

(Please do not write anything except the question number in this space)

कृपया इस स्थान में प्रश्न संख्या के अतिरिक्त कुछ न लिखें।

UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.
Content of the Question is more important than length.
(Specimen Answer Booklet - For Practice Purpose Only)

उम्मीदवारों को इस हारा में नहीं लिखना चाहिए
Candidates must not write on this margin

5) Decarbonising electricity would be a major milestone in our journey to net zero by 2070. Critically analyse in the context of rising coal demand.

↳ India has the fifth largest reserves of coal in the world. The country's thermal power plants used domestic coal.

Bharat Heavy Electronics limited (BHEL) was making efficient and reliable power generating equipment which could use coal with high ash content.

↳ Coal demand

The pace of thermal power development picked up significantly in early 2000's. Importing thermal coal became a necessity. Imports rose to over 196 mn tonnes in 2019-20.

↳ Coal demand Rising

1) Economy → with economy again on a growth trajectory, electricity and resultant thermal coal demand is rising.

↳ Ramping up production to the extent technically feasible from operating mines, fast forwarding production from mines under development and developing new mines, to meet total demand of thermal power plants and industry should be a Priority

↳ Goal of Ending Coal Imports (2024-25)

Speedier environment and forest clearance is a must to achieve this goal without any compromise on substance.

↳ Decarbonising Electricity

Gas Power Plant → There is 25 GW of gas power

Power Plant capacity lying idle as domestic gas is not available and using imported gas to generate electricity from these plants has made it so expensive

↳ Solar Energy → There is option of storing solar energy to get electricity at night. solar power can be directly stored in a concentrated solar thermal plant (CSP)

↳ Concern

↳ The storage option provides electricity for only a few hours. The solution would be to have more renewable energy being used for multiple storage plants to be able to get electricity through night.

↳ Grid stability which needs sources of supply with the ability to quickly step up as well lower generation to meet varying demand

↳ Issue → International pressure asserting our right to use coal and build new coal based plants when there are now the more expensive option for meeting our needs for electricity.

↳ Conclusion

Technology with downward movement in costs, has resulted in a fortunate convergence between the least-cost pathway for meeting our growing electricity needs and decarbonising our electricity system.

Decarbonising electricity would be a major milestone in our journey to net zero by 2070 as declared