



TECHNICAL SESSION 8



INTEGRATED AND SUSTAINABLE URBAN FREIGHT AND LOGISTICS

SNAPSHOT OF INDIAN LOGISTICS SECTOR

Logistics Emissions: Global



Responsible for **11% CO₂ emissions**
90% from Freight movement

Transport Emissions: India

Transport is **3rd largest** contributor to Pollution,
 Accounting for 70 and 100 percent of diesel and gasoline consumption

90% Transport Emissions come from **Road Transport**

Indian Logistics Market



4.6 billion tonnes of goods



Market size of INR 9.5 lakh crore



Provides **livelihood to >22 million people**



Accounts for **14% of GDP**

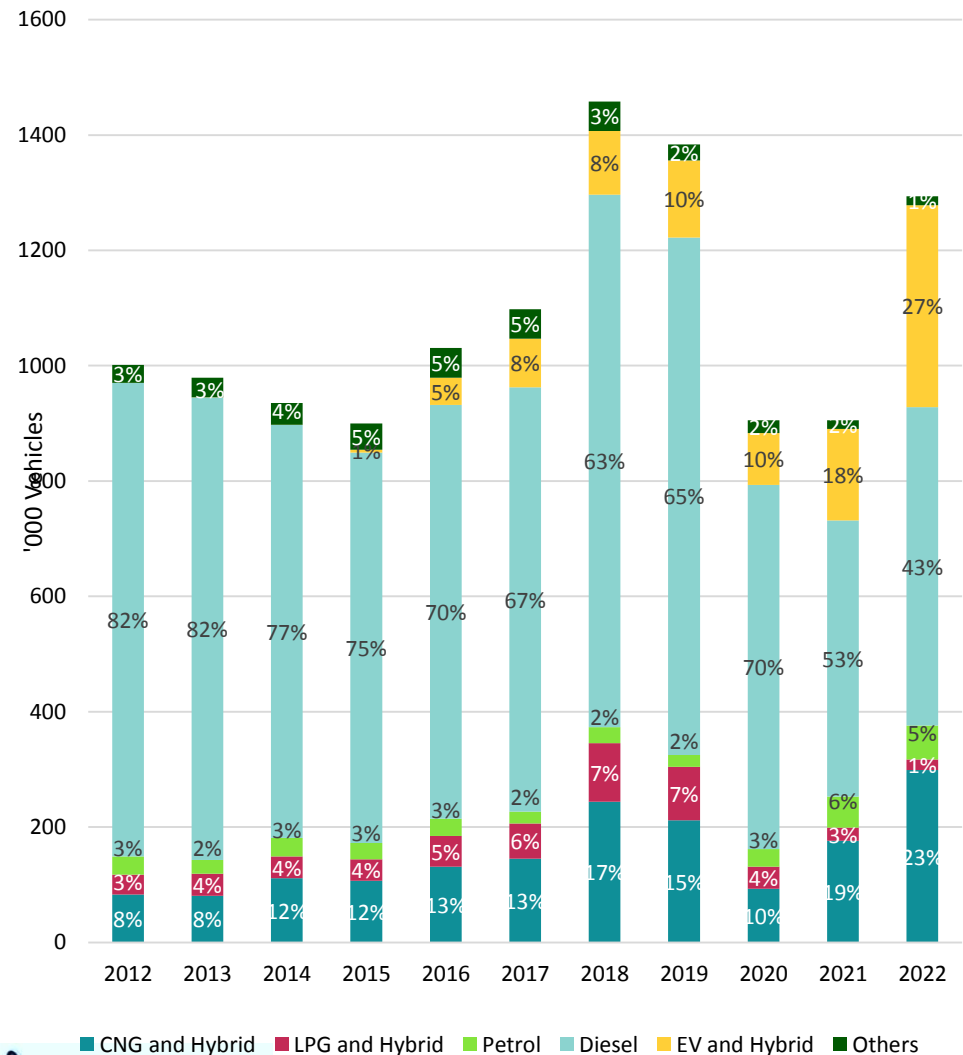


Transportation and Inventory cost account for **90% costs**

