

OWNING NOTHING, CONTROLLING EVERYTHING: HOW INDIA'S ACCOUNTING, TAX AND INSOLVENCY FRAMEWORKS MUST ADAPT TO THE POWER-BY- THE-HOUR ECONOMY

Abstract

The Power-by-the-Hour (PBH) model, originated by Rolls-Royce in 1962, represents the foundational template of availability-based servitization — a structural shift from CAPEX asset ownership to OPEX service consumption where the provider bears performance risk. Using a doctrinal and analytical methodology, this article examines how India's accounting standards, insolvency law, GST framework, and income tax rules respond to service-based asset models, using Battery-as-a-Service (BaaS) as a contemporary domestic illustration. The analysis identifies fault lines under Ind AS 115, 116, and 37; the IBC–Cape Town conflict addressed by the Protection of Interests in Aircraft Objects Act, 2025; GST inverted duty distortions; India's MRO hub ambition; and data integrity risks in PBH billing.

INTRODUCTION

When MG Motor India launched the Windsor EV in late 2024, it separated the battery from the purchase transaction entirely — renting it per kilometre. The model cut upfront cost by 30 to 40 per cent. It was widely described as novel.

It was, structurally, sixty-two years old.

In 1962, Rolls-Royce introduced the Power-by-the-Hour model for the Viper engine on the Hawker Siddeley 125 business jet: operators paid a fixed rate

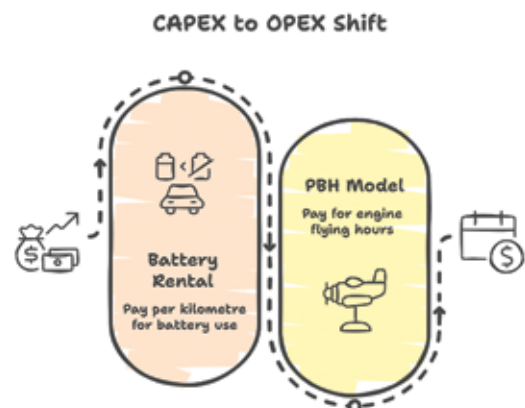


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per engine flying hour, and Rolls-Royce assumed full maintenance liability. Battery-as-a-Service is the consumer-facing descendant of PBH. This article takes PBH as its primary subject, using BaaS only where its domestic context sharpens the analysis.

The CAPEX-to-OPEX shift touches four areas, each examined in turn: who bears performance risk, how revenue is recognised, where assets sit on the balance sheet, and how existing law responds when arrangements built on use — not ownership — encounter insolvency or tax classification.



LITERATURE REVIEW AND METHODOLOGY

Prior Literature

The academic foundation for servitization draws from Vandermerwe and Rada (1988), who first theorised bundled goods-service-knowledge offerings, and Neely (2008), who documented the manufacturing shift to outcome-based models.

Datta and Roy (2011) identified incentive alignment as the central design principle in aerospace MRO contracts — directly corroborated by the PBH structure analysed here. In the Indian legal context, Sengupta and Sharma (2022) identified the IBC's Section 14 moratorium as a structural weakness in cross-border lease enforcement — a vulnerability confirmed by the Go First proceedings.

Methodology

This article adopts a doctrinal and analytical methodology. Primary sources — the CGST Act, IBC, , Ind AS 115/116/37, and the Protection of Interests in Aircraft Objects Act, 2025 — are examined against PBH contract structures.

The analytical layer applies these frameworks to real-world stress tests: the Rolls-Royce COVID-19 catch-up, the Go First insolvency, the AWG CTC downgrade and recovery, and the July 2024 aviation GST reform. No primary fieldwork was conducted.

THE POWER-BY-THE-HOUR MODEL

Under a Flight Hour Agreement — TotalCare (Rolls-Royce), OnPoint Solutions (GE Aviation), or Eagle Services (Pratt & Whitney) — an airline pays a fixed rate per Engine Flying Hour (EFH). The OEM retains ownership, schedules all maintenance, and guarantees airworthiness.

If the engine is grounded, the OEM receives nothing. That single fact is the entire commercial logic of the model.

The OEM is rewarded only when the engine flies. That alignment has done more for commercial aviation reliability than any maintenance schedule ever written.

Engines represent roughly 15 per cent of aircraft value at delivery. Over a 10 to 12-year cycle, the flight-hour revenue stream generates margins that

are multiples of the original manufacturing profit — a durable annuity escalated annually against inflation and labour cost indices.

