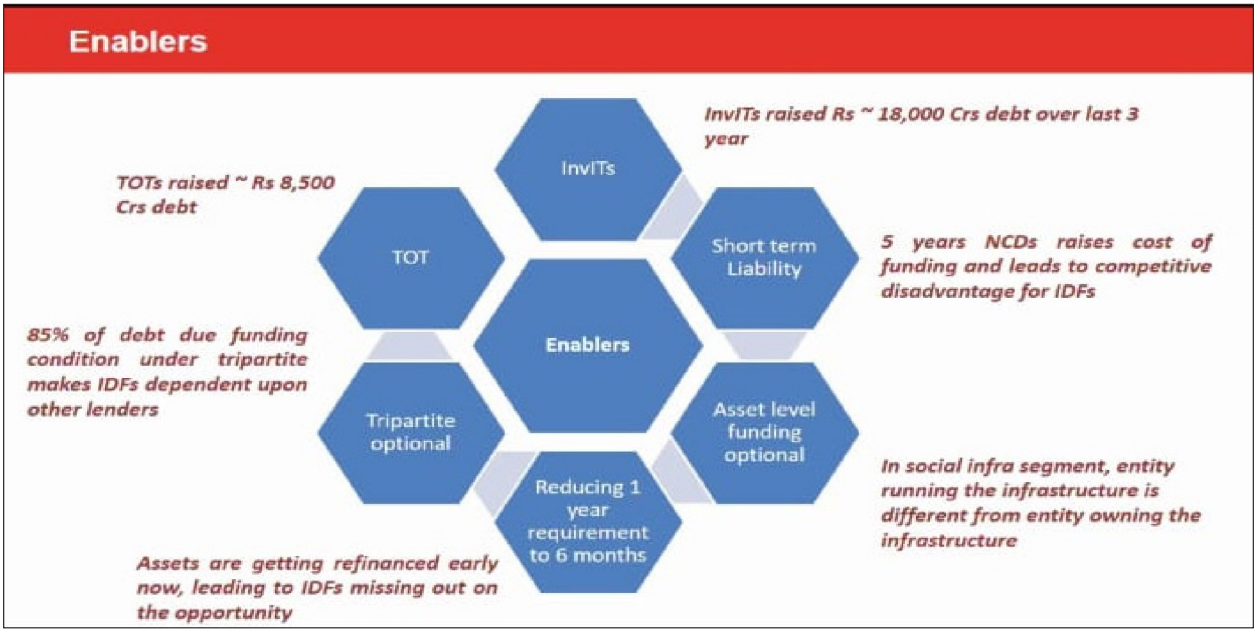
- The Role of different types of Institution's funding infrastructure are complimentary. The expertise and structure of Banks, NBFCs, DFIS are expected to serve different roles during the life cycle of Infra projects.
- The kind of financing need that is there for the infrastructure sector is mammoth and there is space for many institutions.
- There is a need to have the right asset sized institutions. We should not be anaemic. At the same time, we should not be obese. We should have the right muscles and we should function in a more profitable and healthier way, build quality assets so that the institution is more sustainable in the long run.

Reshaping and Reorienting Infrastructure Financing need of the Hour

- A mix of both traditional and new-age financing instruments.
- Lenders must lend in line with their asset-liability profile - Banks are best suited to fund Greenfield assets, given their risk appetite, appraisal & risk mitigation capacities as well as asset-liability profile.
- Lenders can fund Greenfield projects till 5-7 years and upon completion, offload the project for a new set of lenders.

"Relay Refinancing" must be promoted as a Sustainable Long-term Solution to Bridging Funding Gap

- In India, Refinancing is treated as akin to restructuring which invites higher provisions by lenders.
- Restructuring must be looked at from a fresh perspective. Such regulatory restrictions are coming in the way of efficient utilization of capital by lenders. Regulators must salvage value in stuck projects and help to de-stress the lending space.



Long-term financing landscape

Necessary steps or initiatives need to be undertaken in order to solve the challenge of stressed assets faced by banks and infra-NBFCs besides liquidity crunch faced by NBFCs, by encouraging usage of innovative mechanisms such as loan securitisation, InVITs, etc and increased participation of Infrastructure debt funds (IDFs), DFIs, etc.

The Task Force believes that deepening IDF markets and developing the asset- backed securitisation market for infrastructure could significantly relieve banks of current exposure in commissioned projects and enable them to direct more capital for Greenfield projects. Taking note of the scarcity of long-term capital for infrastructure, the Task Force recommends regulatory revamp to enable significant participation of FPIs and FDI in IDFs, DFIs and securitisation markets in consultation with the RBI and the Securities and Exchange Board of India (SEBI).

Augmenting Finance for Sustainable Development

In January 2021, a Task Force on Sustainable Finance has been set up by the Department of Economic Affairs, Ministry of Finance, Government of India. The Terms of Reference of the Task Force include defining the framework for sustainable finance in India, establishing the pillars for a sustainable finance roadmap, suggesting draft taxonomy of sustainable activities and a framework of risk assessment by the financial sector.

India is actively contributing to the global efforts towards green finance. RBI joined the Central Banks and Supervisors Network for Greening the Financial System (NGFS) as a member on April 23rd, 2021 and has begun participating in the work streams of the NGFS. On November 3, 2021, RBI published a 'Statement of Commitment to Support Greening India's Financial System - NGFS' and committed to:

(i) Exploring how climate scenario exercises can be used to identify vulnerabilities in RBI supervised entities' balance sheets, business models and gaps in their capabilities for measuring and managing climate-related financial risks.

(ii) Integrating climate-related risks into financial stability monitoring.

(iii) Building awareness about climate-related risks among regulated financial institutions and spreading knowledge about issues relating to climate change and methods to deal with them accordingly.

**Source – Economic Survey 2021-2022*

Sovereign wealth and pension funds up their infrastructure game

Private equity (PE) firms have been playing a crucial role in financing infrastructure companies and projects. Their journey in the Indian market has been interesting, evolving from providing growth capital to making control investments. The country's infrastructure sector has numerous investment opportunities for PE firms. Brownfield assets across various sectors such as roads, transmission, gas and airports are lucrative bets. Further, the government's asset monetisation drive has created a stir among investors looking for operational assets with stable returns. PE funds will continue to be a critical part of India's infrastructure growth story, given their strategic role in operating and managing assets.

Key trends

- **Investments in start-ups**: The past two years have seen increased investments in tech-enabled start-ups operating in the infrastructure domain, particularly logistics. Venture capital (VC) funding in tech-focused logistics start-ups went up from ₹ 6 billion in 2018 to ₹ 23 billion in 2020, as per deals tracked by India Infrastructure Research. The overall demand for logistics has risen considerably, driven by the e-commerce boom and supportive policy moves such as the goods and services tax. The sector's resilience during the Covid-19 pandemic has further bolstered investor confidence. Logistics start-ups such as Xpressbees, LetsTransport, BlackBuck and Shiprocket are some of the companies that have successfully raised funds from VCs.
- **Participation in new structures**: The introduction of models such as toll-operate-transfer (TOT) and infrastructure investment trusts (InvITs) has augured well for infrastructure financing. A total of ₹ 170 billion has been raised thus far through the offer of three TOT bundles, while around ₹ 770 billion capital has been mopped up through private placements and public listing of InvIT units. These numbers point to the potential of innovative financing structures and the positive market response to these. In fact, sovereign wealth funds (SWFs) and pension funds have been participating in the infrastructure sector through InvIT transactions. For instance, Singaporebased GIC announced an investment of $621 million (Rs 44 billion) in IRB InvIT, and Canadian pension fund Ontario Municipal Employees' Retirement System invested $121 million (₹ 8.7 billion) for a 22.4 per cent stake in IndInfravit Trust.
- **Platform investments**: More recently, there has been a surge in collaborations between SWFs/ pension funds and PE players/developers for the creation of sector-specific platforms. Some instances of these are Virescent Infrastructure (backed by KKR), O2 Power (backed by Temasek and Sweden's EQT), and Hindustan Infralog (NIIF-DP World joint venture). Such platforms have been mostly prominent in the logistics, conventional power and renewable energy sectors. Besides, the country's quasi-SWF, the NIIF has garnered investments from multiple investors, including the Abu Dhabi Investment Authority (ADIA), the Canadian Pension Plan Investment Board (CPPIB), the Ontario Teachers' Pension Plan and the Asian Development Bank.
- **Sectors of focus**: Investors have been looking at sectors other than roads and power for superior returns. Renewable energy is high on their radar due to the strong government push to clean energy and the abundance of operational solar assets. Large renewable energy developers such as Greenko, ReNew Power and Azure Power were recipients of big-ticket funding from foreign investors. Warehousing facilities, telecom tower assets, and data centres are other emerging areas of interest.

- **Exits through initial public offerings (IPOs)**: Many initial challenges of investing in tech firms, such as exits through IPOs and secondary deals, are being more than adequately addressed. The recent IPOs of online aggregators such as Zomato, Nykaa and Policybazaar are also convincing PE funds and other public market investors that they have a stable exit path down the road and do not have to rely on a rare acquisition deal. The buoyancy in the IPO market has further boosted investor confidence to tap this route for exiting.

During 2021, around ₹20 billion worth of PE investments were seen across 48 deals. In terms of number of deals, logistics topped with 22 PE/VC transactions worth ₹ 135 billion. However, in terms of deal value, renewable energy ranked first with ₹ 180 billion worth of investments across 14 deals. This was followed by roads (₹ 106 billion and seven deals) and telecommunications (₹ 76 billion and two deals). There were five deals worth over ₹ 40 billion in the telecom, road, logistics and renewable energy sectors. An investment of around ₹ 53 billion by GIC and Cintra in IRB Infrastructure Developers needs special mention as it was the biggest equity fundraise by a listed road and highway firm. Another notable transaction during the year was a fundraise of $62 million (₹ 4.6 billion) by the Virescent Renewable Energy Trust, India's first renewable energy InvIT, from a group of investors led by the Alberta Investment Management Corporation. The much-awaited NHAI InvIT also witnessed strong demand from investors. CPPIB and the Ontario Teachers' Pension Plan acquired 25 per cent each of NHAI InvIT units as anchor investors.

Opportunities for monetisation

In a bid to invite private investment in infrastructure, the government has laid out a roadmap for the monetisation of revenue yielding assets. It aims to do so via InvITs and public-private partnerships (PPPs). Gas pipelines, toll road assets, power transmission assets and warehouses are proposed to be housed under InvITs, while railway stations, brownfield airports and major port projects would be privatised through PPPs. The maturing InvIT market and success of past InvIT stories will attract investors to this product.

SWFs and pension funds are stepping up investments in India's infrastructure space due to the favourable risk-return matrix across asset classes, especially in roads, renewable energy, and telecom tower and fibre assets. Conducive policies such as tax exemption to notified SWFs and pension funds for their earnings from infrastructure investments in India are big boosters.

Net, net, the opportunity for PE players, SWFs and pension funds in the country's infrastructure space is huge, given the robust asset monetisation pipeline and the government's massive National Infrastructure Pipeline.

Source: India Infrastructure Publications

As a part of budget proposals it has been announced as under to further encourage the alternate investment points.

Alternate Investment Funds (AIFs)

Category I and category II AIFs are undertaking investments in infrastructure and other such sectors. I propose to provide certainty of taxation to these entities on the gains from securities.

Extension of investment date for Sovereign and Pension Funds

To promote funding from Sovereign Wealth Funds and Pension Funds to the infrastructure sector, I propose to extend the date of making an investment by five more years, to 31st March, 2030.

CHAPTER - 13

LOAN SYNDICATION MECHANISM

LOAN SYNDICATION MECHANISM

The major initiatives by RBI in bringing out structural changes to credit delivery mechanism discussed in previous chapter are well founded and is aimed to remove the deficiencies in the existing system of Credit delivery to large corporates. It would help avoid concentration of credit in an individual borrower and /or in a group of connected borrowers and thus help manage credit risk /concentration risk by Banks effectively going forward. In the context of large ticket size of infra-sector project loans, this aspect assumes much importance.

However, going forward we also need to emulate the best practices followed by Banks in developed economy. In this context mechanism of syndicated loans seems most ideal in view of its inherent advantages to the lenders as well as corporates.

Loan Syndication

Currently, Banks in India dispense large Credit through Consortium, Multiple Banking Arrangement or Bilateral lending. These processes have their own merits and demerits. The demerits are mainly in terms of delays in getting approval of each participating lender, different covenants stipulated by different banks, delay in holding consortium meetings, in-effective monitoring of end use, multiple Bank's financing same project under multiple lending leading to borrowers taking advantage of the system and lack of effective exchange of information.

Other disadvantages being delay in modification in terms of sanction, NOC for Ceding charges, information asymmetry between lead bank and members, classification of asset etc.

Suggested Loan Syndication Framework:

Loan syndication framework is operating successfully in many of the developed countries. Under this framework, which is much superior to existing consortium or multiple Banking lending, can be made applicable to loans say with minimum 3-5 lenders or more and a threshold size of loan may be kept minimum of say ₹500 or ₹1000 crores to start with. In this method the role of each of the participants are pre-defined. A secured deal site/admin site for dissemination of borrower's information amongst participants is prerequisite.

Lead Bank would require drawing up the information memorandum and term sheet with common terms and conditions of loan. There has to be pre-determined timelines for sanction of facilities. Further one of important features will be that once Terms and conditions are finalized by the lead Bank, there would no changes whatsoever and participating Bank would have to accept or leave it. Administrative Agent, documentation agent to be appointed with clearly defined role and responsibilities. It would also facilitate Centralized audit by Regulator and also Asset classification would be common across the

Banks. Any Bilateral lending arrangement can continue as existing for smaller exposures.

Important Prerequisites

A deal platform or site needs to be created for each loan which will be managed by Lead arrangers. All the exchange of information between borrowers and lenders will be handled through the said platform only. Information memorandum (IM)and term Sheet for credit facilities will be prepared and circulated by lead arranger. This is similar to IM which is shared during fund raising or IPO with responsibility on proper disclosure. Each lender can carry out their own due diligence based on their risk appetite. Borrower in consultation with lead lender will allocate share to each lender. The final document to be executed by participants will be put on deal platform/site and allocated lenders can give in their signature to complete the documentation.

Post-documentation, agency deal site handled by the administrative agent for exchange of subsequent information Agency for specialized monitoring (ASM) Monitoring reports, Covenant Compliance certificate etc. All the financial statements / documents are accessible to all lenders.

Advantages of Loan syndication method

Main advantage of such system would be to remove the possibility of unhealthy multiple financing and unhealthy competition amongst lenders. It also ensures structured information flow for each project loan. It facilitates potential for better loan structuring with robust terms and conditions and also uniform / transparent documentation process including creation of charge on assets / insurance of properties / common borrowing base etc. - managed centrally by the Agent Bank.

It facilitates the Inflow and outflow of funds - channelized through Admin Agent – loan outstanding maintained pro rata to exposure of each lender. Smaller banks get an opportunity to participate in large loan facilities without having to establish independent borrower relationships.

Most important aspect is that the proposed method paves the way for a robust Secondary market for loans. This can provide depth and liquidity to bank project loans and be a tool for resizing loan portfolios and exposures of banks.

There could be challenges in implementing loan syndication method for working capital when compared to project Term Loan where covenants etc are uniform. In case of WC finance there could be challenges as there is competitive offering for pricing by different lenders, but it has numerous advantages as enlisted above. At least to start with an Inter-creditor agreement in case of working capital loans could be good beginning. Over a period, a robust credit delivery mechanism being evolved in the Indian Banking system learning from its own mistakes. Thus, going forward Indian Banking system would adopt the Loan syndication model for large corporate project credit due to its inherent and numerous advantages. It would also help trading of loan on an electronic secondary trading platform on account standard documentation and covenants and steps for creation of secondary trading platform for loans are already underway.

CHAPTER - 14

METHODOLOGY FOR THE PRICING OF LOANS

METHODOLOGY FOR THE PRICING OF LOANS

External Benchmark Lending Rate (EBLR) /Culmination of the process of interest rate deregulation

Evolution of Interest Rate deregulation in Indian Banking System

One of primary objectives of Bank lending is aimed at providing credit to the productive sectors of the economy. Bank lending rates as well as the allocation of bank credit were closely regulated by the Reserve Bank till the late 1980s. Furthermore, there were a number of sector-specific, programspecific and purpose-specific credit stipulations concerning interest rates. With the initiation of financial sector reforms in the early 1990s, various steps were taken to deregulate the lending rates of commercial banks. A system of prime lending rate (PLR), the rate charged for the prime borrowers of the bank, was introduced in October 1994. The PLR system went through several modifications from a single PLR to multiple PLRs and then to a Benchmark PLR (BPLR)

Evolution of Lending Rate Structure in India

Sep. 1990	The structure of lending rates was rationalized into size-wise slabs. Of these, banks were free to set interest rates on loans of over ₹2 lakh with minimum lending rates prescribed by RBI.
April 1992	Slabs compressed into four.
April 1993	Slabs compressed into three.
Oct. 1994	Lending rates for loans with credit limits of over ₹2 lakh deregulated. Banks were required to declare their Prime lending rates (PLRs).
Feb. 1997	Banks allowed to prescribe separate PLRs and spreads over PLRs, both for loan and cash credit components.
Oct. 1997	For term loans of 3 years and above, separate Prime Term Lending Rates (PTLRs) were required to be announced by banks.
April 1998	PLR converted as a ceiling rate on loans up to ₹2 lakh.
April 1999	Tenor-linked Prime Lending Rates (TPLRs) introduced.
Oct. 1999	Banks were given flexibility to charge interest rates without reference to the PLR in respect of certain categories of loans/credit.
April 2000	Banks allowed to charge fixed/floating rate on their lending for credit limit of over ₹2 lakh.
April 2001	The PLR ceased to be the floor rate for loans above ₹2 lakh. Banks allowed to lend at sub-PLR rate for loans above ₹2 lakh.
April 2002	Dissemination of range of interest rates through the Reserve Bank's website was introduced.

April 2003	Benchmark PLR (BPLR) system introduced and tenor-linked PLRs discontinued.
Feb. 2010	Draft circular on Base Rate placed on RBI web site for obtaining comments/ suggestions from public/stakeholders.
April 2010	Base Rate system of loan pricing introduced effective July 1, 2010. Rupee lending rate structure completely deregulated
	Now, as per direction of RBI, all banks need to maintain MCLR

As stated above, in April 2001, commercial banks were allowed to lend at sub-PLR rates for loans above ₹2 lakh. However, the divergence in PLRs and the widening of spreads for borrowers continued to persist. The PLRs turned out to be rigid and inflexible in relation to the overall direction of interest rates in the economy. In order to address these issues, a BPLR system was introduced in April 2003.

Introduction of BPLR

Benchmark prime lending rate is the rate that Commercial Banks charge to their most credit worthy customers. Banks were free to fix BPLR with the approval of their respective Boards. Banks were free to decide the BPLR but their interest rates to have a reference to BPLR fixed.

Questions about the efficacy of BPLR system being out of sync with market conditions have been raised from various quarters. Customers were dissatisfied as they felt Banks lend to only high net worth corporate at BPLR or sub BPLR. Even there was no transparency in as to how Banks calculated their BPLR. Moreover, variations in BPLR were so wide that it lost its credibility.

Thus, in order to overcome these all deficiencies of BPLR system RBI appointed a working group headed by Sri. Deepak Mohanty Executive Director RBI to study the ongoing activities pertaining to BPLR system land present a report.

The report was submitted in Oct 2009 and the working group in its report clearly mentioned that it strongly felt that BPLR has tended out of sync with market conditions and does not adequately respond to changes in monetary policy. In addition, tendency of Banks to lend at Sub BPLR rates on large scale raises concerns of transparency. Because of competitive pressures, banks were lending at rates which did not make much commercial sense.

BPLR system evolved in a manner that did not meet the objectives. Competition in an environment of excess liquidity had forced the pricing of a significant proportion of loans far out of alignment with BPLRs undermining its role as a reference rate. Furthermore, there was a growing public perception of under- pricing of credit for corporate and over-pricing of credit to agriculture as well as small and medium enterprises. Hence a need was felt for review of BPLR system.

The lack of transparency in the BPLR system also hindered transmission of monetary policy signals.

In view of the concerns pertaining to the shortcomings in the BPLR system raised by the public and those recognized by the Reserve Bank, the Annual Policy Statement for 2009-10 announced the constitution of a Working Group on BPLR to review the BPLR system and suggest changes to make credit pricing more transparent. On the basis of the recommendations of the Working Group (Chairman: Deepak Mohanty) and after taking into account the views of various stakeholders and discussions with banks final guidelines on the base rate system were announced on April 9, 2010.

The Base Rate System

The base rate system replaced the BPLR system with effect from 1st July 2010. Base rate shall include all those elements of the lending rates that are common across all categories of borrowers. Banks may choose any benchmark to arrive at the base rate for a specific tenor that may be disclosed transparently. Banks are free to use any other methodology, provided it is consistent, and is made available for supervisory review. Banks will determine their actual lending rates on loans with reference to the base rate and by including such other customer specific charges as considered appropriate.

With the introduction of the base rate system, all categories of loans will be priced only with reference to the base rate with a few exceptions. The base rate can also serve as the reference benchmark rate for floating rate loan products, apart from other external market benchmark rates. The floating interest rate based on external benchmarks should, however, be equal to or above the base rate at the time of sanction or renewal.

Since the base rate will be the minimum rate for all loans, the current stipulation of BPLR as the ceiling rate for loans up to ₹2,00,000 is withdrawn. It is expected that this will increase the credit flow to small borrowers at reasonable rates

Thus, the base rate fulfills the requirement of a benchmark while giving full flexibility to banks with regards to its computation and overall loan pricing.

RBI guidelines on Base Rate: Reserve Bank of India has issued following guidelines for the fixation of Base Rate by the scheduled commercial banks.

- The base rate system replaces the BPLR system from July 1, 2010. Base rate shall include all those elements of the lending rates that are common across all categories of borrowers. Banks may choose any benchmark to arrive at rate for a specific tenor that may be disclosed transparently. Banks are free to use any other methodology as considered appropriate, provided it is consistent and is made available for supervisory review/scrutiny as and when required.
- Banks may determine their actual lending rates on loans and advances with reference to the Base rate and by including such other customers specific charges as considered appropriate.

- In order to give banks some time to stabilize the system of Base rate calculation, banks are permitted to change the benchmark and methodology any time during the initial six months period i.e. end of Dec 2010 and further extended up to June 2011.
- The actual lending rates charged may be transparent and be made available for supervisory review/scrutiny as and when required.

Applicability of Base Rate

- All categories of loans should he priced only with reference to the Base Rate. However, the following categories of loans could be priced without reference to base rate a. DRI advances (b) Loans to banks own employees (c) Loans to banks depositors against their own deposits.
- Base rate could also serve as reference benchmark rate for floating rate loan products, apart from external market benchmark rates. The floating interest rate based on external benchmarks should however be equal to or above the base rate at the time of sanction or renewal.
- Changes in the Base rate shall be applicable in respect of all existing loans linked to the Base rate, in a transparent and nondiscriminatory manner.
- Since the Base Rate will be the minimum rate for all loans, banks are not permitted to resort to any lending below the Base Rate. Accordingly, the current stipulation of BPLR as the ceiling rate for loans up to ₹2 lakh stands withdrawn. It is expected that the above deregulation of lending rate will increase the credit flow to small borrowers as reasonable rate and direct bank finance will provide effective competition to other forms of high-cost credit.

Review of Base Rate

Banks are required to review the Base rate at least once in quarter with the approval of the board of the ALCO (Asset Liability Management Committee).Since transparency in the pricing of lending products has been key objective, banks are required to exhibit the information on their Base Rate at all branches and also on their websites. Changes in the Base Rate should also be conveyed to the general public from time to time through appropriate channels. Banks are required to provide information on the actual minimum and maximum lending rates to the RBI on quarterly basis as hitherto.

Transitional Issues

The Base Rate system would be applicable for all new loans and for those old loans that come up for renewal. Existing loans based on the BPLR system may run till their maturity. In case existing borrowers want to switch to the new system, before expiry of the existing contracts, an option may be given to them, on mutually agreed terms. Banks, however, should not charge any fee for such switch over.

Illustrative Methodology for the Computation of the Base Rate

Base Rate = a + b + c + d a—Cost of Deposits/funds = D cost (benchmark)

b—Negative Carryon CRR and SLR = [[{D cost – (SLR * Tr)} / {1 – (CRR + SLR)}]*100] – D cost c– Un-allocable Over head Cost == (Uc / D ply)* 100 d—Average Return on Net Worth = [(NP/NW)*(NW/D ply)] * 100

Where

D cost = Cost of Deposits/funds

D: Total Deposits = Time Deposits + Current Deposits + Saving Deposits

D ply: Deployable Deposits= Total deposits less share of deposits locked as

CRR & SLR balances, i.e. = D*[1-(CRR + SLR)]

CRR: Cash Reserve Ratio

SLR: Statutory Liquidity Ratio

Tr: 364 T = Bill Rate

Uc: Unallocatable Overhead Cost

NP: Net Profit

NW: Net Worth = Capital +Free Reserves

Negative Carry on CRR and SLR = [[{D cost – (SLR * Tr)} / {1 – (CRR + SLR)}]*100] – D cost

Negative carry on CRR and SLR balances arises because the return on CRR balances is nil, while the return on SLR balances (proxied using the 364-day Treasury Bill rate) is lower th an the cost of deposits. Negative carry on CRR and SLR is arrived at in three steps. In the first step, return on SLR investment was calculated using 364-day Treasury Bills. In the second step, effective cost was calculated by taking the ratio (expressed as a percentage) of cost of deposits (adjusted for return on SLR investment) and deployable deposits (total deposits less the deposits locked as CRR and SLR balances). In the third step, negative carry cost on SLR and CRR was arrived at by taking the difference between the effective cost and the cost of deposits.

Un-allocable Overhead Cost = (Uc/Deployable funds)*100

Un-allocable Overhead cost is calculated by talking the ratio (expressed as a percentage) of unallocated overhead cost and deployable deposits.

Average Return on Net worth = {(NP/NW)*(NW/Deployable funds)}*100

Average Return on Net Worth is computed as the product of net profit to net worth ratio and net worth to deployable deposits ratio expressed as a percentage.

Introduction and adoption of base Rate by Banks reflected the maturity of Indian Banking system as far as deregulation of interest rate is concerned. Base Rate is expected to enhance the allocative efficiency of the financial intermediation process by banks.

Deregulation of lending rates will promote financial inclusion with greater credit flow to agriculture and small business. Base rate system that comes into effect from July 01, 2010 gives complete freedom to banks in their loan pricing decisions while ensuring transparency. Banks have unlimited access to public deposits and privileged access to the liquidity facility of the Reserve Bank. Hence there is a greater need for transparency and responsible lending practices for public purposes.

Base rates of banks will mirror their relative efficiency and cost structure. While lending rates tend to be sticky, it is expected that the base rate system will show greater flexibility and strengthen both the interest rate and credit channels of monetary transmission.

The new system gives the freedom to banks to choose other market related benchmarks besides their base rates for pricing floating rate products. This could promote development of market benchmarks. It could also deepen the money market to facilitate short-term liquidity management by banks.

External Benchmark Based Lending

Reserve Bank had constituted an Internal Study Group (ISG) to examine various aspects of the marginal cost of funds-based lending rate (MCLR) system. The final report of the ISG was published in October 2017 for public feedback. The ISG observed that internal benchmarks such as the Base rate/ MCLR have not delivered effective transmission of monetary policy. The Study Group had, therefore, recommended a switchover to an external benchmark in a time-bound manner.

As a step in that direction, it was announced in the fifth bi-monthly Monetary Policy Statement for 2018-19 under 'Statement on Developmental and Regulatory Policies' dated December 05, 2018, that all new floating rate personal or retail loans and floating rate loans to Micro and Small Enterprises extended by banks from April 1, 2019 shall be linked to external benchmarks. Subsequently, it was announced in the first bi-monthly Monetary Policy Statement for 2019-20 under 'Statement on Developmental and Regulatory Policies' dated April 04, 2019 to hold further consultations with stakeholders and work out an effective mechanism for transmission of rates. Based on the consultations with stakeholders, it was decided to link all new floating rate personal or retail loans (housing, auto, etc.) and floating rate loans to Micro and Small Enterprises extended by banks with effect from October 01, 2019 to external benchmarks.

Accordingly, RBI instructions contained in Master Direction on Interest Rate on Advances issued vide DBR.Dir.No.85/13.03.00/2015-16 dated March 03, 2016 are amended as under:

(a) All new floating rate personal or retail loans (housing, auto, etc.) and floating rate loans to Micro and Small Enterprises extended by banks from October 01, 2019 shall be benchmarked to one of the following:

- Reserve Bank of India policy repo rate.
- Government of India 3-Months Treasury Bill yield published by the Financial Benchmarks India Private Ltd (FBIL).
- Government of India 6-Months Treasury Bill yield published by the FBIL.
- Any other benchmark market interest rate published by the FBIL.

(b) Banks are free to offer such external benchmark linked loans to other types of borrowers as well.

(c) In order to ensure transparency, standardisation, and ease of understanding of loan products by borrowers, a bank must adopt a uniform external benchmark within a loan category; in other words, the adoption of multiple benchmarks by the same bank is not allowed within a loan category.

Spread under External Benchmark

Banks are free to decide the spread over the external benchmark. However, credit risk premium may undergo change only when borrower's credit assessment undergoes a substantial change, as agreed upon in the loan contract. Further, other components of spread including operating cost could be altered once in three years.

Reset of Interest Rates under External Benchmark

The interest rate under external benchmark shall be reset at least once in three months.

Transition to External Benchmark from MCLR/Base Rate/BPLR

Existing loans and credit limits linked to the MCLR/Base Rate/BPLR shall continue till repayment or renewal, as the case may be. Other existing borrowers shall have the option to move to External Benchmark at mutually acceptable terms. And the switch-over shall not be treated as a foreclosure of existing facility.

External benchmark rate means the reference rate which includes:

a. Reserve Bank of India policy Repo Rate

b. Government of India 3-Months and 6-Months Treasury Bill yields published by Financial Benchmarks India Private Ltd (FBIL)

c. Any other benchmark market interest rate published by FBIL.

When the floating rate advances are linked to an internal benchmark rate, banks shall determine their actual lending rates by adding the components of spread to the internal benchmark rate. There shall be no lending below the benchmark rate for a particular maturity for all loans linked to that benchmark.

All floating rate rupee loans sanctioned and renewed w.e.f. April 1, 2016 shall be priced with reference to the Marginal Cost of Funds based Lending Rate (MCLR) which will be the internal benchmark for such purposes subject to the provisions contained in paragraph 7 of this Master Direction. The periodicity of the reset under MCLR shall correspond to the tenor/maturity of the MCLR to which the loan is linked.

Thus, adoption and moving towards External Benchmark Lending rate by Banks would reflect the culmination of process of interest rate de-regulation in India and will facilitate the borrowers to avail finance at market related pricing.

CHAPTER - 15

STRUCTURAL/REGULATORY CHANGES RELATED TO LARGE CREDIT DELIVERY

STRUCTURAL/REGULATORY CHANGES RELATED TO LARGE CREDIT DELIVERY

Infrastructure sector financing depend on large credit apart from Bonds and equity besides budgetary support. In this context we need to examine various contours of large Credit delivery related regulatory dispensations in the backdrop of experience gained in the infrastructure financing space and lenders should have clear understanding of these regulatory provisions.

One of the reasons for large non-performing loans faced by the Indian Banking System has been loans availed by the overambitious corporates mostly disproportionate to their scale of operations. This was also facilitated apart from other reasons largely by inadequate existing prudential limits relating to the size of borrowings by the borrowers from an Individual Bank or from the entire Banking system. Over a period, time it enabled borrowers to resort to highly leveraged borrowings particularly by the large corporates/businesses inviting twin Balance sheet problems for Corporates and Banks.

There were specified prudential limits in terms of how much a Bank can lend to an individual borrower in terms its own capital funds viz a Bank has exposure limits to Individual borrowers to the extent of 15% of its capital funds. Similarly, a Bank has group exposure limits (aggregate of exposure to borrowers belong to same group) to 40% of its capital funds. These prudential limits were too high in terms of increased concentration of Bank lending to a group of borrowers. Some of the large stressed borrowers in the country witnessed leverage ratios in the vicinity of 15 to 20 times their capital. Obviously, such high leveraging is fraught with risk.

Hence Reserve Bank of India has examined it timely and on a review of the same issued revised individual and group exposures limits by Banks in December 2016 which are dealt in subsequent paragraphs.

In order to check the over lending by Banks and to streamline the Banking system, Reserve Bank of India has introduced/ brought certain structural changes to the Bank Lending in the recent past. Following important and landmark changes are discussed in this chapter.

- Revised Large exposure Framework for large Borrowers
- Enhancing Credit Supply for Large Borrowers through Market Mechanism
- Loan Delivery Mechanism.

Revised Large exposure Framework for large Borrowers

In the month of Dec 2016, Reserve Bank of India came out with revised framework for large exposure framework which popularly known as LEF framework. The new norms brought about by RBI resulted in reduced permissible exposure limits for group and individual corporate due to following changes which is elaborated below:

	Existing	Revised	Remarks
Individual Exposure	15% of Banks capital funds	20% of Banks Tier I capital funds	Banks Board may allow additional 5% exposure.
Group Exposure	40% of Banks Capital funds	25% of Tier I capital of Banks	-

Further on 3rd June 2019 RBI has, in order to capture exposures and concentration risk more accurately and to align the above instructions with international norms, brought the following amendments in the above-mentioned instructions:

i) Exclusion of entities connected with the sovereign from definition of group of connected counterparties.

ii) Introduction of economic interdependence criteria in definition of connected counterparties.

iii) Mandatory application of look-through approach (LTA) in determination of relevant counterparties in case of collective investment undertakings, securitisation vehicles and other structures.

Scope of application

Banks must apply LEF at the same level as the risk-based capital requirements are applied, that is, a bank shall comply with the LEF norms at two levels: (a) consolidated (Group) level and (b) Solo level.

The application of the LEF at the consolidated level implies that a bank must consider exposures of all the banking group entities (including overseas operations through branches and subsidiaries), which are under regulatory scope of consolidation, to counterparties and compare the aggregate of those exposures with the banking group's eligible consolidated capital base.

Scope of counterparties and exemptions

Under the LEF, a bank's exposure to all its counterparties and groups of connected counterparties, excluding the exposures listed below, will be considered for exposure limits. The exposures that are exempted from the LEF are listed below:

a) Exposures to the Government of India and State Governments which are eligible for zero percent Risk Weight under the Basel III – Capital Regulation framework of the Reserve Bank of India.

b) Exposures to Reserve Bank of India.

c) Exposures where the principal and interest are fully guaranteed by the Government of India.

d) Exposures secured by financial instruments issued by the Government of India, to the extent that the eligibility criteria for recognition of the credit risk mitigation (CRM) are met in terms of extant guidelines.

e) Intra-day interbank exposures.

f) Intra-group exposures.

g) Borrowers, to whom limits are authorised for food credit.

h) Banks' clearing activities related exposures to Qualifying Central Counterparties (QCCPs).

i) Deposits maintained with NABARD on account of shortfall in achievement of targets for priority sector lending.

Where two (or more) entities that are outside the scope of the sovereign exemption are controlled by or are economically dependent on an entity that falls within the scope of the sovereign exemption and are otherwise not connected, those entities will not be deemed to constitute a group of connected counterparties.

However, a bank's exposure to an exempted entity which is hedged by a credit derivative shall be treated as an exposure to the counterparty providing the credit protection notwithstanding the fact that the original exposure is exempted.

All exempted exposures must be reported by a bank as required under regulatory reporting, if these exposures meet the criteria for definition of a 'Large Exposure".

The Large Exposure limits

Single Counterparty: The sum of all the exposure values of a bank to a single counterparty must not be always higher than 20 percent of the bank's available eligible capital base. In exceptional cases, Board of banks may allow an additional 5 percent exposure of the bank's available eligible capital base. Banks shall lay down a Board approved policy in this regard.

Groups of Connected Counterparties: The sum of all the exposure values of a bank to a group of connected counterparties must not be always higher than 25 percent of the bank's available eligible capital base.

The eligible capital base for this purpose is the effective amount of Tier 1 capital fulfilling the criteria as per the last audited balance sheet. However, the infusion of capital under Tier I after the published balance sheet date may also be taken into account for the purpose of Large Exposures Framework. Banks shall obtain an external auditor's certificate on completion of the augmentation of capital and submit the same to the Reserve Bank of India (Department of Banking Supervision) before reckoning the additions to capital funds. Further, for Indian Banks, profits accrued during the year), will also be reckoned as Tier I capital for the purpose of Large Exposures Framework

Any breach of the above LEF limits shall be under exceptional conditions beyond the control of the bank, shall be reported to RBI (DBS, CO) immediately and rapidly rectified.

Definition of Connected Counterparties: In some cases, a bank may have exposures to a group of counterparties with specific relationships or dependencies such that, were one of the counterparties to fail, all the counterparties would very likely fail. A group of this sort, referred to in this LEF framework as a group of connected counterparties, must be treated as a single counterparty. In this case, the sum of the bank's exposures to all the individual entities included within a group of connected

counterparties is subject to the large exposure limit, and to the regulatory reporting requirements as specified above. These inter relationships or dependencies within the group of counterparties is well articulated and defined by the Regulator to avoid any sort of ambiguity.

Banks are also expected to refer to criteria specified in the extant accounting standards for further qualitative guidance when determining control.

While determining control relationship, banks should also examine cases where clients have common owners, shareholders, or managers; for example, horizontal groups where an undertaking is related to one or more other undertakings because they all have the same shareholder structure without a single controlling shareholder or because they are managed on a unified basis.

Where control has been established based on any of the above criteria, a bank may still demonstrate to the RBI in exceptional cases (e.g., existence of control between counterparties due to specific circumstances and corporate governance safeguards) that such control does not necessarily result in the entities concerned constituting a group of connected counterparties. For example, in specific cases where a special purpose entity (SPE) that is controlled by another client (e.g. an originator) is fully ring-fenced and bankruptcy remote (i.e. arrangements exist to the effect that assets of SPE are not available to lenders of parent undertaking in the event of insolvency of the parent undertaking) – so that there is no possible channel of contagion. Hence no single risk exists between the special purpose entity and the controlling parent entity.

In establishing connectedness based on economic interdependence, banks must consider, at a minimum, the following criteria:

- Where 50% or more of one counterparty's gross receipts or gross expenditures (on an annual basis) is derived from transactions with the other counterparty.
- Where one counterparty has fully or partly guaranteed the exposure of the other counterparty, or is liable by other means, and the exposure is so significant that the guarantor is likely to default if a claim occurs.
- Where a significant part of one counterparty's production/output is sold to another counterparty, which cannot easily be replaced by other customers.
- When the expected source of funds to repay the loans of both counterparties is the same and neither counterparty has another independent source of income from which the loan may be serviced and fully repaid.
- Where it is likely that the financial problems of one counterparty would cause difficulties for the other counterparties in terms of full and timely repayment of liabilities.
- Where the insolvency or default of one counterparty is likely to be associated with the insolvency or default of the other(s);

Values of Exposures: General Measurement Principles

Under the proposed LE Framework, an exposure to a counterparty will constitute both on and off-balance sheet exposures included in either the banking or trading book and instruments with counterparty credit risk. Definitions and measurements of such exposures are given in this section.

Definitions of exposure values under the LE Framework

Banking book on-balance sheet non-derivative assets: The exposure value is defined as the accounting value of the exposure. As an alternative, a bank may consider the exposure value gross of specific provisions and value adjustments.

Banking book and trading book OTC derivatives (and any other instrument with counterparty credit risk): The exposure value for instruments which give rise to counterparty credit risk and are not securities financing transactions, should be determined as per the extant instructions as prescribed by the Reserve Bank (on exposure at default) for the counterparty credit risk.

Banking book "traditional" off-balance sheet commitments: For the purpose of the LEF, offbalance sheet items will be converted into credit exposure equivalents through the use of credit conversion factors (CCFs) by applying the CCFs set out for the Standardised Approach for credit risk for risk-based capital requirements, with a floor of 10 percent.

On-balance sheet netting: Where a bank has in place legally enforceable netting arrangements for loans and deposits, it may calculate the exposure values for LEF purposes according to the calculation it uses for capital requirements purposes – i.e., on the basis of net credit exposures subject to the conditions set out in the approach to on-balance sheet netting in the risk-based capital requirement.

Calculation of exposure value for Trading Book positions: A bank must add any exposures to a counterparty arising in the trading book to any other exposures to that counterparty that lie in the banking book to calculate its total exposure to that counterparty. The exposures considered here correspond to concentration risk associated with the defaulting of a single counterparty for exposures included in the trading book. Therefore, a bank's exposures to financial instruments issued by counterparties not exempted under this Framework will be governed by the LE limit, but concentrations in a particular commodity or currency will not be.

Large exposures rules for global systemically important banks (G-SIBs) and domestic systemically important banks (D-SIBs): The LE limit applied to a G-SIB's exposure to another G-SIB is set at 15 percent of the eligible capital base. The LE limit of a non-G-SIB in India to a G-SIB in India or overseas will be 20 percent of the eligible capital base. The limit applies to G-SIBs as identified by the Basel Committee and published annually by the FSB. When a bank becomes a G-SIB, it must apply the 15 percent exposure limit to another G-SIB within 12 months from the date of

Implementation date and transitional arrangements

All aspects of the LE Framework except guidelines with reference to economic interdependence criteria and non-centrally cleared derivatives exposures, (both of which are applicable from April 1, 2020), are applicable in full, with effect from April 1, 2019 and the exposure norms applicable to single/group of connected counterparties are no longer applicable from that date. Banks must adjust their exposures so as to comply with the LE limit with respect to their eligible capital base by the date

of implementation. Accordingly, for aspects applicable from April 01, 2020, prior to this date, banks should avoid taking any additional exposure/reduce exposure in cases where their exposure is at or above the exposure limit prescribed under this Framework. While non-centrally cleared derivatives exposures are exempt till April 1, 2021.

Credit Risk Mitigation (CRM) instrument (e.g., SBLC/BG from Head Office/other overseas branch) from which CRM benefits like shifting of exposure/ risk weights etc. are not derived, may not be counted as an exposure on the CRM provider. In this context RBI clarified that above clause will also apply to non-fund-based credit facilities provided to a person resident outside India i.e., the exposure can be reckoned on the person resident outside India instead of treating it as an exposure on Head Office/ other overseas branch, provided the transaction is otherwise compliant with Foreign Exchange Management (Guarantees) Regulations, 2000.

However, on 23rdMay 2020 RBI has, as a onetime measure, to increase a bank's exposure to a group of connected counterparties from 25% to 30% of the eligible capital base of Bank. Because of the COVID-19 pandemic, debt markets and other capital market segments are witnessing heightened uncertainty. As a result, many corporates are finding it difficult to raise funds from the capital market and are predominantly dependent on funding from banks. Therefore, with a view to facilitate greater flow of resources to corporates, it has been decided, by RBI as a one-time measure, to increase a bank's exposure to a group of connected counterparties from 25% to 30% of the eligible capital base of the bank. The increased limit was made applicable up to June 30, 2021.

Other Major Changes as per revised large exposure framework as under:

i) Earlier the bank can take exposure in relation to their capital funds (tier I + tier II). In the revised norms this exposure stands limited to Tier I capital.

ii) Earlier in case of groups bank boards have the discretion to lend additional 5% of capital funds on case-to-case basis, however in the revised norms no such discretion is available.

iii) In case of infrastructure related exposures banks can take additional exposure of 10% of their capital funds. The revised norms do not give any such discretion.

iv) Removal of additional dispensation given to bank for taking exposure on individual corporate and groups for infrastructure projects.

v) Removal of additional dispensation for exposure on oil companies who have issued oil bonds.

The above norms would ensure that there is no undue concentration of large lending by Banks in a group of large borrowers which has been the phenomenon in the recent few years. However, it may pose implementation challenges in the immediate transition period for obvious reasons. It is largely felt that it will be difficult to restrict the exposures of 20% of entire capital base (Tier I) at all times for exposure to large Public Sector Undertakings for obvious reasons.

Moreover, in the revised guidelines of Reserve Bank of India, the ambit of group of connected parties is widened including dependencies of group of counter parties with specific relationship to include in the definition of group exposure. In India, large companies belonging to the core and real sector like Steel, Oil, Automobile, or other core industries may have many small ancillaries/dealers having no significant ownership ties with large corporates. Hence the scope of revised guidelines to include

such ancillaries or dealer companies in the group may involve denial of genuine credit facilities to such small entities. Hence where there is no clear and significant ownership ties such entities may not be part of group even if there is economic interdependence. Or else it would unintentionally impact the credit delivery for genuine credit requirements of such small and medium enterprises which get tagged as part of group by virtue of its natural business relationship to the Company/ Industry major whose product it sells or serves. In fact, often the financing to many small units is done primarily on the strength of the tie up arrangements with the Industry Major.

In fact, in Indian context many large industrial groups have companies operating independently in area where there are no linkages or interdependence. For instance, an industry major may have companies across sectors which are managed independently with no funding support needed from group. Similarly, a group may have companies across diverse fields and if all such companies are considered to be belonging to group, then the ceilings for group exposures need to be much higher than the single exposure ceilings. It may be mentioned that such companies have independent Boards consisting of independent directors and usually high degree of prudent corporate governance.

Similarly, a Bank may have number of large corporate clients who have smaller sized vendor who are also Banks's clients under small and medium enterprise category and where the former (i.e. large corporate) are material customers for the latter. The wordings of above criteria of RBI deems that all such vendors would need to be aggregated to the large corporate.

Enhancing Credit Supply for Large Borrowers through Market Mechanism

One important limitation in the Large Exposure Framework (LEF) was that it is limited to exposure norms for a borrower at an individual Bank level. There was no restriction a borrower approaching multiple Banks for their financing requirements and thus unduly leverage and thus posing systemic risk.

As such there was a build-up of high concentration of credit risk at the systemic level in the banking sector. While single and group exposure norms put a ceiling on the amount an entity can borrow from a single bank, there is no ceiling on total bank borrowing by a corporate entity from entire Banking system. This has resulted in banks collectively having very large exposures to some of the large corporates in India, particularly in the power/ infrastructure, housing finance and steel sectors/ industries. Many large corporates are excessively leveraged and banking sector's aggregate exposure towards such companies is also excessively high. This poses a collective concentration risk to the banking sector, even when the single and group borrower exposures for each bank remain well within the prescribed exposure limits.

Therefore need arises for a framework that mitigates the risk posed to the banking system on account of large aggregate lending by the banking system to a single corporate as the single borrower exposure limit linked to a bank's Tier 1 capital may not by itself be sufficient to contain the risk the banking system is exposed to.

There are several ways to address this risk. In the current context, it was the Reserve Bank's considered opinion that putting in place prudential risk recognition measures are preferable to imposing hard limits on banks' aggregate lending to large borrowers, due, among others, to the following reasons –

(i) Sudden imposition of a hard limit on aggregate lending to a corporate from the banking system may destabilise the credit intermediation process, in the absence of well-developed alternate channels. This may hamper credit growth in an already subdued economic environment and adversely impact the business cycle. It would also be difficult for banks to prune their existing exposures to the corporates at short notice.

(ii) The corporate bond market in India is not well developed and lacks depth – there are a number of constraints relating to the issuer and investor base, absence of robust secondary trading volumes, inadequacies of market infrastructure such as reporting, trading and exchange platforms, disclosure insufficiencies, etc. which need to be addressed at regulatory level separately.

In the circumstances the Reserve Bank proposed to introduce the Framework for Credit supply for large borrowers through market mechanism as an important measure of structural reforms and issued guidelines on 25th Aug 2016 and thereby brought into force the directives relating to Credit supply for large borrowers through market mechanism so that borrower can no longer borrow from multiple Banks without any restrictions. Borrower would be required to gradually move to borrowings through market instruments after he reaches a thresh hold limit in terms of his total borrowings from Banking System.

The detailed guidelines in this regard are enumerated below:

Definitions:

For this Framework, the following terms shall have the meaning assigned to them herein below:

(i) Aggregate Sanctioned Credit Limit (ASCL) means the aggregate of the fund-based credit limits sanctioned or outstanding, whichever is higher, to a borrower by the banking system. ASCL would also include unlisted privately placed debt with the banking system.

(ii) 'Specified borrower', means a borrower having an ASCL of more than

a. ₹25,000 crore at any time during FY 2017-18.

b. ₹15,000 crore at any time during FY 2018-19.

c. ₹10,000 crore at any time from April 1, 2019 onwards.

(iii) 'Reference date', means the date on which a borrower becomes a 'specified borrower'.

(iv) Normally permitted lending limit (NPLL) means 50 percent of the incremental funds raised by the specified borrower over and above its ASCL as on the reference date, in the financial years (FYs) succeeding the FY in which the reference date falls. For this purpose, any funds raised by way of equity shall be deemed to be part of incremental funds raised by the specified borrower (from outside the banking system) in the given year.

Provided that where a specified borrower has already raised funds by way of market instruments and the amount outstanding in respect of such instruments as on the reference date is 15 per cent or more of ASCL on that date, the NPLL will mean 60 percent of the incremental funds raised by the specified borrower over and above its ASCL as on the reference date, in the financial years (FYs) succeeding the FY in which the reference date falls.

(v) Banking system means all banks in India including RRBs and co-operative banks and branches of Indian banks abroad.

(vi) Market instruments shall include bonds, debentures, redeemable preference shares and any other non-credit liability, other than equity.

Scope

These guidelines will be applicable on all single counterparties of Scheduled Commercial Banks (SCBs), except other SCBs, NBFCs registered with RBI, AIFIs (NHB, SIDBI, EXIM Bank and NABARD) and HFCs registered with NHB. Banks should apply their due diligence while deciding the NPLL for a single borrower in order that borrowers do not circumvent the cut-off ASCL criteria by borrowing through dummy/fictitious group companies.

This was made effective from the financial year 2017-18 onwards. The banking system shall ordinarily keep its future incremental exposures to the specified borrowers within the NPLL, else they will be subject to the prudential measures as detailed below.

Prudential Measures

From 2017-18 onwards, incremental exposure of the banking system to a specified borrower beyond NPLL shall be deemed to carry higher risk which shall be recognised by way of additional provisioning and higher risk weights as under:

(i) Additional provisions of 3 percentage points over and above the applicable provision on the incremental exposure of the banking system more than NPLL, which shall be distributed in proportion to each bank's funded exposure to the specified borrower.

(ii) Additional Risk weight of 75 percentage points over and above the applicable risk weight for the exposure to the specified borrower. The resultant additional risk weighted exposure, in terms of risk weighted assets (RWA), shall be distributed in proportion to each bank's funded exposure to the specified borrower.

(iii) Banks may, at their discretion, subscribe to bonds issued by the specified borrowers (over and above NPLL) in the first year of this framework taking effect, i.e., 2017-18 subject to extant investment guidelines and these being divested in the subsequent three years as per the following milestones:

a. Not less than 30 percent by March 31, 2019

b. Not less than 60 percent by March 31, 2020

c. Not less than 100 percent by March 31, 2021

All holdings by a bank of market instruments issued by a 'specified borrower' after the 'reference date' shall be held in the AFS/HFT category and marked to market as applicable thereto. However, banks may, at their discretion, value their holdings of market instruments issued by the specified borrowers in 2017-18 at book value.

Loan Delivery System

One of deficiencies delivery of working capital finance by Banks in the current form of Cash Credit Facilities is that it lacks self-liquidating nature. Every working facility should be normally repaid out of sales proceeds and there has to be a definite time frame for it within the working capital cycle of Industry or trade. But the current method of Cash Credit facility failed to ensure such linkage and unintentionally the Cash Credit limit tacitly continues to be merely a loan for infinite period without naming it Term Loan. With a view to enhance credit discipline among the larger borrowers enjoying

working capital facility from the banking system, it was proposed to modify the system for delivery of bank credit for such borrowers so that working capital limits have a pre specified and compulsory loan component with its predefined repayment period. With this objective RBI has introduced the Loan Delivery System and the salient features of the loan delivery system introduced by RBI on 5th Dec 2018 are as under:

Minimum level of 'loan component' and Effective date

In respect of borrowers having aggregate fund based working capital limit of ₹1500 million and above from the banking system, a minimum level of 'loan component' of 40 percent shall be effective from April 1, 2019. Accordingly, for such borrowers, the outstanding 'loan component' (Working Capital Loan) must be equal to at least 40 percent of the sanctioned fund based working capital limit, including ad hoc limits and TODs. Hence, for such borrowers, drawings up to 40 percent of the total fund based working capital limits shall only be allowed from the 'loan component'. Drawings in excess of the minimum 'loan component' threshold may be allowed in the form of cash credit facility. The bifurcation of the working capital limit into loan and cash credit components shall be affected after excluding the export credit limits (pre-shipment and post-shipment) and bills limit for inland sales from the working capital limit. Investment by the bank in the commercial papers issued by the borrower shall form part of the loan component, provided the investment is sanctioned as part of the working capital limit.

Sharing of Working Capital Finance

The ground rules for sharing of cash credit and loan components may be laid down by the consortium, wherever formed. All lenders in the consortium shall be individually and jointly responsible to make sure that at the aggregate level, the 'loan component' meets the above-mentioned requirements. Under Multiple Banking Arrangements (MBAs), each bank shall ensure adherence to these guidelines at individual bank level.

Amount and Tenor of the Loan

The amount and tenor of the loan component may be fixed by banks in consultation with the borrowers, subject to the tenor being not less than seven days. Banks may decide to split the loan component into WCLs with different maturity periods as per the needs of the borrowers.

Repayment/Renewal/Rollover of Loan Component

Banks/consortia/syndicates will have the discretion to stipulate repayment of the WCLs in instalments or by way of a "bullet" repayment, subject to IRAC norms. Banks may consider rollover of the WCLs at the request of the borrower, subject to compliance with the extant IRAC norms.

Risk weights for undrawn portion of cash credit limits

Effective from April 1, 2019, the undrawn portion of cash credit/ overdraft limits sanctioned to the aforesaid large borrowers, irrespective of whether unconditionally cancellable or not, shall attract a credit conversion factor of 20 percent.

The guidelines will be effective from April 1, 2019 covering both existing as well as new relationships.

The 40 percent loan component will be revised to 60 percent, with effect from July 1, 2019.

CHAPTER - 16

CONSULTANTS IN INFRASTRUCTURE PROJECTS

CONSULTANTS IN INFRASTRUCTURE PROJECTS

Consultants - Appointment of LIE / LIA / LLC

As discussed in previous Chapter, infrastructure financing involves a complex set of intricate analysis and assessment of various contractual obligations, technical aspects and identification of risks and their mitigations. All this necessitates the utilization of services of various consultants for detailed due diligence and advice during the appraisal and post-sanction credit processes to protect the interest of the lenders.

Lenders' Independent Engineer

The lenders usually appoint a Lenders' Independent Engineer (LIE) who is generally a reputed Consultancy / Engineering firm with relevant experience in evaluating large infrastructure projects. The LIE carries out an independent study of the project, examines the project cost and related aspects, project design and technical viability issues, etc., monitors the construction process and generates monitoring reports to enable the lenders to follow-up the project. Adequate care to be taken while appointing LIE based on reputation, track record etc. LIE performance to be monitored periodically. LIEs with proven inefficiency and lacking in reliability to be blacklisted. The detailed scope of work of an LIE is given below:

Scope of Work

The activities of the LIE would be spread across three phases as described below.

i. **Phase I**- Project Review and Assessment (Phase I shall commence from the date of appointment of the LIE and continue till construction phase.)

ii. **Phase II-** Construction Monitoring & Performance Testing

Phase II shall commence from construction and shall continue till two months after COD (commercial operations date).

iii. **Phase III-** Annual Operational Review (Optional)

Scope of work under different phases is broadly described hereunder. However, this is not an exhaustive list and issues specific to a project requiring comments of the LIE may have to be added on project-to-project basis as applicable.

Phase I – From Commencement Date till Construction Phase Scope of work under this phase will broadly cover:

a) Review the technical aspects of the Project including choice of technology, technical specifications and time schedule and adequate provisions have been made for unknown or variable elements in

the schedule, based on a review of the relevant project contracts, DFR and construction schedule as proposed by the Company. The project shall be defined as a composite of on-site and off-site facilities for which financing are being sought. If any facilities necessary for commercial production and off-take are to be outsourced, review thereof will also form a part of the scope.

b) Review and comment on the envisaged configuration and ability to produce the projected product output, given the inputs.

c) Comment on the adherence of the technical and commercial aspects of the project contracts including performance guarantees, warranties, liquidated damages, performance bonuses with respect to the general industry practice and adequacy of these to mitigate project risks.

d) Review the Project Cost including the EPC cost, all equipment procured under the bidding procedure, other contracts, adequacy of contingencies and comment on the appropriateness and reasonableness and comparison of the cost estimate with other similar projects and Base Case Business Plan including O&M costs (excluding financing costs).

e) Technical appraisal and review of the Project's conceptual design, engineering, drawings, construction plans, material procurement schedule and operation plans. In doing so, LIE shall also review the projected construction programme, expenditure schedule and adequacy of the arrangements made to achieve the projected construction schedule.

f) Verification/support of financial model inputs and all technical inputs of the project pro-forma. How well the assumptions & projections are supported by contract guarantees, performance testing, quality of design / equipment, etc.

g) Review of the Environmental Impact Assessment Report prepared for the project with an assessment of outstanding/future risks and methods to mitigate the same.

h) Advise the Lenders on the steps proposed to be taken by Company for protection of the environment and avoid damage to persons and property. Also, comment on any material environmental issues that may have an impact to proceed or complete the project.

i) Determine a limited number of downside scenarios which address possible failure in meeting project milestones.

j) Preparation of a detailed Initial Project Assessment Report including an assessment of the construction and maintenance risks and the adequacy of the risk mitigation measures.

k) Apprise the Lenders of Resettlement & Rehabilitation issues, if any.

l) Review the status of obtaining necessary approvals, permits, licenses, project completion certificates, etc. as may be required by Company for implementation of the Project.

m) Comment on the adequacy of approval/ clearances for starting construction.

n) Review of proposed Performance Testing Criteria.

o) Review of the proposed Draw down schedule.

p) Review of performance shortfalls compared to Liquidated Damages (LDs).

q) Review the consistency of individual equipment / contracts warranties with the overall plant performance guarantees by the PMC and their level of support.

For the scope of services related to Phase I, the LIE shall submit a draft Due Diligence report followed by a final Due Diligence report taking into account observations from the lenders /Company.

Phase II – From financial close till two months after commercial operations date Scope of work under this phase will broadly cover:

Construction monitoring

a) Review the bid procedure/ selection of bidders and the progress of issue of bids/in procurement contracts for conformity with the project schedule.

b) Review and comment on the cost of the equipment bought under bidding process and its design / technical specifications, to be in line as originally envisaged. Any adverse variations should be brought to the notice of the lenders.

c) Review the projected construction programme, expenditure schedule and adequacy of the arrangements made at the site to achieve the projected construction schedule at the specified periodicity (monthly, bi-monthly, etc.).

d) Review, assist and advice about the progress of work at the specified periodicity (monthly, bimonthly, etc.) vis-à-vis program of construction and milestone dates as per the relevant project documents.

e) Review of Contractor's invoices and supporting documents at the specified periodicity (monthly, bi-monthly, etc.) and Certification of the capital cost incurred and approval of disbursements during construction.

f) Spot verification of the quality of the construction work vis-à-vis approved specifications and periodic progress reports to Lenders in this regard.

g) Review and monitor quality control tests carried out. Assessment of variation orders. Monitor adherence to environmental regulations and report on any present/future risks that arise during project implementation.

h) Review the status of obtaining necessary approvals, permits, licenses, project completion certificates, etc. as may be required by Company for commencing commercial operations.

i) Provide necessary assistance to Lenders in case of any disputes.

j) Attending meetings with the Lenders as may be required.

k) Advising lenders of any delays/ major problems that may arise in future and conflict between the borrower & various contractors / equipment suppliers, etc. and adverse development that would affect the lenders.

l) Any other aspect on which the lenders/Company may like comments of the LIE.

m) Attending meetings with the Lenders as may be required,

n) Coordinate with the Lenders' Insurance Adviser (LIA) for providing inputs for designing / analysing adequacy of insurance package.

Performance testing

During start-up and performance testing, the Independent Engineer will:

a) Monitor on site overall plant performance tests including, data collection procedures, testing instrumentation, and plant operating and testing personnel throughout the plant performance test.

b) Reviews the test reports prepared by contractor or contractor's testing consultant and verify data reduction procedures and correction calculations to the various contracts guarantee conditions. c) Facility design versus actual installation.

d) Compliance with health, safety and other regulatory requirements.

e) Confirmation that required governmental permits and licenses have been obtained for operation.

f) Certification of Performance Test Results.

g) Any other matter at the discretion of lenders

Phase III - Annual Operational Review (Optional on project-to-project basis) During this Phase, the LIE will:

a) Advise lenders if the operations and maintenance is being carried out as per stipulated requirements.

b) Review the O&M manuals and comment on their completeness and compatibility to those of similar facilities. In particular, the scheduled maintenance and preventive maintenance programs, maintenance dredging programs shall be reviewed.

c) Review the actual performance in respect of performance parameters specified for the project and in the O&M agreement.

d) Review and evaluate conformance with scheduled maintenance, preventive maintenance, and spare parts programs.

e) Conduct periodic site visits to assess overall operations. Any planned modifications for the period since the last visit would be reviewed.

f) Monitoring and reporting of statutory compliance including environmental requirements.

g) Provide recommendations regarding remedial measures for identified deficiencies, which are appropriate to meet the lenders requirement.

h) Attend meetings, etc. and brief the lenders as needed.

i) Prepare and submit a report addressing all the issues mentioned above to the lenders every quarter.

In addition to the aforesaid, the scope of services of the LIE, in all the phases, would include advising Lenders on all technical matters in order to protect the Lenders interest under the financing documents and all other project documents.

Lenders' Insurance Advisor (LIA)

LIA is required to advise on the insurance requirements for the project during construction as well as operations phases.

Scope of Services

A broad Scope of Work/Services for Lenders Insurance Advisor (LIA) is as follows:

Financial Closure

(a) Prior to financial closure, LIA will prepare a report (a draft of which is to be provided to the Lenders within an acceptable time period for all parties to review and comment on) which will cover, inter alia, the following:

i. Review all Project agreements/documents and comment on the insurance requirements;

ii. Identify risks and interrelationship of risks associated with the Project, including, but not limited to, contractual risks, financial risks (relating to delay or termination), political risks, risk associated with third parties, technical risks, or the risk of business interruption and insurance implications for the Lenders and Project as a whole;

iii. Overview of the insurance market conditions (both international and local) with specific regard to capacity within the insurance market and cost in terms of likely future premia payable to maintain an adequate level of cover;

iv. Research of Indian insurance legislation with assistance of the Lenders' legal counsel and advise the Lenders and legal/technical advisers of any implications to the proposed construction and operational cover, as well as any implications to the perfection of the Lenders' security interest in the insurance policies and proceeds;

v. Based upon the main risks defined in (a) above, provide an opinion on the structure and adequacy of the proposed insurance cover for the construction and operational phases; and detailed policies, as available;

vi. Discuss the exclusions, deductibles and excesses applicable to the proposed insurances and comment on any potential risks to the Lenders and what is considered normally available;

vii. Confirm the market availability of the proposed insurance package and provide an opinion as can be reasonably made, on the continued availability of this coverage in the market; and

viii. Provide a recommendation on the minimum financial rating standard of the insurers (and re-insurers, as applicable).

(b) Liaise with the legal counsel and the Lenders with respect to the drafting of all elements of the insurance requirements in the loan documentation and the perfection of the Lenders' security interest in the insurance proceeds. Draft the schedule of minimum insurance requirements.

(c) Liaise with the Lenders Engineer and the Lenders with regard to the cost in terms of likely future premia payable to maintain an adequate level of insurance cover as allocated within the financial pro-forma; and

(d) Immediately, prior to the financial close, the LIA will certify (in a form acceptable to the Lenders or advice of any changes) that the required insurances are in place and conform to the requirements of the loan documentation.

Construction Phase

(a) Undertake a Risk Review of the Project, identify the major exposures and advise as to how they can be mitigated by Insurance Cover/ Arrangements in line with good industry practice including, but not limited to the following:

i. Physical Damage Risks to the Project facilities during the Construction Phase; ii. Advance loss of Profits and / or Business Interruption Risks;

iii. Employers/Workman's Compensation, Third Party Liability insurance with Cross Liability and/or Common Law Liability Exposures;

iv. Liability Risks (including Employers Liability, Marine, Cargo & Goods-in- Transit); v. Environmental Liability;

vi. Physical Damage risks to other assets such as offices, vehicles, plant, machinery and equipment (s) etc; vii. Sub-contractors' insurances, if applicable; and viii. Any other risks.

(b) Indicate the minimum Schedule of Insurance.

(c) Review and comment upon the proposed Insurance Package including:

i. Suitability of Sums Insured;

ii. Adequacy of the Insurance Policy wordings;

iii. Adequacy of sums insured and limits (taking probable maximum loss estimates into account);

iv. Premium Costs and Projections;

v. Deductible Levels;

vi. Warranties and Exclusions;

vii. Identification of significant Residual Risks that are uninsured and comment on their insurability e.g., those that are generally insurable, or have limited insurability and/or difficult and/or expensive to insure;

viii. Insurance and alternative Project Insurance Structures having regard to cost and availability

ix. Identification of additional Insurance Protection for Lenders including the availability of non-vitiation, assignments and loss payee clauses; and

x. Ensure compliance with all applicable legislation/laws for the time being in force.

(d) Review and comment on the insurance related provisions in the Loan Documentation / Security Documents (including assisting Legal Counsel in the drafting of the Minimum Schedule of Insurance). Ensuring proper insurance related documentation and also inclusion of insurance related relevant clauses in the Lenders' Loan Documentation / Security Documents.

(e) Review and comment on Secondary Insurance affected by the Borrower and/or other Project Participants.

(f) Review Local Insurance Law and its implications for the Project.

(g) Comments on the Financial Integrity of the selected Insurance Companies.

(h) Reinsurance; and

(i) Issue Insurance Report highlighting the Critical Issues raised for carrying out the Scope of Work (a) to (h), confirming compliance with all Conditions Precedents of the Loan / Security Documents and drawing together the conclusions on the above.

Operational Phase

a. Undertake a Risk Review of the Project, identify the major exposures and advise as to how they can be mitigated by Insurance Cover / Arrangements in line with good industry practice including, but not limited to the following:

   i. All Risks to the Project facilities during the Operational Phase;

   ii. Loss of Profits and / or Business Interruption risks;

   iii. Employers / Workman's Compensation, third party Liability Insurance with Cross Liability and/or Common Law Liability Exposures;

   iv. Liability Risks (including Employers Liability, Marine, Cargo Goods-in- Transit);

   v. Environmental Liability Risks including loss of risk to the surrounding property; and vi. Physical Damage risks to other assets such as offices, vehicles, plant, machinery and equipment (s) etc.

b. Advise the Administrative Agent in monitoring Insurance Package, during Operational Phase.

c. Prior to the project completion, audit and report that the Operational Insurance Package is in accordance with the good industry practice.

d. Audit and report on the Annual Renewal of Operational Insurance Package in general and with respect to the following in particular:

   i. Availability of Insurance and whether they are properly affected;

   ii. Security of Insurers;

   iii. Compliance with Schedule of Minimum Insurance requirements for Operational Phase;

   iv. Incorporation of the agreed Lenders' interest provisions in the insurance Package;

   v. Continuity of cover throughout Operational Phase; vi. Market availability of Insurance; and vii. Inflation-and Capital Additions, which need to be reflected in the Sums Insured.

e. Advice Lenders of any material Adverse Change in circumstances, which may necessitate an immediate Review in whole or in part, of the Insurance Package.

f. Advise and assist in the negotiation of any changing requirements for the Insurance Package.

g. Provide on-going advice, assistance and services on Risk and Insurance related aspects of the Project, as required by Borrower and the Lenders from time to time.

h. Identify and comment on Residual Risks & Reinsurance.

i. Advise the Lender on adequacy etc. of various Insurance Arrangements, Packages, the Contractors' All Risks (CAR), Escalations, Extended Maintenance, Design Drafts, etc.

j. Advise the Lender on issues relating to Renewals, Reinsurance, Assignment of the Policies, Settlement of Claims etc., on continuing basis.

k. Any other matter relevant to the Project in the considered view of the Lenders Insurance Advisor. The scope of services provided above is not exhaustive but only indicative and it shall be the sole responsibility of the Lenders Insurance Advisor to render all consultancy and advisory services required to fulfil the obligations broadly envisaged herein.

l. Any other matter at the discretion of the lenders.

Lenders' Legal Counsel (LLC)

Project financing depends to a large extent for risk mitigation on the various contracts/agreements that are entered into between various stakeholders in the project. Services of reputed legal counsel are, therefore, required for legal due diligence on the contracts etc. as well as for drafting of the project specific loan documents.

Scope of Work

Project Documentation

a. Carry out legal due diligence of the Project Contracts / Agreements and advise the Lenders on the risk sharing and comprehensiveness of the Project Contracts and provide specific legal advice, as requested by Lenders, on all the Project Contracts, inter alia, including the following, as may be applicable:

   i. Joint Venture/SPV Agreement by the Promoters

   ii. Memorandum/Articles of Association

   iii. Shareholders Agreement

   iv. Revenue Shortfall Agreement

   v. Board Resolutions

   vi. Concession Agreement vii. State Support Agreement

   viii. EPC Contracts

b. Title Documents pertaining to the properties of the Company (if any) Review and comment on Project Contracts executed or to be executed,

c. Review and comment on the compliance of the obligations of the Company in terms of the Agreements and on the guarantees obtained under the Project Contracts,

d. Provide a legal opinion on, inter-alia, the statutory and regulatory approvals and consents required for the project and the validity of the project documentation,

e. Review and comment on any applicable laws, regulations, codes of conduct or similar requirements, any rules of general law or any requirements of any regulatory body with jurisdiction over the project,

f. Submit Legal Due Diligence Report covering all the aspects mentioned above, and

g. Any other matter at the discretion of Lenders.

Financing & Security Documents

a. Formulate and finalize drafts of documents as set forth below, including preparation of any other documents which might be considered necessary by the lenders (including all type and category of lenders) and the company in connection with financing the project, and discuss, negotiate and finalize such documents with the lenders and the Company and providing specific local law advice, as requested by the lenders and their counsel, on all finance documentation and security documentation required or produced in connection with the project, including inter alia -

   i. Common Terms Agreement

   ii. Rupee Term Loan Agreement

   iii. Foreign Currency Loan Agreement

   iv. Inter – Creditor Agreement amongst the Lenders

   v. Lender's Agent Agreement

   vi. Security Agency Trustee Agreement

   vii. Indenture of Mortgage

   viii. Deed of Hypothecation

   ix. Trust and Retention Account Agreement/ Escrow Agreement

   x. Undertakings for cost overrun / shortfall, Creation of DSRA, Temporary infusion of funds for delay in receipt of Grant from NHAI

   xi. Share pledge Agreement

   xii. Undertakings for non-disposal of shareholdings

   xiii. Declarations and Undertakings as per sanctions

   xiv. Consents and Agreements

   xv. Trust Deed xvi. Power of Attorneys

xvii. Such other documents as the Lenders / LLC may feel necessary

xviii. Review of LCs to be issued in favour of the project company

b. Drafting of any additional local loan documents as the lenders may require.

c. Advise on appropriate transaction mechanism to have minimum cost with efficiency.

d. Liaising, as required throughout the matter, with the counsel of the project Company, counsel of the sponsors and providing such other advice and assistance and undertaking of such other work or services as may be required by the Lenders from time to time in the course of the matter.

e. Submit Closing Opinion confirming that the financing documents and securities created or to be created are valid in law and enforceable.

f. Advise and assist on all legal and documentary arrangements required for the purpose of financial closure up to and including the first with-drawl of the Lenders' loan by the Project company and issue necessary certificates conforming fulfilment of conditions precedent to first disbursement by the lenders.

g. O&M Agreement/Toll Agreement will be finalized by the Consultant as and when required the scope of services provided above is not exhaustive and it shall be the sole responsibility of the legal counsel to render all services required to fulfil the obligations broadly envisaged herein.

As revealed from above description, coordination among the agencies is also required to arrive at correct action points at various stages of the project. Periodic review of the IR reports and performance is advisable for effective monitoring. Further, an independent engineer is also appointed by the concession authority like NHAI and the report of LIE need to be compared and reconciled to assess broad direction of the project progress.