CITIES AND URBAN FREIGHT RELATED EMISSIONS

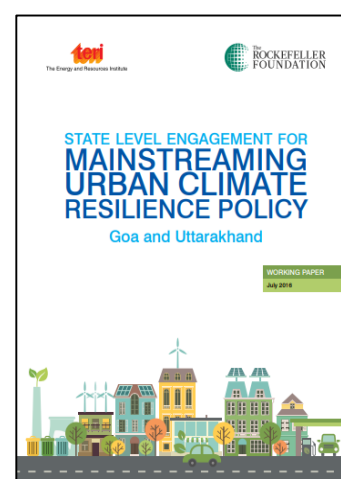
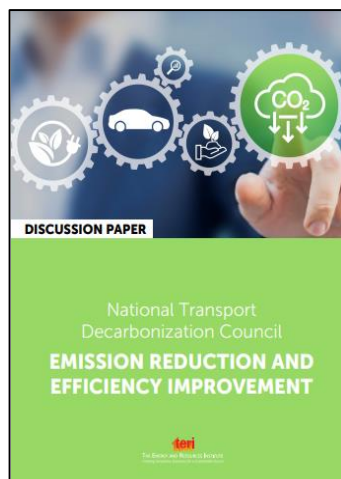
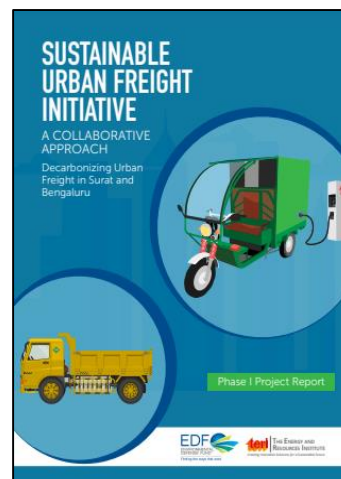
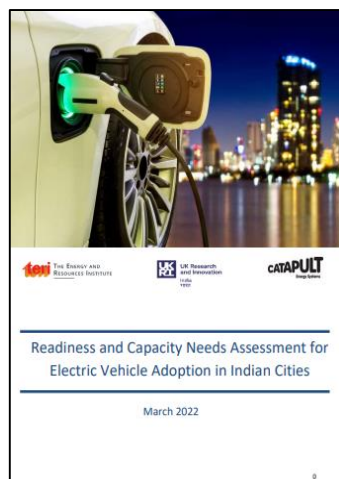
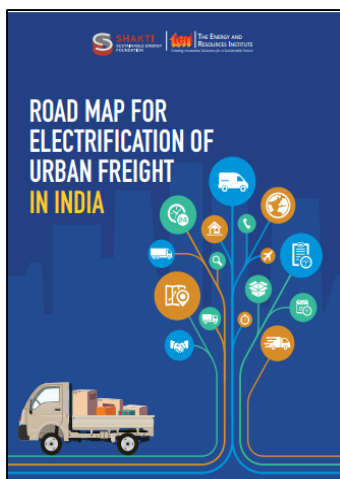
- **14 out of 20** most **polluting cities** are in India
- **Urban freight** traffic contributes up to around **15% of total vehicular movement**
- Freight movement is **largely dependent on ICE vehicles** and small share of CNG vehicles
- Urban freight significantly contributes to transport emissions, congestion, and safety
- With **growing demand** of E-commerce and Q-commerce, addressing the freight challenges is crucial

