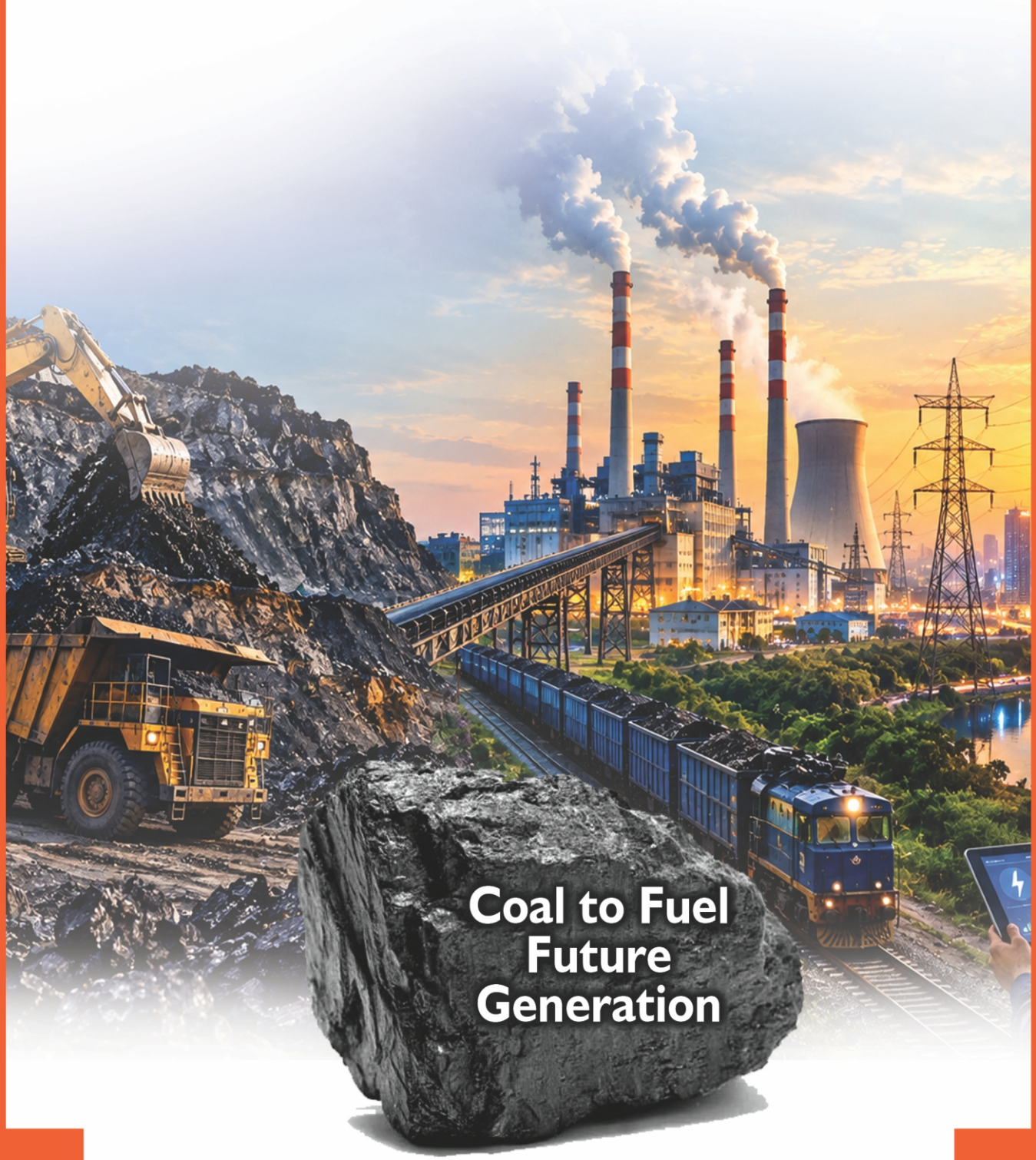
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SAMAY
PARIBARTAN
Vol:16 • No:06 • Issue: October, 2026

FROM THE
PUBLISHER'S DESK

India's Energy Future Linked With Coal

Energy requirement or environmental resolution? This is the question. Often when the chips are down policymakers scamper towards energy, particularly coal based due to its easy accessibility and affordability. Environment then becomes secondary. Yes, the reality is stark. Because, nations thrive and survive on meeting growing energy demand. India's rising electricity demand cannot rely solely on renewables, despite their augmentation. International Energy Agency says the country's annual electricity demand is projected to grow by roughly 6.4% per year through 2030, outpacing overall energy growth. Coal fired capacity has to breach and go beyond the 97 GW additional capacity addition, as was initially projected, by 2035 potentially reaching between 105 GW and 150 GW above current expansion plans. The emphasis on additional coal capacity marks a shift from the position outlined in the National Electricity Plan in 2018, which said India would not require any new coal-based capacity beyond projects already planned.

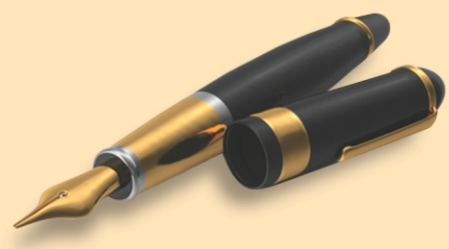
Ravenous hunger for power consumption is expected to reach gluttonous levels in future as India is poised to significantly soar over the coming decade, driven by rapid economic expansion, urbanization, and technological shifts. And, this can be satiated only by increased coal fired capacity addition according to the Chief of Central Electricity Authority. Coal is such an energy fuel, that is supressed forcefully over climatic considerations, yet after a brief passé it erupts again. Nations that leash coal, themselves again unleashes it on their own volition. This has happened over and again and no surprise there.

But in India's case, it stood firm by coal arguing in UN Climate Summits that developing nations cannot abandon their primary energy source while addressing poverty and economic growth. It was good that India reverted back its policy around four to five years back and said that it needs huge addition of coal-based generation. The CEA Chief however opined that the renewed focus on coal should not be interpreted as a slowdown in India's renewable energy ambitions. Thrust on coal based capacity addition merely underscores the need for a judicious mix of energy sources rather than focusing on one or two resources. Unlike Western nations that pledged net-zero by 2050, India has set a net-zero target for 2070, reasoning that it requires an interim period of rising carbon emissions and energy use to industrialize and lift living standards before phasing out coal.

It is a perfectly sound and logical argument. No discussion on India's energy future can ignore coal.

Ashok kr Roy

Ashok Kumar Roy
Publisher



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B Sairam, CMD, CIL takes stock of 3 major OC Projects of SECL

Surojit Roy Chowdhury





B. Sairam, Chairman, Coal India Limited (CIL) on a two-day field visit to South Eastern Coalfields Limited (SECL) made a round of Gevra, Dipka and Kusmunda opencast projects 10 and 11 October 2026. These three opencast mines, the pride of SECL, constitute the bulk of Chattisgarh based CIL subsidiary's total coal output. Their coal deposits make the mother lode of the company's coal resource.

Gevra OC ranks as the second largest coal mine globally while Kusmunda is believed to be the fourth largest. Gevra and Kusmunda alone produce over 100 million tonnes annually, making up close to 10% of India's total coal production.

Sairam's visit to CIL's second largest coal producing subsidiary comes at a time when coal demand is spiralling high amid El Nino activated dry spell and intense heat. Coal stocks are reportedly depleting fast at the thermal power plants with a spike in power generation. There is a scamper by the

coal major to replenish the plummeting stocks. With the beginning of festive season the company would be aiming to allay the fears of lights out situation in the country. Coal supplies have been slowly inching upwards recently. Among the 191 thermal power plants at least 44% have reached critical level at the September end it was reported.



Coal Minister G Kishan Reddy however denied the coal shortage in the country and the assured the supplies would step up.

Sairam inspected various operational patches of the mine and interacted with departmental employees and contractual workers.

Sairam began his visit by taking an overview of Gevra mine from the viewpoint, where he was briefed on the mine's plan. He subsequently inspected the departmental mining patch and interacted with operators of the P&H shovel and 240-tonne dumpers.

During the inspection, the Chairman stepped into India's first Tata Hitachi 21-cubic-metre electric shovel and inspected the operator's cabin. He interacted with the operator to understand the machine's safety features and ergonomics. He also inspected the Krishna shovel.

SECL Director (Technical–Operations) Shri Ramesh Chandra Mohapatra and Director (Technical– Projects & Planning). Nripendra Nath, along with other senior officials, accompanied the Chairman during the visit. ■



TGGENCO heaps praise on CMPDIL

Surojit Roy Chowdhury



Central Mine Planning & Design Institute Limited (CMPDIL) the Ranchi headquartered mine planning and design unit of India's coal major Coal India Limited (CIL) was appreciated by Telangana Power Generation Corporation Limited (TGGENCO) for timely completion of the mining plan and mine closure plan for the Tadicherla-I Coal Block Opencast Mine.

The Telangana based power producer valuing the mine planner and designer for its professional excellence and technical expertise issued a Certificate of Appreciation. It cited CMPDI's dedication, coordinated efforts and commitment to quality, regulatory compliance swift preparation and finalisation of the mining-related plans.

The assignment was completed well within the stipulated timeframe, supporting the progress of the coal mining and power-sector project.

Project overruns have a tendency to severely impede original budget, timeline, or scope estimates. Industry data shows that roughly 85% to 90% of major projects go over budget, with average cost overruns sitting between 27% and 28%. Against this, CMPDIL's feat truly deserve applause.