CHAPTER - 17

DOCUMENTATION – TERMS & CONDITIONS OF SANCTION

DOCUMENTATION – TERMS & CONDITIONS OF SANCTION

As discussed earlier, proper documentation plays a very crucial role in the entire infra funding process. Proper formulation and execution of documents is essential to legally bind each party to the respective documents. As we have seen in previous Chapters, to mitigate various identified risks, suitable conditions are stipulated, to be complied with by borrower at various stages as applicable. Here we will discuss in detail the said terms and conditions. These conditions are illustrative in nature and shall vary from case-to-case as per the requirements of each project. Specific additional conditions may have to be stipulated for necessary compliance in accordance with specific intricacies to protect the lenders interests

Pre-Commitment Conditions

These are the conditions that need to be satisfied before documentation. These are critical basic requirements for a borrower /project to be satisfied before even committing to the project (by way of documentation). In general such conditions include:

1. Signing of a valid principal agreement enabling the promoters to develop the project e.g. Concession Agreement, PPA, etc.
2. All project documents would be reviewed by the LIE/LLC and all issues raised by them would be settled to the satisfaction of lenders.
3. The insurance arrangements would be made to the satisfaction of the lenders after incorporating the suggestions made by the LIA and with suitable bank clause.
4. Equity contribution - A letter of comfort undertaking/equity support guarantee from the promoters towards their equity contribution would be submitted to the lenders/Lead Bank.
5. Management control - any conditions regarding the promoters to collectively hold adequate percentage of share capital during the currency of the loan like pledge of majority shares in project company, etc. (Normally the core promoters should continue to have management control during the loan period).
6. Furnish a guarantee/undertaking to bring in funds in a manner acceptable to the lenders to cover cost-overrun, if any (say 10% - negotiable) of the project cost. The amount and nature of the cost overrun would be determined based on the certificate given by the promoter's auditor & LIE.

7. Assignment of benefits under various project related contracts like LDs under PPA, etc. in favour of lenders.
8. Company should have possession and title of project land, which should be assignable to the lenders, as may be applicable on case-to-case basis.
9. The Shareholders' agreement for the equity of the formed SPV would be finalized and signed to the satisfaction of lenders.
10. Conditions precedent for validity of the State Government Guarantee/ GOI Counter Guarantee should be met.
11. Modifications to/termination of the Shareholders' Agreement to be in consultation with and prior written approval of lenders.
12. In the event of delay in completion of the inter-connection (in respect of telecom, power etc.) facilities, the project company would not request for re-scheduling of the repayment of project debt.
13. Any amendments to the EPC or other contract will be carried out to LIE/Lender's satisfaction.
14. Agree to the effect that changes, if any, in the project related agreements like PPA, etc. would be subject to the approval of lenders.
15. Undertake that in the event of any cost savings on account of custom duties/ other taxes & duties, a pro-rata reduction in debt as well equity in the ratio of the project debt: equity ratio would take place.
16. Obtain necessary approvals from the GOI and RBI for the proposed foreign investment in the equity share capital of the company, if any.
17. The company should agree to maintain various stipulated reserves e.g. DSRA, reserves for general operating expenses, fuel, major maintenance etc.
18. Repatriation of profits/declaration of dividends would be permitted only if the Project Company meets the dividend tests (to be defined in consultation with other lenders), reserves are full and there is no default by the Project Company to lenders.
19. The Company to increase the authorized and paid-up capital of the project company to the required levels.
20. Obtain all statutory/ non-statutory clearances including environmental clearances for the project as certified by the PMC / LIE required at that stage.
21. Agree that the LIE will review all contracts to be awarded to the satisfaction of lenders.
22. Any other condition deemed fit, depending upon case-to-case basis.

Pre-Disbursement Conditions

1. Modify the Memorandum & Articles of Association of the project company to enhance the authorized share capital and borrowing powers as per the envisaged means of financing.
2. The Sponsors to the project to bring specified proportion of their equity contribution up front and the balance in proportion to the debt draw down as per the agreed upon debt: equity ratio.
3. The project company would open and maintain a Trust & Retention Account (TRA) and shall deposit all the cash inflows of the company in the said account and the proceeds should be utilized in a manner and priority to be decided by the Lenders. There would be a specific provision in the TRA that any monies coming from Liquidated Damages payment made to the Project Company from the EPC Contractor/ Fuel Supplier/ any other contractor would be first deposited in this account on which Lenders will have the first charge.
4. Take possession of entire envisaged land for the plant satisfactory to lenders, with a provision to mortgage lease hold rights in favour of lenders and obtain all the necessary approvals for the use of land for the purpose of the proposed project.
5. Agree for a review of the cost of project by lenders with inputs from the Lenders' Engineer prior to financial closure, and to tie up additional means of financing for any increase in the estimated cost of project.
6. Agree and undertake to furnish to lenders such information and data as may be required by lenders to ensure that the physical progress as well as expenditure incurred on the project are as per the schedule.
7. Agree that lenders have the right to review the cost of the project at any time during the implementation of the project as also before the final disbursement of the loan amount. Pending completion of the review, the project company to obtain prior approval of lenders for utilizing the amount of the loans equivalent to the contingency provision in the cost of project.
8. Agree that lenders be entitled to appoint up to two nominees (varies from case-to- case) on the Board of the project company during the currency of financial assistance.
9. Agree that the preliminary and pre-operative expenses would be allowed as a part of the project cost only to the extent they are found to be reasonable, as examined by Lenders' Engineer, and to the extent that they are certified by auditors that they have been actually incurred and relate to the proposed project only.
10. All the remaining statutory/ non-statutory clearances for the project to be obtained as certified by the LIE and as required at that stage of the project, including those relating to firm FSA and PPA (In case of Power Projects).

11. In case of power projects Proper evacuation contracts/arrangement to be ensured.
12. Condition that project sponsor shall ensure execution of a fuel transportation agreement to the satisfaction of lenders is being stipulated.
13. In Case of Power Projects, mitigants such as establishing revolving LC, DSRA etc., may be considered.
14. The Company to obtain clarification from the respective Pollution Control Board regarding requirement of continuous monitoring and make suitable arrangements for depending on the clarification. Ensure that equipment proposed to be installed is adequate and appropriate to the pollution control requirements.

Other Conditions

1. Finalize / strengthen its organization and management set up to ensure good corporate governance.
2. Make satisfactory arrangements with its bankers for meeting its working capital requirements and would furnish a letter from its bankers in this regard.
3. Agree that lenders may, at their discretion, withhold disbursement of the amount of loan equivalent to the provision against margin money for working capital in the cost of the project till such time as the project is completed and the build-up of working capital commences.
4. Maintain conditions stipulated for financial assistance by other FIs/Banks/Foreign Lenders.
5. Broad base its Board of Directors by induction of experienced outside professionals to the satisfaction of lenders.
6. Ensure that the equipment for the plant is adequate and appropriate to meet the pollution control norms.
7. Maintain retention reserves, as per lenders requirements, at all times during the currency of the loan.
8. Satisfy the lenders of the adequacy of its organizational set-up for smooth operation of the project.
9. Agree that any pre-payment of loans by the company will be on such terms as may be agreed to by lenders and no premium shall be payable if the pre-payment is effected at the instance of lenders.
10. Satisfy Lenders that the physical progress as well as expenditure incurred on the project is as per the original schedule.
11. Agree and undertake to furnish to Lenders such information and data as may be required by Lenders.
12. Agree not to reduce its paid-up share capital during the currency of rupee/foreign currency term loan and/or guarantees (without the approval of Lenders).

Documentation - Finance Documents

Documents/Agreements that govern the financing of the project are referred to as financing documents. Major Financing Documents are as under:

- Common Loan Agreement/Term Loan Agreement
- Facility Agreement/Rupee Facility Agreement
- Inter Creditor Agreement
- Trust and Retention Account Agreement/Escrow Agreement
- Hypothecation Agreement/Deed of Mortgage
- Guarantee Deed

The terms and conditions of the sanction to be captured in the respective finance documents for necessary compliance by the borrower.

Common Loan / Facility Agreement

This is one of the key loan documents signed between the lenders and the borrower capturing the entire common term sheets of all the lenders and other terms and conditions normally stipulated for the facilities sanctioned to the borrower. Since the term sheets given by the lenders are not all inclusive and cover the critical terms only, proper drafting of this agreement is paramount as it delineates the rights and obligations of the lenders and the borrower for the loan facilities being extended. If debt includes facilities in different currencies or are lender specific, separate facility agreements will be entered. The key points to be covered under this agreement are:

- The amount borrowed
- Term of the loan and repayments
- Interest rates
- Conditions for draw down
- Use of the proceeds
- Financial covenants
- Security structure

Inter-Creditor Agreement

Any financing agreement involving number of Lenders and a single borrower requires an Inter-Creditor Agreement. The parties to this agreement are all the Lenders under different loan agreements, lenders with loans of different maturity and sometimes even subordinate lenders.

The purpose of an Inter-Creditor Agreement is to provide procedures, agreements and understandings on

a) co-coordinating priorities in loan repayments

b) for accelerating the maturities of loans

c) for establishing loss sharing, etc.

The intention in this agreement is to prevent disputes between creditors which might jeopardize the interest of all the creditors. When the loan is going bad, each lending institution tries to protect itself in the best possible way and obtain an advantage over the other creditors. The procedures in the Inter-Creditor Agreement forestall this. Under this agreement no lender can take legal action except by following the procedures laid down in the agreement. Further, at least 2/3 or half of the lenders, based on the principal balances, are required to agree for any action. This agreement is also beneficial to the borrower as it has to deal with only one Lender, the Lenders Agent.

Trust and Retention Agreement

This is an agreement between the Lenders and the Borrowers for controlling the project revenues. The agreement would contain various deposit sub-accounts into which various amounts, equity, loan, etc., would be credited. The agreement would also contain withdrawal sub-accounts through which the borrower would withdraw the amount for various purposes.

Security Agreement

The main Security Agreements are the Hypothecation Deed and / or the Indenture of Mortgage. The Lenders have a first pari-passu charge on all movables, immovable property of the borrower. Further, in this agreement all documents / contracts are assigned to the Lenders. The objective of this agreement is to permit the lender to step- in and to control the project. Security in project finance is for a defensive purpose – to prevent third parties from interfering with the project.

Transaction Documents

Project and Finance Documents together are referred to as Transaction Documents. Besides the documents mentioned above, certain sector-specific documentation is also required, as explained in the following table:

1. **Power -** Fuel Supply Agreement, Power Purchase Agreement, Fuel Transport Agreement
2. **Roads -** Concession Agreement, Traffic Study, Multipartite Agreement
3. **Ports -** Concession Agreement, Traffic Study, O&M Agreement
4. **Oil & Gas -** Fuel Supply Agreement, Off-take Agreement
5. **Airports -** Operations Management & Development Agreement (OMDA)
6. **SEZ -** State Support Agreement, Shareholders' Agreement

The execution of documents should be got done from the authorized signatories of the borrower company in the presence of officials of the lending institutions.

CHAPTER - 18

MONITORING, SUPERVISION & FOLLOW UP

MONITORING, SUPERVISION & FOLLOW UP

After the loan is sanctioned and terms and conditions accepted by the borrower, the process of documentation is to be completed as discussed in the previous chapter. Thereafter the process of disbursement starts towards the completion of the project. The objective is to ensure proper end-use of funds and timely completion of the project. Proper monitoring supervision and follow is required on the part of lenders at each stage in this respect

Compliance with the stipulated terms and conditions needs to be ensured at various stages of the project implementation, including:

(A) **Compliance regarding Pre-Commitment conditions / Covenants of lenders, documentation, which will include:**

- All Clearances/ permissions like land acquisition, licenses, fuel linkage, rail linkage etc. as applicable at respective stages
- Contract finalization like Shareholder's agreement etc.
- Documentation, etc.

(B) **Compliance regarding Pre-Disbursement conditions / Covenants of lenders, which will include:**

- Loan tie-ups
- Raising Equity as stipulated
- Meeting Financial parameters
- Security Creations
- Finalization of various agreements like EPC Contract, raw material Supply and Transportation, O&M Contract, Escrow, etc.
- Observations, if any, made by Credit Auditors

(C) **Compliance of other conditions of the Lenders during Construction Phase viz.,**

- Regulatory time schedule
- Physical completion schedules
- EPC Contract terms and compliance thereof

- Project cost- estimated and actual- commitment of funding, details of escalation, if any
- Expenses schedule- Estimated and Actual - funding thereof
- Liquidated damages, if any
- Debt Equity infusion schedule
- Progress of the project
- Lender Engineer's - scope and reports
- Issues raised by the LIE in his report(s)
- Chartered/Cost Accountant's Certificate on sources & uses of funds
- Completion test requirements and compliances
- Insurance and other hedging mechanism Creation of charges on securities, etc.
- Inter-creditor arrangements and compliances, etc.
- Environmental and license conditions and compliances
- Cost Escalation, if any
- Cost and time overruns, if any
- Working Capital tie-up

Process of Disbursement and Monitoring

Request for disbursement as per prescribed format is to be obtained with requisite details of status of the project and relevant undertaking along with the proportionate amount of promoter's contribution. During disbursement, it is to be ensured that the utilization towards the advances, are in line with the agreed terms/contract. The lead lender has a very critical role to play in respect of disbursement at each stage. The lender credit note issued by the lead lender to the respective consortium member for disbursement of their proportionate share. Since in the infrastructure projects the EPC contractors are generally group entities of the project sponsors, it is required to be ascertained that the money/ advance given to the EPC contracts is as per the requirements and is being used for the project construction only and is not diverted for any other purposes. A certificate to this effect may be obtained signed by the statutory auditors of the EPC contractor company on periodic basis, as a part of monitoring.

The LCN (Lenders Credit Note) shall be issued after thoroughly verifying the compliance of the stipulated terms and conditions as applicable at each stage of implementation of the project. Only the need-based requirement of the borrower towards implementation of the project shall be met after proper assessment of the same as per the drawdown schedule, actual physical progress / financial progress of each project. Each notice of withdrawal received from the borrower should inter-alia

contain a certificate by an authorized officer of the borrower confirming that the proceeds of earlier drawdown have been applied only towards the project cost and the proceeds of the proposed drawdown are to the satisfaction of LIE and that the proceeds shall be utilized only for such project cost as are permitted under the loan documents.

The compliance of all the pre-commitment and pre-disbursement conditions / security creation condition shall be ensured before the disbursement starts.

A. The disbursals shall be in proportion to the physical progress of the project and subject to promoters' contribution brought in, as agreed in the financial model and schedule of fund infusion to ensure maintenance of debt equity norms envisaged. LIE (wherever appointed) need to visit the site at periodical intervals and furnish project –

   - technical & financial information; and
   - project progress with end use of funds.

B. CA certificate to be obtained for the expenditure incurred and means of finance thereof, inter-alia including upfront equity to be brought in by the promoters, as per the pre-disbursement condition. C. Other points to be checked:

   - Valid insurance
   - Compliance of Pre disbursement condition (1st Disbursement) / Condition for subsequent disbursement.
   - Approval for Relaxation / waiver of any condition.
   - Confirmation regarding "No event of default".
   - Commitment charges if any
   - Proposed utilization of fund.
   - End use of the funds as per last disbursement.
   - Status of approvals besides other vital information, if any.

D. The disbursements would be processed taking into account the information submitted by the LIE, the Company and the auditor/CA besides the information/papers furnished by the Lead Bank/ other lenders.

E. During disbursements, if it is noticed, that one or more lenders in the consortium have not disbursed up to the required level, the matter to be taken up with lead bank/borrower.

F. During disbursements, the position of mobilization advances & recovery thereof and other advances to be examined.

The project progress and implementation to be discussed in consortium meetings. There would be occasions when the project implementation is lagging due to reasons like flood, heavy rains, landslides, accidents including loss of lives and assets, geological conditions, force majeure reasons like earthquake, public disturbances, problem relating to land acquisition Right of Way (ROW), regulatory issues like environmental/forest clearances, delay in approval, release of funds in case of change in scope, utility shifting, tree cutting, delay in disbursement of grant, etc. In such cases, the project progress to be closely monitored and discussed with the borrower/LIE including in the consortium meetings; Also increase in IDC/Cost Overrun also to be discussed in detail and decision taken, including regarding disbursements, taking into consideration, the need to support the project for completion. The circumstances and need for disbursement also to be carefully evaluated to decide the best course of action to be taken in these circumstances. The promoter to bring in equity timely including in case of cost overrun.

Cost escalation/time over run:

A very important aspect of project monitoring is with regard to assessment of cost escalation. The details there of need to be examined as a part of continuous project performance evaluation as per the format given below.

											(₹ Lakhs)
Construction Project Performance- Cost Escalation Details											
Name & description of the Project:											
Date of Reporting:											
Sno.	Factors of Cost Escalation	UOM	Original Cost Estimates			Received Cost Estimates			Cost Variation		Reasons of Variation
A	Due to escalation in Land Acquisition Costs										
A1											
A2											
	Sub- Total (A)										
B	Due to change in Statutory Taxes/Duties (Tax category wise)										
B1											
B2											
	Sub -Total (B)										
C	Due to Exchange Rate Variation (Foreign Currency wise)										
C1											
C2											
	Sub -Total (C)										
D	Due to Price Escalation within the originally approved time cycle (Item wise)										
D1											
D2											

	Sub- Total (D)											
E	Due to Price Escalation owing to the Time Overrun (Item wise)											
E1												
E2												
	Sub- Total (E)											
F	Due to Under Estimation at the Initial Stage (Item wise)											
F1												
F2												
G	Sub -Total (F)											
G1	Due to change in Scope of the Project (Item wise)											
G2												
	Sub- Total (G)											
H	Due to Additions/Deletions on account of other reasons (Item wise)											
H1												
H2												
	Sub-Total (H)											
I	Total Cost Escalation till the Reporting Date											
	Note: Add rows under factor as required for reporting complete details.											

Similarly the time over run details need to be examined as the following format

Construction Project Performance-Time Overrun Details					
Name & description of the Project:					
Date of Reporting:					
S no.	Factors affecting Time Overrun	Scheduled Completion Time	Actual Completion Time	The overrun in Months	Reasons for Time Overrun
1	Due to delays in Land Acquisition				
2	Due to delay in obtaining forest/ environment clearances				
3	Due to delays in getting statutory approvals				
4	Due to delay in getting clearances from local authorities				
5	Due to delay in tie-up of project financing & other financial issues				
6	Due to delay in finalization of detailed engineering				
7	Due to delay getting technical approvals				
8	Due to delay in tendering ordering & equipment supply				

9	Due to lack of Infrastructure support & linkages				
10	Due to changes in scope of the project				
11	Due to law & order problems				
12	Due to Geological surprises				
13	Due to pre-commissioning teething troubles				
14	Due to contractual issues				
15	Due to non-availability of adequate manpower				
16	Due to Encroachments at site & difficulties in clearing the site				
17	Due to State imposed restrictions owing to various factors				
18	Due to litigations/Court Cases (NGT)				

Another suggested format in this respect is as under:-

Format to examine time and cost overrun

A. Name of the Project

B. Sanction date of the project

C. Start date/month of the project as per Administrative approval

D. Completion targeted date/month as per Administrative approval

E. Original approved cost

F. Physical progress achieved as on date of RCC in terms of percentage

G. Actual expenditure incurred as against above mentioned physical progress

H. Revised completion date project

I. Increase time frame with respect to original time of completion

J. Revised cost proposed

K. Increase in cost vis-à-vis original cost (A)/previous RCC

L. Break up of increase cost: (B)

a) Due to statutory levies	Nomenclature of tax	Original % age proposed	Revised % age	Change in %	Total Financial
b) Exchange rate variation	Name of Foreign	Conversion rate adopted	Revised rate to be adopted	Change in rate	Total Financial
c) Price escalation within approved original time cycle	Item of Escalation	Escalation % age provided in	Revised Escalation & age adopted	Change in rate	Total Financial

Total (a+b+c)					
d) Price escalation due to time over run after approved	Item of Escalation	Escalation % age provided in	Revised Escalation & age adopted	Change in rate	Total Financial
e) Under estimation (qty X rate)	Item name	quantity	rate		Total Financial
f) Change in scope					
Addition Deletion	Name of item	Quantity (unit)	rate per unit		Total financial
Total (d+e+f)					

K. Please furnish component-wise details of addition/deletion of items in change in scope (including change in specification) in the Annexure.

M. Whether approval of competent Authority was sought for change in scope, if so, pl. annex copy

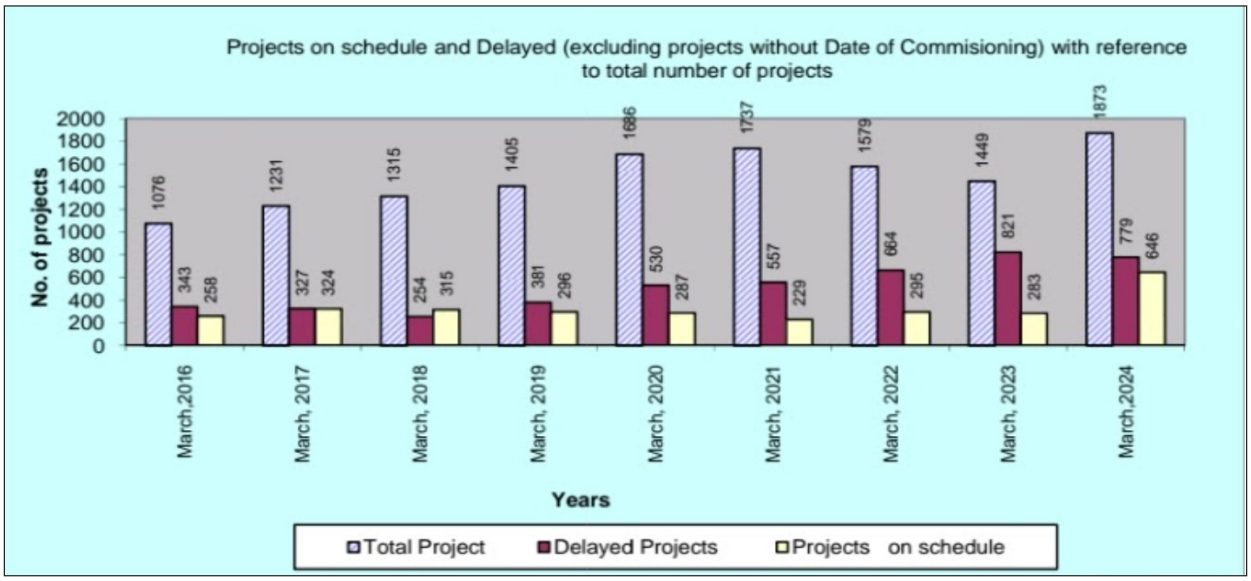
N. Whether responsibility for lapses in finalizing DPP/execution of project is fixed, if so, details thereof.

The above formats are comprehensive in nature and regular monitoring of the projects through these shall facilitate a close watch on the projects and shall help in evolving suitable strategies in each case as per the requirement.

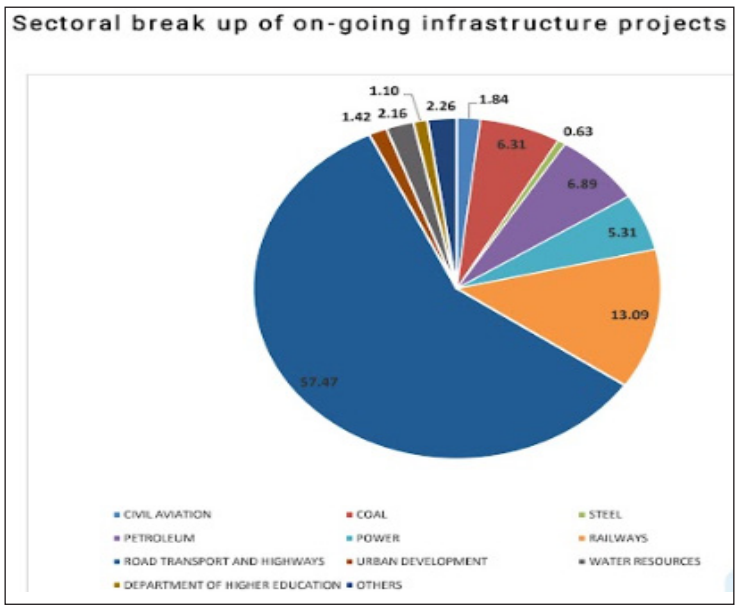
For ready reference, the trends in cost overrun and time overrun are shown below indicating the need for constant monitoring and follow.

In respect of the projects being implemented in India the trend in respect of the cost overrun and time overrun is an under:-




Projects on schedule and Delayed (excluding projects without Date of Commisioning) with reference to total number of projects
No. of projects
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1076
343
258
1231
327
324
1315
254
315
1405
381
296
1686
530
287
1737
557
229
1579
664
295
1449
821
283
1873
779
646
March,2016
March, 2017
March, 2018
March, 2019
March, 2020
March, 2021
March, 2022
March, 2023
March,2024
Years
Total Project
Delayed Projects
Projects on schedule


Trend of projects running behind schedule w.r.t original schedule
Percentage of projects
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
31.88
26.56
19.32
27.11
31.44
32.07
42.05
56.66
41.59
March,2016
March, 2017
March, 2018
March, 2019
March, 2020
March, 2021
March, 2022
March, 2023
March, 2024
Year(s)


Sectoral break up of on-going infrastructure projects
1.84
6.31
0.63
6.89
5.31
13.09
57.47
1.42
2.16
2.26
1.10
CIVIL AVIATION
COAL
STEEL
PETROLEUM
POWER
RAILWAYS
ROAD TRANSPORT AND HIGHWAYS
URBAN DEVELOPMENT
WATER RESOURCES
DEPARTMENT OF HIGHER EDUCATION
OTHERS

Reasons for Time Overrun

- Delay in land acquisition
- Delay in obtaining forest/environment clearances
- Lack of infrastructure support and linkages
- Delay in tie-up of project financing
- Delay in finalization of detailed engineering
- Changes in scope
- Delay in tendering, ordering and equipment supply
- Law & Order problems
- Geological surprises.
- Pre-commissioning teething troubles
- Contractual issues
- Encroachment
- Inadequate manpower
- Delay in technical approval.
- Instances like COVID 19
- Delayed due to financial Issues.
- Court cases (NGT)
- Delay in getting clearance local authorities.

Causes of Cost Escalation

Under-estimation of original cost

Changes in rates of foreign exchange and statutory duties

High cost of environmental safeguards and rehabilitation measures Spiralling land acquisition costs

Changes in scope of projects

Monopolistic pricing by vendors of equipment services

• General Price rise / inflation

Disturbed conditions

• Time Overrun

Action taken by the Government to Minimise Time and cost overruns in Projects

In order to reduce the delays and cost overruns in the projects, the Government has taken several steps which inter-alia includes:

• rigorous project appraisal;

• On-line Computerised Monitoring System (OCMS) for better monitoring;

setting up of Revised Cost Committees in the Ministries for fixation of responsibility for time and cost overruns;

• regular review of the infrastructure projects by the concerned administrative Ministries;

• Setting up of Central Sector Projects Coordination Committees (CSPCCs) in the States under the Chief Secretaries for removal of bottlenecks and for facilitating the speedy implementation of major projects.

As is seen from the above discussion, the comprehensive formats as shown above can be useful in monitoring the progress of each project. The causes of delay and cost overrun need to be analyzed on an ongoing basis in order protect the interest of all stakeholders. It is to be kept in mind that any time overrun leads to cost overrun also because of the element of increase in interest during construction and the inflationary factors. The time overrun and the delays in constructions in-case of road projects also entail extra Economic burden and hazard on account of diversion of traffic major traffic jams and avoidable accidents.

Project Review Under Pragati:

PRAGATI (Pro-Active Governance and Timely Implementation) is a digital governance platform that enables the Prime Minister's Office to review and monitor critical infrastructure and social development projects.

Pragati initiatives involves project selection regular reviews with utilization of digital tools for insuring collaboration and accountability the Pragati has reviewed 340 projects valued at our 345 billion dollars in 215 expediting their implementation and helping in progress of the infrastructure development the initiatives also helps in revolving road and help a feature like digital government ecosystem.

Monitoring of Escrow Account

The escrow account statement needs to be periodically monitored and checked with a view to verifying the end use of funds. The reconciliation of the same with reports submitted by Lenders' Independent Engineer (LIE) & Chartered/Cost Accountant, and Invoices submitted by the borrower should be done on a regular basis. Borrower should not be allowed to open any account outside the consortium and the entire revenue generated needs to be routed through the escrow account.

Periodic reconciliation of the escrow account also needs to be under taken. This shall inter-alia include verifying end use of funds and credits in the account from the revenue collection and the report of the independent CA as mentioned above may be relied upon. Proper monitoring and supervision will include

• Collection of data relating to physical and financial performance of assisted companies; and

• The shaping of the project vis-à-vis the milestones planned as per original schedule.

The monitoring of projects should be strengthened by having periodic joint lenders meeting, site visits, and discussion with IE/LIE/Authorities etc. In case of any sustained delay/defaults, on the part of Authority, then Concessionaire should be asked to initiate timely measures as per the provisions of Concession Agreement.

Auditor's Certificate

Implementation Stage: The end-use of funds is an important requirement of the project monitoring and supervision. Each disbursement request from the borrower should be accompanied by a certificate from the Chartered Accountant/Cost Accountant of the borrower certifying the project cost incurred till the certificate date and the means of finance for the same.

Project Completion Report: Upon the project achieving physical completion, the borrower should furnish a certificate from the statutory auditors / independent auditors of the borrower certifying the completed project cost and the actual means of finance for the same.

Role of Cost & Management Accountants

Credit appraisal process depends on several core factors that deserve to be carefully enumerated. However, among these, two steps require very careful investigation, assessment, and analysis. These are (i) Credit Processing, Analysis, and Collateral Valuation; and (ii) Credit Monitoring and Impairment Recognition. Both these steps would require help of professional experts and usage of data analytics tools.

In recent years, Cost & Management accounting has gained significant advancement and application in project evaluation & analysis and managerial decision-making pathways as there are fundamental differences between financial accounting and cost & management accounting. While financial accounting provides only one-dimensional aggregated data (values) for the entity as a whole; in comparison, cost & management accounting provides detailed and disaggregated three-dimensional data viz. quantity, rate & amount (value) about individual products, activities, divisions, plants, operations etc. Therefore, costing methodologies applied in organizations measures the consumption of economic resources, and supports the accountability of business performance. Accordingly, CMAs focus on the following three areas:

- Strategic management
- Performance management
- Risk management

Therefore, to support the credit processing, project analysis, collateral valuation, and credit monitoring, banks should engage CMAs, adopt cost & management accounting techniques, and use right type of data analytic tools to track the entity's performance & find stressed areas, if any. In addition, banks

must insist upon all major borrowers to implement cost accounting & reporting system to measure the efficiency, productivity & performance of all its products, services, and customers in a most cost effective manner. In this regard, the right model is Activity Based Costing (ABC) that helps to find right data, information & solutions for the management to take right decisions to improve liquidity, competitiveness, productivity, profitability, and sustainability.

As part of performing cost competitiveness audit of various units, products, & activities, CMAs review the entity's cost accounting, cost flow, and cost control systems & processes and also perform detailed analytical procedures in respect of the entity's operations, consumption ratios, impact of major cost elements, and their comparison with the previous best. Therefore, CMAs assess the efficiency and effectiveness of entity's operations, cost control systems & related IT framework, and flow of cost to different products/activities, cost centres, and cost objects. The prime objective of cost data analysis and operational analysis is to identify cost savings by reducing or eliminating undesirable functions, activities, or services; to uncover the opportunities for improvement of performance and creation/ enhancement of value of the business; to find ways to improve operations and facilitate decision making by the entity with responsibility to initiate corrective action; and to identify right measures to guide continuous improvement. All these analyses would surely help the Banks in close monitoring of client's activities and its strengths, weaknesses, and challenges.

Implementation of robust cost accounting & reporting framework enables the entity to exercise control over its operations and costs to achieve optimum economies in the utilisation of available resources. After analysing the available data, CMAs do suggest areas to improve the entity's operations & activities with an objective to bring discernible change in productivity, value creation, profitability, risk management, and sustainability. Their analyses further tells whether the entity's operations/activities are being performed in accordance with the principles of economy, efficiency, and effectiveness and whether there is room for improvement. For evaluating performance of any unit, function, process, product, customer, or market, CMAs select and include such performance measurement criteria that cause visible effect on the entity's profitability, resource utilisation, liquidity, risks, quality, competitiveness, and responsiveness to the market. Therefore, these tools & their results would in real sense function as the Bank's eyes & ears.

Thus, it is proved beyond doubt that CMAs can help banks to undertake cost-benefit analysis of each project, analyse unit-wise & product-wise performance, and monitor key indicators to determine more profitable, less profitable, or unprofitable areas/activities. This exercise would enable the banks to keep a close watch on the wasteful costs and non-value adding activities and guide the entity to discontinue loss-making business segments and focus on more profitable products and services. CMAs can act as a driving force to achieve the objectives of borrower entity, remain competitive and utilize available resources in profitable, efficient, and cost-effective manner through cost control and cost reduction.

Object-wise and asset-wise proper utilization of funds require detailed examination of the company's financial and non-financial records. Activity-based costing or resource consumption accounting that follows the bottom-up approach is well poised to capture proper utilization of company's financial & non-financial resources in different activities, products, and business segments. This mechanism can help the banks and financial institutions to early detect cases of any misappropriation of funds and take timely corrective action.

With the applications of artificial intelligence, and data analytics, CMAs can help provide real-time reporting of performance parameters, such as productivity, machine efficiency, operator efficiency, machine tool efficiency, customer satisfaction, process capacity alignment etc., embedded in the IT systems. This level of monitoring would necessarily prove most effective framework to ensure safety of bank's funds advanced to the entity.

Broad Areas for Performance & Credit Monitoring

All said, quality credit decisions depend upon the quality data, quality analysis, and quality monitoring. Given below are significant areas of performance and credit monitoring; however, these are not exhaustive. Only few important parameters have been suggested. Bank may modify the existing framework with the help of following parameters. For monitoring, it is assumed that the Bank gets actual performance data/information from the creditor on quarterly, half-yearly, and annual basis. Banks are also advised to use the services of Cost & Management Accountants (CMAs) in practice to undertake independent evaluation of the following areas and certify:

General

- As on date, monitoring of the performance of the borrowers' loan accounts are done mainly based on financial accounts, records & statements. With the emergence of various analytical tools & applications and e-commerce, business models are witnessing significant changes. With all these developments, Financial Reports/Statements have reduced their usefulness; these remain relevant for compliance instead of essence of the business and hence, falls short of a Performance Based Reporting for improved Board Governance. Therefore, to ensure success of business, wider applicability of cost &management accounting has become necessary. Banks need to adopt this change in their monitoring framework.
- Today, 39 major industries/sectors are covered for mandatory maintenance of cost records for each unit, product, service, activity, etc., if the company's turnover is ₹35 crore or more. These statutory records of cost & quantitative information can help Banks to identify unprofitable production activities, negative value addition, cost-based stock valuation, thefts if any, inefficiencies, utilisation of economic resources, and biased related party transactions, etc. to get "Early Warning Signals" before the accounts turns NPA.

- In this backdrop, Banks must insert a clause in the Loan Agreement Document of all Borrowal Accounts of ₹50 crore & above which is in line with the notification issued by the Ministry of Finance dated 11th October 2022, for submission of Unit wise and Product wise quarterly cost statements and other details as given herein below.

Resources Utilization

- Monitor actual implementation of the project vis-à-vis original targets. Find significant time and cost overruns, if any, with reasons. How these overruns would affect the viability of the project and change risk profile of the bank loans. Find steps proposed to reduce/nullify the effect of time and cost overruns.
- In case of Infrastructure Projects, bank must pay attention to the timely acquisition of Land, and various regulatory approvals which invariably delay the project execution resulting into time and cost over runs. Monitor & analyse the delay factors with their impact.
- Monitor actual number, specifications, and purchase cost of each Property, Plant & Equipment, and other Non-Current Asset vis-à-vis those given in the project report. Find major variations with reasons.
- Monitor category-wise source and utilization of internal resources, loans & advances disbursed by the Bank(s), and funds borrowed/arranged from other sources. Find major deviation of resources with reasons.

Due Diligence Monitoring

- Banks should necessarily do due diligence on the Borrower's supplier of plant and machinery and raw materials as also their buyers to ensure the genuineness of transactions i.e., Know your Borrower's Customers & Suppliers.
- Bank must do periodic physical verification of the securities through Independent Agencies.
- While undertaking transaction analysis, Bank should relate the transactions in the Current or Cash credit account to purchase and sales and other expenses to have watch on diversion of funds.

Capacity Utilization

- Monitor plant/asset-wise installed capacity, normal achievable capacity, and actual capacity utilization vis-à-vis that projected by the entity. Find major variations and its reasons.
- Any significant adverse variation must be analysed in detail with reasons and monitored closely for corrective action.
- Raise red alarm in case of persistent failure to achieve projected capacity utilization for any plant, asset, or product. Discuss alternative strategies to utilize the available capacities.
- Find cost of underutilized capacities and show it separately in the cost statements.

Operational Systems

- Find application of Internal Financial Controls implemented by the entity. Whether these controls are robust to check any possibility of frauds, or whether circumstances or conditions indicate possible collusion involving employees, management or third parties in perpetuating frauds. Whether management has created and maintained a culture of honesty and ethical behaviour.
- Find application of Internal Cost Flow & Control System implemented by the entity. Whether the cost accounting system in-place reports real-time costs and performance parameters, such as productivity, machine efficiency, operator efficiency, machine tool efficiency, customer satisfaction, process capacity alignment etc. embedded in the IT systems.
- Find whether the entity's cost accounting system helps to evaluate efficiency, productivity & effectiveness of each project, plant, unit, department, function, technology, process, product, machine, material, customer, market, etc. and cost managers undertake input(s) vs. output(s) analysis and compare the results with technical norms/standards, global best, industry best, or the company best.
- Evaluate the entity's risk identification system, assessment process, and mitigation policy.
- Evaluate key related party transactions and possibility of any case of diversion or misappropriation of funds or evasion of taxes.
- Evaluate the Exchange Risk Policy and the risk coverage adopted by the entity.
- Evaluate the scope, coverage, adequacy, and effectiveness of the internal audit, financial (statutory) audit, and cost audit function.
- Evaluate the entity's IT architecture, systems and programmes in use, IT policy, authorization checks, controls on data access & for changes therein; and security of data.
- Find entity's usage of technology and tools such as Data Analytics, Artificial Intelligence, Machine Learning, Cloud Computing, Block Chain Technology, Robotic Process Automation, Quantum Computing, 3D Printing etc. in managerial applications.

Operational Performance

- Monitor plant/unit-wise and product/activity-wise actual production, sales, sale prices, elementwise cost estimates, and margins and compare it with those given in the project report and also with those achieved so far. Find significant adverse variations and analyse it with detailed reasons and monitor closely for corrective action.
- Compare market segment-wise actual sales vis-à-vis those projected by the entity. Analyse region wise domestic sales, and export sales. Also analyse key customers and their procurement pattern & payment behaviour.

- Monitor input-output efficiency of each plant/unit, process, product, machine, material, etc. compare the results with technical norms/standards or the company best.
- Find whether the inventory valuation is based on the relevant cost accounting standard in-place.
- Find any significant deviations with respect to applicable financial accounting standards; generally accepted cost accounting principles, practices & standards; and applicable direct & indirect tax provisions in place.
- Analyse all contingent assets and liabilities with reasons and their possibility of occurrence together with impact on the entity's cost and financial statements.
- Analyse sources (indigenous or imported) of major input materials, utilities, services, etc. and find any possibility of misappropriation of funds or evasion of taxes.

Performance Analysis

- Find periodicity of the entity undertaking following analysis and major outcomes to be shared with the Bank with reasons of good or bad performance:
  - Business Process Flow& Operating Cycle Analysis
  - Asset Capacity Utilization Analysis
  - Productivity, Efficiency & Benchmarking Analysis
  - Energy/Utilities Efficiency Analysis
  - Balance-Sheet & Profitability Analysis
  - Cash/Fund Flow Analysis
  - Key-Costs, Contribution and Product/Service Profitability Analysis
  - Sales-Volume-Profit Analysis
  - Market, Customer & Segment Profitability Analysis
  - Working Capital & Inventory Management Analysis
  - Manpower Efficiency Analysis
  - Inputs Price Volatility & Price-Sensitivity Analysis
  - Risk Mapping & Sustainability Analysis
- Evaluate plant/unit-wise and product/activity-wise cost statements on quarterly, half-yearly, & annual basis and compare their revenue, costs & margin with those given in the project report and find major component-wise variations with reasons.
- Evaluate actual effect of external factors such as change in the ownership & governance structure, government policies, global effects, economic slowdown, regional/ country specific relations, customer behaviour, natural or manmade pandemics/ calamities, political interference, etc. and their mitigation steps taken or planned by the entity.

Project Site Visit - The project site needs to be visited periodically during the disbursement phase with up gradation of the project progress to be assessed at each stage through the filling of the visit report. An illustrative format of the visit report is given below: -

SITE VISIT FORMAT (After sanction and till implementation)

A. GENERAL INFORMATION			
a)	Name of the Company / SPV		
b)	Promoter Group / Sponsor		
c)	Names of Other Lenders and Company official who visited the Site		
d)	Name of the Lender and Company official visited the Site		
e)	Date of Site Visit		
f)	Project Location & Description		
g)	PPP/Public Sector/ Private Sector / Others		
h)	Independent Engineer (If Already appointed)		
i)	Concessionaire		
j)	EPC Contractor		
k)	Total Project Cost		
l)	Means of Finance	Debt :	Equity :
m)	Appointed Date		
n)	Construction Period		
o)	COD	Target COD	Revised COD

B. LENDERS PROFILE					
Lead Lender					
Sanctions by various lenders	Total Amount of Term Loan-				
Debt allocation to various Banks/ lenders – (₹/Crore)					
Name of the lending Institution	**Allocated Amount**	**Disb. Made so far**	**% share of disb.**	**RoI (%)**	
Lead Lender					
TOTAL					

B1. OTHERS			
Name of the Lenders	ROI	Balance outstanding	Irregularity (if any)
a			
b			
c			

C. COST OF THE PROJECT

₹ *In Crores*

Particulars	Scheduled (As per appraisal Note)	Actual (As on Date of Visit)
Land and Site Development		
Civil Works		
Plant & Equipment		
Preliminary & Pre-Operative Expenses		
Interest During Construction		
Contingency Provision		
Margin money for Working Capital		
DSRA		
TOTAL COST		

₹ *In Crores*

Means of Finance	Scheduled (As per appraisal Note)	Actual (As on Date of Visit)
Promoter's contribution • Pure equity • Other equity instruments including unsecured loans		
Rupee Term Loan (Actual Outstanding)		
TOTAL PROJECT MEANS OF FINANCE		

*Comment on actual financial status viz-a-viz projected/scheduled status; In case behind schedule propose remedial action

D. SITE VISIT DESCRIPTION

1.	Last visit by lender and comments (Name of the officer and date of the visit)	
2.	Whether all the terms and conditions of the sanction have been complied with	Yes / No
	• If No, Details thereof with remedial steps proposed	
3.	Lender's engineer's comments on physical performance of the company	
4.	Is the project behind schedule in terms of physical milestones?	Yes / No
	• If Yes, Reasons thereof and proposed remedial steps	

E. PROJECT DETAILS

ILLUSTRATIVE TABLE FOR ROAD SECTOR:

S. No.	Particulars	Scheduled	Achieved
1.	Project Length		
2.	Project Start		

3.	Project End		
4.	Service Roads		
5.	Elevated structures of length		
6.	Vehicular Under Pass (VUP)		
7.	Light Vehicular Under Pass (LVUP)		
8.	Pedestrian Under Pass (PUP)		
9.	Cattle Under Pass (CUP)		
10.	Pipe Culverts		
11.	Box Culverts		
12.	Minor Bridges		
13.	RCC Drain & Footpath		
14.	Toll Plaza		
15.	Truck Bay		
16.	Bus Bays		
17.	Minor Intersections		
18.	Major Intersections		
19.	Shoulder & Footpath		
20.	Realignments		
21.	Grade Separated Intersections		

ILLUSTRATIVE TABLE FOR POWER SECTOR:

S. No.	Particular	Scheduled	Achieved
1.	Type of Project		
2.	Capacity of the Project (MW)		
3.	Interconnection Substation		
4.	Auxiliary Consumption		
	Sale to DISCOM		
5.	Boiler Capacity		
6.	Boiler (Make)		
7.	Turbine (Make)		
8.	Generator (Make)		
9.	Coal Handling Plant	Yes / No	
10.	Ash Handling Plant	Yes / No	
11.	Switch Yard in Place	Yes / No	
12.	Evacuation System	Complete / Partial	
13.	Ash Disposal Linkage		
14.	Flue-Gas Desulfurization (FGD)	Yes / No	
15.	Water Linkage	Yes / No	
16.	Quoted Tariff		

17.	Power Purchase Agreement Period	_____ Years	

*This is illustrative in nature and may be suitably modified for other sectors like ports, airports etc.

F. PROJECT STATUS (Actual in relation to Section E as above)

- Physical/Financial aspect of the project to be covered
- Please comment on current status and steps required/adopted for achievement of milestones as per schedule on each item

G. PROJECT STATUS – Other Issues	
• Validity of Insurance	
• Whether all assets covered under insurance or not	Yes / No
• If No, list out the assets to be covered under insurance	
• Validity of Approvals / clearances	
(Details of validity /expiry of approvals within 1 year and action take there on)	
• Whether fixed assets registered and all other statutory records maintained or not	
• Whether all stipulated risks are covered in the policy	

H. SITE VISIT PHOTOS

The above format should be filled in meticulously after thorough verification by the visiting officer and observations discussed with other lenders of the consortium to protect the lender's interest.

CHAPTER - 19

POST COMPLETION - PROJECT MONITORING

POST COMPLETION - PROJECT MONITORING

Once the project is completed and COD is issued by the concerned authorities, the revenue generation process starts. The Lenders need to keep a close monitoring of the revenue collection process, the capacity utilization of the plant (in case of power project) and traffic level (in case of road project).

Periodic visits to the site of the project needs to made; escrow account needs to monitored on an ongoing basis; and the following format (Illustrative) must be made use of as a part of supervision.

SITE VISIT FORMAT

(Post COD)

A. GENERAL INFORMATION

a)	Name of the company / SPV		
b)	Promoter Group / Sponsor		
c)	Names of the Officer (s) who has/have undertaken the visit		
d)	Name of the Other Lender and Company official who visited the Site		
e)	Date of Site Visit		
f)	Project Location & Description		
g)	PPP/Public Sector/ Private Sector / Others		
h)	Independent Engineer (If already appointed)		
i)	Concessionaire		
j)	EPC Contractor		
k)	Total Project Cost		
l)	Means of Finance	Debt :	Equity :
m)	Appointed Date		
n)	Construction Period		
o)	COD	Target COD	Revised COD (Actual)

B. LENDERS PROFILE				
Lead Lender				
Sanctions by various lenders	Total Amount of Term Loan- Debt allocation to various Banks/ lenders – (₹/Crore)			
Name of the lending Institution				
Lead Lender	**Allocated Amount**	**Disb. Made so far**	**% share of disb.**	**RoI (%)**
Others				
TOTAL				

C. COST OF THE PROJECT

₹ *In Crores*

Particulars	Scheduled (As per appraisal Note)	Actual (Final As on Date of COD)
Land and Site Development		
Civil Works		
Plant & Equipment		
Preliminary & Pre-Operative Expenses		
Interest During Construction		
Contingency Provision		
Margin money for Working Capital		
DSRA		
TOTAL COST		

₹ *In Crores*

Means of Finance	Scheduled (As per appraisal Note)	Actual (Final As on Date of COD)
Promoter's Contribution • Pure Equity • Other equity instruments including unsecured loans		
Rupee term loan (outstanding as on date of COD)		
TOTAL PROJECT COST		

*Comment on actual financial status vis-a-vis projected / scheduled status; the deviation if any, cost overrun etc. with details of sources to be explained

The aspect relating to cost overrun if any needs to be analysed and elaborated. The impact of the same on the overall viability of the project needs to be critically examined. Suitable mitigation steps need to be worked out and stipulated for necessary compliance by the borrowers.

D. THE PROJECT BACKGROUND

ILLUSTRATIVE TABLE FOR ROAD SECTOR:

S. No.	Particular	Details
1.	Project Length	
2.	Project Start	
3.	Project End	
4.	Service Roads	
5.	Elevated structures of length	
6.	Vehicular Under Pass (VUP)	
7.	Light Vehicular Under Pass (LVUP)	
8.	Pedestrian Under Pass (PUP)	
9.	Cattle Under Pass (CUP)	

10.	Pipe Culverts	
11.	Box Culverts	
12.	Minor Bridges	
13.	RCC Drain & Footpath	
14.	Toll Plaza	
15.	Truck Bay	
16.	Bus Bays	
17.	Minor Intersections	
18.	Major Intersections	
19.	Shoulder & Footpath	
20.	Realignments	
21.	Grade Separated Intersections	

ILLUSTRATIVE TABLE FOR POWER SECTOR:

S. No.	Particular	Details
1.	Type of Project	
2.	Capacity of the Project (MW)	
3.	Interconnection Substation	
4.	Auxiliary Consumption	
	- Sale to DISCOM	
5.	Boiler Capacity	
6.	Boiler (Make)	
7.	Turbine (Make)	
8.	Generator (Make)	
9.	Coal Handling Plant	Yes / No
10.	Ash Handling Plant	Yes / No
11.	Switch Yard in Place	Yes / No
12.	Evacuation System	Complete / Partial
13.	Ash Disposal Linkage	
14.	Flue-Gas Desulfurization (FGD)	Yes / No
	If FGD installed, share technology	
15.	Water Linkage	Yes / No
16.	Quoted Tariff	
17.	Power Purchase Agreement Period	_____ Years

**This is illustrative in nature and may be suitably modified for other sectors like ports, airports etc.*

E. COD STATUS		
Whether provisional COD or final COD achieved?	Provisional-COD	Final COD
(Please Tick)		
In Case of Provisional-COD, please detail out the following :		

• Details of remaining work to be done including punch list items	
• Description of work	
• Time Schedule	
• Additional Cost Involved (if any)	
• Briefly state the proposed action by the borrower to achieve the final COD	

F. REVENUE STATUS

• Details of Month-Wise / Yearly Revenue Earned – Effective from COD

(Road Sector – No. of Vehicles / Toll Collected

Power Sector – Units generated / Evacuated / Revenue Collected

Actual versus Projected as per appraisal with reasons for shortfall in revenue if any) Please furnish further details as under :

***Road Sector**	
	Whether toll collection started or not
	If Yes, i. No. of Toll Plazas ii. No. of Toll booths in each plaza iii. All booths operational or not (if non operative, reasons for the same) iv. Whether each booth is fully automated or not v. Boom Barrier Functional or Not vi. Test check whether any discrepancy was found in collection of toll viz. a. viz. vehicular movement vii. Average cash collection on daily basis viii. Check whether cash deposit with collecting bank Next Day / Same Day ix. Check whether toll collection transferred to the Escrow Account within half a day from the collecting bank.
*Power Sector	
1.	PLF Projected Versus Actual
	i. Reasons for shortfall of PLF
2.	All Units / Panels / Turbines working or not. If not then why?
3.	Evacuation aligned with generation or not
4.	Period of realization of bills for power supplied ; reasons for delay if any

Any shortfall in revenue collection/ capacity utilization needs to be discussed with the borrower and remedial should be taken at the earliest. The operations and maintenance aspects also need to be monitored for proper upkeep of the project assets.

The above process of monitoring and supervision shall help in detection of stress in the account if any and proper remedial steps need to be taken to rectify the situation. In this respect Reserve bank

of India has issued detailed guidelines for assessment and reporting of irregularities if any, summary of which is as under.

Identification and Reporting of Stress

Reserve Bank of India has issued detailed guidelines on framework for early identification and reporting of stress. Lenders shall recognize incipient stress in loan accounts and classify them as Special Mention Account (SMA) as per the following categories:

SMA Sub-Categories	Basis for classification – Principal or interest payment or any other amount wholly or partly overdue between
SMA-0	1-30 DAYS
SMA-1	31-60 DAYS
SMA-2	61-90 DAYS

In the case of revolving credit facilities like cash credit, the SMA sub-categories will be as follows:

SMA Sub-Categories	Basis for classification – Outstanding balance remains continuously in excess of the sanctioned limit or drawing power, whichever is lower , for a period of:
SMA-1	31-60 DAYS
SMA-2	61-90 DAYS

Early Warning Signals (EWS)

The Reserve Bank of India has also provided a list of early alert signals which need to be gauged closely in order to protect the interest of lenders. Some Early Warning Signals (EWS) which should alert the bank officials about some wrong doings in the loan accounts which may turn out to be fraudulent are indicated below:

1. Default in undisputed payment to the statutory bodies as declared in the Annual report.
2. Bouncing of high value cheques.
3. Frequent changes in the scope of the project to be undertaken by the borrower.
4. Foreign bills remaining outstanding with the bank for a long time and tendency for bills to remain overdue.
5. Delay observed in payment of outstanding dues.
6. Frequent invocation of BGs and devolvement of LCs.
7. Under insured or over insured inventory.
8. Invoices devoid of TAN and other details.
9. Dispute on title of collateral securities.
10. Funds coming from other banks to liquidate the outstanding loan amount unless in normal course.
11. In merchanting trade, import leg not revealed to the bank.
12. Request received from the borrower to postpone the inspection of the go downs for flimsy reasons.
13. Funding of the interest by sanctioning additional facilities.
14. Exclusive collateral charged to number of lenders without NOC of existing charge holders.
15. Concealment of certain vital documents like master agreement, insurance coverage.

16. Floating front / associate companies by investing borrowed money.
17. Critical issues highlighted in the stock audit report.
18. Liabilities appearing in ROC search report, not reported by the borrower in its annual report.
19. Frequent requests for general purpose loans.
20. Frequent ad hoc sanctions.
21. Not routing of sales proceeds through consortium member bank/ lenders to the company.
22. LCs issued for local trade related party transactions without underlying trade transaction.
23. High value RTGS payment to unrelated parties, Heavy cash withdrawal in loan accounts.
24. Non production of original bills for verification upon request.
25. Significant movements in inventory, disproportionately differing vis-a-vis change in the turnover.
26. Significant movements in receivables, disproportionately differing vis-à-vis change in the turnover and/or increase in ageing of the receivables.
27. Disproportionate changes in other current assets.
28. Significant increases in working capital borrowing as percentage of turnover.
29. Increase in Fixed Assets, without corresponding increase in long term sources (when project is implemented).
30. Increase in borrowings, despite huge cash and cash equivalents in the borrower's balance sheet.
31. Frequent changes in accounting period and/or accounting policies.
32. Costing of the project which is in wide variance with standard cost of installation of the project.
33. Claims not acknowledged as debt high.
34. Substantial increase in unbilled revenue year after year.
35. Large number of transactions with inter-connected companies and large outstanding from such companies.
36. Substantial related party transactions.
37. Material discrepancies in the annual report.
38. Significant inconsistencies within the annual report (between various sections).
39. Poor disclosure of materially adverse information and no qualification by the statutory auditors.
40. Raid by Income tax /sales tax/ central excise duty officials.
41. Significant reductions in the stake of promoter /director or increase in the encumbered shares of promoter/director.
42. Resignation of the key personnel and frequent changes in the management.

Ongoing monitoring of the transaction and operations is thus essential to timely gauge the health of the account to protect the Lenders interest. In the next chapter we shall study the issues relating to the stressed assets.

CHAPTER - 20

MANAGEMENT OF WEAK ACCOUNTS AND RESTRUCTURING

MANAGEMENT OF WEAK ACCOUNTS AND RESTRUCTURING

In order to maintain a healthy credit portfolio, apart from a strong credit appraisal and monitoring mechanism, the protocol to deal with and handle distressed assets is equally important.

Restructuring is an act in which a lender, for economic or legal reasons relating to the borrower's financial difficulty, grants concessions to the borrower. Restructuring would normally involve modification of terms of the advances / securities, which would generally include, among others, alteration of payment period / payable amount / the amount of instalments / rate of interest; roll over of credit facilities, sanction of additional credit facility/ release of additional funds for an account in default to aid curing of default / enhancement of existing credit limits, compromise settlements where time for payment of settlement amount exceeds three months.

Re-structuring implies /involves modification, re-organization, re-orientation, re-building, rearranging the existing structure of the corporate entity. Financial re-structuring involves both liability side changes and assets side changes in the balance sheet. Liabilities side changes deal with debt component as well as equity. Corporate re-structuring involves basic structure of the corporate entity by way of merger, acquisition, de-merger extra.

Objectives of Restructuring

- To Improve Financial Health of the company
- To preserve / promote value
- To create most beneficial environment for the company
- To minimize cost of capital
- To improve overall efficiency of the company
- To unlock true potential of healthy company
- New Strategies for growth and capturing opportunities

Diagnosis of the Issues

Drawing a parallel from the real-life world the treatment of the problem / ailment / diseases will depend upon the reasons identified and the solution in medical terms will be in the shape of:

Physician's treatment by way of medicines, both short term & long term or surgery. Angioplasty open heart surgery or transplant, depending upon the current status of the patient i.e. the corporate entity. What has gone wrong- reasons to be identified and addressed? Value for different stake holders to be taken into account.

Debt Restructuring

- Reducing the cost of capital
- Improving Liquidity

- Increasing cash flows
- Long term loans from Banks NBFCs etc.
- Extending the moratorium – Re-scheduling – Ballooning
- Reduction in Rate of interest etc.
- Bonds secured and unsecured
- Public Deposit
- Sub-debt (Sub-servient to primary debt)
- Short Term debt

Cash flow method may be a way out in such situation.

Reconciling the position of all the stake holders to be taken care of, extreme steps of haircuts, equities swaps, change in management etc. to be examined.

Indicators of Stress

In addition to the points relating to the early warning signal discussed in the previous Chapter, the specific issues pertaining the infrastructure project are:

- Time overrun – delay in approvals from concession authority environmental clearances and others approval of local bodies.
- Cost overrun interest cost and change of scope of the project
- Inadequate revenue -non achievement of targeted capacity and delay in payments. Non revision of tariff.

RBI Guidelines on Restructuring of Stressed Assets

a) Over the period of time, under the watchful eyes of the regulator, the mechanism of handling distressed asset has evolved in accordance with the requirements of the economy. The principle was to have a timely and transparent mechanism of handling stress due to internal and external factors with an objective to support the viable businesses to preserve the economic value of the stressed assets. The intent was to support, while at the same time, and ensure promoters' contribution / commitment.

b) Circular dated 07.06.2019 whereby previous/obsolete guidelines under 28 different circulars have been repealed.

c) Pervious Guidelines on CDR, flexible structuring, SDR, change in management outside SDR and S4A have been done away with conversion of debt into zero coupon / low coupon bonds debentures, equity swap change in management etc. envisaged, as a part of Resolution plan besides ballooning, moratorium extension reduction in interest etc.

d) Resolution plan with sustainable debt/ capital structure that offers best prospects for success to be implemented in a time bond manner maximum 270 days.

e) Cases of Rs. 100 crores and above require independent credit valuation with investment grade BBB rating – 2 ratings for 500 crores and above.

f) Up-gradation not automatic and is now linked to actual minimum recovery of 10/20 %.

g) Stringent conditions relating to provision including penalty for wrong reporting.

h) However exemptions for change in DCCO to continue.

i) Regulatory exemptions for SLR and capital market exposure.

j) Focus on rehabilitation before going to IBC or liquidation.

k) IBC rules and regulation still evolving and success rate still not very good.

l) Liquidation cases position still worse with recovery as less as 5%.

m) Issues like additional collaterals, corporate guaranties of Promoter Company / personal guaranties are integral part of resolution plans with first burden falling on promoters and possible haircuts to be borne by the Lenders.

n) For the purpose of these directions, 'lenders' shall mean all entities.

o) 'Default' means non-payment of debt (as defined under the IBC) when whole or any part or instalment of the debt has become due and payable and is not paid by the debtor or the corporate debtor, as the case may be.

p) For revolving facilities like cash credit, default would also mean, without prejudice to the above, the outstanding balance remaining continuously in excess of the sanctioned limit or drawing power, whichever is lower, for more than 30 days.

Summary of Past Guidelines

The corporate debt restructuring (CDR) mechanism was started in August 2001 with setting up of empowered group' to study viability and rehabilitation potential of the unit.

- 2003-2005 - CDR scheme was reviewed, and scope widened.
- August 2008 - Detailed prudential guidelines on restructuring of advances- comprehensive guidelines superseding all previous instructions with an intent to harmonize and bring alignment in the guidelines applicable to all categories.
- 2008-2013 - Prudential guidelines reviewed from time to time during this period, bringing clarity and adaptability as per the requirements of the emerging situations of the borrower accounts.
- May 2013 - Flexible structuring of long-term project loans to infrastructure and core industries. A path-breaking initiative was taken by announcing the flexible 5 by 25 scheme to take care of the specific requirements of the long-term duration projects with the option of periodic refinancing under infrastructure and core industries, looking to the cash flows generated through the economic life span of each project.
- February 2014 - Withdrawal of regulatory forbearances relating to classification of advances subjected to restructuring, whereby the accounts will be required to be downgraded to the 'substandard category on restructuring.
- July 2014- Framework for revitalizing of stressed assets in economy- refinancing of project loans and other regulatory measures. The previous guidelines were reviewed and enabling provisions were added to bring in the flexibility. This related to extending the repayment period, taking into account the life cycle of the project and cash flows of the project. Emphasis was also laid on close monitoring of and follow up and effective credit risk management through reporting to CRILC, formation of JLF (joint lender forum) and adoption of the corrective action plan including change in management as one of the options.

- June 2015 - Strategic Debt Restructuring -The SDR scheme was introduced for the conversion of debt into equity at fair value, so as to acquire a majority share in the company for off-loading to the new promoter in due course.

June 2016 - Scheme for sustainable structuring of stressed Assets - S4ATo enable adequate deep financial restructuring of large accounts, with aggregate exposure of more than ₹500 Crore Sustainable Debt to be assessed through independent TEV! This provided for partial conversion of debt into sustainable portion and balance into equity and quasi equity-like instruments. Resolution plan to be monitored by overseeing committee set by

June 2019 - A fresh set of comprehensive guidelines on the prudential framework For Resolution of stressed assets was announced by the Reserve Bank of India. This notification repealed various circulars issued between 2001-2017 on this subject. Salient features are as under:

- The fresh guidelines emphasize inter alia early identification and reporting of stress.
- The directions have been issued providing for early recognition reporting and time bound resolution of stressed assets.
- For Resolution plans with aggregate exposure of Rupees 100 crores and above, there is a need for independent credit evaluation (ICE) of the Residual Debt by credit rating agencies. For cases of ₹500 crore and above two such credit ratings are required.
- The role of a central repository of information on large credits (CRILC) has become significant and it is mandatory to report all accounts with aggregate exposure of Rupees 5 crores and above on monthly basis. The emphasis is on tracking the accounts, with tenure of outstanding overdue between 1 to 90 days under 3 categories. viz SMA0, SMA1, SMA2.
- The implementation of resolution plan to be done in a time-bound manner, while ensuring compliance of various guidelines, stringent conditions have been imposed for up-gradation of the account after satisfactory operations in the account as specified. The scheme entails additional provisioning also.
- For the implementation of any resolution plan, there is a necessity for lenders to enter into an inter creditor agreement (ICA) which shall be binding upon all the lenders in specific circumstances. The resolution plan has a wider connotation for regularization of the account, payment of all over dues by the borrower entity, sales of the exposure to third party/ investors, change in ownership and restructuring.
- As a part of income recognition norms, interest income in respect of restructured accounts classified as 'standard' assets may be booked on accrual basis and that in respect of the restructured accounts classified as 'non-performing assets it shall be recognized on cash basis.
- The guidelines also very elaborately bring out the valuation mechanism of debt converted to equity instruments.

Guidelines on dealing with covid 19 related stress

Covid 19 pandemic came as a once in a century Black Swan event that impacted the economies all over the world. The Indian government and Reserve Bank of India took timely proactive and pragmatic steps to handle the situation.

While the above basic framework is applicable in general, to meet the urgent requirements of the situation arising out of the covid 19 stress, a one-time restructuring scheme was announced in August 2020.

Restructuring Scheme:

The Kamath committee appointed by RBI has also stipulated five financial ratios to be complied with, as a part of restructuring scheme for 26 sectors, which have been adversely affected by the covid-19 pandemic.



During the two waves of COVID-19, the Reserve Bank announced Resolution Frameworks (RF) 1.0 and 2.0 to provide relief to borrowers and lending institutions. While the restructuring of large borrower accounts under RF 1.0 could be invoked by December 31, 2020 and implemented within 180 days from the date of invocation, they have time till September 30, 2022 to achieve the operational parameters. On the other hand, resolutions under RF 2.0 for individuals, small businesses and MSMEs could be invoked before September 30, 2021 and the resolution plan had to be implemented within 90 days from the date of invocation.

Guidelines as Per RBI (Project Finance) Directions 2025

"Restructuring" – shall have the same meaning as given in Prudential Framework, as updated from time to time.

"Resolution Plan (RP)" – is a mutually agreed, legally binding, feasible and time-bound plan for resolution of stress in a project finance account. The resolution plan may involve any action / plan / reorganization including, but not limited to, regularisation of the account by payment of all overdues by the debtor entity, sale of the exposures to other entities / investors, change in ownership, extension of DCCO and restructuring

Prudential Norms for Resolution:-

Resolution of Stress-

A lender shall monitor the performance of the project and any buildup of stress on an ongoing basis and shall be expected to initiate a resolution plan well in advance. Occurrence of a credit event with any of the lenders during the construction phase, shall trigger a collective resolution in terms of the Prudential Framework. The reference to 'default' in the Prudential Framework shall be read as 'credit event' for the purpose of project finance accounts, unless specified otherwise.

Any such credit event shall be reported to the Central Repository of Information on Large Credit (CRILC) by the lender in the prescribed weekly as well as the CRILCMain report in compliance with

the extant instructions, as applicable. A lender in a consortium/multiple lending arrangement shall also report occurrence of such credit event to all other members of the consortium/multiple lending arrangement. The instructions on CRILC reporting shall be issued in due course.

A lender shall undertake a prima facie review of the debtor account within thirty days from the date of such credit event ("Review Period"). The conduct of the lender(s) during this Review Period, including signing of Inter Creditor Agreement (ICA), and the decision to implement a resolution plan, wherever required, shall be guided by the provisions of the Prudential Framework, unless specified otherwise in these Directions.

Resolution Plans Involving Extension of Original / Extended DCCO-

A project finance account classified as standard and that satisfies all relevant prudential conditions specified in Chapter III of these Directions, where a resolution plan involving extension of original/ extended DCCO, as the case maybe, is implemented, shall continue to be classified as 'Standard', provided the envisaged resolution plan ab initio conforms to the conditions stipulated hereunder:

(a) Permitted DCCO Deferment – Original / extended DCCO, as the case may be, is extended, along with the consequential shift in repayment schedule for equal or shorter duration (including the start date and end date of revised repayment schedule), within the following time limits:

	Infrastructure Projects	**Non-Infrastructure Projects (including CRE and CRE-)**
Permitted deferment of DCCO from the original DCCO	Upto 3 years	Upto 2 years

(b) Cost Overrun – A lender may finance, as part of a resolution plan, cost overrun associated with permitted DCCO deferment in compliance with above, and classify the account as 'Standard', as under:

(i) Cost overrun up to a maximum of 10% of the original project cost, in addition to IDC.

(ii) Cost overrun is financed through SBCF specifically sanctioned by the lender at the time of financial closure.

(iii) For infrastructure projects, in cases where SBCF was not sanctioned at the time of financial closure, or was sanctioned but not renewed subsequently, such additional funding shall be priced at a premium to what would have been applicable on a pre-sanctioned SBCF. Lenders shall ensure that the loan-contracts ab-initio specify the additional risk premium to be charged on such SBCF, which may be revised upwards based on actual risk assessment at the time of sanction of such facilities. (iv)The financial parameters like D/E ratio, external credit rating (if any) etc. remain unchanged or are enhanced in favour of the lender post such cost overrun funding.

(c) Change in Scope and Size – A project finance account where DCCO extension is necessitated by an increase in the project outlay on account of increase in scope and size of the project, may be classified as 'Standard', subject to complying with the following conditions: (i) The rise in project cost excluding any cost-overrun in respect of the original project is 25% or more of the original outlay as the case may be (Illustration given in Annex 1). (ii) A lender re-assesses the viability of the project before approving the enhancement of scope and fixing a fresh DCCO. (iii) On re-rating

(if already rated), the new external credit rating is not below the previous external credit rating by more than one notch. If the project debt was unrated at the time of increase in scope or size, then it should be externally rated investment grade upon such increase in scope or size in case of projects where aggregate exposure of all lenders is equal to or greater than ₹100 crores. The standard asset classification benefit on account of 'change in scope' shall be allowed only once during the lifetime of the project.

Further, in all the above cases, the following conditions shall be required to be met before the expiry of 180 days from the end of the Review Period, for successful implementation of a resolution plan: i. all required documentation, including execution of necessary agreements between a lender and the debtor/ creation of security charge/ perfection of securities, are completed in consonance with the resolution plan being implemented. ii. the new capital structure and/ or changes in the financing agreement get duly reflected in the books of a lender and the debtor.

If the resolution plan involving change in DCCO is not successfully implemented in terms of above, then the account shall be downgraded to NPA immediately.

Criteria for Upgradation

A project finance account downgraded to NPA for non-compliance with above, can be upgraded only after the account performs satisfactorily post actual DCCO.

A project finance account downgraded to NPA for non-compliance with above, can be upgraded on successful implementation of resolution plan, provided no further request for DCCO deferment is received.

Income Recognition

A lender may recognise income on accrual basis in respect of project finance exposures which are classified as 'Standard'. For NPAs, income recognition shall be as per extant instructions contained in Master Circular - Prudential norms on Income Recognition, Asset Classification and Provisioning pertaining to Advances dated April 01, 2025, as updated from time to time or the relevant instructions as applicable to specific category of lenders.

Provisioning for Standard Assets

For project finance exposures, a lender shall maintain a general provision at the following rates for the funded outstanding on a portfolio basis:

	Construction Phase	Operational Phase – **after** commencement of repayment of interest **and** principal
CRE	1.25%	1.00%
CRE-RH	1.00%	0.75%
All others	1.00%	0.40%

Provisioning for DCCO Deferred Standard Assets

For accounts which have availed DCCO deferment as per these Directions and are classified as 'standard', lenders shall maintain additional specific provisions of 0.375% for infrastructure project loans and 0.5625% for non infrastructure project loans (including CRE and CRE-RH), for each quarter of deferment, over and above the applicable standard asset provision specified a above. These additional specific provisions shall be reversed upon commencement of commercial operation.

Provisioning for Existing Projects

The provisions stipulated shall not be applicable for existing projects which are specified under these Directions. Such project loans shall continue to be guided by the existing prudential guidelines for the purpose of provisioning, which otherwise shall be treated as repealed.

In case of any resolution of a fresh credit event and/or change in material terms and conditions in the loan contract in such projects, subsequent to the effective date, the provisions stipulated as above shall apply to these projects as if these were sanctioned post the effective date.

Provisioning for Non-Performing Assets

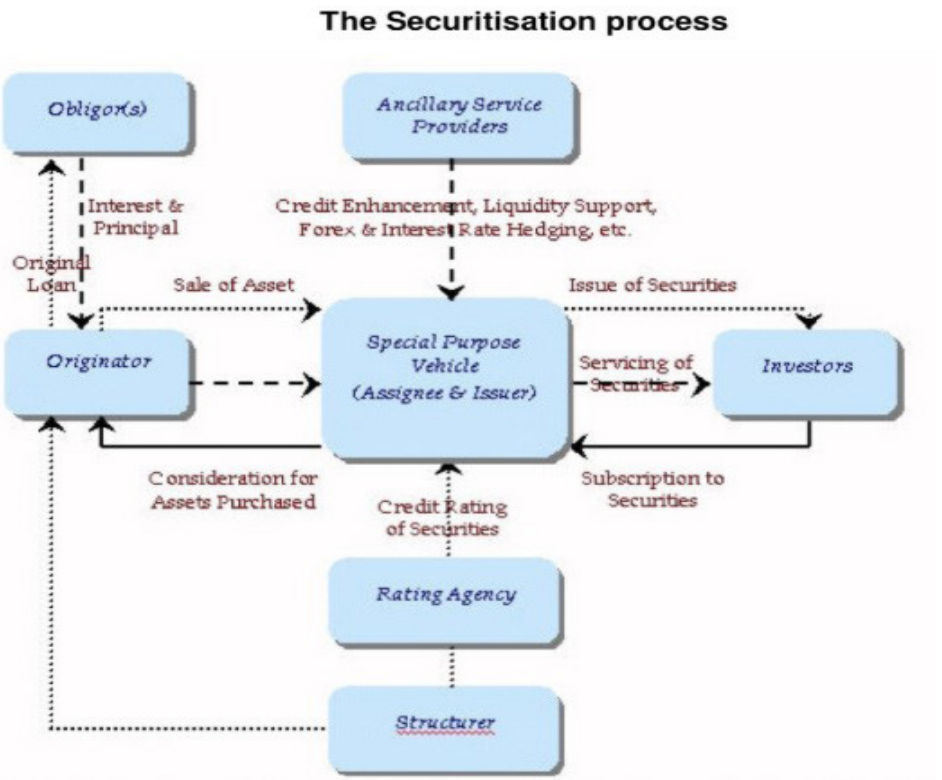
Provisioning for project loans classified as NPA shall be as per extant instructions contained in Master Circular - Prudential norms on Income Recognition, Asset Classification and Provisioning pertaining to Advances dated April 01, 2025, as updated from time to time or the relevant instructions as applicable to specific category of lenders.

