

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

**LOK SABHA  
STARRED QUESTION NO. 447  
TO BE ANSWERED ON 24.07.2019**

**ENVIRONMENT FRIENDLY TECHNOLOGY**

**†\*447. SHRI RAMDAS C. TADAS:  
SHRI RAVI KISHAN:**

**Will the Minister of RAILWAYS be pleased to state:**

- (a) whether Railways is one of the largest consumers of energy in the country and if so, the details thereof;**
- (b) the steps being taken by the Railways to use environment friendly technologies to expand its network judiciously; and**
- (c) the quantum of solar energy being utilised by the Railways at present?**

**ANSWER**

**MINISTER OF RAILWAYS AND COMMERCE & INDUSTRY**

**(SHRI PIYUSH GOYAL)**

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

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**STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) OF STARRED QUESTION NO. 447 BY SHRI RAMDAS C. TADAS AND SHRI RAVI KISHAN TO BE ANSWERED IN LOK SABHA ON 24.07.2019 REGARDING ENVIRONMENT FRIENDLY TECHNOLOGY**

**(a) Yes, Sir. Indian Railways (IR) consumes about 1.27% of total electricity consumption of the country and 3% of High Speed Diesel (HSD) oil for its energy requirements. In 2018-19, Indian Railways consumed about 20.44 Billion units of electricity and 3.1 Billion Litres of HSD oil for its energy requirement.**

**(b) IR is taking various environmental friendly/energy efficiency measures to reduce the carbon footprint and protect the environment.**

**Some of the measures are listed below:**

- i) Railway Electrification of tracks - IR has decided to electrify 100% of its Broad Gauge Rail routes in mission mode, as a green mode of transport.**
- ii) Use of Renewable Energy - IR has planned to source about 1000 Mega Watt (MW) Solar Power and 200 MW of Wind Power.**
- iii) Various Energy efficiency measures taken up by IR, which include the following:**
  - In 2016, a policy decision was taken for allocating 1% cost in all sanctioned works for execution of environment related works.**
  - Use of energy efficient 3-Phase technology with regenerative features for electric locomotives, Mainline Electrical Multiple Units (MEMUs), Electrical Multiple Units (EMUs), Train sets.**
  - Introduction of Head On Generation (HOG) system in trains to reduce diesel fuel consumption in power cars.**

**Contd...2/-**

- **Provision of energy efficient Light Emitting Diode (LED) lighting in all Railway installations including Railway stations, service buildings, Residential quarters and coaches for reduction in electricity consumption. 100% Railway stations, Service buildings have already been provided with LED lights and about 74% of residential quarters have been provided with 100% LED lights.**
- **IR has been made as designated consumer as part of Perform, Achieve and Trade (PAT), Cycle-II by Bureau of Energy Efficiency (BEE) for improving energy efficiency in 16 Zonal Railways and 6 Production Units.**
- **Regular energy audits at consumption points.**
- **Emphasis on use of 5 Star rated electrical equipments.**
- **Regular training of Locomotive pilots for use of coasting, regenerative braking features and switching off blowers of electric locos in case yard detention is more than 50 minutes. Similarly, diesel locos are also shut down if expected detention is more than 30 minutes and thereby resulting in reduction of Green House Gases (GHG) emissions.**
- **Trailing locomotive of multiple units (MU) hauling empty freight trains are switched off to save energy.**
- **Energy consumption on electric locomotives is regularly monitored through microprocessor based energy meters provided in all the electric locomotives and benchmarking is done based on average energy consumption.**
- **Auxiliary Power Unit (APU) has been provided in 986 diesel locomotives to reduce fuel consumption when locomotive is idle.**

- **Monitoring of idling of diesel locomotives is being done through Remote Monitoring and Management of Locomotives and Trains (called as REMMLOT). 2606 locomotives at present are equipped with REMMLOT.**
- **Use of 5% bio-diesel in traction fuel- Blending of bio-diesel with High Speed Diesel (HSD), to the extent of 5% to save HSD. Following additional steps taken for reduction in consumption of HSD:-**
  - **Over aged WDM2 vintage diesel locomotives are being stabled for condemnation.**
  - **Close Circuit Television (CCTV) is being installed at all Railway Consumer Depots (RCDs).**
- **20% Compressed Natural Gas (CNG) substitution in DEMUs- CNG usage emits less Green House Gases (GHG) than liquid fuels. Indian Railways have the distinction of being the only Railway in the world to be using CNG run power cars for passenger transportation. IR has started conversion of Diesel Electrical Multiple Unit (DEMU) Driving Power Car (DPC) into dual fuel mode DEMU/DPC with 20% CNG as a substitution for diesel (HSD). 25 numbers of DPCs have been converted and are under operation.**
- **Water Management - Water Policy of IR was issued in March 2017. Further, water audits at major consumption centres as well as proliferation of water recycling plants and rain water harvesting systems are also undertaken.**

- **To avoid dropping of night soil on platform lines and on tracks, pace of installation of environment friendly bio-toilets in passenger coaches has been increased. In last three years, more than 1,60,000 bio-toilets have been installed in around 42,900 coaches. So far, nearly 2,10,437 bio-toilets have been installed in around 58,379 coaches.**
- **Rail Wheel Factory, Yelahanka has started using Natural Gas for operation of its furnaces. Two more Railway Workshops have switched over to Compressed Natural Gas (CNG) in place of industrial gases for metal cutting.**

**(c) At present, Indian Railways utilizes about 88 Mega Watt (MW) of Solar Power. Further, works of installing solar plants with total capacity of generation as 84 MW are in progress and tenders of works having generating capacity of 93 MW are in progress.**

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