The recognition highlights CMPDI's ability to deliver technically sound consultancy services within the prescribed timeline while maintaining the required standards of quality and regulatory compliance.

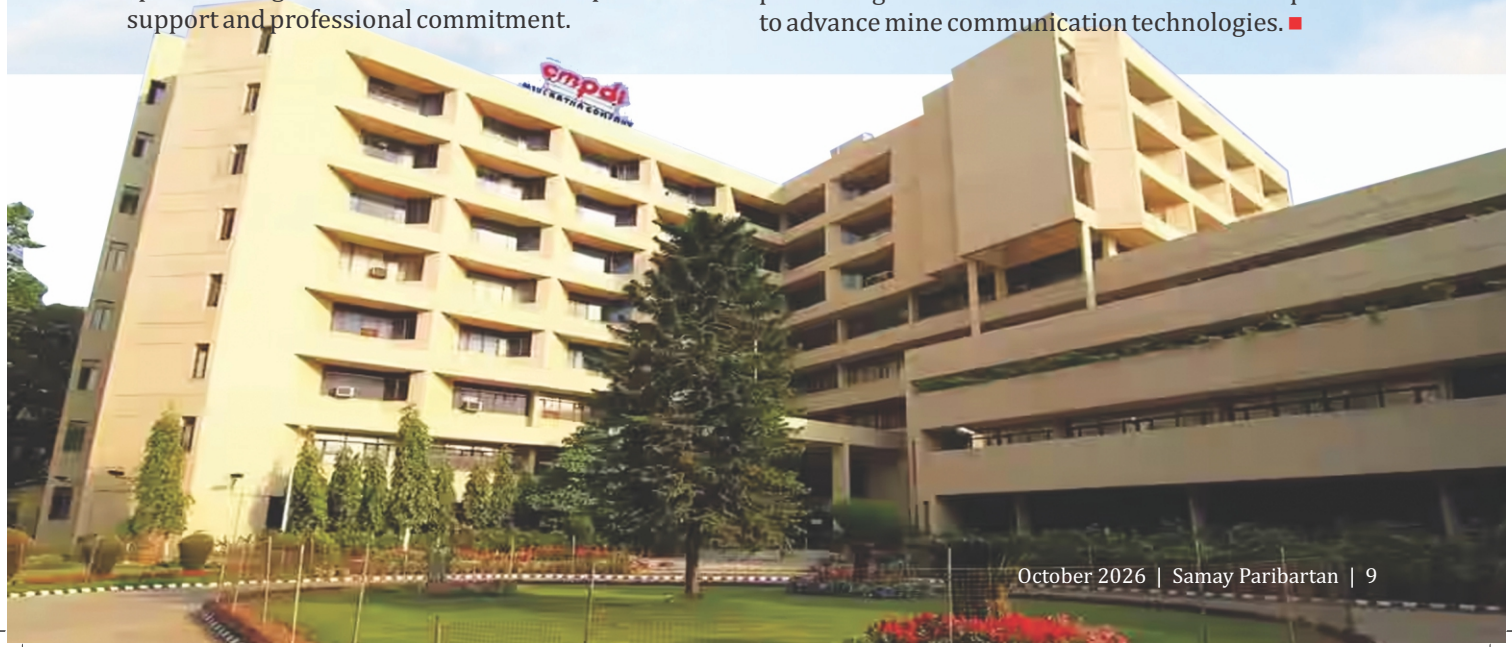
TGGENCO also acknowledged the contributions of CMPDI officials involved in the assignment, with special recognition for their leadership, technical support and professional commitment.

This appreciation specifically recognised General Manager, Opencast Division, for leadership and guidance during the assignment and Sudarshan Rath, Manager (Mining) for exemplary professionalism, technical contribution and valuable support.

Their contributions helped facilitate the coordinated execution and timely finalisation of the Mining Plan and Mine Closure Plan for the coal block.

The recognition from TGGENCO also underscores the importance of collaboration between technical consultancy organisations and power generation companies in supporting the progress of mining projects.

Recently, CMPDIL successfully executed specialized gyro survey operations for the high-profile Mumbai-Ahmedabad High-Speed Rail Project. It had also expanded exploration portfolios into non-coal minerals, receiving an exploration license for the Nawatal-Devigarh Rare Earth Elements (REE) Block in Rajasthan. A showcase R&D achievement of CMPDI is Operationalization of NaCCER (National Centre for Coal and Energy Research–Phase-I) at Ranchi, facilitating strategic clean-coal and net-zero research MoUs with IIT (ISM) Dhanbad and IIT Hyderabad. Another important achievement was eEstablishing a pioneering 5G Use Case Lab at its Ranchi head-quarters to advance mine communication technologies. ■



BCCL's Shares Shot Up 6% Following Coking Coal Price Increase

Bharat Coking Coal Limited (BCCL), a subsidiary of India's coal major Coal India Limited (CIL), which is the country's top coking coal producer declared that its Board has approved rationalisation of basic prices of certain grades of raw coking coal for the non-regulated sector with rate hikes ranging from 0.1 per cent to 14 per cent.

– Ashok Kumar Roy

The revised prices came into effect on October 14, 2026, following approval by the company's board at its 447th meeting held at Koyla Bhawan in Dhanbad. It is aimed at correcting "disproportionate inter-grade price differentials" in BCCL's raw coking coal pricing, it said in a stock exchange filing.

BCCL last revised its coking coal prices on April 1, 2026, based on Wholesale Price Index (WPI) indexation. That revision resulted in an increase of 0.24% over the previous year's prices.

"With a view to correct dis-proportionate inter-grade price differentials, the revision covers steel grades (I and II), direct feed, PCC Washery Grades (W-II to W-VI) and HVMC Washery Grades (W-I to W-VI) for non-regulated Sector only. The basic prices of different grades have been increased by approximately 0.1 per cent to 14 per cent over the existing prices," the filing said.

As per the revised price notification, Steel Grade I prime coking coal is priced at Rs. 7,000 per tonne, while Steel Grade II will cost Rs. 6,500 per tonne. Direct Feed Coal has been priced at Rs. 6,750 per tonne. The prices vary according to the coal grade, with lower rates specified for the lower PCC washery grades.

According to industry experts, the move will marginally increase the cost of domestic coking coal for steel manufacturers and other non-



Manoj Kumar Agarwal
CMD, BCCL

regulated buyers. But since the increase is 0.1-14 per cent and applies only to selected raw grades, the immediate impact is likely to be modest rather than broad-based, they said.

Auction Buyers

BCCL has specified a separate pricing mechanism for certain categories of buyers. Consumers purchasing coal through non-regulated sector linkage auctions from Tranche VI onwards, non-regulated sector Central Public Sector Enterprises (CPSEs), State Nominated Agencies (SNAs), and buyers under Coal India Limited's e-auction scheme will have to pay the higher of the newly notified price and the modulated price fixed by BCCL on March 31, 2026.

According to the notification, the higher of the two prices will apply to these buyers. This provision ensures that the applicable price is determined by comparing the revised rate with the previously established modulated price.

With a view to correct disproportionate inter-grade price differentials, the revision covers steel grades (I and II), direct feed, PCC Washery Grades (W-II to W-VI) and HVMC Washery Grades (W-I to W-VI) for non-regulated Sector only

BCCL plays a pivotal role in fuelling the nation's steel sector. It manages an extensive network of open-cast and underground mines across Jharkhand and West Bengal, with a particular focus on the Jharia Coalfield.

Share Price Surge

Immediately in the aftermath of the price revision, BCCL's shares shot up 5% to 7%, reaching around Rs. 32.87 to Rs. 33.48.

Vipin Kumar, AVP research at Globe Capital Market, said that the stock has started a bounce-back rally from the price support zone of the Rs. 30 to Rs. 31 levels following a sharp decline from the Rs. 44.40 levels. "Going ahead, a decisive close above Rs. 34 will be a positive development that could lead the index towards the Rs. 36 to Rs. 37 levels in the near term. On the downside, the Rs. 30 to Rs. 31 zone will provide decent support," he said. ■



CCL's PR Divn Receives Rare Honour at ET Summit for Strategic Communication

Ashok Kumar Roy

Corporate Communications and Public Relations Department of Central Coalfields Limited (CCL) has received a rare distinction and recognition and was bestowed the prestigious 'Strategic Communication Leadership Award' at the ET Business Excellence and Leadership Summit 2026 in New Delhi on 27th September. which noted the recognition of CCL's efforts in creative communications, innovative public relations and corporate branding.

In a formal ceremony, Indian film personality Rajeev Khandelwal presented the award to Alok Kumar Gupta, General Manager & Head of the Corporate Communications and Public Relations Department CCL and Manager (CD) Mayank Kashyap who received the award on behalf of CCL.



Two reasons that accentuate the award further are, it is for the first time any CC & PR Division among Coal India's (CIL) eight subsidiaries, including Coal India itself, has received such appreciation at national level. CCL's CC & PR Division is the lone member of the distinguished club in CIL as whole.

Secondly, the award was given away by ET's annual business excellence summit, which is widely well regarded in the corporate and business sectors as premier, high-impact convergence point for enterprise leaders, policymakers, innovators, and MSMEs across India. The annual event also, honours visionary leaders, innovative companies, start-ups, and legacy businesses that drive sector transformation. The summits feature high-profile awards and felicitation ceremonies include ET Business Icons and industry champions that validate brand credibility and organizational excellence.