The details relating to maintenance of database and disclosure along with other annexures are given in appendix VI

ARC (Assets Reconstruction Company)

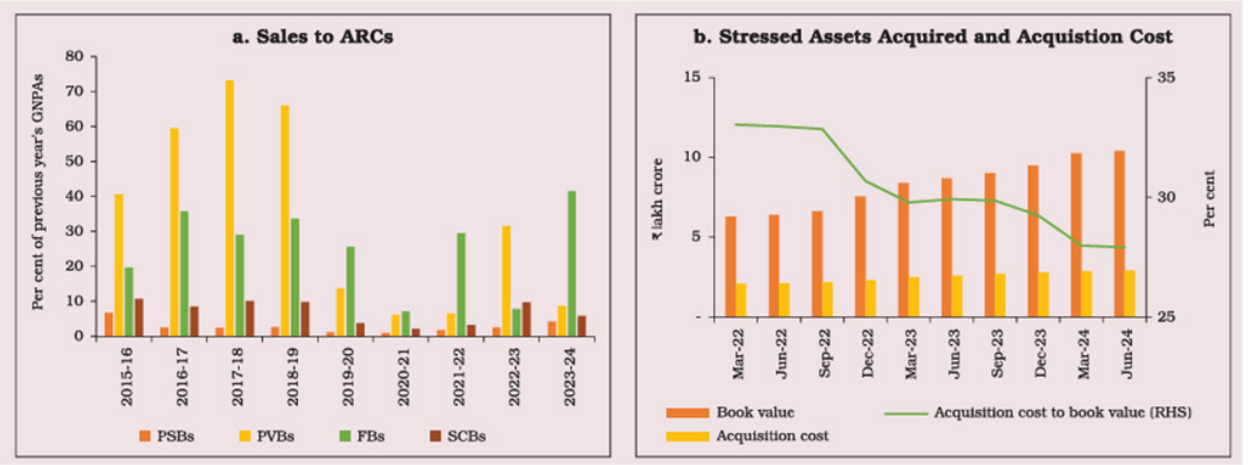
As one of the options besides restructuring of the account the lenders can consider sale of stressed asset to an asset re Construction Company (ARC) under the securitization process as given below

Role of Asset Reconstruction Company



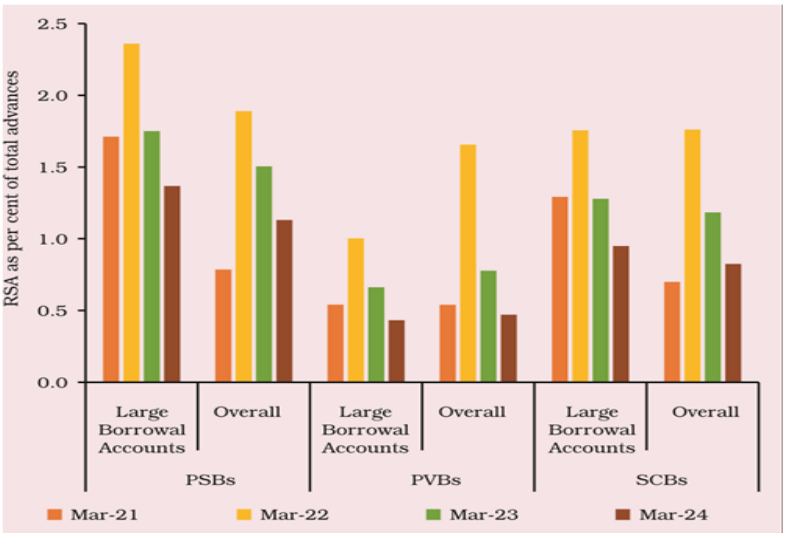
Going forward further steps may be required to make the Handling of the weak accounts more robust and meaningful keeping in view the following points.

Stressed Asset Sales to ARCs



Source: RBI Publications/ Reports

Restructured Standard Advance ratio



Source: RBI Publications/ Reports

As revealed from above charts, the mechanism of restructuring has been actively made applicable particularly in respect of large borrowers including infrastructure sector accounts. The avenue of sale of asset to ARC has also evolved overtime and has the potential to play a significant role in handling stress assets.

The above charts indicate that handling of the stress account is being taken up by the banks as per the specific requirements and the route of sales is also being used over the period of time. The mechanism, however, needs to be more robust with usage of proper data analytic to assess the incipient stress so as to enable timely actions by the banks.

Project Monitoring Group (PMG)

In order to monitor all the standard projects and to facilitate a suitable resolution in such cases the PMG under the DPIIT is playing a very crucial role. The broad mechanism of the same is as under :

The Project Monitoring Group (PMG) is an institutional mechanism for the expedited resolution of issues and regulatory bottlenecks in projects with investments upwards ₹500 Crores in India. It was set up as a special cell in the Cabinet Secretariat, Government of India in 2013 and was subsequently brought under the administrative control of the Prime Minister's Office (PMO) in 2015. With effect from 14th February, 2019, PMG has been merged with the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry. This relocation was enabled in order to create a one-stop facilitation destination for investors at all stages of the investment process, including issue resolution.

The PMG seeks to enlist the unresolved project issues in respect of all mid and large sized Public, Private and 'Public–Private Partnership' (PPP) Projects and takes up fast-tracking of approvals, sectoral policy issues and removal of bottlenecks in expeditious commissioning. DPIIT is mandated as the nodal body for the review of public and private projects facing challenges and facilitates their resolution through PMG.

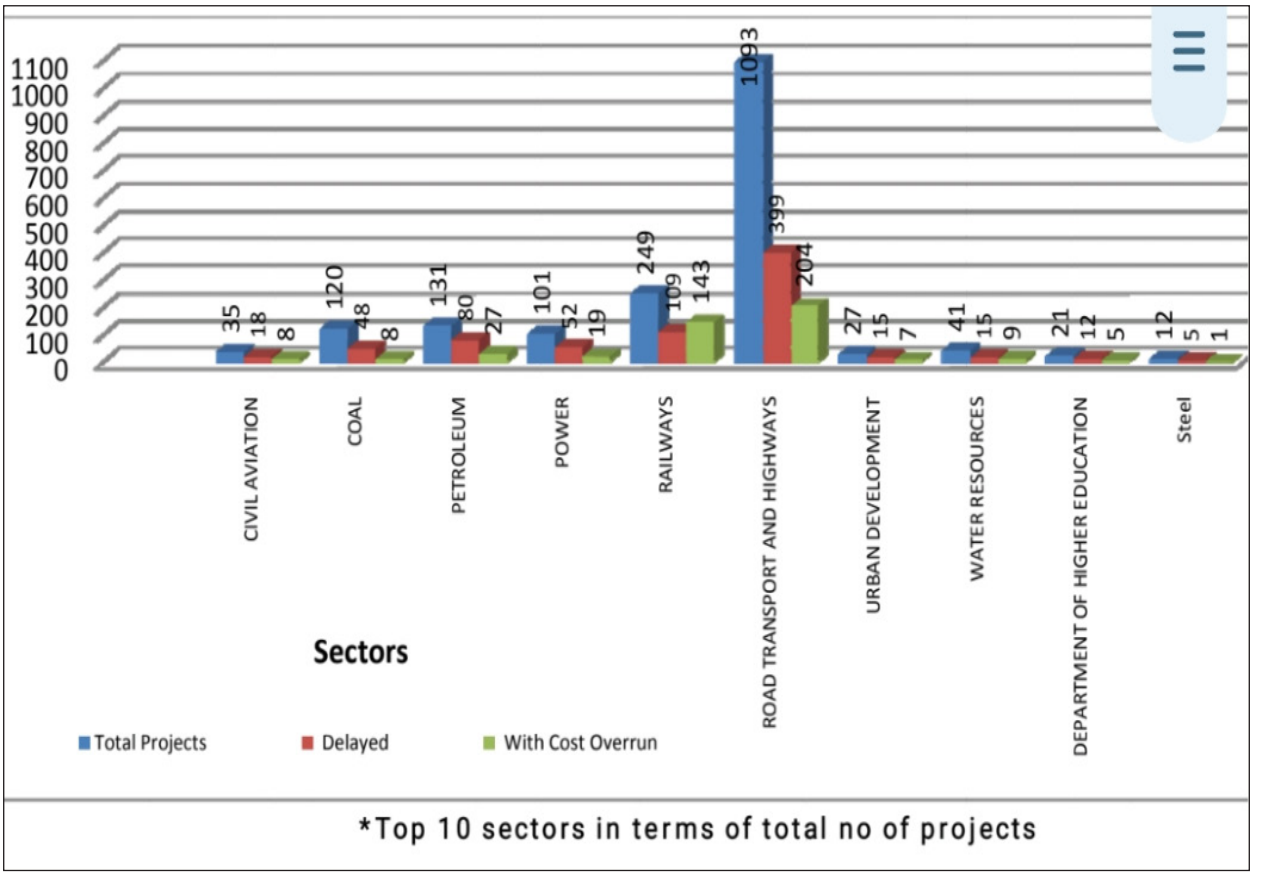
There are several projects from key sectors for which the PMG undertakes issue resolution. The projects are largely from the infrastructural nature, however PMG accepts projects from all sectors, as long as they meet the threshold requirement. These projects typically emanate from sectors such as:

- Road Transport & Highways, Railways, Civil Aviation
- Inland Waterways, Ports and Shipping
- Chemicals, Fertilizers and Petrochemicals
- Power
- Coal and Mines
- Urban Development
- Health and Family Welfare
- Textiles
- Tourism
- Telecommunication and IT Services

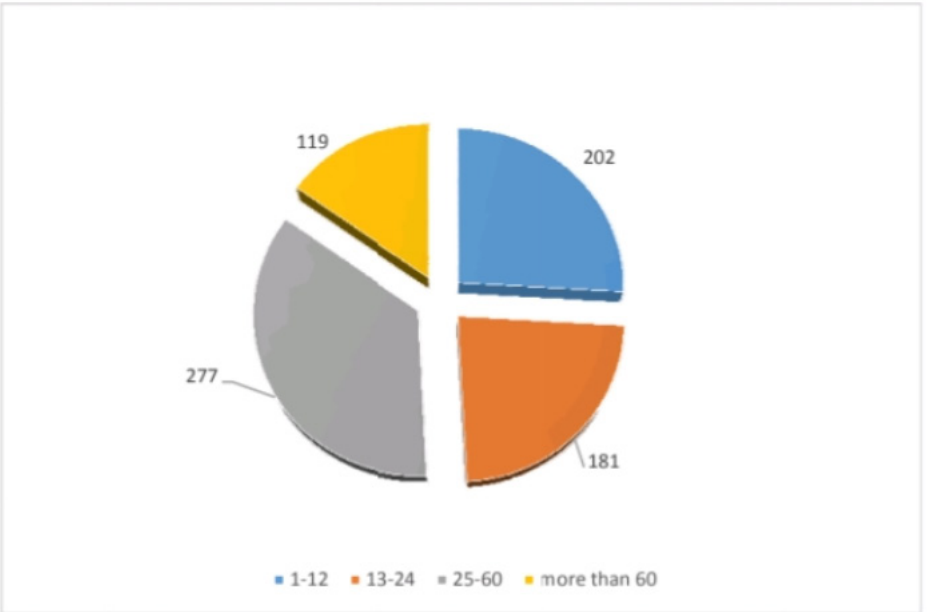
Projects completed during Previous years

Financial Year	No. of completed Projects	Completion Cost (₹ in crore)
2014-15	72	1,25,183.75
2015-16	61	1,39,256.40
2016-17	96	63,236.17
2017-18	90	1,37,763.91
2018-19	132	1,28,588.55
2019-20	186	1,30,229.00
2020-21	77	55,625.13
2021-22	272	2,65,168.07
2022-23	329	306628.91
2023-24 (up to March, 2024)	281	2,42,918.78
Total	1596	15,94,588.67

Sector-wise Status of Projects (w.r.t. original schedules) in top* sectors



Break-up of 779delayed (in months) projects inMarch 2024



Status of Projects Showing Cost and Time Overrun

Status of Projects (as on 01.04.2024)						
Sr. No.	Sector	Total Projects	No of Projects Having			
			Delay		Cost Overrun	
			w.r.t. Original schedule	w.r.t. Revised schedule	w.r.t. Original Cost	w.r.t. Revised Cost
1	ATOMIC ENERGY	5	4	4	3	1
2	CIVIL AVIATION	35	18	15	8	6
3	COAL	120	48	39	8	5
4	FINANCE	3	0	0	1	1
5	MINES	8	7	4	3	1
6	STEEL	12	5	5	1	0
7	PETROLEUM	131	80	38	27	5
8	POWER	101	52	39	19	18
9	HEALTH AND FAMILY	8	7	2	4	2
10	ROAD TRANSPORT AND HIGHWAYS	1093	399	291	204	120
11	SHIPPING AND PORTS	1	1	0	0	1
12	TELECOMMUNICATIONS	7	2	2	2	2
13	URBAN DEVELOPMENT	27	15	10	7	6
14	WATER RESOURCES	41	15	15	9	9
15	SOCIAL JUSTICE	1	0	0	0	0
16	DEFENCE PRODUCTION	1	0	0	0	0
17	DEPARTMENT OF HIGHER EDUCATION	21	12	8	5	1
18	HOME AFFAIRS	5	4	3	3	1
19	DPIIT	2	1	1	1	1
20	DONER	1	0	0	0	0
21	RENEWABLE ENERGY	1	0	0	1	0
Total		1873	779	567	449	287

Role of Infrastructure and Project Monitoring Division (IPMD)

- Monitoring the progress of the Central Sector Infrastructure Projects costing ₹150 crore and above
- Monitoring the performance of 11 key Infrastructure Sectors

Objectives of Project Monitoring

- To enhance effectiveness of project implementation
- To facilitate information flow for effective decision making
- To resolve outstanding implementation issues

- To bring about system improvement
- To promote best management practices

Implementation Status of Central Sector Projects

As on 01.04.2024, 1873 projects with anticipated completion cost of ₹31,88,859.02 crore were on the monitor of the Ministry. For the purpose of monitoring, these projects have been categorised into two categories:

As on 1st April 2024			
SN	Category	No. of Projects	Anticipated Cost (₹ in crore)
1	Mega (₹ 1000 crore and above)	612	26,17,869.79
2	Major (₹150 crore to less than ₹1000 crore)	1261	5,70,989.23
	TOTAL	1873	31,88,859.02

As per the recent data available 2211 projects with aggregate project value of ₹68 lakh crores are covered by PMG and 7104 issues have been monitored

Source: DPIIT, Ministry of Commerce and Industry

Way Forward

- RBI may broaden the ambit of OTR to accommodate SMA1/SMA2 accounts.
- Coordination among lenders to arrive at a consensus as sometimes interest is not aligned.
- Though RBI has prescribed a time bound structure, quick resolution is the key to preserve value.
- All Banks need to understand NPV value vs. whole value.
- Lenders should price risk appropriately & not under-price to gain business with short term perspective.
- Lenders to monitor project with new data/information at their disposal such as GST filings, etc. to support their credit appraisal process.

In order to monitor all the standard projects and to facilitate a suitable resolution in such cases the PMG under the DPIIT is playing a very crucial role.

In order to have a coordinated and collaborated approach, the Gati Shakti Portal, the Project Monitoring Group and India Investment Grid (IIG) are working in tandem with each other for optimal results.

CASE STUDY

Restructuring of a Road Project under Implementation

Introduction

As discussed above , restructuring of account is an essential part of handling stressed accounts and a comprehensive exercise needs to be taken up to protect the interest of the various stakeholders involved. In case of infrastructure projects , taking into account the risks involved, the likelihood of financial default needs to be examined and tackled suitably on case to case basis by way of rescheduling the debt or more stringent measures like change in management. As studied in chapter 3 under the head 'Project Documents', a 'Substitution Clause 'was discussed

as a part of Concession Agreement which inter alia provides for substitution of the EXISTING concessionaire/Private Developer by a NEW nominated company selected by the lenders for completion and operation of the project in certain circumstances whereby the new nominated company steps into the shoes of the original promotors of the project (who cease to be further associated with the project).The Concession agreement itself envisages a situation of the requirement of the change in management in a prescribed mechanism ,in certain cases , in the interest of completion and operation of an Infrastructure Project. A case study is discussed below of a road project under PPP :- DBFOT model (which faced delays in construction), wherein the 'Harmonious Substitution' was undertaken to replace the promoter and the project was successfully completed sub sequently. Project Details and causes of stress:-

This is close illustration based on actual case meant for purely academic purpose, to understand the broad contours of each specific project without any intent to breach or violate any privacy or privileged information or data ownership rights in any manner.

The Concession agreement was signed between NHAI and the selected Developer after selection through the bidding process in August 2015 with an aggregate project cost of 2122 crore. The special purpose vehicle (SPV) - ABC was formed and the appraisal of the project was done by the lead lender .After announcement of the appointed date by NHAI ,the construction was commenced with scheduled completion date as April 2019.

While initially the construction progress was smooth and first milestone was achieved within stipulated time the project faced difficulties on account of the following:-

1) Non-Availability of Right of Way (ROW)

2) Non availability of approval for utility shifting

3) Non availability of approval for tree cutting

4) Non infusion of adequate timely funds by promoters .

In absence of the requisite approvals and due to non-availability of commensurate funds from promotors, the disbursement of loan was also affected.

Against the target of completion of the project in April 2019 ,up to July 2019 only 40 % of EPC cost was approximately incurred and project was stalled with more than projected expenditure on preoperative expenses and financing cost, the time overrun resulting in cost overrun.

TRANSACTION STRUCTURE

A. Structure of acquisition

- As per the terms of Substitution agreement and Circular on the Harmonious Substitution of NHAI, The nominated company shall assume the Lenders liability and liability towards Contractual & statutory liability being listed.
- The liabilities including Term Debt and Accrued Interest up to 31st Jan 2020 shall be assumed by the nominated company through agreement between NHAI, Lenders, Concessionaire and nominated company and Concession agreement shall be endorsed in favour of nominated company.

(₹ in Crores)

Particulars	Original cost estimated	Existing actual cost in July'19 report (Old SPV)	Takeover by New SPV	New Cost for New SPV	Revised Project in new SPV
EPC Cost	1,780.20	687.68	647.54	1,224.92	1,872.46
Mobilisation advance	-	135.92	-	-	0.00
Contingency Exp.	40.74	-	-	40.74	40.74
Other Miscellaneous Cost	24.30	1.93	-	22.37	22.37
Pre-Operative, Consultancy	37.16	48.61	-	18.58	18.58
Financing Cost	25.31	26.74	-	12.66	12.66
Other Exp./ DSRA	37.60	-	-	37.60	37.60
Interest During Construction	176.69	91.35	-	117.59	117.59
Total Project Cost	**2,122.00**	**992.23**	**647.54**	**1,474.46**	**2,122.00**
Means of Finance					
Sr. Debt		530.00	530.00	726.00	1,256.00
Promoters' Equity		394.23	-	559.46	677.00
Grant		-	-	189.00	189.00
Contractual Liabilities and contingent liabilities (Including Accrued interest if any)		68.00	76.00	-	-
Accrued IDC till 31st Jan 20			41.54	-	-
Total Means of Finance	**2,122.00**	**992.23**	**647.54**	**1,474.46**	**2,122.00**

Promotor equity to be raised to 677 crore. Take over total liabilities of ₹647.54 crore including existing term loan of 530 crore by new SPV(Without any haircut to the secured lenders) against total expenses of ₹992.23 crore. Balance hit to be taken by the previous promoter. Approvals/Permissions to be in place before restarting the construction. Right of way available 82.29% EPC cost increase from 1780.20 crore to 1872.46 crore New EPC contractor.

New promoters already having Sufficient experience in completing and operating PPP projects Completion in 15 months after substitution No charges in total concession period. Repayment extended by one year with revised staggered instalments. Cash flows adequate as sufficient traffic on this route much more than projected earlier.

Compliance of RBI Circular for extension of construction period:

- Project shall be completed within 2 years from original SCOD in line with the RBI Guidelines. Considering that the total debt is lower than ₹1,500.00 crore, the RBI Circular dated 07th June 2019 is not applicable and hence extension of SCOD by up-to 2 years is permissible as per the RBI guidelines without affecting treatment of loan for lenders.
- Repayment schedule shall be shifted by 15 months or Repayment due up-to revised COD shall be repaid along with last installment due in June 2032 (Lenders to decide in-line with RBI Guidelines, Nominated company agrees for both the options). Existing request and Financial model is based on shifting of repayment by 15 months without any moratorium.

B. NHAI Harmonious substitution compliance

In view of the difficulties being faced by Concessionaires in Public-Private-Partnership (PPP Projects), Government has decided to permit the substitution of existing Concessionaires or the Selected bidder/consortium Members of such project SPV, in a harmonious manner, in accordance with the

provisions of Clause 40.3 of the Model Concession Agreement read with the Substitution Agreement set forth in Schedule-V of the Model Agreement.

Compliance
This decision shall be applicable to all National Highway Project under PPP mode awarded/yet to be awarded on Build-Operate-Transfer (BOT) mode of delivery as mentioned hereunder: a. The on-going 2-laning and 4-laning National Highway projects where financial close has been achieved by the Concessionaire but Commercial Operation Date (COD) has not yet been declared by the Authority. b. The 6-laning National Highway Projects where financial close has been achieved by the Concessionaire but the project completion certificate has not yet been issued by the Authority. c. Completed 2- laning,4-laning and 6-laning National Highway projects awarded on Build-Operate-Transfer(BOT) mode of delivery under PPP mode; and d. All the new National Highway Projects under PPP mode yet to be bid out on BOT mode of delivery in the with(a), (b) and/or (c) above, as the case maybe.
For the purpose of the harmonious substitution as detailed herein, an event of "Financial Default" as defined shall be deemed to include situations where the Authority and / or the Senior Lenders have reasons to apprehend, in their considered opinion, that the Concessionaire is likely to face financial distress and is likely to default in the compliance of the terms of the Concession. For the purpose of the harmonious substitution as detailed herein, the "Nominated Company" shall mean, wherever the Selected Bidder/Consortium Members of the project SPV are sought to be substituted, the current SPV company itself. Provisions pertaining to substitution of the Concessionaire by the Lenders Representative are contained in Clause 40.3 of the Model Concession Agreement read with the Substitution Agreement set forth in Schedule-V of the Model Concession Agreement in general and Clause 3.1.1 of the Substitution Agreement in particular Clause 3.2 and Clause 3.3 of the Substitution Agreement provide for substitution in the event of Financial Default and Concessionaire's Default respectively. It is further clarified that Right of Substitution by the Lender's Representative can be exercised in situations other than those illustrated in Clause 3.2 and Clause 3.3 of the Substitution Agreement. In cases of harmonious substitution as envisaged in this Circular, 1he provisions contained in Clause 3.4 of the Substitution Agreement shall be applicable, and in addition the procedure laid down herein below shall be applicable. (i) The Concessionaire shall make a written representation to the Lender's Representative with a copy to the Authority requesting the Lender's Representative to seek approval of the Authority for Substitution. Upon receiving the said request, the Lender's Representative shall make its own assessment regarding the said request and upon being satisfied that it will be in the interest of the Project that the Substitution be effected, Lender's Representative in consultation with the Concessionaire would invite, negotiate and procure offers either by private negotiations or public auction or tenders, for the said Substitution as defined herein.

Selection of the substitute (company or the Selected bidder/Consortium Members of such project SPV) and the valuation of the Equity of the Concessionaire would be determined by the Concessionaire and Lenders.
Upon receiving the proposal of the Lender's Representative, the Authority shall satisfy itself about the credentials of the Nominated Company or of the substitute to the Selected bidder/Consortium Members of such projects and accord its concurrence regarding such substitution considering the following:
Thereafter, (where the substitution entity is a new company), the nominated company will form an SPV for taking over the project along with all the rights and obligations of the concessionaire.
The procedure prescribed in other clauses of the Concession Agreement and the Substitution Agreement, except to the extent of this modified scheme of harmonious substitution, shall be strictly adhered to.
The Authority shall stand fully discharged of any claims whatsoever, by the existing Concessionaire where the substitution entity is a new company.
Such substitution may be permitted only once during construction Period.

C. Status on Obligation and Liabilities of Concessionaire

- Lenders: Existing term loan of ₹530.00 Crore along with accrued Interest shall be taken over by the nominated company
- Contractual liabilities: Contractual liabilities shall be taken over by the Nominated company, Such liabilities shall be crystallised on substitution.
- Sponsor equity/Sponsor liabilities/Other liabilities: Shall not be taken over by the Nominated company

D. Legal Frame work Process and Documentation

- Approval of Lenders
- Request from Lenders / Concessionaire to NHAI for Substitution under guidelines for Harmonious substitution
- Compliance of Harmonious substitution by concessionaire and Nominated company
- Compliance of Qualification criteria by Nominated Company
- Approval of NHAI for substitution
- Approval of NHAI for EOT along with revision in the Milestone
- Approval for waiver of Penalties, Settlement of Claims by NHAI and on NHAI
- Endorsement of Concession agreement in favor of Nominated company
- Execution of Undertakings and Financial Documentation with Lenders
- Execution of Agreement between NHAI, Lenders, Concessionaire, Nominated Company
- Execution of Supplementary agreement, Escrow Agreement, Undertakings etc.
- Transfer of Existing Loan, Accrued Interest and Agreed contractual liabilities to Nominated Company

The above process/procedures will be done with advices from Lenders' Legal Counsel (LLC)

E. Financial structure post Substitution

Comparison		**(₹ in Crs)**
	Original	**Proposed**
Total Project Cost	**2,122.00**	**2,122.00**
Sr. Debt	1,256.00	1,256.00
Promoters' Equity	677.00	677.00
Grant	189.00	189.00
Total Means of Finance	**2,122.00**	**2,122.00**
Avg. DSCR	1.59	1.79
Min. DSCR	1.37	1.44
Debt to Project Equity	1.450	1.450
Debt to Equity	1.855	1.855
Financial Closure / Appointed Date	27-Oct-16	
Completion of Substitution/Endorsement of Concession to Welspun		31st Jan 2020
Construction Period (in months)	30 Months	15 Months from Endorsement
Scheduled Completion Date	26-Apr-19	25-Apr-21
Commercial Operation Date (COD)	27-Apr-19	25-Apr-21
Concession Period (in Years)	17.00 Years	17.00 Years
End of concession (After Adj. for Traffic Variation)	26-Oct-33	26-Oct-33
Operational Period (in Days)	5297 Days	4566 Days
Loan Repayment End	31-Mar-31	31-Mar-32
Moratorium Period post COD (in years)	0.9	0

Profitability Projections

Based on the proposed debt of ₹1,256.00 crore, the snapshot of the projected financials for the loan tenor is provided in the following table:

Profitability Projection (FY 2020 – FY 2033) (₹ in Cr)

FY ended March 31,	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Toll Income	**285**	**333**	**362**	**388**	**422**	**458**	**498**
Routine Maintenance Exps	6	7	8	8	8	9	9
Electricity & Patrolling Exps	12	14	15	15	16	17	18
Toll Collection Exps	5	6	6	6	6	7	7
Other O&M Exps	1	1	2	2	2	2	2
Other Office Exps	1	1	1	1	1	1	1
Insurance Exps	4	5	5	5	5	6	6
Total Operating Exps	**30**	**34**	**35**	**37**	**39**	**41**	**43**
EBITDA	**255**	**299**	**327**	**351**	**383**	**417**	**455**
Less: Depreciation	85	100	109	117	127	147	172

FY ended March 31,	2022	2023	2024	2025	2026	2027	2028
Less: Interest (Sr. Debt)	127	134	130	124	115	105	92
PBT	**42**	**65**	**88**	**111**	**141**	**165**	**192**
Less: Tax	9	14	19	24	30	35	41
PAT	**33**	**51**	**69**	**87**	**111**	**130**	**151**
Cash Accruals	**119**	**151**	**178**	**203**	**238**	**277**	**323**
DSCR	**1.44**	**1.57**	**1.57**	**1.55**	**1.58**	**1.66**	**1.72**
Average DSCR	**1.79**						
Minimum DSCR	**1.44**						

(₹ in Cr)

FY ended March 31,	2029	2030	2031	2032	2033
Toll Income	**537**	**577**	**621**	**668**	**720**
Routine Maintenance Exps	10	10	11	11	12
Electricity & Patrolling Exps	19	20	21	22	23
Toll Collection Exps	7	8	8	9	9
Other O&M Exps	2	2	2	2	2
Other Office Exps	1	1	1	1	1
Insurance Exps	6	7	7	7	8
Total Operating Exps	**45**	**47**	**50**	**52**	**55**
EBITDA	**491**	**530**	**571**	**616**	**665**
Less: Depreciation	185	199	214	230	323
Less: Interest (Sr. Debt)	76	57	35	12	1
PBT	**230**	**274**	**322**	**374**	**341**
Less: Tax	49	58	69	80	73
PAT	**181**	**215**	**254**	**294**	**269**
Cash Accruals	**366**	**414**	**467**	**524**	**592**
DSCR	**1.68**	**1.71**	**1.80**	**3.14**	**4.53**
Average DSCR	**1.79**				
Minimum DSCR	**1.44**				

As may be seen from the table above, the projected cash flows indicate sufficient headroom for the proposed borrowing. This is demonstrated by the reasonable levels of gearing and strong coverage ratios. Lenders to the Project may draw comfort from the following observations:

The project is being financed at a comfortable Debt to Equity ratio of 1.45 times, with debt of ₹1,256.00 crore and equity of ₹866.00 crore (including NHAI grant).

Financial Projections –: DSCR Calculation

(₹ in Cr.)

DSCR Calculations	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
Cash available for debt servicing												
PAT	33	51	69	87	111	130	151	181	215	254	294	67
Add: Depreciation	85	100	109	117	127	147	172	185	199	214	230	81
Add: Interest	127	134	130	124	115	105	92	76	57	35	12	0
Less: MMR	(25)	(27)	(27)	(27)	(27)	(27)	(29)	(43)	(43)	(43)	(43)	(11)
Total	221	258	281	300	326	354	385	399	428	459	493	137
Cash Req. for debt servicing												
Interest	127	134	130	124	115	105	92	76	57	35	12	1
Principal	27	31	49	70	90	109	132	162	193	220	145	30
Total	154	165	179	194	206	213	224	238	250	254	157	30
DSCR	1.44	1.57	1.57	1.55	1.58	1.66	1.72	1.68	1.71	1.80	3.14	4.53
Minimum DSCR	1.44											
Average DSCR	1.79											

Sensitivity Analysis

As can be seen from the sensitivity analysis below, Project cash flows are strong and are likely to withstand reduction in volume and growth of traffic as well as increase in operating costs during the tenor of Loan.

Sensitivity Analysis

Parameter	**Factor**	**Avg. DSCR**	**Min DSCR**
Base Case	--	1.79	1.44
Reduction in volume of base traffic	-5%	1.69	1.36
Reduction in traffic growth rate per annum	-1%	1.59	1.36
Increase in O&M expenses	+5%	1.78	1.43
Increase in Interest rate	+1%	1.72	1.35

CASE STUDY SUMMARY:

The above case study reveals the possibilities of successfully implementing a restructuring package through the means of Harmonious Substitution ,whereby a new management takes over the Stalled project by forming a new SPV in place of the old SPV within the ambit of the original Concession Agreement. The need for adequate financial strength of the new promoter to induct the requisite funds in a timely manner and the execution abilities without any further cost escalation, with all approvals in place, has been highlighted. The ultimate success of the restructuring is also dependent on adequate revenue/cash flow generation for which proper assessment of the demand/traffic potential (in case of road project) is crucial.

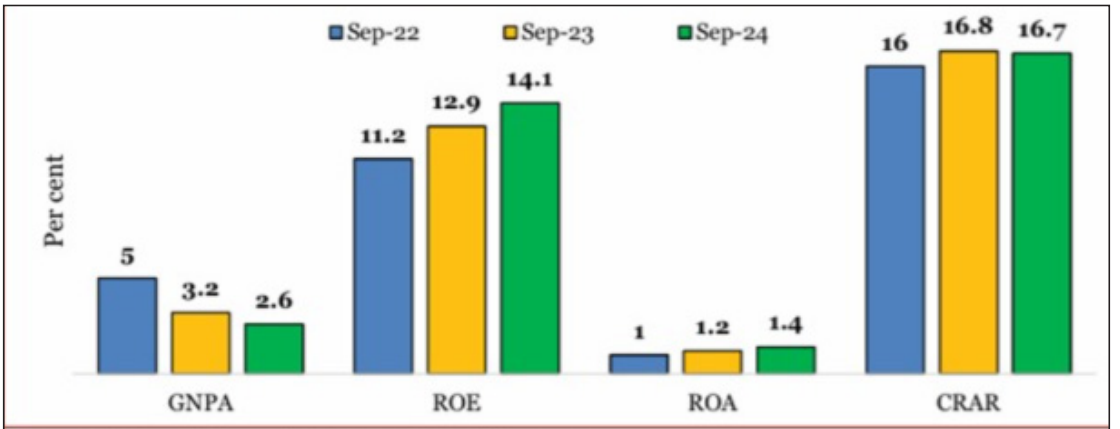
CHAPTER - 21

LEARNING POINTS OF NPA ACCOUNTS & MITIGATION

LEARNING POINTS OF NPA ACCOUNTS & MITIGATION

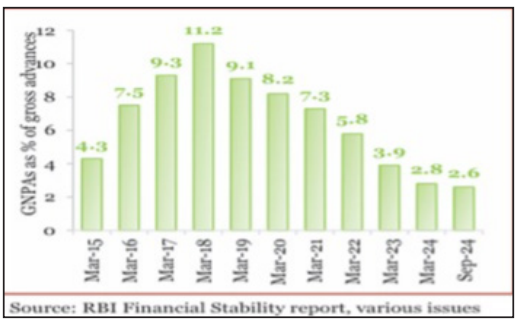
One of the most challenging tasks being faced by the banking industry and financial sector as a whole relates to herculean problem of the non-performing assets. While in the recent past there has been some decline in the gross NPAs from 7.3% in 2021 to 2.6% in September 20, 24. Earlier during the period 2005/2019 there had been a continuous increase in the NPAs in a big way because of external as well as internal reasons. The infrastructure sector has also been adversely impacted in this respect and in fact the percentage of NPAs in the infrastructure sector has been around 11%, which was higher than the average NPAs. This is partly due to the comparatively difficult circumstances through which the sector had to go through as also an account of uncertainties. In certain cases, over aggressive stance on the part of developers in bidding new projects and over leveraging at the group level led to this situation. The under noted diagrams indicate the broader position in this respect.

Stable banking system indicators



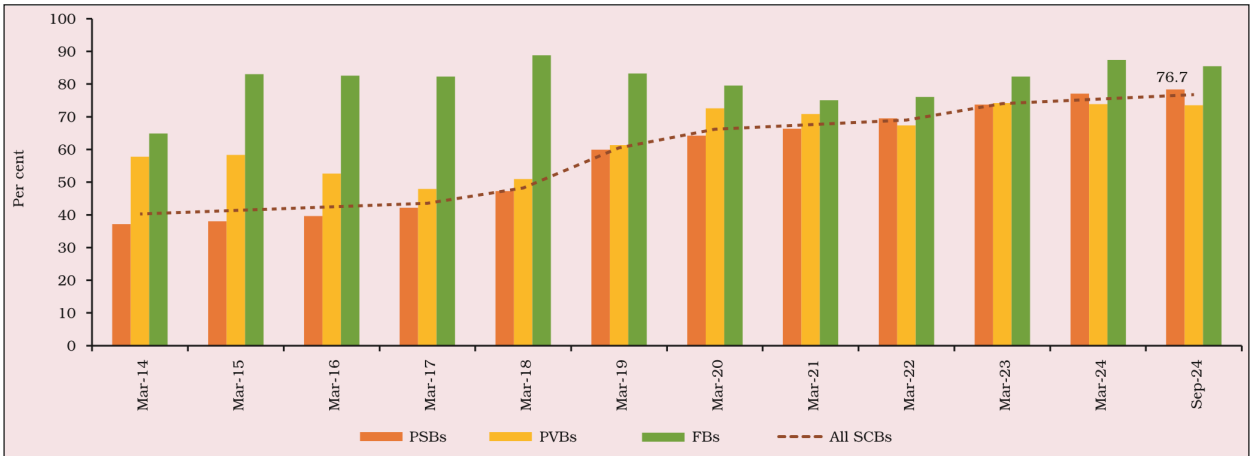
Source: Various editions of RBI Financial Stability Report

Decline in GNPAs of SCBs



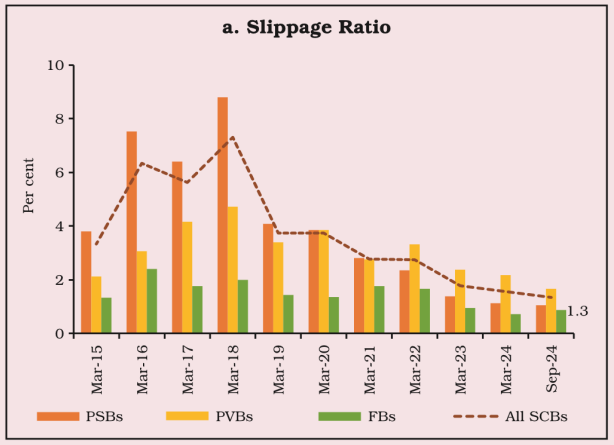
Source: RBI Financial Stability report, various issues

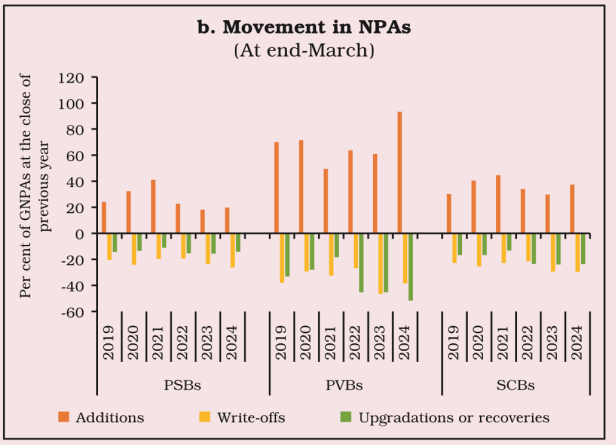
Provision coverage ratio



Note: Provision coverage ratio is not write-off adjusted.
Source: Off-site returns (domestic operations), RBI.

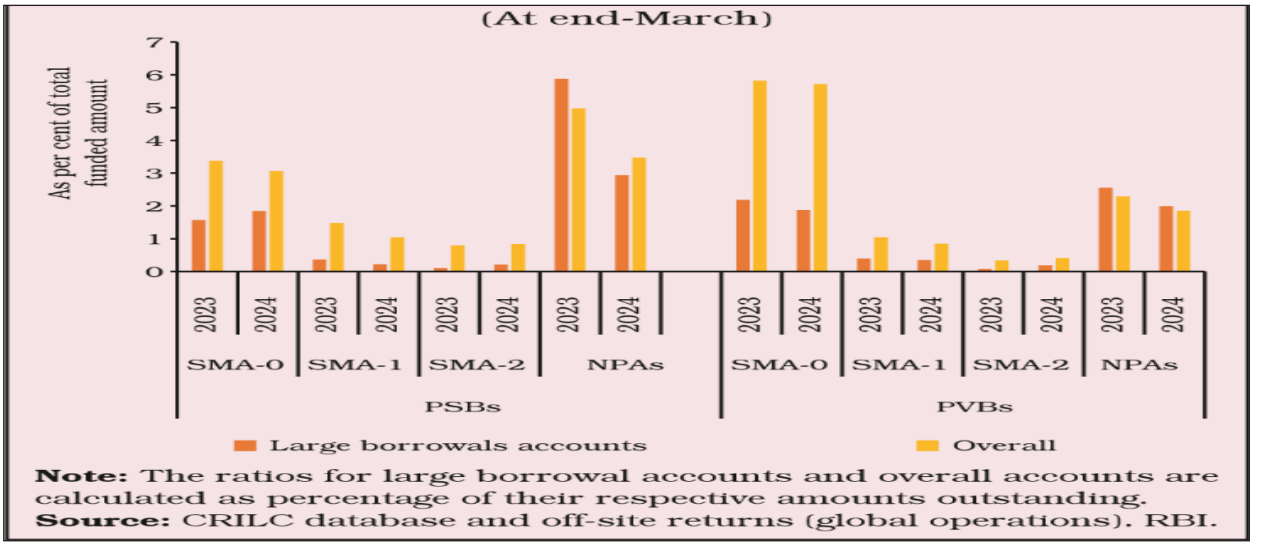
Reduction in GNPAs





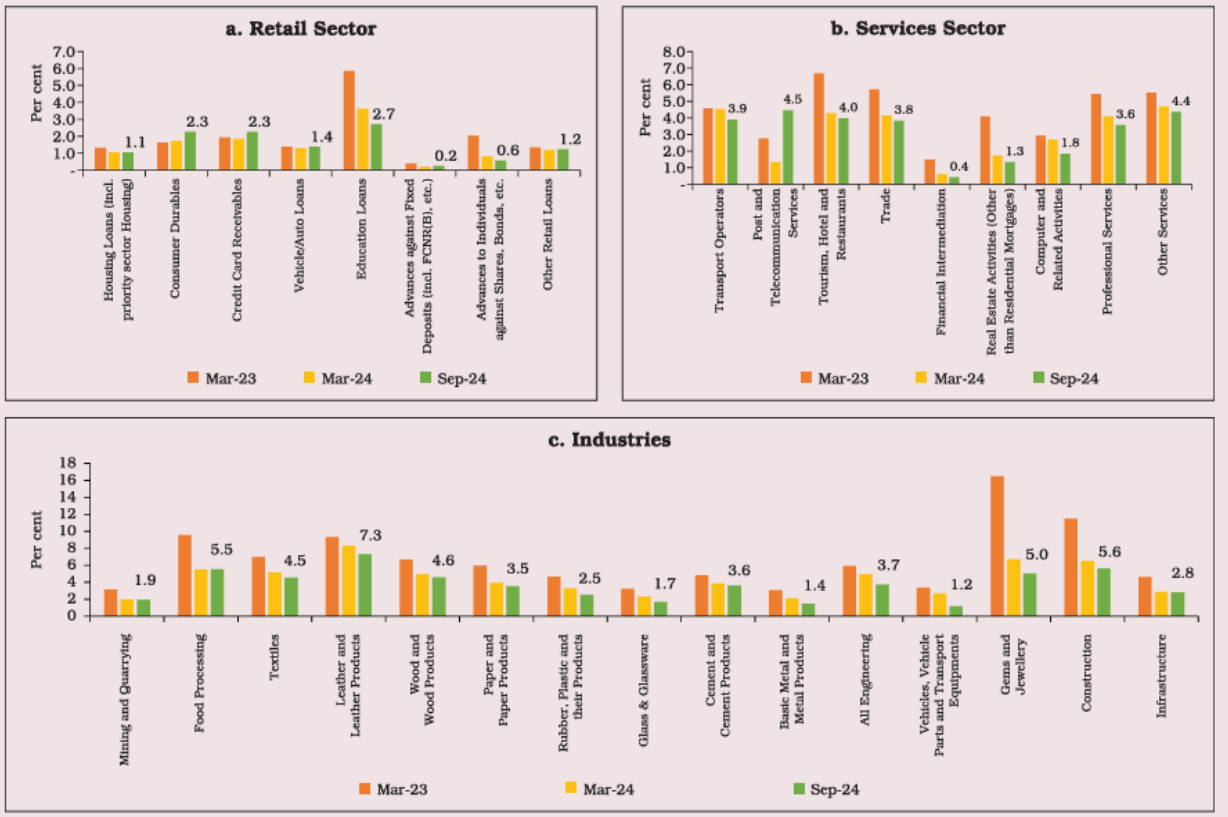
Source: Off-site returns (global operations) and annual accounts of banks.

Overall Stress vis-à-vis Stress in Large Borrower Accounts



Note: The ratios for large borrowal accounts and overall accounts are calculated as percentage of their respective amounts outstanding.
Source: CRILC database and off-site returns (global operations). RBI.

GNPA Ratio in Various Sub-Sectors



Source: Off-site returns (domestic operations), RBI.

- Movements in Non- Performing Assets by Bank Group

(Amount in ₹ crore)

	PSBs	PVBs	FBs	SFBs#	All SCBs
1	2	3	4	5	6
Gross NPAs					
Closing Balance for 2022-23 4,28,197 1,25,214 9,526 8,608 5,71,546 Opening Balance for 2023-24 4,28,197 1,25,214 9,526 8,608 5,71,546 Addition during the year 2023-24 84,435 1,16,801 5,199 7,152 2,13,587					
Reduction during the year 2023-24 1,73,090 1,12,852 8,202 10,170 3,04,314 i. Recovered 43,018 25,794 3,513 2,348 74,673 ii. Upgradations 17,558 38,856 1,961 2,159 60,535 iii. Written-off 1,12,515 48,202 2,728 5,662 1,69,106					
Closing Balance for 2023-24	**3,39,541**	**1,29,164**	**6,523**	**5,590**	**4,80,818**
Gross NPAs as per cent of Gross Advances*					
Closing Balance for 2022-23 5.0 2.3 1.9 4.7 3.9 Closing Balance for 2023-24 3.5 1.9 1.2 2.4 2.7					
Net NPAs					
Closing Balance for 2022-23 1,02,532 29,510 1,656 1,622 1,35,320 Closing Balance for 2023-24 72,544 31,594 799 1,796 1,06,732					
Net NPAs as per cent of Net Advances					
2022-23	1.2	0.5	0.3	0.9	0.9
2023-24	0.8	0.5	0.1	0.8	0.6

Notes: 1. #: Data pertain to scheduled SFBs.
2. *: Calculated by taking gross NPAs from annual accounts of respective banks and gross advances from off-site returns (global operations). **Source:** Annual accounts of banks and off-site returns (global operations), RBI.

Classification of Loan Assets by Bank Group

(Amount in ₹ crore)

Bank Group	End-March	Standard Assets		Sub-standard		Doubtful Assets		Loss Assets	
		Amount	Per cent*	Amount	Per cent*	Amount	Per cent*	Amount	Per cent*
1	2	3	4	5	6	7	8	9	10
PSBs	2023	72,86,427	94.8	62,444	0.8	2,28,806	3.0	1,10,054	1.4
	2024	84,24,922	96.3	58,576	0.7	1,78,483	2.0	83,681	1.0
PVBs	2023	51,99,732	97.8	34,288	0.6	52,469	1.0	29,033	0.5
	2024	66,96,942	98.2	44,199	0.6	52,944	0.8	26,397	0.4
FBs	2023	4,89,212	98.1	1,697	0.3	6,648	1.3	1,182	0.2
	2024	5,39,598	98.8	1,344	0.2	4,228	0.8	950	0.2
SFBs**	2023	1,76,199	95.3	3,035	1.6	2,491	1.3	3,082	1.7
	2024	2,24,245	97.6	4,005	1.7	1,514	0.7	71	0.0
All SCBs	2023	1,31,51,571	96.1	1,01,465	0.7	2,90,414	2.1	1,43,351	1.0
	2024	1,58,85,707	97.2	1,08,125	0.7	2,37,169	1.5	1,11,099	0.7

Notes: 1. *: As per cent of gross advances.
2. **: Data pertain to scheduled SFBs.
Source: Off-site returns (domestic operations), RBI.

Source: RBI Publication/Reports

Reasons for NPA (Non-performing assets)

Analysis of reasons behind the accounts turning NPA reveals factors and issues that need to be taken into account for controlling and gradually improving the overall position of infrastructure sector.

External Factors

1. **Non availability of right of way in the Road projects** -This has been one of the major bottlenecks in respect of earlier cases in the highways sector where projects were allotted and construction started without availability of entire land free from all encumbrances. This led to delays in construction and resultant cost & time overrun rendering some of the projects stranded and non-viable.
2. **Delays in environmental and other approvals -** The concerned authorities took undue time in granting clearances for construction particularly in respect of tree cutting and shifting of utilities etc. This also led to time and cost overrun thereby impacting the projects adversely.
3. **Reduced level of revenue than anticipated because of alternate routes-** In a few instances, the alternate routes and parallel roads were allowed to function impacting the actual traffic under new project which led to lower than projected revenue collection leading to defaults in repayments.
4. **Reduced level of level of revenue on account of exemptions and other local considerations like diversion of traffic -**Instances were there where certain classes of vehicles which were originally subjected to toll were subsequently exempted thereby substantially reducing the chargeable traffic and revenues. Due to local considerations traffic was diverted or toll totally removed in certain cases.
5. **Lower revenue due to economic slowdown-** In certain cases due to external factors lower level of traffic growth was seen as new industrial projects / commercial activities which were anticipated

in the vicinity and en route did not materialize as per projections leading to lower revenue. Similarly banning of mining activities and other similar regulations in certain cases reduced the demand / traffic.

6. **Non achievement of COD in a time bound manner/delay in issuance of certificate of PCOD**-It is to be noted that, one of the reasons for classification of a project as NPA is, non achievement of commercial operations date, within the stipulated time as per RBI norms. Although there are some relaxation allowed in COD in exceptional circumstances, the same needs to be achieved in a time bound manner, to avoid slippage to NPA category. On account of procedural issues also in initial stages there have been instances of certain delays in issuance of PCOD certificate and revenue collection after completion of road,
7. **Non availability of adequate amount of coal gas other raw materials for operations-** There were instances of non-availability of coal and gas in case of certain power projects and distance location of mines. Because of other Logistic issues also supplies got affected thereby making the project non-viable with non-achievement of breakeven capacities.
8. **Financial constraints and stress in payment by respective state Discoms-** Despite the supply of power, the payments from discoms got delayed leading to longer working capital cycle and burden on adequate revenue to service the interest and debt. This initial position of certain discoms is partly rectified now with specific support programme of the government in the adverse circumstances.
9. **Non approval for boiler and installation of machinery/ non availability of aggregates and other construction material-** In a few instances, in the course of construction and implementation of the installation of the machine, clearances were not available, and the project got delayed leading the project getting stranded.
10. **Delay in dispute settlement /Arbitration –** In the of construction and implementation disputes may arise between the concession Authority and the promoter prompt solution of remedial action in such cases is required. due to procedural issues and bureaucratic approach projects got delayed leading to project becoming non-viable.
11. In certain instances it has been observed that the concession authority did not revise the tariff as applicable after operation of the project thereby leading to revenue from project being lower than anticipated.
12. **Road cum real estate project** - The Real estate projects got delayed due to non-availability of requisite approvals.
13. **Change in government policy**- In case of certain power projects supply of coal was impacted due to cancelation of mines and similar other reasons. This led to the impact on the production and viability of the project. Similarly the change in import duty structure etc. on imported plant and machinery may impact the cost of project and ultimately viability of the project.
14. **Inadequacies in credit appraisal** -There have been instances where projected estimates were not subjected to adequate scrutiny and over projection of revenue and profitability were accepted. The project failed to achieve the required revenue and repayment capacities. Proper evaluation of the assumptions and projections become very much relevant.
15. **Inadequate monitoring and follow-up of the project**- In the course of the implementation of the project, the disbursement process followed and monitoring thereof was not up to the mark

in certain cases which led to diversions of funds, time and cost overrun of the project, there by impacting the viability of the project.

The above illustrations of causes of NPAs underline the need for proper identification & assessment of risks and mitigation steps needed become utmost important for successful completion and running of the project. The sensitivity analysis, proper projections based on in-depth analysis become essentials as detailed in project appraisal Chapters earlier.

Internal Factors

1. The single most important internal factor leading to stress in infrastructure projects is inadequate resourcefulness of promoter and non-availability of adequate capital with parent group to fund the SPVs.

   Instances are there in several cases where the promoters did not bring in their contribution of the project in a timely manner thereby delaying the project leading to cost overrun and stranded projects. There have been instances of over leveraging and aggressive bidding approach by certain groups and certain Promoter staking lot of projects beyond the actual financial capabilities of the promoters. This has been one of the major reasons leading to certain promoter / developer groups getting adversely affected and their respective SPV Project becoming NPA. This has been witnessed both in road and power projects in the past. It becomes of utmost importance to properly assess management capabilities and availability of funds for completion of all the projects in hand and those to be started in the near future.

2. In certain cases when more than one promoter group is involved as the sponsor of the project, any dispute among stake holders/promoter groups can lead to unnecessary delays of the project.

3. Despite reasonable level of revenue, in certain cases, it has been observed that the borrower has diverted the revenue and not deposited the full amount in escrow account tinkering with the toll collection mechanism. Close monitoring and control by the vigilant lenders is required in such cases. Integrity of the borrower thus becomes very crucial and needs to be subjected to deep scrutiny at the time of due diligence.

4. A few cases where there was intentional diversion of funds during construction itself were observed with misappropriation of the funds which were sanctioned for project cost. In such cases, the antecedents of EPC contractor, suppliers of plant and machinery need to be verified properly and close monitoring of the disbursements at each stage needs to be ensured.

Learnings out of the various instances as quoted above the various stakeholders have tried to improve the position. For example the HAM model was initiated to take care of the revenue risk and partly the completion construction risk where annuity is assured and NHAI contributing towards the project cost. The availability of minimum 80% right of way has been made a prerequisite in the said model with frequency of contribution increased to 10 milestone stages as against earlier 5. The promoters have also been less aggressive in bidding and sufficient availability of resources towards completion of the project is now being recognised by the promoters instead of over leveraging. The government is also taking steps to improve liquidity position of DISCOMS so that payment delays are minimised particularly for solar projects that have been given must run status.

Setting up of Bad (Assets) Bank / NARCL

In order to deal with the huge pile up of NPAs, the government has also initiated the much awaited setting up of a Bad Bank. The company has broad its government Structure by inducting Independent

as well as Nominee Directors of high repute having vast experience in the field of Administration, Management, Financial services and Regulations to give values advice which will enable the company to achieve its goals.

The setting up of the National Asset Reconstruction Company Limited (NARCL), to consolidate and take over the stressed debt from banks, is a step forward for resolution of large value legacy assets. International experience, however, suggests that for the experiment to succeed and to avoid perverse incentives, risks to banks' balance sheets are clearly identified; transparent transfer pricing for sale of assets are ensured; and management of the new entity is independent and professional.

National Asset Reconstruction Company Limited (NARCL) was incorporated as a Government Company on July 07, 2021, under the Companies Act 2013 ("Act"). The Company was registered with Reserve Bank of India w.e.f October 04, 2021, to commence the business of securitization or asset reconstruction under Section 3 of the Securitization and Reconstruction of Financial Asset and Enforcement of Security Interest Act, 2002 (SARFAESI). The Company's principal activity is acquiring Non-Performing Asset (NPA) from the Banks and Financial Institutions and resolving them through appropriate resolution strategies enunciated in SARFAESI.

The approval of Government of India for issuance of Government guarantees up to ₹30,600 Cr for the purpose of acquisition/ resolution of stressed assets to the NARCL for Security Receipts (SRs) has been granted on 31st March 2022. The Government guarantee will cover the shortfall between the face value of SRs issued by the trust to the selling lenders for an individual asset and the net realization amount attributable to the selling lenders for that asset.

Various available resolution mechanisms, including Insolvency and Bankruptcy Code (IBC), SARFAESI Act, Debt Recovery Tribunals, etc. have proved to be useful to certain extent. However, a large stock of legacy NPAs are yet to be resolved. In addition to this, while there are 28 ARCs existing in India, due to limited capitalisation and low recoveries from existing portfolio, they are better placed for acquiring only smaller value loans.

NARCL was incorporated on 7th July 2021 and has received a certificate of registration from the RBI to commence the business of an Asset Reconstruction Company on 4th October 2021. NARCL will majorly be owned by Public Sector Banks. Canara bank is the Sponsor with shareholding of upto 12 per cent. IDRCL was incorporated on 3rd September 2021 and will have minimum of 51 per cent ownership of Private sector Banks and balance will be held by Public Sector Banks.

IDRCL is co-created under the pioneering initiative of Government of India along with NARCL. It is mandated with the responsibility of unleashing potential value embedded in the large corporate distress assets (NPAs) of the Indian banking and financial system. As the first of its kind institutional framework, IDRCL's mandate include:

a) Provide expert advisory to NARCL on underwriting the acquisition of large corporate NPAs of over ₹500 Crore.

b) Comprehensive responsibility of resolutions of the assets under management and closely monitor for the entire life cycle.

IDRCL's objective is to revive and restructure stressed businesses and towards this actively partner with strategic & financial investors, promoters, thought leaders & industry experts, legal/ valuation / diligence agencies & wide- ranging stake holders.

NARCL and IDRCL's relationship will be defined through a debt management agreement where in

NARCL will aggregate and acquire the stressed assets and IDRCL, in turn, will provide stressed assets management and resolution services to NARCL on an exclusive basis. The term of IDRCL shall be co-terminus with that of NARCL. NARCL will acquire assets by making an offer to the lead bank and the lead bank with an offer in hand (of NARCL) will run a 'Swiss Challenge' process wherein other interested ARCs / Bidders will be invited to better the anchor offer made by NARCL. Once NARCL is declared as a preferred bidder, NARCL shall initiate asset acquisition process and acquire the assets in the underlying Trusts. After acquiring the assets, IDRCL shall prepare and suggest the proposed restructuring / resolution plan, strategies, etc. for each Underlying Trust Assets. Post the approval of resolution from NARCL, IDRCL shall also assist in implementation of resolution. The assets acquired shall be resolved using existing resolution tools within the RBI framework for ARCs.

Resolution mechanisms of this nature typically require a backstop from Government as it imparts credibility and provides for contingency buffers. Globally, bad banks have been set up with Government participation in the form of equity along with other regulatory dispensations, for instance, Danaharta Nasional Berhad (Danaharta) in Malaysia or Asset Resolution Ltd (UKAR) in UK. Therefore taking the precedence from international practices, in India, the government has provided a guarantee of up to ₹30,600 crores, which will back Security Receipts (SRs) issued by NARCL. The government guarantee will be valid for 5 years. Guarantee available for these SRs may be invoked on completion of resolution or liquidation as the case may be to cover the shortfall between actual realization and face value of the asset. The guaranteed amount will be issued based on actual assets acquired by NARCL. This arrangement will not only safeguard the face value of Security Receipts, but it will also take away the need for 100 per cent upfront capitalization of NARCL. The government will charge a guarantee fee on the amount which it guarantees, which will increase annually to incentivize the early and timely resolution.

"The progress is gathering pace and good results are expected in the coming months for this initiative to unburden the banks of managing some large NPAs". Registered with the RBI as an Asset Reconstruction Company under SARFAESI Act 2002, NARCL is an initiative to clean up legacy stressed assets in the Indian banking system.

IBC Mechanism

While financial intermediaries play their part in providing credit to various agents of the economy for economic activity, debtors may sometimes fail in their endeavours. This requires a mechanism to rescue them and provide an honourable exit to honest debtors or an attempt to resolve the stress and get them back into the business. For this purpose, enacting the Insolvency and Bankruptcy Code, 2016 (IBC/Code) has ushered in a modern and comprehensive insolvency resolution framework for distressed entities. By addressing financial distress and NPAs, the Code has had an indelible impact on the health of the country's banking sector and redefined the debtor-creditor relationship.

Till September 2024, 1068 resolution plans approved under the Code have resulted in creditors realising ₹3.6 lakh crore, 161 per cent against liquidation value and 86.1 per cent of the fair value (based on 964 cases where fair value has been estimated). The haircut for creditors relative to the fair value of assets was around 14 per cent, while relative to their admitted claims, it was around 69 per cent.25 Further, until September 2024, 79 corporate debtors (CDs) were closed by sale as a going concern under liquidation. These 79 CDs had claims amounting to ₹1.4 lakh crore, as against the liquidation value of ₹4678.2 crore. The liquidators in these cases realised ₹3674.1 crore.

Resolutions under the Code have spanned across all sectors, from large steel manufacturing companies and real estate projects to small FMCG companies. Out of the 12 large accounts referred by the RBI for resolution under the Code, 10 have been successfully resolved. This highlights that the resolution process under the Code is designed to be sector-agnostic so that all types of distressed entities can find a viable solution to their financial distress.

The deterrent effect of the Code has led to a significant shift in debtor behaviour. Thousands of debtors are resolving distress in the early stages of distress. They are resolving when default is imminent, on receipt of a notice for repayment but before filing an application, after filing application but before its admission, and even after admission of the application, and making best effort to avoid consequences of resolution process. Most companies are rescued at these stages. Till March, 2024, 28,818 applications for initiation of CIRPs of CDs having underlying default of ₹10.2 lakh crore were withdrawn before their admission.

The outcomes of the IBC in terms of its efficiency and effectiveness are discernible from various statistics such as the number of resolutions, early resolutions before the financial distress becomes chronic, and time taken for the processes to complete, etc. However, beyond these numbers, the Code has other far-reaching impacts through its interaction with the higher-level systems like the legal, economic, and financial systems. Some of these systemic benefits of the law, flowing through multiple channels, as proven by research, are as follows:

- **Forex hedging by firms**–Research shows that the likelihood for currency mismatches in the corporate sector has reduced after India's bankruptcy reform. As per BIS research (2018)26 the introduction of the new bankruptcy law raised the probability of currency hedging by 13.7 per cent for firms which originally had a high degree of currency mismatch. Thus, there is an incentive for firms to hedge currency exposure risk better in the presence of a bankruptcy law.
- **Reducing bond credit spreads**–Sengupta and Vardhan (2023)27 highlight that the IBC lowered the credit spreads for bonds issued by non-financial firms from FY17 to FY20 compared to the bonds issued by the finance firms in FY15 and FY16, especially when other issue-level determinants of credit spreads are considered. This shows an encouraging development and reinforces the fact that an effective bankruptcy resolution regime is critical for bond investors to develop confidence in the Indian market. Currently, the bond market is skewed towards high-rated (AAA and AA) bonds, which account for more than 85 per cent of all issuances. Investor confidence in effective bankruptcy resolution will be crucial to developing a deep and liquid market for lower-rated bonds.
- **Exports**–Khan and Chakraborty (2022)28, study a large sample of 4,434 firms between 2000 and 2020 and find that exporting firms in India have benefitted from the bankruptcy reform law by helping them better access credit and get out of financial constraints.

In 2016 a comprehensive Insolvency and Bankruptcy Code was brought to facilitate the process of resolving insolvency and providing an Exit route. This is bringing gradual positive results for Banks in resolving large stressed accounts. The mechanism is passing through the evolutionary stage and the proposed pre 'Packaged Insolvency Resolution Process' is further expected to help in this direction.

In a growing economy like India, a healthy credit flow and generation of new capital are essential, and when a company or business turns insolvent or "sick", it begins to default on its loans. In order for credit to not get stuck in the system or turn into bad loans, it is important that banks or creditors are able to recover as much as possible from the defaulter and as quickly as they can. The business can either get a chance, if still viable, to start afresh with new owners, or its assets can be liquidated

or sold off in a timely manner. This way fresh credit can be pumped into the system and the value degeneration of assets can be minimised.

In 2016, at a time when India's Non-Performing Assets and debt defaults were piling up, and older loan recovery mechanisms such as the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI), Lok Adalats, and Debt Recovery Tribunals were seen to be performing badly, the Insolvency and Bankruptcy Code (IBC) code was introduced to overhaul the corporate distress resolution regime in India and consolidate previously available laws to create a time-bound mechanism with a creditor-in-control model as opposed to the debtor-inpossession system.

When insolvency is triggered under the IBC, there can be two outcomes: resolution or liquidation; all attempts are made to resolve the insolvency by either coming up with a restructuring or new ownership plan and if resolution attempts fail, the company's assets are liquidated.

The IBC was intended to be a time-bound mechanism in the face of the often laggard states of older mechanisms. Timeliness is key here so that the viability of the business or the value of its assets does not deteriorate further. The IBC initially stipulated a 180-day deadline to complete the resolution process, with a permitted 90-day extension.

The IBC was subsequently amended to further make the total timeline for completion 330 days—almost a year. While in 2018, when the timeline was 180+90 days, most cases (from companies that owed less than ₹50 crore to those which owed more than ₹1000 core) were completed in under 300 days. However, in FY22, it took 772 days to resolve cases involving companies that owed more than ₹1,000 crore. The average number of days it takes to resolve such cases increased rapidly over the past five years, as per expert reports.

As per the experts if success has to be determined, then the kind of paradigm shift IBC has brought in the debtor-creditor relationship should be the benchmark. These five years have been a learning experience for resolution professionals, NCLT themselves, members, committee of creditors, lenders, and borrowers.

Comprehensive and wide range of changes have been suggested covering the entire mechanism involved in the code. The weak aspects relating to undue delays and repeated litigations are sought to be addressed besides removal of bottlenecks. The underlying intent is to streamline the processes and procedures by introduction of technology, transperency and bringing out clarity in relevant clauses to ensure smoother implementation.

Based on the past hurdles faced in various provisions and clauses of the CODEE the ground level issues have been identified and proposed to be rectified step by step. These include, the rule relating to The fast track mechanism, Pre Pack Insolvency Resolution Process (PRIRP), real estate and individual cases. The liquidation process is also sought to be made more open, flexible and equitable to provide comfort to the creditors.

Overall the report is a thorough assessment of the difficult issues involved with presentation of the possible solutions.Based on the feedback/suggestions to be received from public the Government should go ahead with revision the bankruptcy code with an element of providing more flexibility and robust implementation, with proper strengthening of the legal mechanism to create a win win situation for all stakeholders.

As the scenario is still evolving all the stakeholders need to play a proactive role towards speedy resolution and optimum returns for which lot of ground work will be required to be taken up besides the requisite changes in the regulations.

Source: Economic Survey 2024-25

NPAs of SCBs Recovered through Various Channels

(Amount in ₹ crore)

Recovery Channel	2022-23				2023-24 (P)			
	No. of cases referred	Amount involved	Amount recovered*	Col. (4) as per cent of Col. (3)	No. of cases referred	Amount involved	Amount recovered*	Col. (8) as per cent of Col. (7)
1	2	3	4	5	6	7	8	9
Lok Adalats	1,37,72,958	1,88,135	3,774	2.0	1,26,84,815	1,89,694	3,322	1.8
DRTs	56,198	4,02,753	39,785	9.9	31,414	1,06,887	16,202	15.2
SARFAESI Act	1,87,340	1,11,359	30,957	27.8	2,31,407	1,23,363	30,460	24.7
IBC @	1,262	1,38715	54,161	39.0	1,004	1,63,943	46,340	28.3
Total	**1,40,17,758**	**8,40,962**	**1,28,676**	**15.3**	**1,29,48,640**	**5,83,887**	**96,325**	**16.5**

Notes: 1. P: Provisional.
2. *: Refers to the amount recovered during the given year, which could be with reference to the cases referred during the given year as well as during the earlier years.
3. DRTs: Debt Recovery Tribunals.
4. @: Cases admitted by National Company Law Tribunals (NCLTs).

Source: Off-site returns, RBI and Insolvency and Bankruptcy Board of India (IBBI).

Source: RBI Publication/Reports

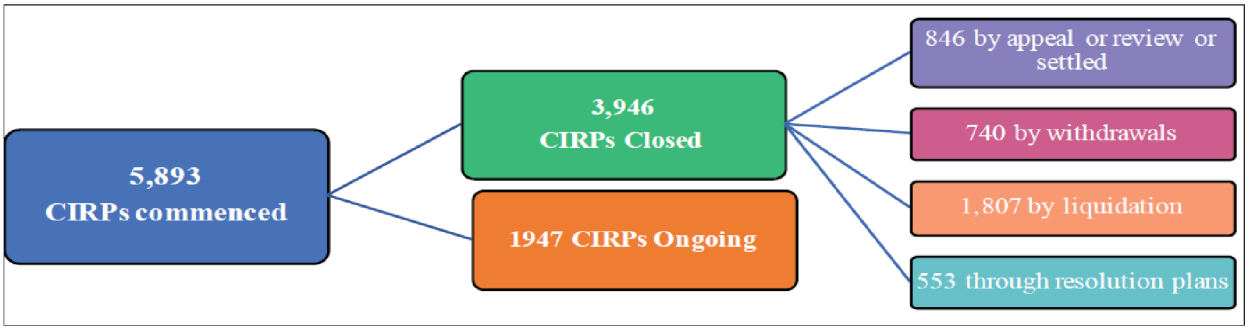
Progress made under the Insolvency and Bankruptcy Code

Ease of doing business: Facilitating the process of 'exit'

The Insolvency and Bankruptcy Code (IBC) has facilitated the exit of distressed firms, thereby allocating scarce economic resources towards more productive use. Since the inception of the IBC in December 2016, 5,893 Corporate Insolvency Resolution Processes (CIRPs) had commenced by endSeptember 2022, of which 67 per cent have been closed. Of these, around 21 per cent were closed on appeal or review or settled, 19 per cent were withdrawn, 46 per cent ended in orders for liquidation, and 14 per cent culminated in the approval of resolution plans.

The Code also provides for a Corporate Debtor (CD) to voluntarily liquidate itself subject to the fulfilment of certain conditions as prescribed under the Code. 1,351 corporate persons initiated voluntary liquidation under the Code as of end-September 2022.

Figure IV.16: CIRPs status since inception (as on September 2022)



Source: IBBI (Insolvency and Bankruptcy Board of India)

Discussion Paper on Introduction of Expected Credit Loss Framework

Presently the banks are required to make loan loss provisions based on an 'Incurred Loss' approach, which used to be the standard approach followed world over. However a need has been felt to modify the provisioning practices to incorporate a more forward looking approach based on the Expected Credit Loss (ECL) models rather than incurred loss models. To further enhance the resilience of the banking system, the Reserve Bank of India proposes to amend the prudential regulations and has brought out a detailed discussion paper on 16th January 2023, entitled 'Discussion Paper on Introduction of Expected Credit Loss Framework for Provisioning by Banks' .The discussion paper aims to lay down principles that would govern the proposed transition .The discussion paper interalia covers the features and aspects relating to Expected Credit Loss approach taking into account IFRS 9,a three stage classification of financial assets, determination of significant increase in credit risk, measurement of ECL, the disclosures required etc. Based on the feedback received from various stakeholders, the RBI is expected to issue detailed guidance keeping in view the principles discussed in the paper, that will be required to be considered by the individual banks while designing the credit Risk Models. Proper validation of the models will be required either in-house or through outsourced external party. The banks will need to gear up for proper assessment of ECL robust implementation of the RBI guidelines. This will entail the need for requisite skill development and capacity building for a smooth transition to the new mechanism.

CHAPTER - 22

PERFORMANCE AUDIT OF INFRA PROJECTS

PERFORMANCE AUDIT OF INFRA PROJECTS

Performance Audit – Introduction erformance audit is an independent assessment/ examination of an infrastructure project to find how far it is performed economically, efficiently and effectively and whether there is room for improvement.

The principle of economy means minimizing the costs of resources; the principle of efficiency means getting the most from the available resources; and the principle of effectiveness concerns meeting the objectives set and achieving the intended results.

Performance audit does not require any attestation or providing assurance to the stakeholders. Instead, it provides valuable insight of the performance of a project or an entity to its management for effective decision making. It helps managers to identify areas, activities, processes, products, services, etc. that requires improvement. The implications of undertaking performance analyses and formulating strategies include many parameters where the cost impact is significant one and hence the independent auditors' appraisal of the performance of the entity is an important input for its top management. Therefore, performance audit is considered more important than the routine financial audit.

Following methodologies are used in undertaking following project performance analysis. The outputs of these analysis are compared with the technical norms/standards, or with the global best, industry best, or the company best to find possible areas as well as the extent/ scope of improvements. – Project milestone analysis,

– Price-sensitivity analysis,

– Time & cost overrun analysis,

– Risk mapping analysis,

– Business process flow analysis,

– Operating cycle analysis,

– Capacity utilization analysis,

– Productivity efficiency analysis,

– Benchmarking analysis,

– Energy efficiency analysis,

– Operational performance & profitability analysis,

– Key-costs & contribution analysis, and – Sustainability analysis.

