

GOVERNMENT OF INDIA
MINISTRY OF COAL

RAJYA SABHA
UNSTARRED QUESTION NO. 836
TO BE ANSWERED ON 11.12.2023

Coal-powered grid

836 Shri B. Lingaiah Yadav:

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

(a) whether country's coal-powered grid in fact increases carbon emissions, since about 70 per cent of the electricity on the grid is coal-generated—more in non-day-light hours when solar generation is nil, and the vast majority of projects have not disclosed their source of electricity and in fact it is also not clear if those few projects have committed to meet 100 per cent of their requirement from these sources; and

(b) if so, the details thereof/present status thereof and corrective steps being taken/results yielded till now along with funds sanctioned/spent under each project, State wise and private companies involved till now?

ANSWER

MINISTER OF PARLIAMENTARY AFFAIRS, COAL AND MINES
(SHRI PRALHAD JOSHI)

(a) and (b): As per the Electricity Act 2003, Generation is a de-licensed activity. Power projects are conceived by developers considering the power supply requirement of the country. The details of the actual power supply position in the country during the years 2020-21, 2021-22, 2022-23 and 2023-24 (upto October,2023) are furnished below: -

Year	Energy Requirement	Energy Supplied	Energy not Supplied	
	(MU)	(MU)	(MU)	(%)
2020 - 2021	1,275,534	1,270,663	4,871	0.4
2021 - 2022	1,379,812	1,374,024	5,787	0.4
2022 - 2023	1,511,847	1,504,264	7,583	0.5
2023 – 2024 (April, 2023 to October, 2023)	982,233	979,345	2,888	0.3

It may be observed from the above figures that the energy requirement of the country has been adequately met with only a marginal gap between the energy requirement and energy supplied. It is a fact that all the available generation sources i.e., coal/lignite, gas, nuclear and renewables, are pooled for adequately meeting the growing energy need.

India has already accelerated its efforts to enhance the contribution of non-fossil fuel in its electricity generation mix. The details of the electricity generation mix for the years 2020-21, 2021- 22, 2022-23 and 2023-24 (upto October,2023) are as under:

Year	Electricity Production from Fossil Fuel						Electricity Production from Non-Fossil Fuel			Total Electricity Production from Non-Fossil Fuel	Total Electricity Production from Fossil + Non-Fossil Fuel	% Share of Non-Fossil Fuel in Total Electricity Production
	COAL	DIESEL	LIGNITE	NAPTHA	NATURAL GAS	Total Thermal	Nuclear	Hydro (Large)	Other Renewable Energy Sources			
	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)			
2020-21	950937.55	126.31	30505.68	101.41	50842.59	1032513.54	43029.08	150299.52	147247.51	340576.11	1373089.65	24.80
2021-22	1041487.43	117.24	37094.04	0	36015.77	1114714.48	47112.06	151627.33	170912.30	369651.69	1484366.17	24.90
2022-23	1145907.58	229.71	36188.34	0.83	23884.21	1206210.67	45861.09	162098.77	203552.17	411512.03	1617722.70	25.44
2023-24 (up to October 2023)	732309.61	232.56	18744.69	0	20342.18	771629.04	27562.06	101969.37	141634.58	271166.01	1042795.05	26.00

It may be observed from the above data that the percentage of Non-fossil fuel generation has increased from 24.8% in 2020-21 to 26% in 2023-24 (till October, 2023). Due to the increasing share of Non-fossil fuel based generation in the grid, Carbon Emission factor of Grid based electricity has reduced from 0.77 tonne of Carbon Dioxide / Megawatt hour (tCo2/MWh) in 2013-14 to 0.71 tCo2/MWh in 2021-22.

To reduce emission intensity and escalate renewable adoption, India has updated its Nationally Determined commitments (NDCs) to UNFCCC which includes-

- Reduction in Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level.
- Reach 500 GW of Non-fossil based electricity generation capacity by 2030.

As of 31.10.2023, the non-fossil fuel based capacity is 186.4 GW (43.8%) out of 425.5 GW of the total electricity generation capacity. As per Central Electricity Authority (CEA) report on Optimal Generation Mix 2030, the installed capacity for the year 2029-30 is likely to be 777.14 GW, which comprises of 59.21 GW of Hydro, 18.986 GW of PSP, 292.566 GW of Solar, 99.895 GW of Wind, 14.500 GW of Biomass, 15.480 GW of Nuclear, 251.683 GW of Coal & Lignite and 24.824 GW of Gas along with Battery Energy Storage System (BESS) capacity of 41.650 GW/208.250 GWh. The 43.8% share of non-Fossil based electricity generation capacity as on 31.10.2023, will increase to 64.40% by 2029-30.

Hence, India has already accelerated its effort to enhance its contribution of non-fossil fuel in its electricity generation mix to reach 500 GW of Non-fossil based electricity generation capacity by 2029-30.