Surprisingly, Alok Kumar Gupta, is a non-PR person. He belongs to Personnel cadre, yet had driven CCL's corporate building needs admirably over years with many innovative initiatives. He credits the CCL's award to CMD Nilendu Kumar and the entire management team for encouraging the Department's creative ideas. These efforts have focused on strengthening CCL's corporate identity and enhancing its brand presence at the national level.

The award recognises the department's initiatives in communication, innovation and creative outreach, as well as its efforts to create an effective platform for public relations professionals. These include the designing and implementation of a new CCL logo and tagline, wall murals highlighting the dedication of coal miners, the 'Kabadi Se Kanchan' and 'War Against Wastage' initiatives, the National PR Conclave and a customised postal stamp dedicated to the spirit and contribution of CCL employees.

These initiatives have also contributed to strengthening its engagement with the media. In recent years, there has been a qualitative increase in CCL-related coverage across print, digital and electronic media, while the company's media relations have also received fresh impetus.

The achievement would encourage the CCL family to pursue further innovative initiatives and strengthen communication practices in the years ahead, said Gupta.

Primarily, corporate communications and public relations functions as a strategic management tool to shape public perception of a corporate in a positive disposition, and maintains alignment a two-way communication channel across internal and external stakeholders. ■

Even with Centre's Impetus, Coal Gasification's Challenge is Capital Availability

Surojit Roy Chowdhury

As an alternative use of coal, other than power generation, coal gasification offers several advantages. It converts high ash solid coal into a synthetic gas mixture known as Syngas. Syngas acts as a flexible chemical building block that can be converted into downstream products such as hydrogen, methanol, ammonium nitrate (AN) synthetic natural gas (SNG), and fertilizers like urea. Syngas also helps in electricity generation.

The great advantage is it can help reduce expensive imports and forex outgo on natural gas, methanol and fertilisers. Importantly, coal gasification effectively processes low grade, high-ash coal, common in regions like India that perform poorly in traditional combustion boilers. But this has its own challenges.

Ammonium Nitrate is a key ingredient in explosives which many mining industries use extensively, particularly the state owned Maharatna coal miner, Coal India Limited. AN is imported and any supply chain constraints would have adverse effect on production as happened in 2020.

The government of India is strongly backing coal gasification, with a Rs. 37,500-crore incentive programme addressing upfront capital-costs. However analysts and market players emphasise on a dedicated financing and risk-sharing architecture to make it market ready, reports *Hindu Business Line*.

Industry sources opined that coal gasification projects have large upfront capital requirements, long gestation periods and multiple layers of risk such as technology performance with Indian high ash coal, project execution, downstream product pricing and offtake, ramp-up risk, carbon management and the cost and tenure of debt.

"Government is addressing the capital-cost gap. However, next challenge is cost and availability of capital itself. If coal gasification is to become an industry rather than a collection of a few large projects, financing structures have to make a technically and economically sound project bankable irrespective of the size of the promoter's balance sheet," reported *HBL* quoting a source.

Another industry source was quoted as when large cap companies are feeling "jittery" entering coal gasification, the opportunity does not seem financially viable for mid-sized firms and start-ups. First-generation projects inevitably carry technology, execution, integration and scale-up risks.

To make coal gasification a success more participation is needed, and to achieve that the government will have to handhold the players, at least in the beginning. This is being done for the first



time and as expected the investor community is cautious in lending, which needs to be addressed at the government level, the same source added.

A senior government official said that the Coal Ministry has been very proactive on gasification and has been constantly meeting with the industry to help them move ahead.

"In our formal and in-formal interaction with interested companies, a few have suggested having a partial credit guarantee facility. This will help address debt financing constraints that projects may encounter as they move from subsidy allocation to financial closure and execution," the official added.

Atanu Mukherjee, CEO of Dastur Energy, who has been closely involved in the coal-gasification policy and technology discussions, said that the next challenge for the sector is to move from capital incentives to financial closure.

Mukherjee has been involved in the National Coal Gasification Mission discussions and with NITI Aayog's work on gasification technologies suited to Indian high-ash coal.



"The incentive framework is an important first step, but coal gasification projects will ultimately need access to long-tenor, competitively priced debt if the sector is to scale. A partial credit-guarantee mechanism, backed by an appropriate sovereign support structure, can help reduce lenders' perceived risk while still keeping adequate responsibility with the project sponsors and financial institutions," Mukherjee told *HBL*.

The objective should not be permanent government support. It should be to help commercially viable projects reach financial closure during the early stages of the industry, he emphasised.

As more projects establish operating track records and lenders become better able to assess and price the risks, the need for such support should progressively reduce. That would also help widen participation beyond a few large balance-sheet players and deepen the financing ecosystem for coal gasification, Mukherjee explained.

One solution can be an external credit insurer or guarantor, supported by a defined sovereign backstop, could cover an agreed portion of lenders' repayment exposure. This would help break the financing gridlock while retaining meaningful risk with lenders, insurers and project sponsors, suggested one of the industry sources.

CIL's Coal Gasification Endeavours

CIL is synergizing its coal gasification efforts with three major CPSUs - BHEL, GAIL, and BPCL. The centrepiece of this push is a coal gasification-based ammonium nitrate project of 6.6 lakh tonnes per annum capacity at Lakhanpur under its Odisha based subsidiary Mahanadi Coalfields. This project, at around Rs. 25,000 crores is being developed through Bharat Coal Gasification and Chemicals which is a joint venture between Coal India and BHEL. This is CIL's first commercial scale downstream coal gasification venture.

Alongside, CIL is pursuing two coal-to-Synthetic Natural Gas projects, each with 633 million normal cubic metres per annum capacity, aimed at supplying cleaner fuel to fertiliser units and industrial consumers.

One is being planned in Bardhaman, West Bengal through JV with GAIL under Coal Gas India Limited, at an estimated investment of Rs.13,000 Crores.

The second SNG facility is planned at Chandrapur in Maharashtra with BPCL at a capital outlay of around Rs 12,200 crores. When commissioned, the three mega facilities could anchor India's coal-to-chemicals ecosystem and reshape the country's vast coal reserves while supporting energy security and industrial growth. ■

CIL denies supply slippage to NTPC & calms quality issues

Srinivasan S

The heat is on literally as the electricity consumption rose sharply by approximately 20.7% in early September 2026 compared to the previous year. India's coal fired plants are gasping for the dry fuel. El Nino patterns, delayed uneven and reduced monsoons, and high agricultural/irrigation needs pushed the demand higher. Compounding to this India's AI Centres boom are also in need of higher power requirement.

Amid coal supply inadequacies, whether real or perceived, two of India's corporate titans – the nation's power generator NTPC Limited and the country's top coal producer Coal India Limited (CIL) have exchanged worried words over supply and quality concerns.

Days after a senior executive of NTPC Limited said most of the company's power plants had coal stocks sufficient for only about a week, citing supply issues, CIL countered stating that it met and exceeded its contractual coal supply commitments to NTPC Limited even as the country's largest power producer faced critically low coal stocks at several plants.

Business Standard had earlier reported that NTPC's coal stocks fell to 5.2 million tonnes (mts) from 18.7 mts in April, leaving most plants with about seven days' cover. This highlights the disconnect between CIL's reported deliveries and fuel availability at power stations, said a BS report.

NTPC's coal stocks fell to 5.2 million tonnes (mts) from 18.7 mts in April, leaving most plants with about seven days' cover.

No supply shortfall

The state-owned CIL supplied 97 mts of coal to NTPC and its joint ventures during April-September of FY 2027 which is about 5 per cent more than in the corresponding period last year and 1 per cent above the level in the same period of FY25, the company said in an exclusive response to *Business Standard* as per the daily's report.

While CIL's numbers project year-on-year positive growth what is important is that whether the company was able to meet current year's committed quantity during H1 amid the rising power generation and coal demand.

Clarifying, the company said "CIL has been supplying coal above its commitment to NTPC under the Fuel Supply Agreements during FY27, and there has been no shortfall in supplies from CIL's side," adding that it was also supplying coal to NTPC under bridge linkage.

NTPC operates 50 power plants across the country and is diversifying its coal sourcing beyond CIL, its



largest supplier, by buying from commercial and captive miners. It is also the largest buyer of CIL's coal.

CIL said its overall dispatches to the power sector during April-September reached 302.8 mt, the highest for any first half, marking a 6 per cent increase over the corresponding period last year.

The company began the current financial year 2027 with a record opening inventory of 130 mts on April 1 and liquidated approximately 63 mt during the first half while continuing to supply power plants and other consumers. Its pithead stocks stood at 67 mts on October 1, compared with 78.7 mt a year earlier.

The other concern is coal quality over which both the PSU giants have been going hammer and tongs over the years. NTPC Limited has been repeatedly highlighting stones and boulders making their way into the coal that was supplied to them and grade variation.

Allays Quality Concerns

CIL said there had been no change in the grade or quality profile of coal supplied to power plants.

Results from third-party sampling agencies during FY 2027 showed that the difference between the weighted average of declared gross calorific value (GCV) and the analysed GCV of coal was around 67 kilocalories per kg (kcal/kg), well within the 300 kcal/kg grade band, CIL said, reported *BS*. GCV measures the heat energy released when coal is burned.

The Mahartana coal miner said this indicated that stock liquidation had not changed the grade or quality profile of coal supplied to power plants.

