
**Volume 20, Issue 2** **May 2026**


## Shri Pankaj Agarwal IAS, Secretary, Ministry of Power

## inaugurated India Energy Forum's first National Conference on Power Transmission on 29th May 2026

## Draft Regulations on Market Coupling

**R.V. Shahi**

The India Energy Forum organised a Webinar on 12th May, 2026 to deliberate on the Draft Regulation on Market Coupling issued by CERC. This was one the most largely attended Seminars with about 140 participants. A detailed Note on this, in the form of comment from the India Energy Forum, has already been sent to CERC. I also sent a brief Note separately to CERC offering comments on my own behalf:

(i) The genesis of Power Exchange is traced back to 2003-04 when, in the Ministry of Power, we were in the process of drafting National Electricity Policy. The idea of Exchange, as an instrument of power trading, was deliberated in couple of meetings with Energy Secretaries of States along with their senior power sector officials. The supporting background notes were prepared on the basis of studies of Power Exchanges in different countries.

It is the National Electricity Policy, in which under Para 5.7 (f) that Power Exchange as an instrument of market development, has been provided. Section 66 of the Electricity Act provides

"The Appropriate Commission shall endeavor to promote the development of a market (including Trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in Section 3 in this regard".

National Electricity Policy Para 5.7
Competition aimed at consumer benefits
Sub Para (f)

"Enabling Regulations for inter and intra State Trading and also Regulations on Power Exchange shall be Notified by the appropriate Commissions within six months".

It is important to note that the policy documents viz. The Act and NEP have placed this instrument of Power Exchange under the heading of competition in NEP, aimed at consumer benefits. This is important to recognise that the Power Exchanges as instruments for market development have been envisaged under the overall consideration of competition which also means that the Power Exchanges should provide to consumers the benefits of competition among themselves. Centralisation of the most important activity of the Power Exchange, to determine tariff, in the face of multiple Bids for sale and purchase of power, has to be seen under this background. Price determination through appropriate technology inputs, considering numerous variables, is a complex exercise. Exchanges should be in a position to offer, based on their own technologies and other services, the benefits of competition to consumers. Any attempt at Centralising this important element of Power Trading goes completely counter to the aims and objectives of Electricity Act and National Electricity Policy. It is with this perspective that the Market Coupling initiative has to be examined and evaluated.

(ii) The initiative of Central Electricity Regulatory Commission, by granting license to Indian Energy Exchange in August 2007 was a historic initiative, and the order granting the license has dealt with extensively the roles and responsibilities including the aspects of technology, financial disciplines, and many other obligations of the Exchange. In the spirit of providing benefits to the consumers through competition, the Commission granted license to second Company and then to a third Company. Obviously, these measures are aimed at, as required under the Act and the NEP, the benefits of competition to consumers. Centralisation of the most vital element of Power Trading, determination of prices for various time blocks, which get generated through complex technology and digital system, goes counter to the letter and spirit of not only the Act and NEP but also contrary to the expectations of the Commission itself as laid down under the license, and their actions of creating multiple Exchanges to enable such competitions.

(iii) The concept of Market Coupling as has been stipulated under the Draft Regulation leaves to the Power Exchanges -three of them - now with only the job of collecting Bids, forwarding them to the central agency and finally taking care of the cashiers job. This obviously could not have been the expectation at the time of granting license, much less at the concept of introducing more Power Exchanges as instruments of making their contribution toward market development.

(iv) It is more than two decades of Electricity Act and associated statutory policies that even now market development through Trading and Power Exchange processes continues to be in the margin. As a matter of fact, through Power Exchanges it is less than 5%. There are several areas in the Act and various Policies which could have been appropriately implemented aimed at electricity market development beyond PPA's. There is a need to consider in the Commission and in the Forum of Regulators to reprioritize actions aimed at deploying and implementing such potentials which can provide a more balanced electricity deeper market structure, rather than struggling on peripheral issues.

(v) In the Webinar organised by India Energy Forum, referred to above, a comprehensive presentation made by Shri R.P. Singh, Former Chairman, UP Electricity Regulatory Commission, revealed that Market Coupling may lead to several risk factors, many of them listed in his presentation, which might be very difficult to address. The presentation brought out that the benefit of proposed coupling is insignificant and anticipated risks are enormous.

(vi) It seems that one of the reasons for this initiative is uniform tariff. In power sector there is nothing like uniform tariff - all PPA's deliver different tariffs, fuel prices are different. The Sector has learnt to go with this approach. As a long term goal we could visualise this, but this instrument cannot be the one to start with. In CERC Advisory Committee is September, 2023 it was suggested and agreed to work toward deeper market driven initiatives Even within existing provisions of the Act and Policies there are much better initiatives with potential of larger impacts but not acted upon.

(vii) As regards Grid India being entrusted with this responsibility, it may be relevant to mention Section 26 of the Electricity Act, which provides -

"Provided that the National Load Despatch Centre shall not be engaged in the business of trading in electricity".

The rules framed on National Load Despatch Centre and Notified in March, 2005 list in detail the functions of National Load Despatch Centre none of these functions as listed is anywhere near the determination of price in this trading operation. It is very clear that National Load Despatch Centre was not conceived to indulge in engaging in any activities of Trading in electricity.

Sub section (2) of Section 3 of the Rules
"Functions of National Load Despatch Centre - The National Load Despatch Centre shall be the apex body to ensure integrated operation of the national power system and shall discharge the following functions, namely:-

a) supervision over the Regional Load Despatch Centres;

b) scheduling and despatch of electricity over inter-regional links in accordance with grid standards specified by the Authority and grid code specified by Central Commission in coordination with Regional Load Despatch Centres;

c) coordination with Regional Load Despatch Centres for achieving maximum economy and efficiency in the operation of National Grid;

d) monitoring of operations and grid security of the National Grid;

e) supervision and control over the inter-regional links as may be required for ensuring stability of the power system under its control;

f) coordination with Regional Power Committees for regional outage schedule in the national perspective to ensure optimal utilization of power resources;

g) coordination with Regional Load Despatch Centres for the energy accounting of inter-regional exchange of power;

h) coordination for restoration of synchronous operation of national grid with Regional Load Despatch Centres; coordination for trans-national exchange of power;

i) providing operational feedback for national grid planning to the Authority and the Central Transmission Utility;

j) levy and collection of such fee and charges from the generating companies or licensees involved in the power system, as may be specified by the Central Commission.

k) dissemination of information relating to operations of transmission system in accordance with directions or regulations issued by Central Electricity Regulatory Commission and the Central Government from time to time."

It is quite clear that this initiative does not appear to be in accordance with the letter and spirit of the Act and the rules framed in this regard.

(viii) As mentioned earlier in this Note, the Market Coupling initiative was deliberated extensively in the meeting of the CERC Advisory Committee in September, 2023 which was fixed to discuss this subject. It was a well-attended meeting and lasted for more than two hours. There were different views - pro and against. Ultimately the consensus was that it was not the right time to introduce Market Coupling., and we should be thinking about deeper marker development.

(ix) Accordingly, I am of the definite view that "This is an idea whose time has not yet come." We should think of many other initiatives on deeper market development. There are potentials and good possibilities.

**********

Dear Reader,

We organized three events in the month of May i.e. Webinar on "Power Market Coupling" on 12th May 2026, another Webinar was on "Storage Batteries with Focus on Iron Air Batteries" on 22nd May then a National Conference on "Power Transmission" on 29th May. Detailed Report on these are enclosed.

It is heartening to note that about 55 GW of power generation capacity from non-fossil sources was added during 2025-26 taking the aggregate capacity to around 300 GW. Lot of emphasis is being given to storage for constant supply for grid to meet surges in demand. Electricity demand rose to about 270 GW during May 26.

After enactment of the SHANTI Bill, NPCIL has entered into an MOU with NLC for establishing Nuclear Power Plans. It already has similar MoU with NTPC. Lot of Interest has also been shown by Adani Power, Reliance etc. to enter the Nuclear Power Generation business.

The development of 500 MW FBR will further strengthen capacity enhancement from Nuclear Energy.

These developments will help the country to meet its vision of Viksit Bharat by 2047 and achieve net zero by 2070.

SMRs are also being projected to meet standalone Nuclear Power. Generations in Defense application as above for upcoming Data Centers.

In this background, it is disturbing to note solar demand falling short of generation. This necessitates faster ramp up of storage capacity thru BESS, PSPs etc.

We are, updating the IEF Members thru daily News on development's in Energy field and thru the Monthly Total Energy. This is further strengthened by the three formats of Webinars, Energy Debates and National Conference by all the Verticals.

**S M Mahajan**

## India Set to Hit 500 GW Renewable Energy Goal, Says Pralhad Joshi

India is on track to achieve its ambitious target of 500 GW of non-fossil fuel energy capacity by 2030, Union Minister for New and Renewable Energy Pralhad Joshi said recently, highlighting the country's rapid progress in clean energy expansion.

Speaking at the CII Annual Business Summit 2026, the minister said India's renewable journey is not only boosting energy capacity but also laying the foundation for a globally competitive and self-reliant energy ecosystem.

India's non-fossil fuel capacity has grown sharply from 81 GW in 2014 to 288 GW currently, marking a more than 256 per cent increase. Solar capacity has surged from 2.8 GW to 155 GW, while wind energy capacity has risen from 21 GW to 56.4 GW.

Joshi noted that the next phase of growth will require deeper integration of generation, storage and transmission systems, along with stronger grid resilience. He emphasised that sustained collaboration between government and industry will be critical to maintaining momentum.

Despite a 7 per cent decline in global renewable investments, India continues to attract strong capital inflows, reflecting rising international confidence in its clean energy trajectory.

The minister also underlined that renewable energy is increasingly becoming a key factor in industrial competitiveness across sectors such as steel, aluminium, automotive and textiles. Emerging segments like green hydrogen, battery storage, offshore wind and round-the-clock renewable energy solutions are expected to drive the next phase of expansion.

He invited global investors and industry stakeholders to participate in the upcoming Renewable Energy Global Investors Meet, expressing confidence that India will emerge as a global benchmark in sustainable industrial transformation.

Referring to recent public appeals by Narendra Modi on sustainable living and self-reliance, Joshi said energy policy is now closely linked with industrial and trade strategy, making renewable adoption essential for long-term economic growth and export competitiveness.

## Renewable energy central to India's industrial competitiveness: Pralhad Joshi

India's clean energy transition is no longer confined to climate commitments but is now central to shaping India's industrial competitiveness, trade positioning, and long-term economic resilience, said Union Minister for New and Renewable Energy Pralhad Joshi recently.

Addressing the CII Annual Business Summit 2026, the Minister highlighted that India's journey towards 500 GW of non-fossil fuel capacity is simultaneously laying the foundation for a globally competitive, innovation-driven and Aatmanirbhar [self-reliant] energy ecosystem.

The minister said that in the current global context, energy policy has become synonymous with industrial and trade policy. He pointed out that evolving global frameworks such as carbon-linked trade regulations are reshaping international markets.

Joshi noted that for the Indian industry, adoption of renewable energy is no longer optional but essential for maintaining export competitiveness and managing future cost pressures.

India has recorded one of the fastest expansions in renewable energy capacity globally. It has achieved significant growth across non-fossil energy, solar and wind capacity, as well as major advancements in domestic manufacturing of solar modules and cells.

The minister noted that renewable energy played a critical role in meeting India's record peak power demand, contributing nearly one-third of the highest-ever demand of 256 GW. He further highlighted that at a time when global renewable energy investments declined by around 7%, India continued to attract strong investment flows, underscoring growing global confidence in its clean energy trajectory.

Key policy measures undertaken to strengthen the renewable energy sector include notification of long-term Renewable Consumption Obligation trajectories, introduction of Carbon Credit Certificate Regulations, 2026, long-term green ammonia procurement agreements, a standardised warranty framework for solar PV modules, the Renewable Energy Equipment Import Monitoring System, and tax and duty reforms supporting domestic manufacturing. Joshi stated that these measures aim to provide long-term policy stability, enhance investor confidence and promote domestic value addition.

The Minister highlighted that renewable energy is becoming a critical determinant of competitiveness in key industrial sectors such as steel, aluminium, chemicals, automotive and textiles. He emphasised the importance of emerging areas including green hydrogen, battery storage, pumped hydro, offshore wind and round-the-clock renewable energy solutions in the next phase of growth.

Shri Joshi expressed confidence that India is well on track to achieve its target of 500 GW of non-fossil fuel capacity by 2030. He stressed that the next phase will require deeper integration of generation, storage and transmission systems, along with enhanced grid resilience. He also underlined the importance of continued collaboration between government and industry to sustain the momentum of growth.

India's non-fossil fuel capacity has increased from 81 GW in 2014 to 288 GW at present. Solar energy capacity has risen from 2.8 GW to 155 GW, while wind energy capacity has grown from 21 GW to 56.4 GW.

Acknowledging the role of industry stakeholders, Joshi stated that the progress achieved in India's renewable energy sector is a result of strong public-private partnership. "The shared commitment between government and industry will be even more critical as we move towards building a globally competitive, technologically advanced and inclusive energy system," he said. He invited industry stakeholders and global investors to participate in the upcoming Renewable Energy Global Investors Meet scheduled later this year.

## India becomes World's third-largest renewable energy capacity holder: Pralhad Joshi

India has emerged as the world's third-largest country in renewable energy installed capacity, overtaking Brazil, Union Minister Pralhad Joshi said recently.

Citing the latest Renewable Energy Statistics 2026 released by the International Renewable Energy Agency (IRENA), the minister said India now ranks behind only China and the United States in total renewable capacity.

Record Growth in Capacity and Generation
India achieved a total non-fossil fuel installed capacity of 283.46 GW as of March 31, 2026, including 274.68 GW from renewable sources and 8.78 GW from nuclear power.

During FY 2025-26, the country added a record 55.3 GW of non-fossil capacity – the highest annual increase to date – nearly doubling the previous year's addition.

