

Whitepaper

Financing the Zero-Emission Truck Transition:

5 Lessons to Accelerate ZET Adoption through Accessible Finance

Context

This white paper summarizes the discussion from the session “Powering the Shift: Unlocking Financial Pathways for ZET Adoption,” convened by Smart Freight Centre India at Smart Freight Week, held in Amsterdam in April 2026.

The Smart Freight Week is SFC’s annual flagship event held in Amsterdam. The 2026 edition took place from April 14–16 at De Kromhouthal. It brings together industry leaders, experts, and stakeholders from across the global freight and logistics sector to focus on one overarching goal: decarbonizing freight transport through collaboration and innovation.

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Background and Context

The most productive conversation at Smart Freight Week 2026 was not about trucks. It was about who pays for them.

SFW session, “**Powering the Shift: Unlocking Financial Pathways for ZET Adoption**,” brought together fleet operators, lenders, battery data specialists, and policy researchers. Based on SFC India’s internal estimates using PSA adoption figures, India’s ZET financing requirement could exceed USD 600 million by 2030. The diagnosis was clear: the trucks are increasingly ready; the commercial frameworks that would fund them at scale are not.

The gap is most visible in public-sector banks. Government banks sit among the lowest-cost sources of capital in the Indian credit market but are largely absent from EV truck financing. Fleets rely on non-banking financial companies (NBFCs) at higher rates and less favorable terms.

Following are five lessons from the discussion.

1. Policy that changes structural conditions outperforms subsidies that close a single deal

Finance practitioners at the session were careful to distinguish between two types of policy support: subsidies that make the deal work today, and structural interventions that change the conditions of capital itself.

The distinction matters. When a subsidy is the primary business case, it becomes the primary risk. If the scheme changes or government priorities shift, the commercial logic underneath it disappears. Lenders pricing a portfolio know this and factor it as downside.

Two structural approaches surfaced repeatedly. The first is demand aggregation. PM-eBus Sewa in India is the working example: the government acts as off-taker, pools demand across municipalities, and gives manufacturers a volume signal they can produce against. Unit costs fall and commercial viability follows because the market has been created, not because the gap has been bridged. The Advanced Clean Trucks (ACT) rule in California illustrates the same logic from the manufacturer side. When zero-emission shares of truck sales are mandated, OEMs produce at volume, costs come down, and lenders observe a track record rather than project one.

The second is supply-side capital mandate. Classifying EV financing as Priority Sector Lending (PSL) is the India-specific version of this argument. If public-sector banks are required to build EV portfolios as a regulatory matter rather than choosing to as a commercial one, the supply of low-cost capital into the sector expands. The mechanism is allocation pressure, not automatic risk re-pricing, but the directional effect on deal terms is meaningful across a pipeline. Demand-pooling and supply-side mandates work through different channels. Both change the underlying market rather than patching individual transactions, which is why finance practitioners trust them more than headline subsidies.

2. Residual value is better understood than financing frameworks assume

Residual value was the session’s most detailed technical topic, and the operational data is well ahead of how lenders price it.

Operators tracking commercial EV battery performance reported retention above 80 percent after five to six years of active use. OEM warranties in China now cover eight years and more than 400,000 kilometers, with degradation capped below 20 percent. Buyback commitments from major manufacturers provide a floor on asset value. These are operational data points from fleets that have

The India-specific angle on cascade use was particularly instructive. A battery that has degraded from 100 percent to 80 percent of original capacity still powers a truck capable of 100 to 120 kilometers per day instead of 150. In a market where quick-commerce delivery and short-haul urban freight are expanding, that vehicle has a second commercial life without requiring major investment. Useful life extends well past the warranty period.

Secondary markets are at different stages across vehicle types. Two-wheelers have an active resale market. Municipal buses, once their route life ends, move to school and corporate transit. Heavy trucks are still early, but the direction is consistent across asset classes.

The piece still missing is standards. A UNEP project is reportedly developing minimum requirements for battery state of health, calendar aging lifetime, and cycle-discharge lifetime for emerging-market EV imports. Once those standards exist as regulatory minimums, the confidence signal to lenders becomes enforceable rather than anecdotal.

