

SUMMARY REPORT

SEMINAR CUM WORKSHOP - ACCELERATING LOW EMISSION LOGISTICS IN INDIA

12th June 2024/ India Habitat Centre, New Delhi

ABOUT SMART FREIGHT CENTRE

Smart Freight Centre launched the SFC India program in May 2023 as a regional initiative in South Asia, in cognizance of the role of the region in the global ecosystem development for low-emission logistics. The program aims to collaborate with the Indian freight sector on its mission to track and reduce global GHG emissions by 1 billion tonnes by 2030 and reach Net Zero by 2050. SFC is involved in various freight decarbonization initiatives in India, including NITI Aayog's e-FAST, and is deeply engaged with key stakeholders of the Indian Freight ecosystem, key Central Government offices, Industry and Ecosystem stakeholders to align on collaborative action for the advancement of Freight Electrification in India.

Smart Freight Centre is also supporting the Ministry of Heavy Industries, Government of India on the development of an e-Truck Ecosystem development roadmap, as part of a recently notified e-Mobility Task Force. Additionally, SFC is working on a sub-national policy framework for ZET adoption in India, along with a few related activities on ZET solutions. The ultimate goal is to drive large-scale e-truck adoption through short/medium-term pilot projects, delivered in collaboration with stakeholders from both the demand and supply sides of India's freight ecosystem.

Furthermore, Smart Freight Centre is collaborating with TERI And IIM Bangalore to develop Freight Emissions Accounting guidelines for India, leveraging its global credentials and expertise on the topic, established via the GLEC (Global Logistics Emissions Council) framework. GLEC is an emissions accounting framework developed by Smart Freight Centre in 2014, in close with the global freight ecosystem which is now recognized as an Industry standard and is also the basis of the ISO14083 standard.

SEMINAR OVERVIEW

The advent of Zero Emission Trucks (ZETs), or eTrucks, marks a pivotal shift in India's road freight sector, traditionally dominated by diesel trucks. With their zero tailpipe emissions and favorable TCO (Total Cost of Ownership) economics, ZETs are poised to capitalize on the burgeoning investments in India's logistics growth, steering the industry toward a sustainable, low-emission future in alignment with net-zero objectives.

The Indian Freight Buyers and Logistics Service Providers (LSPs) are increasingly gravitating towards ZETs, driven by a heightened commitment to sustainability and the tangible business benefits these vehicles offer. This growing interest has received robust support from various government initiatives,

notably NITI Aayog's e-FAST program, which champions a comprehensive approach to accelerating freight electrification. e-FAST India (Electric Freight Accelerator for Sustainable Transport – India) has been instrumental in devising strategies and actions that spur the adoption of electric freight, with an expanding network of partnerships that includes OEMs, shippers, and Think Tanks, further solidifying its collaborative framework.

Recognizing the critical role of finance in the commercial viability of ZETs, there is a pressing need for innovative financing models that surmount the prevailing challenges. Concurrently, efforts to standardize freight emissions accounting framework in India are underway, promising to significantly reduce emissions via efficiency improvements and reduce fuel import reliance.

Smart Freight Centre, in continuation to earlier stakeholder engagement and consultations for the development of ecosystem strategy for ZET deployment at scale, organised a workshop on 'Accelerating Low Emission Logistics in India' in Delhi on 12th June. The day-long workshop brought together key stakeholders from the Indian freight ecosystem, including shippers, LSPs, financial institutions, OEMs, and policymakers, focusing on:

1. Opportunities and Strategic Lever for accelerating ZET adoption in India
2. Emission Accounting for Low Emission Logistics
3. Financing for ZETs

OBJECTIVE

The seminar aimed to build upon the robust industry interest showcased at CEM Goa's inaugural demand signal event, pinpointing ZET deployment prospects across diverse sectors and applications. The discussions forged actionable strategies for actualizing the freight electrification vision. Experts also delved into the nuances of freight emissions accounting—a vital precursor to acknowledging the imperative for freight electrification with an assessment of the present freight emission scenario—and investigated pioneering models designed to overcome the financial hurdles impeding ZET adoption.

