INDIAN RAILWAYS

MAKING RAILWAY STATIONS MORE ENERGY EFFICIENT

Net Zero Energy Vision

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Overview

In view of increasing energy demand and power tariffs, Indian Railways has embarked on an aggressive mission to produce greener energy and tap opportunities for energy savings. As a part of its wider low-carbon growth strategy, Indian Railways plans to reduce emission intensity by 33 percent over the next 15 years by improving rail traction energy and fuel efficiency. It also plans to develop 1 GW of solar energy and 500 MW of wind power by 2020.

Energy Efficiency – The First Fuel

Indian Railways has decided to formulate energy efficiency plans to reduce its energy consumption, thereby reducing its energy bill by INR 5,000 crores over the next five years. It has also notified energy consumption targets for all 16 zones across both traction and non-traction categories as a part of the Perform, Achieve and Trade (PAT) scheme of the Bureau of Energy Efficiency. Energy audits have also been conducted at various stations, workshops and factories to identify potential interventions for energy conservation and efficiency improvement.

In addition, the Electrical Energy Management Directorate of the Ministry of Railways has rolled out several guidelines for Zonal Railways for reducing the energy intensity and electricity consumption. These include:

- Installation of 100 percent LED lights at all railway buildings and installations.
- Use of 3-phase energy efficient locomotives.
- Net zero energy building concepts for new railway stations.
- Use of BEE Star-rated equipments in railway applications.
- Energy audits of large load centres to assess demand profile and actual end use to map energy consumption pattern.
- Implementation of energy efficiency related works in partnership with Energy Efficiency Services Limited.

Towards Net Zero Energy Buildings

The U.S.-India Partnership to Advance Clean Energy - Deployment Technical Assistance (PACE-D TA) Program collaborated with the Ministry of Power to guide India's vibrant building sector towards net zero energy building (NZEB) status. The interventions focused on creating awareness of NZEBs in India through a knowledge portal (http://nzeb.in/) and pilot projects. In addition, the Program supported Indian Railways to develop a NZEB vision to make nearly 400 railway stations energy efficient. This will help Indian Railways to incorporate energy efficiency initiatives such as passive building design of railway stations at the tender planning stage itself.

Technical Support to Indian Railways

1. Developed NZEB vision for 400 stations redevelopment plan of Indian Railways.
2. Prepared guidelines for green and NZEB railway stations redevelopment.
3. Prepared NZEB tender specifications and evaluation process.
4. Designed Measurement and Verification approach.
5. Organized roundtables and workshops for NZEB knowledge dissemination.

Indian Railways has already issued a notification for incorporating the concept of NZEB in the 400 stations that are being considered for redevelopment. NZEB requirements will be included in all tender documents and detailed guidelines will be issued for the evaluation of the tenders as well as for measurement and verification of NZEB requirements.

About the USAID PACE-D TA Program

The Partnership to Advance Clean Energy – Deployment Technical Assistance (PACE-D TA) Program is a part of the overall PACE initiative, the flagship program under the U.S.-India Energy Dialogue. The six year initiative is led by the U.S. Agency for International Development and the U.S. Department of State and implemented in partnership with the Ministry of Power and the Ministry of New and Renewable Energy.

In the first five years, the PACE-D TA Program focused on three key components: energy efficiency, renewable energy and cleaner fossil technologies, with the overall aim of accelerating the deployment of clean energy, expanding U.S.-India trade and investment linkages, and facilitating knowledge exchange.

The Program's focus in the sixth year is largely on accelerating rooftop solar deployment across eight states: Andhra Pradesh, Assam, Haryana, Maharashtra, Punjab, Telangana, Uttar Pradesh and West Bengal. The Program is working with a range of stakeholders in the focal states to build and strengthen the institutional capacity of respective state distribution utilities and state nodal agencies to design, deploy and monitor rooftop solar programs. It is also assisting state electricity regulatory commissions in these states to design an enabling regulatory environment for faster uptake of rooftop solar.

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