

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 2820
TO BE ANSWERED ON 10.07.2019**

GO GREEN INITIATIVES

2820. DR. HEENA GAVIT:

DR. SUBHASH RAMRAO BHAMRE:

SHRI KULDEEP RAI SHARMA:

DR. AMOL RAMSING KOLHE:

SHRI SUNIL DATTATRAY TATKARE:

SHRIMATI SUPRIYA SULE:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether the Railways have undertaken major projects under its Go Green initiatives and if so, the details thereof along with the present status of major projects under the said initiatives;**
- (b) whether the Government has achieved the objectives of Go Green during the last three years and if so, the details thereof; zone-wise;**
- (c) whether the Railways is considering to float green bonds to fund its clean energy projects and if so, the details thereof and objectives thereof;**
- (d) the details of training programmes conducted by the Railways on Go Green initiative for its employees and relevant stakeholders on environmental awareness along with the number of participants of such training programmes and the amount sanctioned/spent for this purpose during the last three years and the current year, zone-wise; and**
- (e) the other methods/techniques undertaken by the Railways to reduce carbon emission and generate clean energy?**

ANSWER

MINISTER OF RAILWAYS AND COMMERCE & INDUSTRY

(SHRI PIYUSH GOYAL)

(a) & (b) Yes, Sir. Indian Railways (IR) has undertaken some major

initiatives to Go Green. The details of the areas/activities identified and their present status are as under:

- (i) IR has planned to provide 1000 Mega Watt (MW) Solar plants and 200 MW of Wind power. Out of this, about 88 MW of Solar power plants and 103 MW of Wind power plants have already been commissioned. The details of Solar Plants and Wind Power plants commissioned Zone-wise during last three years is appended as Appendix -I.**
- (ii) IR as part of its Go Green initiatives has provided 100% LED lighting in all Railway installations including Railway stations and Service buildings. Further, work is in progress for 100% LED lightings in all Railway Residential quarters, as a part of which 68% quarters have already been provided with 100% LED lights.**
- (iii) Ministry of Railways has planned to electrify entire Broad Gauge Routes by 2021-22.**
- (iv) 25 nos. of Diesel Power Cars of Diesel Electric Multiple Units (DEMU) has been converted into dual fuel mode substituting 20% diesel with CNG.**
- (v) Blending of 5% bio-diesel in High Speed Diesel (HSD) for diesel locomotives was started in June, 2015.**
- (vi) Tree plantation to increase green cover in Railway Premises. Track side boundary plantation also started in 2016. On Indian Railways, 1.25 crores saplings were planted during 2016-17, 0.89 Cr. in 2017-18 and 1.10 Cr. in 2018-19.**
- (vii) Towards better Water Management, Water Audits at major consumption centres as well as proliferation of Water Recycling Plants and Rain Water Harvesting (RWH) Systems are undertaken. Water Policy of Indian Railways was issued in March, 2017.**

- (viii) Productions units and major Workshops are certified to ISO 14001 : Environment Management System (EMS) / Integrated Management System (IMS) and ISO 50001 Energy Management System.**
- (ix) Assessment and rating of Indian Railways' Production Units and major Workshops as Green Industrial Units started with 'GreenCo' certification of 2 Workshops and 1 Production unit in 2016-17. 34 more Workshops, 4 more Production Units, 3 Diesel Sheds, one Stores depot and 2 Supervisors Training Centres have been 'GreenCo' certified since then. Nine Railway Stations, three Railway Schools and one Railway Hospital have also achieved Green Certification. 5 administrative / headquarters buildings and 2 divisional offices have been certified as green buildings in last three years.**
- (x) Pace of installation of environment friendly bio-toilets in passenger coaches has been increased. Nearly 2,05,000 bio-toilets have been installed in around 56,700 coaches including more than 160,000 bio-toilets installed in around 42,900 coaches in last three years.**
- (xi) In 2016, a policy decision was taken for allocating 1% cost in all sanctioned works for execution of environment related works.**

(c) The Indian Railway Finance Corporation (IRFC), a Public Sector Undertaking under the Ministry of Railways, had issued bonds worth USD 500 million in the offshore market during the year 2017-18 which has been certified as 'Green Bonds' by the Climate Bond Initiative. The

proceeds of the Green Bonds issue were utilized for acquisition of electric locomotives which help in reducing carbon footprints.

