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Current Affairs: The EV Disruption in India's Intercity Bus Sector

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Overview of buses in India

Fleet Composition

- ~2.5 million registered buses.
- 6% State-run (STU/CTU)
- 94% Private operators

Ridership

- Total: ~399m trips/day
- Intercity buses: ~228m trips/day
  (10x of Indian Railways daily)

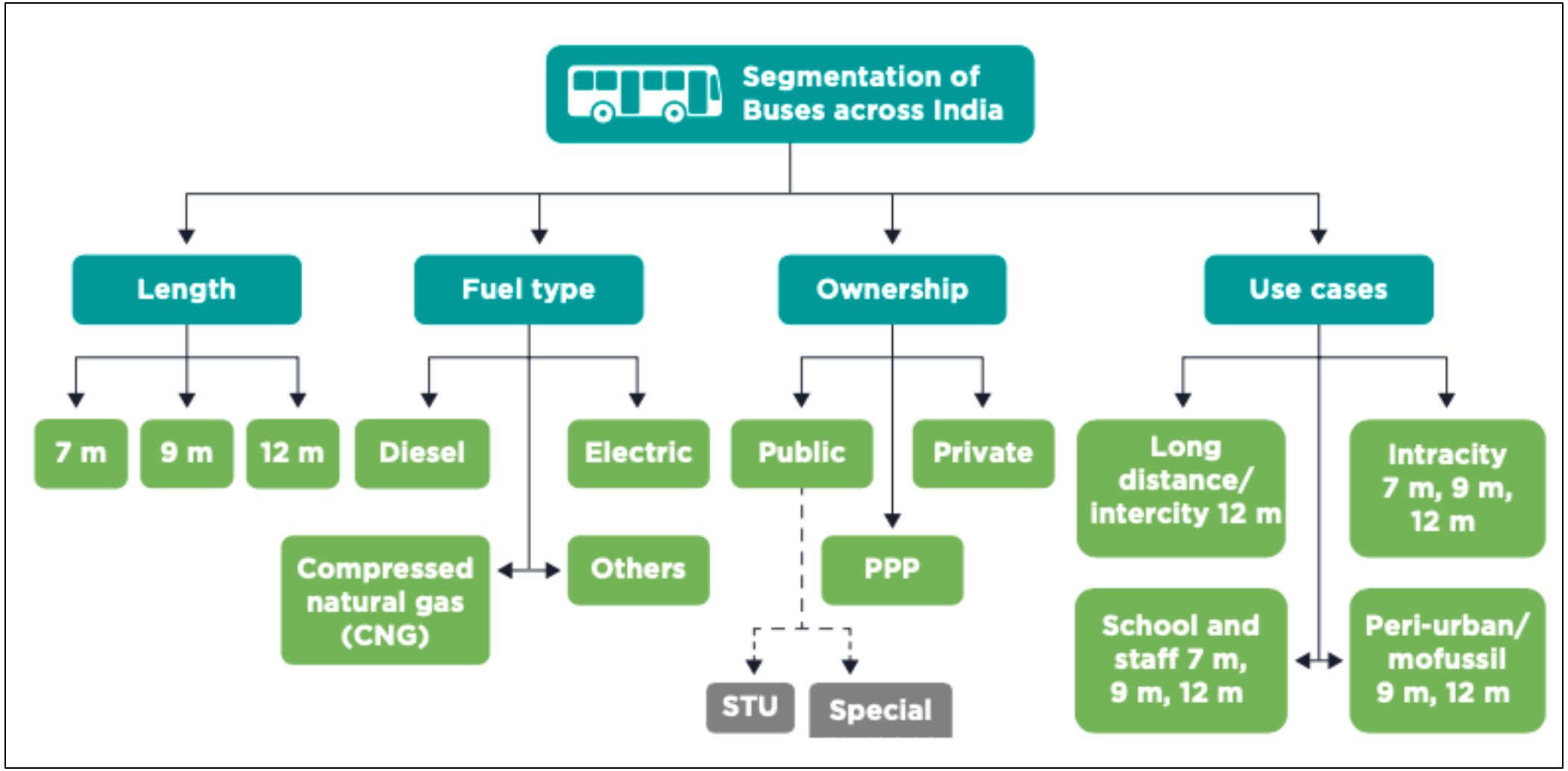
Fuel & Emissions

- Buses = 1% of the vehicle fleet but 15% of road transport emissions.
- Account for ~9.5% of India's transport diesel use.

Market Structure of Bus Operators in India

- 95% of operators run fleets of fewer than 50 buses
- 78% operate fleets of fewer than 5 buses
- The top 5% of operators control 61% of the total fleet
- The market is fragmented at the bottom but concentrated at the top

Overview of buses in India



Government Initiatives & Price Discovery

Scheme	Key Points
FAME I (2015)	• 425 e-buses sanctioned with ₹280 Cr funding with Capex (purchase) or Opex (GCC) model choice
FAME II (2019–24)	• 6,862 e-buses with ₹3,545 Cr allocation • Mandatory Opex (GCC), mix of STU procurement & CESL aggregation
NEBP (2022–23)	• ~11,140 buses sanctioned (2 tenders) • Opex (GCC) via CESL using central ₹82k Cr NEBP fund
PM e-Bus Sewa (2023)	• 10,000 buses with ₹20,000 Cr central support • GCC (Opex) model, subsidies include infra & charging with focus on Tier 2 and 3 cities.
PM e-DRIVE (2024)	• 14,028 buses, ₹4,391 Cr funding for 9 big (Tier 1) cities • GCC (Opex) via CESL; infra, R&D & **intercity support**

The Age of **Price Discovery**

- Initiated by CESL under the Grand Challenge to aggregate demand from cities and float a national-level tender.
- Aggregated tenders cut e-bus OPEX to ₹41–47/km resulted in ~31% cheaper than diesel.
- Scale + GCC contracts drove rates down (BEST: ₹83/km → ₹44/km in 3 yrs).
- City capacity & contract design critical to final prices.
- Future savings hinge on competitive bidding + infra readiness, not subsidies alone.