The country also reached a significant milestone in June 2025 by achieving 50% of its cumulative installed power capacity from non-fossil sources, five years ahead of its 2030 target under the Paris Agreement.

Renewables Power Over Half of Peak Demand
Highlighting a major achievement, Joshi said that in July 2025, renewable energy sources met 51.5% of India's electricity demand of 203 GW – the highest-ever share.

Overall, renewable energy (including large hydro) contributed 26.2% of total electricity generation in FY 2025-26, while non-fossil sources accounted for 29.2%.

India's total electricity generation during the year stood at 1,845.9 billion units (BU).

Solar and Wind Lead Expansion

Solar energy continues to dominate India's renewable growth, with installed capacity surging to 150.26 GW – over 53 times higher than in 2014. Wind energy capacity also grew significantly to 56.09 GW.

FY 2025-26 saw the highest-ever annual solar capacity addition of 44.61 GW, driven by utility-scale projects, rooftop installations, and schemes such as PM KUSUM.

Distributed renewable energy, particularly rooftop solar, emerged as a major contributor, accounting for over one-third of total additions.

Wind energy also recorded a record annual addition of 6.05 GW, further strengthening India's position as a global leader in wind power.

Manufacturing and Self-Reliance Boost
India has significantly expanded its renewable manufacturing base. Solar module manufacturing capacity has grown from 2.3 GW in 2014 to about 172 GW in 2026, while wind turbine manufacturing capacity has increased to around 24 GW.

Policy measures such as reduced GST on renewable energy equipment and incentives for domestic battery manufacturing have supported this growth, aligning with the government's self-reliance goals.

Policy Push and Sector Reforms
The Ministry of New and Renewable Energy has introduced several policy initiatives during FY 2025-26, including:

* Reduction in GST on renewable equipment from 12% to 5%
* Launch of Renewable Energy Equipment Import Monitoring System (REEIMS)
* Introduction of Virtual Power Purchase Agreements (VPPA)
* Pilot scheme for Contracts for Difference (CfD)
* National Policy on Geothermal Energy

Regulatory reforms by the Central Electricity Regulatory Commission (CERC) have also improved grid access and transmission efficiency.

Green Hydrogen and Future Technologies
India is making rapid progress under the National Green Hydrogen Mission, with an outlay of ₹19,744 crore aimed at producing 5 million metric tonnes annually by 2030.

The initiative is expected to attract investments worth over ₹8 lakh crore, create more than 6 lakh jobs, and significantly reduce carbon emissions.

Major developments include record-low price discoveries for green ammonia and hydrogen, establishment of hydrogen hubs, and rollout of certification and safety standards.

Strengthening Infrastructure and Skill Development
The government has also invested in strengthening transmission networks through the Green Energy Corridor project and identified renewable energy zones with a potential of 345 GW.

On the workforce front, over 1.24 lakh individuals were trained in renewable energy sectors during FY 2025-26, supporting the industry's rapid expansion.

Outlook
With a target of achieving 500 GW of non-fossil fuel capacity by 2030, India is on track to become a global leader in clean energy.

While challenges such as grid integration, storage, and supply chain dependencies remain, strong policy support, technological advancements, and rising investments are expected to sustain the country's growth momentum in the renewable energy sector.

## India Adds Over 18 GW Solar Capacity in 2026 As Total Installed Solar Base Crosses 154 GW

India's renewable energy sector continues to witness strong growth in 2026, with solar energy leading the expansion and reinforcing the country's clean energy ambitions. By the end of April 2026, India's total installed solar photovoltaic capacity reached nearly 154.236 GW, making solar the largest contributor to the renewable energy sector. Solar alone now accounts for almost 67.7 percent of the country's renewable energy capacity, excluding large hydro projects, highlighting its central role in India's future power generation plans.

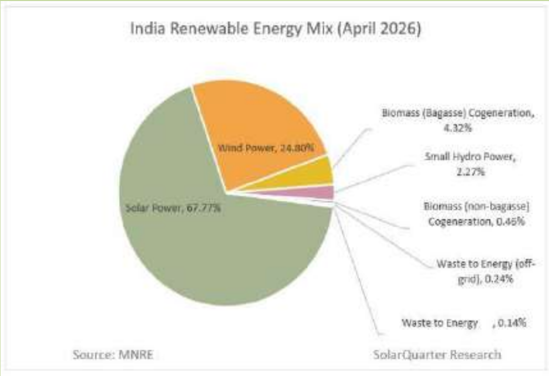
The sector has started 2026 on an exceptionally strong note. During the first four months of the year, India added around 18.426 GW of new solar capacity, reflecting one of the fastest growth phases seen in recent years. April 2026 itself recorded nearly 3.975 GW of fresh installations in a single month, indicating improved project execution, faster commissioning, and rising investor confidence in the sector. Industry experts believe that if this pace continues, 2026 could become a record-breaking year for India's solar market.

Wind energy is also contributing steadily to India's renewable energy transition. Total renewable energy capacity excluding large hydro has now reached around 227.59 GW, with solar and wind together accounting for more than 210 GW. This means the two technologies now represent over 92 percent of the renewable energy mix, strengthening India's efforts to reduce dependence on fossil fuels and increase clean power generation.

Ground-mounted solar projects continue to dominate the market, with total installations surpassing 117.36 GW. Rooftop solar is also witnessing strong growth and has crossed 26.75 GW due to increasing adoption among residential consumers, commercial establishments, and industries seeking lower electricity costs and energy independence. Hybrid renewable projects combining solar and wind capacity have reached around 3.96 GW, while off-grid solar installations have crossed 6.17 GW, helping improve electricity access in rural and remote regions.

Government initiatives continue to support this momentum. Policies such as the Production Linked Incentive scheme and the Approved List of Models and Manufacturers are encouraging domestic manufacturing and improving product quality. The upcoming ALMM wafer compliance requirement from 2028 is also expected to strengthen India's local solar manufacturing ecosystem and reduce reliance on imports.

At the same time, improving global market conditions are offering relief to developers. Reduced geopolitical tensions in the Middle East are helping stabilize supply chains, freight rates, and shipping costs. However, challenges related to land acquisition, transmission infrastructure, and supply chain risks still remain. Despite these hurdles, rising power demand, supportive policies, and growing investments indicate that India's renewable energy sector is likely to maintain strong and sustained growth in the coming years.




## PM-KUSUM is turning Rajasthan's farmers into clean energy producers: Chief Secretary V Srinivas

Rajasthan's renewable energy transition is being shaped not only by large solar parks and private investments but also by farmer-led decentralised solar projects that are creating new income streams and supporting the state's ambition to become power surplus, V Srinivas, Chief Secretary, Government of Rajasthan, said recently.

He was speaking at the ET Government Rajasthan Energy Conclave 2026, organised by The Economic Times' ETGovernment.com with the Rajasthan Renewable Energy Corporation as the co-host partner in Jaipur.

Srinivas said energy sector reform has been a priority area for the Rajasthan government, with the state leadership closely reviewing the roadmap for renewable energy expansion, transmission development and power sector transformation. He said that after joining Rajasthan in November 2025, he found the chief minister deeply focused on accelerating energy reforms and positioning the state as a national clean energy leader.

Referring to a field visit under the PM-KUSUM scheme, Srinivas said the programme had demonstrated how renewable energy can directly transform rural livelihoods. He cited his interaction with a young farmer and electrical engineering graduate at Gudha Kheda village, who had installed a solar plant on his agricultural land along with other farmers participating in the scheme.

"PM-KUSUM has brought tremendous empowerment to their lives," Srinivas said, adding that the scheme has enabled daytime power supply for agriculture, improved voltage quality, supported irrigation and created additional income opportunities for farmers.

He said the PM-KUSUM Component C model, which focuses on solarisation of grid-connected agricultural pumps, allows farmers to use solar power for irrigation and sell surplus electricity to the grid with support from central and state subsidies. This, he said, reduces dependence on conventional grid power while giving farmers a recurring revenue stream.

The chief secretary said Rajasthan's leadership in PM-KUSUM reflects the state's wider commitment to renewable energy reforms. "The vision of a power-surplus Rajasthan and Rajasthan as a solar energy hub for the country is possible," he said, adding that discussions with the Ministry of Power, the Prime Minister's Office, renewable energy developers and transmission companies had reinforced the state's role in India's clean energy transition.

Srinivas said the state is also seeing significant private sector participation from renewable energy developers, including companies setting up solar power plants and associated transmission infrastructure. This, he said, is critical to converting Rajasthan's renewable energy potential into a reliable power supply for consumers and industry.

He pointed to the planned solar park at Gudha as a symbol of this transformation. With a proposed capacity of 2,450 MW and 6,400 MWh of battery energy storage, the project, he said, represents a new generation of storage-integrated solar infrastructure.

"The sheer design and conceptualisation of such a park is enormous," Srinivas said, noting that storagelinked renewable projects will be central to ensuring round-the-clock clean power and strengthening Rajasthan's future energy system.

He also linked the state's renewable energy expansion with broader industrial development, referring to the Hindustan Rajasthan Refinery project as another major energy-sector milestone. Together, he said, renewable energy, storage infrastructure, transmission assets and industrial projects are creating a significant transformation in Rajasthan's energy economy.

Srinivas reiterated the Rajasthan government's commitment to remaining at the forefront of renewable energy development in the country. The larger takeaway from his address was that the state's clean energy transition is moving across two parallel tracks: Large-scale infrastructure-led renewable expansion and decentralised farmer-led solarisation that directly improves rural incomes and power access.

## India's installed renewable energy capacity has registered a growth of 165% in last ten years: Pralhad Joshi

India's installed renewable energy capacity has registered a growth of 165 per cent in the last ten years. Replying to the discussion on the working of the Ministry of New and Renewable Energy in the Rajya Sabha, New and Renewable Energy Minister Pralhad Joshi informed that the renewable energy capacity has increased from 76 Gigawatt in 2014 to 203 Gigawatt in 2024. He also said, India is in the fourth position globally in Renewable Energy installed capacity. Mr Joshi added that in the last ten years, around seven lakh crore rupees have been invested in renewable energy projects.

The Minister highlighted that in the Union Budget 2024-25, more than 21 thousand crore rupees has been allocated for the New and Renewable Energy sector, which was ten thousand crore rupees last year. Mr Joshi said that such a huge allocation of the budget will create employment opportunities in the Renewable sector at the local level and reduce the dependence on fossil fuels. He added that one lakh 60 thousand crore rupees have been allocated for renewable energy-related schemes like PM Surya Ghar, PM Kusum and the National Green Hydrogen Mission. The Minister said, during the UPA rule, the solar power tariff was around 11 rupees per unit, which has come down to two rupees 60 paise per unit in 2024.

## CERC Restores 400 MW Renewable Energy Project Connectivity in Madhya Pradesh

The Central Electricity Regulatory Commission (CERC) has issued a significant ruling in favor of ACME Cleantech Solutions Private Limited in a dispute with Central Transmission Utility of India Limited (CTUIL) over a 400 MW renewable energy project planned in Madhya Pradesh. The case involved the developer's request to change its project source from solar to wind and modify part of its connectivity arrangement after amendments were introduced to the General Network Access (GNA) Regulations.
The dispute started after ACME received an in-principle connectivity grant for a solar power project connected to the Pachora Pooling Station. Later, after the Third Amendment to the GNA Regulations came into effect in September 2025, developers were allowed to change their energy source even before obtaining the final connectivity grant. Based on this provision, ACME applied to convert its planned solar project into a wind project to match the requirements of a hybrid renewable energy contract secured through NTPC Limited.

However, CTUIL did not immediately process the request. The transmission utility argued that it was still working on calculating the available non-solar access capacity during the transition phase under the amended regulations. At the same time, CTUIL directed ACME to submit land documents related to the original solar project before the October 2025 deadline.

Instead of solar project documents, ACME submitted land-related papers for the proposed wind project. CTUIL rejected the submission and issued a letter on December 4, 2025, revoking the company's connectivity approval. The utility also warned that ACME's bank guarantee of ₹40 crore could be encashed.

Following this action, ACME approached the Delhi High Court seeking urgent relief. The court ordered maintenance of the status quo, after which the matter was taken up by the CERC for detailed consideration.

During the proceedings, ACME informed the Commission that it had already made substantial progress on the wind project. The company stated that it had invested in wind turbines, secured lease deeds for 44 project locations, and completed foundation work at 31 sites. ACME further argued that delays by CTUIL in issuing the final connectivity grant, which was reportedly delayed by more than a year, had prevented the company from implementing the required changes earlier.

After reviewing the matter, the CERC observed that the Third Amendment to the GNA Regulations was introduced to provide flexibility to renewable energy developers. The Commission noted that developers should not face penalties because of administrative delays during the transition to the new regulatory framework.

In its final order, the Commission set aside CTUIL's revocation letter and restored ACME's project connectivity status. The CERC also directed CTUIL to process ACME's application for changing the power source, issue the final connectivity grant, and evaluate the land documents submitted for the wind project. The ruling highlights the need to balance regulatory compliance with practical implementation challenges faced by renewable energy developers during policy transitions.

## MNRE Approves ₹2,584 Crore Small Hydro Power Scheme to Add 1,500 MW Renewable Energy Capacity

The Government of India's Ministry of New and Renewable Energy has officially approved the implementation of the Small Hydro Power Development Scheme, marking a significant step toward strengthening the country's renewable energy infrastructure. The scheme will remain active for five years, from FY 2026-27 to FY 2030-31, and aims to promote the development of small hydroelectric power projects across India. The President of India has sanctioned a financial outlay of ₹2,584.60 crore for the nationwide initiative.

The scheme focuses on supporting small hydro projects with capacities ranging from 1 MW to 25 MW. These projects are considered environmentally sustainable because they generate electricity using the natural flow of rivers, streams, and canals without requiring large dams or major land submergence. The government believes that small hydro power can play a key role in improving regional energy security while contributing to India's clean energy goals.