CIL also said specific coal consumption (SCC), or the amount of coal used to generate a unit of electricity, remained broadly stable at 0.69 kg per kilowatt-hour in the first half of FY 2027, compared with 0.68 kg in FY23 and 0.69 kg in FY 2026. It means burning of less quantity of coal for the same unit of power generated.

This was despite imported coal blending declining from 35.1 mts in FY 2023 to 6.8 mt in FY 2026, with a further reduction to around 1.2 mts in H1 FY 2027, the company said. Blending involves mixing two or more types of coal to achieve a specific grade for use in thermal power plants.

CIL's provisional bills are later adjusted, once the actual quality of coal is tested and established by an authorized independent Third Party Sampling agencies. vogue since 2016

"The comparable SCC despite substantially lower imported coal blending indicates an improvement in the quality of domestic coal," CIL said.

Consumers can engage any of the 11 independent third-party sampling agencies empanelled by Power Finance Corporation to assess coal quality at CIL's loading ends, according to CIL. For variations in quality at the mine end, the Fuel Supply Agreement provides for a compensation mechanism, it added.

Coal consumers have the flexibility to select a TPSA of their choice from the PFC-empaneled agencies for quality assessment.

CIL has earlier said and consistently maintains that the notion that customers are billed for higher grade coal than one actually supplied is misconceived. CIL initially bills customers based on the declared grade of coal supplied. Such provisional bills are later adjusted, once the actual quality of coal is tested and established by an authorized independent Third Party Sampling agencies. This mutually agreed system of sampling is in vogue since 2016.



State run CIL is also doubling down on mechanisation and automation to ensure greater consistency in coal quality, circumventing human interference, while significantly reducing quality-related concerns of consumers. The move is aimed at further promoting the use of technology and transparency in the sampling. ■

NTPC aims Rs.14K Cr Coal Gasificaiton

Ashok Kumar Roy



National power generator, the State-owned NTPC Limited plans to invest Rs. 14,000 crore in a coal gasification plant at Talaipalli in Chhattisgarh and expects about Rs. 2,000 crore in support under the Centre's coal gasification scheme, according to a senior executive.

The facility will have an annual capacity of 0.5 million tonnes of synthetic natural gas (SNG), produced at $13 per million British thermal units (MMBtu).

"NTPC is waiting for the Viability Gap Funding (VGF) from the government before it starts the work. The company already has the land there," he said.

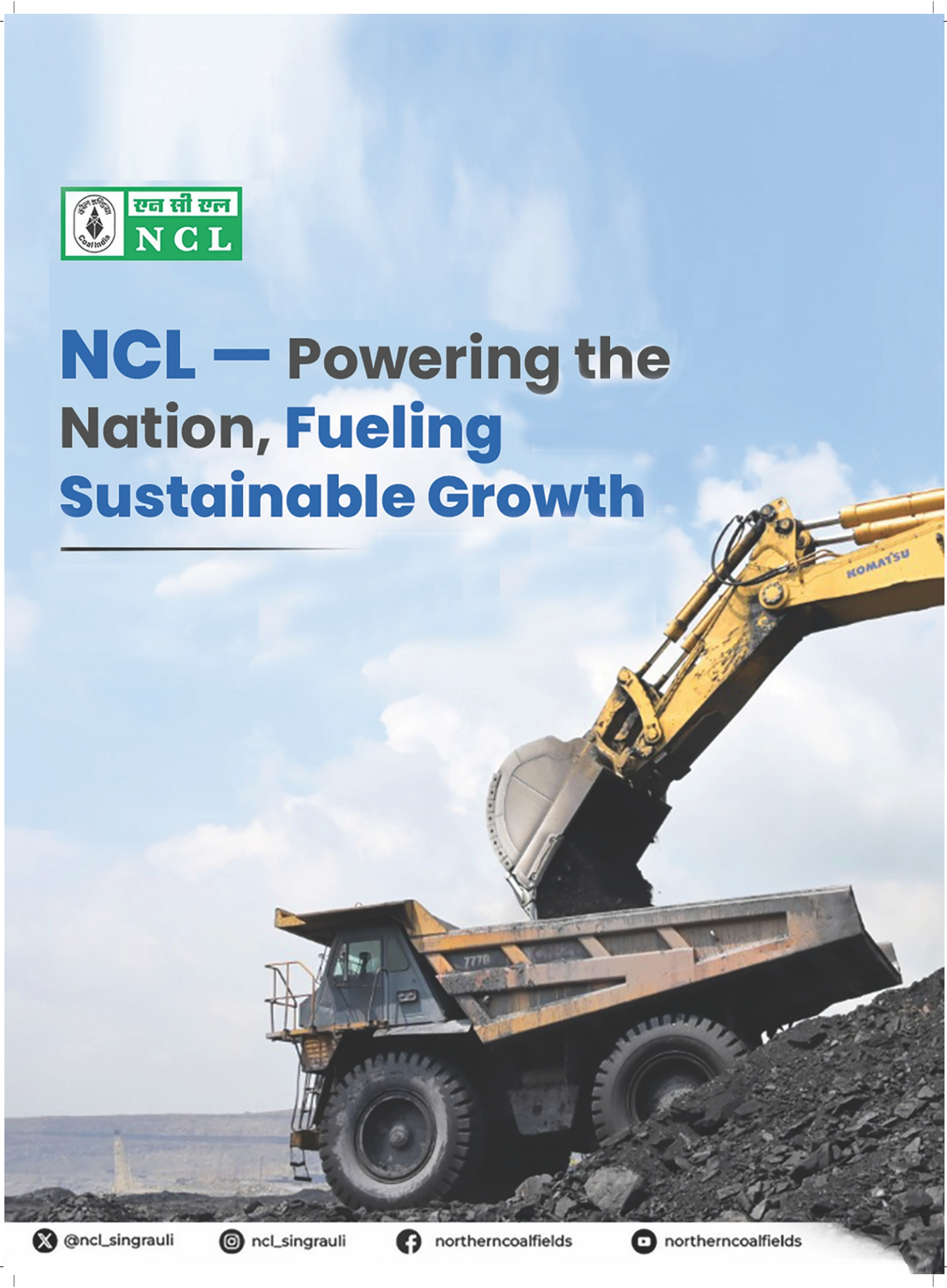
The company has completed preliminary feasibility studies and the detailed project report, and work will begin once the government approves the proposal and releases the funding, the executive said.

NTPC was one of seven applicants in the first round of the Rs 37,500-crore Scheme for Promotion of Surface Coal and Lignite Gasification Projects, alongside Adani Enterprises, Talcher Fertilisers, Gallantt Ispat and Shyam Sel & Power.

It aims to use about 75 million tonnes of coal and lignite, supporting the target of 100 million tonnes of gasification capacity by 2030. Incentives of up to 20 per cent of eligible plant and machinery cost are offered, capped at Rs 5,000 crore per project.

The executive said NTPC was confident of finding buyers for the gas and securing bank loans for the debt-funded project. It is in talks with several technology providers, mostly foreign, and expects to commission the plant in four to five years.

NTPC will also apply in the scheme's second round, which opened on September 8, with fresh windows every two months. The Centre expects the scheme to attract Rs 2.5 lakh crores to Rs 3 lakh crores in investment across about 25 projects. (*Inputs: Swarajya*) ■


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India to add more coal fired generation to meet escalating energy demand: CEA Chief

Special Correspondent

Even as the renewable energy expansion programme is aggressively surging ahead, India's rapidly growing electricity demand could require the country to build substantially more coal-fired generation capacity than previously projected, according to Ghanshyam Prasad, Chairman, Central Electricity Authority of India (CEA), on 13 October.

Speaking at the 20th India Energy Summit organized by the Indian Chamber of Commerce, the CEA Chief noted that demand trends may force the country's planners to reassess the scale of coal capacity additions needed to ensure reliable electricity supplies over the coming decade. He stressed the need to maintain adequate baseload capacity to address the challenges posed by the intermittency of renewable energy sources. Solar and wind power generation fluctuates depending on weather conditions, while the limited availability of energy storage restricts the ability to use surplus renewable power to meet evening and night-time demand.

The country had projected last year that it would add 97 gigawatts (GW) of coal-fired power capacity by 2035, taking total installed coal capacity to about 307 GW. But stronger-than-expected growth in power consumption could push future requirements significantly higher.

"Demand is growing and as demand grows we need stable sources of supply to meet that demand," Prasad said. Coal fulfils that role commendably despite its polluting nature.

Daily peak electricity demand this year has been running about 45 GW to 50 GW higher than a year earlier, partly because weaker monsoon rains,

reduced hydroelectric output and increased reliance on thermal plants, Prasad added.

India's power shortages surged to 560 million kilowatt-hours (kWh) in September, the highest since August 2023, even as coal-fired plants increased output to meet strong demand.

Between April and August this year, coal-based sources generated 579,869.38 million (MU) against 527,542.87 MU in the corresponding period last year, around 10% higher. Generation from coal-based sources was also the highest recorded for the April-August period in the past three years.

In contrast, hydropower generation fell by over 11% to 75,304.58 MU during April-August period this year, from 84,767.77 MU in the corresponding period last year.

Continuing the trend, coal-fired generation rose 13.3% for the months of September from a year earlier, while hydropower generation has fallen 20% from a year ago, government data showed.



Stress on coal-based plants also reflected in depleting coal stocks in these plants. Dry fuel stocks at domestic coal-based power plants have declined by around 66% by the end of September this year, compared with a decline of around 23% during the same period last year, when stocks fell from 55.2 million tonnes at the beginning of April to 42.6 million tonnes by the end of September.

