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Powering Viksit Bharat 2047: The Transmission Imperative

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Solar Power Capacity Will Expand Rapidly: Addressing the Challenges of Stranded Solar Capacity

R.V. Shahi

Indian power sector achieved commendable outcomes during the year 2025-26 when the non-fossil cumulative power generation capacity reached 53% of the total capacity. The Table below provides a detailed break-up of the power generation capacities based on various sources of energy.

Category	Installed Capacity (MW)	% Share in Total
RES (including Hydro)	274,688	51.56
Total Fossil Fuel	249,272	46.79
Wind, Solar & Other RE	223,273	41.91
Coal	221,940	41.6
Solar	150,261	28.21
Wind	56,095	10.53
Hydro (including PSPs)	51,415	9.65
Nuclear	8,780	1.65
Total Non-Fossil Fuel	283,468	53.21
Total Installed Capacity	532,740	100

During the summer of 2026, the peak demand is expected to go beyond 270 GW. Just to appreciate the current nature of power supply profile, on a typical day- 25th April, 2026, the peak power demand during the day crossed 256 GW mark. Solar Power generation support was of the order of 60.5 GW GW, Coal Power - 171.8 GW, Hydro - 11.2 GW, Nuclear - 6.3 GW, Gas - 4.9 GW, and Wind - 4.6 GW. Thermal Power continues to be the main source of power generation contributing over 66 % of supply. Solar Power capacity is increasing almost every day, it has started facing challenge of dispatch inadequacies during the day time. The problem did surface even during the previous years. But now, as the solar capacity is rising rapidly, the size and proportion of stranded Solar capacity is also increasing. The country's agenda of reaching the capacity of 500 GW by the year 2030 can, no doubt, be achieved. Limiting factors will not be the supply of equipment, nor the availability of fund, nor even the ability to construct and commission. The recent experiences indicate that it would be availability of adequate Transmission Infrastructure, which is emerging as a major factor leading to the challenge of stranded capacity. Another factor, which has not emerged prominently yet, but may appear when the Solar generation capacity further increases significantly, may be demand for power itself. In the short and medium terms, however, the transmission constraints are leading to progressively increasing stranded Solar Power generation capacity. A few recent Reports in public domain, brought out by leading News Papers, adequately reflect the nature and size of the problem.

Relevant extracts from some of these sources are given below :

Times of India Report, April 13, 2026,

"Rajasthan tops India's solar capacity with 27% share, but power wasted due to lack of infra

Rajasthan led India's solar power expansion, contributing nearly 27% of total installed capacity by the end of FY2025–26, as national solar capacity reached 150,260MW.Gujarat ranked second with about a 20% share. Combined, Rajasthan and Gujarat accounted for nearly 47% of India's solar capacity, underscoring their outsized role in the country's clean energy transition. However, the state is facing acute challenge of transmitting power due to lack of transmission capacity....."

"Solar power operators in Rajasthan are worried. They are unable to use between 1,500 -2,000MW power daily due to lack of transmission infrastructure. .....They (Developers)

have won these projects on competitive bidding and financed them through loans. Since they cannot take the power they produce, they are suffering huge losses affecting their revenue generation and meeting financial obligations to banks and financial institutions. Meanwhile, registrations for new solar projects at Rajasthan Renewable Energy Corporation have increased to about 40,000 MW, including both utility scale and decentralized plants. A source in the corporation said that another 3000 MW of solar projects are expected to be commissioned in the next six months. If the state does not create new transmission capacity and battery storage systems with urgency, much of the capacity will get wasted, affecting investor interest in the state"

As reported by Energy World, April 22, 2026

"Solar Plants in Rajasthan have been told to cut up to 80% of generation. Rajasthan, a renewable energy hub, is curtailing solar and wind power generation due to low demand and the inability to shut down coal-fired thermal.

The state's failure to establish battery storage systems and insufficient transmission capacity are leading to significant power wastage, impacting investors and small-scale developers. Jaipur: In Rajasthan, the country's leading renewable energy hub, solar and wind power plants have been getting orders from the load despatch centre for the past 20 days to reduce their generation in the wake of low demand as the coal-fired thermal plants cannot completely shut down."....

"Renewable energy enjoys must-run status, which means these plants cannot be shut down. However, the continuous production curtailments have hit the investors. Taking up the issue, Rajasthan Solar Association has written to the energy department flagging the concerns of the power producers."

"Since past one-month, solar plants have been subjected to frequent and significant curtailment (30 per cent to 80 per cent), especially during peak generation hours (10.30am to 14.30pm. The situation is very difficult for small scale solar power developers to clear off their debt in a timely fashion."

An official in SLDC said that about 1,500 MW power is getting wasted because of the curtailments. "We cannot run the thermal plants at night and start them the next day. They have to run continuously. We do not have gas and hydro power plants, which can be easily shut at night and start in the morning during the day when solar power plants start generating."

"The demand has been low due to the weather conditions. Urja Vikas has been trying to sell some capacity in the open market. But it is not possible as the demand is not there as well," said the officials.

Similarly, the power that is going outside has been facing difficulties because there is not enough transmission capacity. The official said that about 4,000 MW power gets wasted because of infrastructure issues"

According to a Financial Express Report of April 21, 2026, India's renewable energy push faces grid constraints with 4 GW curtailed, rising delays and ₹9 trillion transmission needs, exposing gaps in evacuation infrastructure.

"India's renewable energy surge is running into a hard grid constraint, with 4 GW of clean power curtailed, project timelines stretching from 24 to 36 months, and a ₹9 trillion transmission investment requirement colliding with rising costs and execution delays, exposing a widening gap between generation and evacuation infrastructure.

The scale of the disruption is already visible. In Rajasthan, nearly 4 GW of wind and solar capacity was curtailed between March and August 2025, with curtailment levels rising sharply from 8.5% to 51.5%, signalling severe congestion in one of the country's largest renewable hubs.

"CEA monthly reports document ~4GW wind-solar curtailed in Rajasthan (Mar-Aug 2025), escalating

from 8.5% (March 2025) to 51.5% (August 2025) due to ISTS evacuation gaps. Total stranded capacity likely 6-8GW when including partially curtailed plants," the InGovern Research Services report said.

Not an isolated problem

The problem is not isolated. Other renewable-heavy states such as Gujarat, Maharashtra and Tamil Nadu have also recorded 10–30% curtailment, indicating a broader systemic strain across India's renewable corridors.

Major additions projected

The National Electricity Plan projects addition of over 191,000 circuit kilometres of transmission lines, 1,270 GVA of transformation capacity and 33 GW of HVDC links, highlighting the magnitude of infrastructure build-out required.

However, execution is falling behind. Transmission projects designed for 24 months are now taking nearly 36 months, with a group of projects witnessing average delays of around 12 months, driven by right-of-way issues, forest clearances and on-ground constraints.

In several cases, progress has lagged sharply. The report highlights a "time-progress divergence," where certain projects have achieved only 3% physical progress despite utilising 28% of their timeline, pointing to early-stage execution bottlenecks.

Significant financial impact

The financial impact is significant. A 12-month delay can erode equity internal rate of return (EIRR) by nearly 200 basis points, as interest during construction continues to accrue without matching tariff escalation.

The cost pressures are also intensifying. According to Motilal Oswal Financial Services, rising commodity prices, particularly copper used in conductors and cables, are increasing transmission project costs, adding to capital expenditure requirements and affecting project viability.

Lead times are also extending as domestic manufacturers operate at high capacity utilisation and shift towards higher voltage transformers such as 400 kV and 765 kV, which involve longer manufacturing and testing cycles.

At the system level, installed transmission capacity stood at around 1,451 GVA as of March 2026, leaving a gap of 431 GVA to be added by FY27, underlining the pace required in the near term.

The execution landscape is also concentrated. Power Grid Corporation of India Ltd (PGCIL), which operates 1,83,174 circuit kilometres of lines and 288 substations with 5,99,016 MVA capacity, accounts for about 84% of inter-regional transmission capacity.

Over FY21–FY25, PGCIL secured more than 50% share of interstate transmission projects by tariff value, and in FY2025 alone, it won 26 out of 45 projects, or 53.4% share by value, highlighting reliance on a single player for large-scale grid expansion.

Its execution pipeline remains substantial, with ₹1.48 lakh crore of work-in-hand and a capital expenditure plan of ₹3 lakh crore through FY2032, but rising costs and delays are putting pressure on delivery timelines.

At the same time, awarding activity has slowed. Only 16 transmission schemes were awarded in FY26 compared to 45 in FY25, primarily due to temporary bandwidth constraints, though ordering is expected to recover as capacities expand over the next 1–2 years.

The InGovern report noted that despite record capital expenditure, there is a widening gap between spending and asset commissioning. While capex reached ₹26,255 crore in FY25, capitalisation stood at only ₹9,014 crore, pointing to delays in translating investment into operational assets.

It added that the combination of curtailment, execution delays and cost pressures signals a broader "systemic lag" in transmission development.

At the same time, the push for grid stability is accelerating adoption of battery energy storage systems (BESS), with India targeting around 13.5 GW by FY27 and 51.5 GW by FY32, which is expected to drive incremental equipment demand but also add to system complexity.

According to Motilal Oswal Financial Services, the key risks flagged include supply chain disruptions, semiconductor shortages, slower tendering activity, challenges in scaling BESS and rising commodity costs, particularly copper, which continue to weigh on execution timelines."

These extracts from important sources have been quoted consciously and comprehensively, even though a large cross section of energy professionals may be informed about them, with a view to capturing the observations, findings and conclusions of a large cross section of media to have better appreciation of totality of issues and for commenting on them. Besides, these have also highlighted some of the related issues which need consideration and appropriate response. Also, based on deeper analysis of these feedbacks, optional strategies generated to partially mitigate these challenges, could be helpful.

In this context, suggestions have also emerged that instead of very fast growth of Solar Power capacity, the rate of expansion could be moderated, so that the extent of stranded capacity is substantially reduced if not totally eliminated. International Energy Agency (IEA) in their Reports in 2024 and 2025 had examined this issue and suggested that Transmission Infrastructure should be ahead of setting up Solar Power capacity. Nature of construction and the gestation period of establishing Solar Power Plants is short. Transmission Infrastructure requires longer project durations. In Indian context, it is getting even longer primarily on account of several issues, which emanate from land acquisition, resolving Right-of-way issues, and, most importantly, unduly long time required for securing Forest Clearances from the State and Central Ministries. The challenges of logistics, inadequacies of construction agencies and even adequate availability of Conductors and other materials have been and are being experienced. Besides, a few Regulatory issues have also led to delays in timely starts and hence completion of these projects. Therefore, unless these controllable factors are suitably addressed - and it is possible to address them to reasonable extents - these delays will remain inevitable.

Hence, the option is to moderate the pace of growth of Renewables or continue with the situation of stranded capacity. Slowing down on Renewables will be inadvisable. Large scale stranded Solar capacity will also need to be avoided. We may have to focus on every item of delays.

a) Transmission Development right from the stage of Tariff Based Competitive Bids (TBCB), to approval processes - need for such approvals to time taken, state government active support to resolve ROW issues, Environment and Forest at State and Central Level, and other delay contributing factors. The competitive process should generate larger number of strong eligible developers to adequately take care of massive expansion of network. Delays on account of ROW issues are putting most of Transmission Projects completely out of schedule. Regulatory approval process also has scope to cut down time cycle. Besides Time and Cost overrun, leading to higher tariff burden, these are contributing most to the challenge of Stranded Solar Power capacity. A Ministerial Level intervention, may be Chief Ministers Conference, with Agenda focusing on this may be useful.

b) The recent development on Battery Energy Storage System (BESS), which has taken off, is encouraging. This will definitely address the challenge of stranded capacity to a great extent. The Adani Group has already taken the lead by installing BESS at Khavda Solar Complex in Gujarat where the plan is to develop 30 GW Solar Capacity. They have already commissioned the Storage System with Capacity of 1126 MW/ 3531 MWHr, perhaps the largest so far in the country. Khavda will have a much larger Battery facility developed in alignment with the Solar Power Project Expansion. Other large Solar Power Developers in the country will also be setting up BESS. This will provide a major support to manage the challenge of stranded capacity.