SUMMARY

Smart Freight Centre (SFC) opened the workshop by welcoming all partners and participants including senior officials from Niti Ayog, MHI, DPIIT, and representatives from SIDBI(Small Industries Development Bank of India), AITWA(All India Transport Welfare Association), CESL(Convergence Energy Services Limited), TERI, IIM Bangalore, e-FAST, Shakti Foundation along with other senior executives from Freight Industry, Allied sectors, and Knowledge partner organisations.

Dr. Christoph Wolff, CEO, Smart Freight Centre (SFC), outlined the workshop's objective in line with SFC's vision to decarbonize global freight and stated the intent on assisting the international and national

shippers, cargo owners, together with the LSPs and the fleet providers in decarbonizing their operations. Sudhendu J Sinha, Advisor, Infra Connectivity & Electric Mobility Niti Ayog in their special address mentioned that approximately four million trucks currently running on the roads of India, are responsible for spewing out 80% of greenhouse gas emissions from road transport, and thereby emphasized on the urgency of addressing greenhouse gas emissions.

Further, a Memorandum of understanding was exchanged between SIDBI and Smart Freight Centre (SFC), asserting confidence and unwavering ecosystem support for the vision of sustainable logistics via low-emission freight in India. The signed MoU between SIDBI and SFC outlines a strategic objective to systemically identify and address financing as a key challenge hindering the widespread adoption of electric trucks. It is expected that SIDBI's extensive experience in promoting and financing small and medium enterprises and networking with other financial institutions(public and private) coupled with SFCs' strong Industry engagement and freight decarbonization credentials will facilitate the development of a blended finance model based on affordable financing options for fleet operators interested in electric truck transition.

Another partnership announced at the event was an MoU between IIM Bangalore and SFC on the development of an emission accounting framework for India, with IIM Bangalore supporting the creation of the data framework, under the wider mandate of Emissions Accounting Framework development. This initiative is currently undertaken as a collaborative exercise between SFC, TERI and IIM Bangalore. The developed Emissions Accounting Framework will further be supported with disclosure guidelines, data management, and governance framework, and a focused capacity development exercise covering all technical and operations pillars of emissions accounting for freight operations in India, to enable industry-wide adoption of the established framework.

TERI, along with Smart Freight Centre, Shakti Sustainable, IIM Bangalore, and SIDBI also launched the report "Baseline Study for Non-Urban Road Transport in India". The report includes an assessment of the non-urban HDV goods sector in the Indian context and establishes the importance of estimating baseline emissions for long-distance road freight transport operators, specific energy consumption, and distance-based specific energy consumption for truck operators or carriers.

PANEL DISCUSSION: DETAILS AND TAKEAWAYS

Plenary Session 1: Opportunities for ZET Deployment

The session focused on India's e-FAST, a NITI (Government of India) initiative and India's first platform facilitating collaboration between government stakeholders and private sector players to shape strategies to create a conducive environment for freight electrification.

Moderator:

- Christoph Wolff - CEO, Smart Freight Centre

Panel members:

- Sudhendu J Sinha – Advisor, Infra Connectivity & Electric Mobility, NITI Aayog
- E. Srinivas – Joint Secretary, Ministry of Commerce & Industries (Logistics Division)
- Sumit Kumar – Deputy Secretary, Ministry of Heavy Industries
- Pradeep Singhal – Chairman, All India Transporters Welfare Association (AITWA)
- Captain Prashant S. Widge - Head of Public Affairs, South Asia, Group Public and Regulatory Affairs, AP Moller – Maersk

Session Objectives

- Emphasize the primary areas and applications that could benefit from the adoption of E-trucks, citing advantageous business cases and operational adaptability.
- Identify key impediments preventing shippers from moving forward with scaled ZET rollout.
- Assess the potential impact of the transition to electric trucks on the existing Indian logistics market in terms of achieving sustainable logistics goals
- Leverage logistics infrastructure push for electrification of highway corridors to support E-Trucks movement in medium and long-haul applications.
- Engage the industry in developing the e-truck ecosystem, with government support measures to boost private sector contribution.
- Interests of the Indian fleet operators in transitioning to E-trucks, as well as measures from policymakers, shippers, and financial institutions to help the trucking sector
- Identification of potential models that may have the potential to serve as a foundation for early e-truck deployment in India.