"The stock is depleting almost every day. We need to put these plants under maintenance as well. We are not finding time to put them on the maintenance cycle," Prasad said, highlighting the challenges facing the power sector.

According to Prasad, additional coal-based capacity requirements could rise beyond earlier estimates, potentially reaching between 105 GW and 150 GW above current expansion plans.

The remarks highlight the challenge facing India as it seeks to balance surging electricity consumption with its long-term clean energy transition goals. While renewable energy capacity continues to grow rapidly, policymakers remain concerned about ensuring round-the-clock power availability and grid stability.

In addition, reduced rainfall during the monsoon season has also curbed hydropower generation, increasing reliance on thermal power plants to bridge supply gaps.

"It was good that 4 to 5 years back we reverted our policy and said that we need a huge amount of and huge addition of coal-based generation," he added. Prasad opined that the renewed focus on coal should not be interpreted as a slowdown in India's renewable energy ambitions. The situation, he said, underscored the need for a judicious mix of energy sources rather than relying on one or two resources. The emphasis on additional coal capacity marks a shift from the position outlined in the National Electricity Plan in 2018, which said India would not require any new coal-based capacity beyond projects already planned.

Notably, India added roughly 50 GW of renewable energy capacity last year and is expected to continue commissioning more than 50 GW annually in the coming years, he said. However, the CEA chief noted that renewables alone cannot meet the country's growing electricity needs without complementary sources of firm power.

Importantly, he also flagged the challenges of integrating large volumes of renewable energy into the grid, particularly in Rajasthan and Gujarat, where the high concentration of renewable energy projects has led to grid tripping which is the automatic disconnection of power generation units or transmission lines due to faults or abnormal operating conditions.

Expanding nuclear generation, pumped-storage hydropower and other balancing technologies will be crucial to maintaining grid reliability as renewable penetration increases. ■

As LNG shortage deepens coal demand spurts

Special Correspondent



The energy crunch is afflicting the world with the end of the Third Gulf War nowhere in sight. The regional conflict involving the US-Israel-Iran escalation and wider Gulf States has faced protracted fighting and temporary cease-fires or pauses with no permanent, comprehensive resolution yet in sight.

Disagreements remain over post-war maritime regulations, freedom of navigation, and whether Iran can continue using the strait as a geopolitical leverage point.

The ongoing conflict in the Middle East has triggered a severe global energy crisis—described by Qatar Energy and state officials as the worst on record—driven by the effective closure of the Strait of Hormuz and widespread attacks on regional hydrocarbon infrastructure. Roughly 20% of the world's oil and liquefied natural gas (LNG) transit through the Straight of Hormuz , which has faced severe transit blockades and tanker safety threats.

LNG gas flows from the Persian Gulf are still over 75% lower than they were before February 28th. Yet, heating demand is rising ahead of winter. In Europe, the November natural gas benchmark contract is trading at over 81 euros per MWh. In Asia, the spot market LNG topped prices for Europe, drawing cargoes eastward.

Coal-the fixture of energy system

In the midst of these escalating prices and constricted LNG supplies, coal is in spotlight once again. Despite tall talks of closing down coal, when the energy chips are down, the dry fuel is the safest fall back option.

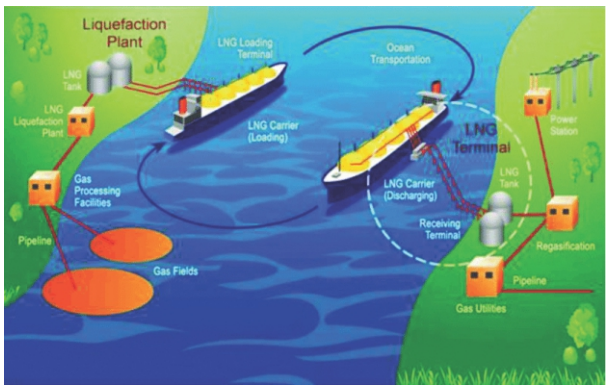
Coal is 80% cheaper than LNG. Practicality demands energy need takes precedence over environmental considerations. Sounds, rough but that is the reality.

Coal has been the target of much climate-related regulation on the basis that it emits the most carbon dioxide plus pollutant gases and particulate matter. Yet coal has remained a fixture of the global energy system because of its affordability, availability, and reliability. Even so, global oil exports have recently been on the decline, driven lower by the above mentioned regulation, which has made it more expensive to generate electricity from coal in many parts of the world—but then the U.S. and Israel attacked Iran, starting a war that has wreaked havoc on gas trade.

In September, the International Energy Agency said it expected demand for coal this year to rise to an all-time high—despite the net-zero push that the IEA is very much in favor of, despite the surge in LNG export and import capacity, and despite the closure of many coal power plants in Europe and North America.

Coal-buying is set for an especially strong fourth quarter of the year, as peak demand season begins.

Until this month, coal exports globally were on track for an annual decline, said Reuters, but the current quarter could change this. Australian thermal coal is trading at a discount of 80% to LNG for delivery in Asia, where the spot price for November cargoes topped $26 per million British thermal units, up from $25.25 per mmBtu earlier this week.



"Asian demand remains price-sensitive, with Chinese buyers particularly unlikely to chase spot cargoes unless prices mean revert, and that is currently unlikely," Davenport Energy managing partner Toby Copson told Reuters earlier this month.

LNG flows trickle down

The reason this is not likely to change is that LNG cargoes out of the Strait of Hormuz are still much fewer than they were before the war started. While tanker-tracking outlets report an improvement in LNG flows out of the Middle East in September, even improved, the flows are much lower than pre-war averages.

In September, 21 LNG cargoes are estimated to have exited the Strait of Hormuz, the highest monthly number since the Iran war began, yet down from over 60 before the war, shipping data compiled by Reuters and released earlier in October. The reason, besides the extended force majeure that Qatar Energy has in place for its LNG industry, is the increased frequency of tanker attacks in the waterway. Over two weeks since September 29th alone, there have been as many as 20 attacks on vessels in the Persian Gulf, most of them tankers, including LNG carriers.

Coal Scamper

Coal, meanwhile, is not anyone's target. Australian benchmark coal is trading at the equivalent of $5.40 per mmBtu, which would make any government reconsider its energy transition plans favoring liquefied natural gas, which is trading at $26 per mmBtu—as long as that government has not shut down its coal power plants, of course.

This is especially true of the world's biggest energy importers, namely Japan, South Korea, and China. Reuters' Maguire reports, citing Kpler data, that these three imported a collective 122 million tons of coal during July-September period of 2027. Third-quarter demand for coal is driven by summer heat and cooling demand. Japan, China, and South Korea were importing coal at a rate of 143 million tons per quarter in both the last three months of 2024 and of 2025—and that was before the war.

Yet coal imports are also rising in the most anti-coal part of the world: Europe. With the war driving gas prices to highs last seen in 2022, and with the European Union reducing its choice of suppliers with its ban on Russian energy commodity imports, coal imports into the bloc that covers most of the continent have risen strongly this year, with the June total, for instance, up by 43% on the year.

It was at this point in time that the world's largest coal exporter, Indonesia, decided to pursue production quotas and policy tweaks in coal that saw its exports drop by as much as 23% in August. The IEA expects the country's coal production to decline this year by over 12 million tons, citing lower production quotas and political discussions about revenue-sharing arrangements with mine operators and the possibility of moving export control to a single state-owned entity.

This could drive coal prices higher during peak demand season, but here's the thing: coal prices are quite unlikely to ever come close to LNG prices. ■



Bitcoin Transaction's Water Consumption more than a Bit Worrying

V.S.S. Nair

Paper Currency Passe

Traditional paper currency of is fast becoming a passe. Cotton (75%) and linen (25%) blend substrate paper currency is rapidly phasing out globally driven by the explosive growth of instant digital transactions and soaring physical management costs.

There was a time people carried money in their pockets and wallets, and cash transactions were the norm. For outstation travels, to deter fluid finger smiths from flicking the cash traveller's cheques were deemed as saviours. Then plastic money- credit cards and debit cards- replaced the paper currency. But they too are slowly waning. All one needs these days is smart phone, of course with sufficient money in the bank account.

Systems like UPI, mobile wallets, and contactless tap-and-go credit/debit networks have made carrying cash a chore rather than a convenience. A UPI payment (Unified Payments Interface payment) is a real-time digital money transfer method that moves funds instantly between bank accounts using a mobile phone.

Money flows across the ether moving instantly through invisible networks, algorithms, and satellite beams in a matter of seconds and occasionally in minutes. Governments worldwide are rolling out official digital tokens (like the digital Yuan or e-Rupee). This moves physical fiat currency into a digital wallet, radically shrinking transaction costs.

Strains water resources

But what about the cost of these transactions and footprint they leave on the environment and the dwindling natural resources, especially the life source - water? It is colossal and worrying.

In 2021, the average transaction recorded on the Bitcoin blockchain carried an estimated water footprint of roughly

16,000 litres, after the water used to generate the electricity behind the mining process and to cool the machines doing the work was added up.

That figure was drawn from a peer-reviewed study published in the Cell Press journal Cell Reports Sustainability. In a talk with Greenpeace, USA to discuss the findings of this hidden ecological cost of Bitcoin mining, Alex de Vries, the researcher and data scientist with a background in financial economics who tracks the industry's resource use, assessed the Bitcoin's water consumption. De Vries's groundbreaking research report highlights substantial water usage associated with Bitcoin mining.