Performance Audit – Objectives - Early warning signals & remedy thereof:

Banks & other financial institutions must ensure that performance audit of each infrastructure project is conducted periodically by a team of independent professional experts to provide milestone & performance variables and actionable insights for strategic decision making. This would timely provide key areas where measurable steps are needed to arrest any possible fall back from the targets/ norms and slippage of the account into NPA category. Finally, this process would help the entities to improve profits and profitability; optimize resource allocation and utilization thereof; optimize the product and services portfolio; monitor performance of various areas; and know if the management is meeting its goals.

The objective is to provide the banks & financial institutions an objective assessment of the performance of the project across various spectrums. It is concerned with providing the Board with information that it "should know" to take suitable actions to improve business performance. This is done by team of independent professionals/experts that include persons with the industry knowledge, project management skills, and cost &management accountants.

There cannot be any set frequency of the performance audit. It is recommended that it should be commensurate with the nature, size and complexity of the infrastructure project. During the project implementation phase, it should be done on half-yearly or on annual basis if the project's implementation period is more than two years; else on quarterly basis. In the post-implementation phase, the performance audit must be conducted on bi-annual basis for very long life-cycle projects, say more than 25 years; else it must be conducted every year. This will enable identification of business risks faced by different stakeholders and evaluate the risk mitigation measures that are planned by the management.

Performance Audit – Characteristics

The prime objective of any performance audit should be to uncover the opportunities for improvement of performance and creation/enhancement of value of the business. This report is meant to be used by the management and banks/ financial institutions. The significant characteristics of an effective Performance Audit Report are as given below.

a) The report should basically lay more thrust on the cost management and efficiency/ productivity aspects of the business and should effectively bring out comments on how the business performance could be improved by elevating the outcome performance.

b) When commenting on or analysing the output/outcome performance, the performance audit team should assess the impact of changes on the profitability of products, customers and market segments.

c) The drivers that are found in the fulcrum of cause-and-effect relationship in the performance of any project, function, process, product, customer, or market, etc. are the ones which form the first level of Key Performance Indicators (KPIs) that are easily understood and actionable for the operational executives. The performance audit team while evaluating the KPIs can also look at the efficacy of these drivers. This evaluation will also enable the operational executives to relate what is being done and what needs to be done.

d) It would be necessary to analyse the use of various resources to boost economy, efficiency and effectiveness of the operations. Economy indicates incurring of the least possible cost for acquiring and/or utilizing the resources, without compromising the quality; efficiency denotes maximization of the output-input ratio; and effectiveness means achieving the desired goals. The Performance Audit Report should cover, at the minimum, all the three aspects of management.

e) For being a valuable document, performance audit report should portray analysis of a range of performance measures. While selecting these measures, care should be taken to include those having a material impact on the past or future performance of the entity or the project. These measures could change over period of time and may require to be reconsidered for inclusion to or exclusion from the performance audit report.

f) The following criteria may help the performance audit team to select and include the various performance measurement criteria in their report:

- Effect on profitability
- Effect on legal adherence
- Effect on resource utilisation
- Effect on availability of KMP's
- Effect on liquidity
- Tax holidays
- Effect on risks
- Effect on quality
- Effect on competitiveness
- Effect on responsiveness to the market etc.

g) The performance audit report should include non-financial performance indicators in addition to the use of traditional ratio analysis. The non-financial measures provide useful information about the probable future of performance of the company, e.g. a consistently good customer satisfaction index would guarantee a certain growth in business.

h) An ideal performance audit report should possess the following characteristics:

- Objectivity
- Capability of being predictive value
- Comprehensiveness
- No information overload
- Coverage of strategic thrust
- Trend measures and current status
- Timeliness
- Segmented and enterprise-wide coverage

Performance Audit – Benefits

Performance or operational audit may benefit the banks, financial institutions and the entity's management through:

- Analysis of performance data, performance measures and self-assessment systems to identify the right measures to guide continuous improvement.
- Identification of best practices &improvement opportunities and the gaps that may exist between current operations and those practices.
- Providing information to improve operations and facilitate decision making with responsibility to oversee or initiate corrective actions.
- Identification of value-adding and non-value adding activities; profit-making, loss-making, or less profitable activities; areas of cost savings and/or services to be reduced or eliminated.
- Analysis of gaps or overlaps in functions or services and recommendations for how to correct them.
- Analysis of the roles and functions of the entity and recommendations to change or eliminate unnecessary roles or functions.

Through periodic performance or operational auditing, we can identify the processes and procedures

that are no longer working. Performance audits can help improve those areas that are working but could be more efficient.

Performance Measurement & Assessment Tools

The performance measurement and assessment involve collection of relevant information, analysing the same by establishing inter-relations between them, interpreting the results and then arriving at meaningful conclusions. Various managerial costing and management accounting tools could be used to analyse the performance with different purposes. Few such tools are:

- Absorption Costing
- Activity Based Costing (ABC)
- Balance Scorecard
- Benchmarking
- Budgetary Control
- Business Metrics Development
- Buy vs. lease analysis
- Cost-volume-profit analysis
- Customer Profitability Analysis
- Environmental costing
- Job Order or Batch Costing
- Kaizen Costing
- Lean Accounting
- Life Cycle Costing
- Marginal Costing (GPK)
- Market, Geographic or Business Segment Analysis
- Mass Customization
- Parametric Cost Analysis
- Performance Based Costing
- Price-led Design Costing or Design-to-Cost
- Process Costing

- Product Profitability Analysis
- Quality Costing
- Resource Consumption Accounting
- Responsibility Accounting
- Sales management scorecards
- Standard costing
- Strategic cost control and analysis
- Target Costing
- Theory of Constrains
- Throughput Costing

CHAPTER - 23

INFRASTRUCTURE THRUST BY GOVERNMENT OF INDIA

INFRASTRUCTURE THRUST BY GOVERNMENT OF INDIA

Infrastructure development critical for diversified rapid growth

Infrastructure is the back bone for any economy. The extent and quality of infrastructure determines the ability of the country to utilize its comparative advantage and enables cost competitiveness. Given the strong backward and forward linkages and the positive externalities that infrastructure generates, it can be a vehicle for social and economic transformation. Public Private Partnership in infrastructure has been an important source of investment in the sector. As per the database of the World Bank on private participation in infrastructure, India is ranked second among developing countries both by the number of PPP Projects as well as the associated investments. Much of the Indian success in PPPs is attributed to development of robust institutional structure, financial support, and use of standardized documents, both process documents like Model Request for Qualification and Model Request for Proposal as well as substantive documents like the Model Concession Agreements across infrastructure sectors.

Infrastructure, being a melange of numerous sectors, its multiplier effects in the economy cannot be realised if it operates in silos. Thus, in 2019, Government of India adopted a forward-looking programmatic approach towards infrastructure. The National Infrastructure Pipeline was born with a projected investment of around □111 lakh crore for FY20-25 for developing a comprehensive view of infrastructure development in the country, monitoring its progress at the highest levels in the government for timely completion, and enabling a pipeline view for investors for them to plan infrastructure investments. The funding for infrastructure comes from a variety of sources, from government to private sector to multilateral. However, given the quantum of funding involved, a creative financing option such as asset monetisation was also envisaged through the 5 lakh crore National Monetisation Pipeline. Apart from generating critical financial resources, private participation in running risk-free brownfield assets will also help in ushering in operational efficiencies and better management of public assets. The pragmatic approach to infrastructure is complemented by structural and financial reforms such as infrastructure financing options of InvITs and REITs, creation of Dedicated Financing Institution (NaBFID), recapitalisation of other sectoral DFIs, push to PPP ecosystem through Model Concession Agreements by line ministries and enabling social infrastructure development through the revamped Viability Gap Funding scheme. To bring in further convergence with comprehensive planning across centre and states, PM Gati Shakti has sectoral complementarity of logistics facilitation through the National Logistics Policy launched in Sept 2022. All of this is expected to tighten the nuts and bolts for the arduous infrastructure journey that our country has

undertaken together by the Physical and Digital Infrastructure: This story has seen many successes. While roads, railways, and waterways have seen unprecedented expansion in the last eight years, ports and airports have been substantially upgraded. This has also helped the country move from unimodal to multimodal transportation, providing a window of opportunity to the private sector to invest and reinvest in these assets, which has already been facilitated by the policy of asset monetisation. Extending infrastructural facilities is only part of the story; modernisation is the other important principle that has been attempted with verve and achieved with commendable speed.

The NIP program encompasses all major infra sub sector and the pipeline has been prepaid after in-depth analysis and critical examination of opportunities and challenges involved. The program is in fact going to be a game-changer for the Indian economy. The financing aspects have been clearly deliberated upon in the report, with well-defined road for each stockholder. This has been supplemented by another program of national monetisation plan.

Creating new and upgrading existing infrastructure will be key to raising India's competitiveness and achieving the target of US $5 trillion economy. It will specially be critical for the success of the 'Make in India' programme as manufacturing competitiveness critically depends on infrastructure. This can help kick in a virtuous cycle of higher investments, growth and employment generation in the economy.

Delivering the full spectrum of required infrastructure will ensure economic growth, ease of living as well as improved competitiveness across sectors.

The NIP and NMP together are helping to create an ecosystem and sectorial balance encouraging there by setting up new projects under the PPP model. All stakeholders need to pitch in to create a success story by making the best use of framework created by the government.

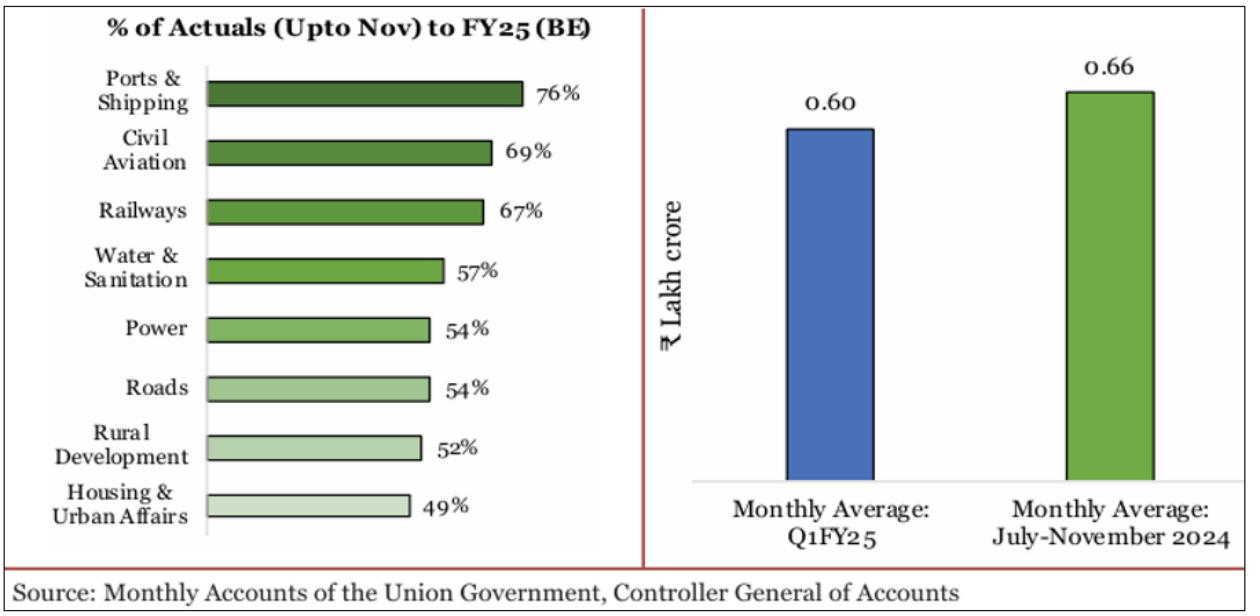
Vision & Mission of NIP (National Infrastructure Pipeline)

NIP's vision - Infrastructure services that raise the quality of life and ease of living in India to global standards. Its Mission says,

- Develop a five-year plan of infrastructure development for India in key sectors
- Facilitate design, delivery and maintenance of public infrastructure as per global standards
- Facilitate generic and sectoral reforms in regulation and administration of public infrastructure services as per global best practices
- Push India up in global rankings in public infrastructure

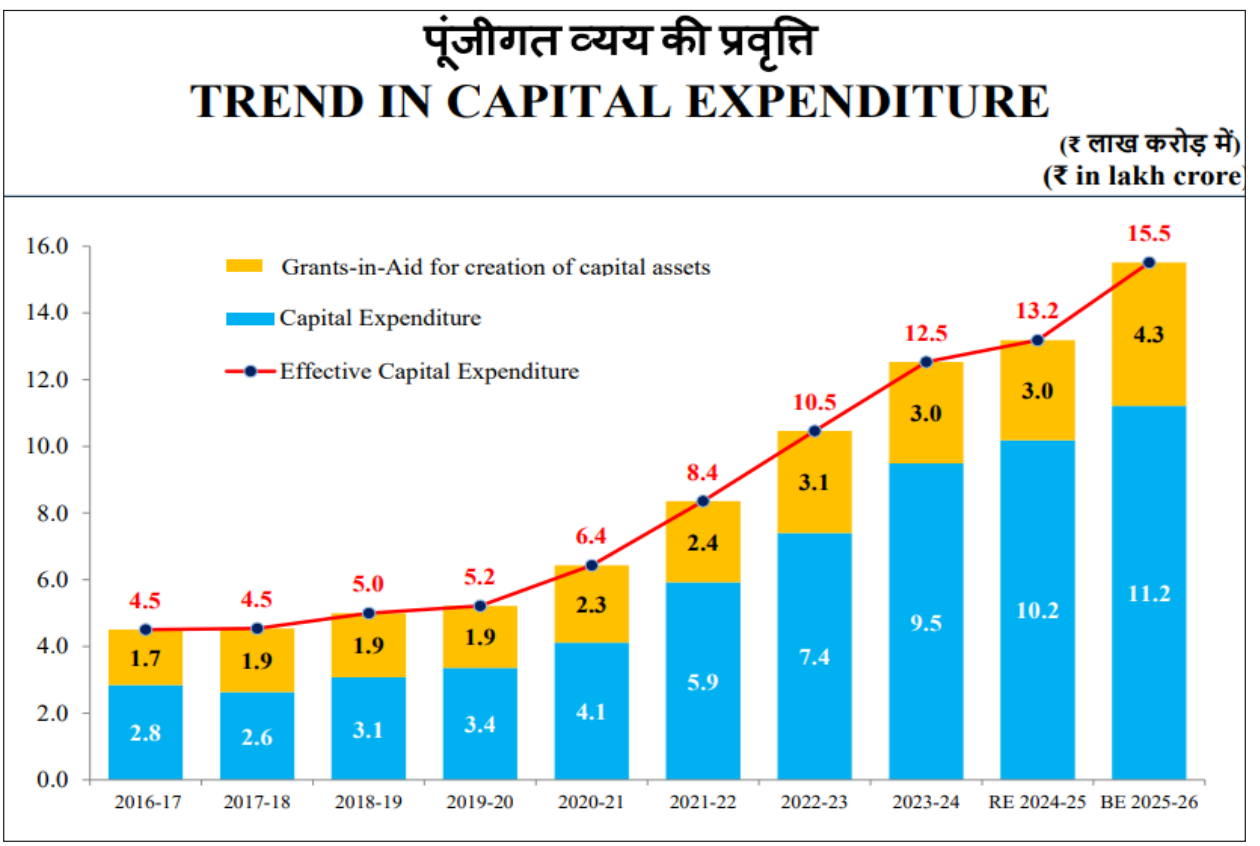
It is estimated that India would need to spend $4.51 trillion on infrastructure by 2030 to realise the vision of a $5 trillion economy by 2025, and to continue on an escalated trajectory until 2030. The endeavour of the NIP would be to make this happen in an efficient manner.

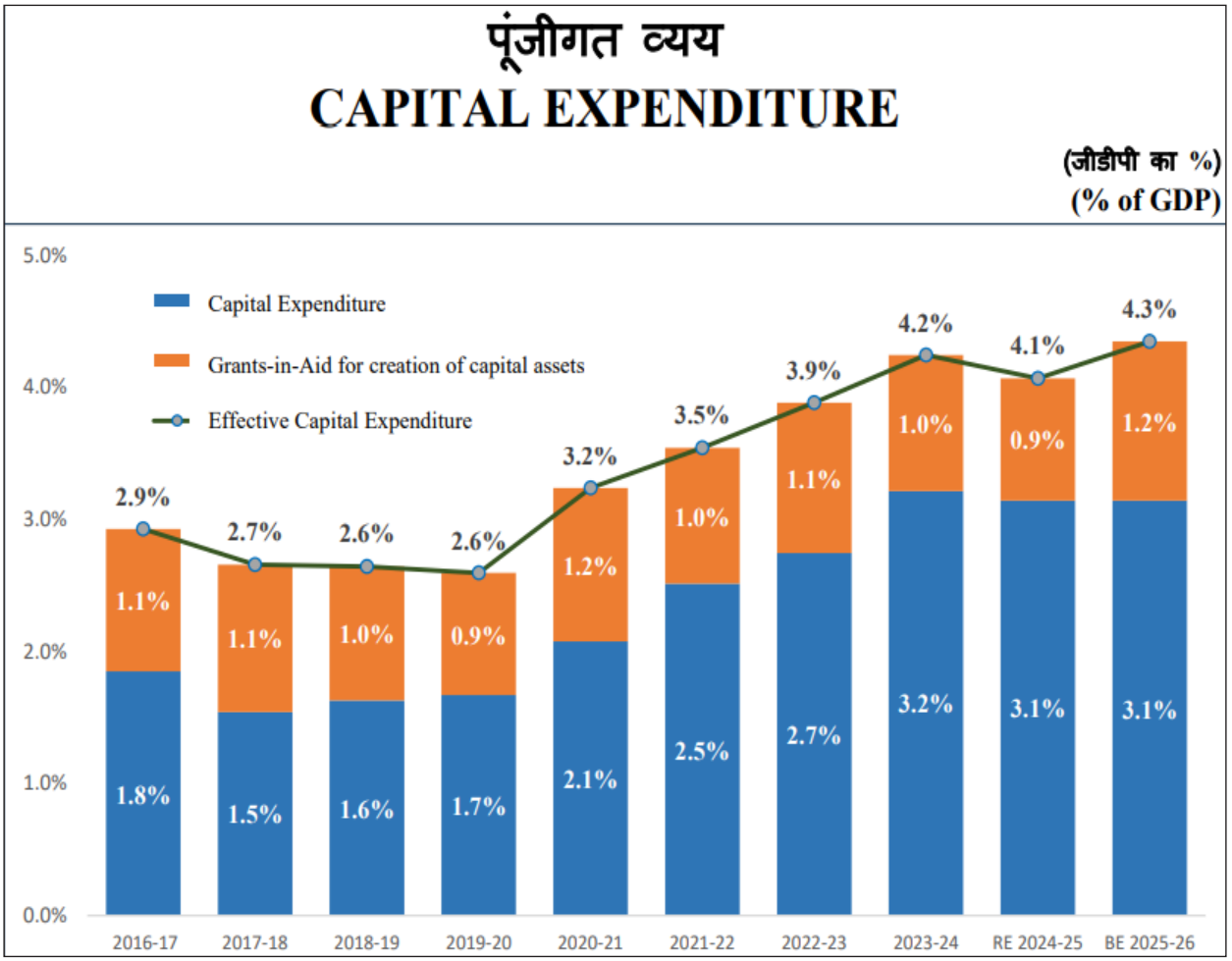
Progress in capital expenditure in infrastructure sectors	Overall Capex of the Union Government



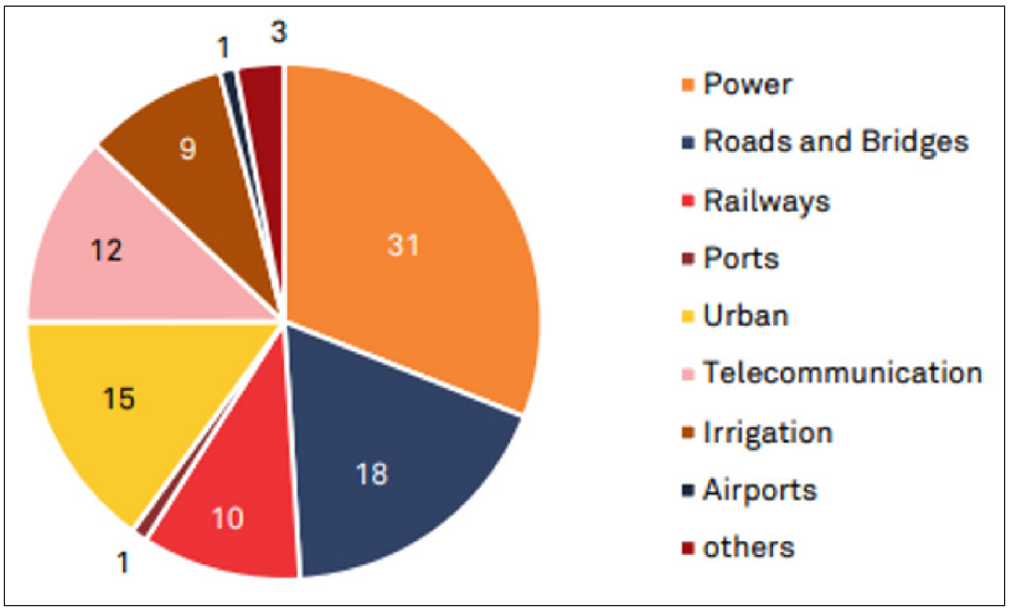
Source: Economic Survey 2024-25

The Proposed expenditure on capital is projected at 11.21 Lakh crores as against 11.11 lakh crores in the previous year (summary of budget at a glance as per annexure).





Sector wise distribution of NIP project



Sources of funding for NIP projects

Rs Crore	Assumptions To Projections	Share of Nip Financed Per cent
Centre's Budget	Centre' budgetary outlay on capital investment is expected to be around 1.25 per cent GDP	18-20
State's budget	State's budgetary outlay on capital investment is expected to be around 1.7 per cent of GDP	24-26
Internal Accruals-PSUs	Projected to suffice for the funding requirement of NIP	1-3
Banks	Expected to grow at an average rate of 8 per cent	8-10
Infra NBFCs (PF, REC, IRFC, IREDA, IIFCL and private sector NBFC)	Expected to grow at an average rate of 12 per cent for public sector NBFCs and 15 per cent for private sector NBFCs	15-17
Bond Markets	Expected to grow to an average rate 8 per cent	6-8
Equality	Expected to grow at an average rate of 15 percent due to NIIF stepping up pace of investments	2-4
Multilaterals/bilateral	Expected to constitution half of the external aid flows	1-3
Others		3-5
Total		83-85

NIP Benefits:

Economy

Well-planned NIP will enable more infrastructure projects, power business, create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive.

Government

Well-developed infrastructure enhances level of economic activity, creates additional fiscal space by improving revenue base of the government, and ensures quality of expenditure focused on productive areas.

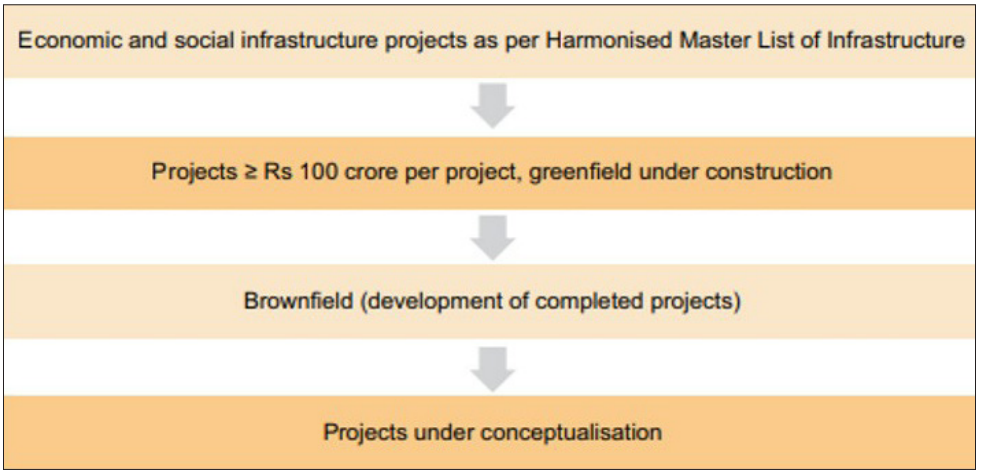
Developers

Provides better prepared projects, reduces aggressive bids/failure in project delivery, ensures enhanced access to sources of finance as a result of increased investor confidence.

Banks/financial institutions/investors

Builds investor confidence as identified projects are better prepared, exposures less likely to suffer stress given active project monitoring by competent authority, thereby ensuring better returns.

Constituents of NIP



Building infrastructure – physical, digital and social - has been a central focus area for the Government in the last five years. This has had various dimensions – increase in public spending on infrastructure, creation of institutions to de-bottleneck approvals and execution and innovative modes of resource mobilisation. In FY25, capital expenditure has gathered momentum post elections. The government has recognised the importance of continuing the pace of infrastructure building and the increasing need to promote sustainable construction practices. It is also clear that public capital alone cannot meet the demands of upgrading the country's infrastructure commensurate with the requirements of Viksit Bharat@2047. We need to ensure increasing private participation in infrastructure by improving their capacity to conceptualise projects and their confidence in risk and revenue-sharing mechanisms, contract management, conflict resolution and project closure. The efforts of the Union Government would need to be supplemented with wholehearted acceptance of the need for public-private partnerships in infrastructure across the country. Equally important, the private sector must reciprocate, too.

India's development aspirations require a substantial investment in infrastructure over the next decade. While estimates of the required spending differ in scale1,2,3, there is general agreement that current infrastructure spending needs to be increased to achieve these objectives. Keeping this in view, the government has laid a special focus on infrastructure in the last five years. Reflecting this intent, the capital expenditure by the union government on major infrastructure sectors4 has been increased at a trend rate of 38.8 per cent from FY20 to FY24.

The government has also instituted many complementary mechanisms to expedite planning, clearances and execution of projects. The National Infrastructure Pipeline (NIP) was launched with a forward-looking approach, targeting a projected infrastructure investment of around ₹111 lakh crore from FY20 to FY25. The NIP serves as a centralised platform for hosting projects of states, union territories and central ministries to facilitate their monitoring and review. Currently, it encompasses over 9,766 projects and schemes across 37 sub-sectors. These projects are tracked and reviewed through the integrated India Investment Grid (NIP-Project Monitoring Group) portal.

The government is bringing in innovative frameworks for attracting investment in infrastructure projects. To boost private investment in brownfield assets, the National Monetisation Pipeline (NMP) was launched in August 2021. This initiative laid down the framework for monetisation policy and identified a pipeline of potential core assets with an indicative value of ₹6.0 lakh crore for the period FY22 to FY255. For the period FY22 to FY24, against the target of ₹4.30 lakh crore, transactions of ₹3.86 lakh crore in terms of accruals or private investments were completed under the core asset monetisation. Sector-wise, roads, power, coal, and mines led the performance, supported by market-tested models and reforms. For FY25, the aggregate monetisation target is set at ₹1.91 lakh crore.

Source: Economic Survey 2024-25

Infrastructure Sector Performance Highlights Growth achieved during the period April – December 2024 and during Last Three Years (April - December)

INFRASTRUCTURE SECTOR PERFORMANCE

HIGHLIGHTS

Growth Achieved during the period April - December 2024 and during last Three Years (April-December)

Sl. No.	Sector	Achievement (as per units applicable)					Percent change in achievement over corresponding period of the previous year			
		April - December 2020	April - December 2021	April - December 2022	April - December 2023	April - December 2024	April - December 2021	April - December 2022	April - December 2023	April - December 2024
1	2	5	6	7	7	7	9	10	11	11
1	**Power (BU)**	1017.833	1113.712	1223.619	1308.968	1379.93	9.42	9.87	6.98	5.42
2	**Coal (MT) excluding Lignite**	471.840	522.973	608.829	684.476	726.312	10.84	16.42	12.42	6.11
3	**Steel (Finished Steel) (MT)**	67.351	83.100	89.555	102.667	107.191	23.38	7.77	14.64	4.41
4	**Cement (MT)**	202.24	255.99	283.61	309.84	321.323	26.57	10.79	9.25	3.71
5	**Fertilizers (MT) (accounts for Nitrogen and Phosphate production only)**	14.138	14.055	15.407	16.776	16.7564	-0.59	9.62	8.89	-0.12
6	**Petroleum :-**									
	i) Crude Oil (MT)	22.983	22.380	22.078	22.018	21.561	-2.62	-1.35	-0.27	-2.08
	ii) Crude Oil Processed (MT)	160.362	177.215	188.572	194.599	199.125	10.51	6.41	3.20	2.33
	iii) Natural Gas (MCM)	21129	25674	25868	27214	27302.7	21.51	0.76	5.20	0.33
7	**Roads #**									
	Widening & Strengthening of Highways									
	i) NHAI (KM)	2183.00	2025	2530.00	2984.00	3090	-7.24	24.94	17.94	3.55
	ii) State PWD & BRO (KM)	4661.99	2804.99	2432.00	2697.00	2442.89	-39.83	-13.30	10.90	-9.42
8	**Railway Revenue Earning**									
	Freight Traffic (MT)	870.45	1029.97	1109.41	1154.65	1178.52	18.33	7.71	4.08	2.07
9	**Shipping & Ports**									
	i) Cargo Handled at Major Ports (MT)	478.008	529.160	576.701	605.505	621.76	10.70	8.98	4.99	2.68
	ii) Coal handled at Major Ports(MT)	92.220	108.921	140.684	143.525	138.113	18.11	29.16	2.02	-3.77
10	**Civil Aviation :-**									
	i) Export Cargo handled (Tonnes)	600146	813672	764483	839799	985851	35.58	-6.05	9.85	17.39
	ii) Import Cargo handled (Tonnes)	459578	676702	642599	633790	758546	47.24	-5.04	-1.37	19.68
	iii) Passengers handled at International Terminals (Lakh)	55.893	138.834	410.545	510.470	568.771	148.39	195.71	24.34	11.42
	iv) Passengers handled at Domestic Terminal (Lakh)	592.409	1177.342	1956.573	2282.340	2467.552	98.74	66.19	16.65	8.12
11	**Telecommunications (July'23) :-**									
	i) Addition in Switching capacity (Fixed+WLL=GSM) ('000 lines)	$	$	$	$	$	-	-	-	-
	ii) New net Fixed/wired Telephone connections ('000 No.)	942.310	3293.549	2261.075	2297.978	5342.889	-	-	1.63	132.50
	iii) New net Cell phone (WLL+ GSM) connections ('000 No.)	-2512.834	-13144.716	993.735	10245.516	-16360.12	423.10	-	931.01	-

BU: Billion Units MCM: Milloion Cubic Meter ** *Telecom data is up to September 2024*

MT: Millions Tonnes $: Switching capacity is not provided by the service providers. *KM : Kilometre*

 # : Includes Widening to four/six/eight lanes & two lanes and Strengthening of existing weak pavement only.

Budget Initiatives -2025-26

Investing in the Economy Public Private Partnership in Infrastructure

Each infrastructure-related ministry will come up with a 3-year pipeline of projects that can be implemented in PPP mode. States will also be encouraged to do so and can seek support from the IIPDF (India Infrastructure Project Development Fund) scheme to prepare PPP proposals.

Support to States for Infrastructure

An outlay of ₹1.5 lakh crore is proposed for the 50-year interest free loans to states for capital expenditure and incentives for reforms.

Asset Monetization Plan 2025-30

Building on the success of the first Asset Monetization Plan announced in 2021, the second Plan for 2025-30 will be launched to plough back capital of ₹10 lakh crore in new projects. Regulatory and fiscal measures will be fine-tuned to support the Plan.

बजट का सार Budget at a Glance

(In ₹ crore)

		2023-2024 वास्तविक Actuals	2024-2025 बजट अनुमान Budget Estimates	2024-2025 संशोधित अनुमान Revised Estimates	2025-2026 बजट अनुमान Budget Estimates
1. राजस्व प्राप्तियां	1. Revenue Receipts	2729036	3129200	3087960	3420409
2. कर राजस्व (केंद्र को निवल)	2. Tax Revenue (Net to Centre) [1]	2327251	2583499	2556960	2837409
3. कर भिन्न राजस्व	3. Non-Tax Revenue	401785	545701	531000	583000
4. पूंजी प्राप्तियां	4. Capital Receipts	1714411	1691312	1628527	1644936
5. ऋणों की वसूली	5. Recovery of Loans	26646	28000	26000	29000
6. अन्य प्राप्तियां	6. Other Receipts	33122	50000	33000	47000
7. उधार और अन्य देयताएं	7. Borrowings and Other Liabilities [2]	1654643	1613312	1569527	1568936
8. कुल प्राप्तियां (1+4)	8. Total Receipts (1+4)	4443447	4820512	4716487	5065345
9. कुल व्यय (10+13)	9. Total Expenditure (10+13)	4443447	4820512	4716487	5065345
10. राजस्व खाते पर	10. On Revenue Account	3494252	3709401	3698058	3944255
जिसमें से	of which				
11. ब्याज भुगतान	11. Interest Payments	1063872	1162940	1137940	1276338
12. पूंजी खाते के सृजन हेतु सहायता अनुदान	12. Grants in Aid for creation of Capital Assets	303916	390779	299891	427192
13. पूंजी खाते पर	13. On Capital Account	949195	1111111	1018429	1121090
14. प्रभावी पूंजी व्यय (12+13)	14. Effective Capital Expenditure (12+13)	1253111	1501889	1318320	1548282
15. राजस्व घाटा (10-1)	15. Revenue Deficit (10-1)	765216 (2.6)	580201 (1.8)	610098 (1.9)	523846 (1.5)
16. प्रभावी राजस्व घाटा (15-12)	16. Effective Revenue Deficit (15-12)	461300 (1.6)	189423 (0.6)	310207 (1.0)	96654 (0.3)
17. राजकोषीय घाटा [9-(1+5+6)]	17. Fiscal Deficit [9-(1+5+6)]	1654643 (5.6)	1613312 (4.9)	1569527 (4.8)	1568936 (4.4)
18. प्राथमिक घाटा (17-11)	18. Primary Deficit (17-11)	590771 (2.0)	450372 (1.4)	431587 (1.3)	292598 (0.8)

Capital Expenditure of various Ministries as per BE 2024-25 & 2025-26

(Amount in ₹/Crore)

Capital Expenditure	2024-25	2025-26
MoHUA	28627	37623
Defence	182241	192388
Space	5568	6103
Railways	252000	252000
DPIIT	1401	5692
Jal Shakti	402	558
MHA	17626	22411
Fertilizer	4	15
MoRTH	272241	272241
Posts	1263	958
Power	518	658
Coal	2	2
Atomic	13860	11978
Mines	45	79
MNRE	17	7
Petroleum	15408	6626
Steel	1	2998
Others	319884	308753
Total	1111111	1121090

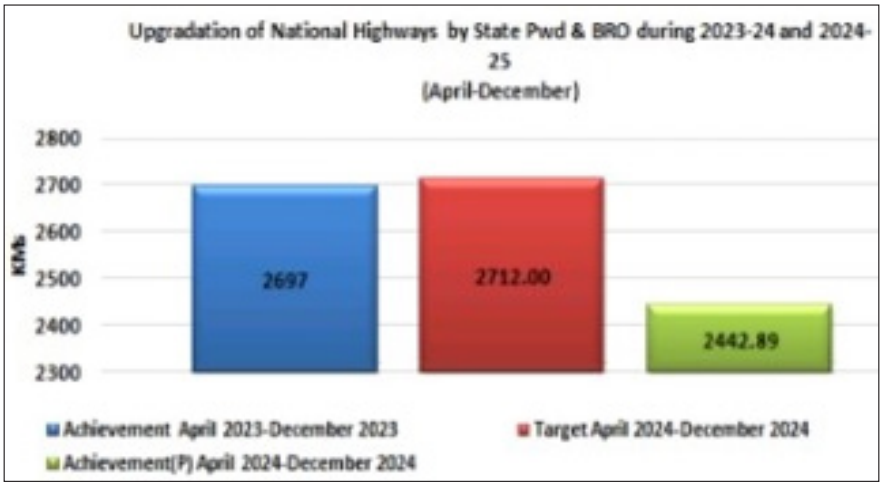
Road transport

National Highways Authority of India (NHAI)

During December 2024, National Highways Authority of India (NHAI) upgraded (Widening to two/four/six/right lanes and strengthening of existing weak pavement) 665 kms of highways which was 50.79 per cent higher than the target for the month and 15.41 per cent higher than the corresponding month of the previous year.

During April 2024-December 2024, NHAI has widened to two/four/six/eight lanes and strengthened 3090 kms of existing weak pavement of National Highways against target of 3217 kms and also, recording a positive growth of 3.55 per cent over the achievement of 2984 kms during April 2023-December 2023.

State PWD and Border Road Organisation (BRO)



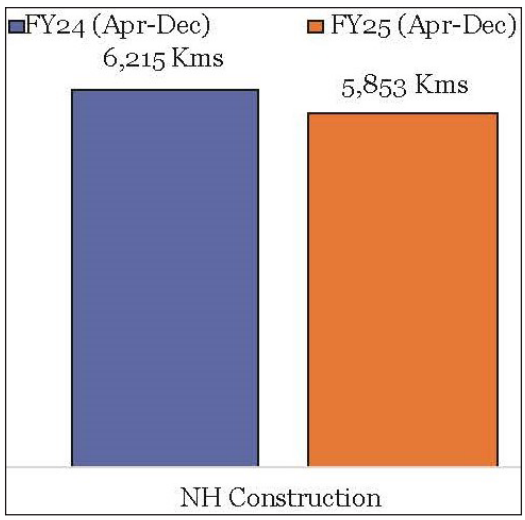
During December 2024, the State PWD and Border Road Organisation (BRO) widened 293.43 kms of two/four/six/eight lanes and strengthened 46.27 km of existing weak pavement.

During April 2024- December 2024, the State PWD and Border Road Organisation (BRO) widened 451.24 kms to four/six/eight lanes, 1745.84 Kms to two lanes and strengthened 245.81 Kms of existing weak pavements. In addition, riding quality of 276.09 Kms was also improved.

India has a total road network of 63.4 lakh km, including National highway (NH) network of 146,195 km. NH network forms the arterial backbone of road transport network as even though it comprises only 2 per cent of total road network yet it carries about 40 per cent of the overall road freight traffic.

The National Industrial Corridor Development Programme aims to create advanced industrial cities in India, positioning them as major manufacturing and investment hubs. In Phase 1, a total of 383 plots, covering 3,788 acres, have been allocated for industrial use in sectors such as electronics and semiconductors, renewables, automobiles and auto-ancillaries, white goods, pharmaceuticals, textiles, and apparel

National highway construction



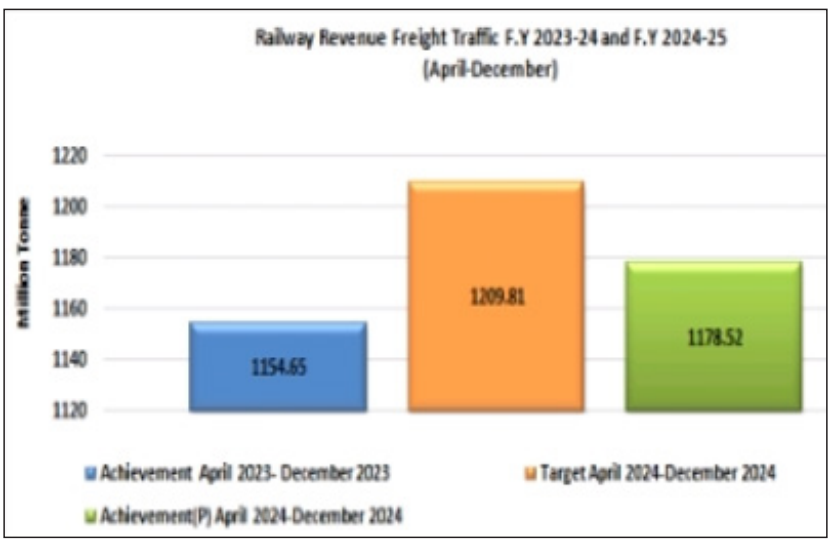
Source: Ministry of Road Transport & Highways

Key Initiatives for logistics efficiency in road connectivity

To improve road connectivity, key initiatives undertaken include advanced traffic management on highways, establishment of logistics parks, sustainable vehicle scrapping, and ongoing ropeway projects.

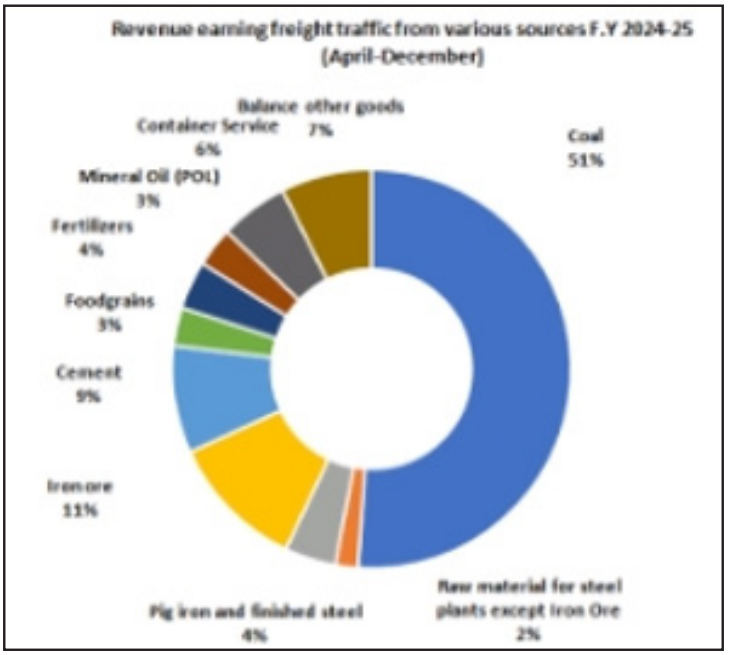
- **Advanced traffic management system:** Installed about 4,000 km of national highways for efficient traffic management and emergency response.
- **Multi-Modal Logistics Parks (MMLP):** Till December 2024, Six MMLPs in Chennai, Indore, Nagpur, Jalna, Jogighopa and Bangalore have been awarded.
- **National highway maintenance policy:** Contractual maintenance for the entire NH network is managed through Performance-Based Maintenance Contracts (PBMC) of 5-7 years or Short-Term Maintenance Contracts (STMC) of 1-2 years. Additionally, long-term maintenance contracts of around 20 years are undertaken through the Toll Operate and Transfer mode and Investment Trust.
- **Vehicle scrapping policy:** Incentive/disincentive-based policy with 82 Registered Vehicle Scrapping Facilities (RVSFs) operational across 19 States/UTs, having scrapped about 1.62 lakh vehicles. An additional 65 RVSFs are under construction, which will add one more State.
- **Ropeways projects development:** Fifteen projects are in progress. Projects at Varanasi, Dhosi Hill, Bijli Mahadev, and Ujjain have been awarded, and ten more are under bidding.

Railways Goods Traffic



The Revenue earning freight traffic carried by Indian Railways during December 2024 was 141.43 Million Tonnes (MT), which was 1.30 per cent lower than the target for the month but 1.75 per cent higher than the corresponding month of the previous year.

During April 2024-December 2024, the freight traffic carried by the Railways was 1178.52 MT. This was 2.59 per cent lower than the target but 2.07 per cent higher than the corresponding period of the previous year.



During April 2024-December 2024, loading of all commodities le. Coal, Mineral Oil (POL), Container Service and Balance other Goods recorded positive growth as compared to the corresponding period of the last year. The Revenue earning freight traffic from various commodities is shown in the alongside chart.

Loading of coal by Coal India Ltd. (CIL) during December 2024 was 327 Rakes per day, which was 12.80 per cent lower than the target of 375 rakes per day for the month and 6.51 per cent higher than the loading of 307 Rakes per day during December 2023.

Passenger Traffic

Railways carried 630.01 Million passengers during the month of December 2024 as compared to 579.10 million passengers in December 2023; an increase of 8.79 per cent.

Track kilometres added

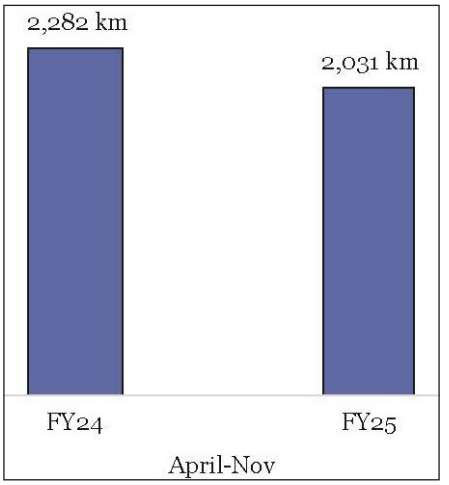
Total 162 Track Kilometers (TKM) of Broad-Gauge track (Gauge/Doubling/New Line) has been added during December 2024.

Electronic Interlocking system

Total 28 stations were provided with Electronic Interlocking System during December 2024.

During FY25 so far, the progress in the expansion of the railway network stayed at levels comparable to the previous year, while the addition of rolling stock increased considerably. Between April and October 2024, 17 new pairs of Vande Bharat trains were introduced to the network, and 228 coaches were produced.

Commissioning of Railway Network



- **Public Private Partnership (PPP):** 17 projects have been completed (₹16,434 crore) and 8 ongoing (₹16,614 crore) under the PPP model.

Major projects

- **Mumbai-Ahmedabad High-Speed Rail Project:** Sanctioned in December 2015, this 508 km project, supported by Japan, has a revised cost of ₹1.08 lakh crore. As of October 2024, it has achieved 47.17 per cent physical progress with an expenditure of ₹67,486 crore.
- **Dedicated Freight Corridors (DFCs):** As of November 2024, 2,741 km (96.4 per cent) of the planned 2,843 km DFC network has been commissioned. DFCs have transformed logistics in India by

Recent initiatives in the rail system

- **Gati shakti multi-modal Cargo Terminal (GCT):** 91 GCTs commissioned and 234 locations approved by October 31, 2024.
- **Net zero carbon emission:** Indian Railways targets 30 GW of renewable energy by 2029-30, with 375 MW of solar and 103 MW of wind commissioned as of October 2024.
- **Major economic corridors:** 434 projects valued at ₹11.17 lakh crore have been identified under three railway corridors, mapped on the PM GatiShakti portal.
- facilitating increased freight volumes without passenger train interference.

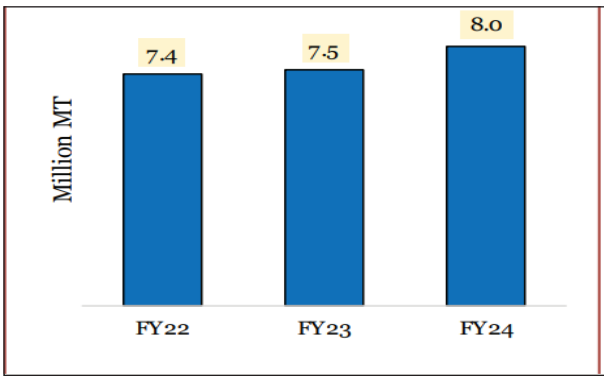
Railway projects are surveyed/ sanctioned/executed Zonal Railway wise and not State-wise as the Railway projects may span across State boundaries. Railway projects are sanctioned on the basis of remunerativeness, traffic projections, last mile connectivity, missing links and alternate routes, augmentation of congested/saturated lines, demands raised by State Governments, Central Ministries, Members of Parliament, other public representatives, Railway's own operational requirement, socio-economic considerations etc. depending upon throw forward of ongoing projects and overall availability of funds. As on 01.04.2024, across Indian Railways, 488 Railway infrastructure projects (187

New Line, 40 Gauge Conversion and 261 Doubling) of total length 44,488 Km, costing approx. ₹7.44 lakh crore are in planning/approval/construction stage, out of which, 12,045 Km length has been commissioned and an expenditure of approx. ₹2.92 lakh crore has been incurred up to March, 2024.

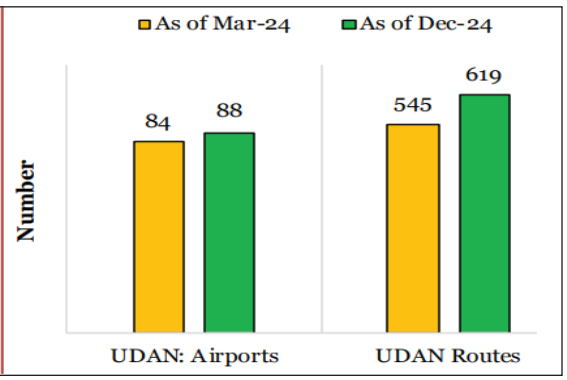
Civil aviation

Airport operators and developers, including the Airports Authority of India, are pursuing a capital expenditure plan exceeding ₹91,000 crores from FY20 to FY25. About 91 per cent of this has been achieved by November 2024. New airports and improved regional connectivity under the Ude Desh ka Aam Naagrik (UDAN) scheme have improved air connectivity considerably. Under the Regional Connectivity Scheme- UDAN), 619 routes connecting 88 airports, including two water aerodromes and 13 heliports, have been operationalised so far. The airport's cargo handling capacity has been gradually increasing, reaching 8.0 million MT in FY24.

Cargo handling capacity at airport



Operationalised airport and routes under RCS



Ports and shipping

Port capacity improved significantly in FY25, leading to improvements in operational efficiency and reduction in average container turnaround time. On waterway transport connectivity, the Sagarmala programme aims to harness India's coastline and waterways fully, improving logistics efficiency. Progress under the programme highlights the highest project completion rates in port modernisation and port-led industrialisation. This is followed by advancements in port connectivity, coastal community development, coastal shipping, and inland water transport.

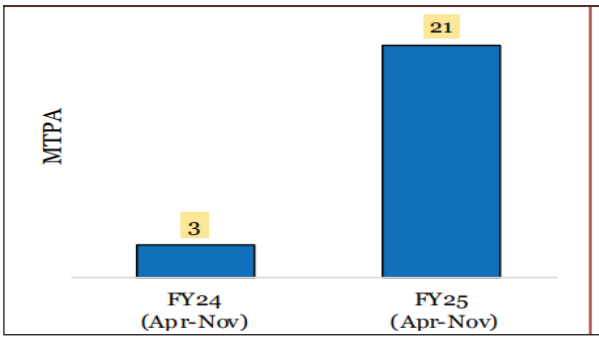
As per the budget 2025-26

The Shipbuilding Financial Assistance Policy will be revamped to address cost disadvantages. This will also include Credit Notes for shipbreaking in Indian yards to promote the circular economy.

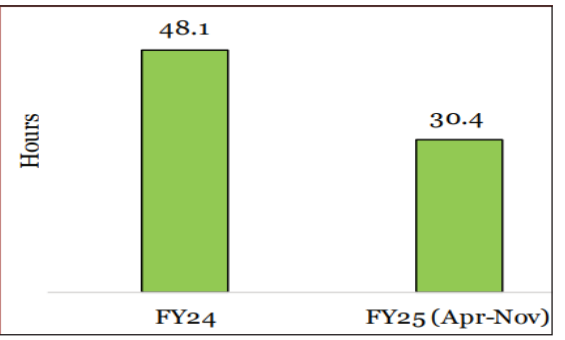
Large ships above a specified size will be included in the infrastructure harmonized master list (HML).

Shipbuilding Clusters will be facilitated to increase the range, categories and capacity of ships. This will include additional infrastructure facilities, skilling and technology to develop the entire ecosystem.

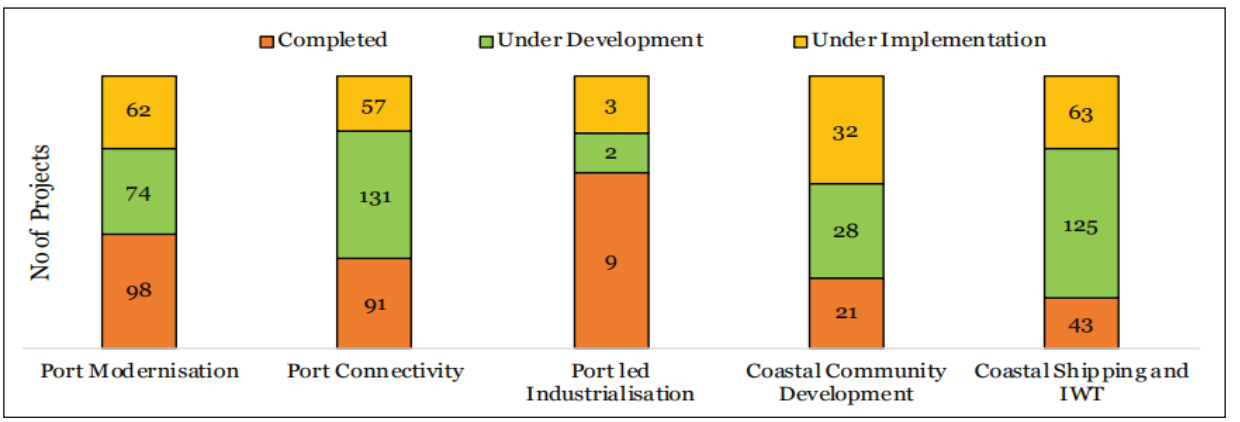
Increased port capacity addition



Reduction in average container turnaround time in major ports



Progress in the Sagarmala programme (As on Nov 2024)



TELECOM SECTOR:-

The Indian Telecom Sector has played a crucial role in driving economic growth by enhancing connectivity and transforming social interactions. India has emerged as the world's second-largest telecommunications market, witnessing significant expansion over the past decade. The Telecom Regulatory Authority of India (TRAI) has been instrumental in shaping the sector's regulatory framework to sustain this progress.

TRAI undertook several key regulatory and policy initiatives to address industry challenges and promote growth. These included recommendations on the auction of 5G spectrum, a regulatory framework for the data economy, the use of street furniture for small cell deployment, and a licensing framework for Satellite Earth Station Gateways (SESG). Additionally, TRAI focused on improving telecom infrastructure in remote areas such as Himachal Pradesh, allocating spectrum for the National Capital Region Transport Corporation (NCRTC), and introducing a rating system for digital connectivity in buildings and areas.

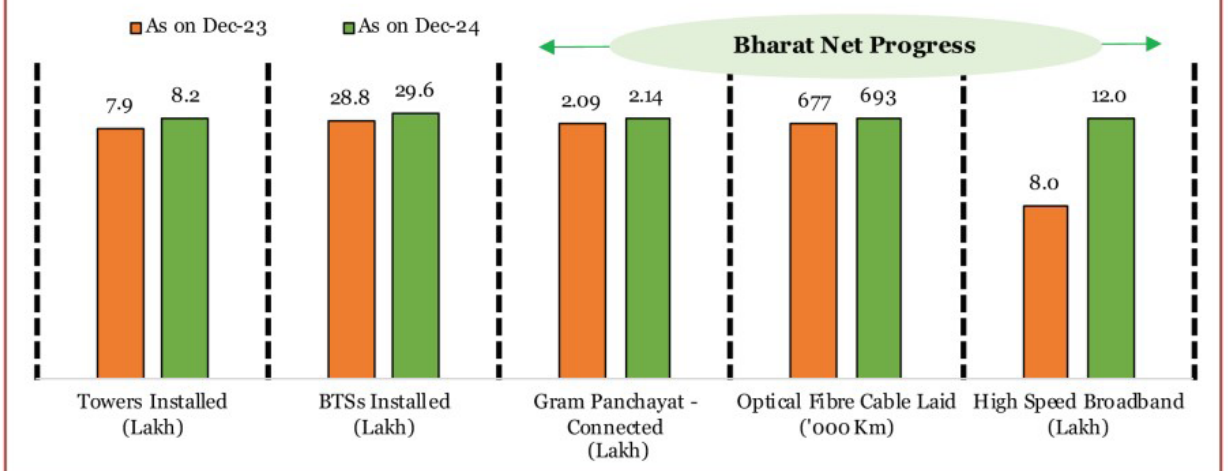
Overall, India's telecom sector continues to witness steady growth, supported by proactive regulatory measures and advancements in next-generation technologies like 5G and the Metaverse. These efforts ensure a robust connectivity infrastructure, fostering economic development and technological innovation.

Digital connectivity has made major advancements in digital inclusion, technological innovation, and regulatory reforms this fiscal year, all in line with the government's vision for a Digital India.

The rollout of 5G services, along with the introduction of new policies aimed at enhancing telecommunications infrastructure and user experience, has played a crucial role in digital connectivity. By October 31, 2024, 5G services were launched in all states and union territories. Currently, 5G services are available in 779 out of 783 districts10. Over 4.6 lakh 5G Base Transceiver Stations (BTSs) have been installed nationwide.

Progress in the telecommunication infrastructure

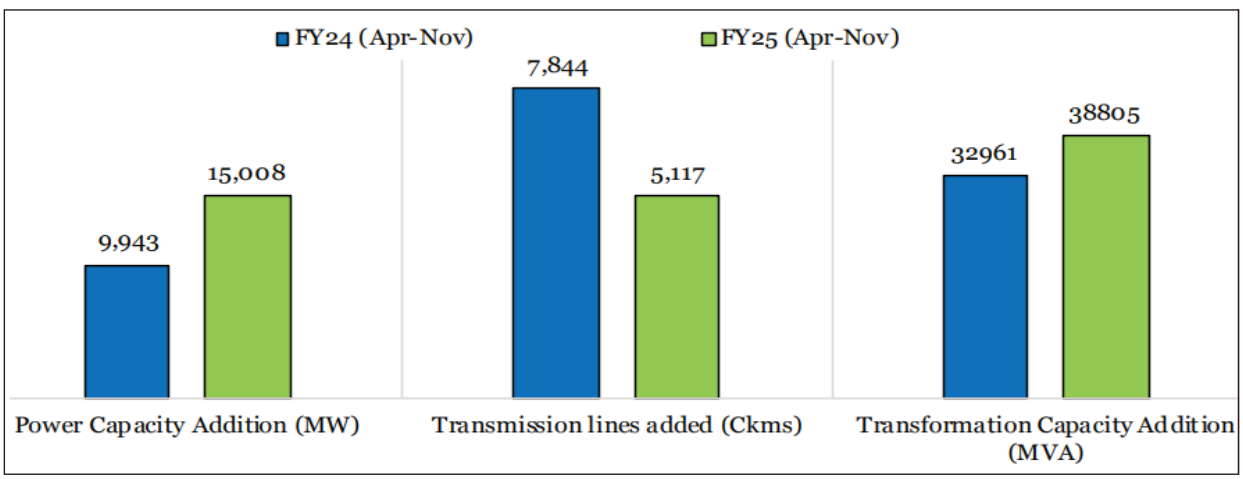
Chart VI.15: Progress in telecommunication infrastructure



Power Sector

The power sector network continues to expand, with installed capacity rising by 7.2 per cent year-on-year to 456.7 GW as of November 2024. The addition of transformation capacity also gained momentum this year. However, the addition of transmission lines was affected by the heavy monsoon conditions that hampered work.

Capacity addition in the power sector



Role of Specialized institutions

IIFCL

Has supported India's infrastructure development over the past 18 years. As a long-term financing institution, it is amongst the most diversified public sector infrastructure lenders in terms of eligible infrastructure sub-sectors and product offerings. It is mandated to finance green-field and brown-field projects, covering direct lending, takeout finance, refinance and credit enhancement across all infrastructure sub sectors as notified by the government in the Harmonised Master List of Infrastructure Subsectors.15 As of September 2024, IIFCL had approved co-financing for over 780 projects with a total outlay of over ₹13.9 lakh crore. This includes more than 500 public private partnership (PPP) projects, representing about 28 per cent of the country's total PPP projects. IIFCL's total sanctions and disbursements on a cumulative basis exceed ₹2.8 lakh crore and ₹1.4 lakh crore, respectively, while the outstanding loan book stands at ₹58,995 crore. Overall, IIFCL has accorded loan sanctions to projects having around 31,000 km of highways (22 per cent of India's NH capacity), 95 GW of installed energy capacity (23 per cent of India's installed capacity), 22 GW of installed renewable energy capacity (11 per cent of India's installed renewable capacity) and 880 million tonnes of port capacity (35 per cent of India's total port capacity).

NaBFID

Given the need for a long-term capital provider with a holistic sectoral mandate, as opposed to the niche mandate of other DFIs, the National Bank for Financing and Infrastructure Development (NaBFID) was established as an infrastructure-focused DFI through NaBFID Act, 2021. The RBI accorded it an 'All India Financial Institution' (AIFI) status on 8 March 2022, making it the fifth AIFI after NABARD, Small Industrial Development Bank of India (SIDBI), NHB and Exim Bank. NaBFID has both financial and developmental objectives. Its financial objective is to lend or invest, directly or indirectly, and seek to attract investment from private sector investors and institutional investors in infrastructure projects to foster sustainable economic development in India. The developmental objective of the institution is to coordinate with the central and state governments, regulators, financial institutions, institutional investors, and other relevant stakeholders.

Credit Enhancement Facility by NaBFID

NAbFID will set up a 'Partial Credit Enhancement Facility' for corporate bonds for infrastructure.

Source: - Economic Survey 2025

NIIF

National Investment and Infrastructure Fund was established through Union budget announcement by the Government of India in 2015 .It is an Alternate Investment Fund (AIF) under SEBI regulations. It is a wealth fund with 49 percent ownership by the government of India and acts as a platform for national and international investors to invest in infrastructure and other important sectors. It manages various types of funds including Master ,Funds of Funds and Strategic Investment Fund.

It has commercially attractive investments across key sectors with a pan India footprint. These include, Roads and Airports, Renewables, Smart meters, Digital Infrastructure and data centres. Total assets under management exceed $4.9 billon .

SOURCE: Website of NIIF

IREDA:

Indian Renewable Energy Development Agency Limited (IREDA) is a **'Navratna'** Government of India Enterprise under the administrative control of Ministry of New and Renewable Energy (MNRE). IREDA is a Public Limited Government Company established as a Non-Banking Financial Institution in 1987 engaged in promoting, developing and extending financial assistance for setting up projects relating to new and renewable sources of energy and energy efficiency/conservation with the motto: "ENERGY FOR EVER".

Indian Renewable Energy Development Agency Limited (IREDA) reported significant growth in its financial performance for the fiscal year ending March 31, 2025, as per provisional data. Loan sanctions for FY 2024-25 stood at ₹47,453 crore, marking a 27% increase from ₹37,354 crore in the previous year. Loan disbursements rose by 20% to ₹30,168 crore, compared to ₹25,089 crore in FY 2023-24. The outstanding loan book also expanded by 28%, reaching ₹76,250 crore as of March 31, 2025, up from ₹59,698 crore in the previous year.

Indian Renewable Energy Development Agency Limited (IREDA) has raised 910.37 crore through the issuance of Privately Placed Subordinated Tier-II Bonds for a 10-year tenor at an annual coupon rate of 7.74%. The raising of Tier-II Bonds aims to tap liquidity in the current financial market and support the borrowing plan of the company. The funds raised will enhance IREDA's Tier-II capital, increasing its Net-worth and Capital to Risk-Weighted Assets Ratio (CRAR), thereby strengthening the company's ability to support country's clean energy transition through financing.

IREDA is expected to play its critical role in boosting the share of the renewable energy in the over all eco system of the economy thereby taking a significant step towards the objective of a Viksit Bharat by 2047 and our carbon Net Zero emissions by 2070

Source: Website of IREDA

Closing Note

Apart from asset creation, our infrastructure programme also emphasises the use of sustainable materials and processes. These considerations are receiving particular attention in areas such as highway development, waterway projects, power capacity addition and waste management. Given the global imperative of promoting sustainable practices, model practices in this direction need to be replicated widely.

India needs a continued step-up of infrastructure investment over the next two decades to sustain a high rate of growth. Requirements are aplenty. Accelerating our efforts to build integrated multi-modal transport, coupled with the modernisation of existing physical assets, will improve efficiency and last-mile connectivity. Disaster resilient urbanisation, public transport, preservation and upkeep of heritage sites, monuments and tourist destinations, as well as rural public infrastructure, including connectivity, call for greater attention. Our Net Zero commitments entail added stress on creating renewable energy capacities.

Quite clearly, public sector efforts cannot fully meet these requirements. There are binding budget constraints to the different tiers of government. Private participation should accelerate in many critical infrastructure sectors in many ways—programme and project planning, financing, construction, maintenance, monetisation and impact assessment.

CHAPTER - 24

ATMANIRBHAR BHARAT INITIATIVE

ATMANIRBHAR BHARAT INITIATIVE

While aiming at US dollar 30 trillion economy by 2030, India has chalked out comprehensive plan to take forward the economy to a new growth trajectory. This includes well defined strategy to take forward National Infrastructure Pipeline (NIP) and National Monetization Plan(NMP) Programs, as observed in these previous chapters. In addition, to make the country 'Atmanirbhar' and a manufacturing hub for the global market, Strategy has been evolved in the shape of liberal FDI (foreign direct investment) policies and Production linked incentive scheme (PLI).

Here we discuss, the FDI policy of government with specific reference to sectors relating to infrastructure and the way forward for further boosting the infrastructure and investment scenario. Similarly, the PLI has been announced in critical sectors, which have inherent linkages with the infrastructure sector and the two shall move in tandem for the overall growth of the economy and taking it to the next higher trajectory.

FDI inflows in the infrastructure sector in India

FDI in the infrastructure sector, or any other industry, brings in an alternative source of funds and also helps in bringing modern technologies, skills and knowledge, which assist in completing a project efficiently. FDI in the modern era is considered to be a critical vehicle for transfer of advanced technologies, resources and innovations from one nation to another. Further, there is a direct correlation among FDI inflows, infrastructure development and economic growth.

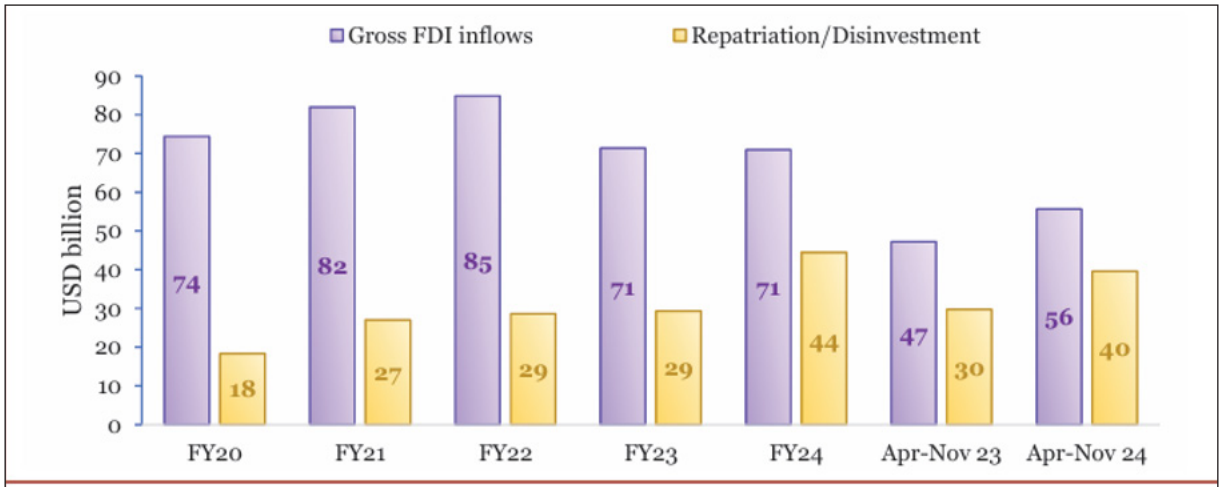
As infrastructure is considered a critical sector for aiding economic development, it requires large investments and liberal policies from the point of view of ease of doing business, thus augmenting foreign investments in this sector. As a positive step towards encouraging FDI inflows in infrastructure sector in India, the Government of India has brought in most of the key infrastructure sectors listed under the Harmonised list of Infrastructure Sectors in India under eligible sectors that can have 100% FDI under the automatic route.

The growth trajectory of capital inflows has shown sign of revival in recent quarters. In Q2 of FY25, net capital inflows stood at USD 30.5 billion, a significant increase from the USD 12.8 billion records during the same period in the previous year. This rise can be primarily attributed to increase FPI inflows, external commercial borrowing, and NRI deposits.

Performance of FDI flows

FDI recorded a revival in FY25, with gross FDI inflows 88 increase from USD 47.2 billion in the first eight months of FY24 to USD 55.6 billion in the same period of FY25, a YoY growth of 17.5 per cent.

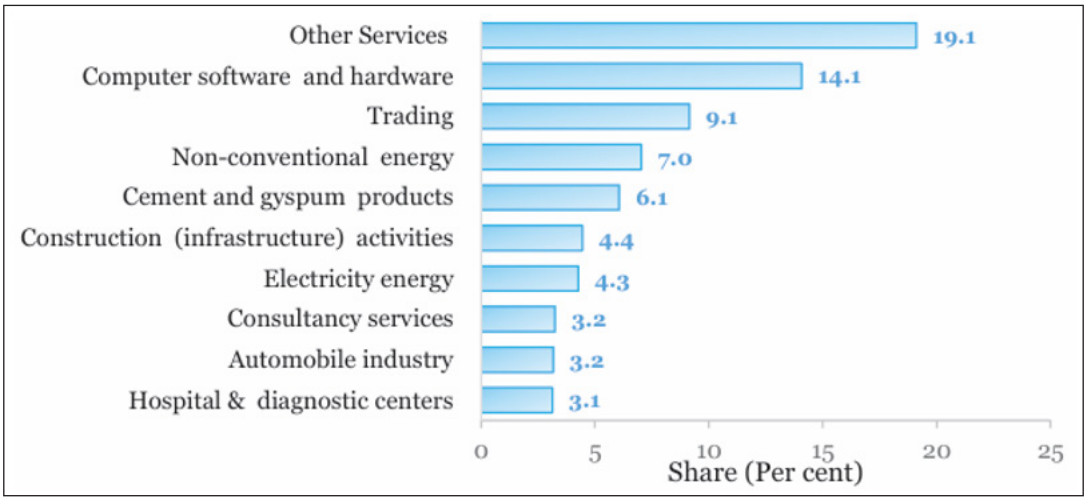
Trends in gross FDI inflows



Source: RBI

The following figure shows that among the infrastructure sectors, FDI inflows to the infrastructure sector were mainly in communication services and power sectors.

Sectoral trends in FDI (H1 of FY25)-share in total FDI equity inflows



Source: Economic Survey 2024-25

This can be attributed to a number of reforms undertaken by the government, such as an increase in the investment caps for certain sectors, and non-sensitive activities placed under the automatic route. During this period, 21 sectors covering 87 areas of FDI policy have undergone major reforms resulting in higher FDI inflows.

India remains a strong destination for FDI, ranking high in greenfield project announcements and international project finance deals. However, the country has to pay heed to numbers. As per the data published by RBI, net FDI to India during the first eight months of FY25 stood at USD 0.48 billion

compared to USD 8.5 billion in the corresponding period of FY24.95 Similarly, for FY23, the figure stood at USD 19.8 billion. For FY24 as a whole, the net FDI was USD 10.1 billion. The last two financial years have indeed seen much larger repatriation from India. The amounts were USD 29.3 billion and USD 44.5 billion, respectively, in FY23 and FY24. In the current year, up to November, the repatriation amount is USD 39.6 billion. At this rate, the full-year figure might exceed last year's figure.

Investment by NRIs and NRI-held entities

More than 2.8 crore people, including NRIs, persons of Indian origin and overseas citizens of India (OCIs) stay overseas. For allowing these NRIs to participate in the Indian growth story and further the infrastructure development in India, FDI policies have been amended to facilitate investments by these NRIs.

NRIs can make investments in India under various schedules of the Foreign Exchange Management (FEMA) Regulations, 2000. Schedule 1 of these regulations permits 100% NRI investments under the automatic route in sectors, such as townships, housing, built-up infrastructure and construction development projects, only when the contribution is on a non-repatriation basis and investments are done as an inward remittance or out of NRE/FCNR (B)/NRO accounts. Further, investments made by NRIs under Schedule 4 of FEMA Regulations, 2000, on a non-repatriation basis is considered to be domestic investment at par with the investments made by the residents. Special dispensation of NRIs is available to companies, trusts and partnership firms that are incorporated outside India and are owned and controlled by NRIs.

NRIs can also invest in shares/convertible debentures of any Indian company under FDI, subject to terms and conditions. An NRI can sell and purchase shares/convertible debentures of any Indian company on both repatriation and non-repatriation basis under the Portfolio Investment Scheme (PIS). The ceiling for investment for NRIs is 10% of the paid-up capital of an Indian company and 20% in case of public sector banks. This ceiling can be raised to 24% of the paid-up capital, subject to the approval of general body of the company.

