**GOVERNMENT OF INDIA**
**MINISTRY OF RAILWAYS**

**LOK SABHA**
**UNSTARRED QUESTION NO. 2862**
**TO BE ANSWERED ON 05.08.2026**

## ELECTRIFICATION BROAD-GAUGE NETWORK OF RAILWAYS

**2862. SHRI BAIJAYANT PANDA:**
**DR. D RAVI KUMAR:**

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

**(a) the present status of railway electrification across the Indian Railways network;**

**(b) whether all Broad Gauge routes have been electrified or are under electrification and if so, the details thereof;**

**(c) whether the Government has set a target for Indian Railways to achieve 100 per cent electrification of its broad-gauge network by financial year 2026-27;**

**(d) if so, the current percentage of electrification achieved and the remaining route-kilometres yet to be electrified;**

**(e) the details of renewable energy projects including solar power installation, implemented by Indian Railways during the last three years;**

**(f) the steps taken by the Government to source renewable energy for traction power, the capacity already tied up;**

**(g) the timeline for meeting the renewable / clean-energy requirement for Railways; and**

**(h) the measures taken to reduce carbon emissions and achieve the target of making Indian Railways a net-zero carbon transporter?**

**ANSWER**

**MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND ELECTRONICS & INFORMATION TECHNOLOGY**

**(SHRI ASHWINI VAISHNAW)**

**(a) to (h) Electrification of railway network on Indian Railways has been taken up in mission mode. So far, about 99.6% of Broad Gauge (BG)**

network has been electrified. The electrification in remaining network has been taken up. Electrification carried out during 2014-26 and before 2014 is as under:

| Period | Route Kilometer |
|---|---|
| Before 2014 (about 60 years) | 21,801 |
| 2014-26 | 48,072 |

Further, all new line / multi-tracking projects are being sanctioned and constructed with electrification.

100% Electrification is a highly challenging goal, as it involves electrifying railway lines that are already in operation and encountering unforeseen various challenges during execution. To expedite railway electrification work, various steps have been taken by Indian Railways which include among others; formation of Project Monitoring Group (PMG) portal to resolve the constraints being faced during commissioning, ensuring effective project monitoring mechanism, assured funding and enhanced financial powers to field units.

Zone wise status of electrification is as under:

| SN | ZONE | % Electrified |
|---|---|---|
| 1 | Central Railway | 100% |
| 2 | East Coast Railway | 100% |
| 3 | East Central Railway | 100% |
| 4 | Eastern Railway | 100% |
| 5 | Konkan Railway | 100% |
| 6 | Kolkata Metro | 100% |
| 7 | North Central Railway | 100% |
| 8 | North Eastern Railway | 100% |
| 9 | Northern Railway | 100% |

| SN | ZONE | % Electrified |
|---|---|---|
| 10 | South Central Railway | 100% |
| 11 | South Coast Railway | 100% |
| 12 | South East Central Railway | 100% |
| 13 | South Eastern Railway | 100% |
| 14 | West Central Railway | 100% |
| 15 | Western Railway | 100% |
| 16 | North Western Railway | 99.8% |
| 17 | Northeast Frontier Railway | 98.7% |
| 18 | Southern Railway | 98.7% |
| 19 | South Western Railway | 96.1% |

**State/UT wise status of electrification is as under:**

| SN | STATE | % Electrified |
|---|---|---|
| 1 | Andhra Pradesh | 100% |
| 2 | Arunachal Pradesh | 100% |
| 3 | Bihar | 100% |
| 4 | Chandigarh | 100% |
| 5 | Chhattisgarh | 100% |
| 6 | Delhi | 100% |
| 7 | Gujarat | 100% |
| 8 | Haryana | 100% |
| 9 | Himachal Pradesh | 100% |
| 10 | Jammu & Kashmir | 100% |
| 11 | Jharkhand | 100% |
| 12 | Kerala | 100% |
| 13 | Madhya Pradesh | 100% |
| 14 | Maharashtra | 100% |
| 15 | Meghalaya | 100% |