Bitcoins' transaction roughly works out 6.2 million times the water footprint of a single credit-card swipe, based on de Vries' own estimate. One card transaction carries a footprint of around 2.6 millilitres.

To give a scale, the water consumption of U.S. Bitcoin miners alone could be on par with the average annual water consumption of approximately 300,000 U.S. households, equivalent to that of a city like Washington, DC.

The research, titled "Bitcoin's growing water footprint," was published online in late November 2023 by De Vries who built his estimate around two components. The larger of the two, accounting for roughly 80 to 90 percent of the total, is indirect water use, that is, the water consumed at power plants to generate the electricity that miners buy, whether through evaporative cooling at thermo-electric plants, hydropower reservoir evaporation, or other generation methods.

The remaining share, about 20 to 10 percent, direct water use, covers cooling and humidification equipment on-site at mining facilities, measured using an industry metric called water usage effectiveness, or WUE. For large-scale US mining operations, the study estimated a weighted-average WUE of between 0.25 and 1.03 litres per kilowatt-hour, depending on climate and facility design.

Location matters enormously to the total: the study estimated Kazakhstan accounted for 63 percent of Bitcoin's 2021 water footprint while hosting only around 14 percent of its computing power. Average water intensity across Bitcoin's power mix rose from 8.63 litres per kilowatt-hour in 2020 to 15.0 litres per kilowatt-hour in 2021, the paper found.

The figure is due to the water used to power and cool the millions of computers worldwide Bitcoin relies on, reports BBC. Up to three billion people worldwide already experience water shortages, a situation which is expected to worsen in the coming decades, the study notes.

Swimming pool full water per transaction

News coverage of the study, including reporting by Science Daily and Fast Company popularized the comparison that a single Bitcoin transaction's water footprint is roughly equivalent to filling a backyard swimming pool.

The main reason Bitcoin uses so much water is because it relies on an enormous amount of computing power, which in turn needs huge amounts of electricity.

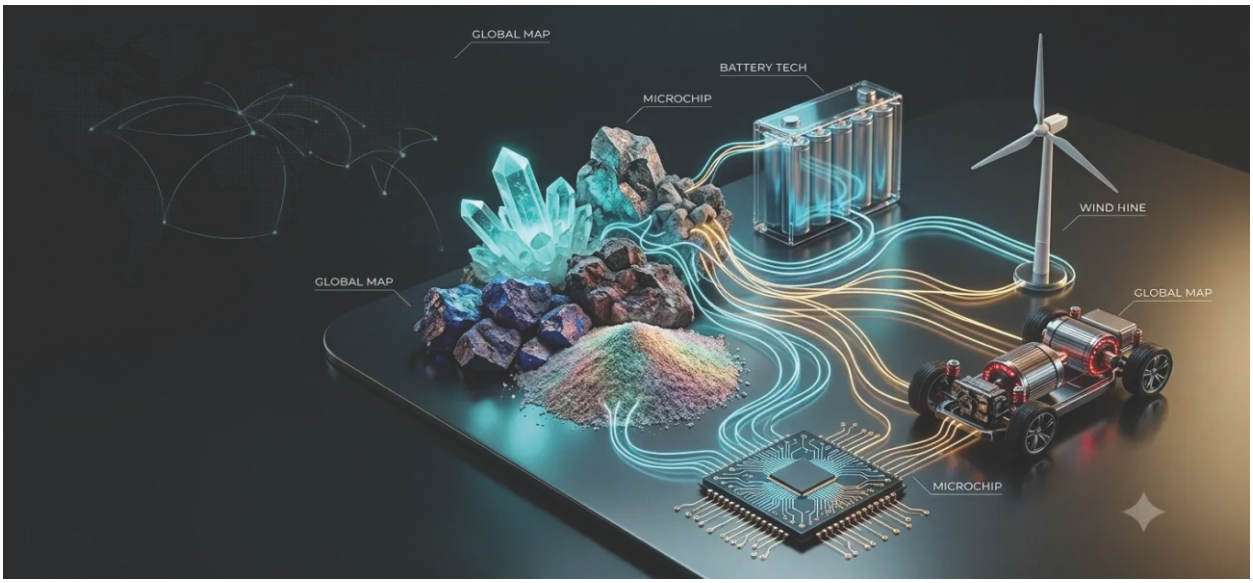
Bitcoin is so power hungry it uses only marginally less electricity than the entire country of Poland, according to figures from Cambridge University. Water is used to cool the gas and coal-fired plants that provide that much of power. And large amounts of water are lost through evaporation from the reservoirs that supply hydroelectric plants.

Critics Disagree

The methodology has drawn pushback. Critics covered in a DL News Investigation note that per-transaction water figures are largely independent of transaction count — a block can bundle thousands of individual payments, so dividing total resource use by the number of on-chain transactions can make the per-transaction number swing based on how the network happens to be used that day — a shift in usage patterns, not a genuine efficiency change.

Bitcoin advocate Daniel Batten has gone further, arguing in commentary covered by the same report that the swimming-pool framing overstates the case by counting indirect water use from power generation that would occur with or without Bitcoin mining, and that applying the same accounting method to other electricity-intensive industries — banking, AI, search engines, construction, or media — would produce similarly large-sounding numbers. Separately, a UN-affiliated water researcher, Kaveh Madani, flagged in the same report that "water footprint" and "water consumption" are technical terms with distinct meanings in hydrology, and that using them interchangeably in public communication risks overstating the case.

Dr Larisa Yarovaya, associate professor of finance at the University of Southampton, said the use of freshwater for Bitcoin mining, particularly in regions already grappling with water scarcity, "should be a cause for concern among regulators and the public" ■



Only a clutch of Countries Control Critical Minerals Powering AI

Srinivasan S

China accounts for 99% of estimated global processed gallium production and 69.2% of rare earth mine production.

The Democratic Republic of the Congo produces 52% of the world's tantalum, followed by Rwanda and Nigeria. These lesser-known materials are used in high-performance semiconductors, magnets, and power-management components found across AI hardware.

Artificial Intelligence (AI) has taken the world by the storm. Despite AI's emerging threats – real and perceived – the fierce race to fine tune it further is on. AI is a huge resource cruncher and its infrastructure depends on far more than chips and electricity.

Critical minerals play a critical part. AI boom depends heavily on physical extraction, with data centers and high-performance chips requiring an intensive supply of critical minerals such as gallium, rare earth elements, and tantalum among others. These are essential to semiconductors, magnets, and power-management systems.

Recently World Bank Development Report 2026 highlighted these three minerals because their production is concentrated in a relatively small number of countries. And, whoever controls them holds the power. The figures are 2025 estimates from the U.S. Geological Survey's Mineral Commodities Summaries 2026 using processed production for gallium and mine production for rare earths and tantalum.

Not surprisingly China accounts for 99% of the total. But there is a catch. It does not mean China holds 99% of the world's gallium in underground. Gallium is generally recovered as a by-product of processing bauxite for aluminium, and China's enormous aluminium industry has helped it develop gallium extraction at scale. Earlier, oversupply and low prices also contributed to producers elsewhere exiting the market.

Gallium matters because compounds such as gallium nitride (GaN) can operate efficiently at high voltages and temperatures. These properties make gallium useful in high-performance semiconductors and power electronics, an increasingly important consideration as AI data centers require more computing power and electricity. China produces

69.2% of the total, followed by the United States at 13.1% and Australia at 7.4%.

What are Rare Earths?

Despite the name, "rare earths" are actually a group of 17 elements. Despite the name, most rare earth elements are relatively common in the Earth's crust (some are as abundant as copper or tin). They are called "rare" because they are rarely found in high-concentration, economically viable deposits. Instead, they are typically dispersed and mixed together with other minerals, making them difficult and expensive to extract and refine. They share similar chemical behaviors and possess special magnetic, luminescent, and electrochemical properties.

Different rare earth elements serve different roles across computing hardware. Neodymium and praseodymium, for example, are used in powerful permanent magnets found in hard drives and other equipment, while other rare earths have applications in semiconductors, displays, optics, and data storage.



African Dominance

The Democratic Republic of the Congo supplies 52% of estimated mine production, while Rwanda and Nigeria contribute 16% and 15.6%, respectively. Together, those three ` useful in demanding power systems. Industry reporting in 2026 points to AI servers to AI servers as a growing source of tantalum capacitor demand.

Controls Constrict Critical Supply

Production concentration does not automatically translate into an AI advantage. Advanced chips, fabrication capacity, energy infrastructure, and capital all matter. However, when one or a handful of countries dominate production of a critical material, export restrictions or other supply disruptions, it can ripple through global technology supply chains.

That risk is already visible. China has introduced export controls on gallium-related items and other selected medium and heavy rare-earth items in recent years. Those measures have encouraged governments and companies elsewhere to pursue alternative suppliers and new production capacity. In Central Africa, concentrated tantalum production presents a different set of challenges, including potential supply disruptions and responsible sourcing concerns.

As AI infra expands, securing the minerals behind chips, servers, and power systems could become increasingly important alongside securing the chips themselves.

Pitfalls of Concentrated Resources

It becomes highly risky when only a few countries control the production or supply of a product. This situation creates a concentrated global supply chain, making the rest of the world vulnerable to severe disruptions. But such is the business dynamics today in a world that is getting increasingly fragmented and self-centred. In economics and geopolitics, this risk is often managed through diversification and strategic stockpiling.