NRI deposits, external commercial borrowings (ECBs), and short-term trade credit have contributed additional buffers to India's capital account, though each component exhibits varying degrees of stability. ECBs have shown an upward trajectory in recent months, with net inflows rising to USD 9.2 billion from April to October 2025, up from USD 2.8 billion in the corresponding period of the previous year, reflecting a greater appetite for borrowing from foreign sources. Similarly, Non-Resident Indian (NRI) deposits have also surged significantly, with net inflows increasing to USD 10.2 billion during H1 of FY25, compared to USD 5.4 billion in the same period of the previous year.

This growth can be attributed to continued strong remittance inflows and a favorable exchange rate environment, which incentivized NRIs to park their savings in India.

Investments by Global Sovereign Wealth Funds and Global Pension Funds

Sovereign wealth funds and global pension funds are characterised by interest in longer term returns, with focus on stable, predictable cash flows, especially on dividend flows. Sovereign wealth funds tend to invest in greenfield projects and in developing countries. These have managed risks through co-investment in partnership with domestic sovereign wealth funds and institutional investors. For the most part, sovereign wealth funds take minority positions and do not intervene in the management

of the infrastructure project or company acquired abroad, leaving the oversight to expert partners. Sovereign wealth funds have long had a specific asset allocation to infrastructure in their portfolios, but the latest trend is also to set up sovereign funds dedicated to investing in domestic infrastructure in partnership with foreign institutional investors, notably other sovereign wealth funds. This is the case of the National Investment and Infrastructure Fund in India.

Government of India in its Union Budget 2020-21 had taken certain bold measures, which are likely to enthuse global pension and sovereign wealth funds' appetite for infrastructure investments. Elimination of dividend distribution tax and 100% tax exemption to their interest, dividend and capital gains income with respect to investment made in infrastructure and other notified sectors before March 31, 2024 and with a minimum lock-in period of three years. It is expected that these measures will provide significant change in the perception of sovereign wealth funds /global pension funds towards infrastructure investments in India and will lead to significant inflows.

The inclusion of Indian Government Bonds (IGB) in some global bond indices this year has significantly supported debt inflows. Since the announcement of inclusion in JP Morgan index in October 2023, there has been heightened activity in the FPI debt segment with cumulative flows of □ 1.1 lakh crore from October 2023 to June 2024. Post effective date of inclusion, FPIs invested □ 62,431 crore in the debt segment from July to November 2024. Assets under custody, which reflects the total market value of the holdings, shows that FPI's cumulative investment in Fully Accessible Route (FAR) securities crossed the USD 20 billion mark within nine months of the announcement of their inclusion in the JP Morgan EM Bond Index. In FY25, as of 15 December 2024, inclusion already resulted in a net inflow of more than USD 3 billion in Indian FAR bonds, with assets under custody of India FAR bonds standing at USD 28 billion as of 15 December 2024.

FDI Prohibited Sectors FDI is prohibited in:

- Lottery Business including Government/private lottery, online lotteries, etc.
- Gambling and Betting including casinos etc.
- Chit funds.
- Nidhi company.
- Trading in Transferable Development Rights (TDRs).
- Real Estate Business or Construction of Farm Houses 'Real-estate business' shall not include development of townships, construction of residential/commercial premises, roads or bridges and Real Estate Investment Trusts (REITs) registered and regulated under the SEBI(REITs) Regulations 2014.
- Manufacturing of cigars, cheroots, cigarillo sand cigarettes, of to baccoor of to bacco substitutes.
- Activities/sectors not open to private sector investment are Atomic Energy and Railway operations (other than permitted activities mentioned in para 5.2).

In addition, foreign technology collaboration in any form including licensing for franchise, trademark, brand name, management contract is also prohibited for Lottery Business, Gambling and Betting activities.

FDI Permitted Sectors

In the following sectors/activities, FDI up to the limit indicated against each sector/activity is allowed, subject to applicable laws/regulations; security and other conditional ties. In sectors/activities not listed below, FDI is permitted up to 100% on the automatic route, subject to applicable laws/regulations; security and other conditional ties. Wherever there is a requirement of minimum capitalization, it shall include share premium received along with the face value of the share, only when it is received by the company up on issue of the shares to the non-resident investor. Amount Paid by the transferee during post-issue transfer of shares be yond the issue price of the share, cannot be taken into account while calculating minimum capitalization requirement.

Sector wise limits for FDI in Infrastructure

Petroleum & Natural Gas

Sector/Activity	% of Equity/ FDI Cap	Entry Route
Exploration activities of oil and natural gas fields, infrastructure related to marketing of petroleum products and natural as ,marketing of natural as and petroleum products, petroleum product pipelines, natural gas/pipelines, LNG Regasification infrastructure, market study and formulation and Petroleum refining in the private sector, subject to the existing sector al policy and regulatory framework in the oil marketing sector and the policy of the Government on private participation in exploration of oil and the discovered fields of national oil companies.	100%	Automatic
Petroleum refining by the Public Sector Undertakings(PSU), without any dis investment or dilution of domestic equity in the existing PSUs.	49%	Automatic

Airports

Sector/ Activity	% of Equity/FDI Cap	Entry Route
(a) Greenfield projects	100%	Automatic
(b) Existing projects	100%	Automatic

Construction Development: Townships, Housing, Built-Up Infrastructure

Sector/Activity	% of Equity /FDI Cap	Entry Route
Construction-development projects (which would include development of townships, construction of residential/commercial premises, roads or bridges, hotels, resorts, hospitals, educational institutions, recreational facilities, city and regional level infrastructure, townships)	100%	Automatic

Industrial Parks

Sector/Activity	% of Equity/FDI Cap	Entry Route
Industrial Parks -new and existing	100%	Automatic

Telecom Services

Sector/Activity	% of Equity / FDI Cap	Entry Route
Telecom Services (including Telecom Infrastructure Providers Category-I) All telecom services including Telecom Infrastructure Providers Category-I, viz. Basic, Cellular, United Access Services, Unified License (Access Services), Unified License, National/International Long Distance, Commercial V-Sat, Public Mobile Radio Trunked Services	100%	Automatic up to 49% Government route beyond 49%
(PMRTS),Global Mobile Personal Communications Services (GMPCS), All types of ISP licenses, Voice Mail/Audio tex/ UMS, Resale of IPLC, Mobile Number Portability Services, Infrastructure Provider Category-I (providing dark fibre, right of way, duct space, tower) except Other Service Providers.		

Railway Infrastructure

Sector/Activity	% of Equity /FDI Cap	Entry Route
Railway Infrastructure Construction, operation and maintenance of the following: (i) Suburban corridor projects through PPP, (ii) High speed train projects, (iii) Dedicated freight lines, (iv) Rolling stock including train sets, and locomotives/coaches manufacturing and maintenance facilities, (v) Railway Electrification, (vi) Signaling systems, (vii) Freight terminals, (viii) Passenger terminals, (ix) Infrastructure in industrial park pertaining to railway line/sidings including electrified railway lines and connectivity's to main railway line and (x) Mass Rapid Transport Systems.	100%	Automatic

NOTE:

(i) Foreign Direct Investment in the abovementioned activities open to private sector participation including FDI is subject to sectoral guidelines of Ministry of Railways.

(ii) Proposals involving FDI beyond 49% in sensitive areas from security point of view, will be brought by the Ministry of Railways before the Cabinet Committee on Security(CCS) for consideration on a case to case basis.

FDI Policy reforms and Other Measures during the Covid-19 Pandemic period

The changes in the FDI policy can be broadly categorized into measures taken to improve foreign participation while protecting Indian industry from opportunistic takeovers, to enhance transparency and rationalization of processes and steps to monitor and expedite implementation.

Measures taken to allow greater foreign participation

(i) Defence Sector: The FDI policy amendments, notified vide Press Note 4 (2020 series) dated 17.09.2020, have been carried out to realize the vision of an Atmanirbhar Bharat. Now, FDI in defence sector is allowed up to 74 per cent through automatic route (from earlier 49percent) for companies seeking new industrial licenses. FDI beyond 74 percent and up to 100 per cent will be permitted under Government route. For existing FDI approved holders/defence licensees, infusion of fresh foreign investment up to 49percent resulting in change in equity/ shareholding pattern can be done by making declaration within 30 days.

(ii) Insurance Sector: Government issued Press Note 2(2021) dated 14.06.2021 to raise the permissible FDI limit from 49percent to 74percent in Insurance Companies under the automatic route and allow foreign ownership and control with safeguards. As announced in the budget 2025-26,

The FDI limit for the insurance sector will be raised from 74 to 100 per cent. This enhanced limit will be available for those companies which invest the entire premium in India. The current guardrails and conditional ties associated with foreign investment will be reviewed and simplified.

(iii)Petroleum & Natural Gas sector: Press Note 3 (2021) dated 29.07.2021 has been issued to permit foreign investment up to 100percent under the automatic route in cases where the Government has accorded an 'in-principle' approval for strategic disinvestment of a Public Sector Undertaking (PSU) engaged in the Petroleum and Natural Gas Sector.

(iv)Telecom sector: Press Note 4 (2021) dated 06.10.2021 has been issued to permit foreign investment up to 100percent under automatic route in Telecom services sector.

Curbing opportunistic acquisitions/takeovers: vide Press Note 3 (2020) dated 17.04.2020, Government amended the FDI policy according to which an entity of a country, which shares land border with India or where the beneficial owner of an investment into India is situated in or is a citizen of any such country, can invest only under the Government route. Further, in the event of the transfer of ownership of any existing or future FDI in an entity in India, directly or indirectly, resulting in the beneficial ownership falling within the restriction/purview of the said policy amendment, such subsequent change in beneficial ownership will also require Government approval.

Measures to improve transparency and to rationalize processes include amendment of the Standard Operating Procedure (SOP) to improve ease of processing FDI proposals.

'FDI Monitoring Cell' has been formed which follows up with applicant/ investor, to expedite FDI proposals with a view identify and hurdles if any. An Inter-Ministerial Committee (IMC) has been constituted under the Chairpersonship of Secretary, Department for Promotion of Industries and Internal Trade to take appropriate decision on delayed proposals and those escalated by Administrative Ministries/ Departments

Production-Linked Incentive (PLI) scheme

The scheme provides incentives to companies on incremental sales for products manufactured in domestic units, which is expected to create minimum production of over US$ 500 billion in 5 years. Automobiles and auto components, pharmaceutical drugs, telecom & networking products, electronic/ technology products, etc., are some of the sectors covered under PLI scheme. The scheme is expected to give a push to both domestic manufacturing capabilities and exports and establish the requisite linkages with infrastructure sector.

The government has approved an outlay of ₹76,000 Crore (>US$ 10 Bn) for the development of Semiconductors and Display Manufacturing Ecosystem. Government's intervention to boost this industry has come at a time when the global economy is facing an acute shortage of semiconductors due to severe disruptions in supply chains. Several companies from diverse industries have been forced to either shut or curtail production in response to breakdown of supply chains. The comprehensive interventions being introduced by the government will aid in the establishment of an ecosystem that boosts semiconductor production in India.

Following sectors/industries/products are covered under the PLI schemes:

(i) Drones and drone components

(ii) Critical Key Starting materials/Drug Intermediaries & Active Pharmaceutical Ingredients

(iii) Manufacturing of Medical Devices

(iv) Automobiles and Auto Components

(v) Pharmaceuticals Drugs

(vi) Specialty Steel

(vii) Telecom & Networking Products

(viii) Electronic/Technology Products

(ix) Semi-conductor Chips

(x) White Goods (ACs and LEDs)

(xi) Food Products

(xii) Textile Products: MMF segment and technical textiles

(xiii) High efficiency solar PV modules, and

(xiv) Advanced Chemistry Cell (ACC) Battery.

It may be emphasized that India has made significant strides in promoting renewable energy and boosting domestic manufacturing of renewable energy equipment through initiatives such as the Production-Linked Incentive (PLI) scheme. The PLI scheme aims to enhance India's manufacturing capabilities in key sectors, including solar panels, wind turbines, and battery storage, by offering incentives to domestic manufacturers. The domestic manufacturing efforts under the PLI scheme are expected to significantly support India's renewable energy targets by reducing costs, improving energy security, and boosting employment. Domestic capacities are being built. For now, India sources 75 per cent of lithium-ion batteries from China, and it has near negligible production capacity for key components like polysilicon, ingots, and wafers.

Make in India 2.0 and the PLI schemes

To further enhance India's integration in the global value chain, 'Make in India 2.0' is now Industry: Steady Recovery 285 focusing on 27 sectors, which include 15 manufacturing sectors and 12 service sectors. Amongst these, 24 sub-sectors have been chosen while keeping in mind the Indian industries' strengths and competitive edge, the need for import substitution, the potential for export and increased employability. Efforts are on to boost the growth of the sub-sectors in a holistic and coordinated manner.

In pursuit of the objectives of the Make-in-India programme and with a vision to achieve Aatmanirbharta, the government launched the PLI scheme. The scheme is expected to attract a capex of approximately ₹3 lakh crore over the next five years. It has the potential to generate employment for over 60 lakhs in India and increase the share of the manufacturing sector in total capital formation, which currently stands at around 17-20 per cent between FY12 and FY20. It is further believed that there will be a significant reduction in the trade deficit with domestic production substituting for imports. Sectors under which the PLI scheme has been announced currently constitute around 40 per cent of the total imports. The scheme, spread across 14 sectors, can enhance India's annual manufacturing capex by 15 to 20 per cent from FY23.

PLI Scheme across these key specific sectors is poised to make Indian manufacturers globally competitive, attract investment in the areas of core competency and cutting-edge technology; ensure efficiencies; create economies of scale; and make India an integral part of the global value chain. The scheme will benefit the MSME ecosystem in the country. The anchor units built in every sector will require a new supplier base in the entire value chain. Most of these ancillary units will be built in the MSME sector.

As of 31st December 2022, 717 applications have been approved under 14 Schemes. More than 100 MSMEs are among the PLI beneficiaries in sectors such as Bulk Drugs, Medical Devices, Telecom, White Goods and Food Processing. As per recent reporting from implementing Ministries/ Departments, around ₹47,500 crore (US$ 6 billion) of actual investment has been made; production/ sales of ₹3.85 lakh crore (US$ 47 billion) of eligible products and employment 286 Economic Survey 2022-23 generation of around 3 lakh has been reported and 106 per cent achievement of actual investment reported versus the corresponding projections of FY227 . Key sectors such as Large-Scale Electronics Manufacturing, Pharmaceuticals, Telecom & Networking Products, Food Processing and White Goods have contributed considerably to investment, production, sales and employment.

Some of the latest developments under the PLI programme include the launch of a designed PLI in

June 2022 to promote the entire value chain in telecom manufacturing and to build a strong ecosystem for 5G as part of the PLI Scheme for Telecom & Networking products. Approvals under this Scheme have already been granted to eligible companies. In September 2022, the Cabinet recently approved PLI Scheme (Tranche II) on 'National Programme on High-Efficiency Solar PV Modules', with an outlay of ₹19,500 crore to build an ecosystem for manufacturing of high-efficiency solar PV modules in India, thus reducing import dependence in the area of renewable energy.

Source: Economic Survey 2022-23

Manufacturing Mission - Furthering "Make in India The Mission's mandate will include 5 focus areas:

1) ease and cost of doing business;
2) future ready workforce for in-demand jobs;
3) a vibrant and dynamic MSME sector;
4) availability of technology; and
5) quality products.

Measures to Boost Investment

To promote foreign investment and tax certainty, the retrospective part of the amendment made by Finance Act 2012 regarding taxation of offshore indirect transfer of assets located in India has been nullified by the Taxation Laws (Amendment) Act 2021 so as to provide that no tax demand shall be raised in future on the basis of the said retrospective amendment for any offshore indirect transfer of Indian assets if the transaction was undertaken before 28th May 2012.

Incentives have been provided by Finance Act 2020 to encourage foreign investments of Sovereign Wealth Funds and Pension Funds into the infrastructure sector of India. Finance Act 2021 relaxed some of the conditions. Since January 2021, nine Sovereign Wealth Funds and 14 Pension Funds have been notified to claim exemption.

In order to incentivize start-ups, the eligibility for claiming tax holiday has been extended for startups incorporated till 31st March 2022 by the Finance Act 2021. The capital gains exemption for investment in start-ups has also been extended for one more year till 31st March 2022.

Various tax incentives have been provided for units located in International Financial Services Centre (IFSC) in order to make it a hub for financial services in the world. IFSCs provide Indian corporates easier access to global financial markets and promote further development of financial markets in India. Further incentives have been provided in the Finance Act 2021 like tax holiday on capital gains for aircraft leasing companies, tax exemption for aircraft lease rentals paid to foreign lessor, tax incentives for relocating foreign funds into IFSC and allowing tax exemption for the investment division of foreign banks located in IFSC.

Pradhan Mantri Gati Shakti National Master Plan

Approved in October 2021, PM Gati Shakti NMP aims to provide multimodal connectivity to various economic zones and integrate the infrastructure linkages holistically for seamless movement of people, goods & services to improve logistics efficiency. Gati Shakti will bring 16 Ministries together for integrated planning and coordinated implementation of infrastructure connectivity projects like Bharat

mala, Sagar mala, inland waterways, UDAN etc. It will also leverage technology extensively including spatial planning tools with ISRO imagery developed by BISAG-N (Bhaskar Acharya National Institute for Space Applications and Geo informatics). Economic zones like textile clusters, pharmaceutical clusters, electronic parks, etc. will be covered to make Indian businesses more competitive globally by cutting down the logistics costs and ensure proper linkages for local industry & consumers. This will boost economic growth, attract foreign investment and create multiple employment opportunities.

Prime Minister launched PM Gati Shakti - National Master Plan for Multi-modal Connectivity, essentially a digital platform to bring 16 Ministries including Railways and Roadways together for integrated planning and coordinated implementation of infrastructure connectivity projects. The multi-modal connectivity will provide integrated and seamless connectivity for movement of people, goods and services from one mode of transport to another. It will facilitate the last mile connectivity of infrastructure and also reduce travel time for people.

Vision of PM Gati Shakti

PM Gati Shakti will incorporate the infrastructure schemes of various Ministries and State Governments like Bharat mala, Sagar mala, in land water ways, dry/land ports, UDAN etc.

Economic Zones like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones will be covered to improve connectivity & make Indian businesses more competitive. It will also leverage technology extensively including spatial planning tools with ISRO (Indian Space Research Organisation) imagery developed by BISAG-N (Bhaskar Acharya National Institute for Space Applications and Geo informatics).

Steps to Overcome Challenges

Traditionally, there was lack of coordination between different Departments, for example, once a road was constructed, other agencies dug up the constructed road again for activities like laying of underground cables, gas pipelines etc. This not only caused great inconvenience but was also a wasteful expenditure. To address this, efforts were made to increase coordination so that all cables, pipelines etc. could be laid simultaneously. Steps have also been taken to address other issues like time-taking approval process, multiplicity of regulatory clearances etc.

In the last few years, the Government has ensured unprecedented focus on infrastructure through a holistic outlook. This helps to address the past issues through institutionalizing holistic planning for stakeholders for major infrastructure projects. Instead of planning & designing separately in silos, the projects will be designed and executed with a common vision.

6 Pillars of PM Gati Shakti

PM Gati Shakti is based on six pillars:

- **Comprehensiveness**: It will include all the existing and planned initiatives of various Ministries and Departments with one centralized portal. Each and every Department will now have visibility of each other's activities providing critical data while planning & execution of projects in a comprehensive manner.
- **Prioritization**: Through this, different Departments will be able to prioritize their projects through cross-sectoral interactions.

- **Optimization**: The National Master Plan will assist different ministries in planning for projects after identification of critical gaps. For the transportation of the goods from one place to another, the plan will help in selecting the most optimum route in terms of time and cost.
- **Synchronization**: Individual Ministries and Departments often work in silos. There is lack of coordination in planning and implementation of the project resulting in delays. PM Gati Shakti will help in synchronizing the activities of each department, as well as of different layers of governance, in a holistic manner by ensuring coordination of work between them.
- **Analytical**: The plan will provide the entire data at one place with GIS based spatial planning and analytical tools having 200+ layers, enabling better visibility to the executing agency.
- **Dynamic**: All Ministries and Departments will now be able to visualize, review and monitor the progress of cross-sectoral projects, through the GIS platform, as the satellite imagery will give on-ground progress periodically and progress of the projects will be updated on a regular basis on the portal. It will help in identifying the vital interventions for enhancing and updating the master plan.

**Source – Economic Survey 2021-2022*

PM GatiShakti: A master plan for integrated project planning

The growth experience of advanced economies has highlighted the importance of having a multimodal transport network approach. Introducing the holistic planning in the case of infrastructure projects, the government launched PM GatiShakti, charting a transformative approach to infrastructure development. The PM GatiShakti National Master Plan entails creation of a common umbrella platform with all infrastructure projects pertaining to various ministries/ departments incorporated within a comprehensive database for efficient planning and implementation on a real-time basis. The projects pertaining to seven engines (roads, railways, airports, ports, mass transport, waterways, and logistic infrastructure) in the NIP will be aligned with PM GatiShakti framework. The touchstone of the Master Plan will be high quality modern infrastructure and logistics synergy among different modes of movement – both of people and of goods – and location of projects. This will help raise productivity, and accelerate economic growth and development.

The focus is on integrated planning and synchronised implementation across ministries/ departments, with innovative use of technology. The aim is to improve multimodal connectivity and logistics efficiency while addressing the critical gaps for the seamless movement of people and goods, with a focus on minimising disruptions and timely completion of infrastructure projects.

In order to facilitate integrated planning and coordinated implementation, a GIS based and data-driven decision support platform called PM Gati Shakti National Master Plan has been introduced. Around 1950 data layers of 22 ministries/departments and 36 States/UTs were mapped up to the village, district, and taluka levels on the national master plan. It can be integrated with various applications of different ministries/agencies to prevent duplication of work and create a single window system for infrastructure planning. Data layers on important assets pertaining to health, education, culture, tourism, gram panchayats, municipal corporation, social welfare housing etc. are being mapped and data validation is being done for optimum use of PM Gati Shakti principles in planning of both physical and social infrastructures. Use cases of Gati Shakti National Master Plan include connectivity to model schools and disaster management planning etc.

As announced in the budget for the year 2025-26, For furthering PPPs and assisting the private sector in project planning, access to relevant data and maps from the PM Gati Shakti portal will be provided.

Source: Economic Survey 2022-23

National Logistics Policy

The relevance of a robust logistics structure for overall development of the infrastructure in a seamless manner is well recognised. While logistics as one of the sub sectors under the harmonized list of infrastructure was introduced by the Ministry of Finance, a few years ago, a need was felt to have a comprehensive logistics policy to give a fillip to the overall development. Accordingly, a National level logistics policy was announced by Government of India,in September 2022 which has direct ramification on the overall infrastructure development of the country. The main objectives of the policy are as under:

1. Reduce cost of logistics in India to be comparable to global benchmarks by 2030.
2. Logistics Performance Index ranking – endeavour to be among top 25 countries by 2030, and
3. Create data driven decision support mechanism for an efficient logistics ecosystem.

The interventions proposed under the Comprehensive Logistics Action Plan(CLAP) are divided into eight key action areas:

(i) Integrated Digital Logistics Systems: Develop a system of unified logistics interface to link multiple data sources and develop cross sectoral use cases for logistics stakeholders.

(ii) Standardisation of physical assets & benchmarking service quality standards: Enhance interoperability, minimize handling risks, undertake process optimisation, and improve ease of doing business, through standardisation of physical assets and benchmarking of service quality standards in logistics.

(iii) Logistics Human Resources Development and Capacity Building: Develop an overarching logistics human resource strategy and under its guiding principles, line ministries to develop action plans to address skill development related and internal capacity building challenges in the respective sector.

(iv) State Engagement: Provide support for development of state/city level logistics plans, set up institutional framework to take action at city/state level, measure and monitor action by states and rank them.

(v) EXIM (Export-Import) Logistics: Addressing infrastructure and procedural gaps in India's EXIM connectivity and create efficient and reliable logistics network, with transparent and streamlined cross-border trade facilitation, for improved trade competitiveness and greater integration of India with regional and global value chains.

(vi) Service Improvement framework: Improving regulatory interface to enable seamlessness between sectors, promote standardisation, formalisation, interoperability; eliminate fragmentation in documentation, formats, processes and liability regimes; reduce gaps in regulatory architecture.

(vii) Sectoral Plan for Efficient Logistics: Sectoral Plans for Efficient Logistics (SPEL) aligned with PM GatiShakti, will be developed for each sector with underlying philosophies of interoperability, resiliency, sustainability, and innovation. Specifically, SPEL would (i) address logistics issues

pertaining to infrastructure, processes, digital improvements, policies and regulatory reforms, and capacity building for better workforce, and ii) prioritise cross-sectoral cooperation to complement and not duplicate efforts and focus on optimisation of modal mix.

(viii) Facilitation of Development of Logistics Parks: Logistics parks (eg. Multi Modal Logistics Parks, Air Freight Stations, Inland Container Depots, Container Freight Stations, cargo terminals, etc.) are hubs for intermediary activities (storage, handling, value addition, intermodal transfers, etc.) in the supply chain connected by a transportation network. It is envisaged to take following steps to facilitate development of logistics parks:

- Draft framework guidelines to facilitate development of Logistics Parks in the country with focus on encouraging private investment.
- Create a network of logistics parks by mapping them on the PM GatiShakti NMP, for enhanced visibility, improved logistics efficiency, optimum utilisation and connectivity.

As per one estimate, India warehousing market was valued USD14.65 billion in 2019 and is forecasted to grow at CAGR of 9.82% to reach USD19.53 billion by 2025 by opening up the sector to private investments ensuring the relevance of the benefit to be gained from private players contribution.

(Source: DPIIT, Ministry of Commerce & Industry)

The Network Planning Group (NPG), which reviews large projects under the PM GatiShakti initiative, have so far cleared as many as 229 critical infrastructure projects of different ministries. In October last year, Prime Minister Narendra Modi had rolled out the Gati Shakti-National Master Plan. It is essentially a GIS-based platform with close to 1,500 layers, capturing all utilities and network linkages in various economic clusters. Under this, different departments join hands for a coordinated development of projects, especially to address first and last-mile connectivity issues and reduce logistics costs.

"For instance, there is a port and there is a highway nearby but the road connecting the two is missing or is highly congested. So, the issue of last-mile connectivity, which will cost less but yield much higher benefits, needs to be addressed. Therefore, the ministries of road and railways, etc. are planning for these missing links on a high priority,"

Announcing the launch of Gati Shakti,it was quoted that : "Just as JAM (Jan Dhan, Aadhar, Mobile) trinity revolutionised the access of government facilities to the people, PM Gati Shakti will do the same for the field of infrastructure."

One hundred critical transport infrastructure projects, for last and first mile connectivity for ports, coal, steel, fertilizer, and food grains sectors have been identified. They will be taken up on priority with investment of ₹75,000 crore, including ₹15,000 crore from private sources.

Financing and Appraisal

For the financers and investors the logistics sub sectors thus provides significant opportunities going forward. However, the concession agreements under the PPP model will have to be structured very carefully to ensure technical feasibility, economic viability of the projects besides giving a reasonable return to the developers. The appraisal aspects of such projects will have to be very carefully taken care of with proper assessment of the various risks involved and requisite mitigation of the applicable risks.

Government Project Funding- Role of Public Investment Board

The detailed guidelines on Appraisal and approval of Public funded schemes and projects have been issued by the government of India, Ministry of finance department of expenditure in August 2016. These inter-alia cover issues relating to the formulation of a scheme /project starting from concept paper/feasibility report along with appraisal. While schemes are appraised by the Expenditure Finance Committee (EFC) or Standing Finance Committee (SFC), the project appraisal is taken up by the Public Investment Board (PIB)or the delegated Investment Board (DIB). Suitable powers have been delegated to various functionaries/levels of authorities based on the cost involved in each scheme/ project. A well-defined structure covering the appraising authority and approving authority has been defined. Public Investment board is involved in appraisal of all projects above rupees 500 crores (other than PPP). Cases involving increase in cost beyond 20% are to be referred to Revised Cost Committee. The detailed project needs to cover the following aspects: -

(i) Context/Background: This section should provide a brief description of the sector/sub-sector as well as the national strategy and policy framework. This section should also provide a general description of the scheme/project being posed for appraisal.

(ii) Problems to be addressed: This section should elaborate the problem to be addressed through the project/scheme at the local/regional/national level. Evidence regarding the nature and magnitude of the problems should be presented, supported by baseline data/survey/ reports etc.

(iii) Aims and Objectives: This section should indicate the development objectives proposed to be achieved, ranked in order of importance. The outputs/deliverables expected for each development objective should be spelt out clearly.

(iv) Strategy: This section should present an analysis of alternative strategies available to Achieve the development objectives. Reasonsfor selecting the proposed strategy should be brought out. Basis for prioritization of locations should be indicated (wherever relevant). Opportunities for leveraging government funds through public-private partnership or savings through outsourcing must be explored. This section should also provide a description of the ongoing initiatives, and the manner in which duplication can be avoided and synergy created with the proposed scheme/ project.

(v) Target Beneficiaries: There should be clear identification of target beneficiaries. Stakeholder analysis should be undertaken, including consultation with stakeholders at the time of scheme/ project formulation. Options regarding cost sharing and beneficiary participation should be explored and incorporated in the project. Impact of the project on weaker sections of society, positive or negative, should be assessed and remedial steps suggestedin caseof any adverse impact.

(vi) legal Framework: This section should present the legal framework, if relevant, within which the scheme/project will be implemented, aswell as the strengths and weaknesses of the legal framework in so far as it impacts on achievement of stated objectives.

(vii) Environmental Impact: Environmental Impact Assessment should be undertaken, wherever required, and measures identified to mitigate the adverse impact, if any. Issues relating to land acquisition, diversion of forest land, wildlife clearances, rehabilitation and resettlement should be addressedin this section.

(viii)Technology: This section should elaborate on the technology choices, if any; evaluation of the technology options, as well as the basis for choice of technology for the proposed project.

(ix)Management: Responsibilities of different agencies for project management or scheme implementation should be elaborated. The organization structure at various levels, human resource requirements, as well as monitoring arrangements should be clearly spelt out.

[x] Finance: This section should focus on the cost estimates, budget for the scheme/project, means of financing and phasing of expenditure. Options for cost sharing and cost recovery (user charges) should be explored. Infrastructure projects may be assessed on the basis of the cost and tenor of the debt. Issues relating to project sustainability, including stakeholder commitment, operation-maintenance of assets after project completion and other related issues should also be addressed in this section.

(xi)Time Frame: This section should indicate the proposed zero date for commencement and also provide a PERT/CPM chart, wherever relevant.

(xii) Cost Benefit Analysis: Financial and economic cost-benefit analysis of the project should be undertaken wherever such returns are quantifiable. Such an analysis should generally be possible for infrastructure projects, but may not always be feasible for public goods and social sector projects. Even in the case of latter, the project should be taken up for appraisal before the PIB and some measurable outcomes/deliverables suitably defined.

(xiii)Risk Analysis: This section should focus on identification and assessment of implementation risks and how these are proposed to be mitigated. Risk analysis could include legal/contractual risks, environmental risks, revenue risks, project management risks,regulatory risks, etc.

(xiv)Outcomes: Successcriteria to assesswhether the development objectives have been achieved should be spelt out in measurable terms. Base-line data should be available against which success of the project will be assessed at the end of the project (impact assessment). Similarly, it is essential that base-line surveys be undertaken in case of large, beneficiary-oriented schemes. Successcriterion for scheme deliverables/outcomes should also be specified in measurable terms to assessachievement against proximate goals.

(xv)Evaluation: Evaluation arrangements for the scheme/project, whether concurrent, mid-term or post-project should be clearly spelt out.

As is revealed from the above, the appraisal aspects covered are broadly in line with the fundamental points taken into consideration for project appraisal by banks and other lenders also. The economic desirability and feasibility are the broader considerations by both the Government as well as the Bankers. However, the commercial viability in taken care by the bankers and other finical institution.

Budgetary Initiatives

Here are budgetary allocations for key sectors of the economy along with the forward looking strategies

Defence

The Finance Minister allocated ₹6,81,210 crore towards defence expenditure for FY26, marking an uptick of nearly 10% from ₹6,21, 940 crore announced in the full Budget 2024. The government has

pegged ₹1,92,387 crore for capital outlay whereas expenditures have been projected at ₹1,60,795 crore.

Under the capital expenditure, the FM allocated ₹48,614 crore for aircraft and aero engines, while ₹24,390 crore has been earmarked for the naval fleet. An additional ₹63,099 crore has been set aside for other equipment.

Agriculture

The agriculture and allied activities found prominence in Sitharaman's Budget speech with the announcement of new schemes to aid growth in the sector. The government allocated ₹1.71 lakh crore to the agriculture sector in comparison to budget estimates of ₹1.51 lakh crore last year. The Finance Minister launched the PM Dhan-Dhaanya Krishi Yojana, which will cover 100 districts with low productivity. The scheme aims to enhance agricultural productivity and adopt crop diversification. The move is also aimed at promoting sustainable agriculture practices with improved irrigation facilities and availability of long-term and short-term credit.

The government further announced ₹8,500 crore for the Rashtriya Krishi Vikas Yojana (RKVY), the government's flagship scheme to ensure the holistic development of agriculture and allied sectors.

Healthcare

The government allocated ₹98,311 crore to the healthcare sector in Budget 2025, marking a 9.78% year-on-year growth from ₹90,958.63 crore in FY25. An additional ₹2,445 crore has been allocated to the PLI scheme for the pharma industry. The Finance Minister announced ₹37,226.92 crore for the National Health Mission in her Budget speech.

Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) received an allocation of ₹9,406 crore this year whereas the Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PMABHIM) got ₹4,200 crore in Budget 2025.

Education

Budget 2025 allocated ₹1,28,650 crore for education, which is an uptick of 6.6% from the ₹1.21 lakh crore allocation for the sector in FY25. Schools have been allocated ₹78,572.1 crore, up from the current estimate of ₹73,008 crore. Higher education has received an allocation of ₹50,077.95 crore.

The finance minister also announced a Centre of Excellence in Artificial Intelligence for education with a total outlay of ₹500 crore. In the medical education field, there will be 10,000 additional seats in the next year. The government has announced to add 75,000 seats in the next five years.

Rural And Urban Development

The government has allocated ₹2,66,817 crore to rural development making its second higher allocation after defence in Budget 2025. The Ministry of Urban Affairs (MoHUA) received an allocation of ₹82,577 crore. In addition, the government has proposed to set up an urban challenge fund of ₹1 lakh crore to implement the proposals for cities as growth hubs for creative redevelopment of cities. It will also cover water and sanitation purposes announced in the July 2024 Budget.

Urban Challenge Fund

The Government will set up an Urban Challenge Fund of ₹1 lakh crore to implement the proposals for 'Cities as Growth Hubs', 'Creative Redevelopment of Cities' and 'Water and Sanitation' announced

in the July (2024) Budget.

This fund will finance up to 25 per cent of the cost of bankable projects with a stipulation that at least 50 per cent of the cost is funded from bonds, bank loans, and PPPs. An allocation of ₹10,000 crore is proposed for 2025-26.

Urban Sector Reforms

Building on the July (2024) Budget proposals, urban sector reforms related to governance, municipal services, urban land, and planning will be incentivized

Additional initiatives in the Budget 2023-24 Sustainable Cities of Tomorrow

States and cities will be encouraged to undertake urban planning reforms and actions to transform our cities into 'sustainable cities of tomorrow'. This means efficient use of land resources, adequate resources for urban infrastructure, transit-oriented development, enhanced availability and affordability of urban land, and opportunities for all.

Making Cities ready for Municipal Bonds

Through property tax governance reforms and ring-fencing user charges on urban infrastructure, cities will be incentivized to improve their credit worthiness for municipal bonds.

Urban Infrastructure Development Fund

Like the RIDF, an Urban Infrastructure Development Fund (UIDF) will be established through use of priority sector lending shortfall. This will be managed by the National Housing Bank, and will be used by public agencies to create urban infrastructure in Tier 2 and Tier 3 cities. States will be encouraged to leverage resources from the grants of the 15th Finance Commission, as well as existing schemes, to adopt appropriate user charges while accessing the UIDF. We expect to make available `10,000 crore per annum for this purpose.

Urban Sanitation

All cities and towns will be enabled for 100 per cent mechanical desludging of septic tanks and sewers to transition from manhole to machine-hole mode. Enhanced focus will be provided for scientific management of dry and wet waste.

The funding aspects that need to be examined and taken care of while financing various projects under the Urban Infrastructure sub sectors have been illustratively taken up in case studies on waste to energy project and city water supply project in chapter 11 above. The points and issues covered in the said case studies need to be assessed and mitigation measures taken up suitably for creating a success stories under the smart cities mission.

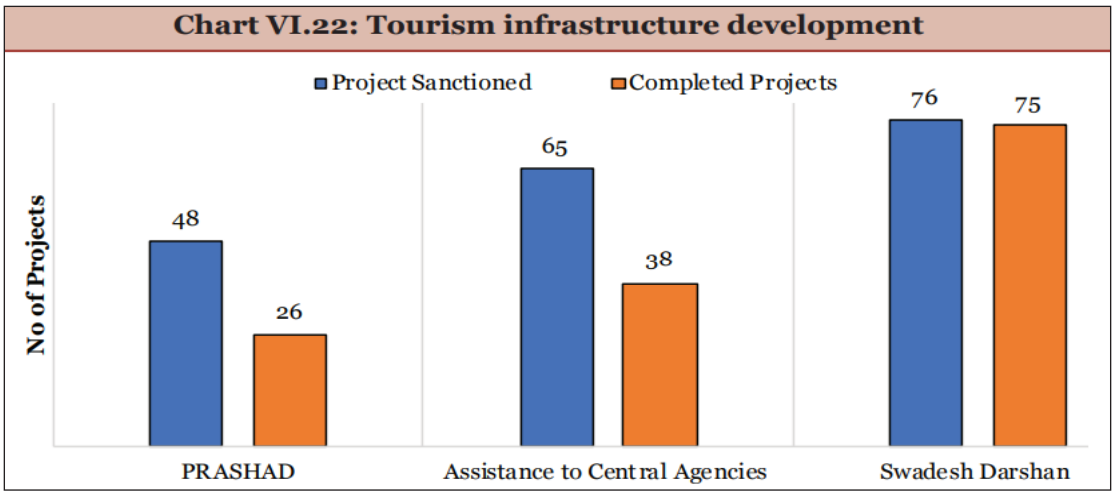
Rail & Metro:

Metro systems have transformed travel in India. Covering over 1,000 km across 11 states and 23 cities, millions of people rely on them for quick, easy and affordable travel. With this growth, India has become home to the third-largest metro network in the world. Metros are not just a way to get around—they are changing how we live and move in cities of the Future with Fast, Safe, and Reliable Travel. The foundation for multi development projects for ₹200 crore was laid in January 2025. The foundation for multiple development projects worth over ₹12,200 crore in Delhi, including the

inauguration of the 13 km stretch of the Delhi-Ghaziabad-Meerut Namo Bharat was also launched. In addition, 2.8 km stretch Delhi Metro was launched. This will greatly ease travel between Delhi and Meerut. Delhi Metro Phase-IV, benefiting West Delhi and was also the foundation for the 26.5 km Rithala-Kundli section, further strengthening connectivity between Delhi and Haryana.

TOURISM INFRASTRUCTURE: -

Tourism Infrastructure Development



Moreover, in line with the FY25 budget announcement, 40 projects across 23 states have been approved for interest-free loans for 50 years for an amount of ₹3,295.8 crore under the special assistance to states for capital investment. This initiative aims to create iconic tourist centres of global standards by supporting their development and marketing.

The government has introduced several initiatives to promote domestic tourism. Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASHAD) aims to develop tourism infrastructure at identified pilgrimage destinations and heritage cities

Another major initiative of the Government to promote domestic tourism is Swadesh Darshan, which is aimed at the integrated development of tourism destinations, including theme-based tourist circuits. This programme was rechristened as the Swadesh Darshan Scheme 2.0 (SD 2.0) in 2022, with the vision to develop sustainable and responsible tourism destinations. Under this scheme, 34 projects have been approved, with a total funding of ₹793.2 crore.

SPACE SECTOR: -

India currently operates 56 active space assets, including 19 communication satellites, nine navigation satellites, four scientific satellites, and 24 earth observation satellites. ISRO has enhanced its capabilities by adding a small satellite launch vehicle to its fleet. New Space India Limited (NSIL) successfully fulfilled its contract to launch 72 OneWeb satellites into low earth orbit. Recently it also launched the GSAT-20 satellite in collaboration with SpaceX. Various initiatives by the government in the domain of space-based infrastructure.

As part of India's Space Vision 2047, the Union Cabinet has approved four key projects: the Gaganyaan follow-on mission, which will pave the way for the establishment of the first module of the Bhartiya Antariksh Station; the Chandrayaan-4 Lunar Sample Return Mission; the Venus Orbiter Mission; and

the development of the Next Generation Launch Vehicle. These initiatives aim to enhance India's technological capabilities, foster industry collaboration, and strengthen the country's position in global space exploration.

Space Economy in India:

- Space-based communication will be one of the primary mechanisms to narrow the digital divide in India.
- Satellite services and application segment would form the largest share of the space economy, accounting for 36% of the total revenue by 2025.
- Opening up of the space economy to private participation in India heralds an era of growth and innovation.

Gift City

The International Financial Services Centres Authority (IFSCA) is poised to play a pivotal role in India's vision for 2047. As a unified regulator, IFSCA is responsible for developing and regulating financial institutions, services, and products within India's International Financial Services Centres (IFSCs). With its internationally aligned regulatory regime, IFSCA aims to create an environment conducive to global financial institutions operating in India. This, in turn, will facilitate the growth of India's financial sector, making it a key player in the global economy.

GIFT IFSC has been witnessing brisk growth, having more than 720 entities across categories. The international and domestic financial services industry is gravitating to this unique jurisdiction which benefits from unrestricted currency convertibility as it is classified as a non-resident zone under the Foreign Exchange Management Regulations. GIFT-IFSC has continued its ascent as a leading IFSC, improving its rank by five places in the 'Global Financial Centres Index 36' (GFCI 36), rising to 52nd position. It also achieved a notable jump in the FinTech rankings, climbing four places to rank 45. This progress reflects the concerted efforts of IFSCA in fostering a robust FinTech ecosystem.

The vibrant banking ecosystem in GIFT IFSC comprises foreign and domestic banks set up as branches of the parent bank operating as IFSC Banking Units (IBUs). As of September 2024, the total asset size of IBUs crossed USD 70 billion, and the cumulative value of transactions undertaken by IBUs crossed USD 975 billion. Credit exposure of IBUs stands over USD 51 billion as of September 2024, covering countries like the US, UK, Singapore, UAE, etc., apart from India. Additionally, the cumulative derivatives trades by IBUs crossed USD 982 billion, while the cumulative non deliverable forwards (NDF) bookings reached almost USD 500 billion.

The asset management ecosystem in IFSC is proliferating. It comprises 128 Fund Management Entities, 168 Alternative Investment Funds (AIFs), and three Investment Advisors. By September 2024, AIFs had raised total commitments of USD 12.1 billion. Further, the insurance ecosystem in IFSC currently comprises 37 entities, including 15 IIOs (IFSC Insurance Offices) and 23 IIIOs (IFSC Insurance Intermediary Offices). The total (Re)insurance premium booked by IIOs is USD 427 million, and the total (Re) insurance premium transacted by IIIOs is USD 1,036 million, up to September 2024.

India's Digital Infrastructure

Launched in 2015, the Digital India Mission aimed to transform India into a digitally empowered society and knowledge economy. The strategy emphasized three core areas: digital infrastructure as a utility to every citizen, governance and services on demand, and digital empowerment.

India's DPI is anchored on the India Stack, a set of open APIs and digital platforms, which includes:

- Aadhaar: A biometric digital identity system
- UPI (Unified Payments Interface): An interoperable real-time payment platform
- Jan Dhan Yojana: Financial inclusion through zero-balance bank accounts
- DigiLocker: A digital document wallet
- FASTag: Electronic toll collection system
- National Scholarship Portal, GeM, and ABHA IDs under Ayushman Bharat

These platforms are now deeply embedded in India's welfare architecture.

India's digital infrastructure has reached scale rapidly, with tangible national coverage:

Platform	Key Metrics (2024–25)
Aadhaar	138.08 crore+ enrolled, 1,000+ Central & State Government schemes
Jan Dhan Yojana	22 Crore + accounts opened, ₹2 lakh crore cumulative deposits
UPI	230+ million users, 6.2 billion documents shared
DigiLocker	₹2,300+ lakh crore in transaction value (FY 2023–24)
FASTag	Covers all toll collection nationally
BharatNet	Optical fiber laid to 2.18 lakh + Gram Panchayats

These achievements have transformed DPI into a strategic tool for inclusive and efficient public service delivery.

DPI's Role in Central Sector Schemes

Digital infrastructure has been pivotal in optimizing implementation and accountability in central sector schemes. By enabling direct, real-time, and paperless services, DPI has improved both speed and transparency. Key examples include:

1. Direct Benefit Transfer (DBT)

- Scale: Covers 300+ schemes across 50+ ministries.
- Savings: ₹2.7 + lakh crore saved by eliminating leakages, ghost beneficiaries, and delays (DBT Bharat Portal).
- Total Transfers Cumulative: ₹34.5 lakh crore since 2014.

2. PM-KISAN

Farmers receive ₹6,000 annually through Aadhaar-authenticated transfers, ensuring funds are directly credited to beneficiaries without middlemen. Over 11 crore farmers are enrolled.

3. **PAHAL (LPG Subsidy)**

   The world's largest cash transfer scheme. Aadhaar-linked bank accounts and LPG connections reduced duplicate and ghost entries, improving targeting and efficiency.

4. **MNREGA**

   Use of Aadhaar-based attendance and the NMMS mobile app enables real-time verification of work and payments, cutting down fake entries and ensuring timely wage disbursement.

5. **PMAY-G (Rural Housing)**

   DPI tools like geo-tagging, real-time monitoring, and Aadhaar validation ensure that benefits reach verified households while allowing policy feedback loops on construction stages.

6. **National Scholarship Portal**

   Students apply through a single-window digital system, linked to Aadhaar and bank accounts. Over □ 9,200 crore was disbursed in FY 2023–24 to over 1.5 crore students.

7. **Ayushman Bharat Digital Mission (ABDM)**

   More than 55 crore citizens now have a digital health ID (ABHA), making health records portable and interoperable between providers, labs, and insurance systems.

DPI as a Global Model

India's DPI has gained widespread international recognition:

- The G20 Digital Economy Working Group (2023) acknowledged Indias DPI as a &" global public good";
- According to a World Bank report prepared for the G20, Indias digital infrastructure has delivered welfare benefits equivalent to 1% of GDP annually through efficiency gains and better targeting (World Bank G20 Note).

India is also exporting its DPI model globally through the India Stack Global initiative.

Countries such as Sri Lanka, Morocco, the Philippines, and Kenya are adopting systems modeled on Aadhaar and UPI.

The Road Ahead:

India's DPI success presents both opportunities and responsibilities and the focus now shift to scaling this infrastructure deeper and wider:

1. Connectivity and Inclusion
   - BharatNet Phase II aims to complete last-mile fiber connectivity across all villages by FY 2025–26.
   - Satellite broadband partnerships with Starlink and OneWeb will connect remote regions.
2. **Cloud and AI Infrastructure**
   - The newly approved India AI Mission (₹10,000 crore) will build AI computing capacity and foundational datasets.

- Major investments from Google, Microsoft, and AWS in cloud data centres are being leveraged to support DPI platforms.

3. Legal and Regulatory Framework

- The Digital Personal Data Protection Act 2023 aim to ensure clarity, privacy, and security while enabling innovation.
- Emphasis on privacy by design and secure data-sharing protocols is central to sustaining DPI trust.

4. Cross-Border DPI and Global South Diplomacy

India is positioning itself as a technology partner to the Global South by offering modular, open-source DPI frameworks. This includes payment systems (UPI), identity (Aadhaar-like platforms), and document systems (DigiLocker clones).

Conclusion

India stands at the forefront of a digital transformation that is reshaping the way governance is delivered. With one of the world's most extensive and inclusive digital public infrastructure (DPI) ecosystems, India has revolutionized service delivery, enhanced transparency, and expanded access to essential public goods for over a billion citizens India's digital infrastructure is more than a technology stack—it is a public governance revolution. It has enabled real-time delivery of welfare, fiscal transparency, and social equity at scale. By building a digitally empowered population and enabling seamless coordination between multiple levels of government, India is pioneering a new model of citizen-centric development.

India's DPI provides a living blueprint of how digital tools can amplify welfare goals, optimize scheme execution, and act as a catalyst for inclusive governance in the 21st century.

In the context of Infrastructure sector, Digitalization has several benefits including improved efficiency, enhanced transparency, Sustainable Development, increased connectivity and better decision making through various tools like AI and Machine Learning. The specific areas include smart transportation, digital agriculture (through technologies like drones) and smart cities to take care of better urban planning, energy management and Public Services. However, issues like cyber security, work force skill development and regulatory framework need to be taken care of. The recent and proposed initiatives of NHAI in the use of digitalization include "One Vehicle One FASTag", Automatic Number Plate Recognition Based Tolling, and Distance Based Tolling.

Source:

1. Press Information Bureau (PIB): https://pib.gov.in
2. DBT Bharat Portal: https://dbtbharat.gov.in
3. World Bank G20 DPI Report (2023): Link
4. G20 Digital Economy Working Group Reports: https://www.g20.org
5. India Stack Platform: https://www.indiastack.org

Reforms required for further Development

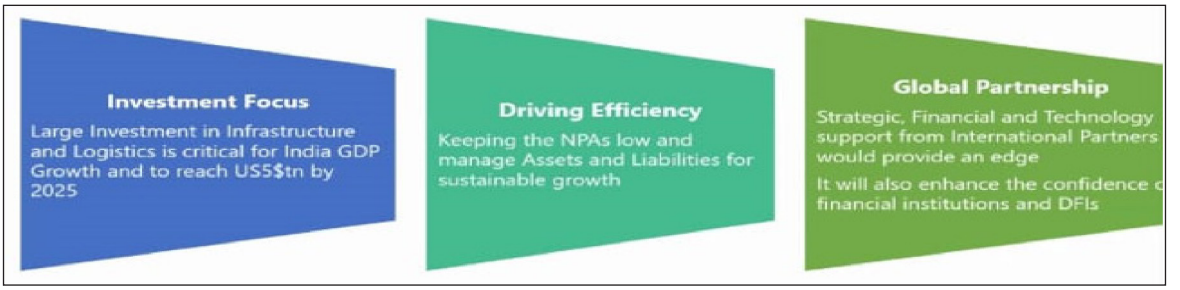
- Improving project preparation processes
- Enhancing execution capacity of private sector participants
- Robust enabling environment
- Optimal risk sharing
- Sanctity and enforcement of contracts
- Institutionalisation and efficiency of dispute resolution
- Improving capacity development of project execution agencies
- Strengthening infrastructure quality
- Promoting competition
- Financial sector reforms
- As announced by the Honourable FM in 2023-24 budget, To meet the needs of Amrit Kaal and to facilitate optimum regulation in the financial sector, public consultation, as necessary and feasible, will be brought to the process of regulation-making and issuing subsidiary directions.

Role of legislation and regulation in providing a conducive environment for private sector participation

In order to meet the infrastructure funding gap and create an enabling environment for improved private sector participation, the Government can consider several measures including changes in existing regulations and dispute resolution mechanisms to ensure optimal and equitable risk allocation across all stakeholders. The following points can be considered:

1. Ensuring equitable allocation of risks in PPPs to respective stakeholders and upholding sanctity of contracts is expected to improve private sector participation in infrastructure.
2. Standardisation of contracts is an international best practice. This clarifies the risk-return framework for the private sector, as well as dealing with issues related to force majeure, incentives and penalties, tariff and its indexation and termination payments. India has developed Model Concession Agreements (MCAs) for the road and port sector. It is necessary to develop MCAs for more sectors, especially for emerging sectors like railway station development and passenger train operations.
3. The risk allocation to respective parties should be based on their ability to bear the same in an efficient manner.
4. Autonomous regulation in all infra sectors that are going in for PPP mode of implementation.
5. Currently a few sectors like airports and power have their respective independent regulators which provide investors recourse on matters such as dispute resolution, performance standards, consumer protection and competition. Similar measures can be considered for other infra subsectors especially the key ones.
6. However, it needs to be borne in mind that independent sectoral regulators are just one option for autonomous regulation. There are other options like regulation by contract practised in the road sector, where India has more than 400 contracts. The option of multi–sectoral regulators economize on costs and skills while deterring regulatory capture.

Forward Approach

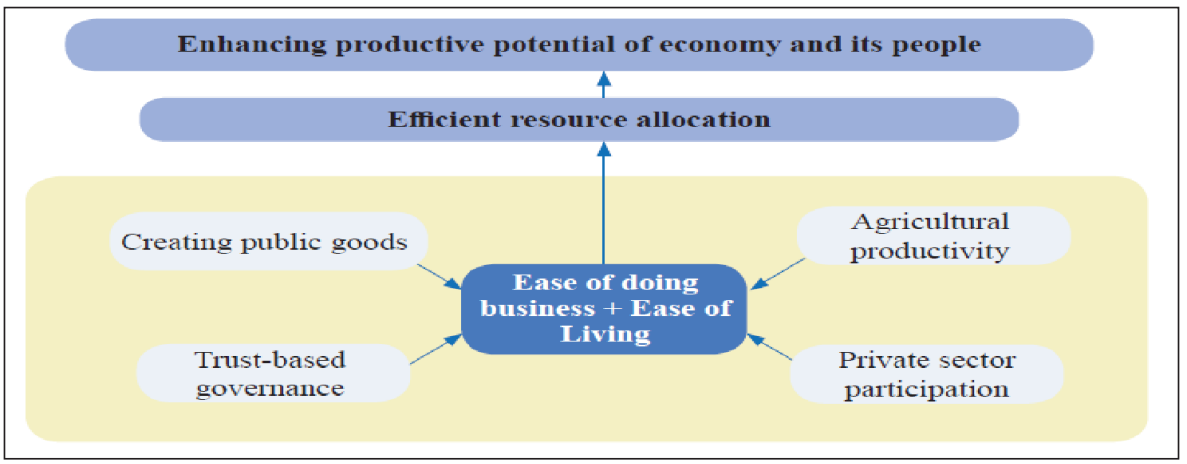


Going forward comprehensive monitoring of the inflows under FDI shall be required with cross correction in policies to further incentives the investors so that substantial funds are available towards the coveted goal of greater infrastructure development.

Reforms for New India-Sabka Saath Sabka Vikaas

The reforms undertaken before 2014 primarily catered to product and capital market space.

They were necessary and continued post-2014 as well. The government, however, imparted a new dimension to these reforms in the last nine years. With an underlying emphasis on enhancing the ease of living and doing business and improving economic efficiency, the reforms are well placed to lift the economy's potential growth. The broad principles behind the reforms were creating public goods, adopting trust-based governance, co-partnering with the private sector for development, and improving agricultural productivity. This approach reflects a paradigm shift in the growth and development strategy of the government, with the emphasis shifted towards building partnerships amongst various stakeholders in the development process, where each contributes to and reaps the development benefits (*Sabka Saath, Sabka Vikaas*).



The commitment to economic reforms has been well underlined in the budget which inter alia includes the following:

Regulatory Reforms

In the last ten years in several aspects, including financial and nonfinancial, our Government has demonstrated a steadfast commitment to 'Ease of Doing Business'. We are determined to ensure that our regulations must keep up with technological innovations and global policy developments. A light-

touch regulatory framework based on principles and trust will unleash productivity and employment. Through this framework, we will update regulations that were made under old laws. To develop this modern, flexible, people-friendly, and trust-based regulatory framework appropriate for the twenty-first century, I propose four specific measures:

High Level Committee for Regulatory Reforms

A High-Level Committee for Regulatory Reforms will be set up for a review of all non-financial sector regulations, certifications, licenses, and permissions. The committee will be expected make recommendations within a year. The objective is to strengthen trust-based economic governance and take transformational measures to enhance 'ease of doing business', especially in matters of inspections and compliances. States will be encouraged to join in this endeavour.

Ministry of Cooperation

In order to have integrated development featuring rapid growth with equitable distribution a separate ministry has been created to take the common objectives of the nation for world.

Ministry of Cooperation was created by transferring the existing entries related to cooperation and cooperative in the business of the erstwhile Ministry of Agriculture, Cooperation and Farmers Welfare vide Cabinet Secretariat's Gazette Notification dated 6th July, 2021.

The Ministry is responsible for provide a separate administrative, legal and policy framework for strengthening the cooperative movement in country. Its aims to deepen co-operatives as a true people based movement reaching up to the grassroots and develop a cooperative based economic model where each member works with a spirit to responsibility. The principal activities of the Ministry include streamlining processes for 'Ease of doing business' for co-operatives and enabling development of Multi-State Co-operative Societies. It lays emphasis on strengthening, bringing transparency, modernization, computerization, creating competitive cooperatives, working constantly to meet the challenge of accessibility to development for every underprivileged in rural areas and on connecting every village with cooperatives, making every village prosperous with the mantra of "Sahakar se Samriddhi" and through this making the country prosperous.

The ministry was created with objectives of:

- To realise the vision of *"Sahkar se Samriddhi"* (prosperity through cooperation).
- To streamline processes for "Ease of doing business" for co-operatives and enable development of Multi-State Co-operatives (MSCS)
- to provide a separate administrative, legal and policy framework for strengthening the cooperative movements in the country.
- To deepen the cooperative as a true people-based movement reaching upto the grassroot level.

Going forward the fulfilment of the above objectives is going to be a well aligned with the infrastructure development of the nation with multiplier effects.

CHAPTER - 25

ESG AND SUSTAINABLE FINANCE

ESG AND SUSTAINABLE FINANCE

In recent years, climate change concerns and sustainable development have taken centre stage in global and national priorities. There has been a growing recognition of the significant financial and economic impacts of environmental, social and governance (ESG) risks across the globe, with many international bodies and financial regulators examining ESG-related issues including regulation and supervision. Unexpected climate changes around the world continue to demonstrate the fragility of traditional business approaches and highlight the importance of organizational resiliency. Investors are more aware of the financial implications of sustainability related risks and opportunities and factors the same in their investment decisions.

In this context all the stakeholders viz the government, the financial sector, the businesses and investors have a crucial role to play. The financial sector has a key role to play which shall be discussed in this chapter along with all other aspects relating to ESG and Sustainable Finance. The investors and businesses are also required to participate in the process of these crucial issues.

Source: SEBI Website

- **Environmental, Social, and Governance (ESG)**
- Environmental, Social, and Governance (ESG) is an approach followed by the economists, governmental organisations, corporations, investment funds, and financial institutions to address the society's environmental, social and governance concerns and find their value drivers in asset management.
- The term ESG is often used interchangeably with sustainability, and green or ethical investment as the three domains of environmental, social and corporate governance are intimately linked to the concept of Responsible Investment (RI).
- Globally, while the Rating Agencies have start measuring the ESG compliance; the Banks, investment funds, and financial institutions have also started evaluating business proposals with ESG index.
- Numerous institutions, such as the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), and the Task Force on Climate-related Financial Disclosures (TCFD) are working to form standards and define materiality to facilitate incorporation of ESG into the investment process and ESG disclosures.

ESG Goals

- Environmental goals include Conservation of the natural world; Ecosystem; Climate change and carbon emissions; Air and water pollution; Biodiversity; Deforestation; Energy efficiency; Waste management; Water scarcity, etc.

- Social goals include Consideration of people & relationships; Customer satisfaction; Data protection and privacy; Gender and diversity; Employee engagement; Community relations; Human rights; Labour standards; Animal welfare, etc.
- Governance include Standards for running a company; Ownership & control, Board composition & diversity; Audit committee structure; Bribery and corruption; Executive compensation; Transparency; Business ethics; Lobbying; Political contributions; Whistle-blower schemes, etc.

ESG Risks & Mitigation Measures

- Global sustainability challenges such as global warming, flood risk and rising sea levels, privacy and data security, social & demographic shifts, the loss of biodiversity, water scarcity, corruption & social tensions, and regulatory pressures, are introducing new risk factors.
- In addition, the economic pressure caused by COVID-19 pandemic on some industries has affected their exposure to ESG risks and their ability to manage them.
- Therefore, not only the corporate world, but the global economies are focussing more & more on addressing these ESG risks.
- India is by far no exception; though it is comparatively in a nascent stage. So far, only nine ESG focused Funds have been launched.
- India's share in ESG themed investment is estimated at 7% but poised to increase to 30% by 2030, equal to over Rs. 20 lakh crore.
- Owing to the imminent threats of climate change on all future lives on this planet, Hon'ble Prime Minister made a pledge to become carbon neutral or cut its emissions to net zero by 2070.
- Our dependence on fossil fuels must be given a go by to ensure environmental sustainability.
- The upcoming real estate sector in India, which is expected to reach a market size of US$1 trillion by 2030, has major ESG concerns as it is responsible for a quarter of the total emissions.
- Therefore the concept of green buildings is becoming a preferred option as these are climate resilient, consume less energy & water, provide adequate ventilation & air quality, and ensure healthier living.
- Other major examples of environmental transformations taking place globally as well as in India are shift towards non-renewable energy, and electric vehicles; digital communication replacing paper; promoting use of recyclable materials [shunning use of plastics]; reducing pollution; and conserve biodiversity, forests & wildlife.

Source: SEBI Website

Role of Financial sector

The Reserve Bank of India as an important regulator of Financial Sector of India has already started taking proactive steps towards bringing out a robust regulatory mechanism to ensure a meaningful and effective role of Banks /NBFCs to tackle climate risk through Sustainable Finance. The RBI joined

the Central Banks and supervisors Network of Greening the Financial System (NGFS) as a member in April 2021. Further, the RBI is also represented in the G-20 sustainable finance group, Financial stability Board's working group on climate Risk and work stream on climate -related Disclosures, Task Force on climate related Financial Risks set up by the Basel committee on Banking Supervision (BCBS) and the international platform on sustainable Finance.

Based on the experience gained from deliberations of these forums/organisations, the RBI proposes to suggest strategies to be adopted by the regulated entities to mitigate climate related risks and develop guidelines for the integration of climate risk into the existing risk management framework.

In line with India's commitment towards net-zero transition, the Reserve Bank has taken proactive steps like including financing renewable energy projects under priority sector loans; introducing green deposits framework; issuance of sovereign green bonds (SGrBs); allowing investment and trading in SGrBs by eligible foreign investors in International Financial Services Centre (IFSC) in India; and issuing a Draft Disclosure Framework for climate related financial risks for public consultation.

The Reserve Bank is also in the process of finalising and issuing a guidance note on scenario analysis and stress testing of climate related risks for Regulated entities, covering modelling techniques, scenario considerations and methodologies for carrying out stress testing exercises. The Reserve Bank's aspirational goals for RBI@100 include establishing a robust regulatory and supervisory framework to effectively manage challenges arising from climate change, enhancing the resilience of payment systems against climate risks, and collaborating with the government for finalising a comprehensive taxonomy11. Reserve Bank Climate Risk Information System (RB-CRIS)

Climate risk assessments by Regulated entities would require, inter alia, high quality data relating to local climate scenarios, climate forecasts, and emissions. The publicly available climate related data are characterised by various gaps, such as, fragmented and varied sources, differing formats, frequencies and units. To bridge these gaps, the Reserve Bank plans to create a data repository, viz., the Reserve Bank – Climate Risk Information System (RB-CRIS)12. The first part of the repository will be a web-based directory, listing various data sources, including meteorological and geospatial data, which will be publicly accessible at the RBI website. The second part will comprise processed datasets in standardised formats. The access to this data portal will be made available only to REs in a phased manner.

Climate change risks are envisaged to impact profitability of financial institutions, growth prospects, and inflation dynamics and, thus, impinge upon financial stability and price stability. To foster assessment of these concerns by Regulated entities, regulatory and supervisory frameworks need to be strengthened with enhanced risk management guidelines; disclosure requirements; periodic stress testing; and stipulating reasonable verification and assurance functions.

Addressing financial risks emanating from climate change is a key priority for all international bodies. The International Organisation of Securities Commissions (IOSCO), the International Sustainability Standards Board (ISSB), and other relevant bodies have collaborated to support jurisdictions in adopting and applying the ISSB's new sustainability related disclosure standards.

An FSB progress report on climate related disclosures indicates that out of the 24 FSB member jurisdictions surveyed, 19 have already enacted regulations, issued guidelines or developed strategic roadmaps for climate-related disclosures. 17 FSB jurisdictions have set or proposed voluntary or mandatory disclosure requirements based on the ISSB Standards and the recommendations of the Task Force on Climate-related Disclosures (TCFD). Moreover, several jurisdictions have taken concrete steps towards assurance requirements.

Source: RBI Report on Currency and Finance 2023

Draft diclouser framework 2024

Role of Government

At the Government level India is playing a responsible role in various international forums while at the same time actively working on Nationally Determined Contributions.

Progress on India's Climate Action

India's climate vision is integrally linked to its vision of development that foregrounds the goals of poverty eradication and guaranteeing basic well-being to all its citizens. Action on addressing climate action was initiated even before the Paris Agreement came into being. In 2008, India launched the National Action Plan on Climate Change (NAPCC), establishing eight National Missions, covering several initiatives and a slew of measures in the area of solar, water, energy efficiency, forests, sustainable habitat, sustainable agriculture, sustaining Himalayan ecosystem, capacity building and research and development (R&D).

Progress on Eight National Missions of the NAPCC highlighting achievements across various domains

National Solar Mission	•Solar power capacity of 61.62 GW installed by October 2022
National Mission for Enhanced Energy Efficiency	•PAT Cycle–VII notified in October 2021 for energy saving target of 6.63 Million Tonnes of Oil Equivalent (MTOE)
National Mission on Sustainable Habitat	•721 km of metro rail network made operational by August 2022. •62.79 lakh individual household toilets and 6.21 lakh community and public toilets constructed by April 2022
National Mission for a Green India	•₹ 626.96 crore for afforestation targets over an area of 2.1 lakh ha
National Water Mission	•Jal Shakti Abhiyan: Catch The Rain 2022
National Mission on Strategic Knowledge for Climate Change	•Created and strengthened 12 Centres of Excellence for climate change (June 2021)
National Mission for Sustaining Himalayan Ecosystems	•Inter-University Consortium •8 Major R&D Programmes initiated
National Mission for Sustainable Agriculture	•Key targets for FY 2022-2023 covering 0.15 lakh ha under organic farming and 10 lakh ha under micro irrigation

India's updated Nationally Determined Contribution (NDC)

India submitted its first NDC to UNFCCC in October 2015. This was updated in August 2022. The 2015 NDC comprised eight goals, three of which were quantitative targets to be achieved up to 2030. The three targets included cumulative electric power installed capacity from non-fossil sources to reach 40 per cent, reduction in the emissions intensity of GDP by 33 to 35 per cent compared to 2005 levels, and creation of additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover.

Article 4 of the Paris Agreement provides that each Party shall communicate or update its NDC every five years. Therefore, in accordance with the aforesaid provision of the Paris Agreement, India submitted the following updates to its first NDC of 2015.

1. To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for 'LIFE'– 'Lifestyle for Environment' as a key to combating climate change.
2. To adopt a climate-friendly and cleaner path than the one followed hitherto by others at the corresponding level of economic development.
3. To reduce the Emissions Intensity of its GDP by 45 per cent by 2030, from the 2005 level.
4. To achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of the transfer of technology and low-cost international finance, including from the Green Climate Fund (GCF).
5. To create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030.
6. To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, the Himalayan region, coastal regions, and health and disaster management.
7. To mobilise domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.
8. To build capacities and create a domestic framework and international architecture for quick diffusion of cutting-edge climate technology in India and for joint collaborative R&D for such future technologies.

Source: Ministry of Environment, Forest and Climate Change

Localisation of Sustainable Development Goals

The adoption of 17 SDGs in 2015 marked a paradigm shift in how the world understood and prepared itself to pursue the development agenda. India continues to wholeheartedly accept, engage, and progress with the idea of SDG implementation. Our timely submission of Voluntary National Reviews of 2017, 2020 and 2023189 and the adoption of the SDG Index 190 reflects India's commitment to the cause. The call for 'Sabka Saath, Sabka Vikas' and the vision of Viksit Bharat by 2047 lays the roadmap for achieving the SDGs.

There is a global shift towards the 'localisation' of SDGs to achieve the goals by 2030 and increase the rate and impact of progress. SDG localisation is the process of adapting and customising these goals and translating them into local development plans and strategies that fit the needs, context and priorities of a particular region or locality in coherence with national frameworks (United Nations, 2024).191 This approach places local communities at the centre of sustainable development and anchors development action on the principles of subsidiarity, inclusion, partnership and multilevel governance, with adequate data and financing availability at the local level.

In India, state governments have been proactive and have laid out strategies and frameworks for achieving SDGs at various administrative levels. Some states have extended their indicator frameworks to the district and block levels, ensuring that local budgets align with SDG objectives. This multi-layered approach to SDG implementation is based on the Indian model of SDG Localisation192 comprising four key pillars: creating institutional ownership, fostering collaborative competition, enhancing capacities, and embracing a whole-of-society approach.

Climate Finance Taxonomy

An important aspect of the Government Policy for handling the challenges of 'Climate Change Risk' is the introduction of "Climate Finance Taxonomy", which is crucial for channelizing capital towards Climate Resilient Infrastructure and practices. The aim is to direct Capital Investments towards genuine green projects in an effective and transparent manner. The new initiative will lead to standardized regulations and guidelines that inform the companies and the investors about the impactful investments in the desire activities which qualified as "Green Investments". The idea is to prevent miss representation through Green Washing and there is a need for enhancing investor confidence in contributing for India's sustainable Green Growth. The Banks and Financial Institutions will need to fund the genuine climate friendly projects and align the financial regulation with Global Standards. A coordinated approach by the government, regulators, Banks and other stake holders is of utmost importance at this stage for successful and smooth implementation of the various policy initiatives. In this respect Ministry of Finance government of India has brought out an important publication in May 2025 by way of DRAFT FRAMEWORK OF INDIA'S CLIMATE FINANCE TAXONOMY. This inter-alia contains the foundational framework and approach in the first phase. The second phase will involve the classification of activities measures and projects that are Climate supportive along with those facilitating transition in specific sectors and industries.

India's climate ambitions are reflected through the Nationally Determined Contributions (NDCs) and the announcement of Net Zero emissions by 2070. India requires around USD 2.5 trillion (at 2014-15 prices) to meet the NDC targets till 2030.1 As per NITI Aayog's India Energy Security Scenarios (IESS) 2047, a scenario-building tool, the total investment required for energy transition is estimated at ~USD 250 billion per year till 2047.2 However, this cost does not include the cost of EV infrastructure, demand infrastructure such as new iron and steel plants, etc.

Finance for adaptation action is vital for addressing climate change impacts, building resilience and achieving India's development goals. Preliminary estimates indicated that about USD 206 billion (at

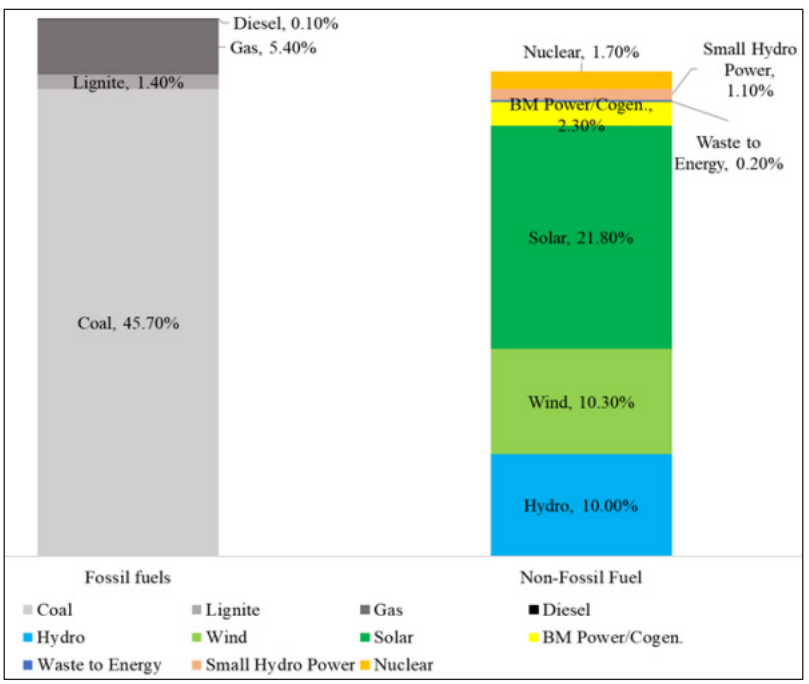
2014-15 prices) would be required from 2015 to 2030 to implement adaptation actions in agriculture, forestry, fisheries, infrastructure, water resources and ecosystems. 3 According to the Initial Adaptation Communication 4 submitted by the country in December 2023, the cumulative expenditure needed for adaptation in a Business as Usual (BAU) scenario is estimated to be ₹56.68 trillion (approx. USD 648.5 billion)5 till 2030 at 2023-24 prices.

