



Volume 20, Issue 4

July 2026

India Curtailed 8,133 GWh of Solar Power Amid Record Summer Electricity Demand



Relevance of Hydrogen in Managing Energy Transition



As per Press Information Bureau (PIB) Ministry of Railways, July 17, 2026

“Indian Railways is entering a new era of clean and sustainable transportation.

Hydrogen fuel cell technology has emerged globally as a promising alternative to

fossil fuel-based traction systems. India's first indigenous hydrogen-powered train marks an important step in adopting this next-generation technology. It is a locomotive that generates its own electricity on board using hydrogen. With the inauguration on 17 July 2026, the hydrogen fuel cell-powered train is set to begin operations. It will run on the Jind - Sonipat section of the Northern Railway. The project combines advanced propulsion technology with dedicated hydrogen storage, refuelling and operational infrastructure. It will demonstrate the feasibility of clean rail transportation in India. Developed as a pilot initiative, the project reflects Indian Railways' commitment to innovation. It also advances energy efficiency and environmentally responsible transportation.

With this, India joins a select group of countries exploring hydrogen-powered rail transportation. These include Germany, Japan, China and the United States. As the technology remains at a nascent stage, the project will provide valuable operational experience.”

Key Features of the Hydrogen Powered Train on the Jind - Sonipat Section

- 10-car hydrogen fuel cell-based train set. Powered by a 1200 kW hydrogen fuel cell propulsion system.

- Approved to operate at a maximum speed of 75 kmph with a design speed of 110 kmph.
- Capacity of Around 2,600 Passengers. Developed from the design stage through prototype manufacturing. It will connect Jind Junction, Gohana Junction and Sonipat while serving intermediate stations.
- Hydrogen fuel cell technology produces electricity through a chemical reaction using hydrogen. The primary energy source is a Proton Exchange Membrane Fuel Cell (PEMFC). This is a fuel cell that generates electricity by reacting hydrogen and oxygen across a proton-conducting Perfluorosulfonic Acid (PFSA) polymer membrane. The process produces only water vapour and heat as by products. Hydrogen is a high-energy fuel, 120 MJ/Kg (megajoules per kilogram) in comparison to diesel, which is 43 MJ/Kg. It is low maintenance with a manageable carbon footprint. This makes hydrogen the cleanest propulsion technology currently available for rail transport. To support this, Indian Railways has established dedicated infrastructure
- Hydrogen Infrastructure consists of country's largest railway hydrogen storage and refuelling facility has been established at Jind, Haryana. The indigenous facility stores nearly 3,000 kg of hydrogen at a time. It will support hydrogen-powered train operations.

It is relevant to mention that the vast railway network of India, which is about 65,000 kilometers, most of which, to the extent over 75%, was being run through the diesel locomotives. I was happy to be associated with an initiative of the Government of India, Indian Railways, through their Railways Energy Management Company, in which I chaired an Advisory Board, to work on energy efficiency measures. This Group worked out details of how much railway network had already been electrified and how much was still being run on diesel locomotives, the cost comparison, the constraints

and the possibilities etc. This was somewhere around 2015-16. It was found that the main reason that electric traction did not find favour with the railways was an excessive electricity tariff which different state governments run Distribution Companies were imposing on the railway electrification system for supply of power. What was done was to approach the Regulatory Commission to provide them an electricity distribution deemed license so that railways could themselves procure electricity whereby electricity tariff, after paying for transmission charges, would work out much more economical to run their electric locomotive. That changed the balance between using the diesel locomotives versus using electric locomotives. Another major reason was also import dependence of Diesel with excessive price volatility. The Railway Energy Management Company Advisory Board, recommended to the Railway Board for fast-track implementation of railway electric traction, which would mean almost more than 50,000 kilometers to be put on electric traction and replace the diesel-driven transportation. It took a few months to convince various stakeholders, and finally it is gratifying that the Railway Board decided to go in for electric traction. It would be relevant to mention that around that very time, the Railway Board and the Government of India had decided to set up a diesel-electric locomotive factory in Bihar, which would produce diesel locomotives meant for railways. This decision was reversed even though initial work had already started at the place. Coming to the main subject of Hydrogen, and its relevance for the railway traction, 90% of which has already been electrified, it is evident that Hydrogen may not now prove economical. Electricity generation transition to solar and other Renewables makes the option of electricity driven railways system further stronger.

That leaves us to depend on hydrogen as a fuel for running the vast system of road transportation and other usages. It will be relevant to mention that over the last 50 years, railway lost the traffic -major goods traffic- to road transportation. 50 years back, railway accounted for 70% of goods traffic, and it was only 25% to 30% that went for the