Under the scheme, the government plans to add nearly 1,500 MW of new hydro power capacity over the next five years. Apart from clean electricity generation, the initiative is expected to create substantial employment opportunities across the country. During the construction phase, around 51 lakh person-days of work are projected to be generated, while nearly 9,000 permanent jobs are expected after project commissioning.

The environmental benefits are also expected to be significant. According to the ministry, the projects developed under the scheme could help avoid nearly 4.3 million tonnes of carbon dioxide emissions annually once the targeted capacity becomes operational. This aligns with India's broader climate commitments and renewable energy transition plans. The implementation and monitoring of the scheme will be handled by the Solar Energy Corporation of India Limited, which has been appointed as the National Programme Implementing Agency. The agency will oversee developer applications, project approvals, and fund disbursement processes.
A major portion of the total outlay, amounting to ₹2,532.60 crore, has been allocated as Central Financial Assistance for project developers. Additionally, ₹30 crore has been earmarked for preparing Detailed Project Reports to support a future pipeline of around 200 projects. The remaining funds will support research, innovation, capacity building, international cooperation, and project monitoring activities involving institutions such as IITs and NITs.

To encourage development in difficult terrains, the government has provided higher financial incentives for projects in hilly and North-Eastern regions. Projects located in border areas and North-Eastern states can receive up to 30% of normative capital costs, capped at ₹30 crore per project. Other regions will receive support of up to 20%, capped at ₹20 crore per project.

The ministry has also introduced a transparent digital process for registrations, applications, and fund disbursements through a dedicated online portal. Developers whose projects began construction after March 18, 2026, will be eligible to apply. The scheme allows participation from private, public, and joint venture entities selected through competitive bidding. Projects approved under the scheme must be completed within four years to ensure timely execution and faster clean energy deployment.

## No Blanket Extension of Approved List of Models and Manufacturers (ALMM) List-II Beyond 1st June 2026 - Case-to-Case Relief to Protect Investments Already Made

The Ministry of New and Renewable Energy (M/o N&RE) has decided that no blanket extension of the deadline for applicability of Approved List of Models and Manufacturers (ALMM) List-II for solar PV cells beyond 1st June 2026 is required. The decision has been taken after detailed examination of representations received from stakeholders and wider consultations held with the industry.

Under the existing framework for ALMM List-II for solar PV cells, Net-Metering Projects and Open Access Projects commissioned prior to 1st June 2026 are exempt from the applicability of ALMM List-II for solar PV cells. Projects commissioned after this date will be required to comply with the ALMM List-II provisions.

The Ministry of New and Renewable Energy had received several representations regarding the timeline of 1st June 2026, with some stakeholders seeking extension of the deadline and others seeking that no extension be granted. During the review process, the Ministry also considered the Office Memorandum dated 29.04.2026 issued by the Department of Expenditure, Ministry of Finance, which, inter alia, advised treatment of the ongoing West Asia situation as war and suggested that time extension for a period of not less than two months and not more than four months may be considered on the basis of specific situations and not through a blanket policy.

After detailed examination of the representations received and wider stakeholder consultations, it has been decided that no blanket extension of the deadline for applicability of ALMM List-II for solar PV cells beyond 1st June 2026 is required to be provided.

However, in order to protect investments already made in the larger public interest, certain Net-Metering, Open Access and Renewable Energy power projects will be considered for appropriate time extension on a case-to-case basis. These include projects where installation of solar modules has been completed but commissioning is pending, or projects where effective steps towards implementation have already been undertaken by Renewable Energy power developers. Such effective steps will in
clude land acquisition, financial closure, connectivity arrangements, approval of electrical drawings, and arrival or installation of solar modules.

Such cases will be considered for appropriate time extension in respect of applicability of ALMM List-II for solar PV cells after objective assessment of the supporting information and documentary proof submitted by the concerned developers.

Renewable Power Project Developers seeking time extension beyond 1st June 2026 may submit their claims, along with requisite documentary proof, through a dedicated portal developed by the National Institute of Solar Energy (NISE) for this purpose on or before 30th June 2026. Such claims shall be examined by an Expert Committee to be constituted by the Ministry to recommend project-wise, case-to-case claims based on the information provided by the concerned Renewable Energy power developers.

Ministry of New and Renewable Energy has also clarified that residential net-metering consumers participating in the “Give It Up” campaign under the PM Surya Ghar: Muft Bijli Yojana (PMSG: MBY), who voluntarily forego Government subsidy, will continue to be governed by the existing Scheme Guidelines till the end of the scheme on 31st March 2027. However, such residential net-metering consumers shall mandatorily apply only through the National Portal for PM Surya Ghar: Muft Bijli Yojana.

The Ministry stated that these decisions reflect the Government’s commitment towards ensuring policy stability in the solar PV manufacturing ecosystem aimed at making India self-sufficient in solar PV manufacturing. The decision is also intended to safeguard investor confidence and protect investments already made in renewable energy power projects that could not be commissioned despite effective steps having been undertaken by developers.

## Govt planning policy to push floating solar projects: MNRE Secretary

The Government is working on a dedicated scheme to give a push to floating solar projects in the country, MNRE Secretary Santosh Kumar Sarangi has said.

The senior ministry official made the remarks at the 13th Foundation Day of the National Solar Energy Federation of India (NSEFI) in the national capital recently.

"We are actively looking at ways in which land does not become a constraint for deployment of solar modules," Sarangi said in his address.

In terms of floating solar, the ministry is looking at a scheme which will encourage the states to go for much larger-scale floating solar projects, which till now have not reached their desired potential.

Under floating solar projects, solar panel systems are installed on water bodies, and they are more energy-efficient than land-based systems due to the cooling effect of water. Meanwhile, Minister of State for New and Renewable Energy (MNRE) Shripad Yesso Naik launched NSEFI Sustainable Energy Federation of India."With the creation of the NSEFI Sustainable Energy Federation of Industry, the organisation will now integrate its ongoing efforts in electricity and agriculture with new focus areas in Industrial and Mobility decarbonization, creating a unified platform to accelerate India's transition to a Net Zero Economy," NSEFI CEO Subrahmanyam Pulipaka said.

According to an official statement, India's solar energy installed capacity has increased 53.28 from 2.82 GW in March 2014 to 150.26 GW in March 2026, registering an increase of 147.44 GW. Of them, floating solar capacity stands around 700 MW.

## Coal Stock Buffer Sufficient to Meet Peak Power Demand: CIL

State-run Coal India Limited (CIL) recently said it has sufficient coal inventories to meet peak summer demand from thermal power plants, assuring that current stock levels are adequate and there is no supply-side concern.

The company said the total coal stock buffer available for use currently stands at around 168 million tonnes (MT), including inventories at thermal power plants, CIL mine heads, transit points and coal moving through railway networks.

Coal stocks at domestic coal-based thermal power plants stood at 47.6 MT as of May 23, while inventories at CIL mine heads reached 113.5 MT as of May 24, nearly 10 per cent higher than the corresponding period last year.

According to CIL, the available stock at power plants is sufficient to meet nearly 19 days of fuel requirements.

In addition, around 3 MT of coal is available at transit points such as goods sheds, ports and private washeries, while nearly 4 MT remains in transit through railway rakes.

The company emphasised that seasonal declines in coal inventories at power plants during summer months are routine and should not be interpreted as an indication of supply stress.

CIL, which accounts for over 80 per cent of India's coal production, also said nearly 50 MT of in-situ coal is readily available for extraction and dispatch in case of additional demand.

As of May 20, a total of 21 thermal power plants were classified under criticality, including 11 domestic coal-based units, of which seven source fuel from Coal India.

The company said it has been regularly engaging with power producers to encourage advance inventory build-up, particularly for plants located in logistically sensitive regions.

A senior official said coal stockpiles are also being strengthened at mining pitheads as a precautionary measure to address any potential disruptions arising from volatility in global oil and gas supplies.

Coal India said the Ministry of Coal continues to support reliable fuel availability through policy facilitation, close monitoring and stakeholder coordination aimed at ensuring uninterrupted operations across critical sectors.

## Ministry of Coal hosts Roadshow on Scheme for Promotion of Surface Coal/Lignite Gasification Projects in New Delhi

The Ministry of Coal has successfully organized a Roadshow on the Scheme for Promotion of Surface Coal/Lignite Gasification Projects in New Delhi, witnessing enthusiastic participation from policymakers, State Government representatives, industry leaders, technology providers, investors, financial institutions and key stakeholders from across the coal gasification sector. Minister of Coal and Mines Shri G. Kishan Reddy graced the occasion as the Chief Guest, while Minister of State for Coal and Mines Shri Satish Chandra Dubey attended the event as the Guest of Honour. Shri Vikram Dev Dutt, Secretary, Ministry of Coal, Shri Sanoj Kumar Jha, Additional Secretary, Ministry of Coal, along with senior officials of the Ministry, were also present during the event.

The Roadshow showcased the immense potential of coal gasification, the policy support available under the newly approved scheme, and the emerging opportunities for large-scale participation in this strategic sector. The event also served as an important platform for dialogue, collaboration and stakeholder engagement towards advancing cleaner and more efficient utilization of India's vast domestic coal resources.

Union Minister of Coal and Mines Shri G. Kishan Reddy, in his keynote address, said that under the visionary leadership of Prime Minister Shri Narendra Modi, India is steadily advancing towards a future-ready, self-reliant and secure energy ecosystem, with Coal Gasification emerging as a key pillar of the nation's industrial and economic transformation. He emphasized that Coal Gasification is not merely an energy initiative, but a strategic national mission that will help India reduce import dependence, promote clean coal utilisation and create new opportunities across downstream industries including fertilizers, petrochemicals, methanol, hydrogen and advanced manufacturing.

Highlighting the Government's strong commitment towards promoting Coal Gasification, the Minister noted that the Government has already launched a Rs 8,500 crore incentive scheme and recently approved an additional Rs 37,500 crore financial support package to accelerate Coal Gasification projects across the country. He said that these initiatives are expected to attract investments worth nearly Rs 2.5 lakh crore, generate large-scale direct and indirect employment opportunities and create a robust industrial value chain in sectors such as fertilizers, methanol, hydrogen and petrochemicals.

Shri Reddy noted that Coal Gasification has the potential to significantly reduce the country's dependence on imported methanol, ammonia, fertilizers and other critical chemicals, thereby protecting farmers, industries and consumers from global trade shocks and price volatility. Shri Reddy further underlined that India possesses the necessary ecosystem, institutional strength and technological capability required to emerge as a major global hub for Coal Gasification. He reiterated that the Government is committed to promoting a strong "Whole of Government Approach" by bringing together Ministries, State Governments, industry leaders, researchers, startups and technology partners to accelerate implementation across the complete Coal Gasification value chain. The Minister expressed confidence that with coordinated efforts and industry participation, Coal Gasification will become a key pillar of India's long-term energy security, industrial self-reliance and the vision of Viksit Bharat by 2047.

In his insightful address, Minister of State for Coal and Mines Shri Satish Chandra Dubey highlighted that the ₹37,500 crore Scheme approved by the Government marks a major step towards promoting Coal Gasification and cleaner utilization of the country's abundant domestic coal resources. He said the initiative will significantly reduce import dependence on products such as LNG, methanol, ammonia, urea, ammonium nitrate and coking coal, while strengthening India's energy security and industrial self-reliance.

Shri Dubey further highlighted that the initiative will accelerate investments, generate large-scale employment opportunities and promote industrial development, particularly in coal-bearing and economically backward regions of the country. He appreciated the enthusiastic participation of stakeholders and said that Coal Gasification has the potential to open new avenues of growth while ensuring more sustainable and value-added utilization of coal resources.

In his opening remarks at the Roadshow on Promotion of Surface Coal/Lignite Gasification Projects, Shri Vikram Dev Dutt, Secretary, Ministry of Coal, stated that India stands at a pivotal moment where the nation is turning to its own resources and ingenuity to shape the next chapter of industrial transformation, strategic self-reliance and national resilience. He underlined that the initiative is not merely about energy security, but about reducing strategic import dependence, strengthening critical industrial supply chains, creating domestic manufacturing capability and unlocking greater value from India's abundant natural resources. Inviting industry to become equal partners in this national endeavour, he thanked all stakeholders for their enthusiastic participation in the roadshow.

Highlighting India's vast coal and lignite reserves as a national endowment, Shri Dutt, emphasized that the question before the country is not whether coal will be used, but how intelligently it will be utilized. Describing coal gasification as the answer, he noted that the technology enables conversion of coal into value-added products such as synthetic natural gas, urea, methanol, ammonia, hydrogen and DRI for steel production, thereby reducing import dependence across critical sectors. He further stated that the Scheme approved by the Union Cabinet with an outlay of ₹37,500 crore is expected to mobilize investments of ₹2.5 to 3 lakh crore and generate approximately 50,000 direct and indirect jobs through nearly 25 new gasification projects across coal-bearing regions. Further, he emphasized that the technology-agnostic framework of the Scheme provides flexibility to project developers while ensuring accountability through milestone-based implementation and monitoring mechanisms.

Referring to the changing geopolitics of global energy and commodity supply chains, Shri Dutt observed that the ongoing conflict in West Asia has reinforced the urgency of building strategic self-sufficiency across energy, fertilizers, chemicals and steel. He stated that India's coal is not merely a commodity, but a strategic asset capable of strengthening the nation's long-term economic and industrial resilience. Underscoring the Government's commitment towards timely implementation, robust governance and industry partnership, he extended an open invitation to PSUs, private companies, technology providers and financial institutions to actively participate in this transformational initiative, adding, "The opportunity is unprecedented. The need is urgent. The support is generous. And the time is now."

The Roadshow also featured an engaging interaction and Question and Answer session, during which potential investors and stakeholders interacted on issues relating to project viability, policy incentives, technology readiness, implementation models and the broader enabling framework required for the growth of surface coal and lignite gasification projects. The interactive exchange reflected the growing confidence of industry in the emerging Coal Gasification sector and the Ministry's commitment towards responsive stakeholder engagement and facilitation.