3. Credit committees are fighting over the growth story, not the asset

When asked what drives the most discussion in ZET credit committees, practitioners at the session gave a consistent answer: not the truck, and not the battery. The growth trajectory.

A deal that depends on charging infrastructure utilization rising from one level to another, or on a freight market expanding at a certain rate, requires the lender to take a view of a market that is still forming. That view is where the debate lives. Asset fundamentals are increasingly legible. The harder question is whether the sector grows fast enough to make the debt serviceable on schedule.

Even with the asset question converging, every deal is still bespoke. The financing instrument, the region, the type of operator, and the deal team all shape which risk narrative gets constructed. In practice, lenders are rebuilding the same analytical framework from scratch for each transaction, which is partly why the growth question feels unresolved each time it gets re-litigated.

Data standardization addresses the procedural half of the problem. Operators who provide structured packages covering asset conditions, maintenance history, battery state-of-health data, and lifecycle projections reduce the per-deal burden on lenders. Once a lender has applied a methodology to one deal and found it holds, the methodology can travel across subsequent deals with the same asset profile. The due diligence work compounds rather than restarts, and the conversation in committee can shift toward the growth question that matters.

4. Every sector needs one first mover, and one anchor willing to hold the structure together

The panel documented a pattern appearing independently across markets and asset classes: sector adoption follows a first-mover logic more than a gradual diffusion one.

In India's e-commerce segment, Amazon and Flipkart placed the first large-scale EV commitments, and that signal activated OEMs, financiers, and fleet operators in quick succession. In FMCG, ITC

and Mondelez led, and the rest of the category followed. Global logistics brands, including DHL, FedEx, and DP World, are setting internal mandates that push local operations toward electrification even where the commercial case alone would not yet force the decision. Similar early-mover effects were noted in other industrial categories discussed at the session.

The implication for ZET deployment is operational, not abstract. Identifying and activating the first mover in each sector pays for itself many times over, because once that first mover is operating, the evidentiary burden on every subsequent deal in that sector drops sharply.

Within any individual project, the same logic plays out as anchor economics. One party has to bear a disproportionate share of coordination cost and risk to bring the table together: a fleet operator building out charging, a corporate off-taker committing to an indexed freight contract, a manufacturer offering a buyback. Anchors do this not because risk is perfectly distributed, but because the project serves their commercial interest and they have the position to convene. The form of the anchor varies by sector but function does not.

In nascent markets, the first deal in any sector sets the commercial and documentation template. Getting it right matters well beyond the individual transaction.

5. The destination: financed like solar, not built like a custom contract

The goal is for ZETs to be financed the way photovoltaic plants are financed today: the technology is known to work, the residual value is understood, and capital deploys as a routine matter rather than as an exception.

That point has not been reached for heavy-duty electric trucks. Each deal is still one of a kind, and the risk narrative is rebuilt each time. The trajectory from the session was clear, and it runs through data standardization, regulatory confidence in battery performance, and a growing body of first-mover evidence that removes the uncertainty about whether the sector will grow.

The Way Forward

The discussions from this session point to a clear way forward for scaling zero-emission truck (ZET) financing in India. Achieving this will require coordinated action across policymakers, financial institutions, OEMs, fleet operators, and the wider ecosystem.

Structural policy changes must go beyond subsidies to create the conditions for long-term investment. Battery residual value data needs credible, enforceable standards that lenders can rely on with confidence. Credit assessment approaches must also become more consistent and reusable, rather than being developed from scratch for each transaction. At a sector level, early movers and anchor players will be critical in demonstrating commercially viable models and building market confidence.

Smart Freight Centre is working with ecosystem partners in India to support this transition through policy engagement, data standardisation, facilitation of first-mover collaborations, and the development of enabling financial frameworks that can help unlock financing at scale.

Ultimately, the objective is to make ZET financing as routine, trusted, and scalable as solar financing is today.

How can you accelerate your decarbonization journey?

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Smart Freight Centre (SFC) is a globally active non-profit organization for climate action in the freight sector. Our goal is to mobilize the global logistics ecosystem, in particular our members and partners, in tracking and reducing its greenhouse gas emissions. We accelerate the reduction of logistics emissions to achieve a zero-emission global logistics sector by 2050 or earlier, consistent with 1.5° pathways.

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