GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.3387
ANSWERED ON 20.03.2025

ELECTRICITY CONSUMPTION

3387. SHRI TATKARE SUNIL DATTATREY:

Will the Minister of POWER
be pleased to state:

(a) whether India's electricity consumption is expected to triple by the year 2050 according to an annual World Energy Outlook report from the International Energy Agency which projects that India would become the third-largest electricity consumer globally by mid-century driven by annual demand growth of over four percent, if so, the details thereof; and

(b) the steps taken/proposed to be taken by the Government to achieve the anticipated target reported by the International Energy Agency?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : As per the World Energy Outlook 2024 published by International Energy Agency, India would become third largest electricity consumer in the world by the year 2050 on the back of growth in demand of over 4% a year in all scenarios. The report mentions that India is poised to experience more energy demand growth than any other country over the next decade. Report also indicates that India will have world's third-largest installed battery storage capacity in place by 2030 to accommodate the rising share of variable renewables.

(b) : Central Electricity Authority (CEA) conducts Electric Power Survey (EPS) in every five years for estimating the power demand of each State/UT (including Mega City) of the Country. The last EPS report i.e, 20th EPS report was published in November, 2022 which covers the electricity demand projections for the year 2021-22 to 2031-32 as well as perspective electricity demand projection for the year 2036-37 and 2041-42 for the country. The details of projected demand in terms of Peak and energy requirement are given at Annexure.

Subsequently, National Electricity Plan (NEP) is prepared by CEA every five year for Generation and Transmission. NEP Generation covers the incremental capacity requirement to meet the projected load and energy requirement. The last NEP Generation Report 2022-32, published in May 2023, includes detailed capacity addition requirement during the years 2022-27 and Perspective Plan projections for the years 2027-32.

In accordance with NEP, the Government of India has proactively undertaken several measures along with existing initiatives to ensure the adequacy of generation and transmission resources. These, inter-alia, include the following:

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1. **Generation Planning:**

(i) **Present installed generation capacity of the country is 470 GW. Installed generation capacity in 2031-32 is likely to be 874 GW. This includes capacity from conventional sources- Coal, Lignite etc., renewable sources- Solar, Wind and Hydro etc.**

(ii) **With a view to ensure generation capacity remains ahead of projected peak demand, all the States, in consultation with CEA, have prepared their " Resource Adequacy Plans (RAPs)", which are dynamic 10 year rolling plans and includes power generation as well as power procurement planning.**

(iii) **All the States were advised to initiate process for creation of generation capacities; from all generation sources, as per their Resource Adequacy Plans.**

(iv) **In order to augment the power generation capacity, the Government of India has initiated following capacity addition programme:**

A. **Government of India has proposed in November 2023 for setting up of an additional minimum 80,000 MW coal-based capacity by 2031-32. Against this target, coal-based capacity of 9,350 MW has already been commissioned in 2023-24 & 2024-25. 29,900 MW Thermal Capacity is under construction and contracts for 22,640 MW thermal capacity have been awarded in FY 2024-25. Further, 33,580 MW of coal and lignite-based candidate capacity has been identified which is at various stages of planning in the country.**

B. **13,997.5 MW of Hydro Electric Projects are under construction. Further, 24,225.5 MW of Hydro Electric Projects are under various stage of planning.**

C. **7,300 MW of Nuclear Capacity is under construction and targeted to be completed by 2029-30. 7,000 MW of Nuclear Capacity is under various stages of planning and approval.**

D. **1,53,920 MW Renewable Capacity including 84,310 MW of Solar, 28,280 MW of Wind and 40,890 MW Hybrid power is under construction while 70,210 MW of Renewable Capacity including 46,670 MW of Solar, 600 MW of Wind and 22,940 MW Hybrid Power is at various stages of planning and targeted to be completed by 2029-30.**

E. **In energy storage systems, 13,050 MW/78,300 MWh Pumped Storage Projects are under construction/concurred and 14,970 MW/54,803 MWh Battery Energy Storage System are currently under various stages of construction/bidding.**

2. **Transmission Planning:**

Inter and Intra-State Transmission System has been planned and implementation of the same is taken up in matching time frame of generation capacity addition. As per the National Electricity Plan, about 1,91,474 ckm of transmission lines and 1274 GVA of transformation capacity is planned to be added (at 220 kV and above voltage level) during the ten-year period from 2022-23 to 2031-32.

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3. Promotion of Renewable Energy Generation:

(i) Ministry of New & Renewable Energy (MNRE) has issued Bidding Trajectory for issuance of RE power procurement bids of 50 GW/annum by Renewable Energy Implementing Agencies from FY 2023-24 to FY 2027-28.

(ii) Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.

(iii) Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025, for Green Hydrogen Projects till December, 2030 and for offshore wind projects till December, 2032.

(iv) To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act, 2001 will attract penalties for non-compliance.

(v) Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable RE (FDRE) projects have been issued.

(vi) Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.

(vii) Scheme for setting up of Ultra Mega Renewable Energy Parks is being implemented to provide land and transmission to RE developers for installation of RE projects at large scale.

(viii) Laying of new transmission lines and creating new sub-station capacity has been funded under the Green Energy Corridor Scheme for evacuation of renewable power.

(ix) "Strategy for Establishment of Offshore Wind Energy Projects" has been issued indicating a bidding trajectory of 37 GW by 2030 and various business models for project development.

(x) The Offshore Wind Energy Lease Rules, 2023 have been notified vide Ministry of External Affairs notification dated 19th December 2023, to regulate the grant of lease of offshore areas for development of offshore wind energy projects.

(xi) To achieve the objective of increased domestic production of Solar PV Modules, the Govt. of India is implementing the Production Linked Incentive (PLI) scheme for High Efficiency Solar PV Modules. This will enable manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV Module

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 3387 ANSWERED IN THE LOK SABHA ON 20.03.2025

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The detail of projected demand as per 20th EPS survey:

FY	Energy Requirement (BU)	Peak Electricity Demand (GW)
2031-32*	2474	366
2036-37	3095	466
2041-42	3776	575

*** As per mid-term review of 20th EPS, the projected peak demand and energy requirement on FY 2031-32 will be 388 MW and 2703 BU respectively.**

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