diesel-driven road transportation system. Now the mix of transportation of goods between railways and roads has just reversed. During the period of over 50 years road took away traffic to occupy the position of almost 70% of goods traffic, leaving hardly 25 to 30% to railways. This happened because railways could not keep pace with development of its infrastructure. In the power sector, for example, Coal transportation enhanced manifold and the railway network remained almost without expansion. Similarly, in cases of other goods, the network did not keep pace with the requirement. As a result, an easy option was found out. It is to be recognised that India depends, to the extent of more than 88% of diesel and petrol, on import, whose prices keep increasing, and the amount of money that goes in the foreign exchange is enormous. Hence it is imperative for India to work out substitutes so that this import dependence on the transportation system is substantially reduced. It is not only for the purpose of economics as such, which on itself is very important, but it is equally important that we use our local fuels. And, in this case now, Solar Power has emerged as a very strong option which can be used for this purpose. Since the use of hydrogen for railway network may not be viable now in the face of the developments that have happened, the road transportation system, in a significant way, can deploy hydrogen as the fuel rather than depending on the diesel and petrol. Another important development that has taken place in Indian road transportation system is that India is going in a big way on the electric vehicles. Cars, two-wheelers and three-wheelers are changing to electric system in a significant way. The large transportation network like tractors, trailers, trucks and buses, are largely dependent on diesel. It is here where the scope is tremendous for hydrogen-driven transportation system. India could target that in the next five years, something like 50% of what is happening on diesel and petrol could happen on either EV or on hydrogen. And this target could further be enhanced in the next 10 years so that almost the entire transportation system is either on electric vehicle or on hydrogen.

Economics of hydrogen has to be seen in the face of different options on energy management. A few years back, hydrogen was found to be a viable option for energy storage. Battery energy storage system has emerged as a more viable option now. Therefore, hydrogen could ultimately, if its economics further improves, also be a viable option for storage for solar power during daytime to be stored, to be deployed, and to produce power during evenings and nights and so on.

There could be many other options for producing hydrogen itself. But in India, perhaps, the enormous amount of water that we have with such a large coastal system, and also the way India is expanding its solar power generation system, this combination of availability of large amount of water and availability of solar power at comparatively much cheaper cost could provide the most important option that can emerge through electrolysis. The hydrogen produced through water and solar power can change the complete economics of hydrogen production itself. At this stage, within India, several projects have been taken up. Many of these projects will emerge successful. There will be possibilities of comparing one with the other, and it could be convenient to find out some of the best options to produce hydrogen at optimal cost. Once that happens, then extensive use of hydrogen will be deployed in the various systems as we have discussed. In changed scenario hydrogen for power generation also could be a viable option in many of the factories and large establishments. It is an opportunity which is expanding itself, and economics is getting justified. Because almost everything that India has to do to expand its energy consumption base has huge volume. And, technology once proven becomes economically viable if sufficient demand is there. Many of the technologically developed endeavours do not go beyond because the volumes of demand do not justify. And at lower volume of demand, they remain undeployed because economics does not justify. In every case of energy transition management, India has huge opportunity of giving a fair trial to everything that is innovated and that is thought by providing initially a large volume. And

that large volume is not only for the purpose of justifying that technology or validating that technology, but also that it is really needed.

The Government of India launched the National Green Hydrogen Mission (NGHM) in 2023. It aims to establish a Green Hydrogen ecosystem and catalyse a systemic response to the opportunities and challenges in this sector. The Mission represents more than an energy initiative; it is a strategic pathway toward industrial competitiveness, import reduction, and long-term energy security—linking sustainability with self-reliance. The National Green Hydrogen Mission is enabling and facilitating projects in industry, mobility and infrastructure. There are several projects which have been identified in the fertilizer industry for long term supply of green ammonia to fertilizer plants. In petroleum refining, replacement of fossil fuel based Hydrogen by green hydrogen is the agenda. In the steel industry several pilot projects have been taken up for the use of green hydrogen for iron reduction. In the shipping industry the hydrogen pilot Projects have been taken up at a few ports.

The use of hydrogen for producing power to back up Solar Power as storage does not appear to be a feasible option in view of the battery which has already been accepted and being extensively deployed. Hydrogen driven Railway System may also be deployed in select isolated locations where regular supply of power may not be feasible. As has been explained, Railway has rightly adopted electric traction by way of replacing the diesel driven locomotives.

Dear Reader,



India's current power generation capacity has reached about 550 GW with 52% of it – around 290 GW - being contributed by non-fossil sources. However, the peak demand has been about 270 GW. This gap needs to be narrowed down as more and more new capacity

addition takes place. Unlike nuclear power, the other RE sources need massive storage capacity to balance the supply to the grid and continuity. We do see renewed activity in setting up BESS & PSPs that will enhance the storage capacity. Readiness of Transmission Grid has also not matched with the generation capacity. The National Electricity Plan envisages development of transmission systems with investment of Rs 9,11,142 crs. during 2022-32 period indicating focus on Power Transmission.

In this background the recent curtailment of Solar Power Supply is worrisome. It is reported that India curtailed 8133 GWh of Solar Power amid record summer electricity demand. The demand increase should be in pace with the capacity additions. Various issues involved, technological developments and efforts being made in the above areas were discussed in the "Power Transmission" Conference and the Energy Debate on Curtailment of Solar Power" organized by IEF recently. Deliberations and recommendations are highlighted in the Summary Report given in Total Energy.

