

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
LOK SABHA
UNSTARRED QUESTION NO. 1624
TO BE ANSWERED ON 29.07.2026**

RAILWAY ELECTRIFICATION AND GREEN TRANSPORTATION

†1624. SHRI BIDYUT BARAN MAHATO:

SHRI DILIP SAIKIA:

SHRI DINESHBHAI MAKWANA:

SHRI VIJAY KUMAR DUBEY:

SMT. KAMLESH JANGDE:

DR. MANNA LAL RAWAT:

SHRI RODMAL NAGAR:

SHRI KRISHNA PRASAD TENNETI:

SHRI LUMBARAM CHOUDHARY:

SHRI ALOK SHARMA:

SHRI RAJKUMAR CHAHAR:

SMT. KAMALJEET SEHRAWAT:

SHRI MUKESHKUMAR CHANDRAKAANT DALAL:

SHRI JANARDAN MISHRA:

Will the Minister of RAILWAYS be pleased to state:

- (a) the details of the progress achieved in electrification of Railways and towards adoption of renewable energy during the last one year;**
- (b) the details of the measures taken to reduce dependence on fossil fuels and improve energy efficiency through electrification, solar power generation and other sustainable initiatives;**
- (c) the details of the initiatives undertaken to promote green railway stations, energy-efficient infrastructure and environmentally sustainable railway operations in the country particularly in Delhi; and**
- (d) the expected contribution of these initiatives towards achieving the objective of making Indian Railways a net-zero carbon emitter?**

ANSWER

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

(SHRI ASHWINI VAISHNAW)

(a) to (d) 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.

State/UT wise status of electrification including Bihar, Uttar Pradesh, Andhra Pradesh and Madhya Pradesh is as under:

SN	STATE	% Electrified	SN	STATE	% Electrified
1	Andhra Pradesh	100%	16	Mizoram	100%
2	Arunachal Pradesh	100%	17	Nagaland	100%
3	Bihar	100%	18	Odisha	100%
4	Chandigarh	100%	19	Puducherry	100%
5	Chhattisgarh	100%	20	Punjab	100%
6	Delhi	100%	21	Telangana	100%
7	Gujarat	100%	22	Tripura	100%
8	Haryana	100%	23	Uttar Pradesh	100%
9	Himachal Pradesh	100%	24	Uttarakhand	100%
10	Jammu & Kashmir	100%	25	West Bengal	100%
11	Jharkhand	100%	26	Rajasthan	99.8%
12	Kerala	100%	27	Tamil Nadu	98.3%
13	Madhya Pradesh	100%	28	Assam	97.9%
14	Maharashtra	100%	29	Karnataka	96.8%
15	Meghalaya	100%	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.

Electric traction is not only environmental friendly but energy efficient also. Reduction in CO2 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	CO2 emission for transportation of 1 tonne for 1 km
Road	101 gm
Rail	11.5 gm (about 89% less)

Further, electrification of railway tracks reduces dependency on fossil fuels, decreased diesel consumption resulting in lower carbon emission. Electrification enables better haulage capacity and higher train speeds, leading to reduced travel time and enhanced efficiency.

Reduction in IR's diesel consumption for traction purpose by 185 crore litres with about 108 crore litres consumption in 2024-25 as compared to 293 crore litres in 2015-16. This has resulted in saving of precious foreign exchange with Government of India exchequer, which would have otherwise been needed for import of fuel which has been saved due to electrification.

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.

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.

In redevelopment process of stations, all environmental norms are duly considered, while sanctioning of Environmental Management Plan (EMP) for achieving sustainable modernization of stations.

As on 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 over IR.

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 achieve net zero carbon emitter.

At present, about 7 MW of solar power capacity has been commissioned in the Delhi region.

In Delhi, entire existing BG network has been electrified. Further, all new line / multi-tracking projects are being sanctioned and constructed with electrification.
