GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1582
ANSWERED ON 05.08.2024

EXPANSION OF THERMAL POWER CAPACITY

1582 # SHRI MITHLESH KUMAR:

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

(a) whether Government proposes to expand thermal power capacity in the country;

(b) if so, the details thereof and the total estimated cost for expansion of thermal power capacity;

(c) the steps taken to reduce dependence on coal based power plants and reduce emission levels of such thermal power plants; and

(d) the details of percentage of electricity generated from various sources like coal, gas, hydro and renewable energy since 2019?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : In order to meet the estimated electricity demand by the year 2031-32, generation planning studies have been carried out by Central Electricity Authority (CEA). As per the study results, it is envisaged that to meet the base load requirement of the country in 2032, the required coal & lignite based installed capacity would be 283 GW against the present installed capacity of 217.5 GW. Considering this, the Government of India proposes to set up an additional minimum 80 GW coal based capacity by 2031-32.

The estimated capital cost for setting up of new coal based thermal capacity as considered in National Electricity Plan is Rs 8.34 Cr/ MW (at 2021-22 price level). Hence, the thermal capacity addition is expected to entail an expenditure of minimum Rs. 6,67,200 Crs by 2031-32.

(c) : (i) To reduce the dependency on coal based thermal power plants, the Government of India has planned to augment non-fossil fuel based installed electricity generation capacity. India in its Intended Nationally Determined Contributions (INDCs) stands committed to achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. At present, India has already achieved 45.5% Installed Capacity from non-fossil fuel-based resources. To achieve this objective, following steps have been taken to promote Renewable Energy Generation in the country:

- Permitting Foreign Direct Investment (FDI) up to 100 percent under the automatic route;

- Waiver of Inter State Transmission System (ISTS) charges for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025;

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- Declaration of trajectory for Renewable Purchase Obligation (RPO) up to the year 2029-30;
- Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission connectivity to Renewable Energy developers for installation of RE projects at large scale;
- Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), Solar Rooftop Phase II, 12,000 MW CPSU Scheme Phase II; PM Surya Ghar: Muft Bijli Yojna.
- Laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power;
- Notification of standards for deployment of solar photovoltaic system/devices.
- Setting up of Project Development Cell for attracting and facilitating investments;
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar PV and Wind Projects;
- Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators;
- Notification of Promoting Renewable Energy through Green Energy Open Access Rules 2022;
- Launch of Green Term Ahead Market (GTAM) to facilitate sale of Renewable Power through exchanges;
- National Green Hydrogen Mission launched with an aim to make India a global hub for production, utilization and export of Green Hydrogen and its derivatives; and,
- Notification of prescribed trajectory for RE power bids to be issued by Renewable Energy Implementation Agencies from FY 2023-24 to FY 2027-28 with an annual target of 50 GW of RE bids.

(ii) Further, for reduction of emission levels of thermal power plants, following measures have been taken by the Government:

- MoEF&CC vide notification dated 07.12.2015 and its subsequent amendments has notified norms in respect of reducing stack emissions such as Suspended Particulate Matter (SPM), SOx & NOx from coal based Thermal Power Plants. To meet these standards, Thermal Power Plants are using techniques like Electro Static Precipitator (ESP), Flue Gas Desulphurization (FGD), NOx Combustion Modification etc.
- Promotion of installation of efficient Supercritical /Ultra Supercritical units over Subcritical Thermal Units.
- Ministry of Power has issued a policy on utilization of Biomass for Power generation through co-firing in coal based power plants. The policy mandates 5-7% co-firing of Biomass primarily of agro residue with coal, after assessing the technical feasibility.

(d): The details of the percentage of electricity generated from various sources such as coal, gas, hydel and renewable energy since 2019 is attached as **Annexure**.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 1582 ANSWERED IN THE RAJYA SABHA ON 05.08.2024

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Percentage of Electricity Generated From Various Sources

Year-Wise Generation from 2018-19 to 2024-25 (Up to May, 2024)									
Source Name			**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25 (upto May)**
			% of Total Gen	**% of Total Gen**	**% of Total Gen**	**% of Total Gen**	**% of Total Gen**	**% of Total Gen**	**% of Total Gen**
Conventional	**Thermal**	Coal	71.77	69.20	68.82	69.81	70.54	72.50	73.29
		Lignite	2.51	2.37	2.21	2.49	2.23	1.95	1.94
		Diesel	0.01	0.01	0.01	0.01	0.01	0.02	0.03
		Naptha	0.00	0.00	0.01	0.00	0.00	0.00	0.00
		Natural gas	3.62	3.49	3.68	2.41	1.47	1.80	2.75
	Sub Total		**77.92**	**75.07**	**74.72**	**74.72**	**74.25**	**76.28**	**78.00**
	Nuclear		2.75	3.35	3.11	3.16	2.82	2.76	2.76
	Hydro		9.80	11.21	10.88	10.16	9.98	7.71	6.42
	Bhutan Import		0.32	0.42	0.63	0.50	0.42	0.27	0.06
Conventional Total			**90.79**	**90.04**	**89.34**	**88.54**	**87.47**	**87.01**	**87.24**
Renewable Energy		Wind	4.51	4.65	4.35	4.60	4.42	4.79	4.03
		Solar	2.85	3.61	4.37	4.93	6.28	6.67	7.65
		Biomass	0.20	0.21	0.25	0.23	0.19	0.20	0.18
		Bagasse	0.99	0.78	0.82	0.84	0.79	0.62	0.34
		Small Hydro	0.63	0.68	0.74	0.70	0.69	0.55	0.41
		Others	0.03	0.03	0.12	0.15	0.16	0.16	0.15
Renewable Energy Total			**9.21**	**9.96**	**10.66**	**11.46**	**12.53**	**12.99**	**12.76**
Grand Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

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