Table 1: CAPEX Ownership vs. PBH Service Model

Dimension	Traditional CAPEX Ownership	PBH / Availability Model (OPEX)
Initial Outlay	Full asset cost at acquisition	Usage fees over contract term only
Maintenance Risk	Entirely borne by operator	Transferred to OEM / service provider
Cash Flow	Irregular; large overhaul spikes	Predictable, usage-linked OPEX
Maintenance Posture	Reactive — fix on failure	Predictive — optimise for uptime
Balance Sheet	Asset at cost less depreciation	ROU asset (if lease) or off-balance-sheet

ACCOUNTING UNDER IND AS: THREE STANDARDS, THREE RISKS

PBH arrangements do not fit neatly under one accounting standard. Three standards apply at the same time. Treating the arrangement as a single transaction is the most common preparer error.

Ind AS 115 — Revenue Recognition: The Catch-Up Risk

Under PBH, revenue is earned over time as engine availability is delivered. Progress is measured by costs incurred against total expected costs over the contract life.

The risk: long contracts are sensitive to changes in utilisation and cost. If estimates change, a catch-up adjustment is required — wiping out revenue recognised in earlier periods, all in one reporting period. Rolls-Royce faced this in 2020. COVID-19 reduced flying hours sharply, and a large reversal hit a single year's results.

A contract profitable at inception can turn negative in a single reporting period — not because the business failed, but because the estimates changed.

Ind AS 116 — Leases: The Hidden Balance Sheet Entry

Many operators choose PBH to keep assets off their balance sheet. Ind AS 116 often defeats this.

If one specific engine is assigned to one specific aircraft and the operator controls its use, the arrangement is a lease — not just a service. A Right-of-Use asset and lease liability must be recognised. The full PBH payment cannot be treated as a simple operating expense. Operators with leverage-based debt covenants face a real risk of technical breach if this bifurcation is not done.

Ind AS 37 — Provisions: The Onerous Contract Trap

Engine Maintenance Reserves are a prepaid asset — not a period expense. Treating them as an expense overstates costs before shop visits occur.

The bigger risk: if a PBH contract becomes loss-making, the entire expected loss must be recognised immediately — in one go. It cannot be spread over the remaining years. Preparers who do not track contract-level profitability at each reporting date will be caught off-guard.



THE IBC CONFLICT AND THE 2025 RESOLUTION

The Go First airline collapsed in 2023. Its aircraft were all leased — the airline owned nothing. When insolvency proceedings began, Section 14 of the IBC automatically froze all repossession. Foreign lessors who owned the aircraft could not take them back. The aircraft sat on the ground for months.

India had signed the Cape Town Convention,

giving lessors the right to repossess within 60 days of a default. But India had never enacted it into domestic law. The consequences unfolded in three stages:

Table 2: The IBC–Cape Town Conflict — Trigger, Response, and Resolution

Stage	Event	Consequence
Trigger (2023)	Go First CIRP — Section 14 moratorium applied. NCLT treated leased aircraft as debtor assets. Lessors blocked from repossession despite clear default.	AWG downgraded India's CTC Compliance Index from 63.5 to 50. Outlook designated 'negative'. India placed on AWG watchlist. Higher lease rates priced into all Indian carrier transactions.
Correction (2024)	April 26, 2024: Delhi High Court ordered aircraft deregistration despite IBC moratorium — establishing CTC obligations cannot be indefinitely suspended by Section 14. November 25, 2024: AWG Score Adjustment Notice removes India from watchlist.	CTC Compliance Index revised to 61. India moved to Medium compliance category — before any legislation was enacted. AWG recognised shift in institutional predictability.
Resolution (2025)	Protection of Interests in Aircraft Objects Act, 2025 enacted April 16, 2025; in force May 1, 2025. Section 9: overriding effect over all inconsistent laws including IBC. Alternative A adopted: mandatory 60-day cure period. High Courts have exclusive jurisdiction; NCLT bypassed.	Repossession rights legally enforceable. Electronic dues tracking system prevents surprise liens. India's lessor jurisdiction risk materially reduced.

The significance goes beyond aviation. Grid-scale batteries, EV fleets, and industrial equipment under long-term service contracts face the same Section

14 problem today. The aviation Act is the template; a broader mobile-asset framework remains the outstanding gap.

GST DISTORTIONS IN SERVICE-BASED ASSET MODELS

Before July 2024, aircraft parts were taxed at rates from 5 to 28 per cent by classification. A single engine overhaul involved components at five different rates. The result: input tax credits piled up unused, working capital was locked, and Indian Maintenance, Repair and Overhaul (MRO) facilities could not price competitively against Singapore or Malaysia.

The July 2024 GST reform fixed this. A single 5 per cent rate now applies to all aircraft parts. Domestic MRO services dropped from 18 to 5 per cent with full input credit. The pricing gap narrowed and new investment followed.

This is the clearest available evidence of what targeted GST correction does to a service-based asset sector: align the rate on the service with the rate on the asset, and the market responds.