Key takeaways

- Three broad levers that can be applied to make freight activities more environment friendly with less CO2 emission footprint,
 - ✓ Avoid the need for energy and thus the CO2 emissions
 - ✓ Shift towards a more sustainable mode of transport

- ✓ Efficiency improvements to again decarbonize or reduce the CO2 footprint in front of freight operations
- About 70% of all freight in India is moved by road, with heavy-duty trucks carrying 76% of the freight and medium-duty trucks carrying 21%. Combined, medium- and heavy-duty trucks handle a staggering 97% of all freight movement in India.
- A transition across the board in terms of value drivers is the need of the hour. Transitioning from an expensive logistics mode to a less expensive logistics mode, from a polluting transport mode to a much lesser or cleaner transport mode will result to deliver the required result.
- Three value cases which are of interest in ZET deployment are -
 - ✓ Environmental case in terms of CO2 reductions
 - ✓ Economical case in terms of energy savings and thus reducing the energy import
 - ✓ Social value case that can be captured by this kind of transition
- There is a need for the identification of corridors for Hydrogen as well as LNG-fuelled vehicles, alongside a focus on the development of ZET corridors. The hub and spoke model are another alternative that can be identified as a self-sufficient model for ZET deployment.
- It is necessary to map the domestic market's supply chain and get a clear understanding of the commodities that are being traded throughout it.
- The electrification of railroads has already received substantial funding, and by December 2024, all railroads will be fully electrified. Therefore, the model share that will be available on the roads and railroads at the same time needs to be accurately assessed.
- Government intervention needs to come in through a comprehensive energy and investment plan. If a particular green corridor needs to be developed, there is a requirement for planning for charging stations and significant investments need to go into manufacturing of E-trucks.
- There are 10 million trucks on the road out of which 1-2 million run on the long route with a national permit and are plying inter-city and inter-state. Seven corridors have been identified where 70% of the business happens. So based on these factors, deployment of 10000 ZETs seems highly possible.
- The ZET industry will be in direct competition with the railways as the stated policy of the government is that freight movement through railways is to be promoted over road transport.
- In India, 70% of the market is owned by small fleet operators. It is being observed that recently there has been a shift from single truck owners to large fleet owners. Development of a framework on how Cooperatives of different truck owner categories can be promoted, as a means to support small fleet operation on asset financing aspect.

Plenary Session 2: Strategic Levers for ZET Deployment at Scale

While EVs in India have witnessed strong market growth since the GOI launched the two FAME schemes (2015 and 2019) and followed it up with the PLI scheme for Battery manufacturing, the spotlight has largely been confined to E-2W, e-3W and e-4W (passenger). Zero Emission Trucks (ZETs) have not found enough traction due to unclear demand signals, low tech maturity amongst Indian truck manufacturers, and inadequate policy focus despite the climate action potential with recognition of freight activities as a key contributor to an entity's ESG performance via Scope 3 emissions.

While Shipper's interest in ZETs with their ESG focus and initial demonstrated success of e-LCVs in last-mile delivery services has established a strong case for other freight use cases and haulage (medium and long) categories getting electrified lately, concentrated efforts toward ecosystem development for scaled ZET deployment projects is required to drive actual deployment on the group, with a scalability potential. This session focused on strategies for ZET deployment at scale, with a focus on specific barriers across finance, technology, operations, and policy.

Moderator:

- Chetna Nagpal - Senior Associate, RMI

Panel members:

- Dr R K Singh - CGM, Green Climate Finance, SIDBI
- Amit Sood – Head, Commercial/ e-trucks, Convergence Energy Services Ltd.
- Sanjay Bajpai – Executive Director, CONCOR
- Yashpal Sachar – VP Corporate Affairs, Ashok Leyland
- Neha Nagpal Grover - International Finance Corporation (IFC)

Session Objectives

- To Identify financing as a strategic lever in ZET (e-trucks) market development in India which will de-risk investments and improve the business case for ZETs in India
- Demand aggregation and joint procurements as tools to accelerate ZET adoption, particularly given the fragmented Industry structure, dominated by private players
- Applicability of ZETs across commodity types and sectors from a use case perspective
- Existing technology is an important barrier in moving towards a low-emissions logistics paradigm, particularly from a performance and reliability standpoint
- High upfront cost as a key hurdle for e-truck adoption, estimate of a realistic timeline for convergence of ICE and E-trucks in terms of price parity, and key factors driving the same.

