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## Indian Railways to Use More Renewable Energy

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### Why in News

The Indian Railways has decided to be **self-reliant for its energy needs** by utilizing its vacant lands for **Renewable Energy** (RE) projects.

It will **utilize solar energy** for meeting its **traction (action of drawing or pulling something over a surface) power** requirements.

### Key Points

- In January 2020, it was announced that the **entire network** of the Indian Railways will run on **electricity by 2024** and become a **net-zero emission network by 2030**.
- Indian Railways is adopting an **innovative concept of installation of solar projects along operational railway lines**. This will help in:
  - Preventing encroachment.
  - Enhancing the speed and safety of trains.
  - Reduction of infrastructure costs due to direct injection of solar power into the traction network.
- **Railway Energy Management Company Limited** (REMCL) is working continuously to further proliferate the use of solar energy on mega-scale.
- With these mega initiatives, Indian Railways is leading **India's fight against climate challenge** and is taking significant steps towards meeting its ambitious goal of being a net-zero **carbon emissions** organisation and meeting India's **Intended Nationally Determined Contributions (INDC) targets**.
- This would also help in making Indian Railways a **complete 'Green mode' of transportation** and '**Atmanirbhar (energy self-sufficient transport organisation)**'.

- **Achievements:**

- Energy procurement from various solar projects like **3 MWp solar plant** set up at Modern Coach Factory (MCF) Raebareli (Uttar Pradesh).
- About 100 MWp **rooftop solar systems** on various stations and buildings of Railways.
- A **project of 1.7 MWp** near Bina Traction Sub Station, Bina (Madhya Pradesh) connected directly to **Overhead Traction System (OTS)** will be commissioned shortly.
  - This is the **first of its kind project in the world** authorised by Indian Railways in collaboration with **Bharat Heavy Electricals Limited (BHEL)**.
    - BHEL is one of the seven **Maharatna** companies.
    - The project was undertaken by BHEL under its **Corporate Social Responsibility (CSR)** scheme.
  - It involves the adoption of innovative technology for **converting Direct Current (DC) to single-phase Alternating Current (AC)** for feeding directly to Railway's overhead traction system.
  - It can produce approximately 25 lakh units of energy annually and will save around Rs. 1.37 crore for Railways every year.

## **Overhead Traction System**

- **Traction system** causes the propulsion of a vehicle in which tractive or driving force is obtained from various devices such as diesel engine drives, steam engine drives, electric motors, etc.
- When this **power supply is drawn from an overhead line system**, it is called an Overhead Traction System.

## **Railway Energy Management Company Limited**

- It was incorporated on **16<sup>th</sup> August 2013** under the **Companies Act 1956** as a **joint venture company** of Ministry of Railways.
- **Objective:** To tap the business potential in the energy sector including green energy, power trading etc. by setting up renewable energy wind power projects, etc.

**Source: PIB**