   A word of caution, however, is on BESS which is a total import as at present. The Government support system could be adequately restructured, so that the extent and speed of indigenisation is expedited.

c) The Hydro Pump Storage Plants also need several supports for optimising the cycle time of approval, construction, and commissioning. There is considerable scope in streamlining the approval processes. It needs to be underscored that it is the Hydro PSP which will be the ultimate solution to the challenges of large scale expansion of Solar Power capacity, and, hence, this issue does require a special attention and support. Ministry of Power and Central Electricity Authority have developed comprehensive policy guidelines to streamline the process. At State Level, where permissions and support are needed to expedite project development, in many cases these are challenging and the process gets delayed. Power Ministry may consider a goal directed intervention through national level conference of Power and Environment & Forest Secretaries aimed at addressing this issue.

d) The reported initiative of NTPC Thermal also developing BESS at their plants, which have low variable cost of power, mainly pit Head plants, is a good initiative and will definitely be a great support in management of grid. This will definitely be a trend setter to be followed by many other plants. Dissemination of successful cases should lead to development of several such cases.

e) CSP is yet another initiative which has potential to not only be a backup for solar during night hours, but also be an effective part of solution to the challenge of Stranded Solar Capacity.

India has demonstrated that, within a period of about ten years, it has achieved the distinction of being one of the largest Solar Power producers in the world. With more than 150 GW capacity, India ranks 3rd in the World. It is way ahead of the curve on its declared path of Net Zero. The phenomenon of Stranded Capacity in Solar Plants is natural and inevitable, experienced by all countries having a fast growth trajectory of solar capacity. In China also, which alone is comparable, this challenge was initially faced. They sorted it out. We should also be successful through well-orchestrated measures and the impact can definitely be reduced significantly by goal directed actions as suggested in this paper.

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Dear Reader,

Uncertainty in the current geo-political situation has put a lot of pressure on the supply chain of crude oil and gas on which all countries depend heavily for their energy needs. Energy security is seriously affected due to practically no movement of cargo ships from the Strait of Hormuz. Though India seems to have built up reserves and diversified supply sources, the continuation of the precarious situation in West Asia will seriously affect our energy security. It is specifically cause for severe concern as we import almost 87% of crude oil and about 60% of our gas consumption requirements.

The world will need to develop and shift to Renewable and Nuclear sources at a much faster rate. India over the years have speeded up the dependence of RE Sources and currently meets about 50% of its energy needs from non-fossil sources. The target of 500 GW from RE by 2030 is seriously being pursued but we need to ramp up further for our energy needs from non-oil and gas sources. If this is to be achieved lot of development is needed to ramp up storage capacity to provide grid stability and evacuation of stored power.

IEF has been debating the needs, developments and policies on all facets of energy. Its Energy Debate initiative is focused on specific issues and trying to bring out directions and strategies. IEF is organizing an Energy Debate on “Rapid Expansion of Solar Power Capacity – Specially to focus on stranded capacity”. Details are shared in this TE issue.

It is pertinent that efforts are speeded up to ramp up Nuclear Power Capacity on a faster track to enable achieve the targeted 100GW by 2047. The Shanti Act and foray of private sector power producers, besides NTPC, can enable this provided the path is made convenient and commercially beneficial. Emphasis will need to be on larger capacity units (500/700 MW besides BSRs/SMRs from the private sector. The achievement of reaching the criticality stage of 500 MW FBR is an encouraging development that should help in faster deployment of PHWRs.

Search for modified fuels is also being seriously pursued.

Wind energy specially offshore has been lacking from its potential and much more focus is needed for this RE sources. GoI has recently announced a target of 100 GW by 2030 from wind energy.

Coal is there to stay was the major focus of IEF Coal Summit held on 9th April 2026. With 1.1 B Tonnes of Annual Coal Production already achieved, the dependence on this Black Gold continues through % share in power generation goes down. Coal gasification, higher thermal efficiency units etc. will help in containing emission levels while allowing use of coal for energy security.

We will in the comings years see more and more contribution of non-fossil sources for energy security. Industrial and domestic dependence on Electricity will increase while bringing in low emission technologies IEF will continue to debate on these through webinars, debates and national conferences.

S M Mahajan

India achieves major milestone in wind energy; capacity now 56 gigawatts: PM Modi

India has achieved a major milestone in wind energy, with the country's wind energy generation capacity exceeding 56 gigawatts, Prime Minister Narendra Modi said recently.

In his monthly radio address 'Mann Ki Baat', Modi also said the country must save electricity and adopt clean energy.

"India recently achieved a major milestone in wind energy. India's wind energy generation capacity has now exceeded 56 gigawatts. In just the past year, nearly 6 gigawatts of new capacity have been added," he said.

Underlining that solar and wind energy are essential for India's development, Modi said, "It is not just about the environment; it is about securing our future, and we all have a role to play in it."

On April 22, Union Minister for New and Renewable Energy, Pralhad Joshi, said that India has recorded its best-ever year in wind energy capacity addition, with a historic 6.1 GW added during 2025-26.

India currently ranks fourth globally in wind energy, with more than 56.1 GW installed capacity and an additional 28 GW under implementation.

Emphasising the vast untapped potential of the sector, Joshi highlighted that India's wind energy potential at 150 metres hub height is estimated at nearly 1,164 GW.

He expressed confidence that with sustained efforts, the country will achieve 100 GW wind capacity by 2030 and 156 GW by 2036, contributing significantly to the net-zero target by 2070.

Joshi also underlined that wind energy plays a critical role in stabilising India's energy system, particularly due to its peak generation during evening and night hours, which aligns with high demand periods.

He noted that nearly 45 per cent of wind power generation occurs during peak demand hours, making it a vital complement to solar energy.

India adds record 6.05 GW wind capacity in FY26, up 46% YoY: Govt

India has added 6.05 GW of wind energy capacity in FY 2025–26, the highest-ever annual addition, surpassing the previous peak of over 5.5 GW recorded in FY 2016–17. The addition marks a 46 per cent increase over capacity added in FY 2024–25, indicating an acceleration in onshore wind deployment. With this, India’s cumulative installed wind power capacity has crossed 56 GW, the Ministry of New and Renewable Energy said in a statement recently. The addition strengthens India’s renewable energy capacity and contributes to the target of achieving 500 GW of non-fossil fuel-based energy capacity by 2030. The ministry attributed the growth to targeted policy measures, transmission readiness, competitive tariff discovery and a strong project pipeline.

The government has undertaken several measures to promote the sector, including concessional customs duty on certain components and raw materials used in wind turbine manufacturing, graded waiver of interstate transmission system (ISTS) charges till June 2028, competitive bidding mechanisms, a separate wind renewable consumption obligation (RCO) framework and technical support from the National Institute of Wind Energy.

India’s wind energy programme was initiated in the early 1990s as part of the broader renewable energy strategy, and the country has since developed a grid-connected wind power ecosystem supported by policy frameworks.

As per the statement, states including Gujarat, Karnataka and Maharashtra were the main contributors to capacity addition during the year, supported by wind-solar hybrid projects and the rollout of green energy open access.

India hits milestone: Renewable energy ramps — 5 years ahead of 2030 Paris Agreement target

India has hit a significant milestone in the global energy transition, with its rapid ramp in renewable energy generating capacity.

As of April 2026, the subcontinent has achieved over 50% of its installed electricity capacity from non-fossil sources — reaching this milestone five years ahead of its 2030 Paris Agreement target.

Total non-fossil capacity stands at approximately 283 GW (including 274.68 GW renewable energy and ~8.78 GW nuclear), out of a total power capacity exceeding 520 GW, according to Ember data.

This underscores a key multiplier: as India builds world-class AI data centre infrastructure, it simultaneously strengthens its renewable energy backbone.

India's renewable energy capacity to reach 359 GW by FY25-30: Jefferies

With geopolitics now driving focus on energy security, Jefferies expects India's renewable energy (RE) capacity to reach 359 GW by FY25-30. The report comes as the country prepares for a significant recovery in power demand following a period of muted growth.

The report anticipates that power demand will rebound to a six per cent growth rate in FY27, driven by a combination of normalizing industrial activity and specific climate factors.

The 2026 monsoon season presents a notable upside for national power consumption. Citing forecasts from the International Research Institute for Climate and Society, Jeffeires notes a 60 per cent probability of an El Nino event during the June to September period. Such weather patterns typically correlate with a sharp rise in energy requirements across the domestic and agricultural sectors.

"Lower rainfall typically raises power demand from residential and agriculture segments which is 40-45 per cent of India's power demand. Households see higher cooling product usage and agriculture usage of irrigation/pumping equipment rises," the Jefferies report states.

While the transition to green energy remains a primary focus, the government continues to bolster thermal capacity to maintain a stable energy mix. Plans are currently in place to add 97 GW of thermal capacity by 2034-35, a major expansion compared to the 247 GW recorded at the end of FY25.

Domestic solar manufacturing is also seeing a heavy push through government mandates and decentralized subsidy programs. The PM Suryaghar rooftop solar initiative achieved approximately 9 GW of installations in FY26, while the PM Kusum agri-pump scheme added 7.5 GW. These programs, which rely on Domestic Content Requirement (DCR) cells, now represent nearly 30 per cent of India's annual solar installations.

"Govt impetus on DCR schemes is driving PV demand while domestic ingot/wafer mandate ensure backward integration. Capex required for cell capacity creation is ~US$ 70mn/GW and capex for ingot/wafer is broadly similar," the report says.

A government mandate for the use of domestic ingots and wafers, effective June 2028, marks a long-term transition toward total backward integration in the solar supply chain. This policy shift likely benefits companies with robust balance sheets that can manage the capital-intensive nature of such projects.

Currently, a shortage of domestic cells allows early movers in the manufacturing space to maintain strong profitability.

Centre Approves 41 Biogas Plants, Issues Licences to 14 Units

The government recently said that 41 biogas cylinder filling and storage plants have received approvals, with licenses already issued to 14 facilities, as part of efforts to strengthen fuel infrastructure and ensure supply continuity.

According to the Petroleum and Explosives Safety Organisation (PESO), a total of 467 applications for compressed natural gas (CNG) and compressed biogas (CBG) dispensing stations were processed on priority between March 25 and April 21. Of these, 157 received final licenses, while 38 were granted prior approvals for construction.

The measures come amid ongoing global uncertainties, with the Ministry of Petroleum and Natural Gas focusing on expediting infrastructure development and maintaining uninterrupted fuel availability.

PESO has introduced several facilitative and safety-focused interventions, including temporary storage relaxations for Superior Kerosene Oil (SKO) to ensure last-mile distribution, and a complete export ban on ammonium nitrate to safeguard domestic supply.

To enhance fuel flexibility, guidelines permitting LNG filling in cryogenic cylinders have been issued, supporting decentralised distribution systems. Additionally, time-bound clearances—within 10 days—for CNG stations and decompression units have been mandated to accelerate capacity expansion.

Operational measures also include permitting LPG unloading at Porbandar jetty to ease supply constraints and a six-month exemption from approval requirements for CNG/CBG compressors to fast-track commissioning of new stations.

Further, the Department for Promotion of Industry and Internal Trade (DPIIT) is implementing complementary measures aimed at ensuring industrial continuity, stabilising supply chains, and supporting manufacturing activity amid evolving geopolitical conditions.

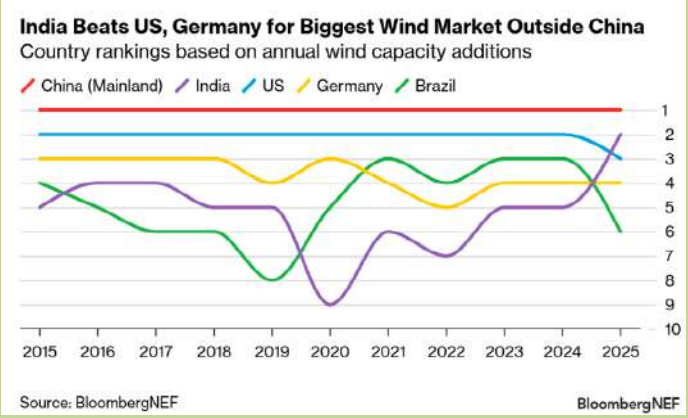
The government said these initiatives are designed to enhance resilience across the energy ecosystem, ensuring the steady availability of fuels and critical inputs while addressing operational bottlenecks faced by industry.

India becomes largest wind market outside China in 2025: BNEF

India commissioned a record 6.3 gigawatt (GW) of wind capacity in 2025, up 85 per cent year-on-year, allowing it to surpass the US and Germany to become the largest wind market outside mainland China, according to a report by BloombergNEF.

