



## Dealing with the Power Crisis

*This editorial is based on [“Three Interlinking Factors That Explain The Coal Crisis”](#) which was published in Hindustan Times on 06/05/2022. It talks about the causes of the power crisis that India recently witnessed and suggests measures to overcome the same.*

**For Prelims:** Coal Production in India, Renewable Energy, CEEW.

**For Mains:** Coal dependency of India's power sector, Renewable Energy Transition.

India was recently hit by a power crisis when the **daily peak power shortage rose to 10,778 MW** and the **energy deficit reached 5%** at the national level, with some states experiencing steep deficits of up to 15%. Consequently, **discoms resorted to load-shedding**, resulting in **long hours of outage** for many households and rationed supply for economic activities.

**Depleting coal supplies** at thermal power plants has resulted in this crisis. However, this is **not a new phenomenon**. The shortage occurs almost every year and the government, despite its various measures, has not succeeded in overcoming the problem.

Now, unless the underlying issues and structural problems are addressed, this crisis won't be the last one to occur. The arithmetic solution is to **make sure coal power plants stockpile enough fuel**.

### What is the Coal Dependency for Power in India?

- As of September 2021, **thermal power** (power generated from burning coal, gas and petroleum) **comprised 60% of India's installed capacity** in power generation.
- Coal-based power generation, with a capacity of around 210 gigawatts (GW) of the total 396 GW, accounts for about 53% of India's total power capacity as on March 2022.
  - **India imports about 20% of its thermal coal requirements.**
- According to a [CEEW \(Council on Energy, Environment and Water\)](#) assessment, a **disproportionate share of generation comes from older inefficient plants**, while the newer and **efficient ones remain idle** for want of favourable coal supply contracts or power purchase agreements.

### What can be the Possible Causes of the Power Crisis?

- **Revival of Economic Activities:** The [heatwaves](#) and revival of economic activities after Covid-19 disruptions propelled electricity demand.
  - In April 2022, average daily energy requirement increased to 4,512 million units (MU) from 3,941 MU in April 2021, registering a 14.5% growth, compared to average year-on-year growth of around 5%. The jump from March to April was 6.5%.

- The Railways, which dominate long-distance transport are also facing high passenger traffic on shared track.
- **Inefficiency of TPPs:** With 236 GW of thermal power plants (TPPs) running much below their **capability** (at 59% capacity utilisation), India could have managed this demand surge by ramping up thermal generation.
  - The **TPPs' inability to ramp up power generation** is explained by critical coal stockpile levels at plant sites.
  - While TPPs are required to maintain stockpiles approximating two-three weeks of fuel needs, **more than 100 plants are operating with fuel stocks below 25% of the required level**, and over half of these have stocks below 10%.
- **Cash Flow Problem In The Electricity Sector:** The **inability of discoms to recover costs** has resulted in outstanding dues of over ₹1 lakh crore to power generation companies. Consequently, power generation companies (GenCos) default on payments to Coal India Limited (CIL).
  - Following the **Ukraine war**, international spot market **coal prices have soared to over \$400 a tonne** from around \$50 a tonne in 2020.
- **Discom Losses:** Despite two decades of sectoral reforms, the **aggregate losses of discoms stand at 21% (2019-20)**.
  - This is reflective of both **operational inefficiency and poor recovery of dues** from consumers, including those affiliated with state governments and municipal bodies.
  - These losses are also the reason for **discoms not being able to pay the generators on time**, resulting in payment delays to Coal India, which, in turn, is reluctant to supply coal on request.
- **Multiple Structural Fault Lines:** First is the **chronic insolvency of discoms** which has disrupted upstream supply chains.
  - Another is that the **utilities do not undertake effective resource planning**.
  - Moreover, the blame-game in such cases is inevitable; with every crisis, **states blame the Centre for faulty coal allocation** and dispatch, and the **Centre blames states' inability to pay upstream suppliers**.
    - The result is 'band-aid solutions' to suppress the crisis rather than fixing structural fault lines.

## What can be the Way Forward?

- **Planning and Policy Reforms:** There is a need to change our planning from one of primarily managing scarcity to one of **flexible resiliency**.
  - We also need to **introduce feedback loops in the ecosystem** so that stakeholders have both carrots and sticks — incentives to achieve/exceed compliance but repercussions if they don't.
  - Policy focus should be on **long-term structural solutions that address distribution financial viability** and a robust mechanism for resource planning.
- **Enabling Ecosystem:** The need is to create an enabling ecosystem to ensure power plants work efficiently.
  - With more than 90% of power being procured through long-term contracts, discoms have little incentive to dynamically assess and manage demand.
    - Discoms should be enabled to **undertake smart assessment and management of demand**.
  - **Revisiting fuel allocation** and supporting the **priority dispatch of efficient plants** could help India **reduce coal demand by up to 6%** of our annual requirement, and set aside more coal for the times of crisis.
- **Strategic Energy Transition:** A knee-jerk reaction to the current crisis may generate pressures to redirect investments to fossil resources, risking India's long-term energy transition efforts. **Coal dependency is neither predictable nor cheap**.
  - A strategic approach to the energy transition that **harnesses the low-cost [power promise of renewable energy](#)** and **opportunities for diversification in energy mix** is critical to address persisting power shortages.
- **Middle Term Solutions to Solve Crisis:** While India is expected to tide over the current coal shortage, the only way it can secure its longer-term energy security is by ramping up production from renewables.
  - However, in the medium term, it is also **imperative to upgrade infrastructure at coal**

**mining facilities**, and **open up existing mines** to the private sector for mining to augment the supply of coal.

- Failure to do so will leave it vulnerable to imbalances in supply and have deleterious trickle-down effects.
- **Focussing on Domestic Production and Reducing Imports:** Increasing domestic production to reduce and even avoid imports altogether is imperative. The key enabler for this would be to dispense with the requirement for **fresh environment clearance**.
  - India must enhance investments in the **deployment of clean coal technologies** throughout the coal value chain.
  - **Mining blocks allocated to the private sector**, private commercial mining now being legal, may be helped to get into production at the earliest.
    - By doing so, the requirement for higher coal imports and the consequent onerous financial burden would get moderated.

## Conclusion

Given the country's development aspirations, India's power demand is set to rise substantially and become more variable. Increasing climatic and geopolitical uncertainties underscore the need to become more efficient in the way we generate, distribute and consume energy. We need to act now for the long-term resilience of India's power sector.

### ***Drishti Mains Question***

Discuss the measures that can be taken to solve the power crisis that has become an annual affair in India.

## **UPSC Civil Services Examination, Previous Year Questions (PYQs)**

### **Q. Consider the following statements: (2019)**

- (1) Coal sector was nationalised by the Government of India under Indira Gandhi.
- (2) Now, coal blocks are allocated on lottery basis.
- (3) Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans: (a)**

### **Q. In India, the steel production industry requires the import of (2015)**

- (a) Saltpetre
- (b) Rock phosphate
- (c) Coking coal

(d) All of the above

**Ans: (c)**

**Q. Which of the following is/are the characteristic/ characteristics of Indian coal? (2013)**

(1) High ash content

(2) Low sulphur content

(3) Low ash fusion temperature

Select the correct answer using the codes given below:

(a) 1 and 2 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Ans: (a)**

**Q. Consider the following statements: (2020)**

(1) Coal ash contains arsenic, lead and mercury.

(2) Coal-fired power plants release sulphur dioxide and oxides of nitrogen into the environment.

(3) High ash content is observed in Indian coal.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 and 3 only

(c) 3 only

(d) 1, 2 and 3

**Ans: (d)**