



DAILY EDITORIAL ANALYSIS

TOPIC

**INDIA'S COAL SECTOR: FROM BLACK
GOLD TO NEXT-GEN FUEL**

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INDIA'S COAL SECTOR: FROM BLACK GOLD TO NEXT-GEN FUEL

Context

- **India's coal sector** has emerged as a **next-generation fuel** aligned with India's development goals towards **Viksit Bharat 2047** by integrating with green technologies.

Coal Sector in India

- **Evolution (1774 to Independence):** Commercial coal mining in India began in **1774** with the **Raniganj coalfield**.
 - ♦ It expanded rapidly under British rule, powering steam locomotives and industries.
 - ♦ The **Bengal Coal Company** (est. 1855) and the **Howrah–Raniganj rail link** (1853) laid the **foundation for India's industrial coal economy**.
- **Post-Independence:** National initiatives like the **Singareni Collieries (1920)** and **National Coal Development Corporation (1956)** introduced state participation.
 - ♦ However, early production inefficiencies and safety concerns persisted.

Coal in India's Energy

- Contributes about **70–75%** of power generation; and accounts for **55%** of primary energy supply.
- Fuels industries like **steel, cement, aluminium, fertilizers, and defence manufacturing**.

Policy Interventions and Nationalisation (1950s–1990s): Nationalisation in the **1970s** aimed to stabilise output and ensure worker safety, but it slowed innovation.

- ♦ The **Freight Equalisation Policy (1952–1995)** hindered mineral-rich eastern states like Jharkhand, Odisha, and Chhattisgarh by **disincentivising local industrialisation**.
- ♦ **Private participation** came in **1993**, but **inefficiencies, corruption, and block misallocations** led to a Supreme Court-mandated cancellation of over **200 coal blocks (2014)**, triggering the **most comprehensive reform** in India's coal history.

Major Concerns and Issues in India's Coal Industry

- **Rising Dependence on Coal Despite Renewable Push:** Coal demand rose **8% YoY** due to peak demand reaching 250 GW, despite record renewable capacity.
 - ♦ The government continues to **expand domestic coal production**, which raises **conflict with COP28 climate commitments**.
- **Environmental and Sustainability Challenges:** **CPCB** reported severe air pollution around mining regions of **Jharkhand, Chhattisgarh, and Odisha**.
 - ♦ Illegal mining, poor mine reclamation, and groundwater contamination are recurring problems.
 - ♦ **Coal India Limited (CIL)** faces penalties for not meeting green norms in over **60% of its mines**.
- **Transport and Infrastructure Bottlenecks:** The **Coal Ministry's** recent review identified transport congestion as a key issue like **railway rake shortages** delaying supply to power plants.
 - ♦ **Over 10,000 MW of capacity** ran below optimal levels due to **coal logistics constraints**.
 - ♦ New **Dedicated Freight Corridors (DFCs)** for coal are under planning, but **implementation delays persist**.
- **Financial and Operational Inefficiencies:** **Coal India's productivity** still lags global standards, output per employee is **30% below global average**.
 - ♦ Delays in land acquisition and clearances add to operational costs.
 - ♦ **Imported coal prices volatility** affects blending and power tariffs.
- **Labor and Safety Concerns:** Mine safety remains a major concern. **DGMS (Directorate General of Mines Safety)** recorded **36 fatalities** in 2025.
 - ♦ Contractual labor accounts for **over 45% of the coal workforce**, with frequent strikes demanding wage revision.
- **Climate and Just Transition Debate:** COP28 commitments and India's 2070 Net Zero target have intensified debates on **phasing down coal**.

- ♦ India lacks a **'just transition' plan** for 13 coal-dependent districts.
- ♦ No clear reskilling or compensation mechanisms are in place for affected workers.
- **Import Dependency and Energy Security:** India imported **over 220 million tonnes of coal in 2025**, up 9% from 2024.
 - ♦ Domestic production grew slower than consumption, mainly due to monsoon disruptions and equipment shortages in CIL subsidiaries.
 - ♦ The government's **Mission Coking Coal** is lagging behind targets for steel-grade coal.
- **Policy Uncertainty and Regulatory Delays:** Frequent changes in **auction rules and mine lease renewals** have discouraged private participation.
 - ♦ The **Coal Auction Round (2025)** saw only **35% of offered mines** receiving bids.

Key Reforms & Initiatives (2014–26)

- **Coal Mines (Special Provisions) Act 2015** and **Mines and Minerals (Development and Regulation) Amendment Act, 2015:** These enabled transparent auctions, opened commercial coal mining, and brought **India's coal policy in line with global best practices**.
- **Record Production:** India produced **1,029 million tonnes (MT)** in FY2024–25, crossing the **1-billion-tonne mark** for the first time.
 - ♦ *Coal India Limited (CIL)* contributed **773 MT**.
 - ♦ *Singareni Collieries Company Ltd (SCCL)* produced **83 MT**.
 - ♦ *Captive and Commercial Mines:* Over **170 MT**.
- **Import Reduction:** Coal imports for power dropped **by over 20% in FY2024–25**, saving India nearly **₹30,000 crore** in foreign exchange.
- **Revenue Growth:** Coal auctions generated **₹58,000 crore** cumulative revenue to states.
- **Employment Impact:** Over **13 million direct and indirect jobs** are linked to the coal value chain.
- **Future Target:** The Ministry of Coal targets **1.25 billion tonnes** of production and **1.5 billion tonnes** by 2030.

Clean Coal and Technology Integration

- **Coal Gasification Mission 2030:** Targeting **100 MT** of coal gasification annually by 2030.
- **Underground Coal Gasification (UCG) Projects:** First-ever auction of UCG blocks announced in **2025**, focusing on cleaner fuel conversion.
- **Washed Coal & Efficiency:** More than **35 coal washeries** under construction to reduce ash content and enhance thermal efficiency.
- **Carbon Capture Pilots:** *NTPC*, *CIL*, and *NLC India* jointly operate carbon capture and utilisation (CCU) projects.
- **Digital Mines:** Over **350 mines** equipped with drone-based monitoring, IoT-enabled sensors, and satellite surveillance through the **Coal Mine Surveillance and Management System (CMSMS)**.
- **Coal Exchange:** It aims to enable real-time price discovery, fostering a transparent market-based mechanism.

Road to Viksit Bharat 2047

- India's coal policy balances **energy independence**, **environmental responsibility**, and **economic resilience**, and India envisions an integrated **low-emission coal ecosystem** where:
 - ♦ Coal mining is **digitised, automated, and circular**.
 - ♦ Coal coexists with **renewables and green hydrogen**.
 - ♦ India emerges as a **global benchmark** in sustainable resource management.

Source: BL

Daily Mains Practice Question

- [Q]** How is India's transformation of its coal sector from a traditional energy source to a next-generation fuel shaping the country's path toward sustainable development and energy security?

