

Description of action (: Achieve net zero carbon emissions)

Procure diverse RE mix for its traction and non-traction network

Undertake initiatives in the area of energy efficiency for optimising energy demand.

100 % Railway electrification by replacing diesel with electricity.

Use of 5% blending of bio-fuels in traction diesel fuel to reduce emissions due to diesel.

Higher tree plantation to increase carbon sink.

[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

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[up to 500 words, please upload supporting strategy documents as needed]

India has a population of over 1.3 billion people spread over a vast geography. The transport sector is and will continue to remain a critical enabler of development and would also have to grow in a sustained manner for the country to meet its developmental objectives. Indian Railways plays a key role in the economic and social development of the country by providing safe, efficient and sustainable mobility. Initiatives are aligned with both:

1. Paris Agreement: Limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.
Achieve 33-35% reduction in emissions intensity of its GDP from 2005 level
Achieve 40% cumulative installed capacity from non-fossil fuel-based energy resources

Indian Railways, one of the largest electricity consumers in the country, has decided to achieve Net Zero carbon emissions by 2030 through continuous efforts. This objective will be fulfilled by focusing on energy security, enabling consumption efficiency and ensuring greening of supply. The organisation plans to electrify railway tracks, develop dedicated freight corridors, and modernise its stations which will increase power demand and necessitate the need for additional supply from green energy sources such as solar and wind-based power plants.

Indian Railways (IR) has about 51,000 hectares of vacant land with the potential of setting up ~20 GW of renewable energy. Indian Railways has installed 103.4 MW wind-based power plants and 6.7 MW of ground-mounted solar PV plants. To utilise the available rooftop space on different stations and service buildings, IR has installed 117.53 MW solar capacity till July 2021. Indian Railways is also planning to deploy new technologies like battery storage to diversify its energy portfolio. Additionally, IR will procure Renewable energy through open access where installation of RE plants is challenging.

To achieve its target of reducing carbon emissions by ~35% by 2030, Indian Railways has decided to target 100% electrification of broad-gauge railway network by FY24. The speed of electrification has vastly been scaled up over the last 5 years to achieve this target.

To optimise its energy demand, Indian Railways is taking multiple energy efficiency initiatives across its traction and non-traction network. Along traction network, Indian Railways will adopt energy efficient rakes, capacitor banks, creation of smart rail energy grids, replacement of short duration train with EMU/MEMU/ DEMU, track electrification, End-on-Generation to Head-on-Generation. Head-on-generation (HOG) allows electrical power for catering hotel load of train to be met directly from locomotive power, and has already led to projected savings of more than INR 3425.1 crores per year. In the non-traction network, Indian Railways will replace all lights with LED lights and higher star rated appliances, deploy occupancy sensors, building management systems, adopt Green Building Design & Green Railway Stations Rating system, and use variable-voltage/ variable-frequency for Lifts/Elevators.

Indian Railways has identified the following NDCs are:

- Enhance the share of the Railways in the overall land-based freight transport from the present 36% to 45% by the year 2030 Use of 5% blending of bio-fuels in traction diesel fuel.
- Improve water use efficiency by 20% up to 2030
- Tree Plantation to increase Carbon Sink.

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I. 1. Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts?

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