Key Takeaways

- The two main obstacles that needs to be overcome includes high acquisition cost, and the residual value, which arises after the conclusion of asset ownership. Both the factors have a significant role in determining the TCO, which in turn affects the viability of the business.
- The bankability is integral from a lender's perspective whether it is a multilateral or a commercial lender or development institution. One of the primary ways of addressing bankability is working on solutions such as demand aggregation. Demand aggregation models have been tested in the EV buses space in India and have also been tested even in the trucking space in international markets, and therefore, can be used as reference models for building a framework.
- The most important factors contributing to a successful ZET deployment strategy are -
 - ✓ Identification of the most feasible financing scheme and understanding of the feasibility and applicability of various financing models
 - ✓ A scale-up approach, i.e., initiating from a smaller deployment to expanding to a larger deployment
 - ✓ Establishing a robust risk-mitigating model
 - ✓ Formation of a communication platform between various actors to synergize efforts
- One of the primary areas where government intervention is warranted is the mitigation of obsolescence risk, whether through accelerated depreciation or other strategies. Governmental intervention can solve one of the primary risk issues, which is the residual remaining value of the electric vehicle trucks. It's possible that the development of hydrogen or other technologies will render this industry obsolete in five or ten years.
- Deploying of E-trucks depends heavily on the availability and feasibility of longer duration contracts, since the initial cost is higher, Op-Ex will depend upon the running of the trucks.
- Any logistical issues pertaining to loading or unloading must be fixed. It must be the case that the truck is either running or meant to be charging. Therefore, a vehicle should never be idle, even with the proper shift timings. If it remains inactive, the duration will undoubtedly lengthen, and the economy will be undermined.
- It's difficult to set up the infrastructure for charging. Obtaining a connection and acquiring the load has gotten easier in recent years when viewed through the prism of ease of doing business. Still, it's a challenge, and a lot of users are still having difficulty with it. According to such a perspective, effective policy is necessary before the government intervenes.
- It is important to implement a pilot project on the ground, to derive a practical understanding of the ground situation. Without the learnings from a pilot project, past mistakes will probably be repeated.

- Electric mobility is meant to be profitable because it uses less energy. Although the total cost of ownership may be high, the cost per kilometer is essentially lower than that of gasoline and diesel. If, after ten years, the infrastructure for mobility has not shown to be profitable, then something is wrong.
- Analysis of the previous 10-year expenditure on infrastructure development for EVs and consequent utilisation (<3-5%) is not very encouraging for further investments. The break-even period with this level of utilization to 45 to 60 years and thus does not support the business case for ZET charging infrastructure on the highways.
- For the period 2030-35, investments in the scale of approximately 325 to 355 billion USD will be required to achieve Net-zero emission targets. These two targets are the first two objectives of the 2070 decarbonization target. If a proper instrument of utilisation and framework is not developed, then opting for other models such as PPP may have to be considered.
- Focus needs to be on increasing the credit affordability of our banks to explore and support green projects. Without a proper financing model, ZET deployment will be difficult to initiate.
- It is recognized that upfront cost will continue to act as a barrier and as such, subsidy schemes as incentives from the Government cannot be a feasible solution in the long term due to its cascading impacts on the economy.
- Policy initiatives to bring the upfront as well as running cost of ZETs down through efficiency improvements, technology enhancements, and economies of scale need to be prioritized.

Breakout Session 1: Financing for ZET Deployment

Indian Freight Industry has signaled a strong interest in the adoption of Electric Trucks with the aggregated demand of 7750 Trucks under NITI Aayog's e-FAST initiative. Further development of the demand signal has indicated a strong potential of translating the same into immediate wins with 6-7 scalable pilots of initial 40-50 ZETs each, with a use case pivot and on selected corridors, over the next two years, until 2025.