It said that the increase in installations enabled India to overtake the US, which had held the second position globally since 2014. It added that multi-technology clean power auctions have been a key driver of growth, requiring developers to integrate solar, wind and energy storage to deliver more reliable power.

Capacity additions were also supported by spillover of projects delayed from 2024 due to grid connectivity constraints.



India's strong installations pushed domestic manufacturers up the global rankings, with Adani Wind entering the global turbine manufacturer leaderboard. Adani Green Energy deployed over 1 GW of turbines from its in-house division for its Khavda renewable energy park.

The report noted a shift in market share towards Asian manufacturers. European and US turbine

makers installed around 1.3 GW in India in 2025, compared with 2.5 GW by Chinese suppliers and higher installations by domestic manufacturers such as Suzlon and Inox Wind.

BloombergNEF said that India's annual wind additions are expected to remain broadly stable through the decade, with installations projected to dip to just over 5 GW in 2026 before increasing from 2027 as transmission capacity improves. India is expected to add around 30 GW of new wind capacity by 2030

Transmission bottlenecks threaten India's ambitious renewable energy goals

India's renewable energy (RE) sector is currently at an inflection point, having transformed rapidly from a phase of high capacity creation on the generation side with climate ambitions at the core to becoming a key solution for the nation's larger self-sufficiency problem.

This strategic shift in the positioning of the clean energy industry comes on the back of the ongoing West Asia war that has threatened to choke key global energy supply arteries. This has made it crucial for countries like India to identify problem areas and take corrective action for the future.

One such area is grid integration and building overall system resilience for RE projects to supply power seamlessly. While falling costs, policy momentum, and the decarbonisation imperative have propelled RE, it remains to be seen if the country's power system is ready to reliably absorb and manage renewables.

NTPC Green Energy Reaches 89,615 MW Capacity as New Solar Projects Boost Renewable Portfolio in Rajasthan

NTPC Limited has announced a major expansion in its renewable energy portfolio through its subsidiary, NTPC Green Energy Limited (NGEL), with the addition of new solar power capacities in Rajasthan. These updates were shared through official regulatory filings, reflecting the company's steady progress in strengthening its clean energy presence in India

According to the disclosures, a 150 MW solar capacity began commercial operations on April 18, 2026. This capacity is part of a larger 300 MW solar project located in Rajasthan. The project is being managed by Project Sixteen Renewable Power Private Limited, which operates under the joint venture ONGC NTPC Green Private Limited. Before this addition, NGEL's total commercial capacity stood at 10,126.40 MW. With the commissioning of this project, the capacity increased to 10,276.40 MW.

In a separate update issued on the same day, NTPC reported the start of commercial operations for an additional 87.50 MW solar capacity on April 19, 2026. This capacity is part of another solar project of 150 MW, also located in Rajasthan, and is being developed by Project Eleven Renewable Power Private Limited. This entity is also a step-down subsidiary under the same joint venture. Following this second addition, NGEL's total installed capacity further rose to 10,363.90 MW.

These developments have contributed to the overall growth of NTPC's power generation capacity. As of April 17, 2026, the total installed capacity of the NTPC Group reached 89,615 MW, while its total commercial capacity stood at 88,535 MW. The addition of new renewable energy projects highlights the company's continuous efforts to diversify its energy mix and reduce dependence on conventional sources.

The regulatory filings were signed by the respective company officials and submitted to stock exchanges to maintain transparency and keep investors informed. This step ensures compliance with market regulations and provides clarity on the company's operational progress.

Overall, the commissioning of these solar projects reflects NTPC's strong focus on expanding its renewable energy portfolio. By developing large-scale solar projects and working through strategic joint ventures, the company is playing an important role in supporting India's transition toward clean and sustainable energy.

ACME Solar Crosses 2 GWh BESS Milestone in Rajasthan, Strengthening India's Grid Stability

ACME Solar Holdings Limited has achieved a major milestone in India's renewable energy sector by operationalizing more than 2 GWh of Battery Energy Storage System (BESS) capacity in Rajasthan. With this development, the company has become one of the early renewable energy players in the country to reach such a large scale in energy storage deployment.

The company's total operational BESS capacity now stands at 591.18 MW, which equals 2,031.24 MWh. This capacity is spread across multiple subsidiaries located in Rajasthan. The milestone is part of ACME Solar's larger plan to scale up its energy storage capacity to 10 GWh by 2027, showing its strong focus on future-ready energy solutions.

These battery storage systems play an important role in improving the performance of the power grid. They store electricity when demand is low and release it during peak hours when demand is high. This helps in balancing the gap between electricity supply and demand. As a result, the systems improve grid stability and ensure better use of available power resources, especially as renewable energy sources like solar and wind are added to the grid.

ACME Solar currently manages a total renewable energy portfolio of 8,071 MW across different technologies, including solar, wind, hybrid projects, and firm and dispatchable renewable energy solutions. Out of this, 2,990 MW is already operational, while 5,081 MW is under construction. The under-construction portfolio also includes around 15 GWh of upcoming BESS projects. In addition, the company has signed power purchase agreements for 3,280 MW capacity.

The company credits its strong execution capabilities for this progress. It follows an integrated business model with in-house Engineering, Procurement, and Construction, along with Operations and Maintenance teams. This approach allows ACME Solar to manage projects efficiently from start to finish, ensuring timely completion, cost control, and high performance.

The company officially shared this development with stock exchanges through a voluntary submission, highlighting its continued efforts to strengthen India's clean energy infrastructure.

Union Cabinet pushes small hydropower to unlock 1,500 MW, power remote areas with ₹2,584 cr scheme

India is set to accelerate its clean energy transition in hilly and remote areas with a targeted push for small hydro power, aiming to add 1,500 Megawatts (MW) of capacity over the next five years while generating 51 lakh person-days of employment during construction.

The Union Cabinet's newly approved Small Hydro Power (SHP) Development Scheme, with an outlay of ₹2,584.60 crore, seeks to harness the country's vast untapped potential and strengthen energy access in underserved regions.

"By promoting decentralised and locally generated power, the scheme seeks to deliver reliable electricity to remote and difficult-to-access regions while reducing dependence on conventional fuels," the government said in a press release. The initiative will run from FY 2026-27 to FY 2030-31 and focus particularly on hilly and North Eastern states, which hold significant untapped potential but face energy access challenges.

India currently has an installed small hydro capacity of 5,171 MW, just 24.5 per cent of the estimated potential of 21,133.61 MW across 7,133 identified sites. Over 15,960 MW remains unutilised, representing a major opportunity for accelerated development through policy support and public-private collaboration.

The scheme defines small hydro projects as those with an installed capacity of up to 25 MW and brings them under the Ministry of New and Renewable Energy's purview, distinguishing them from large hydro projects that fall under the Ministry of Power. It offers structured financial assistance to improve viability in challenging geographies. For North Eastern states and international border districts,

support is set at ₹3.6 crore per MW or 30 per cent of project cost, whichever is lower, with a ceiling of ₹30 crore per project. For other locations, the assistance is ₹2.4 crore per MW or 20 per cent of project cost, capped at ₹20 crore per project.

Beyond energy generation, the government expects the scheme to attract around ₹15,000 crore in investments and promote the use of indigenous plant and machinery, aligning with the Atmanirbhar Bharat vision. To build a long-term pipeline, it has allocated ₹30 crore separately for preparing Detailed Project Reports for a minimum of 200 projects by central and state agencies.

The regional distribution of potential highlights the scope for a balanced strategy. The Northern region accounts for 7,978 MW, or 38 per cent of the total, while the North Eastern region holds 3,262 MW, or 15 per cent. The Southern region has 5,490 MW, the Western region 2,963 MW, and the Eastern region 1,440 MW. While the Northern and North Eastern regions offer large untapped resources, the Southern and Western regions are better positioned for quicker implementation due to stronger infrastructure.

Small hydro power is seen as a cornerstone of India's sustainable and self-reliant energy future. "Small hydro projects, with their minimal ecological footprint, limited land requirements, and long operational life, offer a sustainable pathway for development," the release said. Located near demand centres, these projects minimise transmission losses, improve voltage stability and ensure reliable power in geographically challenging areas, including border regions.

The government also emphasised the socio-economic benefits. The scheme is expected to create sustained employment in operation and maintenance, particularly in rural and remote areas, while supporting small scale industries and self-employment. "By improving electricity access in underserved areas, these projects support infrastructure development and act as a catalyst for local economic growth," it said.

Hydro power remains a critical component of India's energy mix as it provides firm, round-the-clock electricity and grid stability, unlike intermittent renewables such as solar and wind. With its low ecological footprint and long operational life, small hydro is positioned to balance energy security with environmental sustainability.

Clean energy generation surges in India, coal still dominates: Report

India's renewable power generation from solar, wind, hydro and bioenergy saw a record increase of 98 terawatt-hour (TWh) in 2025, double the previous high of 49 TWh in 2022, according to a new report.

Solar and wind both set new individual records for year-on-year increases last year in the country, rising by 53 TWh (37 per cent) and 22 TWh (28 per cent) respectively, the analysis added. The report, "Global Electricity Review 2026", was released recently by Ember, an energy think tank.

In a statement, Aditya Lolla, managing director of Ember, said, "Solar power is the dominant driver of change in India's power system. Along with battery storage, solar is opening a path to fast-scaling, roundthe-clock clean power that can enhance India's energy security and fend off global shocks."

The report also highlighted that India's coal generation declined by 44 TWh in 2025 due to the surge in renewables and a lower-than-average demand growth.

However, coal continues to dominate India's electricity mix. Last year, it provided 71 per cent of India's electricity, above the Asian average of 52 per cent and the global average of 33 per cent.

Also, coal generation has increased by 468 TWh (46 per cent) over the last 10 years and India remains the second-largest coal generator globally, behind China, according to the report.

Ministry of Coal Reports Record-Breaking Production and Dispatch in Captive and Commercial Mines for FY 2025-26

The Ministry of Coal has marked FY 2025–26 as a watershed moment in India's coal sector, with captive and commercial mining achieving a milestone never reached before. For the first time, combined production and dispatch from these blocks have surpassed the 200 Million Tonnes (MT) mark, marking a decisive leap in scale, capability, and contribution to the Nation's energy landscape.

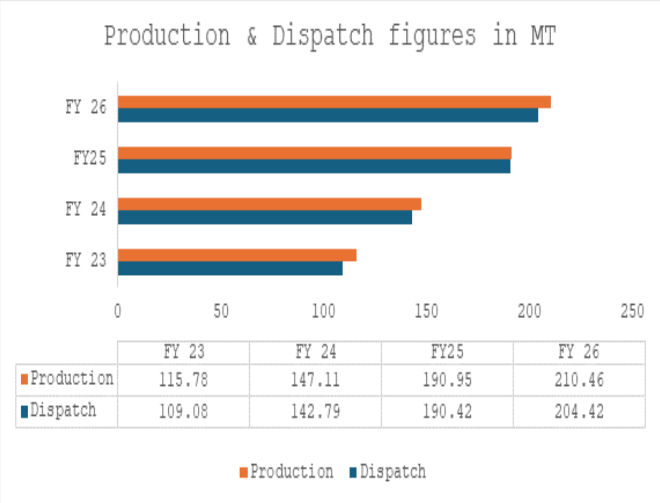
As on March 31, 2026, coal production from captive and commercial mines reached 210.46 MT, registering a robust year-on-year growth of 10.22% over 190.95 MT in the previous fiscal. Dispatches also witnessed a strong uptick, touching 204.61 MT and marking a 7.35% increase compared to 190.42 MT in FY 2024–25. These record-breaking figures reflect improved operational efficiency, strengthened logistics, and the sector's growing capacity to meet the nation's rising energy demand.

Significant Milestones Achieved in FY 2025–26

- Historic 200+ MT Milestone: Production and dispatch from captive/commercial blocks crossed 200 MT for the first time, reflecting sustained growth and operational excellence.

- Operationalization of New Blocks: During FY 2025–26, 12 captive and commercial coal blocks were operationalized through the grant of Mine Opening Permission (MOP), significantly expanding the operational coal mining base by adding more than 86 MT of annual production capacity.

- Accelerated Production Commencement: Further, 7 blocks commenced coal production within the same financial year, demonstrating faster project execution and improved regulatory coordination.