(d) The various training programmes of Indian Railways include sessions on environmental awareness. Number of Railway employees who have undergone Initial and Refresher Training in 2016-17, 2017-18 and 2018-19 (zone-wise) is appended at Appendix- II, III and IV respectively. Centralized Training Institutes are conducting courses/sessions on environment awareness for officers. Environmental awareness programmes are also conducted for other stake holders like passengers, vendors and families of employees. Separate amount sanctioned / spent for this purpose is not maintained.

(e) (i) Railway is more energy efficient mode of transport as compared to roadways. Indian Railways network is being augmented to increase traffic carrying capacity.

(ii) Adoption of three phase technology with regenerative braking features for Electric locomotives and Electric Multiple Units to improve traction energy efficiency.

(iii) Indian Railways have fitted Auxiliary Power Unit (APU) on 876 diesel locomotives to save fuel by shutting down of main engine while idling.

(iv) Electric locomotives are being equipped with hotel load converters for feeding electricity in trains like Rajdhani / Shatabdi for lighting, air-conditioning, pantry etc., which reduces requirement of one Power Car / Diesel Alternator set.

(v) Provision of Solar Panels on the roof top of passenger coaches on trial basis for catering to the requirement of lights and fans in the coaches.

Roof top Solar Panels have also been provided on 50 nos. BVZI brake vans for goods guards.

(vi) Use of energy efficient equipment and appliances such as 5 Star Rated electrical equipment and Variable Voltage Variable Frequency (VVVF) drives.

(vii) Energy Audits are being conducted regularly.

APPENDIX-I REFERRED TO IN REPLY TO PART (a) AND (b) OF UNSTARRED QUESTION NO. 2820 BY DR. HEENA GAVIT, DR. SUBHASH RAMRAO BHAMRE, SHRI KULDEEP RAI SHARMA, DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE AND SHRIMATI SUPRIYA SULE TO BE ANSWERED IN LOK SABHA ON 10.07.2019 REGARDING GO GREEN INITIATIVE

(a) and (b) The details of Solar and Wind Power Plants commissioned on Indian Railways in last three (3) years:

SOLAR POWER PLANTS COMMISSIONED:

S.No.	Railway	Installed Capacity (MW)		
		2016-17	2017-18	2018-19
1	Central Railway	0.71	1.13	1.13
2	Eastern Railway	0.11	0.005	3.35
3	East Central Railway	0.18	0.15	0
4	East Coast Railway	0.10	1	0.12
5	Northern Railway	0	5	3.22
6	North Central Railway	0.12	6.29	3.17
7	Northeast Frontier Railway	0.02	0.98	1.04
8	North Western Railway	1.05	1.51	3.82
9	North Eastern Railway	0.073	0.08	2.38
10	Southern Railway	0.11	0.25	1.98
11	South Central Railway	1.07	1.33	4.42
12	South East Central Railway	0.17	0.75	1.26
13	South Western Railway	0.18	1.27	2.34
14	South Eastern Railway	0.05	0.59	1.57
15	Western Railway	0.17	2.80	4.63
16	West Central Railway	0.22	1.29	2.85
17	Metro	0.5	0.01	0
18	Rail Coach Factory	0	0	0
19	Integral Coach Factory	0.10	2	0.20
20	Diesel Locomotive Modernization Workshop	0.05	2.10	0
21	Diesel Locomotive Works	0.31	1.55	0
22	Chittranjan Locomotives Works	0	0.10	1.46
23	Rail Wheel Factory	0	0	2
24	Modern Coach Factory	1	0	0
	Total	6.28	30.19	40.94

WIND POWER PLANTS COMMISSIONED:

S.No.	Railway	Installed Capacity (MW)		
		2016-17	2017-18	2018-19
1	Central Railway	0	0	6.0
2	Southern Railway	0	0	10.5
	Total	0	0	16.5