The country has also announced its vision to be 'Viksit' or 'developed' by 2047. At present, India's energy consumption per capita is about one-fifth6 of the developed countries and would need to appreciate significantly during the Amrit Kaal, a period of rapid economic growth. Estimates suggest that the minimum level of per capita final energy requirement for India to become a developed country with an HDI of 0.9 must be in the range of 45.7 to 75.

India is progressing towards a diversified energy mix, focusing on expanding renewable energy, bioenergy, nuclear, and storage solutions. As of February 2025, non-fossil fuel sources account for 47.4 per cent of the total installed electricity generation capacity. Within this, solar comprises 21.8 per cent, wind 10.3 per cent, hydro 10.0 per cent, and nuclear 1.7 per cent15.

India is rapidly scaling up solar energy through grid and off-grid initiatives. The Solar Parks Scheme and Ultra-Mega Solar Power Projects aim to establish 40,000 MW capacity, with 55 solar parks already sanctioned across 13 states, totalling 39.9 GW, of which 12.2 GW has been commissioned as of December 2024. In wind energy, states such as Tamil Nadu, Gujarat, Maharashtra, and Karnataka continue to lead.

India's electricity mix in terms of installed capacity (as of February 2025)



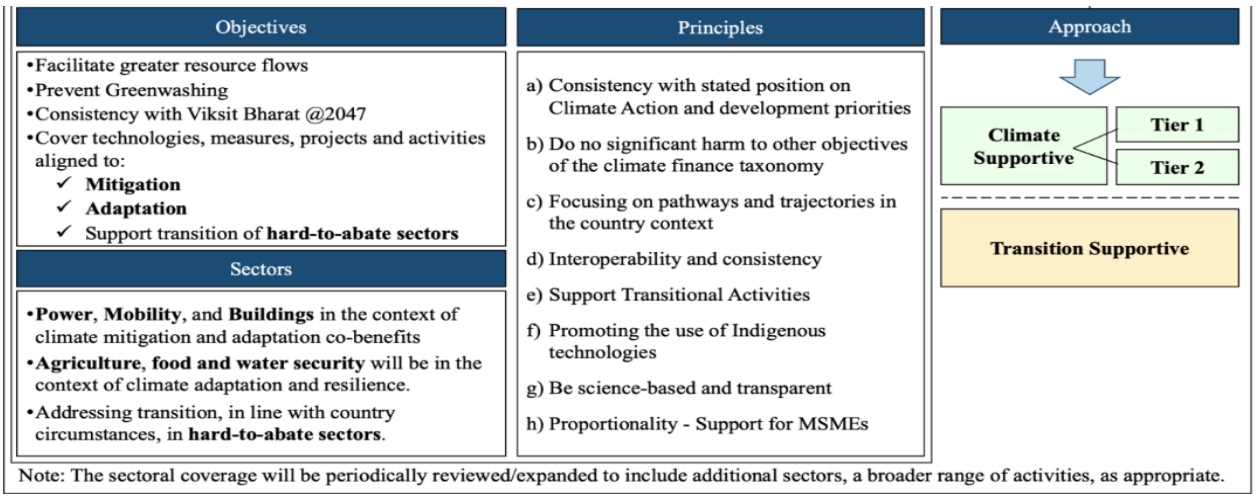
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Given the complexity of the exercise and in alignment with international experience, the proposed work will be conducted in two distinct phases. The first phase will establish the foundational framework and

the approach. Following this, the second phase will involve the classification of activities, measures, and projects that are climate-supportive, along with those facilitating transition in specific sectors and industries. This phased approach aims to enhance clarity and transparency for investors while ensuring that the taxonomy remains aligned with India's developmental goals and climate commitments. Acknowledging that taxonomy must continually evolve in scope and depth to reflect the dynamic nature of the economy, it will be a living document that will be reviewed and updated from time to time. While achieving interoperability and ensuring alignment with global taxonomies is essential and will be pursued, the unique circumstances of the country will ultimately shape the development of the taxonomy.

This approach will facilitate both domestic and foreign financial institutions in identifying investment opportunities in climate-related activities and will also help mitigate the risk of greenwashing.

Structure of India's Climate Finance Taxonomy



A comprehensive structure has been proposed as detailed above clearly identifying the objectives, principles, approach and sectors. The above proposed principles are in alignment with the Global Taxonomy in various countries, including G20 sustainable finance working group. As stated in the ICMA guidelines on taxonomies, "the real challenge is enabling the market to finance the transition rather than unintentionally restricting it to what is already considered exemplary." The taxonomy should facilitate a dynamic and inclusive classification system that recognises and supports sectors crucial for transition, facilitating investment in critical sectors during their transition phase.

The classification will be guided by the principles set down in this framework. The taxonomy will classify activities and projects into two baskets - Climate supportive and climate transition. The taxonomy will adopt a graded approach, classifying activities at various levels.

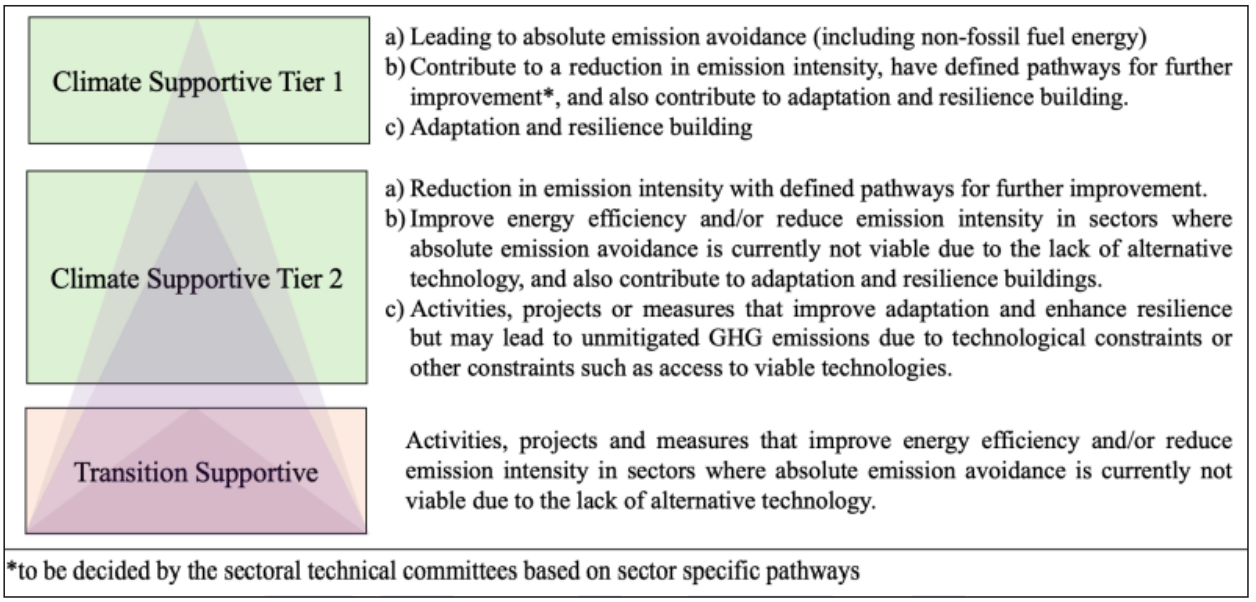
Sectoral Coverage

To begin with, the following sectors shall be considered:

- Power, Mobility, and Buildings in the context of climate mitigation and adaptation co-benefits.

- Agriculture, food and water security will be in the context of climate adaptation and resilience building.
- Addressing transition, in line with country circumstances, in hard-to-abate sectors. Iron and Steel and Cement shall be considered at the outset.

Approach of the Taxonomy: Constituent Elements:



The Climate finance taxonomy will consist of two parts - the Framework and the sectoral annexures. A Concept note was shared with the identified experts from think tanks, academia, international organisations, development finance institutions, line ministries/departments of the Government of India, and industry bodies to gather feedback and inputs. This framework has been prepared based on the consultations and inputs received on the initial concept note. Existing taxonomies from various countries, regions, and organisations have also been reviewed with respect to the objectives, principles and approach.

Before finalisation, comments received through public consultation will be duly considered. Following this, the Department of Economic Affairs, Ministry of Finance will release the Framework of India's Climate Finance Taxonomy. The framework document sets out the basis on which sectoral annexures will be prepared taking into account the objectives, principles, approach and flexibilities to address proportionality and sectoral context and pathways. In the second stage of work, the inputs will be finalised as annexures to the framework document.

Source: Framework of India's Climate Finance Taxonomy Government of India Ministry of Finance

International Solar Alliance (ISA) 7.62

The International Solar Alliance (ISA) is a treaty-based inter-governmental organisation working to create a global market system to tap the benefits of solar power and promote clean energy applications. ISA's mission is to unlock US$ 1 trillion of investments in solar by 2030 while reducing the cost of the

technology and its financing. With the signing and ratification of the ISA Framework Agreement by 15 countries on 6 December 2017, ISA became the first international intergovernmental organisation to be headquartered in India. ISA is partnering with multilateral development banks (MDBs), development financial institutions (DFIs), private and public sector organisations, civil society, and other international institutions to deploy cost effective and transformational solutions through solar energy, especially in the least Developed Countries (LDCs) and the Small Island Developing States (SIDS).

Challenges and Opportunities

India needs to achieve robust economic growth to attain developed nation status by 2047, with a focus on inclusive and sustainable development. While the country has low per capita carbon emissions, it is committed to pursuing low-carbon growth. However, it faces challenges in deploying renewable energy, particularly due to a lack of storage technology and access to minerals. Given India's vulnerability to climate change, a strong adaptation strategy is essential; the increase in adaptation expenditures from 3.7 per cent to 5.6 per cent of GDP between FY16 and FY22 indicates the prominence adaptation and building resilience play in the development strategy. The Lifestyle for Environment (LiFE) initiative, designed to encourage sustainable practices and circular economy, will play a transformative role in the development process. The flow of international finance has remained grossly inadequate, with much of the action being financed from domestic resources. The outcomes from the recent CoP29 hold little promise on that account. A strong adaptation strategy is a priority for the country, given its significant vulnerability to climate change, stemming from its geographic and agro-climatic diversity.1 India's Initial Adaptation Communication, submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2023, reveals that the total expenditure related to adaptation in FY22 was 5.6 per cent of the Gross Domestic Product (GDP), an increase from 3.7 per cent in FY16. Climate action, so far, has been financed through domestic resources, with the public sector playing a central role. On the other hand, the international flow of funds for climate actions is highly inadequate and has a mitigation bias (Chart 1).

Following a low-carbon development pathway and achieving the net zero carbon emissions goal necessitates a fundamental shift in mindset and behaviour towards mindful consumption and production. The India-led global movement, Lifestyle for Environment (LiFE), aims to enhance the country's sustainability efforts. The LiFE initiatives are being executed in India in mission mode through various regulatory measures and policies that encourage environmentally friendly practices such as waste management, resource conservation, and recycling. Promoting a circular economy is also envisioned as a central component under the Mission LiFE.

The recent outcome of the New Collective Quantified Goal at CoP29 (29th session of the annual climate conference under the UNFCCC) held in Baku in November 2024 on finance presents little optimism about the possibility of support to developing countries. With the developed countries also falling short of their Nationally Determined Contributions (NDCs) by about 38 per cent,2 their actions do not reflect the historical responsibility or the leadership in meeting their obligations. The lack of commitment and insufficient delivery of the means of implementation,3 as mandated in the

Paris Agreement, will make the low-carbon transition in developing countries more challenging.

The 29th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 29) and the 6th Session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA 6), held in Baku, Azerbaijan, were designated as the 'Finance COP'. The focus was to establish the New Collective Quantified Goal (NCQG) on climate finance.4 The meetings of COP29 and CMA6 presented a significant opportunity to serve as a benchmark for international climate cooperation and multilateralism, with the potential to influence the efficacy of climate policies on a global scale and strengthen collaborative efforts by enhancing the financial commitments to support climate action in developing countries.

Establishing a small mobilisation target of USD 300 billion annually by 2035 is a fraction of the estimated requirement of USD 5.1 - 6.8 trillion by 2030.5 It is out of sync with the needs of the critical decade when action is required to keep the temperature goals of the Paris Agreement within reach.6 The decision demonstrates a significant misalignment with the Paris Agreement's mandate to demonstrate a 'progression beyond previous efforts' by developed countries. It underscores the unwillingness of affluent developed nations to assume their equitable share of the responsibility to address emission reduction and mitigate climate change impacts on vulnerable populations in developing regions. The goal contravenes equity and the principle of common but differentiated responsibility in the global climate response by disproportionately placing the burdens of climate change on those nations that have not historically contributed to the crisis.

COP 30 in 2025 is the COP for Climate Action, before which the parties to the Paris Agreement are to submit their next version of Nationally Determined Contributions. The funding shortfall may lead to a reworking of the climate targets. Considering that domestic resources will be the key to action, resources for meeting development challenges may be affected, undermining progress toward sustainable development objectives and compromising the integrity of international climate partnerships.

Finance for Sustainable Development - **Sustainable Finance**

Finance is a critical input in India's climate actions. The country's climate actions have so far been largely financed from domestic sources, including government budgetary support, a mix of market mechanisms, fiscal instruments, and policy interventions. India has shown global leadership in the fight against climate change and has committed itself to achieving net-zero emissions by 2070. While several estimates of the required investments are indicated in the LTLEDS report prepared by India, it is important to note that all allude to a need for tens of trillions of US dollars.

The understanding in the Convention and the Paris Agreement has been that the developed countries will mobilise the resources through public and other sources, including by catalysing private finance to enable a flow of financial resources at a reasonable cost. While these are yet to materialise, India has scaled up its efforts towards greater mobilisation of private capital to meet its ambitious climate action goals.

According to the UNEP's latest Adaptation Gap Report, adaptation could cost up to $340 billion per

year by 2030 and $565 billion per year by 2050. If adaptation remains poorly funded, loss and damage financing, on the agenda at COP27 finally, would need that much more attention. Further, the share of concessional capital, which can underwrite investment risks, continues to remain low, with grants accounting for only 26% of reported public climate finance flows. With the bulk of public climate finance channelled in the form of loans instead of blended finance, this capital was able to mobilise a paltry 19% of itself in private capital flows. The majority of the public climate finance was delivered through multilateral sources, particularly multilateral development banks (MDBs).

Green Financing

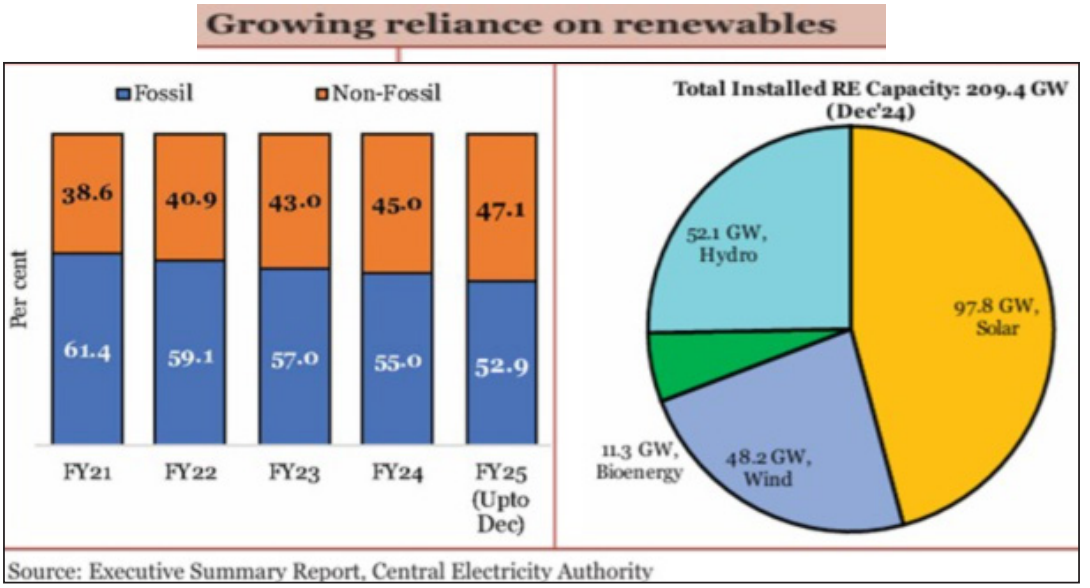
Green bonds are financial instruments that generate proceeds for investment in environmentally sustainable and climate-suitable projects. With the growing focus on the environmental sustainability of projects, green bonds have become widely accepted as an Economic Survey 2022-23 instrument to raise funds to support climate and environmental projects and command a relatively lower cost of capital vis-à-vis regular bonds. Major countries that resorted to green bonds to raise funds include the UK, France, Germany, the USA, and China. IMF data indicates that green bonds of value around US$ 620 billion were issued across the world in the year 2021, in which countries issued green bonds of value US$ 587.7 billion and international organisations issued bonds of value US$ 32.3 billion. As per SEBI's data on green debt securities, during the period of 2017 to September 2022, 15 Indian corporates have issued green bonds of value ₹4,539 crore. Most of these are related to renewable energy generation, while one is slated to be used for the tertiary treatment of wastewater.

A Green Finance working committee has also been set up to oversee and validate key decisions on the issuance of Sovereign green bonds. The committee has the mandate to select the projects for allocation of proceeds, do a time-bound review of the allocation and carry out annual reporting along with an impact assessment of the proceeds from sovereign green bonds issued.

In the shift towards renewable energy, the power sector has been bolstered primarily by large-scale solar and wind initiatives. By the end of December 2024, the country's total renewable energy installed capacity increased by 15.8 per cent year-on year, reaching 209.4 GW, up from 180.8 GW in December 2023. Renewable energy now constitutes about 47 per cent of India's total installed capacity (left panel of chart VI.14), highlighting a growing dependence on cleaner, non-fossil fuel-based energy sources.

In addition to these measures, the Government of India has included Sovereign Green Bonds (SGrBs) in its overall market borrowings with the aim of mobilising resources for green infrastructure. Adhering to the framework for sovereign green bonds that sets forth the obligations of the Government of India as a green bond issuer, the government has issued various lots of SGrBs of varying maturities of 5, 10 and 30 years. On the whole, SGrBs worth ₹16,000 crore were issued in FY23 and ₹20,000 crore in FY24. As for FY25, so far, the Government of India has raised 10-year SGrBs worth ₹11,697.40 crores and plans to raise ₹10,000 crore in remaining period of H2 FY25, i.e., ₹5,000 crore each category.

In order to foster and strengthen the country's green finance ecosystem, the RBI put in place the framework for accepting Green Deposits for Regulated Entities (REs), with effect from 1 June 2023, to encourage green deposits to augment the flow of credit to green activities/projects address greenwashing concerns. RBI has also classified bank loans of up to ₹30 crore for borrowers seeking funding for renewable energy projects under the priority sector lending



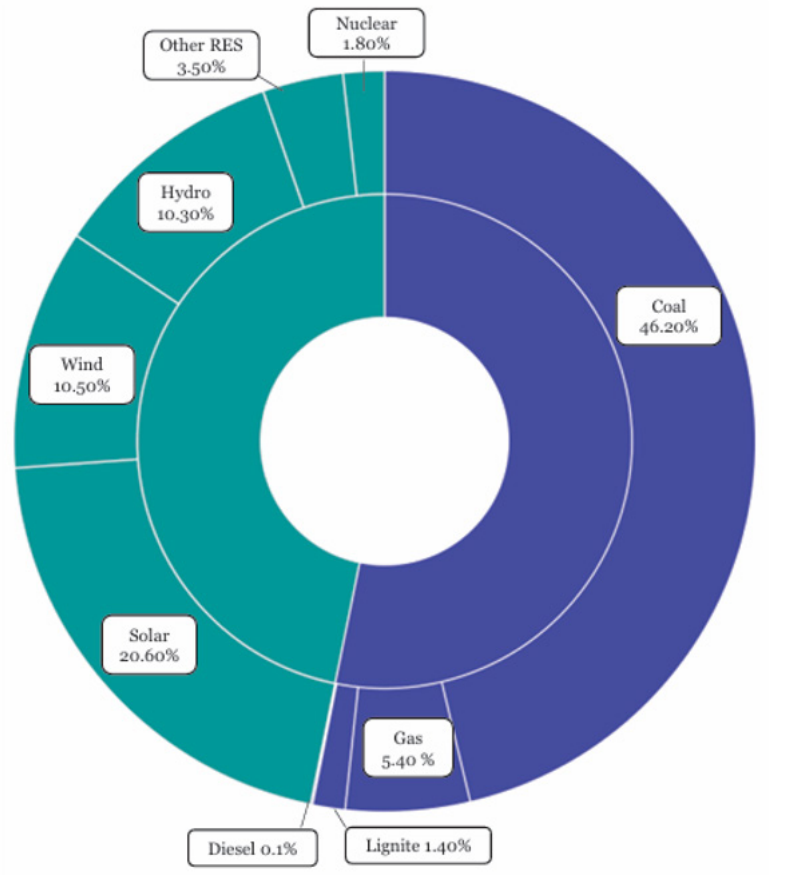
The Government of India implemented multiple initiatives aimed at ensuring uninterrupted power supply to every household. Under the Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS) introduced in 2014, and the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), introduced in 2017, about ₹1.85 lakh crore has been invested to boost distribution infrastructure across various states. Consequently, 18,374 villages have been electrified under DDUGJY, and 2.9 crore households have gained access to electricity through SAUBHAGYA7.

The government has also been implementing the Revamped Distribution Sector Scheme since July 2021 to enhance the quality and reliability of power supply for consumers. This initiative aims to create a financially sustainable and operationally efficient distribution sector. With a total outlay of ₹3.0 lakh crore and gross budgetary support of ₹97,631 crore allocated for the period from FY22 to FY26, projects worth ₹2.8 lakh crore have been approved to develop distribution infrastructure and implement smart metering solutions.

One of the key pillars of SDG7 is the expansion of renewable energy; however, it is clear that even in the most advanced economies, the technologies for renewable energy and their implementation are not yet at a maturity level that allows them to fully replace fossil fuel-based power plants. Several challenges hinder renewable energy's cost-effective and efficient integration into the energy mix. These include significant investments required for grid integration, the development of battery infrastructure to manage intermittency, scaling up production of the components of renewable energy systems,

access to critical minerals that are needed for storage technology, the limited availability of land in densely populated areas and the competing and rapidly increasing energy demands from agriculture, infrastructure, and industry.

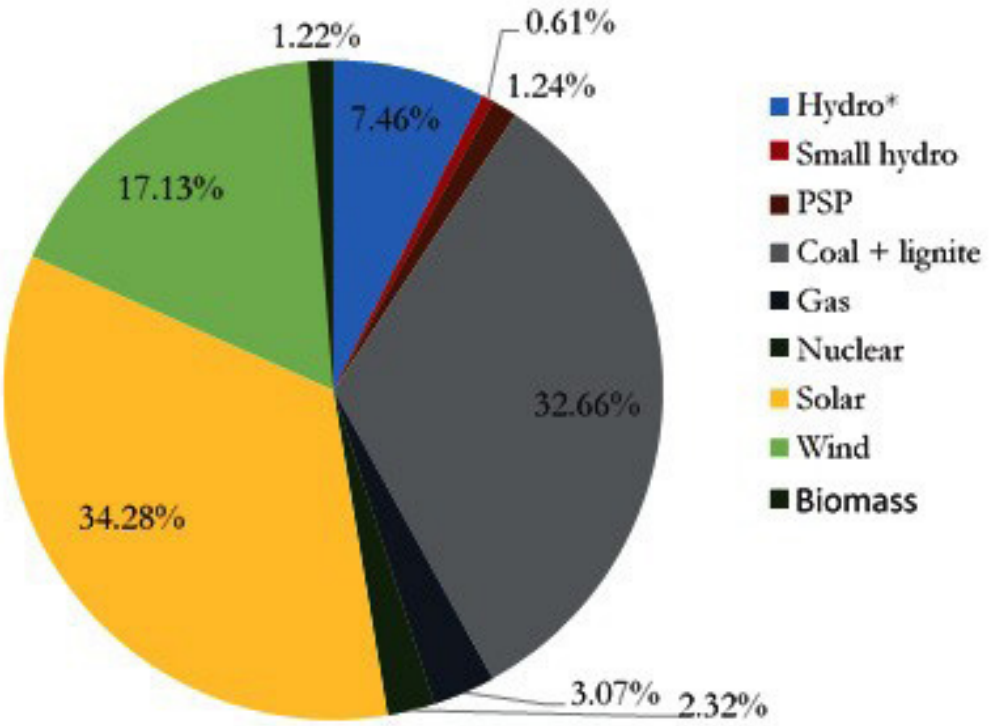
India's Installed Generation Capacity (fuel-wise) (30 November 2024)



Source: Internal calculation based on data from Ministry of Power https://powermin.gov.in/sites/default/files/uploads/power_sector_at_glance_Nov_2024.pdf.

There has been notable progress in energy generation from non-fossil fuels, including nuclear, hydro, and renewable sources. This segment reached 420.8 thousand gigawatt hours in the 2022-23 provisional data, making up 22.8 per cent of the total gross energy generation. Within this, large hydro represents 8.81 per cent, nuclear contributes 2.49 per cent, and renewables account for 11.52 per cent (refer to Chart 6(a)).

Projected optimal mix of installed capacity for 2029-30



Source: Central Electricity Authority

* Including hydro imports of 5856 MW

Sub Sector-wise Action

India's NDC do not bind it to any sector specific mitigation obligation or action. India's goal is to reduce overall emission intensity and improve energy efficiency of its economy over time and at the same time protecting the vulnerable sectors of economy and segments of our society.

1. Energy Transition

The total demand for electric vehicles (EV) in the country could grow at a CAGR of 39 per cent in 10 years. The EV penetration for the overall automobile industry is expected to reach 40 per cent by FY32 from about 4 per cent in FY23. The proliferation of commercial EV charging stations, which provide plug-in chargers on the road, would play a pivotal role in EV penetration.

Meanwhile, the Union Ministry of Power has categorised electric vehicle charging as a service, and thus, the charging station providers would not need licensing under the Electricity Act, 2003.

This Budget 2023-24 provided ` 35,000 crore for priority capital investments towards energy transition and net zero objectives, and energy security by Ministry of Petroleum & Natural Gas.

Supply Chain Considerations for Electric Vehicles

Mitigating road transport emissions, which comprise nearly 75 percent of the emissions from the transport sector, 23 is critical to India achieving its Net Zero goals by 2070. Electric mobility is an important element in India's path to Net Zero. India has made impressive strides

Another priority related to the above that calls for a calibrated and careful approach is climate change and energy transition. Public policy will have to recognise the role of Energy Security and Energy Affordability in enhancing and maintaining competitiveness. It means forging India's own path to energy transition and diversification away from fossil fuels. In this regard, electric mobility makes economic sense in a country which imports most of its oil and has abundant renewable energy and coal. However, it raises important challenges that need addressing. The import intensity of E-Vehicle production – especially from countries with whom India has persistent and large trade deficits- is very high. The extent to which electric mobility is incentivised in the short run needs to keep this factor in mind. Indigenising the technology and raw materials for electric mobility is an urgent task. Finally and importantly, given India's vast size and limited land availability, public transportation is a more efficient alternative for viable energy transition. Therefore, national-level policies and local nudges must promote and facilitate its use, going beyond the focus on tail-pipe emissions of private transportation choices.

1. Renewable Energy Evacuation

The Inter-state transmission system for evacuation and grid integration of 13 GW renewable energy from Ladakh will be constructed with investment of ₹ 20,700 crore including central support of ₹ 8,300 crore.

3. **Charging Stations**

India will require about 63,000 charging stations and cumulative investments of ₹26,900 crore for setting them up over the next five years to cater to the growing demand for power for operating Electric Vehicles (EV).

In the next decade, in line with the growth in EV sales, the country could need 2,30,000 charging stations, entailing a total investment of ₹1.05 lakh crore by FY32, said a report by India Ratings and Research. Per government data, there are about 1,000 commercial charging stations in the country in FY22.

Several corporates and foreign players have started undertaking capital expenditure to set up charging infrastructure to capture a share of this growing market A typical public charging station, comprising a slow charger of 3kwh power, two medium chargers of 20kwh power, and two fast chargers of 60kwh power, requires a capital investment of ₹20,40,000 (3kwh=10,000, 2x20kwh=2 lakh and 2x60kwh=18 lakh). With other expenses such as electricity connection, civil works, land rentals (Mumbai rates), and software, the total cost will work out to ₹35.5 lakh. The costs are estimated to go up in line with inflation as well as demand pick-up in the EV industry.

The proliferation of charging stations would lead to growth of charging station manufacturers as well as charging station operators (CSO). Charging station manufacturers would be responsible for providing complete charging point solutions for public and private charging, including hardware and software installation, maintenance of the hardware, and additional support services.

The UNFCCC Standing Committee on Finance's Biennial Assessment and Overview of Climate Finance Flows found that annual global capital flows for climate action stood at $803 billion, whereas per the IPCC, investments of up to five times that could be necessary to limit warming to 1.5°C. Much of this will be needed in developing countries, where domestic financial systems lack the capacity to fund investments at scale for climate action. That's why the urgent call to 'pay up'.

4.Energy Storage Projects

To steer the economy on the sustainable development path, Battery Energy Storage Systems with capacity of 4,000 MWH will be supported with Viability Gap Funding. A detailed framework for Pumped Storage Projects will also be formulated.

5. Green Hydrogen

India has a target to produce 5 mtpa of green hydrogen by 2030. According to analysis carried out by Renewable Watch Research, the required electrolyser capacity is expected to be 30 GW and the required renewable power capacity is expected to be 60 GW. To achieve these targets, complementary policy incentives will be needed to bring down the cost of large-scale green hydrogen and bridge the gap between fossil fuel-based hydrogen and green hydrogen. Further, uptake will have to be supported by finance from leading lenders and investors.

While these developments are encouraging, a lot still needs to be done to promote large-scale uptake of green hydrogen in India. the positive factor is that countries across the world are at a similar level of development, giving India ample opportunity to emerge as a leader in this space. Renewable energy developers with large wind and solar portfolios are suitably placed to get into the green hydrogen business, as renewable power projects are a key requisite for producing this fuel. Many large developers have announced their intent to enter in this attractive market.

The recently launched National Green Hydrogen Mission, with an outlay of ` 19,700 crores, will facilitate transition of the economy to low carbon intensity, reduce dependence on fossil fuel imports, and make the country assume technology and market leadership in this sunrise sector. Our target is to reach an annual production of 5 MMT by 2030.

Salient Features of the National Green Hydrogen Mission

Likely Outcomes by 2030	• Green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum. • Cumulative reduction in fossil fuel imports over ₹1 lakh crore and creation of over 6 lakh jobs. • Renewable energy capacity addition of about 125 GW and abatement of nearly 50 MMT of annual GHG emissions.
Interventions	• Financial incentive targeting domestic manufacturing of electrolysers and production of Green Hydrogen. • Regions capable of supporting large scale production and/or utilisation of Hydrogen to be developed as Green Hydrogen Hubs.
Policy Framework	• Development of an enabling policy framework to support establishment of Green Hydrogen ecosystem. • Robust Standards and Regulations framework. • Public-private partnership framework for R&D. • Skill development programme

6.Hydro-power

It is felt that the hydro-power sector has not yet reached its potential and solar and wind power have stolen a march over hydropower. These renewable sources have become extremely popular. Singh believes that the logistical challenges are the biggest obstacles for hydropower as most of the hydro resources are in far-flung, remote and hilly areas of the country. "Strengthening and developing the enabling infrastructure in these geographically challenging areas takes considerable time and cost,"

Apart from logistical, geological and technical challenges, there is reluctance on the part of discoms to sign long-term power purchase agreements for hydro-power due to the high tariffs, particularly in the initial years. The constrained financial situation of the distribution segment is a risk concern for developers and financiers. All these factors do not make hydropower the preferred choice of investors. This sentiment is manifested in the lower share of private investments in hydro. The central government's 50,000 MW initiative resulted in large-scale allotment of hydropower projects to the private sector but those projects could not take off. Thus, while the development of solar and wind power has taken off, hydro development is yet to witness the same growth.

Making the state governments willing and proactive partners will go a long way in the sustained growth of the sector. This can be done through project-specific steering committees comprising officials from the central as well as state governments." Additionally, equity investment by the Central Government and State Governments is therefore required for creating a valuable source of nonfossil energy source.

"The increasing capacity of intermittent solar and wind power results in the requirement of balancing power for which hydropower, especially pumped storage, is among the best solutions, as opined by experts.

While the construction of hydropower projects is a highly challenging and difficult task, the generation of clean and green power and the overall socioeconomic benefits brought by these projects are a desired outcome. The projects are generally located in extremely remote areas and in most of the cases, the projects become the harbingers of development for the local community, and sustained development.

7.Solar Technology

India faces limitations in producing critical goods at the scale and quality required to serve the infrastructure and investment needs of an aspiring economy. For instance, India has low production capacity in the solar energy sector for key components like polysilicon, ingots, and wafers. The production capacity of monocrystalline silicon ingot is expected to quintuple by 2025 from 2 GW in 2023, but it won't be enough to meet the demand in the country. Several solar equipment manufacturers in the country significantly depend on Chinese supply chains and related services. The single-source concentration risk in several product areas exposes India to potential supply chain disruptions, price fluctuations and currency risks. India's task is cut out.

It means going all out to attract, promote and facilitate further domestic and foreign investments that India needs to become a competitive and innovative economy. It will not be easy because competition for investment is not only with other emerging economies but advanced economies, too, who are

determined to keep their businesses at home. Equally, investing in and strengthening domestic supply-chain capability and resilience will be the hallmarks of strategic and long-term thinking on the part of the private sector. Alternative sources of supply, where possible, have to be located and nurtured, going beyond short-term cost considerations.

8. Rooftop Solar

India's cumulative roof top solar capacity was approx 9.3 gigawatts at the end of Q1 2023. Of this, 6,476 MW is rooftop solar-based, 1,480 MW is off-grid and the rest is ground mounted. The period April 2021 to February 2022 saw rooftop solar capacity additions of close to 2,036 MW against 7,176 MW for ground-mounted solar. While historically, rooftop solar has been preferred by institutional and commercial and industrial (C&I) consumers, it has now also started gaining traction in the residential segment, which, until recently, was considered a challenging market to tap. The attractive cost economics of solar power, discom-led interventions, government subsidies and increasing environment-consciousness amongst consumers are contributing to this transition.

The gigantic task of achieving 500 GW of non -fossil fuel power generation capacity will require a robust mechanism of funding the traditional solar and wind projects as also the emerging opportunities in battery and power storage and off -shore wind energy. Funding of EV based projects and new technologies like green hydrogen will create new avenues of lending. Similarly, specific funding may be required to reduce green- house gases emissions in existing set ups , efficiency improvements in transition sectors ,and sustainability linked loans .

9.Offshore Wind Energy

Taking into account the aspects elating the appraisal of economic desirability and commercial viability, in offshore wind energy, the Viability Gap Funding (VGF) scheme has been introduced, featuring a total budget of ₹7,453 crore. This includes VGF of ₹6,853 crore allocated for one gigawatt of projects (500 megawatts each off the coasts of Gujarat and Tamil Nadu), and ₹600 crore grant designated for upgrading two ports to enhance logistic infrastructure.

10.Nuclear Power

Among the other cleaner sources of energy, nuclear, being an efficient source of energy, has increasingly emerged as a reliable alternative to fossil fuel. However, there are challenges. The expansion of the use of nuclear power has to contend with public concerns about safety and the uncertainty that the latest technologies are controlled by a few countries (Jayanti, 2023). Geographical concentration (Economic Survey, 2022- 2023; 2023-2024) of uranium and other essential minerals also poses a challenge. Besides, nuclear energy relies heavily on the stability of fossil fuel supply chains to produce sulfuric acid for uranium extraction (Maslin et al., 2022). By 2040, estimates suggest that a shortfall of sulfuric acid supply could range from 100 million to 320 million tonnes, depending on the extent of efforts to reduce carbon emissions. Furthermore, even in the short run, actions by key players can pose a risk to the growth of the nuclear power sector (Dempsey, 2024.The significance of nuclear energy, given its higher efficiency and low greenhouse gas emissions, requires a forward-looking perspective to address potential challenges in advance, facilitating a smoother transition.

Development of at least 100 GW of nuclear energy by 2047 is essential for our energy transition efforts. For an active partnership with the private sector towards this goal, amendments to the Atomic Energy Act and the Civil Liability for Nuclear Damage Act will be taken up. 62. A Nuclear Energy Mission for research & development of Small Modular Reactors (SMR) with an outlay of ₹20,000 crore will be set up. At least 5 indigenously developed SMRs will be operationalized by 2033.

Source: Economic Survey 2024-25/Budget 2025-26

Green Credit Programme

For encouraging behavioural change, a Green Credit Programme will be notified under the Environment (Protection) Act. This will incentivize environmentally sustainable and responsive actions by companies, individuals and local bodies, and help mobilize additional resources for such activities.

Several key initiatives have been taken to enhance pro-environment outcomes by implementing measures consistent with LiFE. One notable example is the introduction of the Green Credit Rules, 2023, for implementation of the Green Credit Programme (GCP). These rules are designed to incentivise voluntary efforts toward environmental conservation, resulting in the issuance of green credits. To begin with, voluntary tree plantation is envisaged on degraded land under the control and management of Forest Departments. The Ministry published notification for 'methodology for calculation of green credit in respect of tree plantation' on 22 February 2024. GCP Portal has been developed and is accessible to public and participants. So far, Seventeen state forest departments are participating as implementing agencies with 48,074 hectares of degraded land registered.

Developments in financial regulation on green investments

Based on the 2019 National Guidelines on Responsible Business Conduct (NGRBC) by the government, SEBI introduced new reporting mandates on ESG parameters - the Business Responsibility and Sustainability Report (BRSR) - for the top 1000 listed companies, mandatory from FY23, replacing the previous Business Responsibility Report (BRR) of 2012. The BRSR norms were further expanded in 2023, with the Board introducing the BRSR core for assurance and ESG disclosures for value chains by the listed entities. The value chain for the purpose of BRSR core reports encompasses the top upstream and downstream partners, cumulatively comprising 75 per cent of the purchases/sales (by value), respectively. From FY26, the top 500 listed entities would be mandated to report under BRSR core, which will be expanded to the top 1000 listed entities from FY27 onwards. The BRSR Core consists of a set of Key Performance Indicators (KPIs)/metrics under nine ESG attributes, including GHG emission footprints, water footprints, energy footprint, embracing circularity, enhancing employee well-being and safety, enabling gender diversity in business, enabling inclusive development, fairness in engaging with customers and suppliers, and open-ness of business.

SEBI also introduced the regulatory framework for the issuance of green debt securities in 2017, which outlines an illustrative list of activities that can be financed through green debt securities. The framework was revamped in 2023 by introducing the concepts of transition bonds (funds raised for transitioning to a more sustainable form of operations, in line with India's Intended Nationally Determined Contributions), blue bonds (related to water management and marine sector), and yellow

bonds (related to solar energy), and circular economy as sub-categories of the green debt securities. The 291 Economic Survey 2024-25 framework mandates the issuers of green debt securities to disclose details related to the perceived social and environmental risks and proposed mitigation plan associated with the project(s) proposed to be financed/refinanced through the proceeds from the issue of green debt securities, in the offer documents. By March 2024, green debt securities amounting to a total of ₹6,128 crore have been issued by various listed companies.

ESG Disclosures - BRSR format

As regard, ESG related reporting by companies, various regulators and international bodies have been working on standardization of sustainability related disclosures by listed entities. SEBI has issued a revised set of sustainability and social related reporting requirements (Business Responsibility and Sustainability Report (BRSR1)) which has replace the Business Responsibility Report (BRR). The filing of BRSR is mandatory from the financial year 2022-23, for the top 1000 listed companies by market capitalization. The increasing legislative and regulatory focus on ESG is expected to expand the ESG related services industry world-wide.

In May 2021 SEBI had issued guidelines on 'Business Responsibility and sustainable Reporting '(BRSR), bringing sustainability reporting at par with financial reporting. The guidelines comprehensively cover issues relating to each entity's ESG risks and opportunities approach to mitigate or adapt to the risks along with financial implications of the same. The tendency towards miss-reporting by way of green washing, green wishing or green hushing will need to be curbed.

Brief on the BRSR format

- The revised BRSR format lays considerable emphasis on quantifiable metrics, which allows for easy measurement and comparability across companies, sectors, and time periods.
- The disclosures on climate and social (employees, consumers and communities) related issues of the entity are significantly enhanced and made more granular.
- The structure of the BRSR format is segregated under essential ("mandatory") and leadership ("voluntary") indicators. The leadership indicators in the BRSR format also includes disclosures related to the value chain of the listed entities.
- The disclosures as per the BRSR format are expected to bring in more standardization, which will enable better measurement and comparability and be helpful for investors to make better investment decisions.
- BRSR will enable companies to engage more meaningfully with their stakeholders, by encouraging them to look beyond financials and towards social and environmental impacts.
- The proposed BRSR format is a notable departure from the existing format for business responsibility reporting. The BRSR lays considerable emphasis on quantifiable metrics, which allows for easy measurement and comparability across companies, sectors, and time periods. Further, the disclosures on climate and social (employees, consumers and communities) related issues of the entity are significantly enhanced and made more granular as compared to the disclosures under BRSR.

The structure of the BRSR format is segregated under essential ("mandatory") and leadership ("voluntary") indicators. The leadership indicators in the BRSR format also includes disclosures related to the value chain of the listed entities. This is in line with the thrust of the NGRBCs on responsibility of businesses to encourage and support their value chain in following the same ESG principles. The format and accompanying guidance note are enclosed at Annex – 1.

The disclosures as per the BRSR format are expected to bring in more standardization, which will enable better measurement and comparability and be helpful for investors to make better investment decisions. It will also enable companies to engage more meaningfully with their stakeholders, by encouraging them to look beyond financials and towards social and environmental impacts.

A few of the key disclosures sought in the BRSR on ESG related parameters are highlighted below:

An overview of the entity's material ESG risks and opportunities, approach to mitigate or adapt to the risks along-with financial implications of the same.

Environment related disclosures:

Essential indicators include disclosures on:

a. Resource usage: Energy consumption, water withdrawal and consumption

b. Air emissions: Scope 1, Scope 2 Green-house gases (GHG) and air pollutant emissions

c. Waste management: Quantum of hazardous and non-hazardous waste generated, re-used and recycled along with waste management practices

d. Compliance with Extended Producer Responsibility (EPR) plan submitted to Pollution Control Boards and Performance-Achieve-Trade (PAT) Scheme of the Bureau of Energy Efficiency.

   Leadership indicators include disclosures on: a. Energy consumption mix through renewable & non-renewable sources, water discharge, b. Water consumption in areas of water stress, c. Scope 3 GHG emissions d. Reclaimed products (as % of products sold)

e. Impact on bio-diversity

Social related disclosures:

Employees / workers related: Disclosures on gender and social diversity including measures for differently abled employees and workers, turnover rates, median wages, welfare benefits to permanent and contractual employees / workers, occupational health and safety, trainings etc.

Community related: disclosures on Social Impact Assessments (SIA), Rehabilitation and Resettlement, Corporate Social Responsibility etc.

Consumer related: disclosures on product labelling, product recall, consumer complaints in respect of data privacy, cyber security etc.

Governance related disclosures:

1. Role of the Board in sustainability: Statement from the director responsible for the report, to highlight sustainability related challenges, targets and performance.

2. Conduct related: Disclosures on fines/penalties / action taken by regulatory authorities or judicial institutions or any law enforcement agency on any of the principles.

Further, the following has been clarified through the guidance note accompanying the BRSR:

1. Inter-operability of reporting: In order to address concerns of duplication of reporting of information by entities which prepare sustainability reports based on internationally accepted reporting frameworks, entities may provide a cross-referencing of the disclosures so made under such framework while making the relevant disclosures sought under the BRSR format. A cross referencing may also be done in case any information is already disclosed in the annual report.
2. Sector-specific issues: The BRSR format is generic and does not seek sector-specific information; it is thus possible that some of the disclosures may not be relevant for entities belonging to particular sectors. In such cases, entities may mention that the disclosure is not applicable along with reasons for the same.

Applicability

The proposed BRSR shall be applicable to the top 1000 listed entities (by market capitalization) for reporting on a voluntary basis for FY 2021 – 22 and mandatory from FY 2022 – 23. 5.2. The filing of BRSR shall be in the manner and form as specified under the provisions of LODR Regulations.

Few Significant Disclosures in BRSR

- Details of total energy consumption and energy intensity –
- The entity shall report the total electricity consumed, fuel consumed and energy consumed from renewable and non-renewable sources during the reporting period, as applicable.
- Energy intensity per rupee of turnover shall be calculated as the total energy consumed divided by the total turnover in rupees.
- Apart from turnover, entities may on a voluntary basis, provide energy intensity ratio, based on other metrics, such as, units of product;
- production volume (such as metric tons, litres, or MWh);
- size (such as m2 floor space); or
- number of full-time employees.
- Details of total energy consumption and energy intensity –
- The entity shall report the total electricity consumed, fuel consumed and energy consumed from renewable and non-renewable sources during the reporting period, as applicable.
- Energy intensity per rupee of turnover shall be calculated as the total energy consumed divided by the total turnover in rupees.
- Apart from turnover, entities may on a voluntary basis, provide energy intensity ratio, based on other metrics, such as, units of product;
- production volume (such as metric tons, litres, or MWh);
- size (such as m2 floor space); or
- number of full-time employees.

Nine Principles of the National Guidelines on Responsible Business Conduct (NGRBC) issued in December 2018 by Ministry of corporate Affairs with the technical support of IICA

Principle 1 – Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent and accountable.

Principle 2 – Businesses should provide goods and services in a manner that is sustainable and safe.

Principle 3 – Businesses should respect and promote the well-being of all employees, including those in their value chains.

Principle 4 – Businesses should respect the interests of and be responsive to all its stakeholders.

Principle 5 – Businesses should respect and promote human rights.

Principle 6 – Businesses should respect and make efforts to protect and restore the environment.

Principle 7 – Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent.

Principle 8 – Businesses should promote inclusive growth and equitable development.

Principle 9 – Businesses should engage with and provide value to their consumers in a responsible manner.

The nine Principles are well aligned with the sustainable developed goals at numerous levels.

Source: SEBI/ICMAI publication

Disclosure Framework on Climate-related Financial Risks

VALUE CHAIN IMPLEMENTATION & ASSURANCE: SUSTAINABILITY PERSPECTIVE AND BRSR CORE

Sustainability Reporting and ESG Disclosures are increasingly gaining importance in recent years, with India playing a significant role in this development and the Securities and Exchange Board of India ("SEBI") already issued Circular ("BRSR Circular") pertaining to Business Responsibility and Sustainability Reporting("BRSR") Core as a framework for assurance and Environmental, Social, and Governance("ESG") disclosures for the value chain. Indian businesses are progressively incorporating sustainability disclosure into their business reporting. By integrating ESG factors into their decision-making frameworks, many businesses are developing clear goals targeted at reducing their environmental footprint, enhancing their social and governance practices. Still there are a lot of challenges to overcome, such as strengthening corporate resilience, implementing effective risk management, and ensuring stakeholder satisfaction,

BRSR CORE

Business Responsibility and Sustainability Reporting or BRSR Core, has been designed to be a subcategory of the present Business Responsibility and Sustainability Reporting format, which was adopted by SEBI in 2021. The nine Key Performance Indicators ("KPI") that make up the present BRSR format are used to evaluate the listed companies. Providing sustainable goods and services, advocating, and upholding human rights, working to protect and restore the environment, encouraging inclusive growth and equitable development, and ethically delivering value to consumers are a few of these.

ESG Disclosures of Value Chain Participants by Companies

Value Chain under the BRSR Core has been defined as, "the top upstream and downstream partners, cumulatively comprising 75% of its purchases or, sales (by value) respectively." It stipulates that disclosures for the value chain shall be made by the listed company as per BRSR Core, as part of its annual report. The listed entitles shall report the KPIs in the BRSR Core for their value chain to the extent it is attributable to their business with their value chain partner. Such reporting may be segregated for upstream and downstream partners or can be reported on an aggregate basis.

SEBI ESG Committee found that investors are increasingly seeking disclosures of value chain entities as a number of companies have significant ESG footprints in the value chain which can enable them to get a complete picture of ESG risks and the impact associated with them.

However, they also identified practical challenges of data availability from the value chain entities as most of them are small, unlisted firms and for certain companies, there are multiple tiers of suppliers within their supply chains.

market capitalization) are required to report, as a part of their annual report, the KPIs in the Considering the above factors, from the financial year 2024-25, Top 250 Listed companies (by BRSR Core for their value chain on a comply or explain basis where an entity shall provide the disclosures on its value chain entities or mention the reason for not being able to do so. These disclosures can be segregated for upstream and downstream partners or can be reported on an aggregate basis. The said companies are also required to obtain a Limited level of assurance on the KPIs disclosed for the value chain entities on comply or explain basis.

EXECUTIVE SUMMARY

To implement BRSR Core for value chain partners, a company needs to identify key upstream and downstream partners accounting for at least 75% of their purchases or sales.

Engage with them to collect ESG data based on BRSR Core metrics, Provide training on the framework, monitor their progress, and incorporate their disclosures into the company's BRSR Core report,

Developing a supply chain sustainability strategy, building supplier alignment, sharing assessments, and maintaining open communication channels to facilitate continuous improvement across the value chain.

Key steps involved in implementing BRSR Core for value chain partners:

1) Identify relevant partners Determine which suppliers and customers within the value chain contribute the most to the company's environmental and social impact, ensuring they collectively represent at least 75% of purchases or sales by value.
2) Develop a sustainability strategy Create a clear strategy outlining how to engage with value chain partners on BRSR Core requirements, including goals, timelines, and performance metrics.
3) Supplier assessment and engagement-

   Communication and training: Communicate BRSR Core expectations to suppliers, providing training on the framework, key metrics, and reporting procedures,

   Data collection: Implement a system to gather ESG data from suppliers using questionnaires, self-assessments, or third-party audits aligned with BRSR Core criteria.

   Performance evaluation: Analyse the collected data to identify areas of improvement and prioritize actions for suppliers.
4) Collaboration and support:

   Capacity building: Offer support to suppliers, especially smaller businesses, in developing their sustainability practices and data collection capabilities.

   Feedback loop: Provide regular feedback to suppliers on their performance against BRSR Core metrics and identify opportunities for improvement.
5) Reporting and disclosure:

Data aggregation: Compile ESG data from value chain partners and incorporate it into the company's BRSR Core report.

Transparency and disclosure: Clearly disclose the percentage of value chain partners covered in the report and any limitations or challenges faced during data collection,

6) Key points to consider:

Phased approach- Start with key partners and gradually expand engagement to a wider range of suppliers based on their impact and readiness.

Technology solutions- Utilize digital platforms to streamline data collection, analysis, and reporting from value chain partners.

Compliance and assurance- Ensure that data collected from partners is accurate and reliable by considering third-party verification or reasonable assurance processes.

CONCLUSION

India's climate efforts are anchored in its ambitious commitment to achieve net zero emissions by 2070. This long-term goal is entwined with the country's aspirations for high and stable economic growth, which envisions becoming a developed nation by 2047. Realising this vision necessitates a delicate balance, achieving low-carbon development while ensuring that critical imperatives such as affordable energy security, job creation, sustained economic expansion, and environmental sustainability are met.

To effectively navigate this dual challenge, India is adopting a holistic approach that embeds mitigation and adaptation in the growth strategy. Mitigation focuses on addressing the root causes of climate change by reducing greenhouse gas emissions, while adaptation seeks to minimize the adverse impacts of climate change through a robust framework for resilience. Given the backdrop of decreasing global financial commitments to support climate action in developing countries, India must increasingly prioritise building resilience to safeguard the benefits of its rapid economic growth against climate-induced setbacks.

Adaptation and building resilience demand explicit and targeted policy measures, sufficient financing options, and the seamless integration of adaptive strategies into existing policies and developmental programs. It requires a multidimensional approach that encompasses a variety of initiatives, including the creation of appropriate policy incentives, the development of resilient infrastructure, research and development (R&D) in climate-related technologies, and mobilising financial resources dedicated to adaptation initiatives. Additionally, it is essential that adaptation actions are tailored to be region-specific, considering India's vast and diverse geographic and agro-climatic landscape.

Despite being one of the world's lowest greenhouse gas emitters per capita, India has made notable strides in reducing the emissions intensity of its energy consumption. This progress is largely due to the increased deployment of renewable energy sources alongside a suite of energy conservation measures. Nonetheless, the growth of renewable energy faces substantial hurdles, particularly in energy storage technologies and the sourcing of critical minerals necessary for this transition. While alternative solutions such as green hydrogen present a viable option for the medium term, affordability issues remain a significant barrier to widespread adoption. Furthermore, although nuclear energy could contribute to India's energy mix, its expansion is impeded by a lack of a supportive ecosystem and the monopolistic nature of nuclear fuel supply chains.

Annexure I - Format of BRSR Core

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
1	Green-house gas (GHG) footprint *Greenhouse gas emissions may be measured in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*	Total Scope 1 emissions (Break-up of the GHG into CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, if available)	GHG (CO_2e) Emission in Mn MT / KT / MT Direct emissions from organization's owned- or controlled sources	1. Absolute Fossil Fuel (Coal, Natural Gas, Diesel, FO etc.) Consumption (Mn MT / KT / MT / MM BTU etc.) 2. Emission Factor (GHG in CO_2e / Unit of Measure) - IPCC or Actual Testing from Accredited Test Lab 3. Quantity of Carbon Capture (Mn MT / KT / MT) 4. GHG emissions in CO2 equivalent by process (Non-Fuel Source) (Mn MT / KT / MT / MM BTU) 5. Fugitive emissions 6. Total Scope 1 GHG Emissions: Point 2 x Point 1 - Point 3 + Point 4 + Point 5	Principle 6, Question 7 of Essential Indicators
		Total Scope 2 emissions (Break-up of the GHG (CO_2e) into CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, if available)	GHG (CO_2e) Emission in Mn MT / KT / MT Indirect emissions from the generation of energy that is purchased from a utility provider	1. Total Consumption of Purchased Energy (MW), Steam (MT), Refrigeration (MMBTU) 2. GHG (CO_2e) Emission Factor across all purchased energy sources - IPCC or actual from the supplier (audited certificates) 3. Total Scope 2 GHG Emissions: Total Consumption x Emission Factor	Principle 6, Question 7 of Essential Indicators

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
		GHG Emission Intensity (Scope 1 +2)	Total Scope 1 and Scope 2 emissions (MT) / Total Revenue from Operations adjusted for PPP	1.Total Emission (Scope 1 & 2) 2. Total Revenue from Operations - From Audited P&L Statement 3. PPP (USD / INR)	Principle 6, Question 7 of Essential Indicators
			Total Scope 1 and Scope 2 emissions (MT) / Total Output of Product or Services	1. Total Emission (Scope 1 & 2) as above 2. Company & Sector Specific (i.e., No. of Vehicles Produced, MT of Material Produced, Data in Mn TB, No. of Seats / Travel Class, Room-nights etc.)	Principle 6, Question 7 of Essential Indicators
2	Water footprint	Total water consumption	Mn Lt or KL	Water consumed is water that it is no longer available for use by the ecosystem or local community, such as water that has been withdrawn and incorporated into products or has evaporated or is polluted to the point of being unusable by other users, and is therefore not released back to surface water, groundwater, seawater, or a third party. It also includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. If the entity cannot directly measure its water consumption, it may calculate this using the following: 1. Input water flow meter logs (Calibrated Meters) 2. Output water flow meter logs (Calibrated Meters) 3. Water consumption = Input Water - Output Water	Principle 6, Question 3 of Essential Indicators

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
		Water consumption intensity	Mn Lt or KL / Rupee adjusted for PPP	1. Total water consumed 2. Total Revenue from Operations (from audited P&L) 3. PPP (USD / INR)	Principle 6, Question 3 of Essential Indicators
			Mn Lt or KL / Product or Service	1. Consumption as above 2. Company & Sector Specific (i.e., No. of Vehicles Produced, MT of Material Produced, Data in Mn TB, No. of Seats / Travel Class etc)	Principle 6, Question 3 of Essential Indicators
		Water Discharge by destination and levels of Treatment	Mn Lt or KL	1. Untreated Water 2. Primary Treatment (Removal of material that floats or settle out i.e Filtration, Screening, Sedimentation etc.) 3. Secondary Treatment (Removal of Dissolved organic Matter i.e. Oxidation, Digestion etc.) 4. Tertiary Treatment (Disinfecting Water i.e. removal of pathogens, Phosphorous, Nitrogen etc.)	Principle 6, Question 4 of Essential Indicators
3	Energy footprint	Total energy consumed	In Joules or multiples	Total energy consumption = non-renewable fuel consumed + renewable fuel consumed + purchased electricity, heating, cooling, steam + self-generated electricity, heating, cooling, steam *(If the entity generates electricity from a non-renewable or renewable fuel source and then consumes the generated electricity, the energy consumption shall be counted only once)*	Principle 6, Question 1 of Essential Indicators
		% of energy consumed from renewable sources	In % terms	Energy consumed through renewable sources / total energy consumed	

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
		Energy intensity	Joules or multiples / Rupee adjusted for PPP	1. Total energy consumed 2. Total Revenue from Operations (from audited P&L) 3. PPP (USD / INR)	Principle 6, Question 1 of Essential Indicators
			Joules or multiples / Product or Service	1.Consumption as above 2. Company & Sector Specific (i.e., No. of Vehicles Produced, MT of Material Produced, Data in Mn TB, No. of Seats / Travel Class etc)	Principle 6, Question 1 of Essential Indicators
4	Embracing circularity - details related to waste management by the entity	Plastic waste (A)	Kg / MT	Absolute weight of the packaging material (Bags, Bottles, Pallets etc.) discarded as defined under the plastic waste management rules 2016 and amendments thereof	Principle 6, Question 9 of Essential Indicators
		E-waste (B)	Kg / MT	Discarded Computers, televisions, cell phones, VCRs, stereos, DVD players, copiers, and fax machines etc. as listed under e-waste management rules 2016 and amendments thereof	Principle 6, Question 9 of Essential Indicators
		Bio-medical waste (C)	Kg / MT	Solids and liquid waste including its container and any intermediate product, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities as listed under Bio-medical waste management rules 2016 and amendments thereof	Principle 6, Question 9 of Essential Indicators
		Construction and demolition waste (D)	Kg / MT	Construction waste as per C&D waste management Rules 2016 and amendments thereof like concrete, plaster, metal rods / wires, wood, plastics etc.	Principle 6, Question 9 of Essential Indicators
		Battery waste (E)	Kg / MT	Discarded batteries i.e., Li-ion, Alkaline, Lead Acid etc used in vehicles, computers & laptops, mobiles other electronics, UPS, Power Back up etc. as	Principle 6, Question 9 of Essential Indicators

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
				per Battery Waste management Rules 2016 and amendments thereof	
		Radioactive waste (F)	Kg / MT	Discarded material such as paper, plastic, clothes, equipment, machine parts etc having exposure to radiation across Nuclear Power Plants, Hospitals, Research Laboratories, Industrial Applications etc.)	Principle 6, Question 9 of Essential Indicators
		Other Hazardous waste. Please specify, if any. (G)	Kg / MT	As per hazardous waste management rules of CPCB	Principle 6, Question 9 of Essential Indicators
		Other Non-hazardous waste generated (H). Please specify, if any. (Break-up by composition i.e., by materials relevant to the sector)	Kg / MT	Waste not identified as Hazardous as per CPCB	Principle 6, Question 9 of Essential Indicators
		Total waste generated ((A+B + C + D + E + F + G + H)	Kg / MT	self-explanatory	Principle 6, Question 9 of Essential Indicators
		Waste intensity	Kg or MT / Rupee adjusted for PPP	1. Total waste generated 2. Total Revenue from Operations (from audited P&L) 3. PPP (USD / INR)	Principle 6, Question 9 of Essential Indicators
			Kg or MT / Unit of Product or Service	1. Total waste generated 2. Company & Sector Specific (i.e., No. of Vehicles Produced, MT of Material Produced, Data in Mn TB, No. of Seats / Travel Class etc)	Principle 6, Question 9 of Essential Indicators
		Each category of waste generated, total waste recovered through recycling, re-using or other recovery operations	Kg or MT	Absolute quantity	Principle 6, Question 9 of Essential Indicators
			Intensity	Kg of Waste Recycled Recovered /Total Waste generated *Disclosure may be provided if certificates from vendors have been relied upon for assurance of KPIs on waste management*	

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
		For each category of waste generated, total waste disposed by nature of disposal method	Kg or MT Intensity	1. Amount of material in MT disposed through Incineration 2. Amount of Material to Landfill 3. Any other method Kg of Waste Recycled Recovered /Total Waste generated	Principle 6, Question 9 of Essential Indicators
5	Enhancing Employee Wellbeing and Safety	Spending on measures towards well-being of employees and workers – cost incurred as a % of total revenue of the company	In % terms	To check sources including – • Insurance Policies & Premium Paid Details • Infant Care Policy • Amount billed/invoices towards providing such facilities *(The following measures may be included – health insurance, accident insurance, maternity benefits, paternity benefits, day care facilities, health & safety measures including access to mental health)*	Principle 3, Question 1(c) of Essential Indicators
		Details of safety related incidents for employees and workers (including contract-workforce e.g. workers in the company's construction sites)	Number of Permanent Disabilities	To check on the basis of claims	Principle 3, Question 11 of Essential Indicators
			Lost Time Injury Frequency Rate (LTIFR) (per one million-person hours worked)	1. Total number of lost time injuries 2. Total No. of working hours 3. LTIFR = (Total number of lost time injuries *10,00,000) / Total No. of working hours	Principle 3, Question 11 of Essential Indicators
			No. of fatalities	To check on the basis of claims as reported to the Factory Inspector	Principle 3, Question 11 of Essential Indicators
6	Enabling Gender Diversity in Business	Gross wages paid to females as % of wages paid	In % terms	Employee Master / Register	Principle 5, Question 3(b) of Essential Indicators
		Complaints on POSH	• Total Complaints on Sexual Harassment (POSH) reported • Complaints on POSH as a % of female employees / workers		Principle 5, Question 7 of Essential Indicators

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
			• Complaints on POSH upheld		
7	Enabling Inclusive Development	Input material sourced from following sources as % of total purchases – *Directly sourced from MSMEs/ small producers and from within India*	In % terms – As % of total purchases by value	self-explanatory *'Input material' - includes all types of procurement such as raw material, spares, services, capex procurement items etc.*	Principle 8, Question 4 of Essential Indicators
		Job creation in smaller towns – Wages paid to persons employed in smaller towns (permanent or non-permanent /on contract) as % of total wage cost	In % terms – As % of total wage cost	Place of employment of employees /workers (Place to be categorised based on with RBI classification system on rural / semi-urban / urban / metropolitan)	Principle 8, Question 5 of Essential Indicators
8	Fairness in Engaging with Customers and Suppliers	Instances involving loss / breach of data of customers as a percentage of total data breaches or cyber security events	In % terms		Principle 9, Question 7 of Essential Indicators
		Number of days of accounts payable	(Accounts payable *365) / Cost of goods/services procured	To check from financial statements	Principle 1, Question 8 of Essential Indicators
9	Open-ness of business	Concentration of purchases & sales done with trading houses, dealers, and related parties Loans and advances & investments with related parties	• Purchases from trading houses as % of total purchases • Number of trading houses where purchases are made from	1. RPT audited by Financial Auditors (Refer Financial Audit Report) 2. Financial statements / invoices	Principle 1, Question 9 of Essential Indicators

Sr. No.	Attribute	Parameter	Measurement	Data & Assurance Approach	Cross – reference to the BRSR
			• Purchases from top 10 trading houses as % of total purchases from trading houses		
			• Sales to dealers / distributors as % of total sales • Number of dealers / distributors to whom sales are made • Sales to top 10 dealers / distributors as % of total sales to dealers / distributors		
			Share of RPTs (as respective %age) in - • Purchases • Sales • Loans & advances • Investments		

Annexure II

BUSINESS RESPONSIBILITY & SUSTAINABILITY REPORTING FORMAT

SECTION A: GENERAL DISCLOSURES

I. Details of the listed entity

1. Corporate Identity Number (CIN) of the Listed Entity
2. Name of the Listed Entity
3. Year of incorporation
4. Registered office address
5. Corporate address
6. E-mail
7. Telephone
8. Website
9. Financial year for which reporting is being done
10. Name of the Stock Exchange(s) where shares are listed
11. Paid-up Capital
12. Name and contact details (telephone, email address) of the person who may be contacted in case of any queries on the BRSR report
13. Reporting boundary - Are the disclosures under this report made on a standalone basis (i.e. only for the entity) or on a consolidated basis (i.e. for the entity and all the entities which form a part of its consolidated financial statements, taken together).
14. Name of assurance provider
15. Type of assurance obtained

II. Products/services

16. Details of business activities *(accounting for 90% of the turnover):*

S. No.	Description of Main Activity	Description of Business Activity	% of Turnover of the entity

17. Products/Services sold by the entity *(accounting for 90% of the entity's Turnover):*

S. No.	Product/Service	NIC Code	% of total Turnover contributed

III. Operations

18. Number of locations where plants and/or operations/offices of the entity are situated:

Location	Number of plants	Number of offices	Total
National			
International			

19. Markets served by the entity:

a. Number of locations

Locations	Number
National (No. of States)	
International (No. of Countries)	

b. What is the contribution of exports as a percentage of the total turnover of the entity?

c. A brief on types of customers

IV. Employees

20. Details as at the end of Financial Year:

a. Employees and workers (including differently abled):

S. No.	Particulars	Total (A)	Male		Female	
			No. (B)	% (B / A)	No. (C)	% (C / A)
EMPLOYEES						
1.	Permanent (D)					
2.	Other than Permanent (E)					
3.	**Total employees (D + E)**					
WORKERS						
4.	Permanent (F)					
5.	Other than Permanent (G)					

S. No.	Particulars	Total (A)	Male		Female	
			No. (B)	% (B / A)	No. (C)	% (C / A)
6.	**Total workers (F + G)**					

b. Differently abled Employees and workers:

S. No	Particulars	Total (A)	Male		Female	
			No. (B)	% (B / A)	No. (C)	% (C / A)
DIFFERENTLY ABLED EMPLOYEES						
1.	Permanent (D)					
2.	Other than Permanent (E)					
3.	**Total differently abled employees (D + E)**					
DIFFERENTLY ABLED WORKERS						
4.	Permanent (F)					
5.	Other than permanent (G)					
6.	**Total differently abled workers (F + G)**					

21. Participation/Inclusion/Representation of women

	Total (A)	No. and percentage of Females	
		No. (B)	% (B / A)
Board of Directors			
Key Management Personnel			

22. Turnover rate for permanent employees and workers

(Disclose trends for the past 3 years)

	FY _____ (Turnover rate in current FY)			FY _____ (Turnover rate in previous FY)			FY _____ (Turnover rate in the year prior to the previous FY)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Permanent Employees									
Permanent Workers									

V. Holding, Subsidiary and Associate Companies (including joint ventures)

23. (a) Names of holding / subsidiary / associate companies / joint ventures

S. No.	Name of the holding / subsidiary / associate companies / joint ventures (A)	Indicate whether holding/ Subsidiary/ Associate/ Joint Venture	% of shares held by listed entity	Does the entity indicated at column A, participate in the Business Responsibility initiatives of the listed entity? (Yes/No)

VI. CSR Details

24. (i) Whether CSR is applicable as per section 135 of Companies Act, 2013: **(Yes/No)**
(ii) Turnover (in Rs.)
(iii) Net worth (in Rs.)

VII. Transparency and Disclosures Compliances

25. Complaints/Grievances on any of the principles (Principles 1 to 9) under the National Guidelines on Responsible Business Conduct:

Stakeholder group from whom complaint is received	Grievance Redressal Mechanism in Place (Yes/No) *(If Yes, then provide web-link for grievance redress policy)*	FY _____ Current Financial Year			FY _____ Previous Financial Year		
		Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks	Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks
Communities							
Investors (other than shareholders)							

Stakeholder group from whom complaint is received	Grievance Redressal Mechanism in Place (Yes/No) *(If Yes, then provide web-link for grievance redress policy)*	FY _____ Current Financial Year			FY _____ Previous Financial Year		
		Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks	Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks
Shareholders							
Employees and workers							
Customers							
Value Chain Partners							
Other (please specify)							

26. Overview of the entity's material responsible business conduct issues

Please indicate material responsible business conduct and sustainability issues pertaining to environmental and social matters that present a risk or an opportunity to your business, rationale for identifying the same, approach to adapt or mitigate the risk along-with its financial implications, as per the following format

S. No.	Material issue identified	Indicate whether risk or opportunity (R/O)	Rationale for identifying the risk / opportunity	In case of risk, approach to adapt or mitigate	Financial implications of the risk or opportunity (Indicate positive or negative implications)

SECTION B: MANAGEMENT AND PROCESS DISCLOSURES

This section is aimed at helping businesses demonstrate the structures, policies and processes put in place towards adopting the NGRBC Principles and Core Elements.

Disclosure Questions	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Policy and management processes									
1. a. Whether your entity's policy/policies cover each principle and its core elements of the NGRBCs. (Yes/No)									
b. Has the policy been approved by the Board? (Yes/No)									
c. Web Link of the Policies, if available									
2. Whether the entity has translated the policy into procedures. (Yes / No)									
3. Do the enlisted policies extend to your value chain partners? (Yes/No)									
4. Name of the national and international codes/certifications/labels/ standards (e.g. Forest Stewardship Council, Fairtrade, Rainforest Alliance, Trustea) standards (e.g. SA 8000, OHSAS, ISO, BIS) adopted by your entity and mapped to each principle.									
5. Specific commitments, goals and targets set by the entity with defined timelines, if any.									
6. Performance of the entity against the specific commitments, goals and targets along-with reasons in case the same are not met.									
Governance, leadership and oversight									
7. Statement by director responsible for the business responsibility report, highlighting ESG related challenges, targets and achievements (*listed entity has flexibility regarding the placement of this disclosure)*									
8. Details of the highest authority responsible for implementation and oversight of the Business Responsibility policy (ies).									
9. Does the entity have a specified Committee of the Board/ Director responsible for decision making on sustainability related issues? (Yes / No). If yes, provide details.									

10. Details of Review of NGRBCs by the Company:

Subject for Review	Indicate whether review was undertaken by Director / Committee of the Board/ Any other Committee									Frequency (Annually/ Half yearly/ Quarterly/ Any other – please specify)								
	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Performance against above policies and follow up action																		
Compliance with statutory requirements of relevance to the principles, and, rectification of any non-compliances																		

11. Has the entity carried out independent assessment/ evaluation of the working of its policies by an external agency? (Yes/No). If yes, provide name of the agency.	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9

12. If answer to question (1) above is "No" i.e. not all Principles are covered by a policy, reasons to be stated:

Questions	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
The entity does not consider the Principles material to its business (Yes/No)									
The entity is not at a stage where it is in a position to formulate and implement the policies on specified principles (Yes/No)									
The entity does not have the financial or/human and technical resources available for the task (Yes/No)									
It is planned to be done in the next financial year (Yes/No)									
Any other reason (please specify)									

SECTION C: PRINCIPLE WISE PERFORMANCE DISCLOSURE

This section is aimed at helping entities demonstrate their performance in integrating the Principles and Core Elements with key processes and decisions. The information sought is categorized as "Essential" and "Leadership". While the essential indicators are expected to be disclosed by every entity that is mandated to file this report, the leadership indicators may be voluntarily disclosed by entities which aspire to progress to a higher level in their quest to be socially, environmentally and ethically responsible.

PRINCIPLE 1 Businesses should conduct and govern themselves with integrity, and in a manner that is Ethical, Transparent and Accountable.

Essential Indicators

1. Percentage coverage by training and awareness programmes on any of the Principles during the financial year:

Segment	Total number of training and awareness programmes held	Topics / principles covered under the training and its impact	%age of persons in respective category covered by the awareness programmes
Board of Directors			
Key Managerial Personnel			
Employees other than BoD and KMPs			
Workers			

2. Details of fines / penalties /punishment/ award/ compounding fees/ settlement amount paid in proceedings (by the entity or by directors / KMPs) with regulators/ law enforcement agencies/ judicial institutions, in the financial year, in the following format (Note: the entity shall make disclosures on the basis of materiality as specified in Regulation 30 of SEBI (Listing Obligations and Disclosure Obligations) Regulations, 2015 and as disclosed on the entity's website):

Monetary					
	NGRBC Principle	Name of the regulatory/ enforcement	Amount (In INR)	Brief of the Case	Has an appeal been

		agencies/ judicial institutions			**preferred? (Yes/No)**
Penalty/ Fine					
Settlement					
Compounding fee					

	Non-Monetary			
	NGRBC Principle	**Name of the regulatory/ enforcement agencies/ judicial institutions**	**Brief of the Case**	**Has an appeal been preferred? (Yes/No)**
Imprisonment				
Punishment				

3. Of the instances disclosed in Question 2 above, details of the Appeal/ Revision preferred in cases where monetary or non-monetary action has been appealed.