	FY 23	FY 24	FY25	FY 26
Production	115.78	147.11	190.95	210.46
Dispatch	109.08	142.79	190.42	204.42

Figure: Production and Dispatch figures of Captive and Commercial mines of consecutive four years

The graph illustrates a steady and progressive upward trend in both coal production and dispatch over the past four years. The sustained increase in dispatch underscores more efficient logistics, streamlined evacuation, and a stronger, more resilient coal supply chain.

This landmark achievement is a strong reflection of India's commitment to Aatmanirbhar Bharat, driven by focused policy interventions, streamlined approvals, and a renewed thrust on enhancing domestic coal production. It underscores the Ministry's sustained efforts to create an enabling ecosystem for captive and commercial mining, thereby reducing import dependence and strengthening national resource security.

Building on this momentum, the achievements of FY 2025–26 reinforce the coal sector's central role in advancing the vision of Viksit Bharat 2047. With continued emphasis on efficiency, scalability, and responsible mining practices, the sector is well-positioned to drive industrial growth, support economic expansion, and ensure a resilient and future-ready energy framework for the nation.

Ministry of Coal Drives Energy Security Push; Hosts Key Stakeholders' Consultation and Launches 15th Round of Commercial Coal mine Auction

कोयला मंत्रालय
Ministry of Coal
सत्यमेव जयते

The Ministry of Coal today convened the Stakeholder Consultation on 'Atmanirbhar Bharat: Coal for Energy Security', alongside the launch of the 15th round of Commercial Coal Mine Auctions, marking another significant milestone in strengthening India's energy security and advancing self-reliance in the coal sector. The day-long consultation brought together policymakers, industry leaders, academia, experts, and stakeholders to deliberate on reforms, technological advancements, coal gasification, sustainability, and inclusive growth shaping the future of India's coal sector.

Shri Vikram Dev Dutt, Secretary, Ministry of Coal, graced the occasion as the Chief Guest. Ms. Rupinder Brar, Additional Secretary and Nominated Authority; Shri Sajeesh Kumar N, Coal Controller; senior officials of the Ministry; industry leaders; and key stakeholders from across the coal sector were present on the occasion.

Shri Vikram Dev Dutt, Secretary, Ministry of Coal launched the 15th Round of Commercial Coal Mine Auctions. A total of 11 coal blocks are being offered in the 15th round, including 7 fully explored and 4 partially explored mines. Of these, 3 mines are being offered under the Coal Mines (Special Provisions) Act, 2015 (CMSP) and 8 under the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR). It includes 1 coking coal block and remaining 10 are non-coking coal blocks, catering to the requirements of key sectors such as steel and power. Additionally, 6 coal mines are also being offered of 2nd attempt of 13th round.

The mines being auctioned are spread across coal/ lignite bearing states of Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh and Telangana, and are expected to attract significant investment, enhance domestic coal availability, and generate employment opportunities.

So far, the Ministry of Coal has successfully auctioned 135 coal mines across 13 rounds of commercial coal mine auctions, with a Peak Rated Capacity (PRC) of approximately 325 million tonnes per annum (MTPA), reflecting the strong momentum in unlocking India's coal potential.

Shri Vikram Dev Dutt, Secretary, Ministry of Coal, in his keynote address underscored that the structural reforms in the coal sector are closely aligned with the vision of Prime Minister Shri Narendra Modi, with a sustained focus on transparency, efficiency, and unlocking the sector's full potential. He highlighted that the introduction of the commercial coal mining framework in 2020 marked a transformative shift in the sector, paving the way for enhanced competition, private sector participation, and improved coal availability for domestic industries. Reflecting on the progress achieved, he noted that the framework has yielded significant outcomes, including increased number of mines auctioned, growing investor interest, and strengthening of domestic supply chains. He expressed satisfaction that participation in successive rounds of auctions has consistently risen, indicating strong and growing confidence among stakeholders. Emphasising a whole-of-government approach, he highlighted the importance of coordinated and collaborative efforts among ministries, state governments, and industry stakeholders in easing procedural barriers, simplifying regulatory processes, and fostering an enabling ecosystem. He added that these concerted efforts are set to drive coal production to new heights while contributing significantly to the nation's economic growth trajectory.

Shri Dutt further elaborated that the Ministry's commitments span multiple dimensions, including sustainability, community welfare, and technological advancement. He emphasised the importance of scientific mine closure, highlighting the need to transform mined-out areas into co-created, vibrant habitats that promote a harmonious ecosystem, ensuring ecological restoration alongside community well-being and long-term social stability. He said that CSR initiatives have been instrumental in bringing positive change in coal-bearing regions and must continue to be strengthened so that communities feel included and benefit from development initiatives. On the technology front, he highlighted the Government's thrust on coal gasification as a cleaner

and more efficient utilisation pathway, supported through policy measures such as viability gap funding, and noted that Underground Coal Gasification blocks have already been offered in previous auction rounds. Referring to the evolving geopolitical landscape, he underscored the importance of enhancing domestic coal production to safeguard India's energy security. Concluding his address, he called upon all stakeholders to actively participate in the upcoming rounds of commercial coal mine auctions, contribute meaningfully to the sector's growth, and collectively advance the vision of a resilient, inclusive, and self-reliant coal sector.

Smt Rupinder Brar, Additional Secretary, Ministry of Coal, set a decisive and forward-looking tone in her opening remarks. She called for accelerated coal production with a conscious approach, balancing growth with environmental stewardship and community well-being underscoring that sustainability must move in tandem with scale. Highlighting the transformational impact of coal sector reforms, she emphasised transparency, policy stability, and ease of doing business as key drivers attracting investment, fostering competition, and unlocking new economic avenues. She reiterated that while India stands as the 2nd largest coal producer, the sector holds far greater potential positioning coal as a powerful engine of employment, industrial growth, and national energy security.

Focusing on innovation, she highlighted coal gasification pathways both surface and underground, noting that enabling guidelines for Underground Coal Gasification have been issued and that the Ministry of Environment, Forest and Climate Change (MoEFCC) has already provided the Terms of Reference (ToR) framework to facilitate such projects. She further stressed the importance of scientific mine closure, highlighting responsible post-mining land use that transforms mined areas into assets for communities, ensuring ecological restoration and long-term social stability, with due emphasis on responsibility and human factors. Reinforcing a whole-of-sector approach, she highlighted the need for collaboration among government, industry, and stakeholders to drive efficiency, adopt best practices, and scale sustainable mining technologies. Concluding with a strong call to action, she urged stakeholders to actively participate, share insights, and shape outcomes, making the consultation a meaningful step towards a resilient, inclusive, and self-reliant coal ecosystem.

The stakeholder consultation witnessed insightful deliberations across key sessions covering critical dimensions of coal sector transformation. Discussions focused on technology adoption, innovation and coal gasification to drive efficiency and value addition; inclusive growth through rehabilitation, resettlement, land repurposing, worker welfare, CSR and just transition with communities and all stakeholders at the centre and sustainability measures promoting greener mining practices and environmental stewardship. Together, the sessions reflected a holistic roadmap for a modern, responsible, future-ready and self-reliant coal sector. Following the deliberations, the session was opened for an interactive Q&A segment with stakeholders, providing a valuable platform for exchange.

The Ministry of Coal is steering the sector towards a future-ready, resilient, and globally competitive coal ecosystem. The 15th Round of Commercial Coal Mine Auctions is set to unlock new investment avenues, enhance domestic production, and reinforce India's energy security. The stakeholder consultation further reflects the Ministry's commitment to continuous engagement, innovation, and sustainable practices, ensuring that the coal sector evolves in alignment with emerging global realities and national priorities.

Coal India plans 10-year roadmap to slash 243 MT coal imports

Coal India Ltd is planning a comprehensive 10-year roadmap to slash the current 243 MT coal import volume through ramped-up domestic production, coal quality upgrades, and logistics cost parity.

The proposed roadmap targeting coal import cuts includes a detailed forensic audit of imports, backed by sector-specific policies and phased shift strategies to boost local supply, a source said.

It will also include the National Washery & Logistics Grid to streamline coal washing and transport, addressing key bottlenecks in the supply chain.

Coal India Ltd (CIL), which accounts for over 80 per cent of domestic coal output, also plans to engage a consultant for preparation of the roadmap and suggesting measures relating to non-tariff barriers.

The coal behemoth plans "to develop and execute a comprehensive Ten-Year Roadmap (2026-2036) for the total substitution of all 'substitutable' coal imports, targeting a reduction in the current 243 MT import volume through domestic augmentation, quality enhancement (beneficiation), and logistical price-parity," the source added.

The development gains significance as the country aims to cut coal imports to support energy security, lower forex outflows, and align with green transition goals under the national coal gasification mission.

Industry experts view this as a timely move to fortify CIL's role in India's energy mix, potentially saving billions in import costs and boosting domestic mining ecosystem. Coal India, which produced 768.1 million tonnes (MT) of coal in FY26, aims to increase coal production to 1 billion tonnes (BT) by 2028-29 to reduce dependence on coal imports and meet domestic demand.

The company said its all key projects and enablers -- including environmental and forest clearances, land acquisition, and evacuation infrastructure -- have been identified for achieving the same.

In an energy uncertain world, imported coal UMPPs are strategic asset for India' energy security

The global energy landscape has been fundamentally reshaped by recent geopolitical disruptions from supply chain shocks to fuel price volatility reminding nations that energy security cannot be taken for granted. This reality is converging with a new wave of demand drivers in India, including steadily rising urban and rural consumption, rapid electrification through electric vehicles, increased adoption of induction-based appliances, usage of cooling appliances and more. Together, they are not only pushing up electricity demand on the whole, but also making the case for a reliable, round-the-clock baseload power stronger than ever.

The energy strategy of the country has, therefore, evolved into a careful balancing act between future sustainability goals and present demand realities. On one hand, it is accelerating towards the 2070-Net Zero goal through a mix of solar, EV adoption and biofuels, but on the other, the Government of India (GOI) has announced plans to add 80-GW of new coal-based capacity by 2031–32. This is to ensure the grid can reliably meet rising peak demand.

In this context, imported coal-based Ultra Mega Power Projects (UMPPs), particularly those using highefficiency supercritical technologies, remain among the most underutilised yet credible assets in India's energy mix.

The country's renewable energy capacity reached 275 GW at the start of the financial year, with solar alone contributing nearly 150-GW (of which 130-GW has been added in the last decade). Despite this impressive progress, conventional thermal sources such as coal and gas remain indispensable. They appear to be at odds with the net-zero vision, but in reality, continue to play a critical role in supporting economic growth and ensuring affordable, reliable and universal access to energy.

There is, however, a need to address the critical gap arising from insufficient policy support for imported coal-based Ultra Mega Power Projects (UMPPs). It is crucial because these projects strengthen energy security and represent one of the most efficient and relatively cleaner forms of thermal generation. UMPPs were a focal point of India's power expansion strategy in the mid-2000s, but given the scale of investment and long gestation periods, they have gradually fallen out of favour among policy planners. Yet optimising existing assets is often more cost-effective than building new capacity.

Reliance, Essar top bidders for coal-based methane gas exploration blocks

Reliance Industries Ltd and Essar Group have emerged as top bidders for the 16 coal-bed methane

(CBM) blocks offered across two consecutive bidding rounds, according to a list of bidders released by the Directorate General of Hydrocarbons (DGH).

State-owned Oil India Ltd bid for three blocks while India's largest oil and gas producer, ONGC stayed away. The government offered three areas for exploration and production of natural gas that is trapped within coal seams underground, in the Special CBM Bid Round 2025, and another 13 blocks in the 2026 bidding round.

Bids for the two rounds closed on March 5.

The gas produced, called CBM or coal seam gas, is used as a cleaner-burning fuel for power generation, heating, and industrial use. It can also be turned into CNG to run automobiles and piped to household kitchens for cooking. It generally produces fewer emissions than coal when burned.

Blocks offered in the 2025 and 2026 Special CBM bid rounds fall in Category II and III basins, where entities offering the most work programme (drilling most wells) are awarded the areas.

Reliance bid for three out of the 13 blocks offered in Special CBM Bid Round 2026 while Essar Oil and Gas Exploration and Production Ltd (EOGEPL) bid for three blocks of 2026 round and two of the three blocks offered in 2025 round.

One block in the 2025 round and seven of 2026 round did not attract any bids, according to DGH. Four of the six blocks of 2026 round that got bids, were single bids. The two blocks of 2025 round got multiple bids.

