

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 2872
TO BE ANSWERED ON 20.12.2023**

REDUCING ENERGY CONSUMPTION IN OPERATION

2872. SHRI PARBHUBHAI NAGARBHAI VASAVA:

Will the Minister of RAILWAYS be pleased to state:

(a) the steps taken by the Railways to reduce energy consumption in its operations;

(b) whether there is regular monitoring of such steps by the authorities concerned, if so, the details thereof;

(c) whether Railways are regularly overhauling its machineries and wiring system for saving energy and to prevent accidents and if so, the details thereof during the last three years; and

(d) whether Railways encourages its employees through appreciation/award or rewards who contribute towards energy savings in its operations or through suggestions, if so, the details thereof?

ANSWER

**MINISTER OF RAILWAYS, COMMUNICATIONS AND
ELECTRONICS & INFORMATION TECHNOLOGY
(SHRI ASHWINI VAISHNAW)**

(a) to (d): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) OF UNSTARRED QUESTION NO. 2872 BY SHRI PARBHUBHAI NAGARBHAI VASAVA TO BE ANSWERED IN LOK SABHA ON 20.12.2023 REGARDING REDUCING ENERGY CONSUMPTION IN OPERATION

(a) Indian Railways (IR) is committed to take steps for energy conservation and to increase energy efficiency. IR has also issued a comprehensive policy for adoption of energy efficiency measures in non-traction applications which, inter-alia, covers sustainable buildings; cloud based data monitoring and management portal; and energy efficiency in equipment and appliances. The policy also provides for procurement of Bureau of Energy Efficiency (BEE) 5 star rated equipment.

Some of the measures taken by IR for energy conservation are as follows:

- (i) Railways has introduced Insulated-Gate Bipolar Transistor (IGBT) based 3-phase propulsion system with regenerative braking in Electrical Multiple Unit (EMU) trains, Mainline Electrical Multiple Unit (MEMU), Kolkata Metro rakes and Vande Bharat Trains to conserve energy during the operations.**
- (ii) Production Units have completely switched over to production of energy efficient three-phase electric locomotives with regenerative braking features.**
- (iii) Provision of energy efficient Light Emitting Diode (LED) lighting in Railway installations including Railway stations, service buildings, coaches, EMUs/MEMUs for reduction in electricity consumption.**
- (iv) Use of energy efficient Brushless Direct Current (BLDC) motor fans in coaches and buildings.**
- (v) Conversion of End on Generation (EOG) trains into Head On Generation (HOG) system in trains to reduce diesel fuel consumption in power cars as well as noise and air pollution.**
- (vi) Regular energy audits at consumption points.**

Contd.2/..

- (vii) Regular counseling of Loco pilots for use of coasting, regenerative braking features and switching off blowers of electric locos in case yard detention is more than 15 minutes to save energy.**
- (viii) Locomotive pilots are trained during their initial training as well as during promotional training and refresher courses for saving of energy/fuel to achieve better energy/fuel efficiency by good driving technique and better road learning.**
- (ix) Guidelines have been issued for provision of energy saving mode on three phase locomotives wherein power supply to Oil Cooling Blower (OCB), Traction Motor Blower (TMB) and Scavenge Traction Motor Blower (ScTMB) will be switched off through software logic.**
- (x) Trailing locomotives of Multi Units (MU) hauling light loads are switched off to save energy.**
- (xi) Provision of 750V external power supply at washing/sick lines for maintenance and testing of LHB coaches.**
- (xii) IR has been made as designated consumer as part of Perform, Achieve and Trade (PAT) by Bureau of Energy Efficiency (BEE) for improving energy efficiency.**
- (xiii) Provision of Automatic Power Factor Controller panels in High Tension/Low Tension panels.**
- (xiv) Use of micro-controller based automatic platform lighting management system at stations as per train services/passenger requirements.**
- (xv) Use of capacitor banks in traction sub-stations to maintain near unity power factor for energy saving.**
- (xvi) Use of timer on high mast tower lightings/street lighting/circulating area of Railway stations.**
- (xvii) Replacement of conventional geysers with solar geysers.**
- (b) The energy conservations steps taken by Railways are monitored regularly at Railway Board as well as the Zonal Railways/Production**

Units. In this connection, regular inspection and monitoring of energy consumption of major load centres in Divisions and Workshops is also undertaken.

- (c) Regular overhauling of Machinery and Plants as per requirement and maintenance schedules is carried out over Indian Railways. Regular maintenance of machineries/ equipments including their overhauling is carried out in accordance with the laid down schedules at the designated work places. The expenditure incurred on maintenance of Machinery and Plants/Equipments in last three years is as follows:**

FY 2020-21-Rs. 8157.82 Crore

FY 2021-22-Rs. 8641.56 Crore

FY-2022-23-Rs. 9631.38 Crore

- (d) Employees are awarded/ appreciated based on their contribution towards energy savings in Railway operations. Employees of divisional wings are awarded based on their performance in maintenance, Operation etc. including energy saving initiatives and efforts. "Electrical Shield" is provided to Zonal Railways/ Divisional Wings, where there is an included criterion of Energy Efficiency indices. Awards are also given to children of employees every year during celebration of "National Energy Conservation Week" in the month of December by conducting essay and drawing competition on energy saving. Further, individual Railways are rewarded under different categories for their efforts in the field of energy conservation through National Energy Conservation Awards by the Bureau of Energy Efficiency (BEE), under Ministry of Power.**