## Coal Gasification: India's Pathway to Energy Security and Economic Growth

India's coal story is both fascinating and disturbing. The country sits on one of the world's largest coal reserves — approximately 401 billion tonnes, enough to last over two centuries at current consumption rates. And yet, every year, we spend upward of Rs 12 lakh crore importing crude oil, liquefied natural gas (LNG), fertilizers, and petrochemicals. Coal gasification can correct this dependence and that is exactly what Govt of India wants to do now.

As we know, the global energy landscape has undergone seismic shifts since 2022. Russia's invasion of Ukraine and the Middle East crisis have squeezed the chokepoint through which over 20 per cent of the world's oil flows, including a large share of India's crude supply.

For India, a nation of 1.44 billion people, the world's fastest-growing economy, her ability to industrialise, create jobs, and achieve her climate commitments is fundamentally constrained by energy insecurity.

Coal gasification, the process of converting coal into a combustible synthetic gas (syngas) offers a compelling solution, if managed carefully. In fact, it may well be the most pragmatic bridge between India's hydrocarbon focused present and its renewable energy future. This article of mine highlights the engineering, economics, and promises of coal gasification.

Coal gasification — The science and the process
Coal gasification is the thermochemical conversion of coal into a gaseous fuel, primarily a mixture of carbon monoxide (CO) and hydrogen (H2) collectively known as syngas (synthetic gas). Unlike burning coal directly for heat or electricity, gasification transforms coal into a versatile gaseous intermediate that can be used to generate power, produce chemicals, manufacture fertilizers, create transportation fuels, and even yield hydrogen — all within a single integrated facility.

The chemistry is almost poetic. When coal, primarily carbon, is subjected to high temperatures (700°C to 1,500°C) in a controlled environment with steam (H2O) and limited oxygen, it does not burn. Instead, it undergoes a series of reactions: partial oxidation, steam reforming, the water-gas shift reaction, and methanation.

The result is a syngas whose composition can be precisely tuned — more hydrogen for fuel cells, more CO for chemical synthesis, more methane for pipeline gas.

A spectrum of high value products
The transformative power of coal gasification lies in its product flexibility. A single integrated coal gasification complex can, in principle, produce dozens of commercially valuable outputs. This is fundamentally different from burning coal for

electricity — which yields only one output and destroys all carbon in the process.

These products — Syngas (CO + H2), Hydrogen (H2), Methanol, Ammonia (NH2), Synthetic Natural Gas (SNG), Liquid Fuels (CTL), Dimethyl Ether (DME), India can replace imported natural gas, create blue hydrogen bridge to green hydrogen economy, provide strategic fuel for defence and aviation.

India's energy security — A case for gasification
To understand why coal gasification matters so urgently for India, one must first grasp the sheer scale of India's energy import dependency — and its vulnerability in the current geopolitical environment.

India imports like crude oil, natural gas, urea, coking coal, ammonia, and petrochemicals. Every single one of these can, in principle, be produced from India's domestic coal through gasification.
Against this backdrop, India's National Coal Gasification Mission — which targets gasifying 100 million tonnes per annum (MTPA) of coal by 2030. It is a strategic imperative.

At 100 MTPA gasification capacity, India could theoretically produce enough syngas to generate over 20,000 MW of power, manufacture over 10 million tonnes of urea annually, and supply hundreds of millions of households with cooking gas — all from domestic resources, insulated from global price shocks and geopolitical disruptions.

The arithmetic of import substitution through coal gasification is compelling. Methanol produced from coal gasification can be blended with petrol at 15-85 per cent ratios, directly displacing crude oil imports. India's methanol demand, if fully met domestically through coal gasification, could save the country an estimated $5-8 billion annually in petroleum imports.

The fertilizer math is even more compelling. India pays roughly Rs 1.75 lakh crore annually in fertilizer subsidies, a significant portion of which flows to imported urea and its precursor, natural gas. Domestic urea production from coal-gasification-derived ammonia would not only slash the subsidy burden but also insulate Indian farmers from global fertilizer price spikes — which doubled and tripled during 2021-23. India's Current Account Deficit (CAD) is fundamentally an energy import problem. Reducing energy imports by even 15-20 per cent through gasification—derived substitutes could save $25-40 billion annually, transforming India's external balance sheet and materially strengthening the rupee. For RBI managing currency volatility driven by oil price shocks, this represents genuine macroeconomic stability.

How gasification fuels India's $5 trillion dream
India's ambition to become a $5 trillion economy and eventually a $10 trillion economy by 2035 requires a GDP growth rate of 7-8 per cent annually. At those growth rates, energy demand will roughly double by 2035. The question is not whether India needs more energy; the question is where it comes from.

Energy import costs that scale with GDP growth will act as a brake — sucking out foreign exchange, widening the current account deficit, and reducing the real purchasing power of growth.

Coal gasification represents a GDP multiplier opportunity on three levels. First, import substitution ensures every dollar of energy and chemicals produced domestically rather than imported is a dollar retained in the Indian economy, circulating through wages, taxes, and reinvestment. At $30-40 billion in potential annual import substitution, the macroeconomic gain is significant. Then comes industrialisation, cheap, domestically produced syngas, methanol, and chemicals lower the input costs for Indian manufacturing, improving competitiveness against China and other export manufacturing hubs. Third is value addition: instead of exporting raw coal at $80-120 per tonne, gasification converts coal into products worth $300-800 per tonne equivalent, a 3 to 10 times value multiplication on the same resource. "A ton of coal burned in a power plant is worth roughly Rs 7,000. That same tonne, converted to methanol and chemical feedstocks through gasification, can generate Rs 35,000-50,000 in value. Estimates suggest a fully —scaled 100 MTPA gasification ecosystem could contribute Rs 1.5-2.5 lakh crore annually in GDP, representing close to 1 per cent of India's current GDP. There is also an export dimension.

India could become an exporter of methanol, ammonia, and specialty chemicals to neighbouring countries — Bangladesh, Sri Lanka, Nepal, Myanmar — and eventually to global markets. South Korea and Japan have already expressed interest in blue ammonia.

The opportunity is clear — India has the coal, the market, the industrial demand, and the policy intent. We now have the mission to drive the agenda. Let's hope it flies.

## Cabinet approves Scheme for Promotion of Surface Coal/Lignite Gasification Projects with a financial outlay of Rs.37,500 crore

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved a Scheme for Promotion of Surface Coal/Lignite Gasification Projects with a financial outlay of Rs.37,500 crore.

The Scheme marks a major step towards accelerating India's coal/lignite gasification programme, advancing the national target of gasifying 100 Million Tonnes (MT) of coal by 2030, strengthening energy security, and reducing dependence on imports of key products such as LNG (more than 50% imported), urea (~20% imported), ammonia (~100% imported), and methanol (~80–90% imported).

In a significant accompanying reform, the Government has also extended coal linkage tenure up to 30 years under the "Production of Syngas leading to Coal Gasification" sub-sector in the Non-Regulated Sector (NRS) linkage auction framework, providing long-term policy certainty for investment in coal gasification projects.

**Salient Features of the Scheme:**

- Total financial outlay of Rs.37,500 crore to incentivize new surface coal/lignite gasification projects for production of syngas and its downstream products, targeting gasification of approximately 75 Million Tonne of coal/lignite.
- Financial incentive provided at a maximum of 20% of the cost of Plant and Machinery.
- Selection through a transparent and competitive bidding process, with an evaluation framework benchmarking project cost, coal input, and syngas output.
- Incentive disbursed in four equal instalments, linked to project milestones.
- Financial incentive for any single project capped at Rs.5,000 crore; for any single product (except Synthetic Natural Gas and Urea) capped at Rs.9,000 crore; and any single entity group capped at Rs.12,000 crore across all projects.
- Incentive under this Scheme is in addition to, and does not restrict access to, incentives under the commercial coal mining regime or schemes of other Central/State Government ministries.
- The Scheme is technology-agnostic; adoption of indigenous technologies is encouraged.

**Strategic and Economic Benefits:**

- Expected Investment Mobilisation**:** Rs.2.5- 3.0 lakh crore
- Energy Security & Import Substitution**:** Diversified use of coal resources and substitutes imports of LNG, urea, ammonia, ammonium nitrate, methanol, and coking coal, insulating India from global price volatility and geopolitical supply-chain disruptions and advancing the Atmanirbhar Bharat and Make in India objectives.
- Employment Generation: The Scheme is projected to create around 50,000 (Direct + Indirect) jobs across 25 projects in coal-bearing regions.
- Revenue to Governments**:** Coal/lignite utilization is expected to generate Rs.6,300 crore annually from 75 Million Tonne of gasification envisaged under the Scheme, plus downstream revenue from GST and other levies.
- Technology Ecosystem**:** Strengthens India's domestic surface coal gasification capability by advancing indigenous technologies and minimising reliance on foreign EPC contractors.

.

## CERC Proposes Capacity Market Framework to Strengthen India's Power Sector Reliability

The Staff of the Central Electricity Regulatory Commission (CERC) released a discussion paper in April 2026 proposing the introduction of a Capacity Market in India's electricity sector. The proposal is aimed at improving long-term resource adequacy, which refers to the power system's ability to meet growing electricity demand reliably at all times. The paper comes at a time when India's power demand is increasing rapidly due to industrial growth, urbanization, renewable energy expansion, and rising electricity consumption across states.

According to the paper, India currently relies heavily on long-term Power Purchase Agreements (PPAs), which already work in a way similar to capacity contracts. However, the CERC staff believes that the present system may not be enough in the future, especially when electricity markets alone are unable to provide sufficient revenue for power plants to recover their fixed costs. This challenge is commonly known as the "missing money" problem in electricity markets.

The paper studies international capacity market models followed in countries such as Germany, the United Kingdom, and the United States. In these countries, generators are not only paid for the electricity they produce but also for being available during times of high demand or system stress. This system helps maintain grid reliability and encourages investments in new power generation capacity.

Based on these global examples, the CERC staff has proposed three possible market mechanisms for India. The first proposal is the Resource Adequacy Capacity Market. Under this system, distribution companies, or discoms, could procure long-term capacity through competitive bidding. One option suggests that discoms invite bids only for capacity charges for contracts lasting up to 15 years, with prices discovered through auctions. Another option recommends continuing the current total-cost bidding system but making market-based dispatch compulsory. A third "Residual" model proposes that a central agency conduct auctions on behalf of discoms facing shortages. To ensure accountability, the paper recommends penalties equal to 1.5 times the capacity charge if a provider fails to deliver during peak stress periods.

The second proposal is the Reserve Capacity Market, which aims to address the present shortage of reserve power in India. At present, the National Load Despatch Centre (NLDC) sometimes has to intervene directly to secure additional resources during periods of high electricity demand. Under the proposed framework, the NLDC would identify reserve shortages and conduct annual auctions for secondary and tertiary reserves. The paper describes this mechanism as a temporary safeguard until all states adopt a complete Resource Adequacy framework.

The third proposal is the creation of a Secondary Short-Term Capacity Market. This market would allow trading of existing surplus capacity for short periods ranging from one to three months. Through this system, discoms with excess contracted capacity could sell it to other discoms facing shortages. The paper states that this would improve efficiency and reduce dependence on isolated or "silo-based" contracts. The market would also include double-sided bidding and strict penalties for failure to supply power during stress periods.

The discussion paper also emphasizes a technology-neutral approach. Renewable energy projects, especially solar and wind developers, would be encouraged to participate by integrating battery energy storage systems. By linking contracts and dispatch mechanisms with the energy market, the CERC staff believes the proposed framework can improve resource utilization, stabilize electricity prices, and provide stronger financial confidence for investors planning new power projects. The commission is currently seeking stakeholder comments on all three proposed market structures before finalizing the framework for India's future power sector development.

## India holds inter-ministerial meeting to speed up battery storage and grid upgrades

An inter-ministerial meeting chaired by power minister Manohar Lal recently said recently reviewed measures to expedite battery storage deployment, transmission expansion and implementation of time-of-day tariffs as India looks to maximise renewable energy utilisation and strengthen grid stability.

The meeting was co-chaired by heavy industries minister HD Kumaraswamy, new and renewable energy minister Pralhad Joshi and minister of state for power Shripad Yesso Naik.

Discussions were held on faster implementation of energy storage systems, particularly battery energy storage systems, to support reliable integration of renewable energy into the grid.

The ministers also discussed expediting critical transmission projects to reduce renewable energy curtailment and improve grid connectivity across regions.

The issue has become increasingly important as renewable energy capacity in several states grows faster than transmission infrastructure propping issues of curtailment of green power.

Another key focus area was accelerating the rollout of time-of-day tariffs, which are aimed at encouraging higher electricity consumption during solar hours through differential pricing mechanisms.

## NTPC Group's Installed Power Capacity Surpasses 90 GW Mark

State-run power major NTPC Group has crossed 90 GW of installed power generation capacity following the successful trial operations of the second 800 MW unit at Patratu Vidyut Utpadan Nigam Limited (PVUNL) in Jharkhand, according to an official statement issued recently.

The milestone strengthens NTPC's position as India's largest power producer and marks another step toward enhancing the country's energy security and sustainable power infrastructure.

PVUNL, incorporated in October 2015, is a joint venture between an NTPC subsidiary holding a 74 per cent stake and Jharkhand Bijli Vitran Nigam Limited, which owns the remaining 26 per cent. The project comprises three 800 MW units and is focused on delivering affordable and environmentally sustainable power through advanced technologies and efficient resource utilisation.

With the commissioning milestone, NTPC Group now operates more than 90 GW of installed capacity nationwide and has an additional 32 GW under construction.

The company has set an ambitious target of reaching 149 GW of total installed capacity by 2032, including 60 GW from renewable energy sources.