The implementation of these pilots will however require all ecosystem nodes to be activated to lend necessary support for making them viable as a fundable project. One of the key barriers and a critical attribute defining the Business viability of these pilots is the availability of finance and the cost of capital specific to each use case. Considering that the Indian freight sector is highly fragmented with a vast majority of carriers (fleet operators) with small-scale enterprise profiles with less than 5 trucks ownership, it makes the financing of e-truck as an asset even more challenging due to high asset cost along with low financial appetite and credit worthiness of prospective owners. This session focused on

deliberating key financial issues hampering the deployment of ZETs and exploring different models for mitigating the same via presentation on the topic, following by a Panel Discussion on the topic.

Moderator

- Vijay Jaiswal - Director, SFC India

Panel members

- Mr. Rajiv Kumar - General Manager, SIDBI
- Mr. Pramod Sharma - President, Corporate Affairs, SUN Mobility
- Mr. Jayant Prasad - Executive Director, Ckers Finance
- Mr. Nishant Idnani - Founder & Managing Director, Vaultus Green Funding

Session Objectives

- Expand on high ownership cost and TCO gaps as per present asset utilization scenarios and service contract arrangements.
- Highlight key components of commercial viability gaps for ZET adoption to be addressed by Financial Institutions
- Government support to address the viability gap and learning from e-BUS transition program
- Explore potential ownership models given fragmented structure of the Freight Sector, with small-scale fleet operators as the dominant majority in the carrier pool
- Bring in important learning from Internal ZET financing programs and service models

Key takeaways

- The major challenge for ZET adoption at scale will be the Capex at almost or more than double in case of e-trucks. Financing will be the key thing as far as the e-trucking is concerned.
- MDV and HDV segments are growing exponentially and will be the case also in the future from the perspective of transitioning to electric trucks. The CAGR currently as per trend is at 2.81% and even with that, almost 1 million new truck sales can be estimated in 2050. This will approximately put 17 million trucks on the road by 2050 which will be 4X from current numbers.
- Study on contracting arrangement for medium and heavy-duty trucks in India suggest that while 10% is captive use, the fixed contract comprises of 30% while majority 60% is still reliant on transport service providers.
- From the financing model perspective self-funded are roughly at 2% while finance with state or private banks is at 15% with maximum borrowers relying on financing with NBFCs .
- An alternative model can be truck leasing or hire purchase which tends to be more cost-effective and provides flexibility and, particularly beneficial for upgradation of trucks on a regular basis.

- Resale risk for electric trucks is significantly higher than ICE trucks with no established secondary market. A mature market for second-life batteries will allay the risk significantly.
- Performance risk again is considered higher for e-truck in the current scenario as compared to ICE. Similarly, operation risk and infrastructure risk are considerably higher for electric trucks while the loan customer risk profile would probably stay the same apart from the differential in the upfront capex which is required.
- For financing longer duration of borrowing is required and that will only be ensured once the operational years or the contracts which is being given to the fleet owners are more.
- Models for the financing of ZET deployment can be worked based on the financing models for E-buses. For instance, the GCC model gross cost contract has a longer period duration of around 10 to 12 years where the OEM/Operator needs to come up with a complete solution.
- In the railway industry, the IRFC and NBFC lease assets to the Ministry of Railways for a period of thirty years. During the first fifteen years, the IRFC recovers the principal and interest, and for the remaining fifteen years, the Ministry of Railways pays the IRFC a minimum rent. After 30 years, they charge the nominal price and transfer the assets to the Minister of Railways. This improved the business flow of capital and business risk in railroads while also lowering the upfront risk of putting the asset on the track. This funding model can serve as a guide for developing a deployment plan akin to that of e-trucks.
- The subsidies offered as part of FAME-I and FAME-II triggered a lot of interest and have brought the market to a certain level of maturity where it becomes self-sustainable. Similar support from the government can drastically shorten the transition time to an eco-development perspective.
- There are huge opportunities in ZET ownership, but at the same time there are challenges and barriers. Hence, large scale financing is not happening, this is where the role of a Development Financial Institution like SIDBI exists.
- A significant portion of the result depends on how the asset is being utilised and the manner in which it is being monitored. It's important to differentiate between perceived risks and actual risks, which can be done by deploying at least 200 vehicles on the ground.
- There is a need for blended finance facilities, so that when SIDBI can bring down the rate of interest, because if there is a higher upfront cost, rate of interest will be reasonable.
- SIDBI operates a risk-sharing facility for sectors with high perceived risks, such as the energy service company (ESCO) market. The facility provides guarantees to lenders for projects that have been technically appraised, offering them comfort even if the project fails.
- The risk-sharing facility has been successful in areas like energy efficiency, e-mobility for two and three-wheelers, and municipal solid waste, with no defaults reported.

