

**GOVERNMENT OF INDIA  
MINISTRY OF POWER  
LOK SABHA  
UNSTARRED QUESTION NO.1111  
ANSWERED ON 08.02.2024**

**EXPANSION OF THERMAL POWER CAPACITY**

**1111. SHRI MANOJ KOTAK:  
SHRI GANESH SINGH:  
SHRI TAPIR GAO:  
SHRI RAVINDRA KUSHWAHA:**

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

- (a) whether the Government proposes for expansion of thermal power capacity in the country;**
- (b) if so, the details thereof and the estimated total cost for expansion of the same;**
- (c) the steps taken by the Government to reduce dependency on coal-based power plants and to decrease emission levels in such thermal power plants; and**
- (d) the details of the percentage of electricity generated from various sources such as coal, gas, hydel and renewable energy since 2014?**

**A N S W E R**

**THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY**

**(SHRI R.K. SINGH)**

**(a) & (b): In order to meet the estimated electricity demand by the year 2031-32, generation planning studies has been carried out by Central Electricity Authority (CEA) considering stressed scenario. 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 is 283 GW against the present installed capacity of 214 GW. Considering this, Government of India propose 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) : To reduce the dependency on coal based power plants, Government has planned to augment non fossil fuel based installed electricity generation capacity to over 5,00,000 MW by 2031-32. To achieve this objective following steps have been taken to promote Renewable Energy 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,**
- **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 to RE 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, 12000 MW CPSU Scheme Phase II;**
- **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;**
- **Notification of “The Electricity (Late Payment Surcharge and related matters) Rules (LPS rules);**
- **Launch of Green Term Ahead Market (GTAM) to facilitate sale of Renewable Energy 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. Under the trajectory, 50 GW/annum of RE bids to be issued.**

**Further, for reduction of emission levels of thermal power plants, following measures are taken by the Government:**

- **MoEF&CC notification dated 07.12.2015 and its subsequent amendments has notified norms in respect of reducing stack emissions such as Suspended Particulate Matter (SPM), SO<sub>x</sub> & NO<sub>x</sub> from coal based Thermal Power Plants by using Electro Static Precipitator (ESP), Flue Gas Desulphurization (FGD), NO<sub>x</sub> Combustion Modification, etc.**
- **Promotion of installation of efficient Ultra Supercritical/Supercritical units over Subcritical Thermal Units.**
- **Biomass co-firing- Ministry of Power has issued policy on Bio-mass Utilization for Power Generation through Co-firing in Coal based Power Plants to use 5-10% blend of biomass pellets made, primarily of agro-residue along 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 2014 is attached as Annexure.**

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**ANNEXURE**

**ANNEXURE REFERRED IN REPLY TO PARTS (d) OF UNSTARRED QUESTION NO. 1111 ANSWERED IN THE LOK SABHA ON 08.02.2024**

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**Percentage of Electricity Generated From Various Sources**

<b>Year-Wise Generation from 2014-15 to 2023-24 (Up to Dec)</b>												
<b>Source Name</b>			<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24 (upto Dec)</b>
			<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>	<b>% of Total Gen</b>
<b>Conventional</b>	<b>Thermal</b>	<b>Coal</b>	72.08	73.45	73.30	72.76	71.77	69.20	68.82	69.81	70.54	71.22
		<b>Lignite</b>	3.20	2.92	2.80	2.66	2.51	2.37	2.21	2.49	2.23	1.86
		<b>Diesel</b>	0.13	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
		<b>Naptha</b>	0.09	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
		<b>Natural gas</b>	3.61	4.00	3.95	3.83	3.62	3.49	3.68	2.41	1.47	1.83
	<b>Sub Total</b>		79.10	80.42	80.07	79.28	77.92	75.07	74.72	74.72	74.25	74.93
	<b>Nuclear</b>		3.25	3.19	3.05	2.93	2.75	3.35	3.11	3.16	2.82	2.77
	<b>Hydro</b>		11.64	10.34	9.86	9.64	9.80	11.21	10.88	10.16	9.98	8.77
	<b>Bhutan Import</b>		0.45	0.45	0.45	0.37	0.32	0.42	0.63	0.50	0.42	0.36
<b>Conventional Total</b>			94.44	94.39	93.43	92.21	90.79	90.04	89.34	88.54	87.47	86.82
<b>Renewable Energy</b>	<b>Wind</b>		3.04	2.81	3.70	4.03	4.51	4.65	4.35	4.60	4.42	5.33
	<b>Solar</b>		0.42	0.63	1.09	1.98	2.85	3.61	4.37	4.93	6.28	6.44
	<b>Biomass</b>		0.28	0.32	0.34	0.26	0.20	0.21	0.25	0.23	0.19	0.19
	<b>Bagasse</b>		1.06	1.10	0.80	0.91	0.99	0.78	0.82	0.84	0.79	0.43
	<b>Small Hydro</b>		0.72	0.71	0.62	0.59	0.63	0.68	0.74	0.70	0.69	0.62
	<b>Others</b>		0.03	0.02	0.02	0.03	0.03	0.03	0.12	0.15	0.16	0.16
<b>Renewable Energy Total</b>			5.56	5.61	6.57	7.79	9.21	9.96	10.66	11.46	12.53	13.18
<b>Grand Total</b>			100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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