Yearly Goods Vehicle Registration in India



TERI's WORK ON URBAN FREIGHT TRANSPORT

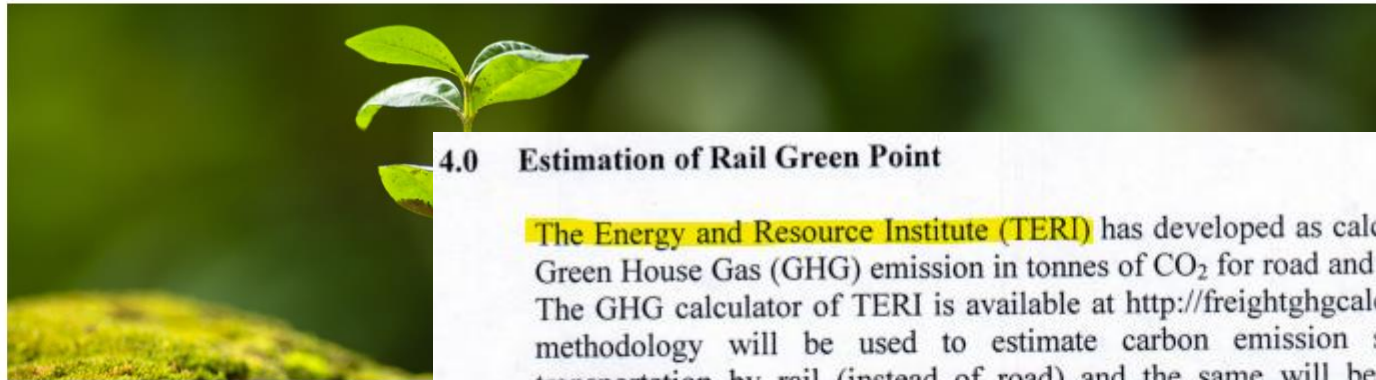
Urban Freight | Electrification | Fuel Economy | Resilient Cities



TERI's WORK ON SUSTAINABLE TRANSPORT

Long Haul Freight | Urban Freight | Public Transport | Intermediate Transport

RAIL GREEN POINTS



4.0 Estimation of Rail Green Point

The Energy and Resource Institute (TERI) has developed a calculator for estimation of Green House Gas (GHG) emission in tonnes of CO₂ for road and rail based on tonne-km. The GHG calculator of TERI is available at <http://freightghgcalculator.com/>. The same methodology will be used to estimate carbon emission saving on account of transportation by rail (instead of road) and the same will be termed as Rail Green Point (RGP).

As per latest details collected by CRIS/FOIS from TERI, the following emission factor may be considered: *(as modified from time to time)*

Mode	Emission Factor (KgCO ₂ per ton-km)
Rail	0.009
Road	0.040

This incorporation by CRIS must be done under advice to TERI considering their emission factor is being used for the calculation of Rail Green Point.

TERI's WORK ON SUSTAINABLE TRANSPORT

Long Haul Freight | **Urban Freight** | Public Transport | Intermediate Transport

Electric mobility is key enabler to decarbonise transport sector, say experts

On the occasion of World Environment Day on June 5, it is imperative for us to live sustainably in harmony with nature by bringing transformative changes through policies and our choice

New Delhi: A strategy involving high penetration of electric vehicles (EVs) could lead to a 14% reduction in the total energy requirement in 2030. The benefit is even greater in 2050 with an estimated 26% reduction, says **The Energy and Resources Institute (TERI)**.

TERI's WORK ON SUSTAINABLE TRANSPORT

Long Haul Freight | **Urban Freight** | Public Transport | Intermediate Transport

SLMG to Convert its Vehicle Distribution Fleet to EVs

Lucknow-based SLMG Beverages will be spending close to \$12 million for acquiring 2000 electric vehicles to convert

written by Aishwarya Saxena • September

SLMG has decided to convert
electric vehicles with orders for



TERI's WORK ON SUSTAINABLE TRANSPORT

Long Haul Freight | Urban Freight | **Public Transport** | Intermediate Transport

