

Going green: India gets its first solar-powered train

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In a drive towards making the Indian Railways environment-friendly, Railways Minister Suresh Prabhu inaugurated the operation of India's first solar-powered diesel electric multiple unit (DEMU) coach at Safdarjung railway station here on Friday.

The country's first 1600-horse power DEMU coach has a solar-powered hotel load system, installed and commissioned by Jakson Engineers.

According to the official statement, the solar rooftop system will generate 7,200 kilowatts (KW) per system per year, and it will be used for powering internal lights, fans, and other electrical systems of the coach.

The project will help offset carbon emission by 9 tonnes per coach per year, and also save about 21,000 litres of diesel for a solar-powered DEMU with six-trailer coaches, thereby saving ₹12 lakh every year.

The hotel load system is electrical load caused by all systems on a vehicle (especially a marine vessel or a truck) for purposes other than propulsion.

Jakson was awarded this project by the Indian Railways Organization for Alternate Fuels (IROAF), a unit of Indian Railways that



Journalists check out the battery panel of a DEMU train at the Safdarjung railway station in New Delhi on Friday

PHOTO: PTI

works to promote bio-diesels and other environmentally benign alternative fuels for India's rail network.

Sixteen solar panels of 300 Wp (watts at peak capacity), manufactured by Jakson at its solar module manufacturing plant in Greater Noida power, have been installed on the roof of the coach.

"It is not an easy task to fit solar panels on the roof of train coaches that run at speeds of 80 km per hour. Our engineering skills were put to the test during the execution of this rooftop solar project," said Sundeeep Gupta, vice-chairman and managing director, Jakson Engineers Ltd.

This is the first instance of a diesel-run passenger train fitted with a solar rooftop system with a battery backup. The system is capable of developing up to 20 kWh (kilowatt hour or units) per day throughout the year, according to the statement.

Surplus power generated during peak hours will be stored in a battery system. It will help in generating data for research on adapting the system for a roll-out on all trains of the Indian Railways. The solar system has been fitted with an anti-theft mechanism, which can withstand trains running at more than 100 km an hour, the statement added.

RUNNING ON GREEN TRACK

7,200 KW

of solar energy generation annually per system per year



₹12 Lakh

of cost savings annually for 25 yrs

due to 21,000 litres of diesel saved per train with 6 coaches

9 tonnes

of reduction in CO₂ generation per coach per year



In March, Prabhu had said the Indian Railways aimed to save ₹41,000 crore on electricity expenses by switching to solar energy over the next 10 years. The ministry had prepared 'Mission 41K' to save electricity consumption charges by betting big on solar energy.

The minister had said efforts were on to 'mop up' ₹17,000 crore through non-fare revenue modes and bring down energy consumption by 15 per cent.

Prabhu said the reduction in power consumption had saved ₹4,000 crore and ₹41,000 crore would be saved by generating 1,000 Mw of solar power in the next five years.