

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1105
ANSWERED ON 09.02.2026

ECONOMIC VIABILITY OF COAL BASED POWER PLANTS

1105 SHRI K.R.N. RAJESHKUMAR:

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

- (a) whether Government has assessed the economic viability of adding coal-based power capacity beyond what is already under construction;
- (b) if so, the details of such assessment and the projected Plant Load Factor (PLF) of coal plants through 2032;
- (c) whether Government has conducted a comparative cost analysis between new coal- based electricity and renewable energy coupled with battery storage; and
- (d) if so, the current tariff ranges for coal-based electricity versus firm and dispatchable renewable energy options?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b): Generation expansion planning study is carried out by Central Electricity Authority (CEA) to determine the optimal mix of different generation resources (coal, hydro, solar, wind, storage, nuclear etc.) to meet the projected electricity demand. Various parameters like the capital cost of different generation technologies, fuel cost, O&M cost, useful life etc. are considered in the Generation expansion planning study.

As per the studies, projected thermal (coal and lignite) capacity requirement by the year 2034–35 is estimated at approximately 3,07,000 MW as against the 2,11,855 MW installed capacity as on 31.03.2023. To meet this requirement, Ministry of Power has envisaged to set up an additional minimum 97,000 MW coal and lignite based thermal capacity.

As against the above-mentioned requirement, thermal capacities of around 17,360 MW have already been commissioned since April 2023 till 20.01.2026. In addition, 39,545 MW of thermal capacity (including 4,845 MW of stressed thermal power projects) is currently under construction. The contracts of 22,920 MW have been awarded and is due for construction. Further, 24,020 MW of coal and lignite-based candidate capacity has been identified which is at various stages of planning in the country.

The projected Plant Load Factor (PLF) of coal-based plants by the year 2031-32 is estimated to be around 61%. However, PLF of coal-based power plants will depend on a number of factors like the increase in electricity demand, actual coal based and RE capacity materializing etc.

(c) & (d) : The generation expansion planning model, while arriving at optimal capacity mix, does the comparative analysis between new coal-based plants, solar, wind, storage etc. considering the cost of different technologies, projected electricity demand, RE generation profile, fuel cost, operational characteristics of different types of technologies, storage duration etc.

The cost of the electricity generated from coal-based plants depends on various factors such as life of the plant, distance of the plant from the coal mines, type of technology (sub-critical, super-critical) etc.

The all-India Weighted Average Rate of Sale of Power (WARSP) of the electricity generated from existing coal-based plants for the past three years ranges from INR 4.36/kWh to INR 4.58/kWh, with the lowest tariff being about INR 1.52/kWh.

The tariff discovered for new coal based Thermal Power Projects selected through Tariff Based Competitive Bidding (TBCB) route is in the range of INR 5.38 - 6.30 /kWh. This is based on bidding carried out in the year 2025.

The Tariff discovered under firm and dispatchable renewable energy (FDRE) tenders awarded by SECI in August, 2024, is the range of INR 4.98 - 4.99/kWh.

Although the tariff ranges appear broadly similar, a direct comparison is not appropriate on like-to-like basis due to the inherent differences in the nature, operational characteristics, risk allocation, fuel cost structure, dispatch profile, and contractual framework of coal-based thermal power and FDRE projects. The two categories of power serve different system requirements and involve distinct cost components and performance obligations.