Reliance was the sole bidder for two blocks in Chhattisgarh and Odisha (SRONHP (CBM)-2026/4 block in Mand-Raigarh coal field in Chhattisgarh and SRONHP(CBM)2026/5 block in IB Valley coal field in Odisha. It was in direct contest with EOGEPL for the PG-ONHP(CBM)-2026/5 block in Godavari Valley coal field in Telangana. EOGEPL was the sole bidder for PG-ONHP(CBM)-2026/3 block in Godavari Valley coal field in Telangana while state-owned Oil India Ltd (OIL) was the only bidder for SR-ONHP(CBM)-2026/1 CBM block of Singrauli coalfield in Madhya Pradesh.

OIL and EOGEPL were locked for another block in the Singrauli coalfield of Madhya Pradesh.

Two blocks in Singrauli coalfield of Madhya Pradesh, offered in 2025 round, got multiple bids -- EOGEPL, Prabha Energy, and a consortium of Oilmax Energy and SAS Infotech Pvt Ltd for one and OIL, EOGEPL, Oilmax-SAS Infotech and Invenire Petrodyne for the other.

According to the DGH, total prognosticated CBM resource for awarded 33 CBM blocks was about 62.4 trillion cubic feet, of which, so far, 9.9 Tcf has been established as Gas in Place (GIP).

Reliance currently produces gas from two CBM blocks in Madhya Pradesh while Essar's Raniganj East as well as Great Eastern Energy Corporation's (GEECL) Raniganj West block (both in West Bengal), too, have been put on production. CBM is seen as a way to curb India's dependence on imported natural gas by tapping domestic resources embedded in its vast coal reserves.

India is the world's third-largest gas consumer but meets half of its demand through imports, including liquefied natural gas (LNG). Domestic gas output has struggled to keep pace with rising consumption from sectors such as power, fertilisers and city gas distribution. That gap has increased exposure to volatile global prices and supply risks.

CBM offers an alternative because methane is already present in coal seams across major basins such as Jharkhand, West Bengal, and Madhya Pradesh. Unlike conventional gas exploration, CBM development leverages existing coal geology, potentially lowering geological risk. India has estimated CBM resources of over 2-3 trillion cubic meters, though only a fraction has been commercially developed so far.

Policy support has also improved. The government has allowed pricing and marketing freedom for CBM producers, eased land and environmental clearances in some cases, and aligned CBM development with broader upstream reforms. These steps aim to attract investment and accelerate production.

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India Sets New Peak Power Demand Record at 256.11 GW

India's electricity demand surged to an all-time high of 256.11 GW recently as soaring temperatures across the country drove increased use of cooling appliances in households and commercial establishments, according to data from the Ministry of Power.

The latest peak surpassed the previous record of 252.07 GW set just a day earlier, highlighting the sharp uptick in consumption as the heatwave intensifies. Despite the spike, officials confirmed that power supply remained stable with no outages, supported by adequate generation capacity.

Demand is expected to climb further, with projections indicating a peak of around 270 GW during the ongoing summer season. The recent surge follows a relatively mild start to April, when unseasonal rains temporarily suppressed electricity consumption before temperatures began rising steadily from mid-month.

According to the India Meteorological Department, several regions are witnessing temperatures up to 5°C above normal, signaling escalating heat stress conditions. The agency has forecast an intense heatwave from April to June 2026, particularly across northern, central, and eastern parts of the country.

States including Haryana, Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, and Maharashtra are expected to experience prolonged periods of extreme heat, with temperatures potentially exceeding 45°C in some areas. High humidity levels are likely to further aggravate health risks.

Authorities have cautioned that extreme heat conditions could increase incidents of heat exhaustion and heatstroke, especially among vulnerable groups such as children, the elderly, and outdoor workers. Citizens have been advised to stay hydrated, limit outdoor exposure during peak afternoon hours, and wear light, breathable clothing.

The sustained rise in power demand underscores the growing strain on energy infrastructure during extreme weather events, while also highlighting the importance of capacity planning and grid resilience in meeting peak summer loads.

Power consumption grows marginally by 1.8% to 149.56 billion units in March

Power consumption in the country grew marginally by 1.8 per cent to 149.56 billion units in March from 146.92 BU a year ago amid lesser use of appliances like air-conditioners and coolers due to unseasonal rains.

Intermittent rains have kept the temperature at a lower level, delaying the onset of summer across the country.

According to the government data, the peak power demand met or the highest supply during March this year rose slightly to 238.37 GW from 235.22 GW recorded in February 2025.

The peak power demand touched an all-time high of about 250 GW in May 2024. The previous all-time peak power demand of 243.27 GW was recorded in September 2023.

During the last summer (April 2025 onwards), the peak power demand reached 242.77 GW in June, but stayed lower than the government's estimate of 277 GW.

The power ministry has estimated about 270 GW of peak power demand during the summer season this year.

According to the Indian Meteorological Department, March this year saw higher rainfall as eight western disturbances impacted the country, against the usual five or six during this month.

Rains led to a reduction in maximum temperatures over most parts of the country. As a result, no heat wave conditions prevailed over the country during the second half of the month, the IMD said.

Experts stated that the use of appliances like air-conditioners and desert coolers was negligible due to lower temperatures, mainly because of unseasonal rains.

This decreased the demand as well as the consumption of electricity in various parts of the country, especially in the north.

Experts are also expecting a subdued growth in power consumption as well as demand in April, as the onset of summer will be delayed due to more rainfall.

IMD has stated that in April, maximum temperatures are likely to be normal to below normal in many parts of the country.

However, above-normal maximum temperatures are expected over many parts of east and northeast India and some parts of northwest India and the southern peninsular region during the month.

Also, above-normal minimum temperatures are likely to prevail in most parts of India, except for some isolated pockets over the south peninsula, which is likely to see normal minimum temperatures during April.

Rainfall is likely to be normal to above-normal in most parts of the country except northeast India, where below-normal rainfall is expected in April.

Cabinet approves Investment Proposal for construction of 1200 MW Kalai-II Hydro Electric Project in Anjaw District of Arunachal Pradesh with an outlay of Rs.14105.83 crore

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi has approved investment of Rs.14,105.83 crore for construction of Kalai-II Hydro Electric Project (HEP) on Lohit river in Anjaw District of Arunachal Pradesh. The estimated completion period for the project is 78 months.

The project with an installed capacity of 1200 MW (6 x 190 MW & 1 x 60 MW) is expected to generate 4852.95 MU of energy annually. As the first hydro project in the Lohit Basin, it will strengthen power supply in the State, support in peak demand management, and contribute to balancing the national grid.

The Project will be implemented through a Joint Venture Company between THDC India Limited and the Govt. of Arunachal Pradesh. Government of India shall extend ₹599.88 crore as budgetary support for construction of roads, bridges and associated transmission line under enabling infrastructure besides Central Financial Assistance of ₹750 crore towards equity share of the State.

The State will receive 12% free power and an additional 1% earmarked for the Local Area Development Fund (LADF), along with significant infrastructure development and socio-economic benefits for the region.

There will be significant improvement in infrastructure in Namsai and Anjaw District of Arunachal Pradesh, including the development of around 29 kilometres of roads and bridges, for the project which shall be mostly available for local use. Local populace shall also be benefitted from many sorts of compensations, employment and CSR activities.

Himachal emerging as leader in green energy: CM Sukhu

To meet state's annual energy consumption which is approximately 13,000 million units, Himachal Pradesh Chief Minister Sukhvinder Singh Sukhu has set a target to meet more than 90 percent of this demand from renewable sources, an official statement said.

In line with Sukhvinder Singh Sukhu's directions, the state government has accelerated the development of small hydropower projects - up to five MW capacity - in recent years. Over the past three years, seven small hydropower projects with a total capacity of 17.25 MW have been started, 12 projects with a of 23.80 MW have been completed and 18 projects with a capacity of 47.90 MW have been sent for approval, a release said.

Additionally, five projects of 12.65 MW have received technical approval, supplementary implementation agreements for capacity enhancement and other related approvals have been signed for seven projects of 25.7 MW. Another, 76 new applications

for allocation of projects totaling 75 MW are being processed, it added.

The state government has decided to establish five solar parks with a total capacity of 501 MW and various solar energy projects of 212 MW. A 200 MW solar power plant would also be set up on barren land in Damtal of Kangra district.

To ensure transparency, the state government has adopted a "First Come, First Serve" policy for allocating solar projects ranging from 250 KW to five MW. The electricity generated from these projects will be purchased by the Himachal Pradesh State Electricity Board. So far, 547 investors have been allotted 595.97 MW of ground-mounted solar projects and power purchase agreements for 403.09 MW have already been signed, a release said.

The state government has launched the Green Panchayat Programme, under which 500 KW groundmounted solar projects are being installed in all of the panchayats across the state. The 20 percent of the revenue generated from these projects will be used to provide assistance to orphans and widows in the respective Gram Panchayats, it added.

India discusses energy cooperation with Nepal's new govt

India's envoy in Kathmandu and the energy minister in the new government in Nepal discussed issues of mutual interests and those focusing on cooperation in energy. India's Ambassador to the himalayan nation Naveen Srivastava and Nepal's Minister for Energy, Water Resources, and Irrigation Biraj Bhakta Shrestha met recently, according to sources at the ministry. Shrestha took charge as the energy minister in March last week after the Balendra Shah 'Balen' led Rastriya Swatantra Party (RSP) won a landslide victory in the general election earlier that month.

Minister Shrestha and Ambassador Srivastava discussed bilateral relations and issues of mutual interests, focusing on cooperation in energy and water resources. "The discussions focused on the longstanding partnership between Nepal and India, and the shared vision of advancing sustainable development and regional connectivity," the sources said. Both sides reaffirmed their commitment to deepening collaboration and fostering greater synergy to ensure shared prosperity and mutual benefit for the people of both countries. The energy minister said he looks forward to further strengthening this partnership through continued dialogue and cooperation.

Weeks before the March general elections, Nepal signed a long-term agreement for the export of 10,000 MW power to India, an MoU for cooperation in renewable energy, and jointly inaugurated three crossborder transmission lines. These developments took place during the two-day visit of the External Affairs Minister S Jaishankar to the Himalayan nation in January.

On the same day, Shreshtha also met Chinese Ambassador Zhang Maoming and discussed a range of topics aimed at advancing mutually beneficial practical cooperation. "They also exchanged views on how to cope with the current regional energy challenges," the sources added.

India needs rapid scale-up in power capacity: Sagar Adani

Building energy infrastructure at scale and speed will be critical to India's long-term resilience and economic stability, Adani Group executive director Sagar Adani said recently, calling for a sharp expansion in power capacity. Speaking at The Economist's Resilient Futures Summit in New Delhi, he said the ability to create largescale infrastructure with purpose will determine how well countries withstand global disruptions.

"The real question is not whether India will need more energy-that is already clear. The real question is: how fast can we build it?" he said. With per capita energy consumption at about one-third of the global average and roughly one-fifth of China's, India faces a structural challenge rather than an incremental one, he said. To achieve its goal of becoming a developed economy by 2047, India will need to add nearly 2,000 GW of power generation capacity over the next two decades. Adani called for faster electrification across sectors and lower dependence on imported fuels, positioning electrification as a key pathway to long-term stability.

PNGRB Unveils Massive Energy Pipeline Push; IOCL Gets 425-km Gas Corridor, 2,500-km LPG Grid Takes Shape

In one of the biggest moves yet to overhaul India's fuel transportation architecture, the Petroleum and Natural Gas Regulatory Board (PNGRB) has simultaneously cleared a major natural gas pipeline in the South and accelerated a nationwide LPG pipeline rollout worth nearly Rs 12,500 crore, signalling an aggressive shift towards safer, cleaner and more efficient energy logistics.

At the centre of this infrastructure thrust is PNGRB's authorisation to Indian Oil Corporation Limited for the Kochi–Kanyakumari–Thoothukudi Natural Gas Pipeline (KTPL), a 425-km gas corridor that will transport regasified LNG from Kochi LNG Terminal deep into Kerala and Tamil Nadu's southern districts.

The pipeline, with a capacity of 6.84 MMSCMD, is expected to dramatically improve natural gas access in the region, support industrial consumption, feed power plants and accelerate expansion of City Gas Distribution (CGD) networks for PNG and CNG supply.

Officials said the project would strengthen southern India's integration with the national gas grid while advancing the Centre's long-term goal of raising natural gas share in India's energy basket.
But the bigger signal from PNGRB lies in its parallel LPG logistics transformation plan.