Case Details	**Name of the regulatory/ enforcement agencies/ judicial institutions**

4. Does the entity have an anti-corruption or anti-bribery policy? If yes, provide details in brief and if available, provide a web-link to the policy.

5. Number of Directors/KMPs/employees/workers against whom disciplinary action was taken by any law enforcement agency for the charges of bribery/ corruption:

	FY _____ (Current Financial Year)	**FY _____ (Previous Financial Year)**
Directors		
KMPs		
Employees		
Workers		

6. Details of complaints with regard to conflict of interest:

	FY _____ (Current Financial Year)	**FY _____ (Previous Financial Year)**

	Number	Remarks	Number	Remarks
Number of complaints received in relation to issues of Conflict of Interest of the Directors				
Number of complaints received in relation to issues of Conflict of Interest of the KMPs				

7. Provide details of any corrective action taken or underway on issues related to fines / penalties / action taken by regulators/ law enforcement agencies/ judicial institutions, on cases of corruption and conflicts of interest.

8. Number of days of accounts payables ((Accounts payable *365) / Cost of goods/services procured) in the following format:

	FY _____ (Current Financial Year)	FY _____ (Previous Financial Year)
Number of days of accounts payables		

9. Open-ness of business
Provide details of concentration of purchases and sales with trading houses, dealers, and related parties along-with loans and advances & investments, with related parties, in the following format:

Parameter	Metrics	FY _____ (Current Financial Year)	FY _____ (Previous Financial Year)
Concentration of Purchases	a. Purchases from trading houses as % of total purchases		
	b. Number of trading houses where purchases are made from		

	c. Purchases from top 10 trading houses as % of total purchases from trading houses		
Concentration of Sales	a. Sales to dealers / distributors as % of total sales		
	b. Number of dealers / distributors to whom sales are made		
	c. Sales to top 10 dealers / distributors as % of total sales to dealers / distributors		
Share of RPTs in	a. Purchases (Purchases with related parties / Total Purchases)		
	b. Sales (Sales to related parties / Total Sales)		
	c. Loans & advances (Loans & advances given to related parties / Total loans & advances)		
	d. Investments (Investments in related parties / Total Investments made)		

Leadership Indicators

1. Awareness programmes conducted for value chain partners on any of the Principles during the financial year:

Total number of awareness programmes held	**Topics / principles covered under the training**	**%age of value chain partners covered (by value of business done with such partners) under the awareness programmes**

2. Does the entity have processes in place to avoid/ manage conflict of interests involving members of the Board? **(Yes/No)** If Yes, provide details of the same.

PRINCIPLE 2 Businesses should provide goods and services in a manner that is sustainable and safe

Essential Indicators

1. Percentage of R&D and capital expenditure (capex) investments in specific technologies to improve the environmental and social impacts of product and processes to total R&D and capex investments made by the entity, respectively.

	Current Financial Year	Previous Financial Year	Details of improvements in environmental and social impacts
R&D			
Capex			

2. a. Does the entity have procedures in place for sustainable sourcing? (Yes/No)
   b. If yes, what percentage of inputs were sourced sustainably?

3. Describe the processes in place to safely reclaim your products for reusing, recycling and disposing at the end of life, for (a) Plastics (including packaging) (b) E-waste (c) Hazardous waste and (d) other waste.

4. Whether Extended Producer Responsibility (EPR) is applicable to the entity's activities (Yes / No). If yes, whether the waste collection plan is in line with the Extended Producer Responsibility (EPR) plan submitted to Pollution Control Boards? If not, provide steps taken to address the same.

Leadership Indicators

1. Has the entity conducted Life Cycle Perspective / Assessments (LCA) for any of its products (for manufacturing industry) or for its services (for service industry)? If yes, provide details in the following format?

NIC Code	Name of Product /Service	% of total Turnover contributed	Boundary for which the Life Cycle Perspective / Assessment was conducted	Whether conducted by independent external agency (Yes/No)	Results communicated in public domain (Yes/No) If yes, provide the web-link.

2. If there are any significant social or environmental concerns and/or risks arising from production or disposal of your products / services, as identified in the Life Cycle Perspective / Assessments (LCA) or through any other means, briefly describe the same along-with action taken to mitigate the same.

Name of Product / Service	Description of the risk / concern	Action Taken

3. Percentage of recycled or reused input material to total material (by value) used in production (for manufacturing industry) or providing services (for service industry).

Indicate input material	Recycled or re-used input material to total material	
	FY _____ Current Financial Year	FY _____ Previous Financial Year

4. Of the products and packaging reclaimed at end of life of products, amount (in metric tonnes) reused, recycled, and safely disposed, as per the following format:

	FY _____ Current Financial Year			FY _____ Previous Financial Year		
	Re-Used	Recycled	Safely Disposed	Re-Used	Recycled	Safely Disposed
Plastics (including packaging)						
E-waste						
Hazardous waste						
Other waste						

5. Reclaimed products and their packaging materials (as percentage of products sold) for each product category.

Indicate product category	Reclaimed products and their packaging materials as % of total products sold in respective category

PRINCIPLE 3 Businesses should respect and promote the well-being of all employees, including those in their value chains

Essential Indicators

1. a. Details of measures for the well-being of employees:

Category	Total (A)	% of employees covered by									
		Health insurance		Accident insurance		Maternity benefits		Paternity Benefits		Day Care facilities	
		Number (B)	% (B / A)	Number (C)	% (C / A)	Number (D)	% (D / A)	Number (E)	% (E / A)	Number (F)	% (F / A)
Permanent employees											
Male											
Female											
Total											
Other than Permanent employees											
Male											
Female											
Total											

b. Details of measures for the well-being of workers:

Category	Total (A)	% of workers covered by									
		Health insurance		Accident insurance		Maternity benefits		Paternity Benefits		Day Care facilities	
		Number (B)	% (B / A)	Number (C)	% (C / A)	Number (D)	% (D / A)	Number (E)	% (E / A)	Number (F)	% (F / A)
Permanent workers											
Male											
Female											
Total											
Other than Permanent workers											
Male											
Female											
Total											

c. Spending on measures towards well-being of employees and workers (including permanent and other than permanent) in the following format –

	FY _____ Current Financial Year	FY _____ Previous Financial Year
Cost incurred on well-being measures as a % of total revenue of the company		

2. Details of retirement benefits, for Current FY and Previous Financial Year.

Benefits	FY ____ Current Financial Year			FY ____ Previous Financial Year		
	No. of employees covered as a % of total employees	**No. of workers covered as a % of total workers**	**Deducted and deposited with the authority (Y/N/N.A.)**	**No. of employees covered as a % of total employees**	**No. of workers covered as a % of total workers**	**Deducted and deposited with the authority (Y/N/N.A.)**
PF						
Gratuity						
ESI						
Others – please specify						

3. **Accessibility of workplaces**

   Are the premises / offices of the entity accessible to differently abled employees and workers, as per the requirements of the Rights of Persons with Disabilities Act, 2016? If not, whether any steps are being taken by the entity in this regard.

4. Does the entity have an equal opportunity policy as per the Rights of Persons with Disabilities Act, 2016? If so, provide a web-link to the policy.

5. Return to work and Retention rates of permanent employees and workers that took parental leave.

	Permanent employees		Permanent workers	
Gender	**Return to work rate**	**Retention rate**	**Return to work rate**	**Retention rate**
Male				
Female				
Total				

6. Is there a mechanism available to receive and redress grievances for the following categories of employees and worker? If yes, give details of the mechanism in brief.

	Yes/No ***(If Yes, then give details of the mechanism in brief)***
Permanent Workers	
Other than Permanent Workers	
Permanent Employees	
Other than Permanent Employees	

7. Membership of employees and worker in association(s) or Unions recognised by the listed entity:

Category	FY _____ (Current Financial Year)			FY _____ (Previous Financial Year)		
	Total employees / workers in respective category (A)	No. of employees / workers in respective category, who are part of association(s) or Union (B)	% (B / A)	Total employees / workers in respective category (C)	No. of employees / workers in respective category, who are part of association(s) or Union (D)	% (D / C)
Total Permanent Employees						
- Male						
- Female						
Total Permanent Workers						
- Male						
- Female						

8. Details of training given to employees and workers:

Category	FY _____ Current Financial Year					FY _____ Previous Financial Year				
	Total (A)	On Health and safety measures		On Skill upgradation		Total (D)	On Health and safety measures		On Skill upgradation	
		No. (B)	% (B / A)	No. (C)	% (C / A)		No. (E)	% (E / D)	No. (F)	% (F / D)
Employees										
Male										
Female										
Total										
Workers										
Male										
Female										
Total										

9. Details of performance and career development reviews of employees and worker:

Category	FY _____ Current Financial Year			FY _____ Previous Financial Year		
	Total (A)	No. (B)	% (B / A)	Total (C)	No. (D)	% (D / C)
Employees						
Male						
Female						
Total						

Workers						
Male						
Female						
Total						

10. Health and safety management system:
    a. Whether an occupational health and safety management system has been implemented by the entity? ***(Yes/ No).*** If yes, the coverage such system?
    b. What are the processes used to identify work-related hazards and assess risks on a routine and non-routine basis by the entity?
    c. Whether you have processes for workers to report the work related hazards and to remove themselves from such risks. (Y/N)
    d. Do the employees/ worker of the entity have access to non-occupational medical and healthcare services? ***(Yes/ No)***

11. Details of safety related incidents, in the following format:

Safety Incident/Number	**Category***	**FY _____ Current Financial Year**	**FY _____ Previous Financial Year**
Lost Time Injury Frequency Rate (LTIFR) (per one million-person hours worked)	Employees		
	Workers		
Total recordable work-related injuries	Employees		
	Workers		
No. of fatalities	Employees		
	Workers		
High consequence work-related injury or ill-health (excluding fatalities)	Employees		
	Workers		

*Including in the contract workforce

12. Describe the measures taken by the entity to ensure a safe and healthy work place.

13. Number of Complaints on the following made by employees and workers:

	FY _____ (Current Financial Year)			**FY _____ (Previous Financial Year)**		
	Filed during the year	**Pending resolution at the end of year**	**Remarks**	**Filed during the year**	**Pending resolution at the end of year**	**Remarks**
Working Conditions						
Health & Safety						

14. Assessments for the year:

	% of your plants and offices that were assessed (by entity or statutory authorities or third parties)
Health and safety practices	
Working Conditions	

15. Provide details of any corrective action taken or underway to address safety-related incidents (if any) and on significant risks / concerns arising from assessments of health & safety practices and working conditions.

Leadership Indicators

1. Does the entity extend any life insurance or any compensatory package in the event of death of (A) Employees (Y/N) (B) Workers (Y/N).

2. Provide the measures undertaken by the entity to ensure that statutory dues have been deducted and deposited by the value chain partners.

3. Provide the number of employees / workers having suffered high consequence work-related injury / ill-health / fatalities (as reported in Q11 of Essential Indicators above), who have been are rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment:

	Total no. of affected employees/ workers		No. of employees/workers that are rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment	
	FY _____ (Current Financial Year)	FY _____ (Previous Financial Year)	FY _____ (Current Financial Year)	FY _____ (Previous Financial Year)
Employees				
Workers				

4. Does the entity provide transition assistance programs to facilitate continued employability and the management of career endings resulting from retirement or termination of employment? ***(Yes/ No)***

5. Details on assessment of value chain partners:

	% of value chain partners (by value of business done with such partners) that were assessed
Health and safety practices	
Working Conditions	

6. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from assessments of health and safety practices and working conditions of value chain partners.

PRINCIPLE 4: Businesses should respect the interests of and be responsive to all its stakeholders

Essential Indicators

1. Describe the processes for identifying key stakeholder groups of the entity.

2. List stakeholder groups identified as key for your entity and the frequency of engagement with each stakeholder group.

Stakeholder Group	**Whether identified as Vulnerable & Marginalized Group (Yes/No)**	**Channels of communication** (Email, SMS, Newspaper, Pamphlets, Advertisement, Community Meetings, Notice Board, Website), Other	**Frequency of engagement (Annually/ Half yearly/ Quarterly / others – please specify)**	**Purpose and scope of engagement including key topics and concerns raised during such engagement**

Leadership Indicators

1. Provide the processes for consultation between stakeholders and the Board on economic, environmental, and social topics or if consultation is delegated, how is feedback from such consultations provided to the Board.

2. Whether stakeholder consultation is used to support the identification and management of environmental, and social topics (Yes / No). If so, provide details of instances as to how the inputs received from stakeholders on these topics were incorporated into policies and activities of the entity.

3. Provide details of instances of engagement with, and actions taken to, address the concerns of vulnerable/ marginalized stakeholder groups.

PRINCIPLE 5 Businesses should respect and promote human rights

Essential Indicators

1. Employees and workers who have been provided training on human rights issues and policy(ies) of the entity, in the following format:

Category	FY _____ Current Financial Year			FY _____ Previous Financial Year		
	Total (A)	No. of employees / workers covered (B)	% (B / A)	Total (C)	No. of employees / workers covered (D)	% (D / C)
Employees						
Permanent						
Other than permanent						
Total Employees						
Workers						
Permanent						
Other than permanent						
Total Workers						

2. Details of minimum wages paid to employees and workers, in the following format:

Category	FY _____ Current Financial Year					FY _____ Previous Financial Year				
	Total (A)	Equal to Minimum Wage		More than Minimum Wage		Total (D)	Equal to Minimum Wage		More than Minimum Wage	
		No. (B)	% (B / A)	No. (C)	% (C / A)		No. (E)	% (E / D)	No. (F)	% (F / D)
Employees										
Permanent										
Male										
Female										
Other than Permanent										
Male										
Female										
Workers										
Permanent										
Male										
Female										
Other than Permanent										
Male										
Female										

3. Details of remuneration/salary/wages

a. Median remuneration / wages:

	Male		Female	
	Number	**Median remuneration/ salary/ wages of respective category**	**Number**	**Median remuneration/ salary/ wages of respective category**
Board of Directors (BoD)				
Key Managerial Personnel				
Employees other than BoD and KMP				
Workers				

b. Gross wages paid to females as % of total wages paid by the entity, in the following format:

	FY _____ Current Financial Year	**FY _____ Previous Financial Year**
Gross wages paid to females as % of total wages		

4. Do you have a focal point (Individual/ Committee) responsible for addressing human rights impacts or issues caused or contributed to by the business? **(Yes/No)**

5. Describe the internal mechanisms in place to redress grievances related to human rights issues.

6. Number of Complaints on the following made by employees and workers:

	FY _____ Current Financial Year			**FY _____ Previous Financial Year**		
	Filed during the year	**Pending resolution at the end of year**	**Remarks**	**Filed during the year**	**Pending resolution at the end of year**	**Remarks**
Sexual Harassment						
Discrimination at workplace						
Child Labour						
Forced Labour/Involuntary Labour						
Wages						
Other human rights related issues						

7. Complaints filed under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, in the following format:

	FY _____ **Current Financial Year**	**FY _____** **Previous Financial Year**
Total Complaints reported under Sexual Harassment on of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH)		
Complaints on POSH as a % of female employees / workers		
Complaints on POSH upheld		

8. Mechanisms to prevent adverse consequences to the complainant in discrimination and harassment cases.

9. Do human rights requirements form part of your business agreements and contracts? **(Yes/No)**

10. Assessments for the year:

	% of your plants and offices that were assessed (by entity or statutory authorities or third parties)
Child labour	
Forced/involuntary labour	
Sexual harassment	
Discrimination at workplace	
Wages	
Others – please specify	

11. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 10 above.

Leadership Indicators

1. Details of a business process being modified / introduced as a result of addressing human rights grievances/complaints.

2. Details of the scope and coverage of any Human rights due-diligence conducted.

3. Is the premise/office of the entity accessible to differently abled visitors, as per the requirements of the Rights of Persons with Disabilities Act, 2016?

4. Details on assessment of value chain partners:

	% of value chain partners (by value of business done with such partners) that were assessed
Sexual Harassment	
Discrimination at workplace	
Child Labour	
Forced Labour/Involuntary Labour	
Wages	
Others – please specify	

5. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 4 above.

PRINCIPLE 6: Businesses should respect and make efforts to protect and restore the environment

Essential Indicators

1. Details of total energy consumption (in Joules or multiples) and energy intensity, in the following format:

Parameter	**FY _____ *(Current Financial Year)***	**FY _____*(Previous Financial Year)***
From renewable sources		
Total electricity consumption (A)		
Total fuel consumption (B)		
Energy consumption through other sources (C)		
Total energy consumed from renewable sources (A+B+C)		
From non-renewable sources		
Total electricity consumption (D)		
Total fuel consumption (E)		
Energy consumption through other sources (F)		
Total energy consumed from non-renewable sources (D+E+F)		
Total energy consumed (A+B+C+D+E+F)		
Energy intensity per rupee of turnover (Total energy consumed / Revenue from operations)		
Energy intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total energy consumed / Revenue from operations adjusted for PPP)		
Energy intensity in terms of physical output		
Energy intensity *(optional)* – the relevant metric may be selected by the entity		

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

2. Does the entity have any sites / facilities identified as designated consumers (DCs) under the Performance, Achieve and Trade (PAT) Scheme of the Government of India? (Y/N) If yes, disclose whether targets set under the PAT scheme have been achieved. In case targets have not been achieved, provide the remedial action taken, if any.

3. Provide details of the following disclosures related to water, in the following format:

Parameter	**FY _____** ***(Current Financial Year)***	**FY _____** ***(Previous Financial Year)***
Water withdrawal by source (in kilolitres)		
(i) Surface water		
(ii) Groundwater		
(iii) Third party water		
(iv) Seawater / desalinated water		
(v) Others		
Total volume of water withdrawal (in kilolitres) (i + ii + iii + iv + v)		
Total volume of water consumption (in kilolitres)		
Water intensity per rupee of turnover (Total water consumption / Revenue from operations)		
Water intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total water consumption / Revenue from operations adjusted for PPP)		
Water intensity in terms of physical output		
Water intensity *(optional)* – the relevant metric may be selected by the entity		

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

4. Provide the following details related to water discharged:

Parameter	**FY _____ *(Current Financial Year)***	**FY _____ *(Previous Financial Year)***
Water discharge by destination and level of treatment (in kilolitres)		
(i) To Surface water		
- No treatment		
- With treatment – please specify level of treatment		
(ii) To Groundwater		
- No treatment		
- With treatment – please specify level of treatment		
(iii) To Seawater		
- No treatment		
- With treatment – please specify level of treatment		
(iv) Sent to third-parties		
- No treatment		
- With treatment – please specify level of treatment		
(v) Others		
- No treatment		
- With treatment – please specify level of treatment		
Total water discharged (in kilolitres)		

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

5. Has the entity implemented a mechanism for Zero Liquid Discharge? If yes, provide details of its coverage and implementation.

6. Please provide details of air emissions (other than GHG emissions) by the entity, in the following format:

Parameter	***Please specify unit***	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
NOx			
SOx			
Particulate matter (PM)			
Persistent organic pollutants (POP)			
Volatile organic compounds (VOC)			
Hazardous air pollutants (HAP)			
Others – please specify			

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

7. Provide details of greenhouse gas emissions (Scope 1 and Scope 2 emissions) & its intensity, in the following format:

Parameter	***Unit***	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Total Scope 1 emissions (Break-up of the GHG into CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 2 emissions (Break-up of the GHG into CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 1 and Scope 2 emission intensity per rupee of turnover (Total Scope 1 and Scope 2 GHG emissions / Revenue from operations)			
Total Scope 1 and Scope 2 emission intensity per rupee of turnover adjusted			

Parameter	***Unit***	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
for Purchasing Power Parity (PPP) (Total Scope 1 and Scope 2 GHG emissions / Revenue from operations adjusted for PPP)			
Total Scope 1 and Scope 2 emission intensity in terms of physical output			
Total Scope 1 and Scope 2 emission intensity *(optional)* – the relevant metric may be selected by the entity			

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

8. Does the entity have any project related to reducing Green House Gas emission? If Yes, then provide details.

9. Provide details related to waste management by the entity, in the following format:

Parameter	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Total Waste generated (in metric tonnes)		
Plastic waste ***(A)***		
E-waste ***(B)***		
Bio-medical waste ***(C)***		
Construction and demolition waste ***(D)***		
Battery waste ***(E)***		
Radioactive waste ***(F)***		
Other Hazardous waste. Please specify, if any. ***(G)***		
Other Non-hazardous waste generated ***(H)***. *Please specify, if any.* (Break-up by composition i.e. by materials relevant to the sector)		
Total (A+B + C + D + E + F + G + H)		

Parameter	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Waste intensity per rupee of turnover (Total waste generated / Revenue from operations)		
Waste intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total waste generated / Revenue from operations adjusted for PPP)		
Waste intensity in terms of physical output		
Waste intensity *(optional)* – the relevant metric may be selected by the entity		
For each category of waste generated, total waste recovered through recycling, re-using or other recovery operations (in metric tonnes)		
Category of waste		
(i) Recycled		
(ii) Re-used		
(iii) Other recovery operations		
Total		
For each category of waste generated, total waste disposed by nature of disposal method (in metric tonnes)		
Category of waste		
(i) Incineration		
(ii) Landfilling		
(iii) Other disposal operations		
Total		

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

10. Briefly describe the waste management practices adopted in your establishments. Describe the strategy adopted by your company to reduce usage of hazardous and toxic chemicals in your products and processes and the practices adopted to manage such wastes.

11. If the entity has operations/offices in/around ecologically sensitive areas (such as national parks, wildlife sanctuaries, biosphere reserves, wetlands, biodiversity hotspots, forests,

coastal regulation zones etc.) where environmental approvals / clearances are required, please specify details in the following format:

S. No.	Location of operations/offices	Type of operations	Whether the conditions of environmental approval / clearance are being complied with? (Y/N) If no, the reasons thereof and corrective action taken, if any.

12. Details of environmental impact assessments of projects undertaken by the entity based on applicable laws, in the current financial year:

Name and brief details of project	**EIA Notification No.**	**Date**	**Whether conducted by independent external agency (Yes / No)**	**Results communicated in public domain (Yes / No)**	**Relevant Web link**

13. Is the entity compliant with the applicable environmental law/ regulations/ guidelines in India; such as the Water (Prevention and Control of Pollution) Act, Air (Prevention and Control of Pollution) Act, Environment protection act and rules thereunder (Y/N). If not, provide details of all such non-compliances, in the following format:

S. No.	**Specify the law / regulation / guidelines which was not complied with**	**Provide details of the non-compliance**	**Any fines / penalties / action taken by regulatory agencies such as pollution control boards or by courts**	**Corrective action taken, if any**

Leadership Indicators

1. Water withdrawal, consumption and discharge in areas of water stress (in kilolitres):

For each facility / plant located in areas of water stress, provide the following information:

(i) Name of the area

(ii) Nature of operations

(iii) Water withdrawal, consumption and discharge in the following format:

Parameter	**FY _____ *(Current Financial Year)***	**FY _____*(Previous Financial Year)***
Water withdrawal by source (in kilolitres)		
(i) Surface water		
(ii) Groundwater		
(iii) Third party water		
(iv) Seawater / desalinated water		
(v) Others		
Total volume of water withdrawal (in kilolitres)		
Total volume of water consumption (in kilolitres)		
Water intensity per rupee of turnover *(Water consumed / turnover)*		
Water intensity *(optional)* – the relevant metric may be selected by the entity		
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
- No treatment		
- With treatment – please specify level of treatment		
(ii) Into Groundwater		
- No treatment		
- With treatment – please specify level of treatment		
(iii) Into Seawater		
- No treatment		
- With treatment – please specify level of treatment		
(iv) Sent to third-parties		
- No treatment		
- With treatment – please specify level of treatment		
(v) Others		
- No treatment		
- With treatment – please specify level of treatment		
Total water discharged (in kilolitres)		

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

2. Please provide details of total Scope 3 emissions & its intensity, in the following format:

Parameter	***Unit***	***FY _____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Total Scope 3 emissions (Break-up of the GHG into CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 3 emissions per rupee of turnover			
Total Scope 3 emission intensity *(optional)* – the relevant metric may be selected by the entity			

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

3. With respect to the ecologically sensitive areas reported at Question 11 of Essential Indicators above, provide details of significant direct & indirect impact of the entity on biodiversity in such areas along-with prevention and remediation activities.

4. If the entity has undertaken any specific initiatives or used innovative technology or solutions to improve resource efficiency, or reduce impact due to emissions / effluent discharge / waste generated, please provide details of the same as well as outcome of such initiatives, as per the following format:

Sr. No	Initiative undertaken	Details of the initiative *(Web-link, if any, may be provided along-with summary)*	Outcome of the initiative

5. Does the entity have a business continuity and disaster management plan? Give details in 100 words/ web link.
6. Disclose any significant adverse impact to the environment, arising from the value chain of the entity. What mitigation or adaptation measures have been taken by the entity in this regard.

7. Percentage of value chain partners (by value of business done with such partners) that were assessed for environmental impacts.

PRINCIPLE 7 Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent

Essential Indicators

1. a. Number of affiliations with trade and industry chambers/ associations.

   b. List the top 10 trade and industry chambers/ associations (determined based on the total members of such body) the entity is a member of/ affiliated to.

S. No.	Name of the trade and industry chambers/ associations	Reach of trade and industry chambers/ associations (State/National)
1		
2		
3		
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2. Provide details of corrective action taken or underway on any issues related to anti-competitive conduct by the entity, based on adverse orders from regulatory authorities.

Name of authority	Brief of the case	Corrective action taken

Leadership Indicators

1. Details of public policy positions advocated by the entity:

S. No.	Public policy advocated	Method resorted for such advocacy	Whether information available in public domain? (Yes/No)	Frequency of Review by Board (Annually/ Half yearly/ Quarterly / Others – please specify)	Web Link, if available

PRINCIPLE 8 Businesses should promote inclusive growth and equitable development

Essential Indicators

1. Details of Social Impact Assessments (SIA) of projects undertaken by the entity based on applicable laws, in the current financial year.

Name and brief details of project	SIA Notification No.	Date of notification	Whether conducted by independent external agency (Yes / No)	Results communicated in public domain (Yes / No)	Relevant Web link

2. Provide information on project(s) for which ongoing Rehabilitation and Resettlement (R&R) is being undertaken by your entity, in the following format:

S. No.	Name of Project for which R&R is ongoing	State	District	No. of Project Affected Families (PAFs)	% of PAFs covered by R&R	Amounts paid to PAFs in the FY (In INR)

3. Describe the mechanisms to receive and redress grievances of the community.

4. Percentage of input material (inputs to total inputs by value) sourced from suppliers:

	FY ____ Current Financial Year	FY ____ Previous Financial Year
Directly sourced from MSMEs/ small producers		
Directly from within India		

5. Job creation in smaller towns – Disclose wages paid to persons employed (including employees or workers employed on a permanent or non-permanent / on contract basis) in the following locations, as % of total wage cost

Location	FY _____ Current Financial Year	FY _____ Previous Financial Year
Rural		
Semi-urban		
Urban		
Metropolitan		

(Place to be categorized as per RBI Classification System - rural / semi-urban / urban / metropolitan)

Leadership Indicators

1. Provide details of actions taken to mitigate any negative social impacts identified in the Social Impact Assessments (Reference: Question 1 of Essential Indicators above):

Details of negative social impact identified	Corrective action taken

2. Provide the following information on CSR projects undertaken by your entity in designated aspirational districts as identified by government bodies:

S. No.	State	Aspirational District	Amount spent (In INR)

3. (a) Do you have a preferential procurement policy where you give preference to purchase from suppliers comprising marginalized /vulnerable groups? (Yes/No)
   (b) From which marginalized /vulnerable groups do you procure?
   (c) What percentage of total procurement (by value) does it constitute?

4. Details of the benefits derived and shared from the intellectual properties owned or acquired by your entity (in the current financial year), based on traditional knowledge:

S. No.	Intellectual Property based on traditional knowledge	Owned/ Acquired (Yes/No)	Benefit shared (Yes / No)	Basis of calculating benefit share

5. Details of corrective actions taken or underway, based on any adverse order in intellectual property related disputes wherein usage of traditional knowledge is involved.

Name of authority	Brief of the Case	Corrective action taken

6. Details of beneficiaries of CSR Projects:

S. No.	CSR Project	No. of persons benefitted from CSR Projects	% of beneficiaries from vulnerable and marginalized groups

PRINCIPLE 9 Businesses should engage with and provide value to their consumers in a responsible manner

Essential Indicators

1. Describe the mechanisms in place to receive and respond to consumer complaints and feedback.

2. Turnover of products and/ services as a percentage of turnover from all products/service that carry information about:

	As a percentage to total turnover
Environmental and social parameters relevant to the product	
Safe and responsible usage	
Recycling and/or safe disposal	

3. Number of consumer complaints in respect of the following:

	FY ____ (Current Financial Year)		**Remarks**	**FY ____ (Previous Financial Year)**		**Remarks**
	Received during the year	**Pending resolution at end of year**		**Received during the year**	**Pending resolution at end of year**	
Data privacy						
Advertising						
Cyber-security						
Delivery of essential services						
Restrictive Trade Practices						
Unfair Trade Practices						
Other						

4. Details of instances of product recalls on account of safety issues:

	Number	Reasons for recall
Voluntary recalls		
Forced recalls		

5. Does the entity have a framework/ policy on cyber security and risks related to data privacy? **(Yes/No)** If available, provide a web-link of the policy.

6. Provide details of any corrective actions taken or underway on issues relating to advertising, and delivery of essential services; cyber security and data privacy of customers; re-occurrence of instances of product recalls; penalty / action taken by regulatory authorities on safety of products / services.

7. Provide the following information relating to data breaches:
   a. Number of instances of data breaches
   b. Percentage of data breaches involving personally identifiable information of customers
   c. Impact, if any, of the data breaches

Leadership Indicators

1. Channels / platforms where information on products and services of the entity can be accessed (provide web link, if available).

2. Steps taken to inform and educate consumers about safe and responsible usage of products and/or services.

3. Mechanisms in place to inform consumers of any risk of disruption/discontinuation of essential services.

4. Does the entity display product information on the product over and above what is mandated as per local laws? (Yes/No/Not Applicable) If yes, provide details in brief. Did your entity carry out any survey with regard to consumer satisfaction relating to the major products / services of the entity, significant locations of operation of the entity or the entity as a whole? (Yes/No)

CHAPTER - 26

URBAN INFRASTRUCTURE – THE WAY FORWARD

URBAN INFRASTRUCTURE – THE WAY FORWARD

Urbanisation / City development India is poised to urbanise rapidly in the coming decades. It will have an urban population of 600 million by 2030, up from 400 million in 2018. This will accelerate the construction of buildings over the next decade, and also spur the growth of smart and green buildings. Hence, it is vital for the government, building developers, financial institutions and owners to devise a strategic roadmap committing to achieving smart and green targets for the next decade.

Smart Cities Mission

Cities are engines of growth for the economy of every nation, including India. Nearly 31% of India's current population lives in urban areas and contributes 63% of India's GDP (Census 2011). With increasing urbanization, urban areas are expected to house 40% of India's population and contribute 75% of India's GDP by 2030. This requires comprehensive development of physical, institutional, social and economic infrastructure. All are important in improving the quality of life and attracting people and investments to the City, setting in motion a virtuous cycle of growth and development. Development of Smart Cities is a step in that direction. The core infrastructure elements in a Smart City would include:

i. adequate water supply,

ii. assured electricity supply,

iii. sanitation, including solid waste management,

iv. efficient urban mobility and public transport,

v. affordable housing, especially for the poor,

vi. robust IT connectivity and digitalization,

vii. good governance, especially e-Governance and citizen participation,

viii. sustainable environment,

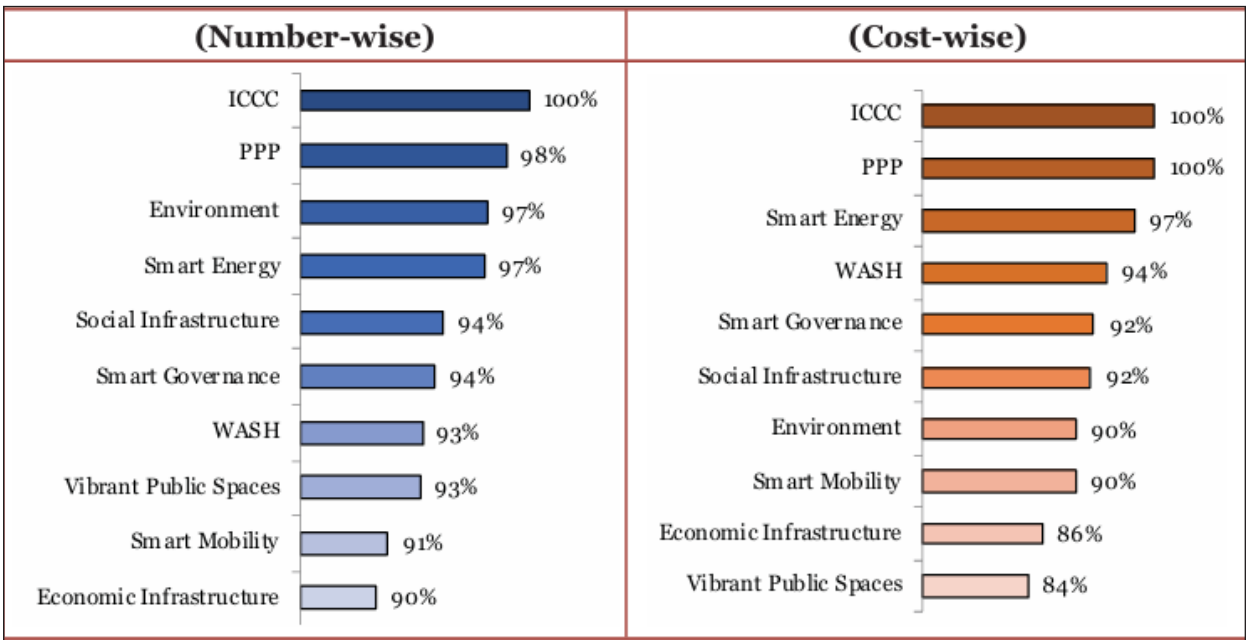
ix. safety and security of citizens, particularly women, children and the elderly, and

x. health and education.

Accordingly, the purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area-based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving liveability of the whole City. New areas (greenfield) will be developed around cities in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities.

Smart Cities Mission: Launched in 2015, the mission aims to develop smart cities with essential infrastructure, good quality of life and a sustainable environment. As of 13 January 2025, 8,058 projects worth 1.64 lakh crore have been proposed, with 7,479 projects worth 1.50 lakh crore.

Projects completed under Smart Cities Mission



Source: Ministry of Housing and Urban Affairs

Note: * As on 13 January 2025

- Smart Mobility: Includes smart road, NMT, pedestrianisation and public transport projects etc.
- Smart Energy: Includes LED/solar, streetlights, solar energy installation and gas pipelines etc.
- WASH (water, sanitation and hygiene): Includes water supply, sewerage, drainage and solid waste management projects etc.
- Vibrant public spaces: Includes rejuvenation of open spaces and waterbodies
- Economic infrastructure: Includes projects that enhance municipal revenue, market redevelopment, etc.
- Social Infrastructure: Includes smart classrooms, digital libraries, and smart health centers etc.
- Smart Governance: Includes ICT based projects aimed at improving municipal governance
- ICCC stands for integrated command and control centres

Achivements of the Smart Cities Mission

Chart VI.21: Achievements of the Smart Cities mission*

Integrated Command and Control Centres	•Operational in 100 cities. Used for urban management in crime tracking, safety, transport, disaster management, etc.
Public Safety	•83,000+ CCTV cameras, 1,884 emergency call boxes, public address systems, and traffic enforcement tools installed
Public Safety	•1,200+ projects completed, 318 km of waterfronts developed, •484 heritage sites conserved
Water Supply	•17,000 km of water supply monitored via SCADA in 31 cities, reducing water loss and leaks.
Solid Waste Management	•ICCCs and 9,000 RFID-enabled vehicles in 48 cities optimized waste collection.
Streetlights	•16 lakh solar/LED streetlights installed across 79 cities.
Mobility	•1700 km of smart roads, shared bicycles (23,000), buses (1,500+), bus stops (2,000+), ITMS in 35 cities.
Affordable Housing	•35,000+ affordable housing units built in 23 cities.
Smart Solutions	•9,400 Wi-Fi hotspots and 83,000 CCTV cameras created.
Health	•3,100+ hospital beds, 172 e-health centers, 155 health ATMs, and 300 sports facilities added.
Education	•9,400 smart classrooms in 2,300 schools, digital libraries, and Anganwadis developed.
PPP Projects	•199 projects worth ₹9,200 crores implemented in 50+ cities.
Economic Hubs	•Incubation projects and skill centers developed, supporting 1,400+ startups and 20,000+ vendors.

Apart from asset creation, our infrastructure programme also emphasises the use of sustainable materials and processes. These considerations are receiving particular attention in areas such as highway development, waterway projects, power capacity addition and waste management. Given the global imperative of promoting sustainable practices, model practices in this direction need to be replicated widely.

India needs a continued step-up of infrastructure investment over the next two decades to sustain a high rate of growth. Requirements are aplenty. Accelerating our efforts to build integrated multi-modal transport, coupled with the modernisation of existing physical assets, will improve efficiency and last-mile connectivity. Disaster resilient urbanisation, public transport, preservation and upkeep of heritage sites, monuments and tourist destinations, as well as rural public infrastructure, including connectivity, call for greater attention.

Green Buildings

Green (sustainable) buildings prioritise resource efficiency and sustainability, and are developed by employing processes that are environmentally responsible and discharge minimal waste during construction. Such buildings are planned and designed in order to optimize water as week as energy consumption. They have clear waste disposal mechanisms that maximise reuse and recycling. Therefore, the concept of green buildings is becoming a preferred option as these are climate-resilient, consume less energy & water, provide adequate ventilation & air quality, and ensure healthier living.

Urban housing: The Pradhan Mantri Awas Yojana – Urban (PMAY-U), launched in 2015, aims to provide permanent housing in urban areas. As of November 25, 2024, a total of 1.18 crore houses have been sanctioned, with 1.14 crore grounded and over 89 lakh completed. PMAY-U 2.0 was launched in September 2024 to assist an additional one crore households. Currently, 29 states and union territories have signed agreements to implement PMAY-U 2.0, with approval having been granted for 6 lakh houses in FY25.

In order to give a further boost to the housing sector, Affordable housing was included as one of the subsectors in the social and commercial infrastructure category of the harmonized Master List of the infrastructure Sub-Sectors in 2017 subsequently another category in the name of Affordable Rental Housing Complex was included to take care of affordable houses of rental bases for the needy population in 2020 (post the major shifting of population during Co-vid)

RERA Initiatives

The Real Estate (Regulation and Development) Act 2016 (RERA) is a law that has been enacted to regulate the real estate sector. The objective is to protect the home owner and promote transparency and accountability through the regulatory authority, which will oversee the sector. The mechanism inter-alia involves registration of projects with the respective authority by each developer before starting construction. Proper disclosure of information about the projects including time lines, budgets and funding sources and amenities need to be ensured and incase of noncompliance penalty imposed by the concerned authority.

Real Estate Development: Rules under the Real Estate (Regulation & Development) Act, 2016 (RERA) have been notified in all States and Union Territories except Nagaland, with various regulatory authorities established. About 1.38 lakh real estate projects and 95,987 real estate agents have been registered under the Real Estate Regulatory Authority as of January 6, 2025. 1.38 lakh complaints have been disposed of by the RERA across the country.

This mechanism has proved to be quite effective in ensuring better handing of the projects in the interest of the buyers. Further strengthening of the powers of the RERA authority can be considered to make the mechanism all the more efficient.

City Gas Distribution

India is actively expanding its City Gas Distribution network to increase natural gas access for various sectors with development of pipeline network and establishment of compressed natural gas(CNG) and Piped Natural Gas(PNG). The government has a plan to have one nation one gas grid by 2030. The petroleum and natural gas regulatory board organises city gas distribution biding abounds where companies acquire the rights for development in specific geographical areas. India aims to increase the share of natural gas in its primary energy basket to 15% by 2030 with the city gas distribution segment expected to play a major role in this respect.

Urban transport: Metro rail and rapid rail transit systems are operational or under construction in 29 cities across India, with 1010 kilometres currently operational in 23 cities and an additional 980 kilometres underway. As of January 5, 2025, 62.7 kms were operationalised in FY25, and the daily ridership reached 10.2 million. These systems have led to considerable savings in emissions, time, vehicle operating costs, accidents and infrastructure maintenance.

Namami Gange

The government has approved Namami Gange Mission-2 with a budgetary outlay of ₹22,500 crore

till 2026, including projects for existing liabilities for ₹11,225 crore and new projects/ interventions of ₹11,275 crore as informed by the ministry.

A total of 409 projects are taken up at estimated cost of ₹39,912.40 crore till December 2022. Out of this, 232 projects are complete and made operational. Majority of the projects pertain to creation of sewage infrastructure as the untreated domestic/industrial waste water is the main reason for the pollution of river Ganga.

Atal Mission for Rejuvenation and Urban Transformation

AMRUT was launched on June 25,2015 with the aim of developing basic urban infrastructure in 500 mission cities. The mission has five thrust areas, with the top priority being water connections and enhancing water supply capacity. Of the total plan size of ₹776.4 billion of all the state annual action plans, about 50 per cent of the funds have been allocated to water supply (Es 390.11 billion), 42 percent to sewerage and septage projects (₹324.56 billion), and 4 per cent towards drainage projects (₹29.69 billion) amongst others of the total investment of ₹776.4 billion, around ₹305 billion had been released and ₹471.4 billion was yet to be released as of February, 2021. Currently, 232 projects worth ₹22.50 billion are under various stages of tendering. Of this, water supply and sewerage projects account for-90 percent share. Under Union Budget 2021-22, the mission was allocated ₹73.33 billion.

Of the 6,527 projects approved so far by MoHUA, Detailed Project Reports (DPR) have been approved by States/UTs for 2,058 projects worth ₹36,481.47 crore, Notice Inviting Tender have been issued for 1,025 projects worth ₹19,157.55 crore, works have awarded for 608 projects worth ₹5,422.82 crore and 29 projects worth ₹102.99 crore have been completed.

In order to carry forward the objective of universal coverage of water supply from 500 cities covered under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) to all the statutory towns across the country, AMRUT 2.0 has been launched in October 2021 for a period of 5 years i.e., Financial Year 2021-22 to 2025-26. It focuses on making the cities 'self-reliant' & 'water secure' & providing universal coverage of sewerage & septage management in 500 AMRUT cities. Mission has a reform agenda focused on financial sustainability, case of living of citizen & water sector reforms.

AMRUT scheme was launched in 2015 to focus on improving urban water management in 500 cities. As a result, tap water coverage has increased to 70 per cent, and sewerage coverage has risen to 62 per cent. The mission has created or augmented water treatment capacity of 4,649 million litres per day and developed 2,439 parks, adding 5,070 acres of green space. In 2021, AMRUT 2.0 was introduced to expand coverage to all statutory towns and cities, with an allocation of ₹2.77 lakh crore during FY22 to FY26. This phase so far has initiated 8,923 projects worth ₹1.89 lakh crore. AMRUT 2.0 actively involves self-help groups and promotes innovative technologies.

The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is benefiting citizens by improving water supply systems, augmenting localised water resources through the revitalisation of water bodies, enhancing groundwater recharge, increasing permeable green spaces, promoting the recycling and reuse of wastewater, and implementing energy efficiency reforms, thus, promoting key thematic areas under the NMSH. As of December 2024, 785 stormwater drainage projects have been completed, eliminating 3,631 waterlogging points and constructing 1,380 kilometres of drains to mitigate the effects of urban flooding. Work is currently underway to address an additional 285 waterlogging points. Additionally, 2,438 parks have been developed, contributing 5,070 acres of green space. Over 320 green mobility projects have been completed to encourage environmentally friendly modes of transport and infrastructure, creating 493 kilometres of walkways and cycle tracks.

AMRUT 2.0 aims to enhance ease of living by creating water-secure cities through water conservation, augmentation and rejuvenation. As of December 2024, 3,078 water body rejuvenation projects have been approved with the planned rejuvenation of 475 square kilometres area with 4.65 crore million litres per day (MLD) capacity, of which nine water rejuvenation projects have been completed. These projects are focused on sewer diversion/treatment before discharge into water bodies, sustainability and emphasis on nature-based solutions. AMRUT 2.0 also focuses on the reuse of water and greywater management. As of December 2024, 1,437 MLD capacity has been developed for recycling/reuse.

Jal Jeevan Mission

The Government has accorded the highest priority to improve the quality of life and enhance the 'ease of living' of people, especially those living in rural areas. On the 73rd Independence Day, 15 August 2019, the Jal Jeevan Mission (JJM) was announced, to be implemented in partnership with States, to provide tap water connection to every rural household and public institutions in villages like schools, Anganwadi centres, ashram shalas (tribal residential schools), health centres, Gram Panchayat building, etc., by 2024.

At the time of the rollout of the JJM in August 2019, about 3.2 crore (17 per cent) households out of the total of 18.9 crore rural households had a tap water supply. Since the launch of the Mission, as of 18 January 2023, of 19.4 crore rural households, 11.0 crore households are getting tap water supply in their homes. Further, four States, i.e., Goa, Gujarat, Telangana & Haryana, and three UTs, i.e., Andaman & Nicobar Islands, Dadra Nagar Haveli & Daman Diu and Puducherry have become 'Har Ghar Jal' State/UT, i.e., 100 per cent households are having tap water supply. Similarly, 121 districts, 1,515 Blocks, 82,071 Gram Panchayats, and more than 1.5 lakh villages have also become 'Har Ghar Jal Block', 'Har Ghar Jal Panchayat', and 208 Economic Survey 2022-23 'Har Ghar Jal Gaon' respectively. Further, more than 8.8 lakh schools and 9.1 lakh Anganwadi centres are getting potable piped water supply. It provides more details about the Mission and how it is serving to improve public health.

These flagship schemes launched by the government are crucial for urban development as they ensure the provision of basic civic amenities to the residents. However, there are multiple bottlenecks being faced by them such as funding issues, lack of private participation and delays in clearances, thereby resulting in time and cost overruns.

In a notable development, the Union government launched a new flagship programme, Jal Jeevan Mission (Urban), under Union Budget 2021-22. The objective of the mission is to provide universal coverage of water supply to all households through functional taps in all 4,378 statutory towns in accordance with SDG Goal-6. Further, providing coverage of sewerage/septage management in 500 AMRUT cities is the other focus area. The total outlay proposed for Jal Jeevan Mission (Urban) is ₹2.87 trillion, which includes ₹100 billion for continuing financial support to AMRUT Mission. For Union Territories, there will be 100 per cent central funding. For North Eastern and Hill States, central funding for projects will be 90 per cent. Meanwhile, Central funding will be 50 per cent for cities with population less than 100,000 one-third for cities with population between 100,000 and one million, and 25 percent for cities with population more than one million.

The World Bank report projects $840 billion investment over the next 15years in urban in infra (largely in transport and water; it does not include housing, education, health etc). This implies an average of ₹4 trillion a year, if we assume that the investments start small and grow linearly, this is a requirement of say ₹2 trillion a year going up to ₹6 trillion by the end of the fifteenth year.

Accordingly, Municipal corporations, roughly, face a large gap between their revenue surpluses and the

expected capital outlay, even in a situation where their planned capital outlay annually is less than ₹1 Trillion. To put this in context of the World Bank report, what is required is close to ₹2 trillion (and even that covers only a few sectors). This difference of a trillion rupees (S12.5billion) annually, and rising, will need to be covered by increasing devolutions and OSRs.

Since 2019, 15 crore households representing 80 per cent of India's rural population have been provided access to potable tap water connections.

To achieve 100 per cent coverage, I am pleased to announce the extension of the Mission until 2028 with an enhanced total outlay.

The Mission's focus will be on the quality of infrastructure and O&M of rural piped water supply schemes through "Jan Bhagidhari". Separate MoUs will be signed with states/UTs, to ensure sustainability and citizen-centric water service delivery.

Financial capacity

Bringing in external providers of capital can help bridge this gap. Equity investors or debt financiers look for well structured public private partnerships (PPPs) that offer a reasonable business case for investment. Many urban infrastructure projects have large element of social benefits: a low-cost public transport infrastructure, for example, improves social and economic mobility of citizens by allowing them to access distant opportunities. From a PPP perspective, structuring the risk and returns from the project such that private capital can come in, is important. Many levers for bringing in external capital exist, including: (some) pricing freedom, reasonable certainly on revenue (on price, or quantity offtake, or both), low-cost financing support or guarantees by governments, etc. The type of capital that comes in can range from the yield-seeking long-term patient capital (long-term bank debt, pension funds, sovereign funds) to more risk-taking equity investors (who may expect to gain from the upside that urban growth offers).

Accessing bond markets is also an acknowledgement that the sources of debt capital have increased from insurance, pension, mutual funds. etc. Engaging with such wide array of investors also requires considering their needs, largely around "security, liquidity, and exit. As projects mature, equity investors can invest larger sums in urban sectors.

Cities of different sizes (by population and/or area) have different requirements of investments and concomitant complexity. However, across the cities, it is clear that a few key sectors (housing, transport, water and sanitation) require bulk of the investments in the urban sector. Developing specific toolkits for these three segments can help creates specific projects for Investors and financiers to consider.

Experts have suggested that a regulatory innovation has worked very well in attracting private capital is the creation of the Solar Energy Corporation of India(SECl) in the renewables sector. At its core is the tripartite agreement between the centre, the state, and the power generator which assures the generator that payments due to them will come through and on time. Creating a similar independent intermediator to act as a financial middle man at the local of the centre for urban investments can help catalyse private investments, for example, by 'securitising' a part of the Centre's grants to ULBs and states.

(Source: NIIF)

Water Management

The country's increasing population, along rapid urbanization and industrial growth have led to tremendous stress on its finite water resources Per capita water availability declined at an alarming rate from 1,816 cubic meters in 2001 to 1,545 cubic meters in 2011. The gap between demand and supply of water is increasing and is expected to widen further in the coming years. In view of the limitations on the availability of water resources, sustainable water management has acquired critical importance.

India has 4 per cent of the world's water resources as 18 per cent of the world's population. Around 48 per cent of the country's population is reeling under high to extreme water stress. Sustainable water management with a focus on identification of alternative water sources, along with the adoption of advanced technologies will thus be critical for averting the looming water crisis.

There has been a rising focus on developing alternative sources of water supply through practices such as recycling and reuse of treated water and desalination. These processes have also been promoted under various government policies and programmes, including the Swachh Bharat Mission, the Atal Mission for Rejuvenation and Urban Transformation, and the Namami Gange programme.

In the past few years, the adoption of decentralised wastewater treatment systems has also gained significance due to the high costs associated with and inadequate coverage by centralised sewage treatment plants (STPs). The deployment of digital technologies such as smart meters and supervisory control and data acquisition systems has also progressively transformed the way water resources are managed in the country. These solutions and innovations will play a kay role in strengthening the sector and meeting the fast-growing water requirements.

Wastewater recycling and reuse

The use of recycled water for meeting the needs of the residential, municipal and industrial segments is slowly gaining ground in the country. As freshwater resources become scarce, treated wastewater can play an important role in mitigating water stress by preventing pollution of waterbodies as minimal effluents and sewage are discharged into the ecosystem after proper treatment.

At present, only 30 per cent of the wastewater generated in the sector. The model will play a crucial role in attracting industry participation and ensuing performance, efficiency and viability of operations. In a HAM-based project 40 per cent of the project cost is borne by the government while the balance 60 cent is arranged by the private player. During the operation and maintenance period of 15 years, the player receives annuity payments from the government that are linked to performance. A large number ot projects are being implemented under HAM and the model has received an encouraging response. Some of the key projects are the setting up of sewage treatment plants in the cities of Varanasi, Kanpur, Haridwar, etc. However, currently HAM is restricted to the sewerage segment and it is too early to ascertain its success.

Smart Metering initiatives

Several water utilities in the country continue to deal with high non-revenue water, unchecked leakages, and unauthorized and reckless water consumption leading to poor recovery of operation and maintenance costs. This has led to growing demand for smart water meters that help utilities in gauging consumption and managing leaks, and also improve their revenues. Smart metering solutions have also been promoted under government programmes such as the Smart Cities Mission.

Desalination

Given India's vast coastline, desalination is increasingly becoming an important option for meeting the burgeoning water demand in coastal areas. So far, the use of desalinated water has been explored for both municipal and industrial purposes. In the municipal space, desalination projects have been executed to meet drinking water requirements of the growing urban population. In the industrial segment, desalinated water has been used primarily for meeting the requirements of thermal power plants. Besides, it has also found application in oil refineries, and steel and cement industries.

Funding Scenario

The investment requirements of the country's water and waste management sector are substantial, given the current level of inadequate and poor-quality services. Public funding has continued to be the principal mode of financing for water and waste projects. However, as funding requirements increase further with the soaring population, rapid urbanization and industrialisation, the government's capacity to fund infrastructure development in the sector is expected to become much more constrained. Thus, it has become important to increase private sector participation through the adoption of new and better public-private partnership (PPP) models. Moreover, it is crucial that the urban local bodies (ULBs) improve their financial health and become self-sustainable by exploring innovative financing mechanisms such as municipals bonds and land monetisation.

Other funding sources

Funding for water and waste projects is also received from multilateral agencies such as the World Bank. the Aslan Development Bank and the Japan International Cooperation Agency. These agencies extend funds to the sector in the form of concessional and non-concessional loans, equity investments and grants, Meanwhile, other sources for funding also include public financial institutions such as Housing and Urban Development Corporation Limited, India Infrastructure Finance Company Limited and Infrastructure Development Finance Company Limited.

Emerging funding mechanism

In the past few years, greater emphasis has been laid on the need for financial independence of ULBs. Several new government programmes such as AMRUT and the SCM encourage local bodies to raise funds through alternative and Innovative financing mechanisms such as collection of user fees, land monetisation, borrowings from financial institutions and Issue of municipal bonds.

The government has also taken several measures to develop the municipal bond market. In August 2019, the Securities and Exchange Board of India allowed special purpose vehicles under the SCM to raise funds through the issue of municipal bonds. Earlier, in April 2019, the reserve Bank of India permitted foreign portfolio investors to invest in municipal bonds. The MoHUa has also launched an incentive plan for ULBs raising funds through such bonds under AMRUT. Municipal corporations of several cities such as Ahmedabad, Bhopal, Pune, Hyderabad, and Indore have raised funds through municipal bonds.

Private investment and PPP experience

Although PPPs in the water and waste sector have been in place for almost two decades, private participation has remained limited as compared to other infrastructure sectors such as power and roads.

Moreover, the overall experience has been mixed due to factors such high revenue risks on account of lower tariffs, high capital costs and lack of central-level regulations for the sector. However, the role of the private sector is evolving and is expected to increase with the introduction of innovative service delivery mechanisms and new PPP models such as the hybrid annuity model (HAM). The government is working towards attracting private investment in the sector to enhance service delivery and reduce fiscal pressures. Flagship programmes such as the Namami Gange and the SCM are instrumental in increasing private participation. Over the years, there has been a shift in the PPP models from service contracts to long-term build-own-operate-transfer, and other formats. Further, the type of work awarded in the water supply and sewerage sector has evolved from the upkeep of water and wastewater treatment facilities to their construction, financing, and commissioning, implementation of 24*7 water supply projects, setting up of desalination plants, and improvements in efficiency, and metering and billing practices.

In the waste management sector, private involvements has progressed from activities such as collection and transportation to the setting up of Waste-to-Energy (WtE) plants and implementation of integrated waste management projects. Further, the introduction of HAM under the Namami Gange programme is expected to be a game changer for sanitation while encouraging large-scale citizen participation. SS2021 has already garnered feedback from over 30 million citizens through a variety of platform such as the vote for your City App, Swachhata App and Swachh Suvekshan portal.

There are some sectors, such as waste management and transportation, where PPs have done well. But in sectors where it is difficult to generate revenues due to the inability to levy user charges, the scope of private participation remains limited. However, the government's continued focus on the mission has lent confidence to various stakeholders. It is hoped that with the government focusing on measure to attract private investment and with the enhanced implementation experience, progress in the next few years will be more visible and significant. These projects offer ample opportunities for developers and financiers.

Conclusion

Given the gap between the current level of demand and supply of water and waste management services, funding from all the sources combined still falls short of the estimated requirements. Though private participation in the sector is growing. It has been less than desirable. Several factors such as the public service nature of the industry, poor cost recovery and lack of reliable data have led to limited private participation. Further, local bodies continue to be highly dependent on the upper tiers of government, even for meeting operating expenses in some cases. Thus, there is an urgent need to undertake financing reforms to bridge the investment deficit in the sector.

CHAPTER - 27

PREVENTIVE VIGILANCE

PREVENTIVE VIGILANCE

Vigilance Requirements

Banking in general and lending in particular are based on relationship which pre supposes trust. Current legal framework has introduced certain profound and fundamental changes in the ways banks underwrite loans or monitor them. Delays in interest and instalment payment are now alarm bells and not merely early warning signals and calls for preventive vigilance amongst the lenders.

Preventive vigilance assumes larger significance in the context of large ticket size of Infrastructure loans and complexities involved in pre-construction stage as well as post construction stage.

Complex holding structures, financing of holding companies and multiple companies within a group, cross guarantees, huge related party claims etc are some of the common features of infrastructure lending which have quite often resulted in huge haircuts for banks at later stages account goes in stress.

Based on the experience gained by the financial sector, Insolvency process in EPC, infrastructure, companies have mostly resulted in liquidation and negligible recovery to financial creditors. Hence there is need for cautious approach by Lenders and understanding of legal implications and clear understanding of these complex structures by the lenders need to be ensured.

Equally Innocuous products like Stand-By letter of Credit (SBLC) proved to be toxic with minimal recovery in the eventuality of winding up of companies. Hence there need for is all the more in-depth and deeper scrutiny of such products in terms of KYC of beneficiaries and proper and realistic assessment of cash flow backup for meeting these obligations.

Borrowers must now focus on liquidity, ensure tight cash flow forecasting and monitoring to stay current on payments. Borrowers need to be proactive in identifying issues, communicating with lenders and developing/implementing a turnaround plan. Borrowers now must retain the confidence of lenders and avoid default with operational creditors. In case of fraudulent diversion of assets, personal contribution can be sought and even imprisonment possible.

Timely payments to operational creditors (including statutory dues) and other lenders are required to be monitored closely. Unauthorized borrowings outside the lenders group must be objected to. Opening of cash management accounts with consortium banks who have very small exposure must

be discouraged.

The book value of security has no meaning in the eventuality of liquidation of company under insolvency proceedings as market values them at market/realisation value. Indiscriminate extension of corporate guarantee must not be permitted.

Investments in associates and subsidiaries and related party transactions need deeper scrutiny. All major service contracts entered into by the borrowing company should be thoroughly verified to detect unrealistic transfer pricing /skimming.

Cross border projects should be approved after understanding the legal system prevailing there and enforceability of contracts.

One of the important aspects is periodic detailed review of the assets and liabilities of the personal guarantors to corporate debtor must be carried out. Current legal framework permits simultaneous proceedings against personal guarantee and corporate debtor. The supreme court verdicts allow promoters or directors who have furnished personal guarantees will still be liable if a company is taken to bankruptcy court or goes into liquidation. The ruling clears the way for the Banks to attach the personal assets of promoters of several corporates currently under corporate resolution under IBC process. Creditors can initiate insolvency proceedings against such persons in National Company Law Tribunal.

The court in verdicts have clearly said that IBC process does not absolve guarantor of own liability that arises out of an independent contract and thus approval of a resolution plan does not ipso facto discharge a personal guarantor of his or her liabilities under the contract of guarantee.

There are instances where EPC contractors tend to procure the vehicles/machinery on hire purchase arrangements while concurrently availing finance for the same under project finance from lending institutions. Lending institutions must adopt adequate safeguards to detect any such fraudulent acts.

One of the challenges before financial Institutions in preventive vigilance to ensure that there are no veiled corporate structures without some equity participation. These holding structures may be operating from a tax heaven country. As a conduit the money can flow to a step-down subsidiary in another tax heaven with an objective to further leverage.

So there should not be any scope for sort of irrational exuberant behaviour either at lending institution or at borrowing entity to ensure the success of the project.

In the backdrop of the experience gained by Banking Industry about causes of NPA including large infrastructure sector finances, one of the predominant reasons observed by CVC has been diversion of funds by the borrowing entity for activities unrelated to project. The diversion of funds in majority cases has been facilitated by opening of current account with Non lending Banks and

thereby movement of funds by borrowing entity escaped the monitoring radar of lending Banks and resulted into frauds.

RBI Guidelines

On a review RBI has issued stringent guidelines for monitoring of the opening of the current accounts by borrowers who have availed credit facilities in the form of cash credit (CC)/ overdraft (OD) from the banking system and check opening of such accounts outside consortium Banks or lending Banks. Following guidelines issued by RBI in this regard in its latest Circular of Oct 2021.

(i) For borrowers, where the exposure of the banking system is less than ₹5 crore, there is no restriction on opening of current accounts or on provision of CC/OD facility by banks, subject to obtaining an undertaking from such borrowers that they shall inform the bank(s), as and when the credit facilities availed by them from the banking system reaches ₹5 crore or more.

(ii) In respect of borrowers where exposure of the banking system is ₹5 crore or more, such borrower can maintain current accounts with any one of the banks with which it has CC/OD facility, provided that the bank has at least 10 per cent of the exposure of the banking system to that borrower.

Further, other lending banks may open only collection accounts subject to the condition that funds deposited in such collection accounts will be remitted within two working days of receiving such funds, to the CC/OD account maintained with the above-mentioned bank maintaining current accounts for the borrower. In case none of the lenders has at least 10% exposure of the banking system to the borrower, the bank having the highest exposure may open current accounts. Non-lending banks are not permitted to open current accounts.

It is clarified that borrowers not availing CC/OD facility from the banking system shall continue to maintain current accounts as per para 1(v) of the above mentioned circular dated August 6, 2020, as hitherto.

Further, banks are permitted to open/ maintain the following accounts, without any restrictions placed in terms of the above-mentioned circular dated August 6, 2020, subject to meeting the conditions specified as at para 2 of DOR. No. BP.BC. 30/21.04.048/2020-21 dated December 14, 2020:

i. Inter-bank accounts

ii. Accounts of All India Financial Institutions (AIFIs), viz., EXIM Bank, NABARD, NHB and SIDBI

iii. Accounts opened under specific instructions of Central Government and State Governments

iv. Accounts attached by orders of Central or State governments/regulatory body/Courts/ investigating agencies etc. wherein the customer cannot undertake any discretionary debits

It is clarified that banks shall monitor all accounts regularly, at least on a half-yearly basis, specifically with respect to the exposure of the banking system to the borrower, and the bank's share in that

exposure, to ensure compliance with these instructions. If there is a change in exposure of banks or aggregate exposure of the banking system to the borrower which warrants implementation of new banking arrangements, such changes shall be implemented within a period of three months from the date of such monitoring.

To conclude Bankers should not hesitate, whenever any doubt arises about diversion of funds or misappropriation by the borrower, to get proactively a preventive forensic audit done in the account.

CHAPTER - 28

INFRASTRUCTURE SECTOR REFORMS - A NEED FOR FORWARD LOOKING APPROACH

INFRASTRUCTURE SECTOR REFORMS - A NEED FOR FORWARD LOOKING APPROACH

In order to take forward our economy on a higher growth trajectory towards our journey for a VIKSIT BHART, a trasforrmative and forward looking approach is an essential prerequisite.The spirit of the Mantra, 'Reform, Perform and Transform' will be required for Infrastructure Sector as well .The initiatives taken in the recent past are bearing fruits by way of fresh infrastructure assets creation alongwith climate risk mitigation. While the establishment of Infrastructure Secretariat in DEA, Ministry of finance has set the ball rolling ,with initial steps in the desired direction,a lot more needs to be done.

The reforms and changes will be required by way of a comprehensive strategy taking into account the bottlenecks and challenges still being faced and the future needs of the economy.

1) One key challenge relates to dispute resolution and litigation.This harms the overall sentiments for fresh investments.Lot of costs are involved and uncertainties further act as a deterrent.While concession agreements and PPAs have been revised and Standardized,there are still several instancesc of ambiguity and disputes arising out of differences in interpretation of certain clauses etc.

   The dispute resolution process and contract enforcement needs a fresh look.A full fledged legislation on PPP is the need of the hour

2) An independent regulator may be required to oversee the entire PPP process and its implimentation across various sub sectors to achieve the desired objectives.

3) While formulating new policies and schemes,the consultative process needs to be strengthened and its scope should be widened by including representation of financial lenders also .There needs to be a consistency in policies with no negative surprises . Constitution of 'Infrastructure Financing Task Force ' is required to drive policy alignment, regulatory clarity and financial innovation across Infrastructure Financing Domain.

4) The review / revision of the Harmonised Master List (HML) of Infrastructure sub sectors should be done more frequently in the context of emerging opportunities including projects related to the development of smart City program ,climate risk mitigation and digital Infrastructure .

5) All stakeholders need to collaborate with common objective in mind with minimum friction and fault finding in the spirit of no blame ,no claim with an intent to foster trust between private and public sector partners .The spirit behind the concept of partnership which entails joint and several liability needs to be adopted as an underlying approach.Share the gains and share the pain should be the common thread . Inclusion of Lenders as one of the parties to the concession agreement can be considered

6) Considering the long term nature of the projects , developing a framework for ' Renegotiation of PPP contracts' may also be required.

7) With experience gained so far some more innovative models of PPP can be brought in.

The 'Alliance PPP delivery Model ' which is already in usage in other countries like Australia can be tried in India with suitable adaptation to Indian situation.

8) Blended finance models with a combination of public seed capital,bank financing to SPV and usage of credit enhancement instruments to be expored. Co- Financing and guarantee mechanism through partnership among Institutions like NaBFid ,IIFCL, MDBs and state Financial Corporations can be encouraged.

8) Digital India ecosystem and innovative technologies including those based on AI can optimise the costing and viability of projects therby creating more opportunities.Climate proofing and circularity to be made an integral part of usage of technology .We can deploy block Chain based project ledgers to record milestones as per the allocated roles .

9) The government guidelines on Climate Finance Taxonomy need to be finalized quickly to create further interest in new eligible projects.Climate and green financing windows need to be created in all DFIs and all segments of Lenders with corresponding funds Procurement at lower costs

10) The bond market in India is still not agile and active in Infrastructure funding.The Insurance and pension sector needs to bring in requsite pro- active policies to participate in Infrastructure funding on the lines of best global practices . State and municipal bond market needs special attention.

11) The Partial Credit Enhancement mechanism has remained underutilsed so far. Relevant bottlenecks need to be identified with requsite remedial measures.

12) Integrated and coordinated approach at the state level is required to ensure timely approvals and state support in letter and spirit.Instances of delayed operationalisation of renewable power plants need to be avoided. In several cases, while the power project was complete and ready ,it could not actually start power generation because the power transmission lines to be set up by other state agencies were not ready on time to evacuate power.

13) Climate risk mitigation and adaptation will need to be in built in throughout the entire life cycle of each project right from conceptualisation of the projects ,with requisite revision in standing operating procedures and approach.

14) We can think of having a Coordination council at the National level with corresponding entity at state level to have a unified coordination mechanism.At project level also a joint project coordination committee may be required representing all departments, including a lender representative at appropriate stage .

15) 'Capacity - Building and Coordination' training will be required to ensure that all stakeholders and agencies are on the same page and work in tandem to achieve the desired goals in a time bound manner to create new success stories.

WAY FORWARD

India's next phase of infrastructure development demands a paradigm shift in how infrastructure is financed, structured, and delivered. While the government has laid a strong foundation through programs like the National Infrastructure Pipeline (NIP) and PM Gati Shakti, achieving Viksit Bharat 2047 will require sustained momentum and systemic reform across financing institutions, regulatory frameworks, and governance systems.

1. Greater Private and Institutional Participation in Financing

- Mobilizing private and institutional capital is essential to reduce the fiscal burden on government budgets.
- Deepening corporate bond and InvIT markets, expanding credit enhancement mechanisms, and improving risk-sharing arrangements will help attract pension funds, insurance funds, and global investors.
- Public policy must focus on creating predictable and transparent regulatory environments, with clear frameworks for tariff setting, viability gap funding, and dispute resolution to build investor confidence.

2. Empowered Subnational Governments with Stronger Capacity

- States and ULBs should be at the frontline of India's infrastructure push, especially in urban transport, water, sanitation, and green energy.
- This requires capacity building, access to concessional co-financing, and improved creditworthiness through better revenue collection and fiscal discipline.
- Strengthening municipal bond markets and creating pooled financing facilities can enable smaller ULBs to access capital markets efficiently.

3. Policy and Institutional Reforms for Innovation and Transparency

- Streamlined regulatory frameworks and faster clearances will make infrastructure projects more bankable and reduce delays.
- Strengthening PPP frameworks, standardizing concession agreements, and ensuring balanced risk allocation will enhance private sector participation.
- Transparent project appraisal and monitoring systems — supported by digital dashboards and standardized evaluation tools — will improve accountability across project lifecycles.
- Institutional reforms should also focus on climate resilience and sustainability, ensuring that financing frameworks integrate environmental and social safeguards.

4. A Dedicated Infrastructure Financing Task Force

- A high-level Infrastructure Financing Task Force should be established to provide strategic direction, ensure inter-agency coordination, and monitor implementation progress.

- The Task Force should include representatives from the Ministry of Finance, NITI Aayog, RBI, SEBI, IIFCL, NABFID, and multilateral partners.
- It should:
  - Track policy implementation and DFI coordination.
  - Identify bottlenecks in project financing and recommend corrective actions.
  - Promote innovation in financial instruments (e.g., blended finance, green bonds, infrastructure REITs).
  - Ensure alignment of financing flows with national priorities such as climate adaptation, digital infrastructure, and sustainable urbanization.
- Establishing a central digital dashboard to track project pipelines, financing status, and policy actions would bring greater visibility and accountability.

In summary, India's infrastructure financing ecosystem must evolve into a resilient, diversified, and collaborative system — one that draws upon the strength of financial institutions, empowers subnational entities, fosters private participation, and ensures that every rupee invested delivers sustainable, long-term value for citizens and the economy.

ACKNOWLEDGEMENT OF REFERENCES

Information and material available in public domain and on the websites of the following have been used in the preparation of this publication and the same is duly acknowledged:-

Ministry of Finance,

NITI Aayog,

Ministry of Road Transport and Highways,

Ministry of New and Renewable Energy,

Ministry of Corporate Affairs,

Ministry of Railways

Ministry of Housing And Urban Affairs

Ministry of Statistics And Program Implementation

Ministry of Commerce And Industry

Ministry of Communications

Ministry of Civil Aviation

Ministry of Cooperation

Other Government Departments, Enterprises ,Undertakings and Entetities

Press Information Bureau

India stack Platform

World Bank Reports

ADB Reports

G20 Reports

Reserve Bank of India

SEBI,

IRDAI,

PFRDA,

NHAI,

NIIF,

NARCL,

NaBFID,

IDRCL,

SECI,

NTPC,

India.gov.in,

IBEF,

IREDA,

IIFCL,

PFC,

- NSE,
- BSE
- Other material available in general in various reputed publications/journals/websites of industry bodies related to the subject.