Strengthening its clean energy portfolio, NTPC added 5,488 MW of renewable capacity during FY26 across solar, wind and pumped storage projects, reinforcing its transition toward a diversified and low-carbon energy mix.

NTPC's power portfolio spans thermal, hydro, solar and wind generation, enabling reliable and cost-effective electricity supply across India.

The company has also expanded into emerging energy segments such as e-mobility, battery storage, pumped hydro storage, waste-to-energy, nuclear power and green hydrogen solutions as part of its long-term growth strategy.

Financially, NTPC reported an over 8 per cent rise in consolidated net profit to Rs 5,489 crore during the October-December quarter of FY26, compared with Rs 5,063 crore in the corresponding period last year. The power major also announced a second interim dividend of Rs 2.75 per share.

## India's Electricity Demand Rises 8.1% Despite West Asia-Driven Energy Price Pressures: ICRA

India's electricity demand growth accelerated to 8.1% in May 2026, supported by rising temperatures and higher power consumption, even as ICRA Limited lowered its FY27 GDP growth forecast to 6.2% amid elevated crude oil prices linked to the ongoing West Asia crisis.

The report found that the pace of year-on-year (YoY) expansion in all-India electricity demand improved to 8.1% during May 1–21, 2026, compared with 4.4%

growth in April. ICRA attributed the increase to rising temperatures and heatwave conditions across parts of the country, which pushed average electricity demand to 5.2 billion units (BU) per day in May so far, compared with 5.1 BU per day in April.

However, average spot power tariffs in the day-ahead market (DAM) softened to Rs. 4.6 per unit during May 1–22, down from Rs. 5.3 per unit in April, amid ample solar power supply during daytime hours.

India Power Demand Growth Hits 8.1% Despite West Asia Crisis

A recent ICRA research note highlighted healthy YoY growth in electricity demand, even as the ongoing stalemate in West Asia kept global energy prices elevated. The report showed that all-India electricity demand growth improved to 8.1% during May 1–21, 2026, from 4.4% in April 2026.

ICRA attributed the growth to rising temperatures, with average electricity demand reaching 5.2 BU/day in May 2026 so far compared with 5.1 BU/day in April, along with a favourable base effect (-4.9%/+2.2% in May 2025/April 2025).

Moreover, average spot power tariffs in the DAM softened to Rs. 4.6/unit during May 1–22, 2026, from Rs. 5.3/unit in April, amid ample solar energy supply during solar hours.

Financial Impact of West Asia Crisis
ICRA also noted that worsening financial conditions and persistently high global energy prices due to the West Asia stalemate prompted it to revise its crude oil price assumption for FY27 to around $95 per barrel, up from its earlier estimate of $85 per barrel. As a result, the agency lowered its baseline GDP growth forecast for FY27 to 6.2% from 6.5% earlier.

Despite improvements in some sectors, five of the eight core industries still recorded output contractions in April, excluding steel, cement, and electricity generation. ICRA said this indicates that economic activity in several sectors may have been impacted by the West Asia crisis, potentially leading to weak IIP growth for April 2026. The impact is expected to be reflected in the April IIP data under the revised base year, scheduled for release on June 1, 2026.

The agency said the year-on-year improvement in April 2026 core sector output was largely driven by electricity generation, cement production, and a narrower contraction in fertiliser output. Electricity generation growth rose to 4.1% in April from 0.8% in March, while cement output growth accelerated to 9.4% from 4.7%.

According to ICRA, early May indicators remain relatively positive, supported by healthy electricity demand growth and continued double-digit expansion in vehicle registrations. However, the agency warned that elevated global energy prices and tighter financial conditions could weigh on economic growth momentum in the coming months.

## CERC Approves New Green Power Trading Framework for IEX Under Revised Renewable Consumption Obligation (RCO) Rules

The Central Electricity Regulatory Commission (CERC) has approved a major restructuring of green power contracts at Indian Energy Exchange Limited (IEX), marking an important step in aligning India's electricity trading system with the latest Renewable Consumption Obligation (RCO) framework issued by the Ministry of Power. The order was issued under Petition No. 338/MP/2025 and is expected to significantly improve the way renewable energy is traded and accounted for in the country.

Earlier, India's renewable energy compliance mechanism was largely based on separate Solar and Non-solar Renewable Purchase Obligations (RPOs), with hydropower later added as another category. However, in line with India's growing clean energy ambitions and changing policy requirements, the Ministry of Power revised the framework in October 2023 and finalized the updated RCO structure in September 2025. The new policy divides renewable power procurement into four categories: Wind Energy, Hydro Energy, Distributed Renewable Energy (DRE), and Other Renewable Energy sources.

To support this transition, IEX requested approval from CERC to modify its trading systems and business rules. During the proceedings, the Commission reviewed submissions from IEX and the National Load Despatch Centre (NLDC), operated by Grid India. CERC observed that the new categorization would help obligated entities such as DISCOMs, open-access consumers, and captive power users meet their renewable energy obligations more efficiently and transparently.

Under the approved structure, IEX will gradually replace the older renewable energy categories across its trading platforms, including the Green Day-Ahead Market (G-DAM), Green Intra-day Contracts, and Green Monthly Contracts. These products will now operate according to the newly defined four-category framework. To ensure clarity and transparency, sellers participating on the exchange will need to provide a No Objection Certificate (NOC) or similar approval clearly mentioning the exact renewable energy source category.

The Commission also directed that when state DISCOMs sell bundled renewable portfolios on the exchange, details of the individual generating stations and their renewable energy sources must be displayed for buyers. This step is aimed at improving transparency and strengthening buyer confidence in green power transactions.

Another key feature of the revised framework is the concept of fungibility among renewable categories. According to the Ministry of Power guidelines, shortages in Wind, Hydro, or Other Renewable Energy obligations can be adjusted using surplus procurement from the other categories. However, Distributed Renewable Energy remains non-fungible, meaning shortfalls cannot be compensated using surplus from other renewable segments. This provision is intended to encourage the actual installation of small-scale distributed systems such as rooftop solar projects.

CERC also approved changes to improve market participation and trading efficiency. The minimum bid size for Green Intra-day and Green Day-Ahead Contingency contracts has been reduced from 0.220 MW to 0.1 MW in line with Open Access regulations. In addition, all Green Term Ahead Market contracts will now be traded uniformly in Megawatt-hours (MWh).

The Commission has directed NLDC to implement the necessary updates on the National Open Access Registry (NOAR) portal and revise short-term open access procedures accordingly. IEX has also been instructed to publish the revised business rules on its official platform, paving the way for a more streamlined and transparent green energy trading ecosystem in India.

Timely payments by state discoms aiding power gencos: Moody's

Recent improvements in the payment discipline of state-owned electricity distribution companies (discoms) are supporting near-term cash flow visibility for power generators, although the sustainability of these gains will depend on continued reform support from the central government and progress in addressing structural weaknesses in the sector, according to Moody's Ratings.

The ratings agency said the distribution sector has shown a marked improvement in key operational metrics in recent years.

The gap between average cost of supply and average revenue realised (ACS-ARR) narrowed sharply to Rs 0.06/unit in FY25 from Rs 0.69/unit in FY21, while aggregate technical and commercial losses fell to 15% from 21.9% over the same period. The sector also reported a consolidated profit after tax of around Rs 27 billion in FY25, the first such profit since the unbundling of State Electricity Boards.

However, the performance remains uneven across states. The agency said that 20 out of 31 states continue to report ACS-ARR gaps above the state discom average, while only Gujarat and West Bengal have accumulated surpluses.

According to the report, the late payment surcharge rules introduced in 2022 have strengthened payment discipline and cut receivables pressure for power generators.

.

## Puri: India has 2 months of fuel stocks, no supply worries despite West Asia crisis

India is sitting on comfortable fuel stockpiles and faces no supply disruptions despite the ongoing conflict in West Asia, Petroleum and Natural Gas Minister Hardeep Singh Puri said recently — but warned that state-run Oil Marketing Companies (OMCs) are losing Rs 1,000 crore every single day and cannot absorb losses indefinitely.

Speaking at the CII Annual Business Summit, Puri said the country entered the crisis well-stocked and had since expanded domestic production to cover gaps left by disrupted imports. "We have no supply-side problems," he said. "Today, the country has more than enough stocks of crude oil, LNG and LPG. When this crisis began, there were some concerns, but we converted the challenge into an opportunity."

India currently holds around 60 days of crude oil supplies, 60 days of LNG inventories and 45 days of LPG reserves, he said.

OMC losses near Rs 2 lakh crore; one quarter could wipe out annual profits

The supply-side comfort comes with a steep fiscal cost. Puri said the combined under-recovery on petrol, diesel and LPG for the current quarter has climbed to nearly Rs 1.98 lakh crore, with actual losses estimated at around Rs 1 lakh crore — enough to erase the profits that Indian Oil Corporation, Bharat Petroleum and Hindustan Petroleum earn over an entire year.

At current crude prices, the three companies are losing Rs 14 per litre on petrol, Rs 42 per litre on diesel, and Rs 674 per cylinder on LPG. "My oil companies are losing 1,000 crores a day," Puri said. "So we will have to start worrying about these things."

Petrol and diesel have not seen a price increase in four years, currently retailing at Rs 94.77 and Rs 87.67 per litre respectively. LPG prices were raised by Rs 60 per cylinder in March, but remain well below cost.

LPG output ramped up as imports from Hormuz diversified

Puri said the government has significantly scaled up domestic LPG production to reduce dependence on Gulf shipments. "We have ramped up our domestic production of LPG, which used to be 36,000 metric tonnes per day. We have now taken it up to 54,000 metric tonnes per day," he said.

Previously, around 60 percent of India's LPG imports moved through the Strait of Hormuz, through which roughly 20 percent of global energy supplies transit. The minister said alternative sourcing arrangements had been put in place swiftly, without any supply disruptions or dry-outs at the retail level.

Fuel demand has held up through the crisis, with petrol consumption rising around 6 percent. LPG demand has moderated to about 75,000 metric tonnes per day from nearly 90,000 metric tonnes earlier. "Some demand for LPG has come down. It used to be 90,000 metric tons. It has come down to 75. Some of it is because of the temperature. But even otherwise, I think the prudent supply and demand side, we have done very well, and I have no reason to believe that we will not do well in the future," Puri said.

Minister backs PM Modi's call for energy conservation

Puri defended Prime Minister Narendra Modi's recent appeal to citizens to conserve fuel and cut oil imports, describing it as forward-looking rather than a signal of imminent restrictions or rationing. "The Prime Minister's statement is very visionary. It looks to the future — that if this were to continue, we also have to look at what we can do in terms of lifestyle changes. It's not that something is going to happen. That's all negative, panic-creating activity," he said.

He urged households and industries to shift from LPG to piped natural gas where infrastructure is available, saying pipeline networks and LNG supplies are being rapidly expanded.

War-room reviews, long-term rethink under way

The minister said he conducts daily reviews with the chairmen and managing directors of state oil companies. "I review the situation every day, along with the CMDs of the oil sector for an hour or an hour and a half. There is absolutely no cause for anxiety," he said.

He acknowledged the current crisis had forced a broader reassessment of India's strategic energy storage policies and supply chain architecture. "The experience since February 2026 means you have to rethink everything," he said.

India plans to expand refining capacity to 320 million metric tonnes annually by 2030 from around 260 million currently, and the government is stepping up outreach to global oil majors to accelerate domestic exploration under expanded licensing rounds.

## Oil India Makes Fresh Gas Discovery in Rajasthan: Puri

Maharatna public sector company Oil India Limited (OIL) has unlocked a new gas-bearing pay zone in Rajasthan’s Dandewala field, marking a fresh development in India’s domestic energy exploration efforts.

Union Petroleum and Natural Gas Minister Hardeep Singh Puri announced the development recently, describing it as an important step toward strengthening India’s energy security and reducing import dependence.

In a post on social media platform X, the minister said natural gas has begun flowing for the first time from the shallower Sanu Formation in the Dandewala field at a production rate of nearly 25,000 standard cubic metres per day.

“India’s quest to strengthen domestic production of energy scripts a new chapter in Rajasthan,” Puri said.

He added that the breakthrough would provide fresh momentum to India’s energy self-sufficiency goals and strengthen the country’s domestic hydrocarbon production capacity.

The minister also commended Oil India for its technological capabilities and sustained exploration efforts in unlocking the new gas-bearing zone.

The development comes as India continues to prioritise domestic exploration and production to enhance long-term energy resilience and reduce reliance on imported oil and gas.

Separately, Oil India reported a strong financial performance for the fourth quarter of FY26.
The company posted a 76 per cent sequential rise in net profit during the quarter, while revenue increased 10 per cent to Rs 10,013 crore compared with the preceding quarter.

Operational performance also improved, with EBITDA rising 31 per cent to Rs 3,281 crore from Rs 2,510 crore in the previous quarter.

EBITDA margin expanded to 32.8 per cent in the reporting quarter from 27.5 per cent earlier, reflecting improved operating efficiency.

However, the PSU stock has delivered robust long-term shareholder returns, gaining around 20 per cent over both the past six months and one year, while surging more than 450 per cent over the last five years.

India shielded fuel supply through crude diversification amid Hormuz turmoil: S&P Global Energy official

India's refinery operations continue to remain "robust" despite disruptions in global energy markets due to the Strait of Hormuz crisis, with the country diversifying crude purchases and increasing imports from multiple sources, Pulkit Agarwal, Head of India Content at S&P Global Energy, has said.

Speaking on the sidelines of an event organised by the S&P Global India Research Chapter, Agarwal said India's energy system has been under pressure due to developments in West Asia, but the country has managed to keep domestic fuel supplies running smoothly.

"What we have seen happen over the past two months is India really diversified its own energy buying. India bought a lot of Russian oil that was floating around, that was the first thing that India did," Agarwal told ANI.

"And then India really went out in the market and started buying oil really from all kinds of sources that were available to buy. And that has kept the refining system running," he added.

He said India's refinery run rates continue to remain at "a very robust level", helping meet domestic fuel demand despite turbulence in global oil flows.