In a sweeping bid to reduce hazardous and expensive bulk LPG movement by road, PNGRB has identified nine LPG pipeline projects and is currently moving ahead with bid conclusion for four major corridors stretching nearly 2,500 km across the country. These include Cherlapally–Nagpur, Shikrapur–Hubli–Goa, Paradip–Raipur and Jhansi–Sitarganj routes.

The proposed projects are expected to draw investments of around Rs 12,500 crore and could fundamentally reshape how LPG is transported from ports and refineries to bottling plants nationwide.

Sources indicate that the regulator is targeting a near-complete phase-out of bulk LPG road transportation by 2030 — a move seen as crucial in reducing accident risks, lowering transit losses, cutting emissions and creating a far more dependable national supply chain.

Pipeline transportation would also create strategic energy storage flexibility during disruptions, while reducing logistics costs and enhancing delivery speed.

Energy sector observers say the dual announcements underscore PNGRB's determination to build a future-ready hydrocarbon transmission system where both natural gas and LPG move increasingly through dedicated pipeline infrastructure instead of highways crowded with hazardous tanker fleets.

With India's fuel demand steadily rising and clean energy commitments tightening, PNGRB's latest decisions are being viewed as a decisive infrastructure intervention aimed at energy security, environmental sustainability and nationwide logistics modernisation.

Govt sets deepwater gas price ceiling at $8.90/MMBTU for Apr–Sep 2026

The Petroleum Planning and Analysis Cell (PPAC) has notified a price ceiling of USD 8.90 per MMBTU for gas produced from deepwater, ultra-deepwater and high-pressure, high-temperature (HPHT) fields for the period April 1 to September 30, 2026. The notification, dated March 31, 2026, states: "the gas price ceiling for the period 1st April 2026 – 30th September 2026 is notified as US$ 8.90/MMBTU on Gross Calorific Value (GCV) basis."

The ceiling applies to gas output from difficult fields that enjoy marketing and pricing freedom under the government's policy framework.

Follows APM gas price revision for legacy fields
The latest ceiling comes as the government raised the administered price mechanism (APM) gas rate for legacy fields operated by ONGC and Oil India to USD 7 per MMBTU, as reported earlier.

While APM gas pricing is linked to a formula with a floor and ceiling, deepwater and HPHT fields are governed by a separate regime that allows market-linked pricing, subject to a notified cap.

Policy framework and applicability
The PPAC notification references the government's 2016 guidelines granting pricing freedom for gas from deepwater and HPHT discoveries. The move ensures a calibrated pricing structure — allowing producers some upside from challenging fields while preventing excessive price spikes for consumers.

New report pitches coal gasification as geopolitical insurance for India against oil, LPG shocks amid Hormuz risks

A new white paper on coal gasification has argued that India should treat the fuel route as a buffer against geopolitical shocks hitting oil, LPG and fertiliser supplies, especially amid renewed tensions around the Strait of Hormuz.

"We have managed quite well, delivering around 50 lakh cylinders consistently, fully meeting domestic demand and up to 80 per cent of commercial demand. There is no reason for anybody to fear shortages," the official told TOI. Around half the new piped gas connections - to households and for commercial use - have been activated, while the rest are under process.

Separately, over 16,000 LPG connections have been surrendered following the govt's nudge to ensure those with active piped gas connections do not continue to retain cylinders, easing pressure on the system. People wishing to surrender their connections can submit details on the designated portal, which has a 'hall of fame' to recognise consumers who have voluntarily given up their connections.
Amid concerns over supply shortages and long queues, officials said there was sufficient stock of crude oil, petroleum products and cooking gas, which were being replenished. "We have managed quite well for over a month, and we are tying up supplies and importing from wherever required," the official said.

The Centre has urged people to use alternative such as induction and electric cooktops wherever feasible. Officials said online cylinder bookings have risen to 95 per cent, while authentication code-based deliveries - aimed at preventing diversion at the distributor level - have increased from 53 per cent in Feb to 90 per cent now.

To help the migrant population without regular LPG connections, oil companies have sold about 6.6 lakh portable 5kg cylinders since March 23, including 90,000 recently, up from a daily average of 70-75,000 before the war.

Govt expects recent moves to improve the flow of raw material to industries facing shortages. From packaging units to pharma, companies were hit hard by supply disruptions due to West Asia conflict.

India's piped gas expansion: 8 lakh new consumers amidst LPG cylinder drive

A new white paper on coal gasification has argued that India should treat the fuel route as a buffer against geopolitical shocks hitting oil, LPG and fertiliser supplies, especially amid renewed tensions around the Strait of Hormuz. The report, released against the backdrop of the government's Rs 8,500-crore incentive framework for coal gasification, says the technology offers a "strategic pathway to domestic energy and industrial resilience" and calls the country's reliance on imported chemicals a "hidden form of energy dependence."

The white paper, prepared by New Era Cleantech Solution Pvt Ltd, a coal-to-chemicals company, with analytical inputs from EY Parthenon, was formally released by Union Coal Minister G Kishan Reddy and Maharashtra Chief Minister Devendra Fadnavis recently

Hormuz disruptions sharpen the risk
The white paper says India imports approximately 85 percent to 90 percent of its crude oil requirements and adds that the Strait of Hormuz remains the country's most important energy chokepoint, with around 30 percent of global seaborne crude and about 90 percent of India's LPG imports passing through the corridor. It says recent tensions in West Asia have already led to supply disruptions, port

delays and LPG price increases of up to Rs 144 per commercial cylinder.
The report also says crude oil and fuel shocks continue to hit the wider economy hard. It notes that India's crude import bill touched USD 158 billion in FY23, while crude oil import dependence rose from 83.8 percent in FY19 to about 88.2 percent in FY25. The paper says rising oil prices affect inflation, fertilizer subsidy spending, the trade deficit and currency stability.

The hidden chemical import bill
Beyond crude and gas, the report focuses on what it calls the deeper industrial exposure embedded in chemical feedstocks. It says India's combined annual import value of energy-derived chemical feedstocks already exceeds USD 30 billion. These include ammonia, urea, mono ethylene glycol (MEG), methanol and ammonium nitrate, all of which feed sectors such as fertilisers, textiles, plastics, mining and pharmaceuticals.

The paper says the 2022 energy crisis showed how quickly these markets can tighten. It notes that methanol prices doubled, ammonia rose by over 300 percent, ammonium nitrate increased by nearly 200 percent, MEG rose by about 95 percent and olefins and petrochemical intermediates rose by around 50 percent. In fertilisers, the report says global urea prices jumped from about USD 350 a tonne to nearly USD 900 a tonne during the crisis, pushing India's fertilizer subsidy bill from Rs 79,530 crore in FY21 to Rs 2.54 lakh crore in FY23.

DME is pitched as an LPG bridge
A major part of the paper is devoted to dimethyl ether, or DME, which it describes as a possible substitute for LPG. The report says DME can be produced from coal gasification, natural gas reforming, biomass gasification or waste-derived syngas, and that it can be blended, transported and stored using existing LPG infrastructure with limited modification.

It also highlights the size of India's LPG exposure. The paper says LPG consumption reached 31.3 million tons in FY25, while domestic production stood at 12.8 million tons, forcing imports of 20.7 million tonnes. India's LPG import bill is estimated at USD 13-15 billion annually, and demand is projected to rise to 43.6 million tonnes by 2030-31.

On that basis, the report argues that even a modest blending programme could make a difference. It says an 8 percent national blending programme could cut LPG imports by about 2.5 million tonnes a year. It also notes that BIS has already notified standards allowing up to 20 percent DME-LPG blending in India, while UNECE approved up to 12 percent DME by mass in LPG for transport and distribution in 2024. China, the paper says, has already demonstrated 20 percent DME-LPG blends for domestic cooking.

Urea and food security sit at the centre
The paper gives similar weight to the fertiliser sector, saying urea sits at the heart of India's food security system. It says 95 percent of domestic urea is produced using gas, most of it imported, and that India imported 58.62 lakh tonnes of urea during April-October 2025, more than double the 24.76 lakh tonnes imported in the same period a year earlier.

The report says coal gasification could reduce this vulnerability by supporting domestic ammonia and urea production. It points to the Talcher fertilizer project in Odisha as the "lighthouse project" for the sector. The plant is designed to produce 2,200 tons per day of ammonia and 3,850 tons per day of urea, and is expected to be completed in late 2027. The paper says it would be the first large-scale venture to prove that Indian high-ash coal can be gasified reliably.

Oil India reports hydrocarbon discovery in Libya's Area 95/96 block

State-run Oil India Limited (OIL) has reported a fresh oil and gas discovery in Libya's Area 95/96 block, marking the fifth find in the acreage as exploration activity resumes in the Ghadames Basin. The company said it holds a 25 percent participating interest in the onshore block, which it shares in a consortium with Indian Oil Corporation Limited (IOCL) and which is operated by SIPEX. The block sits in the highly prospective Ghadames Basin in south-western Libya and covers about 6,630 sq km.

OIL said the block had already seen five completed wells, of which four made oil and gas discoveries during 2012-14, and that the latest well, A1-96/02, has now added a new gas and oil find.

What Libya's oil company said
Libya's National Oil Corporation (NOC) earlier said the discovery came from the sixth well in Contract Area 95/96, about 70 km from the Wafa field. It said the well reached a final depth of 8,440 feet and was producing 13 million cubic feet of gas and 327 barrels of condensate a day from the Awynat Wanin and Awyn Kaza formations. The Ghadames Basin is shared by Libya, Algeria and Tunisia and lies about 600-620 km southwest of Tripoli.

Why the find matters for OIL
OIL said the development is a "significant achievement" for the company and "reinforces OIL's strategic focus on expanding its international footprint." The company's international E&P portfolio spans 10 assets across seven countries, one of which is Libya's Area 95/96. OIL's website also says force majeure on the block was revoked in June 2023 and that appraisal and remaining drilling work are still planned.

ONGC rig pricing veto may tighten fuel tap

India's offshore drilling sector is staring at a potential supply shock, with executives warning that repeated tender cancellations and aggressive cost cutting by Oil and Natural Gas Corp (ONGC) could prompt rig operators to look at other markets, hitting domestic oil production.

State-owned ONGC, India's largest oil and gas producer, is also its largest hirer of rigs. Since 2024, ONGC has cancelled four tenders to hire 15 jack-up rigs that are used for drilling in shallow waters. Three tenders were cancelled after price bid opening and one before submission. The latest tender cancellation occurred last month. ONGC did not reply to queries.

Owing to this series of flipflops, ADES-Shelf Drilling plans to withdraw five rigs operating in India.

"ADES-Shelf Drilling is evaluating whether to keep its assets in India or trim down its presence, because it has been bleeding for some time now," said one of the persons. "If tenders keep getting cancelled, rigs remain idle."

An offshore rig deteriorates and loses value when it's not working.

"Even when companies are willing to operate at lower rates, the lack of visibility on contracts from ONGC is a bigger concern," the person said. ADES-Shelf Drilling did not reply to an email sent by ET. "It's a confusing state of affairs. On the one hand, ONGC appoints BP Plc as an adviser to increase oil production on the west coast and on the other, you have this erratic approach to rig chartering which deprives them of the necessary equipment to enable them," said another senior industry executive. He added that ONGC is expecting the rigs to be priced at much cheaper rates than the market, which is not feasible for the drill ship owners.

According to S&P Global Energy, the current jack-up global average stands at $112,900 per day.

"The jack-up drilling rig day rates in India continue to trail global averages for the JU 300-IC market category," S&P Global Energy said in an emailed response. "As of Q4 2025, global day rates for this category stood at $74,326, while the Indian average was $35,565."

It added that the most recent ONGC tender that was cancelled last month had day rates at $55,000, narrowing the gap with the global average at that time. However, current Indian rates are at $97,750, still lower than the prevailing global average of $112,900 for comparable rigs.

"Lower operating costs by regional contractors and longer contract durations - typically three years in India compared to a global average of one year- contribute to the disparity," said S&P Global Energy.

The Indian market is dominated by regional contractors, with limited participation from international firms. This makes India a niche segment within the global jack-up market.

India positioning itself as a global player in clean energy; there is an integrated push on hydrogen, nuclear and innovation: Dr. Jitendra Singh

Union Minister of State (Independent Charge) for Science & Technology, Earth Sciences, and MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh said here today that India is steadily positioning itself as a global player in the Clean Energy landscape through a calibrated mix of policy support, technological innovation, and industry participation.

