Greenwashing Indian Railways

Why in News?

Recently Indian railways has exported unused diesel locomotives to African countries.

What is the status of Indian electrification?

- **First electric train** - After commencement of first Railway service between Mumbai & Thane in 1853, first electric train was run between Mumbai & Thane in year 1925.
- **Five-year plans** - First 5-year plan (1951-56) targeted electrification of 141 RKM of tracks and 12th five-year plan (2012-17) had a challenging target of electrification of 6500 RKM of tracks.
- **Mission 100% Railway electrification** – India has planned to electrify entire broad-gauge network routes of Indian Railways by March 2024.
- **Nodal Agency** - The Central Organization for Railway Electrification (CORE) along with other organizations.
- **Electrification Status** - Indian Railways had electrified 96.99% of the total broad-gauge network of Indian Railways (66,413 rkm, including Konkan Railway) as on 1 October 2024.
- The entire electrified mainline rail network in India uses 25 kV AC; DC is used only for metros and trams.
- **Objectives -** To provide environment friendly, green and clean mode of transport to the people.
- To use of renewable energy, especially solar, by making use of the huge land parcel available along the railway tracks.

What are the benefits of railway electrification?

- Electrification will provide energy efficient, eco-friendly mode of transport and also improve system throughput by modernization of the railway system.
- **Better railway efficiency** - Mission Electrification will result into seamless (end to end) train operation on electric traction.
- **Enhance connectivity** - Prioritizing electrification of high-density network (HDN), high utilized network (HUN) and last mile connectivity/port connectivity routs here started giving returns early.
- **Increased speed** - Electrification will help in increasing average speed of Freight Trains thereby help in achieving objective of "Mission Raftar".

Mission Raftaar is a 'Mission' envisaged for speed enhancement and to achieve a target of doubling average speed of freight trains and increasing the average speed of Superfast /mail/Express trains by 25 kmph.

- **Greater freight movement** – It enables haulage of heavier freight and longer passenger trains at higher speeds.
- **Financial savings** - Electrification plan will enable the state-owned railway to save an estimated Rs 264bn on its annual fuel bills.
- **Employment** - About 5.5 lakh man years will be generated during execution period of Mission electrification.
- **Reduced forex bill**- saving of foreign exchange by reducing the import of crude oil.
- **Reduced environmental pollution** – It reduces the emission of carbon pollution from diesel and switch over to renewable sources of energy such as solar and wind.

What are the issues with electrification of Indian Railway?

- **High Costs** - The electrification project is estimated to cost around Rs 1300bn.
- **Redundant Diesel Locomotives** -The plan will make about 4000 serviceable diesel locomotives redundant.
- As of now, there are about 760 diesel locomotives idling across the network, many of which have a residual life of over 15 years.
- **Economic Viability** - The average cost of transportation on many routes may increase due to electrification.
- **Technical Challenges** - The transition from diesel to electric traction requires significant infrastructure changes and upgrades.
- **Environmental Impact** -The process of manufacturing and installing new electric locomotives and infrastructure also has an environmental impact.
- **Insignificant pollution reduction** – Of the 70% of total diesel oil consumption in the country was by the transport sector , the Share of the Railways was just 3.24%.
- Trucks consume 28% and Agricultural sector 13.2%.
- **Untenable environmental benefits** - Electricity is a secondary source of energy which needs to be generated by expending a primary source of energy from fossil fuels such as coal, oil and natural gas.

  Nearly 50% of the electricity generated today in the country is through coal-fired thermal plants.

- **Pollution shift** - Switchover to electric traction merely shifts the pollution caused by diesel locomotives to the source of power generation in a more concentrated form.

What lies ahead?

- Increase the share of renewable energy production for railway electrification.
- Transcend to high-speed magnetic levitation system and explore the possibility of hyperloop.

Reference

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