Agarwal said the closure of the Strait of Hormuz has had a major impact on global energy markets and India's downstream energy system. "There's a whole lot that's happening in the energy markets right now with the closure of Strait of Hormuz and that's really impacting Indian energy system and really downstream from the energy system as well quite significantly," he said.

He noted that India has traditionally operated with relatively low operational oil storage because of its proximity to Middle Eastern suppliers and shorter shipping timelines. "India as a country is a very efficient buyer of energy," Agarwal said, adding that crude shipments from the Middle East generally take "about 7 to 10 days" to reach India.

He, however, pointed out that India lacks the scale of strategic petroleum reserves built by countries such as China, Japan and South Korea. "India did not build up the kind of strategic storages that we have seen some of the other Asian countries, big Asian economies like Japan, Korea, China built up. So that is where we are lacking in terms of energy storage," he said.

Calling larger reserves, the "smartest strategy" in an ideal situation, Agarwal said building strategic inventories requires massive investment in both storage infrastructure and crude procurement. On domestic fuel prices, he said Indian consumers are currently being shielded from the full impact of the surge in global crude prices.

"The consumer is really shielded from some of the vagaries of the market," he said while referring to domestic fuel prices despite rising international oil rates. "As per their base case... they feel that the oil prices could be somewhere about 120-130 in a couple of months and receding from there," he said.

On the timeline for recovery in case the conflict ends immediately, Agarwal said global energy systems would still take time to stabilise. "If the war stops today, oil markets... does not function on a flip of a switch," he said, adding that "10-20 weeks" may be required for Middle East energy flows to start returning to some level of normality.

## India Accelerates LNG Storage Expansion Amid West Asia Supply Disruptions

India is stepping up efforts to expand its liquefied natural gas (LNG) storage capacity in response to supply disruptions triggered by the ongoing geopolitical conflict in West Asia. The move highlights the country’s growing focus on strengthening energy security and ensuring supply stability.

Strategic Push Led by Petronet LNG Ltd
According to the leadership at Petronet LNG Ltd, India’s largest gas importer, enhancing LNG storage infrastructure has become an urgent priority. As global uncertainties rise, the company is actively planning capacity expansion to safeguard against supply shocks. To reinforce its storage capabilities, Petronet LNG has outlined a series of infrastructure projects across multiple locations:

*Two new LNG storage tanks at Gopalpur, Odisha
*One additional tank at Kochi, Kerala
*Expanded storage capacity at Dahej, Gujarat

These projects are expected to be completed within the next three years. Once operational, they will significantly strengthen India’s ability to maintain uninterrupted gas supply even during periods of global disruption.

Geopolitical Tensions Disrupt LNG Supplies
The expansion plans come at a critical time, as LNG imports from Qatar have been impacted due to escalating geopolitical tensions in West Asia. Given that LNG accounts for a substantial share of India’s energy mix, such disruptions expose vulnerabilities in the country’s energy supply chain.

Strengthening Energy Security Through Strategic Reserves
India is prioritising the development of strategic LNG reserves. By increasing storage capacity, the country aims to build a buffer against future supply uncertainties and price volatility. Moreover, enhanced storage infrastructure will enable better demand management, improve supply flexibility, and reduce dependence on immediate imports during crises.

Building a Resilient Energy Future
As reported by devdisvourse.com, India's proactive approach to expanding LNG storage reflects a broader strategy to build a resilient and secure energy ecosystem. As global energy markets remain volatile, investments in infrastructure and diversification will play a crucial role in ensuring long-term stability.

## India, other oil importers to bilaterally negotiate transit corridors with Iran: Moody's

India and other oil importing nations are likely to negotiate bilaterally to secure energy supplies, potentially through coordinated transit corridors, but a return to pre-war traffic volumes is unlikely in 2026, Moody's Ratings has said.

In a global report on geopolitical risks, Moody's said there is little prospect of a swift and durable settlement between the US and Iran and with it the full reopening of the Strait of Hormuz.

Moody's said the transit flows will gradually improve, but through bilateral channels rather than a general reopening. This would allow some incremental improvement in energy transit flows from near-zero now, but the process will be slow, opaque and subject to interruption.

"We expect oil importers -- particularly China, India, Japan and Korea -- to negotiate passage bilaterally with Iran, potentially through coordinated transit corridors such as those reportedly emerging near Larak Island and through Omani territorial waters... A return to pre-conflict traffic volumes in 2026 is unlikely," it said.

Moody's said even if safe passage in the Strait were to resume in the next six months, the oil market would remain supply-constrained, with persistently higher and more volatile energy prices and broader knock-on effects through costs, demand and financing conditions for exposed borrowers.

"We now expect Brent crude in the USD 90-110/bbl range for much of this year, with significant volatility, including occasional fluctuations outside this range in response to new developments," Moody's said in its May 12 report.

At sustained Brent prices of USD 90-110/bbl, Moody's estimates real GDP growth reductions of 0.2-0.8 percentage point for several major economies.

"India is among the most exposed, given around 46 percent of its crude oil imports come from the Middle East, its sensitivity to currency depreciation and pressure on its current account and fiscal management," Moody's said.

Moody's in its May Global Macro outlook slashed India's GDP growth estimate for 2026 calendar year by 0.8 percentage points to 6 percent.

The Middle East conflict, which started with the US and Israel joint air strikes on Iran has entered its third month. The attack triggered the closure of the Strait of Hormuz, a key chokepoint through which roughly one-fifth of the world's seaborne crude oil and liquefied natural gas (LNG) passed in peacetime.

Maritime traffic through the Strait has fallen by more than 90 percent from pre-conflict levels, with shipping activity curbed by risk aversion, high insurance costs and the presence of sea mines. Brent crude has fluctuated widely between USD 90 and USD 120/bbl.

The disruption to shipping through the Strait has become a structural supply constraint to global energy flows rather than a temporary supply shock, Moody's said, adding that it expects the disruptions to continue through autumn.

Moody's also warned that persistently higher energy prices and scarcity of energy products will feed into headline and core inflation..

## Maharashtra signs ₹6.5 lakh crore nuclear energy MoUs with NTPC, Reliance, Adani

The Maharashtra government recently signed memoranda of understanding (MoUs) with four companies to attract investments worth ₹6.5 lakh crore in the nuclear energy sector, PTI reports.

The agreements were signed with NTPC Ltd, Adani Power Ltd, Reliance Industries Ltd and Lalitpur Power Generation Company Ltd. The projects are expected to generate 25,400 MW of power and create around 1,23,500 jobs.

As per the state government, Reliance Industries will invest ₹2 lakh crore to develop 7,200 MW of nuclear power capacity, which is expected to generate more than one lakh jobs.

Adani Power will invest ₹1.5 lakh crore to establish projects with a combined capacity of 6,000 MW, creating around 12,000 direct and indirect jobs.

NTPC will invest ₹1 lakh crore to develop 7,200 MW of nuclear power capacity, generating nearly 5,000 jobs.

Lalitpur Power Generation Company Ltd, part of the Bajaj Group, will invest ₹2 lakh crore to build 5,000 MW of capacity, with around 3,000 jobs expected to be created.

“This investment will not only boost power generation in the state but also create substantial employment opportunities. Maharashtra will continue to remain at the forefront of clean energy generation in the country,” said Maharashtra Chief Minister Devendra Fadnavis.

He also directed the companies to expedite implementation of the projects and begin surveys of project sites, assuring full cooperation from all concerned state government departments.

## NTPC Chief cautions against dependence on single supplier for nuclear technology

The country must remain watchful of becoming over-dependent on any single supplier or country for nuclear technology as it moves ahead with the ambitious 100 GW nuclear power plan, an industry executive has cautioned.

Gurdeep Singh, the Chairman of India's largest power generation company NTPC, has asserted that the country should prioritise control over technology and resources, even if domestic options are 5-10 percent costlier at the initial stage, to avoid the supply chain vulnerabilities currently seen globally.

Singh, at a workshop organised by Central Electricity Authority (CEA) on India's nuclear power roadmap, urged stakeholders to move beyond legislative intent and focus on the immediate formulation of rules and guidelines, arguing that clarity in implementation is the only way to convert policy into actual investment, accoding to the minutes of the workshop released by the CEA at the weekend.

The workshop on "Shanti Act, 2025: Enabling India's 100 GW Nuclear Power Roadmap through Public-Private Partnership" held last month.

"The Chairman has also cautioned against technological over-dependence on any single supplier or country, asserting that India should prioritize control over technology and resources, even if domestic options are 5-10 per cent costlier at initial stage, to avoid the supply chain vulnerabilities currently seen globally," as per the minutes.

Singh said his company aims to build 30 GW of nuclear capacity by 2047, and to achieve this goal NTPC is exploring feasible locations across 14 states of the country. On the size of the projects being planned by NTPC, he stated the focus must remain on large capacity reactor sets.

"For a large-scale power producer like NTPC, the focus must remain on large capacity reactor sets rather than Small Modular Reactors (SMRs), he said and suggested it might be better suited for captive industrial use despite their high standby costs.

According to the NTPC website, the company currently has an installed capacity of 89,805.30 MW at group-level, spanning coal, gas/liquid fuel, hydro and solar power.

As of March 31, 2026 NTPC held 17 percent of India's total power generation capacity and contributed 24 percent of total power generation of the country.

The SHANTI Act repealed the Atomic Energy Act of 1962 and the Civil Liability for Nuclear Damage Act, 2010, which had proved to be impediments to the growth of the civil nuclear sector in India.

The new law enables private companies and joint ventures to build, own, operate, and decommission nuclear power plants under a government license.

## India's nuclear sector opens to the world: How the SHANTI Act is rewriting history

A 20-member U.S. nuclear industry delegation met Union Minister of State for Science and Technology Dr Jitendra Singh said recently to explore investment opportunities in India's nuclear sector, months after the SHANTI Act overhauled the country's six-decade-old nuclear laws.

The delegation, comprising representatives from the Nuclear Energy Institute and the U.S.-India Strategic Partnership Forum, discussed manufacturing partnerships, supply chain integration and technology cooperation under India's Nuclear Energy Mission.

Singh said India aims to scale nuclear power capacity from 8.8 gigawatts to 100 gigawatts by 2047 through a phased expansion strategy, adding that the programme was creating major opportunities for global partnerships in manufacturing, technology cooperation, supply chain integration and advanced research.

The estimated market value stands at nearly 300 billion dollars.

The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Act, 2025, repeals the Atomic Energy Act of 1962 and the Civil Liability for Nuclear Damage Act of 2010, replacing both with a single comprehensive law.

For the first time since independence, private Indian companies may own and operate nuclear plants in India, while foreign firms may participate through India-incorporated joint ventures and invest up to 49 per cent under the automatic route, though companies incorporated outside India cannot directly hold operating licences under the Act.

The old liability framework had long kept Western companies away. Under the previous law, nuclear suppliers faced direct legal exposure if an accident occurred at a plant. The SHANTI Act replaces a flat liability cap with a graded structure that varies by reactor size and type, bringing India closer to international norms.

The implementation framework under the Act is currently being finalised, and American firms have signalled they want formal input into rule-making before the regulations are set.

Questions around fuel supply security remain unresolved. After India's 1974 Pokhran nuclear test, the United States began delaying enriched uranium shipments to the Tarapur Atomic Power Station, using fuel as leverage to pressure India into signing the Nuclear Non-Proliferation Treaty. India subsequently sourced fuel from France, China and Russia. American companies can today offer long-term commercial supply contracts, not sovereign guarantees, and New Delhi is aware of the distinction.

Unresolved issues around U.S. export approvals and reprocessing arrangements on the Indian side also remain on the table.

Singh said the SHANTI Act reform was expected to create a more enabling ecosystem for investment, industrial collaboration, manufacturing partnerships and technology cooperation aligned with India's Nuclear Energy Mission.

The delegation is scheduled to visit Mumbai and meet Maharashtra Chief Minister Devendra Fadnavis before concluding its visit on 21 May.

## NLC India Signs Key Nuclear Power Agreement with NPCIL

NLC India Limited (NLCIL) and Nuclear Power Corporation of India Limited (NPCIL) have signed a Memorandum of Understanding (MoU) to form a joint venture for developing nuclear power projects in the country, marking a major step toward strengthening India’s clean energy capacity and long-term energy security.

The agreement, signed on May 25, aims to develop 700 MW Indigenous Pressurised Heavy Water Reactor (PHWR)-based nuclear power projects and other advanced reactor technologies based on mutually agreed terms.

The MoU was signed by NLCIL Director (Power) Venkatachalam and NPCIL Director (Technical) Rajesh in the presence of senior officials, including NLCIL Chairman and Managing Director Prasanna Kumar Motupalli and NPCIL Chairman and Managing Director Bhuwan Chandra Pathak.

The proposed joint venture will also explore investment opportunities in NPCIL’s existing and upcoming 700 MW PHWR projects.

The partnership comes as India targets 100 GW of nuclear power capacity by 2047 to support economic growth and climate goals. The initiative has gained momentum following the enactment of the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill in December 2025, aimed at modernising the country’s nuclear policy and regulatory framework.

NLCIL, a Navratna CPSE under the Ministry of Coal, has been expanding beyond conventional power generation into renewable and green energy segments including solar, wind, pumped hydro storage, battery energy storage systems, green hydrogen and waste-to-energy projects.

NPCIL, under the Department of Atomic Energy, remains India’s key nuclear power utility responsible for the design, construction and operation of nuclear power plants.

Speaking on the occasion, NLCIL CMD Prasanna Kumar Motupalli said the collaboration marks a strategic milestone in the company’s diversification into sustainable energy and highlighted nuclear power’s role in supporting India’s Net Zero and long-term energy security objectives.

The two public sector enterprises said the partnership combines NLCIL’s power sector experience with NPCIL’s nuclear expertise to develop reliable, low-carbon base-load power infrastructure for the country.