For one, controlling countries can use their monopoly as political leverage, imposing export restrictions or embargoes to achieve diplomatic goals. A natural disaster, political instability, war, or economic crisis in a dominant country can instantly cripple the global supply. A small group of producing nations (often forming a cartel) can artificially restrict output to drive up global prices.

For example, Taiwan a small island by land area, though carries enormous global economic and geopolitical importance because of its dominance in advanced semi-conductors. It is the Taiwan's economic lifeline. Any cross-strait conflict or natural disaster could choke or halt global tech manufacturing, from smart phones to cars. OPEC+ nations historically used crude oil as a political weapon causing massive global inflation. How can one forget the 1973 oil crisis?

Fractured World

Vasudhaiva Kutumbakam is the concluding part of a famous shloka of the ancient Indian Vedic scripture Maha Upanishad which nobly propounds universal brotherhood that means "The World is One Family".

The entire shloka translates to "This person is one of mine, and that person is a stranger" — such is the counting (or division) of the narrow-minded. For those of noble character (the magnanimous), the entire world is a family."

Unfortunately, the world today is following the parochialism of divisiveness, disconnectedness, political hegemony, economic pursuits with least consideration to others' risks, and strangling other countries with their dominance.

The essence of the above referred shloka was engraved at the entrance of the Parliament of India and served as the official theme ("One Earth, One Family, One Future") for India's G20 Presidency. ■

Modernizing India's Transmission Infra, Vital: Kearney

V.S.S. Nair

A latest report by global management consulting firm Kearney titled 'Rewiring India's power future: a blueprint for an intelligent and future-ready transmission sector,' noted that India will need to accelerate the expansion of its power transmission network to meet its 500 GW renewable energy capacity target by 2030 with faster planning, execution and digitalisation critical to supporting the clean energy buildout.

Kearney sees the country's transmission sector at an inflection point - a time of sudden, noticeable, or important change.

"India's transmission sector is at an inflection point. The country has set out one of the most ambitious renewable energy targets in the world, and the investment blueprint to support it is largely in place," said Sanchit Makhija, Partner, Kearney.

India does not currently have sufficient transmission lines to seamlessly meet the rapid growth and geographic shift in its energy sector—particularly the surge in renewable energy. While the country operates a massive unified grid of over 5 lakh circuit kilometres high voltage transmission lines of 220 Kv and above under the "One Nation, One Grid, One Frequency" system and infrastructure expansion is struggling to keep pace with generation.

Due to localized grid congestion, regions in northern, western, and southern India experience severe solar power curtailment ranging from 30% to 50% during peak daylight hours for generators using Temporary General Network Access (T-GNA). Transmission additions frequently trail targets. For example, FY 2025 saw a 42% shortfall while commissioning 8,830 ckm against a target of 15,253 ckm). Solar and wind projects can be built in 12 to 18 months, whereas high-voltage transmission lines and substations often require 12 to 24+ months (or longer due to land and clearance delays), creating structural bottlenecks.

Ironically, while certain inter-state transmission



system (ISTS) corridors face low average utilization (<30%), key green-energy-rich states such as Rajasthan, which faces 8 GW of stranded capacity) face acute local evacuation shortages.

The report also found that even as peak power demand is projected to climb to 459 GW by FY 2036, the country's transmission backbone, which is built for a different era of thermal-led generation, needs significant modernisation to keep pace with a rapidly changing, renewables-heavy grid.

"India not only needs to build more but also use existing infrastructure more efficiently. Our analysis shows that co-locating storage can free up to 60 percent of tied-up grid capacity, and technologies such as FACTS and dynamic line rating can add 20 to 30 percent more throughput on existing lines," added Mukhija.

Kearney's report calls for India's Inter-State Tran mission System (ISTS) rolling plan to include 67,263 circuit kilometres of new transmission lines and 629,597 MVA of additional transformation capacity by FY231, requiring an estimated investment of ₹4.85 lakh crore.



Kearney identifies five structural challenges slowing India's transmission buildout. Fragmented planning between the central transmission utility and 36 state transmission utilities often leaves evacuation infrastructure out of sync with renewable capacity additions as transmission projects take three to five years to complete compared with 12 to 18 months for solar and wind projects.

Transmission assets also remain underused, particularly in solar-heavy corridors outside daylight hours, while the NC-RE component of ISTS charges has risen from around 1 per cent to about 9 per cent in under five years.

Right-of-way and clearance bottlenecks had delayed at least 14 ISTS projects covering 1,972.5 circuit kilometres as of March 2025, as per Kearney.

Moreover, supply chain constraints, including transformer lead times of 24–42 months and India's roughly 85 per cent dependence on imported CRGO steel, are further delaying projects.

At the same time, digital tools such as GIS-based route planning, drone and LiDAR surveys, and wide-area monitoring remain unevenly deployed across the sector.

Kearney's analysis based on Central Electricity Authority (CEA) data shows that annual transmission additions have consistently missed National Electricity Plan targets, with shortfalls as high as 50 per cent in some years.

Why Transmission modernisation is Critical

Up to 71% of ISTS corridors operate below 30% utilization because solar-heavy lines sit idle outside daylight hours. Modernisation helps shift or balance this load via time-segmented access and storage.

High shares of weather-dependent solar and wind cause frequency deviations outside the Indian Electricity Grid Code, requiring grid-forming inverters, BESS (Battery Energy Storage Systems), and dynamic reactive power support (STATCOM/SVC).

Faster deployment of GIS-based route planning, drone and LiDAR surveys, and Wide Area Monitoring Systems (WAMS/PMUs) is needed to replace slow, traditional build-out methods.

Supply Chain & Steel Independence: Addressing bottlenecks like 24–42 month transformer lead times and reducing heavy reliance on imported CRGO steel is vital to accelerate modernization.

Key Advantages

Modernizing India's transmission lines supports the country's clean energy targets, lowers power loss, and stabilizes the national grid against rising electricity demand.

Smart transmission systems represent the missing link between renewable energy ambitions and ground realities. They don't just carry electricity. They manage flows in real time, balance supply with demand, and prevent blackouts across vast distances. Understanding why this infrastructure matters can reshape how we think about energy security.

Smart transmission infrastructure goes beyond copper wires and steel towers. It integrates digital sensors, automated controls, and real-time data analysis to create a responsive network. To draw an analogue one can think of it as upgrading from a highway system to one with traffic management centers, dynamic routing, and instant accident response. ■



Export Curbs push Indonesian Coal Miners against the Wall

V.S.S. Nair

Indonesia, the world's largest thermal coal exporter is facing major challenges due to tight government production caps, domestic market obligations, and centralized export controls.

The world's biggest exporter of thermal coal, is not benefiting from tightening global coal markets amid an Asian switch to coal from gas due to the Middle East crisis choking LNG supply. Ideally, it would have been a windfall for coal miners of Indonesia. But the government has stepped in, in mid-2026 strongly to curb, suspend, and strictly regulate coal export.

One of the key problems is that, the government has aggressively scaled back national production targets from roughly 790 million tons in 2025 down to a projected 600–641 million tons for 2026 to curb oversupply and support.

The other is Domestic Market Supply (DMO) priority. DMO policy requires coal miners to supply 25% of their annual production to the domestic market, primarily to the state utility PT Perusahaan Listrik Negara, or PLN, at a heavily capped price. When global prices spike, miners often bypass local obligations to sell overseas, triggering government clampdowns to avert severe domestic energy blackouts. DMO also means, local power generators take first priority with a strict $70/ton price cap, creating a massive price gap compared to export prices, which have topped $121/ton, making local supply unprofitable for many miners.

Indonesian thermal coal exports have been crimped this year by strict government production quotas and heightened uncertainties about Indonesia's policy in the coal mining and exporting sectors. Earlier this year, the government slashed quotas for coal miners. In the middle of the

year, authorities revised up some of the quotas, but uncertainties among Indonesia's buyers remained.

Moreover, the strong El Nino has reduced rainfall and lowered river water levels, disrupting coal barge movements to export ports. As a result, the top coal exporter saw its shipments drop by 23% in August from a year earlier, and by 6.54% from July. Indonesian coal exports were the lowest for the month of August in five years, according to data reported by the Jakarta Post.

The uncertain Indonesian coal policies are making buyers more anxious about seeking deals with the world's biggest coal exporter, at a time when global coal demand is on track for a record high this year, due to the gas supply disruptions in the Middle East. China, India, are facing the brunt along with Philippines.

"Last year we did about 4 million tons of Indonesian coal sales; this year we'll be lucky to get 2 million," said Matthew Boyle, head of research at trader Ashon International DMCC, according to Bloomberg.

Soaring LNG prices due to the Strait of Hormuz blockage are prompting economies to shift to alternative energy sources, pushing coal demand to another record high this year, the International Energy Agency (IEA) said in its Coal Mid-Year Update 2026 earlier this month. In the update the IEA sees Indonesia's coal output falling by more than 12 million tons this year, or by 1.5% from 2025.

"The government has lowered its coal production target to 641 Mt, well below the previous year, creating fresh uncertainty for both producers and international buyers," the IEA said.

"Ongoing policy discussions over export taxes, revenue-sharing arrangements, mining permits and the possible centralisation of exports through a state-controlled entity have added yet more uncertainty."

Earlier Restrictions and Reasons

In August 2021, there was a partial suspension by the Indonesian government banning 34 coal mining companies from exporting. The reason was these specific companies failed to meet their DMO requirements between January and July 2021.