| SN | STATE | % Electrified |
|---|---|---|
| 16 | Mizoram | 100% |
| 17 | Nagaland | 100% |
| 18 | Odisha | 100% |
| 19 | Puducherry | 100% |
| 20 | Punjab | 100% |
| 21 | Telangana | 100% |
| 22 | Tripura | 100% |
| 23 | Uttar Pradesh | 100% |
| 24 | Uttarakhand | 100% |
| 25 | West Bengal | 100% |
| 26 | Rajasthan | 99.8% |
| 27 | Tamil Nadu | 98.3% |
| 28 | Assam | 97.9% |
| 29 | Karnataka | 96.8% |
| 30 | Goa | 91.4% |

**Indian Railways (IR) has undertaken one of the fastest railway electrification programs in the world. While many countries prioritize electrifying only their busiest passenger and freight corridors, India has chosen to electrify its entire broad gauge network. Indian Railways' achievement in railway electrification stand out globally. According to the latest report of International Union of Railways (UIC) of June, 2025, railway electrification in important railway systems is as under:**

| Country | Railway Electrification |
|---|---|
| Switzerland | 100% |
| India | 99.6% |
| China | 82% |
| Spain | 67% |
| Japan | 64% |
| France | 60% |
| United Kingdom | 39% |

**By network coverage, Indian Railways is now among the most extensively electrified large railway systems in the world. Indian Railways had electrified 99.6% of its broad-gauge network, completing one of the world's largest infrastructure transformation programs in a decade.**

**The completion of Electrification project(s) depends on various factors like forest clearances by officials of forest department, shifting of infringing utilities, statutory clearances from various authorities, geological and topographical conditions of area, law & order situation in the area of project(s) site, number of working months in a year for particular project site due to climatic conditions etc. All these factors affect the completion time of the project(s).**

**Electrified railways are well suited for integrating solar, wind & other renewable energy into traction power systems, making them most effective transport systems for utilizing renewable electricity. Indian Railways is committed to sustainable operations through near total Railway Electrification combined with use of renewable energy sources, based on strategic power procurement planning, thus contributing to carbon footprint reduction. As of June, 2026, about 1161 Mega Watt (MW) of solar plants (both on rooftops and on land) and about 103 MW of wind power plants have been commissioned. Further, 100 MW of renewable power under Round the Clock (RTC) mode tied up from solar Energy Corporation of India (SECI) has also started flowing. In addition to this, 2500 MW renewable capacity under RTC mode which is a hybrid solution consisting of solar, wind and storage component, has also been tied up through Power Purchase Agreements (PPA).**

**Renewable energy commissioned during 2014-26 and before 2014 is as under:**

| Period | Solar | Wind |
|---|---|---|
| Before 2014 | 3.68 MW | 10.5 MW |
| 2014-2026 (till June'26) | 1161.6 MW | 92.9 MW |

**During last three Financial Years, about 1090 Mega Watt (MW) of renewable capacity have been commissioned.**

**The adoption of clean energy to meet the power requirement of IR has significant impact in contributing towards the sustainability as it reduces dependency on fossil fuels and lowering carbon emissions in line with the objective of sustainable development of IR.**

**Indian Railways has taken up state-of-the-art project for running of first hydrogen train on pilot basis to demonstrate the use of hydrogen powered train technology in Railways. The operation ensures zero CO2 emissions with water vapour being the only emission. On 17th July 2026, the train commenced passenger services on the 89 Km Jind-Sonipat circuit.**

**Indian Railways (IR) has also taken initiatives to use of energy efficient technologies to reduce carbon emissions like completely switching over to production of three phase electric locomotives with regenerative features, use of head on generation (HOG) technology, use of LED lights in buildings and coaches, star rated appliances.**

**Indian Railways has envisioned to become net zero carbon emitter through the usage of non-fossil sources power, saving in diesel consumption by electrification of railway tracks, consistent efforts directed towards modal shifting of cargo and passenger from road to rail, harnessing hydrogen gas to drive train sets etc. Through these efforts, Indian Railways are on way to become net zero carbon emitter.**

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