Priorities to move forward on Transport Decarbonisation

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TRANSFORMATIVE ACTION ON CLIMATE CHANGE MITIGATION AND ADAPTATION

- Power
- Energy Efficiency
- Transport
- Climate Policy
- Clean Energy Finance
Sustainable Transport

- Low Carbon Mobility Systems + Cities
- Vehicle and Fuels
  - Electric Mobility Initiative
- Low Carbon Freight
Transport Decarbonisation Pathways

CLIMATE ACTION TRACKER (2020) “Decarbonising the Indian Transport sector”
Transport Decarbonisation Pathways

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Transport Decarbonisation Pathways

• **Challenges**
  – Avoid and Shift measures require a multi-systems approach – poor policy frameworks make it high effort
  – Full electrification of sales by 2035/2040 is necessary
  – Long-Haul freight electrification remains a challenge – pathways are not clear
  – Alternative fuel technologies and their benefits are uncertain

• **Opportunities**
  – Electric Vehicle technology is robust, battery prices continue to fall
  – India’s cities are yet to be build – better planned cities can lower emissions
  – Public Transport services are used extensively, and needs expansion
  – India’s extensive rail network could support long-haul electrification
Policy Context and Priorities

1. Electric Vehicles
2. Low Carbon Freight
3. Low Carbon Mobility and Cities
4. Fuels and Fuel Efficiency
Electric Vehicles
Background

1. TCOs are close to ICE on Public Bus, Taxi’s, Freight Delivery Vehicles (WRI, TERI)
2. Battery Prices are falling, more with localisation (BNEF, ICRIER)
3. Tomorrow’s auto industry is still unbuilt (CEEW)
4. Clear policies have led to industry commitments (EU, China, US)
Mandates lead to Commitments

- California’s Zero Emission Vehicle (ZEV) and Truck Program
- China’s New Energy Vehicle Mandate
- EU’s CAFE norms
- UK ICE Ban by 2030

**Industry Commitments**

- Jaguar full electric by 2025 in EU, 2030 – UK, 2036 - World
- Ford full electric by 2030 in EU
- BMW to be 2/3 Electric 2030
- GM to be Carbon Neutral by 2040
- Toyota’s first BEV announcement
Policy Context and priorities | Electric Vehicles

Policy Context
- FAME 2
- Battery Mission
- State Policies

Priorities
- Manufacturing
  - Mandates for Electrification 2035
  - Focus on HDV electrification
- Adoption
  - Incentives to support adoption / states
  - Support to pilots and fleet electrification
- Charging Infrastructure
  - Funding CI roll out – approaches for PPP
  - Evolving processes and regulations
- Awareness
  - Capacity building and awareness

Major Actors
Industry Departments
Transport and Urban Departments
DISCOMs and Regulators
Auto Manufacturers
Fleet Operators
Low Carbon Mobility and Cities
Background

1. Cities of the future are yet to be built
2. Urban planning (compact / TOD) can avoid trips and promote low-carbon modes of transport – Public Transport, shared and Non-motorised modes
3. Public Transport expansion needs funding, planning, innovation, and capacity
4. Policy Framework for Low Carbon urban transport needs a revisit
   1. Fragmented executive functions and finances
   2. Absent planning and regulatory functions
   3. Incomplete systems – Demand Management measures
   4. Solutions today focus on mega cities
Policy Context and priorities | Low Carbon Mobility

Policy Context

- National Urban Transport Policy
- UMTA - UTF
- National Metro - TOD policy
- Central Missions

Priorities

- Implementing Urban Planning (CEPT, NIUA, CF)
  - Transit Oriented Development
  - Town Planning Schemes, Form Based Codes
- Expand and integrate Public Transport – innovation, capacity, private participation, information, obligations, finance (WRI, SGA)
- TDM– Parking, Congestion Charge (ITDP)
- Shared mobility regulations / regulator
- Enabling an integrated state approach
  - Public Authority for Urban Transport
  - Improve revenue, finances, and capacity
- Clean Air Zones – EV, PT, NMT, TDM together

Major Actors

State Urban Development and Transport Depts.
City Governments
Traffic Police
MoHUA – Metro, Smart Cities, AMRUT
MoORTH – STUs, Road Safety
Fuels and Fuel Efficiency

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Background

1. Several alternative fuel options – Biofuels, Natural Gas, H-FCs whose emissions in Indian conditions, cost and feasibility is unclear

2. FE Norms not operational
   - Tyre EE norms are ready – testing facilities
   - HDVs, MDVs,
   - CAFE for 4Ws in place (ICCT, TERI)
**Policy Context**
- National Policy on Biofuels
- Fuel Efficiency Norms
  - HDVs
  - MDVs
  - CAFE

**Major Actors**
- Ministry of Power / Petroleum and NG
- BEE, PCRA
- Auto Manufacturers
- Tyre Manufacturers

**Policy Context and priorities | Fuels and Fuel Efficiency**

**Priorities**
- Revise and complete FE Norms - EVs
  - Tyre Efficiency Norms
  - Implement HDV norms
  - CAFÉ Norms – driving EVs
- Examine alternative fuels closely
  - Life Cycle Assessment
  - Carbon Emissions
  - Economic viability
  - Lock-in
  - Mode specific Infrastructure needs – Steel and Cement
Low Carbon Freight
Background
1. Freight will constitute ~50% of transport emissions in 2050 (IMC)
2. Existing rail network across the country – congested (35%)
3. Rail freight subsidises passenger travel
4. 1/3rd of freight is coal
5. Rail electrification and capacity improvement plans (TERI)
Policy Context and priorities | Low Carbon Freight

Policy Context
• National Logistics Policy
• National Rail Plan

Priorities
• Examine strategies for long term increase in railway’s carrying capacity
• Developing supportive infrastructure for multi-modal integration
• Improve competitiveness of rail tariffs – Cross subsides from polluters need consideration
• Explore the potential to plan Rail, Road and Air together – national authority

Major Actors
Ministry of Railways
Indian Railways
Ministry of Road Transport and Highways
Ministry of Civil Aviation
Thank you!

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CAT – Passenger Scenarios

Figure 2. The modal split in urban passenger transport in 2050 in the Rail, the Road Focused and Current Policies scenarios.

Figure 3. The modal split in non-urban passenger transport in 2050 in the Rail, the Road Focused and Current Policies scenarios. Short- and long-haul refers to domestic aviation.
Figure 4. The modal split in long-haul freight transport in 2050 in the Rail, the Road Focused and Current Policies scenarios.

Figure 5. The modal split in long-haul freight transport in 2050 in the Rail, the Road Focused and Current Policies scenarios.