

Head on Generation Technology

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Source: *PIB*

Indian Railways have come up with an energy-efficient and environment-friendly innovative solution to address the issues of air & noise pollution and energy efficiency in the running of passenger trains. An improvised converter has been developed, which is fitted in Electric locomotives which can replace the diesel generators. **It uses power from overhead centenary to feed auxiliaries in the coaches hauled by Electric locomotives. It saves up to 1 Million liters of diesel per train per annum.**

Present status of the Rail engines

- Premium passenger trains fitted with Air-Conditioned coaches and **running traditionally on the End-on-Generation (EOG) system** are also contributing towards air and noise pollution.
- These trains are using **2 diesel power cars** for feeding power to air-conditioning and lighting load in the passenger coaches which produce an **unbearable noise of around 100dB.**
- Further, these power cars guzzle on an average of **3000 liters of diesel per trip per train contributing to the pollution in the cities.**

Hence It is planned to convert balance End-On-Generation (EOG) LHB rakes into the HOG system on an accelerated pace to harness the benefits of energy-efficient and environment-friendly technology.

Brief about Head on Generation system:

- **Head on Generation system is an electrical power supply system where electrical power for catering hotel load of the train, which includes Train Lighting, Air conditioning, Lighting, fannage and other passenger interface requirement working on the electrical power supply.**
- This scheme is a widely used power supply system by the Railways world over.
- The power in this system is received from the locomotive. With the introduction of this scheme heavy under-slung power generating, equipment gets eliminated.
- Further, it also reduces the use of Diesel sets employed in power cars at the End on Generation system.

Advantages of the HOG system

- Reduction in noise- from 100dB noise to noiseless,
- Significant reduction of CO₂ (over 2500Ton) & NO_X(over 10Ton) emissions till now,
- Reduced Diesel Consumption leading to huge savings in operational costs to the tune of over Rs.1100 crores per annum,
- Economical- EOG Power Rs 22/unit, HOG Power Rs 6/unit.