GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

LOK SABHA
STARRED QUESTION NO. 249
TO BE ANSWERED ON 17.12.2025

ELECTRIFICATION OF BROAD GAUGE RAILWAY NETWORK

***249. SHRI YOGENDER CHANDOLIA:**
SMT. KAMLESH JANGDE:

Will the Minister of RAILWAYS be pleased to state:

(a) the total length of electrification of the broad-gauge network as on date, division, zone and State-wise particularly in Bihar, Jharkhand, Rajasthan, Chhattisgarh and Tamil Nadu;

(b) the names of States/UTs and Railway Zones that have achieved 100 percent electrification and those yet to achieve the same, division, zone and State/UT-wise;

(c) the pace of electrification achieved during the Financial Years 2023-24 and 2024-25 in terms of route-kilometer electrified per year and the targets for Financial Year 2025-26, division, zone and State/UT-wise particularly for Pali Lok Sabha Constituency in Rajasthan;

(d) whether electrification works in the North-Eastern States have been completed or are still ongoing;

(e) if so, the updated progress and expected completion timelines;

(f) the details of the latest official source/official report on electrification e.g. Railway Board/Central Organization for Railway Electrification, zone-wise;

(g) whether the Government has evaluated the potential reduction in carbon emissions and diesel consumption upon full electrification of Tamil Nadu's railway network and if so, the details thereof including the estimated annual savings in fuel and emissions; and

(h) whether any steps have been taken to enhance train speed and haulage capacity in Tamil Nadu's fully electrified sections to optimise the benefits of electrification and if so, the details thereof?

ANSWER
MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND ELECTRONICS & INFORMATION TECHNOLOGY
(SHRI ASHWINI VAISHNAW)

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

*****

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (h) OF LOK SABHA STARRED QUESTION NO. 249 TO BE ANSWERED ON 17.12.2025

(a) to (h) Electrification of railway network on Indian Railways (IR) has been taken up in mission mode. So far, about 99.2% of Broad Gauge (BG) network has been electrified. The electrification in remaining network has been taken up. Electrification carried out during 2014-25 and before 2014 is as under:

Period	Route Kilometer
Before 2014 (about 60 years)	21,801
2014-25	46,900

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
United Kingdom	39%
France	60%
Spain	67%
Russia	52%
Japan	64%
China	82%
Switzerland	100%

Railway Electrification achieved during Financial Year 2023-24 and 2024-25 is 7,188 and 2,701 Route kilometer (RKM) respectively. Existing BG network in Pali Lok Sabha Constituency in Rajasthan, have been 100% electrified. Further, all new line / multi-tracking projects are being sanctioned and constructed with electrification.

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%
10	South Central Railway	100%
11	South East Central Railway	100%
12	South Eastern Railway	100%
13	West Central Railway	100%
14	Western Railway	100%
15	North Western Railway	98%
16	Southern Railway	98%
17	Northeast Frontier Railway	95%
18	South Western Railway	95%

State/UT wise status of electrification including Bihar, Jharkhand, Rajasthan, Chhattisgarh and Tamil Nadu 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%
27	Tamil Nadu	97%
28	Karnataka	96%
29	Assam	92%
30	Goa	91%

Existing BG network in Arunachal Pradesh, Meghalaya, Nagaland, Tripura and Mizoram states of North eastern region have been 100% electrified. Further, all new line / multi-tracking projects are being sanctioned and constructed with electrification. Assam has been 92% electrified and electrification in remaining network has been taken up.

The latest details of Railway Electrification are available on Indian Railways' website at following link:

https://indianrailways.gov.in/railwayboard/uploads/directorate/ele_engg/2025/Status%20of%20Railway%C2%A0Electrification%20as%20on%C2%A030_11_2025.pdf

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).

State wise data of fuel consumption and carbon emissions is not maintained. Indian Railways has witnessed reduction in fuel consumption for traction purpose by 136 crore ltrs. during 2023-24 as compared to 2018-19.

Reduction in CO_2 emissions in transportation by railways as compared to transportation by road is as under (Ref:- NITI Aayog Report titled "Fast Tracking Freight In India, June 2021)

Mode of Transportation	CO_2 emission for transportation of 1 tonne for 1 km
Road	101 gm
Rail	11.5 gm (about 89% less)

Indian Railways is committed to sustainable operation through near total Railway Electrification combined with use of renewable energy sources, a combination of solar, wind and other renewable sources based on strategic power procurement planning, thus contributing to carbon footprint reduction.

In order to improve efficiency of freight including average speed of freight trains and haulage capacity over IR including Tamil Nadu, following measures, among others, have been adopted:

i. **Ensuring increased availability of rakes/wagons against demand.**
ii. **Increasing the loadability for carrying additional traffic per wagon. Length of freight trains has also been increased to increase throughput per train.**
iii. **For increasing network capacity – multitracking on busy sections, RORs, bypasses are being taken up on busy junctions.**
iv. **Use of Information Technology in freight operations to improve monitoring and utilization of assets.**
v. **Induction of higher horsepower locomotives.**
vi. **Induction of higher capacity and high-speed wagons.**

vii. **Improvement in maintenance practices of wagons and locomotives resulting in increased availability of loco and rolling stock for traffic use.**

viii. **Improvement in track and signaling to carry higher volume of traffic.**

ix. **Training staff and officers to adopt the new technology and management practices.**

The following measures are being taken by Indian Railways to upgrade railway tracks:

i. **Modern track structure consisting of 60kg, 90 Ultimate Tensile Strength (UTS) rails, wider and heavier Pre-stressed Concrete Sleepers (PSC) with elastic fastening, fan-shaped layout turnout on PSC sleepers and Steel Channel/H-beam Sleepers on girder bridges are being used while carrying out primary track renewals.**

ii. **The Thick Web Switches and Weldable CMS Crossings are being used in turnout renewal works.**

iii. **Supply of 130m/260m long rail panels have been increased to avoid welding of joints, thereby improving safety.**

iv. **Thick Web Switch Expansion Joints are being used in place of earlier Conventional/Improved SEJs.**

v. **Adoption of better welding technology for rails i.e. Flash Butt Welding.**

vi. **Adoption of mechanized system for track maintenance using high output plain tampers and points & crossing tampers for improved maintainability & reliability of track.**

vii. **Deployment of state-of-the-art modern machines including Rail Grinding Machines to further improve asset reliability.**

viii. **Mechanization of track laying activities through use of track machines like PQRS, TRT, T-28 etc.**

ix. **Interlocking of Level Crossing (LC) Gates for enhancing safety at LC gates.**

x. **Use of advanced Phased Array technology of testing of rail and welds.**

xi. **Deployment of Integrated Track Monitoring Systems (ITMS) and Oscillation Monitoring System (OMS) for comprehensive health assessment to ascertain optimal maintenance requirements.**

xii. **Using web enabled Track Management System (TMS) for integration and data analytics of the track inspection records received through various sources to enable precise maintenance inputs.**

*****