APPENDIX-II REFERRED TO IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 2820 BY DR. HEENA GAVIT, DR. SUBHASH RAMRAO BHAMRE, SHRI KULDEEP RAI SHARMA, DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE AND SHRIMATI SUPRIYA SULE TO BE ANSWERED IN LOK SABHA ON 10.07.2019 REGARDING GO GREEN INITIATIVE

(d) Number of Non-Gazetted Staff Trained during 2016-2017:

RAILWAY/ PU	INITIAL	REFRESHER
Central Railway	4883	8249
Eastern Railway	3263	12146
East Central Railway	2150	3269
East Coast Railway	3136	6110
Metro	78	458
Northern Railway	5623	11803
North Western Railway	5528	12054
North Eastern Railway	2912	2267
Northeast Frontier Railway	3030	4914
North Central Railway	2586	4286
Southern Railway	6656	11156
South Central Railway	5761	11897
South Eastern Railway	5658	9361
South East Central Railway	1244	5399
South Western Railway	2240	2018
West Central Railway	5318	5991
Western Railway	10619	17088
Chittranjan Locomotives Works	60	1767
Diesel Locomotive Works	882	905
Diesel Locomotive Modernization Workshop	26	508
Integral Coach Factory	657	1670
Rail Coach Factory	720	369
Research Design and Standards Organisation	268	434
Rail Wheel Factory	10	1312
Modern Coach Factory	254	137
GRAND TOTAL	73,562	135,568

APPENDIX-III REFERRED TO IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 2820 BY DR. HEENA GAVIT, DR. SUBHASH RAMRAO BHAMRE, SHRI KULDEEP RAI SHARMA, DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE AND SHRIMATI SUPRIYA SULE TO BE ANSWERED IN LOK SABHA ON 10.07.2019 REGARDING GO GREEN INITIATIVE

(d) Number of Non-Gazetted Staff Trained during 2017-2018:

RAILWAY/ PU	INITIAL	REFRESHER
Central Railway	6134	9929
Eastern Railway	3900	13867
East Central Railway	2150	3269
East Coast Railway	3136	6110
Metro	78	458
Northern Railway	9256	15898
North Western Railway	5185	9875
North Eastern Railway	2912	2267
Northeast Frontier Railway	2687	6405
North Central Railway	5140	8259
Southern Railway	6656	11897
South Central Railway	5761	9361
South Eastern Railway	4813	9185
South East Central Railway	2808	6922
South Western Railway	2240	2018
West Central Railway	5318	5991
Western Railway	6155	9882
Chittranjan Locomotives Works	60	905
Diesel Locomotive Works	882	508
Diesel Locomotive Modernization Workshop	54	435
Integral Coach Factory	802	1026
Rail Coach Factory	936	708
Research Design and Standards Organisation	340	381
Rail Wheel Factory	10	1312
Modern Coach Factory	254	137
GRAND TOTAL	77,667	137,005

APPENDIX-IV REFERRED TO IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 2820 BY DR. HEENA GAVIT, DR. SUBHASH RAMRAO BHAMRE, SHRI KULDEEP RAI SHARMA, DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE AND SHRIMATI SUPRIYA SULE TO BE ANSWERED IN LOK SABHA ON 10.07.2019 REGARDING GO GREEN INITIATIVE

(d) Number of Non-Gazetted Staff Trained during 2018-2019:

RAILWAY/ PU	INITIAL	REFRESHER
Central Railway	7675	10128
Eastern Railway	4157	13136
East Central Railway	3689	6434
East Coast Railway	5919	8796
Metro	362	235
Northern Railway	9657	14292
North Western Railway	3541	12051
North Eastern Railway	0	580
Northeast Frontier Railway	6464	7479
North Central Railway	2003	5142
Southern Railway	4366	15692
South Central Railway	928	3114
South Eastern Railway	1184	8966
South East Central Railway	379	5529
South Western Railway	920	3687
West Central Railway	5318	5991
Western Railway	8690	19564
Chittranjan Locomotives Works	95	6934
Diesel Locomotive Works	394	1185
Diesel Locomotive Modernization Workshop	29	589
Integral Coach Factory	782	3034
Rail Coach Factory	516	1948
Research Design and Standards Organisation	336	303
Rail Wheel Factory	16	545
Modern Coach Factory	02254	137
GRAND TOTAL	36,215	155,491