- Running such facilities requires risk capital, which SIDBI has obtained through grants from organizations like the World Bank, Shell Foundation, and GIZ. A similar risk-sharing facility for the trucking segment could help bring 200 vehicles on the ground, providing extra comfort to lenders.
- SIDBI is already working on that count with the Green Climate Fund and other funds wherein there is an opportunity to bring in concessional capital in the country.
- There are cases where there is high-frequency battery swapping possible if the movement is point-to-point-loop.
- By reducing the battery size of the vehicle as well as the downtime between the changes, upfront costs can be lowered significantly.
- The residual value of the truck can be seen in tandem with the reusable value of the truck. commercial life is 10 years only for ICE trucks. Thereafter, retrofitting or resale are the only viable options. Therefore, swapping technology provides a benefit in terms of 15-20 years of utilization.
- A deep understanding of battery technology and asset management is essential for financiers to adapt to the evolving market. The presence of four or more OEMs with mature products in a segment indicates the first step of market readiness.
- India is identified as a “green discount market,” in contrast to Europe, which is considered a “green premium market.”
- Demonstration fleets are crucial for building market confidence by demonstrating the viability of ZET across various parameters including business and operational.
- Small fleet operators and market load operators are driving the transition and often outperform larger fleet operators due to their deeper investment in the success of their operation
- The challenge lies in understanding electric vehicles and their technology as a new asset class.
- Pre-delinquency management, a practice from the past, is being revisited to predict and prevent defaults based on vehicle data and customer behavior.
- Transport as a Service (TaaS) Model: The TaaS model, with asset financing and leasing at its core, is becoming increasingly relevant in the Indian trucking sector. This model addresses changes in ownership patterns and provides new financing solutions.
- Leasing solutions are emerging as a go-to-market strategy for OEMs and new market entrants to address these challenges.
- Logistic companies are considering a mix of leasing and direct loans for adopting electric trucks. This mix promotes aggregation and economies of scale, which can help solve ecosystem challenges and improve charging station and vehicle viability.

- There is a need for evolved digital monitoring and pre-emptive checks to ensure maintenance and adherence to SOPs, especially when the driver is not the vehicle owner.
- Financing aggregation can lead to the opening of markets like green bonds, which are not viable at the individual operator level. This will be significant in the context of the evolving market.
- Supporting leasing companies is crucial as they enable longer tenors for loans, which are necessary for the viability of truck operations.
- Small businesses with distribution reach are setting up new leasing platforms, indicating a trend towards more diverse financing options. The market is not expected to be dominated by a single player, suggesting a competitive and diverse market environment.
- Proper battery management, including cooling during charging and use, can extend the battery life cycle by 20-30%.
- The residual value of the battery electric truck, including the vehicle with or without the battery, is not currently a primary consideration for fleet operators, as OEMs or swapping station providers manage the batteries.
- Lithium iron phosphate batteries used in EVs have a defined life cycle of 2500 cycles at 25 degrees Celsius, after which capacity depletes to 80%.
- After the first life cycle, batteries can be repurposed for secondary uses like solar applications, where they can undergo an additional 2000 cycles.
- A strong credit flow is necessary for scaling up quickly, which is crucial for OEMs and the viability of solutions like battery swapping.
- Removing the battery from the financing scope of the operator and providing separate financing for batteries and infrastructure could lower monthly instalments (EMIs) and prevent defaults.
- Granting infrastructure status to the EV sector could enable priority funding and financing, stimulating market growth.
- There is a need for central recognition and policy support for battery swapping systems, which some states have already implemented.
- The government should invest in infrastructure to support the EV ecosystem, possibly through Public-Private Partnerships (PPPs) like those managed by the National Highway Logistics Management Company (NHLM).
- Out of 1000 highway sites, only 200 have tenders for wayside amenities. The remaining 800 sites could include charging and swapping infrastructure in their tenders, potentially using hybrid or full annuity models.