Private Electric Bus Operators: Navigating Market Barriers

Private operators are pioneering electric bus adoption through innovative strategies despite regulatory and market challenges.

Market Context

- **Privatized market dominance** - Private operators lead intercity and informal transit segments
- **AITP regulatory framework** enables cross-state intercity operations

Key Challenges

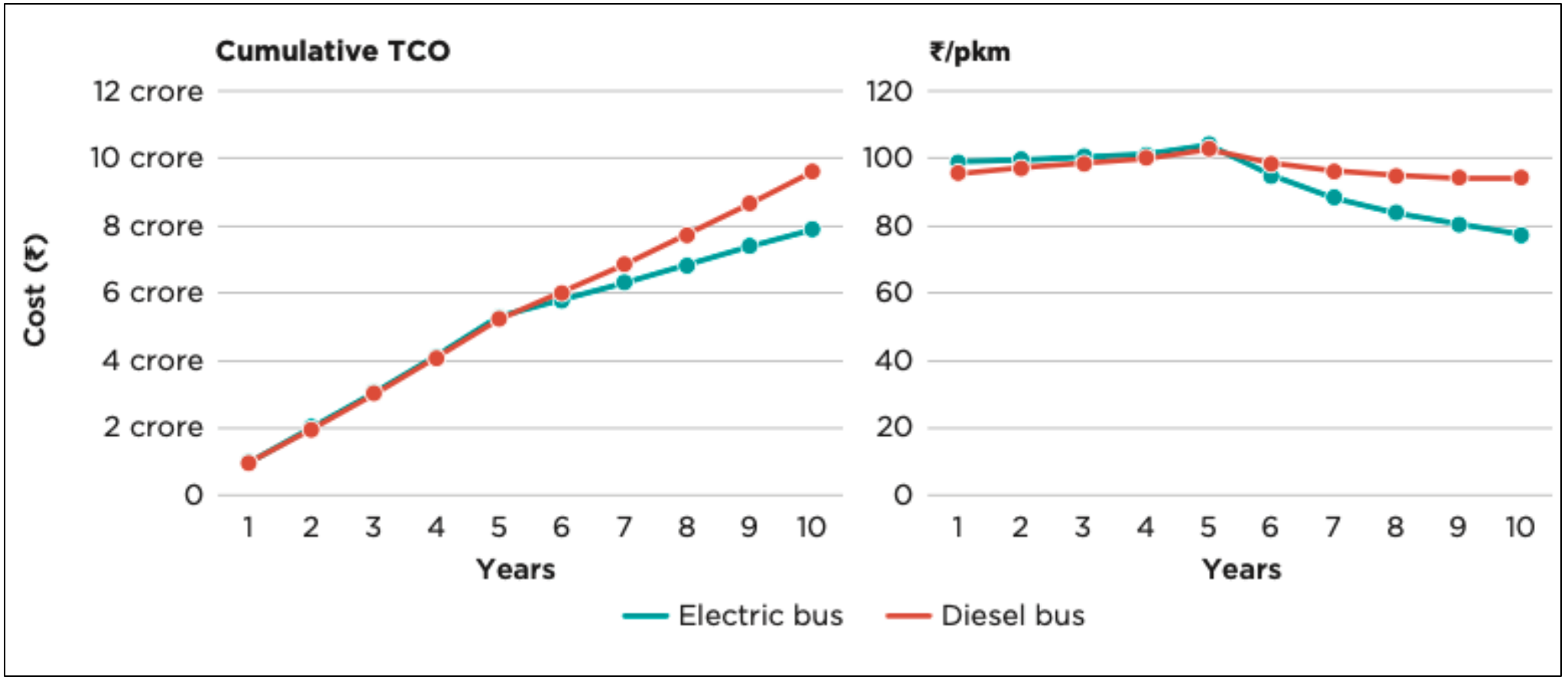
- **Permit-driven constraints** - Operations limited by licensing, manufacturing capacity, and infrastructure
- **OEM focus misalignment** - Manufacturers prioritize government bulk orders over private sector needs
- **Higher risk exposure** - Private operators face demand volatility and fuel price risks without revenue guarantees

Strong business models & smart route planning are essential for private operator viability

Electric Bus TCO Advantages Over Diesel

- **Battery cost drives overall TCO** - but smaller batteries with opportunity charging deliver 17% savings vs. diesel
- **Operating cost advantages compound over time** - stable electricity tariffs and reduced maintenance offset rising diesel prices
- **Strategic charging infrastructure** reduces downtime and eliminates need for oversized batteries
- **Higher utilization accelerates payback** - longer daily ranges help recover battery investment faster
- **Competitive advantage** - lower operating costs enable more competitive fare pricing

Electric Bus TCO Advantages Over Diesel



Overcoming E-Bus Adoption Barriers

Challenges

- **High upfront costs** - E-buses cost ₹2.5 crore vs. viable target of ₹1.2 crore per unit
- **Regulatory uncertainty** around intercity operations blocks investment and financing
- **Infrastructure gaps** - Limited depot access and lack of shared charging networks create capital barriers
- **Market fragmentation** - No unified platform to address financing, procurement, and operational needs

Way Forward

- **Optimize TCO approach** - Right-sized batteries and strategic charging can deliver 17% cost savings
- **Battery-as-a-Service (BaaS)** - Leasing models reduce capital requirements and improve cash flow management

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