## India’s nuclear power ambitions face a tariff test

The passage of the SHANTI Act, 2025, allowing the private sector to set up and run nuclear power plants in India has created a buzz. But few seem to have looked at nuclear energy’s soft underbelly — the cost.

India’s existing nuclear power plants produce electricity competitively — at ₹2.72–3.87 a kWhr. But these plants were built decades ago.
What will be the cost of new nuclear power plants? A peek into this was provided by experts at a recent workshop on the SHANTI Act, organised by the Central Electricity Authority. A pressurised heavy water reactor (PHWR) — the Nuclear Power Corporation of India is building 10 of these at 700 MW capacity each — will cost ₹21 crore a MW.

## India to shrink zones around nuclear reactors to free up land

India plans to reduce the size of exclusion zones around nuclear plants to free up significant amounts of land for reactor expansions, three officials familiar with the matter said, in a move to attract private investment that is likely to face backlash from opposition parties and the public.

At present, all nuclear reactors in India have a minimum buffer of about 1 km (0.62 miles) around reactors where no habitation or economic activity is allowed, a provision meant to keep radiation risks at a distance.

India's atomic energy regulator and the Department of Atomic Energy have approved an "in principle" plan to reduce these buffers, the three officials said. They requested anonymity because they are not authorised to speak to the media.

The changes are likely to be included in final rules that are due to be published in the next couple of months after the country opened its nuclear generation sector to private and foreign players last year. India aims to expand nuclear capacity to 100 gigawatts by 2047 from about 8 gigawatts at present as part of its clean energy strategy.

The in-principle agreement between the Atomic Energy Regulatory Board and the Department of Atomic Energy to reduce the exclusion zones around nuclear plants to free up land for expansion as well as the size of the cuts have not been previously reported. The proposal was not part of a bill that was approved by parliament and it is expected to be set out in detailed rules that have yet to be released.

The revisions to the buffer zones would cut the land needs by half for large reactors and by nearly two-thirds for small units, potentially allowing two to three times more capacity on the sites, according to an internal presentation reviewed by Reuters.

With smaller exclusion zones, a 10-reactor nuclear complex with 700 megawatts of capacity each could be set up within less than 700 hectares, the presentation showed. India's existing nuclear plants typically use around 1,000 hectares of land.

Small modular reactors could also be placed in industrial zones for captive use, two of the officials said. And cutting exclusion zones would also allow existing plants to add new reactors more easily using shared infrastructure, the presentation said. The change is aimed at easing land constraints, a key hurdle, as the private sector - including Tata Power, Adani Power and Reliance Industries - looks to invest in the sector.

The three officials said the exclusion zones are being reduced because of safer reactor technologies, in line with global norms followed by countries like the U.S. and France that do not fix exclusion distances. Strict siting rules - including distance from human settlements and safety risks - along with lengthy land acquisition processes, often exceeding four to five years, make identifying new sites difficult.

The decision on exclusion zones, however, risks a backlash in a country where nuclear power has faced public opposition despite no major accident record. For much of the public, nuclear power in India is closely associated with radiation risks and the exclusion zones serve as a measurable assurance that risk is kept at a distance.

Some Indian lawmakers, while debating the opening of the nuclear sector in parliament in December, said the reforms prioritised private investment over safety and flagged risks including radiation and nuclear waste. Opposition leaders said the legal amendments risked weakening nuclear safety safeguards by diluting liability protections, easing reactor siting rules and expanding private participation without stronger independent oversight. The bill was cleared by parliament despite the safety concerns raised by opposition lawmakers during the debate.

"The reduction is a meaningful shift that has been under discussion for nearly 18 months," said R. Srikanth, the engineering dean at the National Institute of Advanced Studies, a research institute. "Data from existing plants show that radiation levels around them are significantly lower than natural background levels in parts of coastal Kerala and Tamil Nadu."

"Unfortunately, good news of the Indian nuclear power has been kept hidden from the public," he said. "We need to overcome this all-pervasive sense of secrecy around civilian nuclear power plants."

.

## NATIONAL CONFERENCE ON POWER TRANSMISSION
## 29 May 2026 | New Delhi

**Theme: Powering Viksit Bharat 2047: The Transmission Imperative**

### Executive Summary

India Energy Forum (IEF) successfully organised its first National Conference on Power Transmission on 29 May 2026 at Hotel Le Meridien, New Delhi. The Conference brought together policymakers, regulators, utilities, system operators, transmission developers, manufacturers, financial institutions and industry experts to deliberate on the critical role of transmission infrastructure in supporting India's energy transition and developmental aspirations under *Viksit Bharat 2047*.

The Conference focused on three key dimensions of transmission sector development:

- Planning the transmission system for a high-renewable future;
- Delivering transmission infrastructure at scale through improved execution, supply-chain readiness and technology adoption; and
- Mobilising the large-scale financing required for future transmission investments.

Idam Infra served as the Knowledge Partner and prepared the Theme Paper released during the Inaugural Session. More than 150 delegates participated in the Conference.

### Inaugural Session

The Inaugural Session highlighted the central role of transmission infrastructure in achieving India's clean energy transition and the vision of *Viksit Bharat 2047*. Owing to an urgent official engagement of the Chief Guest, Shri Pankaj Agarwal, IAS, Secretary, Ministry of Power, the sequence of the inaugural proceedings was suitably adjusted while ensuring full participation of all distinguished speakers.

Welcoming the participants, Shri Indu Shekhar Jha, Chairman, Transmission & Distribution Group, IEF, highlighted the growing importance of transmission as a critical enabler of renewable energy integration, energy security and sustainable economic growth. He emphasised on the need of strong coordination of generation and transmission while planning the transmission system.

This was followed by a Special Address by Shri Pratik Agarwal, Chairman, Serentica Renewables & Resonia Ltd and Managing Director, Sterlite Electric Ltd, who highlighted the execution challenges, technological advancements and the need for efficient development of transmission infrastructure, and emphasised on the need for efficient transmission development through greater mechanisation.

In his Presidential Address, Shri R. V Shahi, President, India Energy Forum and former Secretary (Power), set the context for the Conference by emphasising the strategic importance of transmission infrastructure in supporting renewable energy growth and India's long-term developmental aspirations. He underscored the need for creating adequate demand and supporting infrastructure to maximise the benefits of clean energy expansion. He also emphasised that while ROW issue in execution of transmission is becoming severe problem, we should also make efforts to reduce timeline in more controllable factors like approval, awards, issue of license to the developer.

Delivering the Inaugural Address, Shri Pankaj Agarwal, IAS, Secretary, Ministry of Power, highlighted the Government of India's policy initiatives aimed at strengthening transmission infrastructure and facilitating large-scale renewable energy integration. He emphasised that while planning renewable energy projects, consideration should be given to the overall delivered cost of power, including the cost of transmission evacuation infrastructure. He observed that in certain cases, the cost of establishing long-distance transmission systems for evacuation of renewable energy from remote locations could have a significant bearing on the overall economics of power delivery.

Following the departure of the Chief Guest for an urgent official engagement, the inaugural programme continued with Special Addresses by Shri Vimal Kejriwal, Managing Director & CEO, KEC International, and Shri Vamsi Ram Mohan Burra, CMD, POWERGRID. Both speakers highlighted the unprecedented scale of transmission expansion envisaged in the country, the associated execution and supply-chain challenges, and the need for technological innovation, manufacturing readiness and accelerated project implementation.

The Inaugural Session concluded with the Keynote Address by Shri Ghanshyam Prasad, Chairperson, CEA, who outlined the transmission development roadmap under the National Electricity Plan and highlighted the opportunities, challenges and strategic interventions required to build a future-ready transmission network capable of supporting India's energy transition and economic growth aspirations.


**Session I**

**Planning the Transmission System for Viksit Bharat 2047**

**Chair:** Shri V. K. Singh, Member (Power Systems), CEA
**Theme Presentation: Shri Ashwin Gambhir, Senior Fellow, Prayas**
**Panelists:**
- **Shri Vamsi Ram Mohan Burra, CMD, POWERGRID**
- **Shri Samir Saxena, CMD, Grid India**
- **Shri Pratik Agarwal, Chairman, Serentica Renewables & Resonia Ltd and Managing Director, Sterlite Electric Ltd**

**• Shri Kailash Kumar Gupta, COO, Central Transmission Utility of India Ltd**
**• Shri Awdhesh Kumar Yadav, Chief (Engineering), CERC**
**. Shri Ashwin Gambhir, Senior Fellow, Prayas**

**The session focused on the challenges of planning transmission infrastructure for a rapidly evolving power system characterised by high renewable energy penetration, emerging demand centres, green hydrogen hubs and increasing electrification.**

**The theme presentation provided an overview of the evolving transmission planning framework, highlighting the need for integrated planning of generation, ISTS and InSTS systems, refinement of the GNA framework and optimisation of transmission asset utilisation.**

**Key Issues Discussed**

- Integrated planning of generation, ISTS and InSTS systems.
- Planning transmission infrastructure for renewable energy zones, green hydrogen hubs and industrial corridors.
- Experience gained from implementation of the General Network Access (GNA) framework.
- Balancing transmission expansion with efficient asset utilisation.
- Managing uncertainties associated with renewable energy development and future load growth.

**Major Takeaways**

- Stronger coordination between generation planning and transmission development is essential.
- The GNA framework has significantly improved planning visibility but requires continuous refinement based on implementation experience.
- Transmission planning must increasingly adopt a corridor-based and anticipatory approach.
- Technologies and market mechanisms will play an important role in improving transmission asset utilisation.
- Future planning should account for flexibility, resilience and evolving demand patterns.


**Session II**

**Delivering the Grid at Scale – Execution, Supply Chain and Technology**

**Chair:** Shri Indu Shekhar Jha, Former CMD, POWERGRID and Former Member, CERC

**Theme Presentation**: **Shri Naveen Srivastava, Director (Operations), POWERGRID**
**Panelists:**
- **Shri Naveen Srivastava, Director (Operations), POWERGRID**
- **Shri Randeep Narang, Managing Director & CEO, Transrail Lighting Ltd**
- **Shri Ganesh Srinivasan, President (T&D), KEC International Ltd**
- **Shri Akilur Rahman, CTO (India) & Market Innovation Lead – South Asia, Hitachi Energy**

**The theme presentation highlighted the scale of transmission expansion envisaged in the coming decade and the associated execution and supply-chain challenges.**

The session focused on challenges associated with delivering the large volume of transmission infrastructure required over the coming decade.

**Key Issues Discussed**

- Execution challenges under TBCB and Regulated Tariff Mechanism projects.
- Delays arising from right-of-way issues, clearances and contractual complexities.
- Supply-chain constraints affecting transformers, GIS, bushings and HVDC equipment.
- Readiness of the domestic manufacturing ecosystem.
- Adoption of advanced technologies for faster project implementation and improved system reliability.

**Major Takeaways**

- Supply-chain readiness will be critical to achieving planned transmission expansion targets.
- Strengthening domestic manufacturing capacity and vendor ecosystems is essential.
- Improved project risk allocation and contracting frameworks can accelerate execution.
- Technology adoption, including digital substations, automation, FACTS and advanced monitoring systems, can significantly improve reliability and efficiency.
- Greater use of modern construction techniques and digital tools can reduce project delivery timelines.

**Session III**

**Financing the Transmission Imperative**

**Chair:** Shri Rajesh Kumar, Director (Finance), REC
**Theme Presentation**: **Shri Balwant Joshi, Managing Director, Idam Infrastructure Advisory**
Panelists:

- **Shri Akshay Hiranandani, CEO, Serentica Renewables**
- **Shri Sushant Kansal, Vice President-Lending & Financing Projects, NaBFID**
- **Shri Satyan Kumar, Sr. Vice President, Energy Portfolio, Sekura**

The session examined financing requirements and innovative funding approaches needed to support future transmission investments.

**Key Issues Discussed**

- Capital requirements for supporting renewable energy growth, electrification and emerging demand centres.
- Financing challenges arising from long asset life and uncertain utilisation patterns.
- Monetisation of operational transmission assets through Infrastructure Investment Trusts (InVITs).
- Role of development finance institutions and multilateral agencies.
- Innovative financing instruments such as green bonds, blended finance and long-term institutional capital.

**Major Takeaways**

- India's transmission expansion plans will require mobilisation of unprecedented levels of long-term capital.
- Asset monetisation through InVITs offers an effective mechanism for capital recycling.
- Greater participation of pension funds, sovereign wealth funds and international investors should be encouraged.
- MDB financing and blended finance structures can help lower financing costs and diversify funding sources.

Regulatory certainty and stable revenue frameworks remain critical for attracting long-term investment.

**Overall Recommendations Emerged from the Conference**

1. Strengthen coordination between generation and transmission planning to improve overall system efficiency.
2. Continue refinement of the GNA framework based on implementation experience.
3. Accelerate transmission project execution through improved contracting frameworks and faster approvals.
4. Develop a robust domestic manufacturing and supply ecosystem for critical transmission equipment.
5. Promote adoption of advanced technologies to improve reliability, flexibility and asset utilisation.
6. Encourage innovative financing mechanisms, including InVITs, green bonds and blended finance structures.
7. Facilitate greater participation of institutional and international investors in transmission infrastructure.
8. Maintain a stable and predictable policy and regulatory environment to support long-term investments.

**Conclusion**

The Conference successfully brought together key stakeholders across the transmission value chain and provided a platform for meaningful dialogue on the opportunities and challenges associated with building the transmission infrastructure required for *Viksit Bharat 2047*. The deliberations highlighted the need for coordinated planning, accelerated execution, technological innovation and sustainable financing to ensure that India's transmission network remains a strong enabler of economic growth and energy transition.