In January 2022, a nationwide export blanket ban was imposed on all coal exports starting January 1, 2022. It was gradually lifted later in the month. The reasons then was critical coal shortages at domestic power stations threatened to cause widespread blackouts across the country.

During early to mid-2026 the Indonesian authorities The government slashed the national production quota down to 614 million tons from 817 million tons in 2025 and enforced targeted export holds. It was fuelled by an effort to stabilize plummeting global thermal coal prices caused by overproduction, alongside unexpected domestic utility



shortages following regional energy shocks.

The future outlook for 2026-2027 is a state controlled takeover. A new regulation mandates a sweeping trade overhaul where a state-owned enterprise will completely route and centralize all coal exports by 2027. It is designed to eliminate under-invoicing, maximize tax revenues, and heavily secure domestic raw materials.

Upfront Declaration of output Quotas

Indonesian miners of coal and other commodities have until November 15 to file their 2027 work plans and budgets under Rencana Kerja dan Anggaran Biaya (RKAB) framework, the document that fixes the volumes they will be allowed to mine next year. The six-week window opened on October 1 under regulation of the Ministry of Energy and Mineral Resources. Indonesia reverted the RKAB the quota validity period from three years back to an annual (one-year) cycle. Approvals factor in company compliance, local contractor empowerment, and contributions to state revenue such as higher royalty payments.

As the demand for coal increases in Asia, Indonesian coal miners are facing the heat. ■





China increases Coal's Value 7-Fold in Coal to Oil Process

Srinivasan S

Coal-to-liquid (CTL) fuel is a chemical process that turns solid coal into synthetic liquid hydrocarbons like gasoline, diesel, and jet fuel. The advantage includes energy security as the process provides an alternative liquid fuel source for countries with abundant coal reserves but limited domestic crude oil. India is a classic example.

CTL Brief History

The best-known CTL process is Fischer-Tropsch synthesis named after the inventors Franz Fischer and Hans Tropsch from the Kaiser Wilhelm Institute, Germany in 1920s.

The world's first industrial-scale coal-to-liquid fuel plants were built in Germany during the1930s to supply synthetic fuels for military and industrial needs. By the early1940s Germany operated roughly a dozen major synthetic fuel facilities producing hydrocarbons from coal to compensate for a lack of natural petroleum reserves. Coal liquefaction was an important part of Adolf Hitler's four-yearplan of 1936 and became an integral part of German industry during World War II. CTL provided 92% of

Germany's air fuel and over 50% of its petroleum supply in the 1940s, partially mitigating the lack of fuel for the Nazi military.

Following the war, in the 1950s, South Africa developed its own CTL technology. The South African Coal, Oil and Gas Corporation (Sasol) was founded in 1950 as part of industrialization process that the South African government considered essential for continued economic development and autonomy. South Africa had no known domestic oil reserves at the time, and this made the country very vulnerable to disruption of supplies coming from outside, albeit for different reasons at different times. Sasol was a successful way to protect the country's balance of payment against the increasing dependence on foreign oil. For years its principal product was synthetic fuel, and this business enjoyed significant government protection in South Africa during the apartheid years for its contribution to domestic energy security. The recurrent underlying principle is Energy Security.

Although it was generally much more expensive to produce oil from coal than from natural petroleum, the political as well as economic importance of achieving as much independence as possible in this sphere was sufficient to overcome any objections. Early attempts to attract private capital, foreign or domestic, were unsuccessful, and it was only with state support that the coal liquefaction could start. CTL continued to play a vital part in South Africa's national economy, providing around 30% of its domestic fuel demand.

Methods

Specific liquefaction technologies generally fall into two categories: Direct Coal Liquefaction (DCL)and Indirect Coal Liquefaction (ICL) processes. Direct processes are based on approaches such as Carbonization Pyrolysis and Hydrogenation.

Indirect liquefaction processes generally involve gasification of coal to a mixture of carbon monoxide and hydrogen often known as synthesis gas or simply Syngas.

China- World's Leader in CTL

The world's largest singlecoal-to-liquids plant is located in the Ningxia Hui Autonomous Region in northwest China. It is built and operated by the China Energy Group Ningxia Coal Industry Company Limited. The plant processes tens of millions of tonnes of coal annually (such as 24 million tonnes in recent baseline years) to convert solid coal into liquid oil products, lubricants, and rocket fuel.



The world's largest CTL plant is turning coal into oil products that can power rockets and serve as machine lubricants while boosting its value sevenfold, according to a Chinese newspaper,says South China Morning Post.

The production line, built by China Energy Group Ningxia Coal Industry Co Ltd, began full operations in northwest China's Ningxia Hui autonomous region last month and processed 24million tonnes of coal in 2025 – a quarter of the region's total annual output, according to a report published by Science and Technology Daily.

The technology has been a boon this year for China, which sourced more than 40 per cent of its crude oil from the Middle East before the Strait of Hormuz was blocked by the US-Israel war on Iran.

At one point, international oil prices rose above US$100 per barrel, making turning coal into oil a very profitable business. According to the report, the project has not only generated substantial economic returns, it has also helped to reduce reliance on imported oil.

China's energy structure has longbeen defined by its abundant coal, limited oil and scarce natural gas reserves. In Ningxia, coal accounts for more than 90 per cent of the region's energy use.

The facility's core technology –known as indirect coal liquefaction – involves heating coal with oxygen and steam to turn it into a synthetic gas of carbon monoxide and hydrogen. After purification, the gas is converted into environmentally friendly oil products that are low in sulphur and aromatics.

"This technology is the most profound 'magic' in the field of coal chemical engineering," He Peng, a manager with Ningxia Coal Industry, told the newspaper, reported South China Morning Post.

Goes Indigenous

The process has been long and required enormous investment, with the report noting that as early as 2004 the Chinese government

sent Ningxia Coal Industry's predecessor to negotiate with foreign firms to licence the CTL technology.

The global pioneer in the field was South African company Sasol, which capitalised on its proprietary know-howby repeatedly raising its price, demanding as much as US$2.5 billion for one synthesis alone. The negotiations dragged on for years without resolution.

In 2009, China's domestic research efforts achieved a breakthrough when Synfuels China Technology completed a 160,000-tonne-per-year indirect coal liquefaction pilot line and produced products that met industry standards.

At that point, Ningxia Coal Industry decided to move forward independently, using Synfuels' fully licensed home-grown technology. The path to self-reliance was beset with challenges, from clogged furnaces to easily broken nozzles and catalysts that were unstable. The most critical component was the gasifier, the first step in turning coal into liquid fuel.

The gasifiers built using foreign technical routes could only handle high-quality premium coal and were also prohibitively expensive to modify, forcing the team to start from scratch. In 2012, the domestically developed Shenning furnace was born, opening a new avenue for the clean use of lower-grade coal, thanks to its ability to handle a wide variety in quality.

The following year, the National Development and Reform Commission gave formal approval for the mega project, designed to produce 4 million tonnes of oil products annually.

The world-class facility, covering an area larger than 650 football fields, finally produced its first drop of qualified oil in 2016.

Coal enters this system and emerges transformed – into diesel, naphtha, liquefied gas, sulphur, high-puritywaxes, and a host of other products, each with greater value.

The report gave two examples of the uses of these products, across industries. Using its own core technology and working with several partners, China Aerospace Science and Technology Corporation developed a coal-based rocket fuel that helped to launch the Long March-12, reducing the industry's dependence on a single fuel source.

The report also named Ningxia Coal Industry's self-developed C Energy+ series of high-end lubricants, with 11 products for both cars and industrial use. Its 68# anti-wear hydraulic oil performs on a par with leading international products, it said. The upgraded production line means higher-end products and improved safety, with the project standing as a model for China's coal-to-liquids industry, according to the report.

An industry insider told the Science and Technology Daily that "China's coal-to-liquids sector has very few high-end products" at present.

"Most top companies make mid- or low-end items, and high-end ones account for only a small share. Many advanced research findings are still in the lab and haven't been scaled up for production," the insider said.

Following the latest upgrades, the project's core processing units were also now operating with 99.8 per cent automated control, enabling long-term unattended operation, the report said. The whole industry should produce more valuable oil products and speciality chemicals, integrate more green hydrogen and green electricity in coal plants to cut emissions, and deploy robots and smart sensors in dangerous areas to keep workers safe, it said.

India's CTL Scenario

India aims to gasify 100 million tons of coal by 2030, backed by a Rs.37,500 Crore scheme for promotion of surface coal/lignite Gasification approved by the Union Cabinet to convert domestic coal into synthetic natural gas, chemicals, and liquid fuels.

India imports large quantities of its key inputs, including 80% to 90% of methanol, nearly all ammonia, and over 50% of its liquefied natural gas. Utilizing vast domestic coal reserves helps insulate the country from global supply chain shocks and price volatility.

The energy industry is seeking assured off take commitments from the government for coal gasification projects, arguing that viability gap funding (VGF) alone may not be enough to unlock investments in capital-intensive plants.

The investment case remains weak even with government support, if project developers have to commit thousands of crores without certainty on demand, on who would buy the gasification output and at what volumes and prices, industry executives said, according to ET Energy World.

"If you are putting in Rs.10,000 crore and there is no assured place to sell the product arithmetic does not work," a senior industry executive told ET, it reports. The industry is also seeking freight support or allocation of land near the mine head and ports for gasification projects supplying fertiliser and steel plants saying logistics costs could further weaken the economics of these projects. ■



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