The Minister said the country is simultaneously advancing green hydrogen, expanding Nuclear Energy capacity, and strengthening renewable sources, while building indigenous capabilities in critical technologies such as electrolyzers. Emphasising the need for scaling up through public-private partnerships, he said India's approach is focused on creating a robust and self-reliant ecosystem supported by enhanced research funding and innovation-led growth.

Dr. Jitendra Singh was addressing the World Hydrogen Energy Summit alongside the World Petrocoal Congress at the NDMC Convention Centre, New Delhi. The conference brought together policymakers, global industry leaders, domain experts and stakeholders from petroleum, coal, gas and emerging hydrogen sectors, providing a platform for deliberations on future energy pathways.

Referring to India's evolving energy roadmap, the Minister said the country is pursuing a multi-dimensional strategy that combines energy security with sustainability. He said India is targeting nearly 100 billion US dollars in oil and gas investments, expansion of exploration areas to 1 million square kilometres, and increasing the share of natural gas in the energy mix to 15 percent. At the same time, India's refining capacity continues to expand, placing it among leading nations globally.

On clean energy transition, Dr. Jitendra Singh said the National Green Hydrogen Mission, with outlay of Rs 19,744 cr, has placed India among the frontrunners in developing alternative fuel ecosystems. He said green hydrogen will play a key role in decarbonising hard-to-abate sectors such as steel and cement, while efforts are underway to reduce production costs through domestic manufacturing and innovation.

The Minister also shared progress in India's nuclear energy programme, stating that the recently announced Nuclear Energy Mission aims to achieve 100 GW of nuclear power capacity by 2047. He said India has entered the next phase of its nuclear programme with indigenous technological advancements, placing it among a select group of nations.

Highlighting the role of small reactors, Dr. Jitendra Singh said India plans to develop five Small Modular/Small Reactors by 2033, with work already underway on three of them. These include a Bharat Small Modular Reactor (SMR), a Bharat Small Reactor (BSR) based on established heavy water technology, and a small-scale hydrogen-linked reactor of a few megawatts' capacity. He said such reactors will enable flexible, scalable, and decentralised clean energy solutions, while also supporting emerging hydrogen applications.

The Minister said recent policy reforms have opened the nuclear sector for private participation, along with rationalised liability provisions to facilitate wider industry engagement. He said these steps will encourage startups, MSMEs and private players to contribute to the expansion of clean energy infrastructure.

Dr. Jitendra Singh also spoke about emerging opportunities in green jobs and innovation, noting that sectors such as electric mobility, battery recycling, grid management, and renewable manufacturing are generating new livelihood avenues. He referred to ongoing initiatives in the circular economy, including conversion of used cooking oil and agricultural residue into biofuels, as well as new frontiers like ocean energy under the Deep Ocean Mission.

The Union Minister said India's demographic strength, technological capabilities and policy direction position it to play a significant role in global decarbonisation efforts, while ensuring sustainable growth and energy access for its population.

India Targets 100 GW Nuclear Power Capacity by 2047: CEA Chief

India is targeting a more than tenfold expansion in nuclear power capacity—from 8.8 GW currently to 100 GW by 2047—as part of its long-term clean energy transition strategy, according to Ghanshyam Prasad, Chairperson of the Central Electricity Authority.

Speaking at a session on India's nuclear roadmap in the national capital, Prasad said a detailed plan has been drawn up to achieve the ambitious target, with legislative reforms playing a central role. He noted that a key milestone—the enactment of the Shanti Act—has already been completed, while work is ongoing to frame supporting rules, procedures, and implementation guidelines.

Efforts are currently focused on accelerating policy execution, improving financing mechanisms, and standardising processes to make nuclear power more cost-effective. The roadmap also addresses critical enablers such as fuel security, site development, and the creation of a skilled workforce to support large-scale capacity addition.

Highlighting structural changes in the sector, Prasad indicated that nuclear energy could see broader participation going forward. While the segment is currently dominated by a single operator, as many as 10–12 companies are expected to enter the space, potentially accelerating project execution and investment flows.

On the operational front, nuclear energy was emphasised as a reliable source of baseload power, capable of delivering continuous generation with high stability. Prasad also noted that, when managed effectively, nuclear power remains among the safest forms of energy generation.

Looking ahead, emerging technologies such as Small Modular Reactors (SMRs) are expected to play a critical role in the future energy mix. While still under development globally, SMRs offer potential for scalable, cleaner, and more flexible nuclear deployment.

NTPC exploring 2 nuclear power units of 1,400 MW in Banka district of Bihar

As part of its energy diversification plan, state-owned NTPC is looking to set up two nuclear units of 700 MW each in the Banka district of Bihar, which could entail an investment of around Rs 25,000 crore.

At present, NTPC officials are conducting a feasibility study for two 700-MW nuclear units in the district, located around 250 km from Patna, a government official said.

The Bihar government has also assured full support for the project and water availability. Initial estimates suggest that around 1,000 acres of land would be required for these units, the official told PTI without sharing any financial information.

According to industry estimates, a 1 GW nuclear plant requires an investment of Rs 15,000-20,000 crore and typically takes at least three years from concept to commissioning.

A detailed project report (DPR) will be prepared after the feasibility report is completed, he said.

NTPC is looking to set up around 30 GW of company-owned nuclear projects across various locations in the country in line with the government's ambition of having 100 GW nuclear capacity by 2047. The power PSU is eyeing at least 2 GW of nuclear capacity as early as 2032.

NTPC is also setting up a nuclear project in a joint venture (JV) with Nuclear Power Corporation of India Ltd (NPCIL) in Rajasthan at an investment of about Rs 42,000 crore.

The company, with an installed capacity of over 89,615 MW at the group level, has accelerated its nuclear plans, with recent legislative changes aimed at attracting investment in this space.

NTPC Ltd has steadily expanded and diversified into new energy sources, spanning coal, gas/liquid fuel, hydro and solar power.

India's clean energy push: Govt mulls bids for 220 MWe small modular reactor

India is set to take a major step in expanding its nuclear energy programme, with plans to invite bids for the establishment of a 220 MWe Bharat Small Modular Reactor (BSMR-200), within the next three to six months. The project is considered as a major part of the country's clean energy transition, officials told ET.

Foreign companies will be allowed to participate in the bidding process, but only through tie-ups with local partners, an official said. The reactor design will be standardised, and the first unit is expected to serve as a model for future installations.

"A cost of roughly Rs 30 crore per megawatt (MW) has been approved for BSMR-200 as a pilot project," another official told the financial daily.

The BSMR-200 is being jointly developed by the Bhabha Atomic Research Centre (BARC) and the Nuclear Power Corporation of India Ltd (NPCIL). The total cost of development and construction is estimated at around Rs 5,960 crore, to be funded through the Nuclear Energy Mission. After approvals, the construction is expected to take anywhere between 60 and 72 months.

Officials said that inter-ministerial consultations are currently underway to finalise the bidding details.

The move follows the opening up of the nuclear sector to private investment after the enactment of the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act in December 2025.

"A final call on the proposal will be taken by the Cabinet Committee on Economic Affairs," the official said, adding that domestic firms capable of executing the project on an engineering, procurement and construction (EPC) basis have already been identified.

The Union Budget had already alloted Rs 20,000 crore to develop at least five indigenously designed and operational small modular reactors by 2033 under the Nuclear Energy Mission.

India has also set an ambitious goal of reaching 100 GW of nuclear power capacity by 2047, alongside efforts to strengthen local manufacturing and technology development in the sector.

In a recent milestone for the nuclear programme, India's prototype fast breeder reactor reached criticality this month.

Prototype Fast Breeder Reactor at Kalpakkam, Tamil Nadu attains First Criticality

In a landmark achievement for India's nuclear energy programme, the 500 MWe Prototype Fast Breeder Reactor (PFBR) has successfully attained first criticality (start of controlled fission chain reaction) on 6th April 2026 at 08:25 PM marking a historic step in providing long-term energy security and advancing indigenous nuclear technology capabilities.

The criticality was achieved in the presence of Dr Ajit Kumar Mohanty, Secretary, DAE & Chairman, AEC, Shri Sreekumar. G. Pillai, Director, IGCAR, Shri Allu Ananth, CMD-In-Charge, BHAVINI and Shri K.V. Suresh Kumar, Former CMD, BHAVINI & Homi Sethna Chair after meeting all the stipulations of the Atomic Energy Regulatory Board (AERB), which had issued clearance after a rigorous review of safety of the plant systems.

The technology development & design of PFBR was indigenously done by Indira Gandhi Centre for Atomic Research (IGCAR), an R&D Centre of the Department of Atomic Energy, and was built & commissioned by Bharatiya Nabhikiya Vidyut Nigam Ltd (BHAVINI), a PSU under the Department of Atomic Energy.

Fast Breeder Reactors are a cornerstone of India's long-term nuclear strategy. Unlike conventional thermal reactors, the PFBR uses Uranium-Plutonium Mixed Oxide (MOX) fuel. The core of PFBR is surrounded by a blanket of Uranium-238. Fast neutrons convert fertile Uranium-238 into fissile Plutonium-239, enabling the reactor to produce more fuel than it consumes. The reactor is designed to eventually use Thorium-232 in the blanket. Through transmutation, Thorium-232 will be converted into Uranium-233, which will fuel the third stage of India's nuclear power programme.

This unique capability significantly enhances the utilization of nuclear fuel resources and enables the country to extract far greater energy from its limited uranium reserves while also preparing for large-scale use of thorium in the future.

With the achievement of first criticality, India moves closer to realizing the full potential of its three-stage nuclear power programme. Fast breeder technology forms the vital bridge between the current fleet of pressurized heavy water reactors and the future deployment of thorium-based reactors, leveraging the country's abundant thorium resources for long-term clean energy generation.

Achieving this milestone demonstrates the strength of India's indigenous design, engineering and manufacturing ecosystem. The reactor incorporates advanced safety systems, high-temperature liquid sodium coolant technology and a closed fuel cycle approach that enables recycling of nuclear materials, thereby improving sustainability and reducing waste.

The project also reflects the dedication of significant number of scientists, engineers, technicians and industry partners who have contributed to the design, fabrication and construction of the reactor using predominantly indigenous technologies and components. Their efforts highlight the nation's growing capability in advanced nuclear engineering and reinforce India's commitment to technological self-reliance complying with Atmanirbhar Bharat.

Beyond energy generation, the fast breeder programme strengthens strategic capabilities in nuclear fuel cycle technologies, advanced materials, reactor physics and large-scale engineering. The knowledge and infrastructure developed through this programme will support future reactor designs and next-generation nuclear technologies.

As India continues to expand its clean energy portfolio, fast breeder reactors will play a crucial role in delivering reliable, low-carbon, base-load power with higher thermal efficiency. The attainment of first criticality represents not only a technological milestone but also a major step towards a sustainable and self-reliant energy future for Viksit Bharat.

PARLIAMENT QUESTION

Impact of Indo–Us Nuclear Agreement

The India-US Civil Nuclear Agreement of 2008 and following international agreements for cooperation in nuclear energy enabled import of fuel for use in reactors under IAEA safeguards and setting up of new nuclear power reactors with foreign cooperation. As a result, presently sixteen reactors (excluding RAPS-1, 100 MW) with a capacity of 6380 MW under IAEA safeguards are being fuelled by imported fuel. This has led to substantial increase in the nuclear electricity generation.

India has signed several Inter Governmental Agreements with key partner countries for Cooperation in peaceful uses of Nuclear Energy including technology cooperation.

The conclusion of international cooperation agreements following the NSG waiver has enabled increased total nuclear power generation from 16956 MU in 2007-08 to 56681 MU in 2024-25. The nuclear power capacity has since increased from 4020 MW in 2007-08 to 8780 MW at present.

Four reactors, KKNPP 3&4 (2X1000 MW) and KKNPP 5&6 (2X1000 MW) being set up in cooperation with Russian Federation are presently under construction.

