ROLE OF INDIAN RAILWAYS IN PROMOTING SUSTAINABLE MOBILITY

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Conserving Now, Preserving Future
Top 7 freight corridors of India

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~50% Of Total Indian Freight traffic
Contribution of Railways to GHG emissions

Share of Railways in CO₂ emissions - Global Transport

- 3.5% Rail
- 10.6% Aviation
- 10.2% Navigation
- 1.9% Pipeline Transport
- 73.5% Road
- 5.1% Other

Source: UIC, 2013

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India Share of CO$_2$ emissions as per BUR

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- Energy Industries: 58.28%
- Manufacturing & Construction: 19.91%
- Transport: 12.45%
- Other sectors: 6.12%
- Fugitive Emissions: 3.24%

Share of Railways in India's Emissions: ~4%

### Emissions by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Million tCO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>164.32</td>
</tr>
<tr>
<td>Civil Aviation</td>
<td>12.49</td>
</tr>
<tr>
<td>Railways</td>
<td>7.50</td>
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<tr>
<td>Navigation</td>
<td>3.70</td>
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</tbody>
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Ministry of Environment, Forest and Climate Change
Government of India
### Key Metrics of Sustainability

<table>
<thead>
<tr>
<th>Mode</th>
<th>Railways</th>
<th>Road</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Specific energy Consumption</td>
<td></td>
</tr>
<tr>
<td>Passenger (Terrajoule/BPkm)</td>
<td>71</td>
<td>1338</td>
</tr>
<tr>
<td>(Taxis)</td>
<td>196</td>
<td>(Buses)</td>
</tr>
<tr>
<td>Freight (Terrajoule/BTkM)</td>
<td>91</td>
<td>1125</td>
</tr>
<tr>
<td>Operating costs ($/tonne km)</td>
<td>0.028</td>
<td>0.043</td>
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</table>
Indian Railways contribution towards meeting Sustainable Development Goals

- Aggressive measures towards meeting India’s NDCs
  - Electrification, Energy efficiency (energy efficient locos, EMUs with regenerative braking)

- Renewable Energy Deployment in Railways
- Use of Alternative Fuels (biodiesel, CNG/LNG)
Indian Railways contribution towards meeting Sustainable Development Goals

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- Bio toilets for discharge free railways
- Cleanliness drives at all railway stations
- Water conservation measures
- Greening production units
Pillars of Environmental Sustainability for Indian Railways

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Environmental Sustainability in IR

Technology  Institution  Finance
Key Initiatives taken

- **Institution**: Formation of Environment and Housekeeping Directorate at Board and divisional level

- **Technology**: Indian Railways has pioneered use of low carbon technologies
  - DEMU solar powered trains, CNG for traction purposes
  - Solar on coaches, biodiesel implementation

- **Finance**: Policy to earmark 1% of project costs for environmental initiatives

- **Capacity Building**: Capacity building and training programs for Energy Efficiency and climate change sensitization
Indian Railways calls for Transport Sector Low Carbon Pledge

• **Policies to stimulate Modal shift** – Policies to promote *rapid modal shift* to accelerate progress towards *low-carbon freight transport*.
  ✓ Setting upper limit of tonnage for moving cargo through road transport
  ✓ Incentivising freight transport through low carbon mode
  ✓ Policy intervention to factor mitigation costs associated with emission intensive mode of transport

• **Use of Renewables** – Promote renewables in *Railways* to achieve net decarbonisation.

• **Sustainable transportation** – promote *green practices* for freight transportation for businesses and disclose information about the *emissions footprint* of freight transport.
Thank You