DMRC to make passengers aware about CO2 emissions related to Metro travel

The Delhi Metro Rail Corporation (DMRC) has launched a "CarbonLite Metro Travel" app for passengers to know how much carbon emissions they generate by using the Metro instead of petrol-fueled cars. "CarbonLite Metro Travel" was developed by the **Energy and Resources Institute (TERI)**, Delhi, that each kilo instead of road vehicles "results in a noteworthy reduction



TERI's WORK ON SUSTAINABLE TRANSPORT

Long Haul Freight | Urban Freight | Public Transport | **Intermediate Transport**

Chennai Metro Rail Limited to launch electric auto feeder service today

TNN / Jan 10, 2019, 08:30 IST



New Delhi: A strategy involving high penetration of electric vehicles (EVs) could lead to a 14% reduction in the total energy requirement in 2030. The benefit is even greater in 2050 with an estimated 26% reduction, says **The Energy and Resources Institute (TERI)**.

TERI'S WORK ON ELECTRIFICATION OF URBAN FREIGHT

Potential First Movers

- **Fixed fleet services:** Solid waste management vehicles, APMC freight vehicles
- **SCV Segment:** Postal services, End-mile e-commerce deliveries, Q-commerce deliveries

Potential Cost and Emission Reduction

- 14% CO2 emission reduction is attainable with higher EV penetration

Estimated Impact

75% reduction in **GHG emission** from SWM operation

98% savings in **fuel cost**

57% savings in **capital cost**

Surat Municipal Corporation to use 300 e-tempos for waste collection in city


TNN / Updated: Mar 26, 2022, 08:35 IST

 193 PTS

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New For You



With Surat Municipal Corporation's (SMC) focus now on reducing air pollution and promoting e-vehicles, it has started by deploying 300 e-vehicle for garbage collection.

ROADMAP FOR ELECTRIFICATION: INDIA POST

Mail Motor Service (MMS) in India



103 MMS Units



1493 Commercial vehicles
+ 456 Staff vehicles



Average **daily run** ranges
between **70-110 km**



Diesel dominated fleet,
contributing to greater
pollution

Total Cost of Operation for MMS Operation

Vehicle Type	ICE Vehicles(rs/km)	Electric Vehicles (rs/km)
LCV	10-12	4-10
MCV	11-18	8-15
HDV	25-32	28-30

How shifting to EVs is beneficial?

- Substantial **savings in Total Cost of Operations**
- Potential to **save 10,794 tonne tailpipe CO2 emissions annually**



KEY GREY AREAS

Target Setting	Sector specific emission reduction targets
	Commitments from Government as well as private sector
Planning & Policy	Limited integration between Master plans, Development plans and Logistics plan, Freight movement plans
	Data driven planning of warehouses/fulfilling centers
	Need of national level Freight aggregator/E-commerce policy and/or rules to optimize operations
Technology	Availability and reliability of cleaner/hybrid vehicles across segments
	Tools for transport and freight optimization
	Efficient technologies and infrastructure to facilitate seamless transfer of goods from one mode to another

CAN ASI APPROACH WORK FOR URBAN FREIGHT?

Avoid

- Avoid end mile
- Set up collection centers
- Regulations on delivery hours

Shift

- Go local
- Shift to NMT/EVs for end mile

Improve

- Data driven planning
- Vehicle and Fuel technology
- Seamless intermodal transfer
- Dedicated freight circulation areas
- Route optimization/minimum distance
- Spatial Planning

SESSION OBJECTIVE



Policies, guidelines, mandates, etc. to facilitate adoption of clean vehicle technologies and efficient logistics solutions



Effective planning measures to enable seamless and efficient freight movement in the city



Data collection, data analysis, and modeling as a tool for robust planning



Private sector contribution and commitment towards sustainable urban freight



Challenges and Financial viability of clean technology vehicles



Incentive schemes and support mechanisms for transition to efficient city logistics and zero emission vehicles