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APPENDIX I (Chapter 4)

MINIMUM INFORMATION TO BE DECLARED BY BORROWING ENTITIES TO BANKS WHILE APPROACHING FOR FINANCE UNDER MULTIPLEBANKING ARRANGEMENTS (ANNEXURE 1)

A. Details of borrowing arrangements from other banks (institution wise)

I. Name and address of bank/institution	
II. Purpose for which borrowed	
III. Limit sanctioned (full details to be given, e.g. working capital / demand loan/ term loan / short term loan)/ foreign currency loan, corporate loan/line of credit/ Channel financing contingent facilities like LC,BG, DPG(I&F)etc. Also, state L/C bills discounting/project wise finance a vailed)	
IV. Date of sanction	
V. Present outstanding	
VI. Over dues position, if any	
VII.Repayment terms (for demand loans, term loans, corporate loans, project- wise finance)	
VIII. Security offered (complete details of security both primary and collateral including specific cash flows assigned to project wise finance/ loan raised & personal/ corporate guarantee, to be furnished)	
IX. Requests for facilities which are under process	

[The information to be given for domestic and overseas borrowings from commercial banks, Financial Institutions and NBFCs]

B. Miscellaneous Details

i. CPs raised during the year and current outstanding	
ii. Details of financing outside banking system e.g. L/C Bills discounting	
iii. Main and allied activities with locations	
iv. Territory of sales and market share	
v. Details of financial aspects incl. DSCR Projections wherever applicable as per requirement of bank–Imp. Financial covenants, if any, agreed to/accepted with other lenders.	
vi. CID A/cs, within/outside financing Banks, being operated, if any	
vii. Demands by statutory authorities/ current status thereof	
viii. Pending litigations	
ix. A declaration authorizing the bank to share information with other financing banks	

ANNEX II

REVISED FORM AT UNDER MULTIPLE BANKING ARRANGEMENT CREDIT INFORMATION EXCHANGE

PART I
(BIO DATA)

I. Borrowing party's name and address	
II. Constitution	
III. Names of Directors /Partners	
IV. Business activity • Main • Allied	
V. Names of other financing Banks	
VI. Net worth of Directors/Partners	
VII. Group affiliation, if any	
VIII. Date on associate concerns, if banking with the same bank	
IX. Changes in shareholding and management from the previous report, if any	

PART II (FINANCIAL)

A. I RAC Classification	
II. Internal Credit rating with narration	
III. External Credit rating, if any	
IV. Latest available Annual Report of the borrower	As on ----------

PART III (EXPOSURE DETAILS)

I. Type of credit facilities, e.g. working capital loan/demand loan / term loan / short term loan / foreign currency loan, corporate loan/line of credit/ Channel financing, contingent facilities like LC, BG &DPG(I & F) etc. Also, state L/C bills discounting/ project wise Finance availed).	
II. Purpose of loan	
III. Date of loan facilities (including temporary facilities)	
IV. Amount sanctioned(facility wise)	
V. Balance outstanding(facility wise)	
VI. Repayment terms	
VII. Security of fered • Primary • Collateral • Personal /Corporate Guarantees • Extent of control over cash flow	
VIII. Default sinterm commitments/ lease rentals /others	
IX. Any other special information like court cases, statutory dues, majored faults, adverse internal / external audit observations .	
PART IV (EXPERIENCE)(*)	
I. Conduct of funded facilities (based on cash management/ tendency to over draw)	
II. Conduct of contingent facilities (based on payment history)	

III.	Compliance with financial covenants
IV.	Company's internal systems & procedures
V.	Quality of management
VI.	Over all Assessment

(The above to be rated as good, satisfactory or below par only)

(*) Broad guidelines for incorporating comments under this head is furnished in the next page.

BROAD GUIDELINES FOR INCORPORATING COMMENTS UNDER PART IV (EXPERIENCE) OF THE CREDIT INFORMATION REPO

	GOOD	SATISFACTORY	BELOW PAR
I. Conduct of funded facilities			
• Over drawings (No. of times)	Up to 4 times	5 to 6 times	Above 6 times
• Average period of adjustment	Within 1 month	Within 2 months	Beyond 2 months
• Extent of over drawings (% of limit)	Up to 10%	10 to 20%	Above 20%
II. Conduct of contingent facilities			
• No. of Defaults	Up to 2 times	3 to 4 times	Above 4 times
• Average period of adjustment	Within 1 week	Within 2 weeks	Beyond 2 weeks
III. Compliance with financial covenants			
• Stock statement/Financial data	Timely	Delay up to 15 days	Delay over 15 days
• Creation of charge	Prompt	Delay up to 2 months	Delay over 2 months
IV. Company's internal systems and procedures			
• Inventory Management	Adequate systems are in place	Adequate systems are in place but not adhered	Adequate systems are **not** in place
• Receivables Management	- do -	- do -	- do -
• Resource Allocation	- do -	- do -	- do -
• Control over Information	- do -	- do -	- do -
V. Quality of management			
• Integrity	Reliable	Nothing adverse	Cannot be categorized in previous columns
• Expertise Competence/ Commitments	Professional & visionary	Have necessary experience	-do-
• Tract Record	Timely	Executions /	-do-

ANNEX– III

Part -I

DILIGENCE REPORT

To,

The Manager,

_____(Name of the Bank)

I/We have examined the registers, records, books and papers of Limited (the Company) as required to be maintained under the Companies Act, 1956 (the Act) and the rules made there under, the provisions of various statutes, wherever applicable, the provisions contained in the Memorandum and Articles of Association of the Company as well as the provisions contained in the Listing Agreement/s, if any, entered in to by the Company with the recognized stock exchange/s, as may be applicable for the half year ended on_.

In my/our opinion and to the best of my/our information and according to the examination carried out by me/us and explanations furnished to me/us by the Company, its officers and agents. I/We report that in respect of the aforesaid period:

1. the management of the Company is carried out by the Board of Directors comprising the following persons:

   During the period under review the following changes took place:

2. the shareholding pattern of the company is as under:

   During the period under review the following changes took place :

3. the company has altered the following provisions of

   (i) the Memorandum of Association during the period under review and has complied with the provisions of the Act.

   (ii) the following Articles of Association during the period under review and has complied with the provisions of the Act.

4. the company has during the period under review, entered into the following transactions with business entities in which directors a reinterested.

5. The company has during the period under review, advanced loans, given guarantees and provided the securities amounting to Rs.____To its directors and/or persons or firms or companies in which directors are interested.

6. the Company has during the period under review, made loans and investments; or given guarantees or provided securities to other business entities as under:

7. the amount borrowed by the Company from directors, members, public, financial institutions, banks and others during the period under review is/are within the borrowing limits of the Company. The break-up of the company's borrowings are asunder:

8. The Company has during the period under review, not defaulted in the repayment of any public deposits or unsecured loans and the Company or its Directors are not under the Defaulter's list of Reserve Bank of India or in the Specific Approval List of ECGC.

9. the Company has during the period under review, created, modified or satisfied charges on the assets of the company asunder:
10. the exposure and Oversee as Borrowings of the company are as under
11. the Company has issued, offered and allotted all the securities to the persons entitled thereto and has also issued letters, coupons, warrants and certificates thereof to the concerned persons and also redeemed its preference shares/debentures and bought back its shares (wherever applicable) in compliance with the specified procedures and within the stipulated time.
12. the Company has insured all its secured assets.
13. the Company has complied with the terms and conditions, set forth by the lending institution at the time of availing the facility and also during the currency of the loan and has utilized the funds for the purposes for which these were borrowed.
14. the Company has declared and paid dividends to its shareholders as per the provisions of the Companies Act,1956.
15. the Company has insured fully all its assets.
16. the Company / Directors are not in the will full defaulters' list of RBI.
17. The Company/Director are not in the Specific Approval List of ECGC.
18. The Company has paid all its Statutory due sand that there are no arrears.
19. the Company has complied with the terms and conditions, set forth by the lending institution at the time of availing any facility and also during the currency of the loan.
20. The Company has used the funds for the purpose for which it borrowed.
21. the Company has declared and paid dividends to its shareholders, as per the provisions of the Companies Act.
22. the Company has complied with the provisions stipulated in Section 372 A of the Companies Act in respect of its Inter Corporate loans and Investments.
23. the Company has complied with the applicable and mandatory Accounting Standards issued by the Institute of Chartered Accountants of India.
24. the Company has credited and paid to the Investor Education and Protection Fund all the un paid dividends and other amounts required to be so credited.
25. a list of prosecutions initiated against or show cause notices received by the Company for alleged offences under the Act and also the fines and penalties or any other punishment imposed on the Company in such cases is attached.
26. the Company has complied with the various clauses of the Listing Agreement, if applicable.
27. The Company has deposited both Employees' and Employer's contribution to the PF Fund. Provident Fund with the prescribed authorities.

Note: The qualification, reservation or adverse remarks, if any, may be stated at the relevant place(s).

Place: Signature:

Date: Name of Company Secretary:

C.P. No.

Part II

CERTIFICATIONS OF BORROWAL COMPANIES BY CHARTERED ACCOUNTANTS / COST ACCOUNTANTS / COMPANY SECRETARIES

i. Terms of reference for stock audit are to be spelt out clearly by the Banks, so that the Chartered Accountants / Cost Accountants can give focus attention to such areas.

ii. End-use verification funds lent, if certified by Statutory Auditors, will be a good comfort to the Banks.

iii. As Banks quite often deal with unlisted companies, disclosure requirements for such companies above a specific turnover may be made akin to those for listed companies, viz. consolidated balance sheet, segmental reporting etc. Information on large shareholding also will be useful.

iv. Further, following additional certification from Chartered Accountant, Cost Accountant or Company Secretary may also be thought of:

   (a) Company Directors not figuring in defaulters list (RBI/ECGC)/wilful defaulters list etc.)

   (b) Details of litigation above a specified cut off limit.

   (c) A specific certificate, probably from the Company Secretary, regarding compliance with Sec. 372 (a) of the Companies Act.

   (d) Details of creation/ modification/ satisfaction of charges on the assets of the company, position regarding insurance, showcause notices received, finds and penalties a warded.

v. As regards rotation of Auditors, for the sake of operational convenience, it is suggested they may be changed once every 5 years instead of every 3 years.

vi. In order to avoid concentration, group companies may have different Statutory / Internal Auditors in case group turnover exceeds ₹100 crores.

Part-I: 2009

DILIGENCE REPORT

To,

The Manager,

_____(Name of the Bank)

I/We have examined the registers, records, books and papers of ..... Limited having its registered office at… .....as required to be maintained under the Companies Act, 1956 (the Act) and the rules made thereunder, the provisions contained in the Memorandum and Articles of Association of the Company, the provisions of various statutes, wherever applicable, as well as the provisions contained in the Listing Agreement/s, if any, entered into by the Company with the recognized stock exchange/s for the half year ended on… In my/our opinion and to the best of my/our information and according to the examination carried out by me/us and explanations furnished to me/us by the Company, its officers and agents. I/We report that in respect of the aforesaid period:

1. The management of the Company is carried out by the Board of Directors comprising of as listed in Annexure …., and the Board was duly constituted**.** During the period under review the following changes that took place in the Board of Directors of the Company are listed in the Annexure …., and such changes were carried out in due compliance with the provisions of the Companies Act,1956.
2. The shareholding pattern of the company as on ------- was as detailed in Annexure…….: During the period under review the changes that took place in the shareholding pattern of the Company is detailed in Annexure…
3. The company has altered the following provisions of
   (i) The Memorandum of Association during the period under review and has complied with the provisions of the Companies Act, 1956 for this purpose.
   (ii) The Articles of Association during the period under review and has complied with the provisions of the Companies Act, 1956 for this purpose

4. The company has entered into transactions with business entities in which directors of the company were interested as detailed in Annexure…...

5. The company has advanced loans, given guarantees and provided securities Amounting to ₹ to its directors and/or persons or firms or companies in which directors were interested and has complied with Section – 295 of the Companies Act , 1956.

6. The Company has made loans and investments; or given guarantee so provided securities to other business entities as detailed in Annexure And has complied with the provisions of the Companies Act,1956.

7. The amount borrowed by the Company from its directors, members, financial institutions, banks and others were within the borrowing limits of the Company. Such borrowings were made by the Company in compliance with applicable laws. The break-up of the Company's domestic borrowings were as detailed in Annexure.:

8. The Company has not defaulted in the repayment of public deposits, unsecured loans, debentures, facilities granted by banks, financial institutions and non- banking financial companies.

9. The Company has created, modified or satisfied charges on the assets of the company as detailed in Annexure…. Investments in wholly owned Subsidiaries and/or Joint Ventures abroad made by the company are as detailed in Annexure..

10. Principal value of the forex exposure and Overseas Borrowings of the company as on are as detailed in the Annexure under"

11. The Company has issued and allotted the securities to the persons-entitled there to and has also issued letters, coupons, warrants and certificates there of as applicable to the concerned persons and also redeemed its preference shares/debentures and bought back its shares within the stipulated time in compliance with the provisions of the Companies Act,1956 and other relevant statutes.

12. The Company has insured all its secured assets.

13. The Company has complied with the terms and conditions, set forth by the lending bank/financial institution at the time of availing any facility and also during the currency of the facility

14. The Company has declared and paid dividends to its shareholders as per the provisions of the Companies Act,1956.

15. The Company has insured fully all its assets.

16. The name of the Company and or any of its Directors does not appear in the defaulters' list of Reserve Bank of India.

17. The name of the Company and or any of its Directors does not appear in the Specific Approval List of Export Credit Guarantee Corporation.

18. The Company has paid all its Statutory dues and satisfactory arrangements had been made for arrears of any such dues.

19. The funds borrowed from banks/financial institutions have been used by the company for the purpose for which they were borrowed.

20. The Company has complied with the provisions stipulated in Section 372A of the Companies Act in respect to fits Inter Corporate loans and investments.

21. It has been observed from the Reports of the Directors and the Auditors that the Company has complied with the applicable Accounting Standards issued by the Institute of Chartered Accountants in India.

22. The Company has credited and paid to the Investor Education and Protection Fund within the stipulated time, all the unpaid dividends and other amounts required to be so credited.

23. Prosecutions initiated against or show cause notices received by the Company for alleged defaults/ offences under various statutory provisions and also fines and penalties imposed on the Company and or any other action initiated against the Company and/or its directors in such cases are detailed in Annexure…...

24. The Company has (being a listed entity) complied with the provisions of the Listing Agreement.

25. The Company has deposited within the stipulated time both Employees' and Employer's contribution to Provident Fund with the prescribed authorities.

Note : The qualification, reservation or adverse remarks, if any, are explicitly stated may be stated at the relevant paragraphs above place(s).

Place: Signature:

Date: Name of Company Secretary/Firm:

C.P. No.:

Part II

CERTIFICATIONS OF BORROWAL COMPANIES BY CHARTERED ACCOUNTANTS/COMPANY SECRETARIES/COST ACCOUNTANTS

i. Terms of reference for stock audit are to be spelt out clearly by the Banks, so that the Chartered Accountant/ Cost Accountants scan give focused attention to such areas.

ii. End-use verification of funds lent, if certified by Statutory Auditors, will be a good comfort to the Banks.

iii. As Banks quite often deal with unlisted companies, disclosure requirements for such companies above a specific turnover may be made akin to those for listed companies, viz. consolidated balance sheet, segmental reporting etc. Information on large shareholding also will be useful.

iv. Further, the following additional certification it her from Chartered Accountant or Company Secretary or Cost Accountants may also be thought of:

   (a) Company Directors not figuring in defaulters list (RBI/ECGC)/will full defaulters list etc.)

   (b) Details of litigation above a specified cut off limit.

   (c) A specific certificate, probably from the Company Secretary, regarding compliance with Sec. 372 (a) of the Companies Act.

   (d) Details of creation/ modification/satisfaction of charges on the assets of the company, position regarding insurance, showcause notices received, finds and penalties awarded.

v. As regards rotation of Auditors, for the sake of operational convenience, it is suggested they may be changed once every5years instead of every 3 years.

vi. In order to avoid concentration, group companies may have different Statutory/ Internal Auditors in case group turnover exceeds ₹100 crores.

APPENDIX II (Chapter 5)

Illustrative format of information to be obtained from the borrowers in application form

1. Borrower's Profile:

Name & Address:

Registered Office:	Project Site/Project location:
Phone:	Phone:
Email:	Email:

Nature of Proposed Project/Purpose of the loan-

2. Details of Proposed Facilities (₹ in Cr)

Nature of Facility	Existing Limit, if any	Proposed
1. Fund Based: Term Loan		
2. Non- Fund Based: 1) Letter of Credit /Deferred Payment Guarantee 2) Bank Guarantee		
Total Non-Fund Based(B)		
Grand Total(A+B)		

(2) Main Persons to be contacted

Name	Status (Director / Authorized Signatory)	Contact No.

A)	Whether the line of business activity of proposed project is specified/included in the main object clause of Memorandum of Association /Articles of Association.
(iii c)	Whether the company / SPV has powers to borrow: Under the Memorandum of Association / Article of Association?
(iv)	Constitution of Borrower
b)	Date of Constitution / reconstitution
c)	Date of Commencement of Business
V a)	Income Tax Pan No.
b)	GST Regd. No.
c)	CIN Number

Project Cost	
Means of Finance	Means of Finance / Ratio Equity Share Capital Debt Total
Bid Comparison (if Bidded Project)	
Concession agreement / Power Purchase Agreement, FSA, Appointed Date, SCOD. Any other key dates / milestones if applicable	

EPC and O&M	
Technology	
Status of Land	
Power Evacuation (wherever applicable)	
DSCR (In case of Take-out Finance; Actual last audited balance Sheet)	

Financing Details

Details of Borrowings of SPV/Project from Other Banks/FIs. (Existing / Proposed)

Name of Bank / FIs along with contact details	Type of Facility	Limits	Share in Consortium	Outstanding As on _____	Status/Assets Classification	Name of Lead Bank / FI along with contact details

Details of facilities enjoyed by sister / allied group concerns / subsidiaries / from OTHER BANKS/FIS

Sr.	Name of Account	Name of Bank/ FIs along with contact details	Type of Facility	Limit Sanctioned	Outstanding	Asset Classification	Name of Lead Bank/FI along with contact details

Shareholding Pattern of SPV/Project

Name of Share holder	Number of Shares held	Paid up Value (₹ in crores)	Percentage to the total equity

9) Share Holding pattern of the Promoter/Sponsor Company-Promoters pls. give details of each company 9a)Promoter group	Name of the Company -
9(b) Financial Institutions (if any)	
9 (c) General Public (if listed)	
9 (d) Others	

Total	

Details of guarantors who have agreed to guarantee the credit facilities:

Sr.	Name	Relationship with Promoter	Financial Net Worth (₹ In Crores)*	Details of other Borrowers in whose favour the guarantee has already been given

Details of Collateral Securities (Immovable Properties) Offered if any:

S. no	Complete Description of property	Complete Address	Area in Sq. Meters / Feet	Name of Reg. Owner	Realizable Value	Freehold /Lease Hold	Rented / Self occupied	Monthly Rent / Lease if any	Any dispute/ litigation pending (Yes/No)

Details of other collateral securities offered if any:

Name of the holder	Description	Value face/Market (Whichever is the lower)

Details and present status of major pending litigation's against the company / project

14. Note on compliance of statutory liabilities and outstanding dues, if any.

Declaration by the applicant(s):

I/We confirm / affirm and undertake as under:-

- That no insolvency proceedings initiated against me/us nor have I/we ever been adjudicated insolvent. That no litigation is pending against the securities offered in the shape of moveable or immovable, in any court in India or Outside India. Further, no litigation is pending of any kind

against the borrower and its promoters / sponsors. Further, no investigations are undergoing by any of the regulatory / investigating agencies like SEBI, ED, SFIO etc.

- That neither I/we have been a defaulter of any Bank or Financial Institution nor any of our accounts has been written off by any Bank/Financial Institution, and that my/ our name does not appear in RBI/ECG caution list/Defaulters list/ will full defaulter list etc;
- That I am/we are related/not related to any of the Director of LENDER.
- That I am/we are not a close relative of any staff member of the LENDER.
- that I/we have read the application form and am/are aware of all the terms and conditions of availing finance from **LENDER** I also authorize **LENDER** to exchange, Share, part with all information relating to me/our loan details and repayment history information to other Bank/ Financial Institutions/Credit Bureaus/ information companies/Agencies/other authorities as may be required and shall not hold **LENDER** liable for use of this information.
- that I/we shall furnish any information required by the **LENDER** to process my application for loan and also to be bound by the rules or by revised additional terms and conditions which may at any time hereafter be made while the loan obtained by me is still outstanding.
- I/We shall abide by the Repayment Schedule as fixed by the **LENDER** for liquidation of my loan liability in full.
- I/We certify that all the particulars and information given in the application is correct complete and up to date in all respects, and I/we have not withheld any information.
- I/ We confirm that the proposed loan is not in lieu of or a substitute for budgetary resources envisaged for the project. Further, I/We confirm that the repayment / servicing of the debt shall not be out of budgetary resources. (Applicable in case of public sector undertakings ONLY)
- As a part of KYC compliance, I / We further declare that our identity does not match with any person or entity, whose name appears in 'Sanction List' circulated by Reserve Bank of India (RBI). If subsequent to entering into transaction with LENDER, in case we are covered under this said 'Sanction List' of RBI, we undertake to inform LENDER within 10 days of change, otherwise LENDER shall have a right to terminate Business Relationship with us at the discretion of Designated Director/ Whole Time Director (WTD).

*****

APPENDIX III (Chapter 8)

Projected Profit & Loss Account

Profitability Estimates (Estimates of Working Results)

(₹ in Crores)

	I	II	III	IV	V	VI	VII	VIII	IX	X
Installed Capacity (Nos.) Production (Nos.) % of production to installed capacity										
A. Sales realization										
Cost of Production 1. Raw materials 2. Consumables 3. Power, Fuel, Water, etc. 4. Repairs & maintenance 5. Wages & salaries 6. Rent, insurance, etc. 7. Depreciation B. Total manufacturing expenses (Total of items from 1 to 7)										
8. Administrative expenses 9. Selling expenses C. Total Admn. & Selling expenses (Total of item 8 & 9)										
10. Interest on term loan 11. Interest on bank borrowings Total financial expenses (Total of item No. 10 & 11)										
E. Total cost of production (B + C + D) Net operating profit (A-E) Preliminary expenses written off Taxation Dividend C/F loss/net surplus Cumulative surplus										

CASH FLOW ESTIMATES

RS. in Crores

	During Construction	I	II	III	IV	V	VI	VII	VIII	IX	X
Sources of Funds											
Increase in share capital											
Net Profit after depreciation but before interest and taxes											
Depreciation											
Preliminary expenses written off											
Increase in term loans											
Trade Credits											
Increase in bank borrowings											
State Government interest fee loan											
Deposition of Fund											
Increase in capital expenditure											
Increase in current assets											
(Inventories and book debt)											
Preliminary expenses											
Repayment of Term loan											
Interest											
Taxation											
Dividend											
Opening Balance											
Net Surplus											
Closing Balance											

FORMAT OF BALANCE SHEET

Balance sheet of (Name of Company) as at (Date)

Figures Liabilities The for the Previous Year (₹)	Figures For the Current year (₹)	Figures For the Previous Year (₹)	Assets For the Current year (₹)	Figures
1. Capital 2. Reserves & Surplus i) Capital Reserves ii) General Reserves iii) Specific Funds 3. Secured Loans i) Debentures) Loans from banks iii) Other Loans 4. Unsecured Loans i) Fixed Deposits ii) Loan from Subsidiaries iii) From Banks & other 5. Current Liabilities i) Bills Payable ii) Trade Creditors iii) Advance Payments iv) Unclaimed Dividends v) interest Accrued but not due vi) Others 6. Provision i) For Taxation ii) For dividends iii) For PF, Pension iv) Others			1. Fixed Assets i) Intangible assets ii) Tangible assets 2. Investments i) Govt. and Trust Securities ii) Other (Specify if subsidiaries) 3. Current Assets i) Accrued interest on investment ii) Stores and Spares iii) Raw Material Stock Stocks-in Trade Work -in Process iv) Loose Tools v) Debtors vi) Cash & Bank 4. Loans and Advances i) Subsidiaries & firms ii) Bills of Exchange iii) Prepaid Expenses iv) Others 5. Miscellaneous i) Preliminary Expenses ii) Commission and Discount on issue of shares or Debentures etc. iii) Development Expenses iv) Others	

Illustrative Format for processing the proposal

1. BRIEF ABOUT THE PROJECT:

2. PROMOTERS DETAILS:

- Group holding Chart
- Shareholding pattern
- Directors' list
- Brief Financials
- Brief about Group other operating / under implementation projects.

3. BORROWER PROFILE:

Board of Directors p passport number

S. No.	Name of the Director	DIN	PAN no.	PASS PORT no.	DOB	Address
1						
2						
	RBI Defaulters list – As per Lead Bank IM					
	CIBIL -					

PROJECT DETAILS:

5. PROJECT COST & MEANS OF FINANCE:

6. SUMMARY OF PROJECTED / ACTUAL FINANCIALS:

- Brief projected financials Table
- DSCR
- Financial indicators:
- Sensitivity Analysis

7. RATE OF INTEREST (ROI) –

8. INTERNAL RATING –

9. EXTERNAL CREDIT RATING

10. CREDIT COMMITTEE OBSERVATIONS:

11. RISK MATRIX:

Risks and mitigating factors:

Sl. No.	Risk Identification	Risk Allocation	Risk Mitigation
Pre-Completion Risk			
1	Promoter Risk / Management Risk		
2	Approvals and clearances		
3	Land Acquisition Risk		
4	Equity & Debt Funding Risk		
	Other, if any		

Post Completion Risk			
5	Performance / Revenue shortfall		
6	Evacuation ROW Risk		
	Other, if any		
Market Risk			
7	Off-take risk & tariff risk		
8	Force Majeure Risk		
	Other, if any		

12. JUSTIFICATION FOR CONSIDERING THE PROPOSAL –

i. …… ii. …….

Checklist for Road Sector

Sl. No	Particulars
1.	PPP/Non-PPP/Public
2.	Project cost: Appraised cost – positive grant, if any
3.	Promoters capability to infuse equity to the project
4.	Promoters credit and marketable worthiness- past track record
5.	External rating of the promoter company
6.	Techno Economic Feasibility Report
7.	Financial viability and appointed date
8.	Concession Period
9.	Project Schedule
10.	Operations & Maintenance
11.	Traffic Study
12.	Projected Toll Collection
13.	Status of Land Acquisition
14.	ESS status
15.	Projected Financials
16.	IRR and Sensitivity Analysis

Checklist for Power Sector

Sl. No	Particulars
1.	PPP/Non-PPP/Public
2.	Project cost: Appraised cost – positive grant, if any
3.	Promoters capability to infuse equity to the project
4.	External rating of the promoter company
5.	Techno Economic Feasibility Report
6.	Financial Viability and appointed date
7.	Project Schedule
8.	MOU
9.	Power Purchase Agreement (PPA)
10.	Transmission Agreement
11.	Project cost- cost of land
12.	Fuel tie- up status- Domestic/Imported / FSA (Fuel Supply Agreement) /FTA (Fuel Transportation Agreement)
13.	Coal cost (Mining, Transportation, Boiler) Vis a Vis Cost of Power Generation
14.	Technology
15.	Status of Clearances of Various Statutory Approvals
16.	Land Acquisition
17.	BTG Supplier
18.	LC : Purpose Name of LC Issuing Bank Commission Time Limit

Checklist for Port Sector

Sl. No	Particulars
1.	PPP/Non-PPP/Public
2.	Project cost: Appraised cost – positive grant, if any
3.	Promoters capability to infuse equity to the project
4.	External rating of the promoter company
5.	Techno Economic Feasibility Report
6.	Financial Viability and appointed date
7.	Project Schedule
8.	Facilities to be installed – jetty, mooring dolphins, approach to jetty, bollards, fendering system, material handling systems, back-up storages, piloting/tugging etc.
9.	Concession Agreement, provision of mortgage/right/assignment, tariff fixation etc.
10.	Site selection – hydrographic study on current, tidal, wind, bathymetry, morphology, geology, soil, oceanography and meteorological aspects etc.
11.	Land Acquisition

12.	Traffic study, expected cargo and jetty capacity
13.	Inter-linkage with road and railways / linkage with hinterland
14.	EPC contractor
15.	Technology
16.	Statutory Approvals (permission from port trust/state maritime board including use of water front/back up area, approval from pollution control board, environmental clearance, layout approval from ministry of explosives for POL products, rail linkage, road linkage, land use agreement etc.)
17.	Warehousing and storage facilities
18.	Use-or-pay contract with major consumers

Security

Debt shall be secured by

a) a first mortgage and charge on all the Borrower's immovable properties, both present and future, save and except the Project Assets.

b) a first charge on all the Borrower's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, and all other movable assets, both present and future save and except the Project Assets.

c) a first charge over all accounts of the Borrower including the Escrow Account and the Sub-Accounts (or any account in substitution thereof) that may be opened in accordance with this Agreement and the Supplementary Escrow Agreement, or any of the other Project Documents and all funds from time to time deposited therein, the Receivables and all Authorized Investments or other securities, provided that:

(i) The same being applied to the extent of waterfall of priority of payment as specified in Article 23A of the Concession Agreement and Article 4 of the Escrow Agreement and not beyond that.

(ii) the charge over the Receivables shall be enforceable by the Lenders or on their behalf only for the purpose of ensuring that the Receivables are credited to the Escrow Account for the purpose of being applied to the extent of waterfall of priority of payment as specified in Article 23A of the Concession Agreement and Article 4 of the Escrow Agreement and not beyond that.

d) A first charge on all intangible assets including but not limited to goodwill, rights, undertaking and uncalled capital present and future excluding the Project Assets (provided that all amounts received on account of any of these shall be deposited in the Escrow Account that the charges on the same shall be subject to the extent permissible as per the priority specified in the Article 23A of the Concession Agreement and Article 4 of the Escrow Agreement). Further, a charge on uncalled capital, as set in above, shall be subject however to the provisions of Articles 5.3 and 7.1(k) and Article 23A of the Concession Agreement.

e) Assignment by the way of Security in:

(i) all the right, title, interest, benefits, claims, and demands whatsoever of the Borrower in Project Documents.

(ii) the right, title, and interest of the Borrower in, to and under all the Government Approvals.

(iii) all the right, title, interest, benefits, claims, and demands whatsoever of the Borrower in any letter of credit, guarantee including contractor guarantees and liquidated damages and performance bond provided by any party to the Project Documents.

(iv) all the right, title, interest, benefits, claims, and demands whatsoever of the Borrower under all Insurance Contracts.

Provided that the charge on assignment mentioned in paragraph

f) above shall be enforceable:

- in the manner specified in the Substitution Agreement to enable the Nominated Company (as defined under the Concession Agreement) to substitute the Borrower in respect thereof as per the Substitution Agreement.
- only for the purpose of ensuring that the amounts received thereupon are credited to the Escrow Account for the purpose of being applied in the order of priority specified in Article 23A of the Concession Agreement and Article 4 of the Escrow Agreement and not beyond that.

g) A pledge of 51% of the issued, paid up and voting equity share capital of the Borrower held by the Promoter in the Borrower till the Final Settlement Date. Provided that any enforcement of the pledge over shares shall be subject to Article 5.3 and 7.1(k) of the Concession Agreement and the prior written Approval of NHAI as provided therein.

The shares pledged to the Lenders shall be free from any restrictive covenants/ lien or other encumbrance under any contract/arrangement including shareholder agreement/ joint venture agreement / transfer of the shares etc. The pledge shall be subject to Sec19(2) of Banking Regulation Act (pledge to be restricted to 30% and Non-Disposal and Non encumbrance Undertaking to be obtained for 21% in case of single lender) during the tenure of the Facility. At no point, the proportionate hare of any one lender shall be more than 30%.

Provided that:

(i) The aforesaid mortgages, charges, assignments, guarantees and the pledge of equity shares shall in all respects rank pari- passu inter-se amongst the Lenders, in accordance with the Concession Agreement, without any preference to one over the other or others; and

The Security Interest stipulated in sub-paragraphs (a) to (f) hereinabove shall exclude the Project Assets (as defined in and in accordance with the Concession Agreement). Connectivity between north of India i.e., Delhi, Haryana, Punjab, Rajasthan and Ports in Gujarat.

- Toll Revenue collection to start from the Appointed Date. There is no project development risk like land acquisition, clearances, construction in the Project since it is an operational Project.
- The Project Sponsor is are source full company and has a good track record of operation of various road Project. Currently the Sponsor is operating 2 Toll Projects.

	• Debt is **79.73%** of Total Project Cost indicating comfortable gearing level with minimum DSCR of **1.30** and average DSCR of **1.55.** Post Tax Project IRR of **13.99%** indicate viability of the Project. • The total Concession Period is for 20 years whereas door to door tenure of the proposed Debt is 15 years. • CA provides for risk mitigating contractual arrangements like the Substitution Agreement and Escrow Agreement. • Termination Payments by NHAI provide effective mitigation of risks inherent to the Project. • Sponsor undertaking to meet shortfall in respect of Lenders dues in the event of termination of CoA provides adequate safety to Lenders. • Road Improvement Works has been awarded to EPC Contractor on fixed cost fixed time basis. • In case of lower revenue collection due to lower traffic, Concession Agreement provides for increase in Concession Period.
	Personal guarantee of 2 main promoter guarantors stipulated

APPENDIX IV/2

SITE VISIT REPORT

I. NAME OF THE OFFICER:

II. DATE OF SITE INSPECTION:

S.N.	Particulars	Remarks
1.	Name of the Company/SPV	
	Promoter/Group	**Promoter** / **% share**
2.	Nature of Project	
	Sector	State
3.	PPP/ Public Sector / Private Sector	
4.	Risk rating by External Agency Risk rating by LENDER	

5.	Cost of the project (₹/ Crore)	Means of finance (₹/ Crore)

Particulars	Amount
EPC Cost	
Prelim. & preop. Exp.	
Supervision Expenses	
Financing Charges	
IDC	
Contingency Provisions	
Working capital	
Total	

Particulars	Amount
Equity	
Subordinated debt	
Senior Debt	
Total	

6.	Lead Bank
7.	Total Amount of Term Loan -

Debt allocation to various Banks/ lenders – (₹/Crore)

Name of the lending Institution	Allocated Amount	Disb. made so far	% share of disb.	RoI (%)
TOTAL				

8.	Whether all the terms & conditions of sanction have been complied with	
9.		
10.	Lender's Engineer/Lead Bank/comments on the overall performance of the company/ project	
11.	Whether the company is regular in servicing of dues? (Interest and Principal)	
12.	Penal Interest rate charged by other Consortium Members Any other charges levied by other bank.	
13.	Status of Equity –	
	Equity Brought In	
	Promoters contribution	
	Unsecured loans from promoters	
	Total	
14.	Status of ESSF issues	
15.	Present Status of Project	
	Status of Land Acquisition	
	Scheduled Financial progress	
	Actual Financial progress	
	Scheduled Physical progress	
	Actual Physical progress	
16.	Whether audited Balance Sheet received from the company?	
17.	Latest LIE report received and Name of the LIE.	
18.	Audit Objections, if any of other banks.	
19.	Planned / Revised COD	
20.	Comments / Observations	

APPENDIX (V/1.1)

Chapter 10

Case Study I

Projected Cash flow Statement **(₹ in Crore)**

CASH FLOW (Year wise)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Sources of Funds									
PAT	-	-	8.27	17.25	18.49	19.92	21.37	22.92	24.47
Depreciation	-	-	-	33.07	35.23	37.40	11.00	42.13	44.68
Increase in Share Capital	73.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Promoter CCD	0.00	39.53	33.73	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Debt	69.61	432.83	150.24	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Construction Support	206.46	146.52	179.82	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Inflow	**349.33**	**618.88**	**372.06**	**50.31**	**53.72**	**57.33**	**61.01**	**65.04**	**69.15**
Uses of Funds									
Increase in Capex	349.33	618.88	363.79	0.00	0.00	0.00	0.00	0.00	0.00
Repayment of Debt	0.00	0.00	0.00	26.11	32.63	32.63	35.90	35.90	39.16
Total Cash Outflow	**349.33**	**618.88**	**363.79**	**26.11**	**32.63**	**32.63**	**35.90**	**35.90**	**39.16**
Opening Balance	0.00	0.00	0.00	8.27	32.48	53.57	78.26	103.38	132.52
Cash Available (Surplus/Deficit)	0.00	0.00	8.27	24.21	21.09	24.69	25.12	29.15	29.99
Closing Balance	0.00	0.00	8.27	32.48	53.57	78.26	103.38	132.52	162.51
Interest on Cash Balances	0.00	0.00	0.25	1.22	2.58	3.95	5.45	7.08	8.85
Cash in Major Maintenance Reserve	0.00	0.00	0.00	8.08	16.16	24.24	32.32	40.40	48.48
Interest on Major Maintenance Reserve	0.00	0.00	0.00	0.00	0.48	0.97	1.45	1.94	2.42

Table continued from above (₹ in Crore)

CASH FLOW	10	11	12	13	14	15	16	17	18
Sources of Funds									
PAT	26.10	24.12	25.85	27.79	29.72	31.74	33.82	36.05	33.75
Depreciation	47.47	50.33	53.43	56.76	60.17	63.81	65.82	70.86	73.57
Increase in Share Capital	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Promoter CCD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Debt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Construction Support	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Inflow	**73.57**	**74.45**	**79.28**	**84.55**	**89.89**	**95.55**	**99.64**	**106.90**	**107.31**
Uses of Funds									
Increase in Capex	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Repayment of Debt	45.69	45.69	52.21	52.21	55.48	58.74	62.00	78.32	0.00
Total Cash Outflow	**45.69**	**45.69**	**52.21**	**52.21**	**55.48**	**58.74**	**62.00**	**78.32**	**0.00**
Opening Balance	162.51	190.40	219.16	246.23	278.57	312.98	349.79	387.43	416.01
Cash Available (Surplus / Deficit)	27.88	28.76	27.07	32.34	34.41	36.81	37.64	28.58	107.31
Closing Balance	190.40	219.16	246.23	278.57	312.98	349.79	387.43	416.01	523.32
Interest on Cash Balances	10.59	12.29	13.96	15.74	17.75	19.88	22.12	24.10	28.18
Cash in Major Maintenance Reserve	0.00	9.94	19.87	29.81	39.75	49.69	59.62	0.00	0.00
Interest on Major Maintenance Reserve	2.91	0.00	0.60	1.19	1.79	2.38	2.98	3.58	0.00

APPENDIX (V/1.2)

Projected Balance sheet Statement **(₹ in Cr.)**

BALANCE SHEET (Year wise)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Liabilities									
Construction Support	206.46	352.98	532.80	532.80	532.80	532.80	532.80	532.80	532.80
Promoters Contribution	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26
Promoters CCD	0.00	39.53	73.26	73.26	73.26	73.26	73.26	73.26	73.26
General/ Profit Reserve	0.00	0.00	8.27	25.52	44.01	63.93	85.30	108.22	132.69
Net worth	**279.72**	**465.77**	**687.59**	**704.84**	**723.33**	**743.25**	**764.62**	**787.54**	**812.01**
Term Debt	69.61	502.44	652.68	626.57	593.94	561.31	525.41	489.51	450.35
Major Maintenance Reserve	0.00	0.00	0.00	8.08	16.16	24.24	32.32	40.40	48.48
Total Liabilities	**349.33**	**968.21**	**1340.27**	**1339.50**	**1333.43**	**1328.80**	**1322.35**	**1317.45**	**1310.84**
	0.25	1.08	0.99	0.95	0.89				
Assets			0.32	1.24	2.14				
Gross Fixed Assets/ Capital WIP	349.33	968.21	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00
Less: Cumulative Depreciation	0.00	0.00	0.00	33.07	68.30	105.70	145.35	187.48	232.16
Net Fixed Assets	**349.33**	**968.21**	**1332.00**	**1298.94**	**1263.70**	**1226.30**	**1186.65**	**1144.53**	**1099.84**
Current Assets									
Cash Balances	0.00	0.00	8.27	32.48	53.57	78.26	103.38	132.52	162.51
Cash Balance in MMR	0.00	0.00	0.00	8.08	16.16	24.24	32.32	40.40	48.48
Total Assets	**349.33**	**968.21**	**1340.27**	**1339.49**	**1333.43**	**1328.80**	**1322.35**	**1317.45**	**1310.84**

Liabilities	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Construction Support	532.80	532.80	532.80	532.80	532.80	532.80	532.80	532.80	532.80
Promoters Contribution	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26
Promoters CCD	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26	73.26
General / Profit Reserve	158.79	182.91	208.76	236.55	266.27	298.01	331.83	367.88	401.63
Net worth	**838.11**	**862.23**	**888.08**	**915.87**	**945.59**	**977.33**	**1011.15**	**1047.20**	**1080.95**
Term Debt	404.66	358.98	306.76	254.55	199.07	140.33	78.32	0.00	0.00
Major Maintenance Reserve	0.00	9.94	19.87	29.81	39.75	49.69	59.62	0.00	0.00
Total Liabilities	**1242.78**	**1231.14**	**1214.72**	**1200.23**	**1184.41**	**1167.35**	**1149.10**	**1047.20**	**1080.95**
Assets									
Gross Fixed Assets/ Capital WIP	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00	1332.00
Less: Cumulative Depreciation	279.63	329.96	383.39	440.15	500.32	564.13	629.95	700.81	774.37
Net Fixed Assets	**1052.38**	**1002.04**	**948.61**	**891.85**	**831.68**	**767.87**	**702.05**	**631.19**	**557.63**
Current Assets									
Cash Balances	190.40	219.16	246.23	278.57	312.98	349.79	387.43	416.01	523.32
Cash Balance in MMR	0.00	9.94	19.87	29.81	39.75	49.69	59.62	0.00	0.00
Total Assets	**1242.77**	**1231.14**	**1214.72**	**1200.23**	**1184.40**	**1167.34**	**1149.10**	**1047.20**	**1080.95**

CASE STUDY 2

APPENDIX (V/2.1)

Profit and Loss Account

Projected Profit and Loss Account – IGAAP (₹ In Crores)

Particulars	1	2	3	4	5	6	7	8	9	10	11
Stretch 1	41.82	84.53	91.52	100.03	109.18	118.72	129.01	140.08	153.21	167.15	180.76
Stretch 2	37.70	76.41	82.94	89.59	98.23	107.20	116.97	127.11	138.35	150.09	162.91
Total Toll Revenue	79.52	160.94	174.46	189.61	207.41	225.92	245.98	267.19	291.55	317.24	343.67
Interest on DSRA Fund & MMRA & Equity FD in 1st Year	2.48	1.37	1.37	2.06	3.50	5.02	3.95	2.06	2.08	2.86	4.33
Total Revenue	81.99	162.31	175.83	191.67	210.90	230.94	249.93	269.25	293.63	320.10	348.00
RM Costs 5A2-1	2.65	5.52	6.13	6.37	6.63	6.89	5.61	5.90	7.03	6.98	7.26
RM Costs 5A2-2	1.64	3.39	3.73	3.87	4.02	4.18	3.29	3.51	4.35	4.36	4.54
Total Routine Maintenance Cost	4.29	8.92	9.86	10.24	10.65	11.08	8.90	9.41	11.38	11.35	11.80
Operating Costs 5A2-1	2.18	4.18	4.35	4.52	4.70	4.89	5.09	5.29	5.50	5.72	5.95
Operating Costs 5A2-2	1.73	3.32	3.45	3.59	3.74	3.89	4.04	4.20	4.37	4.55	4.73
Total Operating Cost	3.91	7.50	7.80	8.12	8.44	8.78	9.13	9.49	9.87	10.27	10.68
Electricity Costs 5A2-1	0.41	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11
Electricity Costs 5A2-2	0.15	0.28	0.29	0.30	0.32	0.33	0.34	0.35	0.37	0.38	0.40
Total Electricity Cost	0.55	1.06	1.11	1.15	1.20	1.24	1.29	1.35	1.40	1.45	1.51
Toll Booth Operation Cost SA-2-1	0.94	1.80	1.87	1.94	2.02	2.10	2.19	2.27	2.36	2.46	2.56
Toll Booth Operation Cost SA-2-2	0.87	1.67	1.74	1.81	1.88	1.95	2.03	2.11	2.20	2.29	2.38
Total Booth Operations Cost	1.81	3.47	3.61	3.75	3.90	4.06	4.22	4.39	4.56	4.74	4.93
MM COST - PKG 1	0.00	1.22	0.79	0.82	0.85	0.88	39.83	41.43	0.00	0.00	0.00
MM COST - PKG 2	0.00	2.22	0.82	2.46	0.89	5.11	22.73	23.64	1.13	3.07	2.57
Total Major Maintenance Cost	0.00	3.44	1.61	3.28	1.74	5.99	62.56	65.07	1.13	3.07	2.57
Total of Direct Cost	10.57	24.39	23.98	26.53	25.92	31.15	86.10	89.70	28.34	30.89	31.50
IE Fees 1st Year - % of Concession Fee	2.05	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IE Fees 2nd Year onwards	0.00	0.34	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.07
Insurance Cost	0.00	0.81	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
PSBG Cost	0.17	0.24	0.25	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32
LIE Fee	0.00	0.07	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.21
LIA Fee	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
Security Trustee Fee	0.00	0.01	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Lead Lender Fee	0.00	0.03	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09
Escrow Manager Fee	0.00	0.01	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Annual Review Charges	0.00	0.03	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09
Collection & Banking cost (% of revenue)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit Rating Fees	0.00	0.01	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Audit Fees	0.00	0.01	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Total Common Costs	2.22	3.37	3.23	3.29	3.34	3.41	3.47	3.54	3.61	3.68	3.75
Total Expenses	12.79	27.77	27.21	29.82	29.27	34.55	89.57	93.24	31.95	34.56	35.25
EBITDA	69.20	134.54	148.62	161.85	181.63	196.38	160.35	176.01	261.68	285.53	312.75
EBITDA %age	84%	83%	85%	84%	86%	85%	64%	65%	89%	89%	90%

Interest of Debt - TL 1	50.82	97.04	96.19	94.85	93.27	90.95	87.06	80.98	72.94	64.18	55.42
EBTDA	18.38	37.50	52.44	67.01	88.37	105.43	73.29	95.04	188.74	221.35	257.33
Depreciation	15.84	32.05	34.73	37.74	41.28	44.92	48.87	53.08	57.92	63.02	68.27

Profit Before Tax	2.55	5.46	17.70	29.26	47.09	60.51	24.43	41.95	130.82	158.33	189.06
Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profit after tax	2.55	5.46	17.70	29.26	47.09	60.51	24.43	41.95	130.82	158.33	189.06

Particulars	12	13	14	15	16	17	18	19	20	21
Stretch 1	196.78	215.22	233.60	254.77	273.35	292.92	313.53	336.89	361.70	174.97
Stretch 2	176.69	192.88	210.59	229.42	246.13	263.24	281.70	303.20	233.75	132.74
Total Toll Revenue	373.48	408.10	444.19	484.19	519.49	556.17	595.22	640.09	595.45	307.71
Interest on DSRA Fund & MMRA & Equity FD in 1st Year	5.80	6.01	1.96	2.08	0.82	0.00	0.00	0.00	0.00	0.00
Total Revenue	379.28	414.11	446.15	486.27	520.31	556.17	595.22	640.09	595.45	307.71
RM Costs 5A2-1	7.55	7.75	6.50	7.11	8.43	8.84	9.55	9.94	10.33	4.92
RM Costs 5A2-2	4.72	4.91	3.71	4.09	5.52	5.74	5.97	6.21	6.46	3.07
Total Routine Maintenance Cost	12.27	12.66	10.21	11.20	13.95	14.58	15.53	16.15	16.79	7.99
Operating Costs 5A2-1	6.19	6.44	6.70	6.96	7.24	7.53	7.83	8.15	8.47	4.03
Operating Costs 5A2-2	4.92	5.11	5.32	5.53	5.75	5.98	6.22	6.47	6.73	3.20
Total Operating Cost	11.11	11.55	12.01	12.49	12.99	13.51	14.05	14.62	15.20	7.23
Electricity Costs 5A2-1	1.16	1.20	1.25	1.30	1.36	1.41	1.47	1.52	1.59	0.75
Electricity Costs 5A2-2	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.27
Total Electricity Cost	1.57	1.64	1.70	1.77	1.84	1.91	1.99	2.07	2.15	1.02
Toll Booth Operation Cost SA-2-1	2.66	2.77	2.88	2.99	3.11	3.24	3.36	3.50	3.64	1.73
Toll Booth Operation Cost SA-2-2	2.47	2.57	2.67	2.78	2.89	3.01	3.13	3.25	3.38	1.61
Total Booth Operations Cost	5.13	5.34	5.55	5.77	6.00	6.24	6.49	6.75	7.02	3.34
MM COST - PKG 1	0.00	30.76	71.07	0.00	21.22	0.00	0.00	0.00	0.00	0.00
MM COST - PKG 2	0.00	7.98	59.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Major Maintenance Cost	0.00	38.74	130.89	0.00	21.22	0.00	0.00	0.00	0.00	0.00
Total of Direct Cost	30.08	69.93	160.37	31.23	56.01	36.25	38.06	39.59	41.17	19.59
IE Fees 1st Year - % of Concession Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IE Fees 2nd Year onwards	1.11	1.16	1.20	1.25	1.30	1.35	1.41	1.47	1.52	0.73
Insurance Cost	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	0.81
PSBG Cost	0.33	0.35	0.36	0.37	0.38	0.40	0.41	0.43	0.44	0.21
LIE Fee	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.15
LIA Fee	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.01
Security Trustee Fee	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.03
Lead Lender Fee	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.06
Escrow Manager Fee	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.03
Annual Review Charges	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.06
Collection & Banking cost (% of revenue)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit Rating Fees	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.03
Audit Fees	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.03
Total Common Costs	3.83	3.91	4.00	4.08	4.17	4.27	4.37	4.47	4.57	2.14
Total Expenses	33.91	73.84	164.36	35.31	60.18	40.52	42.43	44.05	45.74	21.73
EBITDA	345.37	340.27	281.78	450.95	460.13	515.65	552.80	596.03	549.70	285.97
EBITDA %age	91%	82%	63%	93%	88%	93%	93%	93%	92%	93%
Interest of Debt - TL 1	46.17	36.44	25.73	14.05	2.05	0.00	0.00	0.00	0.00	0.00
EBTDA	299.20	303.84	256.06	436.91	458.08	515.65	552.80	596.03	549.70	285.97
Depreciation	74.20	81.07	88.24	96.19	103.20	110.49	118.25	127.16	118.29	61.13
Profit Before Tax	225.00	222.76	167.81	340.72	354.87	405.16	434.55	468.87	431.41	224.85
Tax	19.43	73.38	62.13	108.22	113.99	128.80	138.39	149.46	137.94	70.74
Profit after tax	205.57	149.38	105.68	232.49	240.89	276.36	296.15	319.41	293.47	154.11

APPENDIX (V/3.1)

CASE STUDY 3

Profit & Loss Account

Financial Year Ending March 31	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Tariff	47	48	49	50	51	52	53	53	53	52	52	52	51	51
Total Revenue	47	48	49	50	51	52	53	53	53	52	52	52	51	51
Expenses	3	3	3	4	4	4	4	4	4	4	5	5	5	5
O&M	2	2	2	3	3	3	3	3	3	3	4	4	4	4
Lease Rental	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross Profit	44	45	46	47	48	49	50	49	48	48	47	47	46	46
Operating Profit	44	45	46	47	48	49	50	49	48	48	47	47	46	46
EBITDA	44	45	46	47	48	49	50	49	48	48	47	47	46	46
Depreciation	15	15	15	15	15	15	15	15	15	15	15	15	15	15
EBIT	29	30	31	32	33	34	35	34	34	33	33	32	32	31
Interest on Term Loan	26	25	24	22	20	18	16	14	11	8	5	3	2	0
Interest on WC Loan	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EBT	2	4	6	9	12	15	18	20	22	24	27	28	29	30
Income Tax Payable	0	1	1	2	2	3	4	4	5	5	6	6	6	6
Deferred tax	0	1	1	1	2	2	2	3	3	3	3	4	4	4
PAT	1	3	4	6	8	10	12	13	15	16	18	19	19	20

DSCR

Year Ending March 31	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
PAT	1	3	4	6	8	10	12	13	15	16	18	19	19	20
Depreciation	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Interest	26	25	24	22	20	18	16	14	11	8	5	3	2	0
Deferred tax	0	1	1	1	2	2	2	3	3	3	3	4	4	4
Total	42	43	43	44	44	45	45	44	43	42	41	40	39	30
Interest	26	25	24	22	20	18	16	14	11	8	5	3	2	0
Repayment of Term Loans	8	9	11	13	15	18	20	21	23	23	23	12	12	7
Total	34	34	35	35	36	36	36	35	34	31	28	15	13	7
DSCR	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.26	1.28	1.35	1.46	2.65	2.98	4.00
Minimum DSCR														
Avg. DSCR														

As per the increase in tariff rate and production level the total revenue per year is projected to increase gradually and repayment schedule is also fixed accordingly.

Security Details

Liquidated Damages	
Security	
	Primary Security 0. A First charge on all immovable properties and assets of the project, present and future, in favour of the lenders, by way of 1. Equitable mortgage for private land; 2. Equitable mortgage of parcels of land acquired on lease basis, wherever it is permitted under the lease deed; 3. Assignment of leasehold rights in regard to land acquired on lease basis where equitable mortgage is not permissible; 4. Assignment of Right of Way (ROW) for transmission line up to the delivery point for electricity. a. A First change by way of hypothecation of all the movables (including movable plant and machine machinery spares, tools and accessories, present and future b. First charge on current assets related to the facts including book debts and cash flow generated from the Projects commissions and revenue whatsoever nature present and future of the hot c. Assignment of all Project related documents contracts his interests insurance contracts and all benefits incidental to project activities present and future d. A First Charge Assignment and or creation of security interest to Favour of the lenders on the Trust & Retention Account and Debt Service Reserve Account, to be established/maintained by the Borrower(s);

Favour of the lenders on the Trust & Retention Account and Debt Service Reserve Account, to be established / maintained by the Borrower(s);

Collateral Security

0. Fledge of 51% equity shares of the Borrower(s) and it shall ensure that the voting rights of the pledged shares do not fall below 51% during the currency of the Facilities.

a. Corporate guarantee of promoters company.

APPENDIX VI

Chapter 20

Illustration for computation of increase in project cost **Annex 1**

Illustration 1
Original cost of the Project – ₹1,000 crore
Revised cost of the Project – ₹1,200 crore
Increase in cost – ₹200 crore i.e., 20%
Attribution of increase in cost
a. Change in Scope 18%
b. Cost Overrun 2%
The increase in cost attributable to change in scope is ₹180 crore (18%) only. Since rise in cost on account of change in scope is 18%, which is less than 25%, no asset classification benefit shall be available.
Illustration 2
Original cost of the Project – ₹1,000 crore
Revised cost of the Project – ₹1,400 crore
Increase in cost – ₹400 crore i.e., 40%
Attribution of increase in cost
a. Change in Scope 30%
b. Cost Overrun 10%
The increase in cost attributable to change in scope is ₹300 crore (30%). Since rise in cost on account of change in scope is 30%, which is more than 25%, asset classification benefit shall be available.

Illustration for maintaining additional Specific Provisions (over and above General Provisions)

Annex 2

Infrastructure Projects	**Non Infra Projects (including CRE and CRE-RH)**
Illustration 1	**Illustration 1**
Funded Outstanding – ₹ 1000 crore	Funded Outstanding – ₹ 1000 crore
Original DCCO – January 01, 2026	Original DCCO – January 01, 2026
Extended DCCO – April 01, 2026	Extended DCCO – April 01, 2026
Quantum of Specific Provisions to be maintained – ₹ 3.750 crore	Quantum of Specific Provisions to be maintained – ₹5.625 crore

Illustration 2 Funded Outstanding – ₹ 1000 crore Original DCCO – January 01, 2026 Extended DCCO – April 01, 2027 Quantum of Specific Provisions to be maintained – ₹18.750 crore	**Illustration 2** Funded Outstanding – ₹ 1000 crore Original DCCO – January 01, 2026 Extended DCCO – April 01, 2027 Quantum of Specific Provisions to be maintained – ₹28.125 crore
Illustration 3 Funded Outstanding – ₹ 1000 crore Original DCCO – January 01, 2026 Extended DCCO – April 01, 2029 Asset Classification - NPA Quantum of Specific Provisions to be maintained– ₹ 150 crore	**Illustration 3** Funded Outstanding – ₹ 1000 crore Original DCCO – January 01, 2026 Extended DCCO – April 01, 2028 Asset Classification - NPA Quantum of Specific Provisions to be maintained – ₹ 150 crore

Annex 3

No	Parameters for Project Finance Database
1	**Debtor Profile** Name of the Project/SPV, PAN, LEI, Name(s) of the Sponsor, Shareholding details, Banking Arrangement, Sector, Sub-Sector
2	**Original Project Profile** Nature of Project, External Credit Rating, Economic Life, Date of Financial Closure, original Date of Commencement of Commercial Operations, Total project cost excluding IDC, IDC, Capital Structure, D/E, DSCR, Repayment Tenor, Repayment Start Date, Repayment Frequency
3	**Change in DCCO** Date of Change, reason for change, extended DCCO, revised project debt, revised project total cost, increase in cost, cost overrun, % of total increase financed by equity, % of total increase financed by debt, revised D/E, revised DSCR, revised repayment tenor, revised repayment start date, revised repayment frequency, revised external credit rating
4	**Credit event other than deferment of original/extended DCCO** Date of Change, reason, total increase in project cost, % of project cost financed through equity, % of project cost financed through debt, revised D/E, revised DSCR, revised repayment tenor, revised repayment start date, revised repayment frequency, revised external credit rating.
5	**Current Specification of the Project** Asset classification, original/ extended DCCO, economic life, external rating, total outstanding, provision held, current project cost excluding IDC, IDC, current capital structure, D/E, DSCR, repayment tenor, repayment frequency

Format for Disclosure under 'Notes to Accounts' **Annex 4**

Sl. No.	Item Description	Number of accounts	Total outstanding (in ₹ crore)
1	Projects under implementation accounts at the beginning of the quarter.		
2	Projects under implementation accounts sanctioned during the quarter.		
3	Projects under implementation accounts where DCCO has been achieved during the quarter		
4	Projects under implementation accounts at the end of the quarter. (1+2-3)		
5	Out of '4' – accounts in respect of which resolution process involving extension in original/extended DCCO, as the case may be has been invoked.		
5.1	Out of '5' – accounts in respect of which Resolution plan has been implemented.		
5.2	Out of '5' – accounts in respect of which Resolution plan is under implementation.		
5.3	Out of '5' – accounts in respect of which Resolution plan has failed.		
6	Out of '5', accounts in respect of which resolution process involving extension in original/extended DCCO, as the case may be has been invoked due to change in scope and size of the project.		
7	Out of '5', account in respect of which cost overrun associated with extension in original/extended DCCO, as the case may be, was funded		
7.1	Out of '7', accounts where SBCF was sanctioned during financial closure and renewed continuously		
7.2	Out of '7', accounts where SBCF was not pre-sanctioned or renewed continuously		
8	Out of '4' – accounts in respect of which resolution process not involving extension in original/extended DCCO, as the case may be has been invoked.		
8.1	Out of '8' – accounts in respect of which Resolution plan has been implemented.		
8.2	Out of '8' – accounts in respect of which Resolution plan is under implementation.		
8.3	Out of '8' – accounts in respect of which Resolution plan has failed.		

BANKERS : REVIEWS & APPRECIATION FOR FIRST EDITION

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RESERVE BANK OF INDIA
www.rbi.org.in

Azadi Ka Amrit Mahotsav

कार्यपालक निदेशक
Executive Director

June 14, 2022

Dear Shri Chattopadhyay,

Thank you very much for the book: An Aide Memoire on Infrastructure Financing. The book is indeed a comprehensive piece of work and I deeply appreciate the hard work that must have gone into this 'first-stop' on the subject. I look forward to reading it in the coming days.

2. Taking this opportunity to thank you once more for sharing the book.

With Warm regards,

Yours sincerely,

(Jayant Kumar Dash)

CMA Chittaranjan Chattopadhyay
Chairman-Banking, Financial Service & Insurance Board
The Institute if Cost Accountants of India
CMA Bhawan
12, Sudder Street,
Kolkata 700016

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हिंदी आसान है, इसका प्रयोग बढ़ाइए

सुरेश एन. पटेल
SURESH N. PATEL

सत्यमेव जयते

केन्द्रीय सतर्कता आयुक्त
केन्द्रीय सतर्कता आयोग
CENTRAL VIGILANCE COMMISSIONER
CENTRAL VIGILANCE COMMISSION

November 23, 2022
CVC/ Misc./ 2022 – 531118

Dear Shri Chattopadhyay ji,

I am glad to receive the handbook titled as 'Aide Memoire on Infrastructure Financing' brought out by the BFSI Board of the Institute of Cost Accountants of India. This Handbook is one of its kind to address issues relating to infrastructure financing broadly.

Sharing of knowledge is one of the best ways of empowering people. Case studies are also a very powerful medium to learn through illustrations. This handbook provides both knowledge and guidance in the field of infra sector with valuable case studies to illustrate the salient points in appraisal, risk identification and mitigation.

I compliment the efforts of The Institute of Cost Accountants of India for this excellent initiative. This publication would surely promote sharing of knowledge, experience and best practices among all stakeholders as well as public.

I thank you for sharing this handbook with us and also convey our Best Wishes to you and your team.

With regards

Yours sincerely,

(Suresh N. Patel)
23/11/2022

CMA Shri Chittaranjan Chattopadhyay,
Chairman – Banking, Financial Services & Insurance Board
The Institute of Cost Accountants of India,
CMA Bhawan,
12, Sudder Street,
Kolkata – 700016.

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Mahesh Kumar Sharma
Managing Director & CEO

12th July, 2022

Dear Mr. Chattopadhyay,

I thank you for your letter no. BFSIB/22/07/32 dated the 6th July 2022 enclosing a copy of "Aide Memoire On Infrastructure Financing" (1st Edition).

The book certainly provides valuable insights on issues relating to infrastructure financing.

Thanking you once again.

With warm regards,

Yours sincerely,

(Mahesh Kumar Sharma)

CMA Chittaranjan Chattopadhyay
Chairman – Banking, Financial Services & Insurance Board
The Institute of Cost Accountants of India
CMA Bhawan
12, Sudder Street
Kolkata 700 016

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कार्यपालक निदेशक
M. Karthikeyan
Executive Director

बैंक ऑफ़ इंडिया
Bank of India BOI

ED/MK/7 18.06.2021

Dear Sir,

I sincerely appreciate and thank you for sending me a copy of "Aide Memoire on Infrastructure Financing".

The publication of this handbook which describes a practical approach to address all the issues relating to Infrastructure financing by giving case studies applicable to various sectors to illustrate the salient points in appraisal, risk identification and mitigation is a very good initiative on your part.

It will indeed guide the bankers, financial institutions and the investors in their lending operations in the various sectors of infrastructure.

I once again thank you for sending me a copy of this book.

With regards,

Yours faithfully,

(M. Karthikeyan)

Shri CMA Chittaranjan Chattopadhyay
Chairman – Banking, Financial Services & Insurance Board
The Institute Of Cost Accountants Of India,
Kolkata – 700 016

प्रधान कार्यालय : स्टार हाऊस, सी-5, "जी" ब्लॉक, बांद्रा-कुर्ला संकुल, बांद्रा (पूर्व), मुंबई-400 051. ई-मेल / Email : ED.Karthikeyan@bankofindia.co.in www.bankofindia.co.in
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S. PARAMASIVAN
MANAGING DIRECTOR

AFCONS INFRASTRUCTURE LIMITED

Shapoorji Pallonji

Date: 02-08-2022

Shri Chittaranjan Chattodapdhyay
Chairman - Banking, Financial Services & Insurance Board,
The Institute of Cost Accountants of India
CMA Bhavan, 12, Sudder Street
Kolkata -700016
Mob : 9433013380 / 8240478286

Sub: Release of the Aide Memoire on Infrastructure Financing

Dear Sir

This has reference to your letter dated 12th July 2022, regarding the release of **Aide Memoire on Infrastructure Financing**. I am pleased to know that the Institute of Cost Accountants of India has come out with this publication, which will provide valuable guidance needed for evaluating and financing infrastructure projects.

Your Aide Memoire on Infrastructure Financing is a welcome addition to the limited repository of knowledge available on the subject, and I hope it will guide bankers, investors and regulators take the right decisions on infrastructure financing and enable robust and sustainable infrastructure development during the Amrit Kaal.

I will go through the handbook and provide my feedback soon. I once again congratulate the Institute of Cost Accountants of India for this much-needed publication.

With warm regards,

S.PARAMASIVAN

Afcons House, 16, Shah Industrial Estate, Veera Desai Road, Azad Nagar P.O., Post Box No. 11978, Andheri (W), Mumbai-400 053.
Phone : +91 (22) 6719 1106, 6719 1000 Fax : +91 (22) 2673 0027 / 0047 / 1031 Email : param@afcons.com

20th July, 2022

To:
CMA Chittaranjan Chattopadhyay,
The Institute of Cost Accountants of India,
CMA Bhawan,
12,, Sudder Street,
Kolkata 700 016.

Dear Sir,

Sub: Release of "Aide Memoire on Infrastructure Financing"

Thank you very much for sharing complimentary copy of the above publication. It is one stop guide book for the entire infrastructure spectrum of the country. The topics of the book are very well articulated and rich in input and are understandable by an average person in the Industry.

The last decade was a very crucial decade for the entire Infrastructure Industry where we have witnessed many unprecedented events. May be it was a cleansing process. The publication has come at the most appropriate time where the country is heading towards US $ 5 trillion economy. There are many new players in the market and the Financers have also consolidated their position. This publication will be very handy to all of them and it will help to carry out their respective functions more efficiently.

Congratulation to your entire team. I thank you very much for your initiative in taking out this hand book and sharing with me.

With kind regards,

Yours sincerely,

A.B. Desai
(GAMMON)

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CIN NO.: L65190MH2004GOI148838

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उप प्रबंध निदेशक
SURESH KHATANHAR
Deputy Managing Director

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Website : www.idbi.com

June 27, 2022

Dear Shri Chattopadhyay,

At the outset let me congratulate you and the BFSI Board of Institute of Cost Accountants of India for coming out with a publication titled "Aide Memoire on Infrastructure Financing".

Best wishes for the endeavor.

Yours faithfully,

(Suresh Khatanhar)

CMA Chittaranjan Chattopadhyay,
Chairman – Banking Financial Services
& Insurance Board,
The Institute of Cost Accountants of India,
CMA Bhawan, 12, Sudder Street,
Kolkata 700016.

Janata Sahakari Bank Ltd., Pune
(Multistate Scheduled Bank)

CA Madhav (Abhay) Mate
Chairman

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Phone : (Bank) 020-2445 3258/59. (Office) : 020 2445 5080.
E-mail : madhav.mate@janatabankpune.com
Website : www.janatabankpune.com

To

CMA Mr Chittaranjan Chattopadhyay

Chairman, Banking, Financial Services & Insurance Board

Institute of Cost Accounts of India

12, Sudder Street, Kolkatta – 700 016

Subject :- Release of the Aide Memoire on Infrastructure Financing

Reference :- Your letter bearing No.BFSIB/22/06/296 dated 15.06.2022

Dear Sir,

I am in receipt of your above referred letter along with a copy of Aide Memoire On Infrastructure Financing.

I express my sincere thanks for sharing the Copy of Aide Memoire on Infrastructure Financing.

I shall read the book carefully, but at the outset I wish to congratulate you for publising such a wonderful work.

The said work is very help ful to cater infrastrucutre financing needs of Bank's customers and will also serve as guide and care points in the subject.

Once again I thank you for marvellous work and expect such works from you in future also.

Thanking you,

With regards,

27/6/2022.

(CA Madhav R. Mate)

Chairman,

Janata Sahakari Bank Ltd.,Pune

PHD CHAMBER
OF COMMERCE AND INDUSTRY

Pradeep Multani
President

No. ME-1
11th July 2022

Dear CMA Chittaranjan Chattopadhyay ji,

Greetings from PHDCCI!

We congratulate you and your whole team of the Institute for coming out with a publication titled "Aide Memoire on Infrastructure Financing' addressing issues relating to infrastructure financing for one of the most vibrant sectors of the economy.

The Handbook is very informative, interesting and useful for the readers engaged in the business of infrastructure financing. A copy of the publication is being placed in our Library as a reference book for our Members.

We look forward to organise a joint programme on Infrastructure Financing with our BFSI Committee for the constituents of PHDCCI to take forward the agenda of Atmanirbhar Bharat.

With best regards,

Yours sincerely,

(Pradeep Multani)

CMA Chittaranjan Chattopadhyay
Chairman – Banking, Financial Services & Insurance Board
The Institute of Cost Accountants of India
CMA Bhawan
3 Institutional Area, Lodhi Road
New Delhi – 110 003

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Date – 27.06.2022

To,
CMA Chittaranjan Chattopadhyay
Chairman,
Banking, Financial Services & Insurance Board,
The Institute of Cost Accountants of India,
CMA Bhavan, 12, Sudder Street,
Kolkata – 700016

Dear Sir,

At the very onset, I thank you for sending me a complimentary copy of 'Aide Memoire on Infrastructure Financing'.

It will indeed offer valuable guidance to the promoters of infra sector projects and guide the bankers, financial institutions & investors in their lending operations for this sector that includes railways, road transport, civil aviation, ports, inland waterways etc. The handbook describes a practical approach to address all issues related to infrastructure financing along with case studies applicable to various sectors. This helps in illustrating the prominent features in appraisal, risk identification and mitigation thereof.

I am confident that this Book will be an important reference material for all stakeholders in Infrastructure Financing.

I once again thank you for your thoughtful deed of sending me a copy of the book. I also take this opportunity to wish you the very best in all your future endeavours.

Regards,

Mrs. Apekshita Thipsay
Managing Director

Registered Office : 'Cosmos Tower', Plot No. 6, ICS Colony, University Road, Ganeshkhind, Shivajinagar, Pune - 411 007. Maharashtra (INDIA)
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UMESH CHOWDHARY
Vice Chairman & Managing Director

15th July 2022

Dear Mr Chattopadhyay,

Thank you very much for your letter BFSIB/22/07/70 dated 11th July 2022 and a copy of the hand book – "Aide Memoire on Infrastructure Financing"

Thanking you

Yours sincerely

Umesh Chowdhary

CMA Chittaranjan Chattopadhyay
Chairman-Banking, Financial Services & Insurance Board
The Institute of Cost Accountants of India
CMA Bhawan
12 Sudder Street
Kolkata 700 016

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अध्यक्ष सह प्रबन्ध निदेशक
SATYAJIT TRIPATHY
Chairman-cum-Managing Director

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8th August 2022

Shri CMA Chittaranjan Chattopadhyay,
Chairman,
Banking, Financial Services & Insurance Board,
CMA Bhawan,
12, Sudder Street,
Kolkata – 700 016

Dear Sir,

Re: BFSI Chronicle 10th Edition (2nd Annual issue) July 2022

I acknowledge with thanks receipt of your letter ref.no. BFSIB/22/08/66 dated 03.08.2022 along with BFSI Chronicle 10th Edition July 2022.

The said book is very exhaustive and covers all aspects of infrastructure financing which I find very informative. I thank you for sharing this Annual Issue and look forward to receiving the future Editions also.

With regards

(Satyajit Tripathy)

Tel : 044-28575266 & 044-28575267, 044-28522021 E-mail ID : tripathys@uiic.co.in
सेवा - वृद्धि का प्रवेश द्वार / Service - The Gateway to Growth

YES BANK

Prashant Kumar
Managing Director & CEO

June 16, 2022

Mr. Chittaranjan Chattopadhyay
Chairman – Banking, Financial Services &
Insurance Board
CMA Bhawan
12, Sudder Street
Kolkatta 700 016

Sub: Release of the Aide Memoire on Infrastructure Financing

Dear Mr. Chattopadhyay

At the onset, I would like to personally thank you and the entire BFSI Board of Indian Institute of Cost Accountants for the sharing a copy of the first publication in Aide memoire series titled 'Aide Memoire on lending to Micro, Small & Medium Enterprises sector ' with YES Bank.

Given infrastructure is one the key focus areas of the Union Government and the continuous thrust of investment program within the sector, and the fact India's MSMEs contribute nearly one third of the country's GDP, makes this book extremely insightful and can potentially act as a one-stop comprehensive guide on infrastructure financing for all stakeholders.

YES Bank strategy adopted for our MSME clients is where digital and analytics form the fulcrum of both new acquisitions and seamless customer service. Analytics is being used to drive prospective client identification, while the AI-powered Early Warning Signals framework helps to flag off incipient sickness and support frontline remedial management.

The MSME segment continues to remain attractive for us. The micro, small and medium businesses suffered the brunt of the COVID-19-related economic downturn. But there are some strong positives in their favour. They are also early and intensive users of tech-based banking. MSMEs have been able to pivot around quickly with a helping hand from the government. MSME business made up 24% of YES Bank's advances base and 18000 crores of new sanctions/ disbursements in FY 2021-22, and we see a huge potential for product volumes and customer size in this segment.

We look forward to the second publication of the Aide Memoire Series.

Once again, I would like to express my gratitude to you and the BFSI Board of the ICAI.

Yours sincerely

Prashant

Prashant Kumar
Managing Director & CEO

Registered & Corporate Office: YES BANK Limited, YES BANK House, Off Western Express Highway, Santacruz (East), Mumbai - 400055
Tel: (D) +91 (22) 6507 9002 (O) +91 (22) 6507 9800 **Fax:** +91 (22) 2619 2866 **Website:** www.yesbank.in **CIN:** L65190MH2003PLC143249

NOTES

NOTES

CONTACT DETAILS

CMA Chittaranjan Chattopadhyay,

Chairman

Banking, Financial Services & Insurance Board -

82404 78286

CMA Dibbendu Roy,

Addl. Director, Secretary & HoD

Banking, Financial Services & Insurance Board

96434 43047

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Banking, Financial Services & Insurance Board

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