- The government could consider allocating 1000-2000 crore INR for VGF, with states contributing additional funds, to facilitate infrastructure development.
- Extending the tenor of loans is a significant change for banks traditionally financing diesel vehicles, as it exposes them to more cycles of logistics' cyclical nature.
- There is a concern about technology becoming obsolete over extended tenors, especially as battery and vehicle prices decrease, potentially affecting the renewal of contracts.
- The renewable sector has addressed similar challenges through government contracting, but the private sector requires a portfolio approach to manage market risks and provision risk capital.

Breakout Session 2: Freight Emissions Accounting in India

Objective

1. This session's goal was to discuss and envision a back-and-forth interaction with shippers and carrier organizations and attempt to get a grasp of their experiences regarding challenges faced by the logistics industry in dealing with their carbon emissions accounting.
2. The larger goal, intended in the months to follow, is to figure out how to combine the efforts being made by shippers and logistics companies and add a mechanism of incentive to it, either in the form of a PAT-style scheme or a carbon trading system developed by the Bureau of Energy Efficiency.

Topic Relevance to Freight Decarbonisation

- A significant portion of the economy is logistics. As the world's population grows, there will be a greater need to move goods, and this will lead to additional legislative pressure, primarily in Europe but also elsewhere. This pressure will eventually include carbon accounting and the need to act to truly decarbonise your emissions.
- There is essentially a road map that comprises of several pillars when it comes to decarbonising existing emissions. The first step is reporting and charting emissions since no significant action can be taken if they are not accounted for with some level of precision. Once the emissions are calculated, scientific knowledge-based targets may be established. Thereafter, different decarbonisation mechanisms and tools can be deployed to cut emissions, and various actors along the same physical supply chain may be partnered with to really construct the ecosystem needed to achieve the change.

Key Challenges in Freight Emissions Accounting

- The logistics sector in India needs a consistent emission accounting methodology for all players operating there. If the Emission framework is standardized, then the customer can understand

that one similar framework, the emissions being calculated is a standard, and thus, becomes comparable.

- Most emission calculation techniques or accounting techniques are dedicated to and focused on Full Truck Load (FTL) freight. The same tools are not usable for Less-than-Truckload (LTL) freight.
- Due to the multi-tier structure of a freight transport system, different sets of benchmarks are required for different hierarchies. As such, different emission factors are required for different types of vehicles, leading to complexities in the calculations.

Way Forward

- As of now, the framework for emissions accounting has been developed. As a following step, a few pilot projects will be conducted to test the framework, and as such, partnerships for doing so, are already in the pipeline. For instance, the framework will be run through DP World, TCI, and Safe Express, among others, to verify its applicability. Thereafter, the focus will be on the development of the disclosure framework and the capability development framework.
- Smart Freight Centre (SFC), IIM Bangalore, and The Energy and Resource Institute (TERI) are collaboratively working on developing the emission accounting framework. Principally IIM Bangalore is supporting SFC on the creation of the data framework. At the same time, TERI and SFC are working together on the disclosure framework and the capacity development framework
- Support requirements from Shippers and Carriers:
 - a) Expression of interest in running the pilot projects.
 - b) Deciding the scope for running the pilot projects.
- Once the pilots are completed, the gap assessment is done. Eventually, all the variations and feedback will be integrated into the final framework before it is submitted to the regulatory body.