The same distortion exists in BaaS — and has not been fixed:

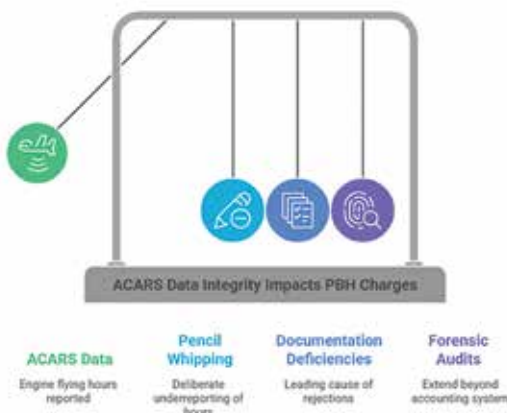
- ⦿ **Buying** an EV attracts 5 per cent GST.
- ⦿ **Renting** the battery per kilometre attracts 18 per cent.
- ⦿ **The 56th GST Council’s September 2025 reforms** reduced rates on small cars and sub-350cc motorcycles to 18 per cent — narrowing the EV price advantage — without touching battery rental.

India taxes owning an EV at 5 per cent and using one through a service model at 18 per cent. The correction is available. It has not been applied.

Table 3: GST Rate Comparison — Pre- and Post-Reform

Item / Service	Previous Rate	Current Rate	Effect
Aircraft Parts	5%–28% (HSN-dependent)	5% uniform IGST (Jul 2024)	Eliminates inverted duty
Domestic MRO Services	18%	5% with full ITC (Jul 2024)	Restores price competitiveness
EV Purchase	5%	5% (unchanged)	Consistent ownership incentive
BaaS Battery Rental	18%	18% (unchanged)	Tax penalty persists on service model

DATA INTEGRITY: THE FORENSIC DIMENSION



PBH invoices are built on one number: Engine Flying Hours. These are reported through ACARS

— the Aircraft Communications Addressing and Reporting System — which sends timestamped signals every time an engine starts, takes off, lands, and shuts down. Those four timestamps drive every flight-hour charge.

The vulnerability: 99 per cent of ACARS traffic travels in plaintext — readable by anyone with basic radio equipment. In a PBH model, the usage record has the same financial value as the asset itself. Standard internal financial controls do not reach this layer.

In a PBH model, the usage record has the same financial value as the asset itself. It is a target for manipulation in exactly the same way a financial record is.

Table 4: PBH Forensic Audit Framework — Data Layer Controls

Audit Control	What It Checks	Why It Matters
ACARS vs. ATC Reconciliation	Cross-check engine Out-Of-On-In timestamps against air traffic control records	Detects deliberate underreporting of flying hours at source
Fuel Burn Anomaly Detection	Compare reported engine hours against actual fuel consumption patterns	Flags inconsistencies between billed hours and physical evidence
LLP Serial Verification	Physically verify Life-Limited Part serial numbers against on-wing maintenance logs	Confirms reported maintenance history matches physical component records
FMS Sensor Calibration Audit	Review calibration history of sensors feeding the Flight Management System	Ensures the source data for hour calculations is accurate at origin
EFB Log Reconciliation	Use Electronic Flight Bag data logs as an independent secondary check on billed engine hours	Provides a parallel data stream not derived from ACARS

CONCLUSION AND POLICY PRESCRIPTION

The Power-by-the-Hour model is sixty-two years old and still defining how high-value assets are financed and accounted for. The table below summarises what India has achieved and what remains to be done.

Table 5: India's PBH Readiness — Progress and Policy Gaps

Area	Progress Made	Gap / Action Required
Legal Framework	Protection of Interests in Aircraft Objects Act, 2025 (enacted April 16; in force May 1, 2025). Section 9 overriding effect. IBC moratorium cannot delay aircraft repossession.	No equivalent framework for non-aircraft high-value mobile assets — grid-scale storage, EV fleets, industrial equipment — under PBH-style contracts.
GST	July 2024 reform: uniform 5% IGST on aircraft parts; MRO services reduced from 18% to 5% with full ITC. Indian MRO now price-competitive.	BaaS battery rental still taxed at 18% vs. 5% on EV purchase. Align rate on battery rental service with the rate on the underlying asset.
MRO Hub Ambition	MRO facilities grew from 96 (2014) to 154 (2025). Safran–GMR LEAP engine facility inaugurated Hyderabad 2025. \$4B domestic MRO target by 2030 reaffirmed by PM Modi, IATA AGM, June 2025.	India must become the jurisdiction where PBH contracts are written and enforced — not just a location where maintenance work is performed.

The Right to Use an asset is a property right. It warrants the same legal protection, accounting clarity, and tax consistency as the Right to Own one. Until India's frameworks reflect that parity — and as India moves to become a provider of PBH contracts, not just a consumer — the shift from CAPEX to OPEX will carry a regulatory cost that neither the investor nor the operator should be required to absorb. **MA**

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