## Webinar on "Power Market Coupling" 12th May 2026

India Energy Forum had organised a Webinar on 12th May 2026 on Power Market Coupling in which about 145 power sector professionals participated. A number of power sector experts expressed their views on the proposed power market coupling and the draft CERC (Power Market) (Second Amendment), 2026 under which Grid India has been designated as Market Coupling Operator. Following comments have been prepared based on the deliberations and the conclusions drawn in the above Webinar:

1. Section 66 of Electricity Act, 2003 provides that the Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as specified and shall be guided by National Electricity Policy. Clause 5.7 (d) of the NEP stipulates that

2. One of the main objectives of the Electricity Act,2003 is to promote competition. It is in this context that CERC in the guidelines for grant of permission for setting up and operation of Power Exchange framed in the year 2007 decided that the policy framework should make room for more than one exchange at national level. This would promote competition between the power exchanges to provide better services to their customers. The general approach of the Commission was towards development of power market with minimal regulations and allow the power exchanges operational freedom within an overall framework. It was felt that the private entrepreneurship would be allowed to play its role and the Commission would keep away from governance of Power Exchange, which would be required to add value and provide quality service to the customers.

3. While specifying Power Market Regulations, 2010, CERC continued with the same approach of "principle-based regulation" and manage the macro picture with adequate safeguards and leave micro-management to participants to provide enough space for innovation by markets.

4. Two Power Exchanges viz., PXIL and IEX were initially established at the national level in the year 2008. A third Power Exchange viz., Hindustan Power Exchange (HPX) was also established in the year 2022. However, bulk of the transactions in Day Ahead Market (DAM) and Real Time Market (RTM) segments continued to be carried out in one Exchange.

5. The Power Exchanges have played a very important role in the development of short-term collective markets, implementation of dispute free clearing and settlement and development of new and innovative market products. The PX also played their role in providing support to the Discoms in optimizing their power procurement through short term market. This has resulted in significant market participation in day-ahead and real time collective markets.

6. The CERC Power Market Regulations, 2021 had a provision for market coupling and designation of a Market Coupling Operator responsible for operation and management of Market Coupling to come into effect as and when decided by the Commission in accordance with the regulations to be specified separately. The stated objectives of market coupling are discovery of uniform market clearing price for the Day Ahead Market or Real Time Market or any other market as notified by the Commission, Optimal use of transmission infrastructure and Maximisation of economic surplus.

7. In our opinion, the power market coupling is contrary to the earlier approach of the Commission which was in consonance to one of the objectives of the Act, to promote competition between the power exchanges which would be required to add value by private entrepreneurship and provide quality service to the customers. On implementation of Market Coupling, the role of the Power Exchanges will be reduced to bid collection and transmission of data to the MCO which will not have any scope for innovation and value addition.

### Is power market coupling required? Whether any economic case has been made out for market coupling?

8. In India more than 87% of the transactions are being carried out through bilateral contracts and long term power purchase agreements where there are different rates of electricity under each agreement. There are different rates even for the same power plant having more than one PPA. The retail tariffs for

the consumers are not uniform pan India. Thus, there is no logic behind a uniform price across the power exchanges where less than 6.5% of the total electricity generation is transacted.

9. CERC by order dated 6.2.2024 had directed Grid-India to implement on shadow pilot basis, coupling of Real-Time Market (RTM) of three power exchanges, separately coupling of RTM with Security Constrained Economic Dispatch (SCED), and coupling of DAM of the three power exchanges and report the experience gained. Grid-India was also directed to submit a feedback report at the end of four-month period and post the feedback report on its website for the stakeholder awareness.

10. We have accessed from the Website of Grid India two feedback reports dated16.1.2025 and 30.6.2025 that Grid India had submitted to CERC.

11. In Jan 2025 report the exercise on coupling of DAM and RTM segments of the three power exchanges for the period from 1-Apr-22 to 31-Aug-24 (29 months) was conducted. It indicates that 99.995% of total RTM welfare was discovered at IEX and 99.818% of total DAM welfare was discovered at IEX. There was insignificant improvement in welfare due to coupling which was 0.042% of RTM turnover and 0.059% for DAM turnover. compared to the uncoupled (BAU) scenario. Further, there are very few instances in the collective market segment when any volume is lost owing to congestion. The congestion remained at a level of around 0.10% in FY 2023-24. Therefore, for more than 99.9% of the time, there is no congestion, and a single price was discovered across the regions Pan-India.

12. June 2025 study report of Grid India for the period December 2024 to March 2025 indicates that with coupling of DAM there is increase in total market clearing volume of 52 MU (0.22 %) and total increase in welfare of ₹389 million (0.3%). Coupling of RTM for the above 4 months period indicates increase in market clearing volume of 1.5 MU (0.012%) and total increase in welfare of ₹7.2 million (i.e. 0.01%).

13. January 2025 report which covered a period of more than two years indicates insignificant impact of market coupling in welfare gain and volumes cleared. The June 2025 report carried out for a period of only 4 months and was not a representative study also showed marginal increase in market clearing volume and welfare in DAM segment and insignificant gain in RTM segment.

14. It is seen from the Explanatory Memorandum of the proposed amendment that CERC has considered only the June 2025 study which was for a period of only 4 months and has not addressed the results of January 2025 study which was for a period of more than 29 months. The January 2025 study clearly established insignificant increase in volumes and welfare due to market coupling and indicated practically no congestion.

15. Considering even the absolute gain of 38 Cr in DAM as per June 2025 study, it amounts to less than 0.004% of the annual turnover of India's total annual electricity market turnover of over Rs 10 lakh Crores.

16. There is also no cost benefit analysis comparing welfare gains against implementation costs and additional operational costs of MCO (CAPEX & OPEX).

17. Thus, no economic case has been transparently made out for implementation of market coupling. For a structural reform of this magnitude, a publicly accessible cost-benefit analysis should be made before the regulations are finalised.

18. The market coupling in Europe is the coupling of power markets operating in different geographical areas. In India, the three power exchanges are operating in the same geographical area. The proposed market coupling is not market coupling but coupling of power exchanges which in our opinion, is not in the interest of development and growth of power markets.

**Can Grid India be designated as Market Coupling Operator?**

19. Grid India controls NLDC and RLDCs. According to section 28 of the Electricity Act, 2003, the Regional Load Despatch Centre is the apex body to ensure the integrated operation of the power system of the concerned Region. The functions of the RLDC are optimum scheduling and despatch of electricity, monitor grid operations, keep accounts of electricity transmitted through the regional grid, exercise supervision and control over the ISTS, and be

responsible for carrying out real time operations for grid control and despatch of electricity through secure and economic operation. The National Load Despatch Centre is responsible for optimum scheduling and despatch of electricity among the RLDCs. NLDC and RLDC shall not engage in the business of trading in electricity (section 26 & 27). These provisions are designed to keep the system operator free from any commercial entanglement in the market it controls.

20. The function of MCO and price discovery in market are not clearly assigned to the National and Regional Load Despatch Centre. "Trading" under the EA,2003, means purchase of electricity for resale thereof. Though MCO functions do not literally amount to trading and do not strictly violate the provision of the Act in letter but in the spirit of the provisions of the EA 2003, Grid India should not indulge in the functions of price discovery in the DAM, RTM and other power markets.

21. As MCO, Grid India will receive all pre-clearing bid data before market clearing. This is a commercially sensitive information in the electricity market. Grid India simultaneously procures ancillary services from the same generators whose pre clearing bids it will now see in advance. Thus, there is a conflict of interest in Grid India's grid control functions and MCO functions. Creating a separate cell in Grid India for MCO functions, as suggested in the draft regulations, is an administrative fix and not structural separation.

**Compliance to APTEL directions in judgment dated 13.2.2026**

22. APTEL had directed that the officers named in SEBI's October,2025 interim order are kept away from the regulation making exercise on market coupling until the SEBI's investigation has concluded. In the Explanatory Memorandum there is no statement that CERC has complied with the APTEL directions.

**CONCLUSION**

i. No economic case has been transparently made out for implementation of market coupling. For a structural reform of this magnitude, a publicly accessible cost-benefit analysis should be made before the regulations are finalised.

ii. In the spirit of the provisions of the EA,2003, Grid India should not be designated as MCO.

iii. The conclusion arrived at the Webinar was that implementation of market coupling is premature. It will not help in increasing the depth of the market. The Commission may take measures to increase the depth of power market before considering the coupling of power markets.

## Webinar on Storage Batteries with Focus on Iron Air Batteries

22nd May 2026

A Webinar on "Storage Batteries with focus on Iron Air Batteries" was organized by' India Energy Forum' on 22nd May 2026. **Dr. RR Sonde**, Professor – IIT Delhi-Abu Dhabi, and **Dr. Arvind Kumar Chandiran**, Associate Professor – Dept of Chemical Engineering, IIT Chennai & Head – Hyundai WTWO Innovation Center, were invited as key speakers to deliver their talk/presentation on the subject webinar.

**Dr. H L Bajaj**, Chairman – Power Group, IEF & former Chairperson – CEA & Ex-Officio – Secretary, Ministry of Power, while welcoming the distinguished speakers gave brief description of the energy storage requirement as per the National Electricity Plan 2023 of Central Electricity Authority due to the addition of larger amount of renewable energy in the light of the net zero emission targets set for 2070. He mentioned about availability of several energy storage technologies viz Pumped Hydro storage, Compressed Energy storage, Hydrogen storage, Battery Energy storage system (Lithium–ion, Sodium-ion, Iron Flow Batteries etc). He opined that each technology has its own utility and limitations. He mentioned that Dr. RR Sonde and Dr. Arvind Kumar Chandiran would explain these technologies.

**Shri R V Shahi**, President – IEF & Former Secretary (Power), GoI, in his Presidential address, dwelled on the innovation of Battery which is century old and being used in various applications of daily use and industries. He mentioned that it has now assumed greater dimensions on global basis and in India because of its energy expansion plans and relief from carbon emissions. India's energy demand is likely to be huge in terms of ranking on power and per capita consumption. As CEA has projected capacity addition plans up to 2047, he expressed that we have achieved 150 GW of solar capacity up to March 2026. The solar capacity addition is further increasing at a much faster pace and by 2030, it is expected to achieve 500 GW. However, there is a challenge of dispatch inadequacies during the day time. The transmission capacity addition can't pick up at the same pace as solar power development which has created problems of absorption leading to progressively increasing stranded solar power generation capacity. Therefore, the stranded capacity during the daytime has to be taken care of by storage. He opined that we should definitely evaluate merits and demerits of each storage system viz Pumped Hydro Storage, Hydrogen storage, Battery storage etc. He mentioned that today's subject of Iron-Air Battery storage has been taken up as Li-ion Batteries have certain limitations. We welcome listening to both eminent scientists and technology experts, Dr. R R Sonde of IIT Delhi and Dr. Arvind Kumar of IIT Chennai.

**Dr. RR Sonde**, Professor – IIT Delhi-Abu Dhabi & eminent scientist & technology expert, while delivering his keynote address, has touched upon the problems of grid fluctuation and backing down of coal based thermal power plants/nuclear plants which he considers is not the right way since carbon emissions increase by operating power plants at lower efficiencies. He mentioned that the kind of renewable energy ramp up that has happened in the last few years (presently having 150 GW solar power) also has a challenge of absorption of power during the daytime. He informed that Rajasthan and Gujarat states are facing acute challenge due to inadequate capacity of transmission infrastructure. He opined that for realizing full potential of Renewable energy, Batteries are not only considered as storage but also India's Energy Security. Furthermore, keeping in view India's seasonal variations, there should be multiple solutions for storage. While concluding his talk, Dr R R Sonde recommended 5 variants for storage solutions:

- For frequency control and quick ramp up, he suggested using Li-ion and Sodium-ion batteries which could have storage up to 1-2 hours.
- For evening peaks, to balance the duck curve, he suggested Pumped Hydro storage.
- For overnight, he suggested Iron flow batteries
- For multi-day (RE not available), he mentioned
    - Hydrogen storage is the best option
    - Iron-air batteries are another option (up to 100 hours storage) but they occupy huge space
- For seasonal balance (fog conditions), ammonia, methanol/hydrogen storage as possible options.

He said that Dr. Arvind Kumar would cover in his detailed presentation various options including Iron-Air Batteries storage.

**Dr. Arvind Kumar Chandiran**, Associate Professor – Dept of Chemical Engineering, IIT Chennai & Head – Hyundai WTWO Innovation Center, gave a detailed presentation/talk on "Storing Energy in Metals and Gases – Indian Renewable Energy Storage Scenario". He commenced his presentation with electro-chemical energy systems and dwelled on hydrogen micro-grid operational at IIT – Chennai since May 2025. The objective is to utilize hydrogen for long duration energy storage from renewables. He explained the requirement of seasonal storage to maintain the base load by citing examples of comparison of Tamil Nadu & Gujarat state data. For long duration energy storage, he mentioned options of Hydrogen storage, Battery storage, Pumped Hydro storage and molten salt. A comparison of hydrogen vs metals wrt to turn-around efficiency gives an edge to Zinc (eff. > 40%), Hydrogen (eff. ~ 30%), Iron (eff' up to 20%) and Aluminum (eff. < 10%). Storing energy in the form of metals has various advantages, especially High Energy Stored in small volumes and non-flammable. India is the 4$^{th}$ largest producer of Iron and Zinc, and 2$^{nd}$ largest producer of Aluminum globally. Therefore, all 3 metals can be used for battery storage. In conclusion, he opined that basis lab tests and considering the charging & discharging efficiency and voltage, the overall efficiency for Zn-Air battery is 28-52%, Al-Air battery is 15-30% and Fe-Air battery is 20-25%. He also added that since Iron is available in plenty in India, at comparatively cheaper prices, Fe-Air batteries could emerge as Grid-Scale Technology. He informed that one of the manufacturers of Fe-Air batteries presently is 'FORM ENERGY', USA.

**Dr. H L Bajaj** gave his concluding remarks and expressed gratitude to both the eminent scientists for enlightening the subject technology for long term battery storage.

**Shri. Satish C Sharma**, Convenor of Power Group, IEF & also Compere of Webinar, expressed his privilege and honor to present the vote of thanks.