ANNEXURE I – Glimpses from the Workshop



Figure 1 Key note address by SFC, NITI Aayog, MHI and SIDBI



Figure 2 Group photograph with partners and stakeholders



Figure 3 Panel Discussion on Opportunities for ZET Deployment



Figure 4 Panel Discussion on Strategic Levers for ZET Deployment at Scale



Figure 5 Panel Discussion on Innovative Financing models for ZET ownership

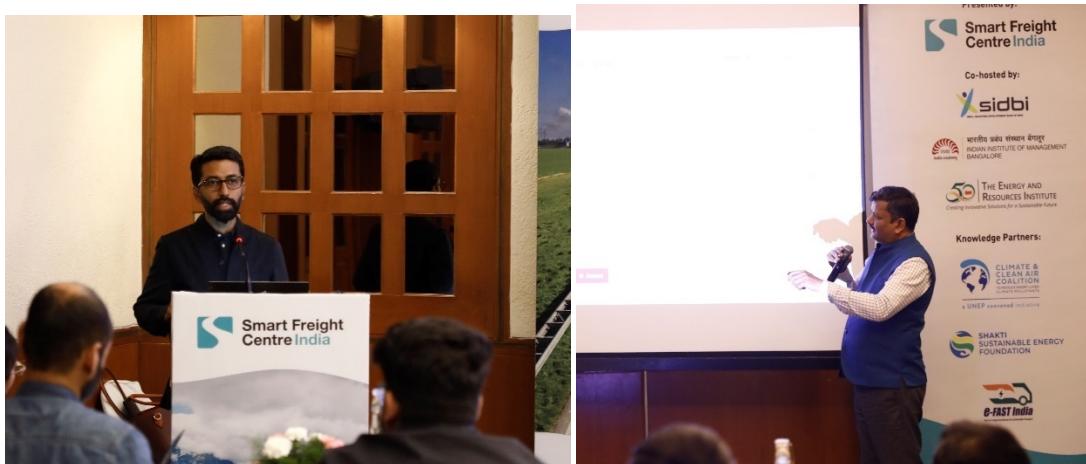
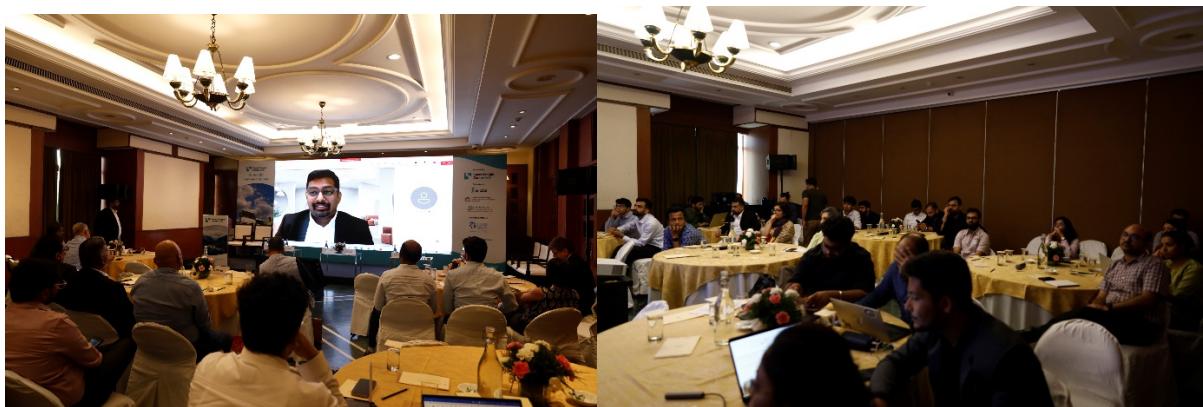


Figure 6 TERI and IIMB presentation during session on Emissions Accounting Framework for India



ANNEXURE II – List of participating Companies

- Ashok Leyland
- Maersk India
- Container Corporation of India
- Vaultus Green
- IFC
- DP World
- Amazon
- Switchlabs Automobiles
- Wholsum Foods
- JBM Group
- Sun Mobility
- VE Commercial vehicles
- Aditya Birla Group
- Bosch
- Greencell Mobility
- Pepsico
- IPLT
- MoEving
- Safexpress
- Tata Power
- Transport Corporation of India Limited
- ITC
- Reliance Industries Limited
- Power Finance Corporation
- Ckers Finance
- Mondelez
- MRF
- Creadble
- Cushman & Wakefield
- Intugine



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