India had enacted the Civil Liability for Nuclear Damage (CLND) Act in 2010 which provides for compensation to the victims of nuclear incident / accident. The CLND Act has certain provisions like right of recourse against the supplier [section 17(b)]

and the effect of any other law for time being in force [section 46] which are not aligned with the international civil liability framework. Due to these sections the foreign suppliers have apprehensions in supplying nuclear reactors to India. Issues related to nuclear liability had delayed conclusion of commercial agreements for setting up nuclear power projects at Jaitapur in Maharashtra and Kovvada in Andhra Pradesh which were designated to be set up in cooperation with France & USA respectively. With the enactment of SHANTI Act, the provisions of civil liability is now aligned with international liability framework. With the enactment of the SHANTI Act, these issues are expected to be addressed.

This information was submitted by Union Minister of State for Personnel, Public Grievances and Pensions & Prime Minister's Office , Dr. Jitendra Singh in Rajya Sabha on 2nd April 2026.

World's Oldest Operating Atomic Plant, In India, Gets 'Open Heart Surgery'

For nearly six decades, two green-hued buildings on India's western coast have quietly produced electricity. They have outlasted geopolitical shocks, technology denial regimes and the wear of time. Today, Tarapur Atomic Power Station Units 1 and 2 are the oldest commercially operating nuclear reactors in the world, with Unit 2 set to restart soon.

During a rare visit, NDTV accessed the facility alongside BC Pathak, chairman and managing director of the Nuclear Power Corporation of India Limited, to examine how the ageing reactors have been refurbished and brought back into operation, a feat nothing short of an open heart surgery.

"This green building has been generating clean, carbon-free power for the last 57 years," said Pathak as he stood outside Tarapur. "India is now home to the newest reactor, the Prototype Fast Breeder Reactor, and also home to the world's oldest commercially operating nuclear reactor."

Commissioned in 1969, the Tarapur units are based on boiling water reactor technology. Designed and supplied in an era when nuclear engineering was still in its infancy, especially in developing nations, these reactors have now been refurbished and brought back into full commercial operation after prolonged shutdowns.

Each unit now produces 160 megawatts of electricity. Unit 1 has already resumed operations, while Unit 2 is expected to follow shortly.

"This is our oldest power plant, not only of the country, but of the world," Pathak said. "What you see here is a very compact reactor, very beautifully designed."

What makes this achievement remarkable is not just the age of the reactors, but the scale of engineering intervention required to revive them. "This refurbishment is like open heart surgery," Pathak explained. "The reactor is the heart. The heart is intact, but all the veins were replaced."
Engineers carried out extensive non-destructive testing of the reactor pressure vessel, the plant's most critical component. "The reactor life is very good," he said, adding that civil structures and key equipment were also assessed and replaced where required.

Much of the work was carried out under radiation-controlled conditions. "All 24-inch stainless steel pipelines were replaced," Pathak said. "Our engineers worked day and night for four years."

Unlike many large infrastructure projects, the refurbishment was largely executed in-house. NPCIL says this helped keep costs low and minimise radiation exposure.

The total cost of refurbishing both reactors was around Rs 400 crore, significantly lower than building a new plant of comparable capacity. "In return," Pathak pointed out, "we are today generating 160 megawatt clean energy from each unit."

"This reactor today is as good as a brand new reactor," Pathak stressed. "Otherwise, we would have shut it down after 57 years of operation."

Safety Upgrades And Legacy Systems

The refurbishment also incorporated safety measures developed after global incidents such as the Fukushima nuclear disaster.

"This is the safest reactor, giving clean energy at a very reasonable price," he said. "Everything is here, including upgrades which came out of the Fukushima accident."

Inside the complex, NDTV was shown the containment filtered venting system, a post-Fukushima feature designed to manage pressure and reduce radioactive release in emergencies. The leadership of the Tarapur Atomic Power Station in the Control Room of the units 1 and 2. Photo Credit: Pallav Bagla.

Despite these upgrades, Tarapur retains its original analogue control room, with rows of dials and gauges instead of modern digital interfaces.

"Yes, it is an analogue control room," Pathak said. "At that time, instrumentation was not developed like today." Yet, there is no sense of obsolescence. The control room looked freshly painted and well-maintained, staffed by young control engineers, including women officers managing power generation in real time. "We are very proud to have women in our Nuclear Power Corporation," Pathak said, as a control engineer calmly monitored output.

At the time of NDTV's visit, Tarapur Unit 1 was operating at full capacity. "This is around 160 megawatt," Pathak said, pointing to the analogue meter. "This is the maximum capacity."

Tarapur's longevity is also tied to India's push for self-reliance after international cooperation collapsed following the 1974 nuclear test.

"We indigenised everything," Pathak said. "All components we could source from India." Today, NPCIL says fuel supply is stable, and spent fuel is being managed effectively. "We do not have any problem as far as fuel is concerned," Pathak said. "Spent fuel storage is fully managed." According to NPCIL, India's nuclear fleet has accumulated around 650 full-power reactor years of operating experience. "We have been operating our reactors very safely," Pathak said. "The radioactive releases have never been beyond stipulated values."

India, he pointed out, has not even a single instance of 'concern' occurring to date in any of the nuclear power plants. "We have been operating since 1969," he said. "You can see where we are."

Tarapur's revival comes as India expands its nuclear ambitions, including the development of the Prototype Fast Breeder Reactor at Kalpakkam.

"The fast breeder reactor is the crowning glory of nuclear technology," Pathak said, describing it as key to long-term energy security. "It paves the way for nuclear power security in the country." While the PFBR represents the future, Tarapur represents endurance.

At Tarapur itself, plans are underway to introduce Bharat Small Modular Reactors, reinforcing its role in India's nuclear roadmap. For India, the refurbishment is not just about extending the life of ageing infrastructure. It reflects a broader strategy of balancing cost, safety and energy security. "With relatively modest investment, we are able to generate significant electricity," Pathak said.

As India aspires to become a developed nation and achieve carbon neutrality, nuclear energy is being positioned as a reliable base-load power. The newly passed Shanti Act opens the door for private participation, but NPCIL's experience stands as a benchmark.

"Safety culture is very important," Pathak said. "Once you are into nuclear, you are into nuclear forever." Tarapur 1 and 2, having survived time, technology denial, and history itself, now stand renewed. With their open-heart surgery complete, they are once again quietly powering India, proof that with engineering discipline and a safety-first culture, even the oldest machines can be given a new lease of life.

18th National Conference on Coal

9th April 2026, Hotel Le Meridien, New Delhi

Theme: Transforming Coal Sector for a Net Zero Future

India Energy Forum jointly with MGMI-DC and ISMAA-DC organized its annual flagship event, 18th National Conference on Coal, on 9th April 2026 at Hotel Le Meridien, New Delhi. The Conference focused on Transforming India's Coal Sector for a Net Zero Future through technological innovation and policy reform. **Shri G Kishan Reddy,** Hon'ble Minister of Coal and Mines, was very kindly agreed to inaugurate the Conference but due to unavoidable last minute development, he could not come to inaugurate the Conference. He sent his good wishes and Message which was read at the Inaugural Session.

The Conference was inaugurated by the Chief Guest, **Shri M Prasanna Kumar**, CMD, NLC India and key-note address was the Guests of Honour, by **Shri Sanjay Som**, Director, BEML. **Shri R V Shahi,** President, IEF and Former Secretary (Power) gave the Presidential address and **Shri Alok Perti,** Patron, 18th National Conference on Coal 2026 and Former Secretary, Ministry of Coal delivered the welcome address. While **Shri Anil K Jha**, Vice President, IEF and Former CMD, CIL presented the Vote of Thanks, **Shri N N Gautam,** Chairman, Coal Group, IEF gave the introductory remarks at the beginning of the Inaugural Session and coordinated the Session.

A Souvenir carrying the theme papers, articles of the Speakers and Speakers profile was released on the occasion by the dignatories present at the Inaugural Session.

Session I of the 18th National Conference on Coal chaired by **Shri S K Srivastava**, Former Secretary, Ministry of Coal and co-chaired by Shri PM Prasad, **Former CMD, CIL** focused on "Strategic Policy Initiatives Required to Facilitate Transformation of Coal Sect. The distinguished speakers who shared their views at the Session were**: Dr B Veera Reddy**, Advisor, CIL**; Shri C P Garg**, Executive Director (S&R), Coal India Ltd; and **Shri Alok Jain**, Chief Commercial Officer, MTCSL **.** The Session Coordinator was. **Shri Tarun Mishra,** CEO, EvotAi Technologies.

Session II on "Reducing Carbon Footprint in Coal Utilization: Conventional Methods" was chaired by **Shri Shivam Srivastava,** Director, NTPC and co-chaired by **Shri M N Jha**, Former CMD, SECL/CMPDI. The distinguished speakers who shared their views in the Session were: **Shri Siddhartha Saxena**, Director (Infra), Grant Thornton Bharat LLP; **Prof Dr Arvind Kumar Mishra**, Director, CIMFR; **Professor Debashish Chakravarty**, IIT Kharagpur; and Shri Naveen Kumar Ahlawat**, President, Sustainability and Decarbonisation, Jindal Steel**. The Session Coordinator was **Shri Umashankar**, Coal Mining Specialist.

Session III focused on "Reducing Carbon Footprint in Coal Utilization: Advance Alternate Methods," led by **Shri R P Ritolia,** Former CMD, CCL and **Shri A K Balyan**, Former MD & CEO, Petronet LNG. The distinguished speakers who shared their views were: **Dr Sanjay Kumar**, Former Director (P), WCL; **Shri Sujay Karmakar,** CGM, NETRA (NTPC Energy Technology Research Alliance); **Dr. Peeyush Kumar**, MD, Bharat Coal Gasification and Chemicals Ltd and Prof. Khanindra Pathak**, Adviser, Geospatial Academy, IIT Kharagpur**. The Session Coordinator was **Shri P S Upadhyaya,** Former Director, NMDC.

Valedictory Session: While **Shri R V Shahi**, President, IEF summed up 18th National Conference on Coal, **Shri Alok Perti,** Former Secretary, Ministry of Coal, shared the recommendations that emerged during the full day conference. Shri SM Mahajan, SG, IEF gave a Vote of Thanks.

The Conference concluded with actionable recommendations for the Ministries of Coal and Power regarding sustainable coal utilization.

The Conference was attended by Policy makers, sectoral leaders, Coal and Energy professionals and Members of the IEF, ISMAA and MGMI. There were more than 150 delegates.

Full Proceedings, Presentations and Glimpses of the 18th National Conference on Coal can be downloaded from the following link:

https://drive.google.com/drive/folders/1Etdgzz7aWkv8Lqrwg1SNRTJbMnlDF9QX?usp=sharing

UPCOMING EVENT

National Conference on Power Transmission

29th May 2026, Hotel Le Meridien, New Delhi

Theme: Powering Viksit Bharat 2047: The Transmission Imperative

India has articulated the vision of becoming a Viksit Bharat by 2047, which will require sustained economic growth supported by a robust and reliable energy system. The energy sector will play a critical role in enabling this transformation, with electricity expected to account for a significantly larger share of the country's energy mix, rising from about 22% of final energy consumption at present to around 40% by 2047 and nearly 60% by 2070.

India has also set a target of achieving over 500 GW of non-fossil fuel capacity by 2030, reflecting the rapid scale-up of renewable energy required to meet the country's growing electricity demand. Shares of non-fossil generation are expected to increase from 23% in 2025 to 80-85% in 2070.

India already operates one of the largest synchronous grids in the world, with over 5 lakh circuit kilometres of transmission lines and more than 1,400 GVA of transformation capacity. As per the National Electricity Plan, about 1.91 lakh circuit kilometres of transmission lines and 1,270 GVA of transformation capacity, along with 33 GW of HVDC links, are planned to be added during 2022–2032, increasing inter-regional transfer capacity from 119 GW to about 168 GW.

The transmission expansion plan provides visibility of investment opportunities exceeding ₹9.15 lakh crore by 2032, while also bringing into focus several challenges relating to system planning under increasing renewable penetration, timely project execution, supply chain readiness, technology adoption and mobilisation of long-term financing.

In this context, the India Energy Forum is organising the National Conference on Power Transmission on 29 May 2026 in New Delhi on the theme "Powering Viksit Bharat 2047: The Transmission Imperative." The conference will bring together policymakers, regulators, utilities, developers, financial institutions and technology providers to deliberate on key issues relating to the planning, development and financing of India's transmission system.

The summit will deliberate on the following issues in three technical sessions:

- Planning the Transmission System for Viksit Bharat 2047
- Delivering the Grid at Scale – Execution, Supply Chain and Technology
- Financing the Transmission Imperative

For Further enquiries and participation, please contact:

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