If per capita electricity consumption has to increase substantially from current about 1500 KWhr to about 4000 KWhr, massive electrification / use of electricity in Transportation, Industry and Domestic appliances has to be done. The recent crude oil crisis will also necessitate this. With enactment of the SHANTI ACT and EOI on BSRs, the interest of private sector in Nuclear Power Generation is encouraging. Besides 30 GW of Nuclear Power by NTPC, 10 GW by Adani Power and equal capacity by TATA Power; Jindal Group has also declared their plan to foray into this field. Industry is awaiting the Rules and Regulation of the Act from DAE. NTPC and NPCIL Joint Venture has already announced 4x700 MW PHWR at Mahi Banswara and Adani Power plans to develop nuclear power plants in MP. BARC design of SMR will further open the gates for meeting localized power needs and BSRs for captive power requirement.

All these developments auger well for Viksit Bharat Vision. IEF shall continue to provide an effective platform to propagate developments in the Energy Field thru Conferences, Energy Debates and Webinars on all aspects of Energy.

All these developments auger well for Viksit Bharat Vision.

S M Mahajan

India needs 86 GW additional thermal power by FY'36, 64 GW under works: Shripad Naik



India needs to add 86,440 MW of thermal power generation capacity by 2035-36 and out of this, a total of 63,545 MW are at various stages of implementation, Parliament was informed recently.

As per the National Generation Adequacy Plan (2026-27 to 2035-36) prepared by CEA (Central Electricity Authority) in March 2026, the required thermal capacity based on coal and lignite is estimated at around 3,15,000 MW to meet the projected electricity demand by 2035-36, the Minister of State for Power Shripad Naik said in a written reply to Rajya Sabha recently.

According to the reply, against this (3,15,000MW), the installed coal and lignite-based capacity as on March 31, 2026, stood at 2,28,560 MW, he informed the House.

The minimum additional thermal capacity required to meet the projected demand is estimated at approximately 86,440 MW, he also informed the House.

During FY 2026-27 (till June, 2026), thermal capacities of 2,260 MW have already been commissioned, he also told the House.

In addition, there is 47,545 MW of capacity currently under construction. Furthermore, 16,000 MW of capacity has been awarded and is due for construction, he stated.

The minister further said, with adequate power availability in the country, the requirement for electricity has been met in both energy and peak demand, with only a marginal gap.

The details of actual power supply position in terms of energy and peak demand for the current FY 2026-27 (up to June, 2026) show that during fiscal year 2026-27 (up to June, 2026), India got supply of 2,70,820 MW electricity against the 2,70,832 MW highest peak demand.

In another written reply to the House, the minister stated that development of transmission infrastructure is being undertaken in a phased manner, commensurate with the growing electricity demand and planned generation capacity addition, including renewable energy.

The National Electricity Plan envisages development of the transmission system with an estimated investment of about Rs 9,16,142 crore during the plan period (2022-32).

Grid modernization measures, including deployment of Static Synchronous Compensator (STATCOMs), Battery Energy Storage Systems (BESS), Synchronous Condensers and other advanced grid support technologies are also being planned to enhance grid reliability, flexibility and facilitate integration of renewable energy.

Further, as on May 30, 2026, addition of 2,17,199 circuit kilometre (ckm) of Transmission lines, 9,38,495 MVA of Transformation capacity and 84,390 MW of Inter-Regional capacity has been done since 2014.

Thus, total inter-regional transmission capacity has become 1,20,340 MW, enabling reliable transfer of power across regions.

He stated that there is adequate availability of power in the country. Present installed generation capacity of the country is 548.86 GW (as on June, 2026).

The country has addressed the critical issue of power deficiency by adding 324.7 GW of generation capacity since April, 2014, transforming the country from power deficit to power sufficient.

As on June 30, 2026, the country's total installed generation capacity reached 5,48,858 MW, comprising of 2,51,489 MW (45.82 per cent of total installed capacity) of fossil-fuel sources i.e. Coal & Lignite, Gas, Diesel and 2,97,369 MW (54.18 per cent of total installed capacity) of non-fossil fuel sources i.e. Solar, Wind, Hydro, Nuclear and Biomass.

The government has set an ambitious target of 100 GW nuclear power capacity by 2047.

India's Total Primary Energy Supply Reaches 39,055 Petajoules in FY25: Govt

India's total primary energy supply (TPES) reached an estimated 39,055 Petajoules during 2024–25, compared with 37,936 Petajoules in 2023–24, according to information shared by the government in the Lok Sabha recently.

In a written reply, Minister of State (Independent Charge) for Statistics and Programme Implementation Rao Inderjit Singh said the country's total renewable energy potential was estimated at 4,704,043 MW as of March 2025, more than double the 2,109,655 MW estimated as of March 31, 2024.

The minister explained that one Petajoule (PJ) equals 10^{15} joules, or approximately 278 gigawatt-hours (GWh) of energy, making it a standard unit for measuring large-scale national energy supply.

Highlighting improvements in official statistical systems, Singh said the Ministry of Statistics and Programme Implementation (MoSPI) has strengthened data collection through digital platforms, including Computer Assisted Personal Interview (CAPI) and the e-SIGMA system. These platforms incorporate real-time validation checks, AI-enabled chatbots, multilingual interfaces and continuous data monitoring, improving the accuracy and reliability of official statistics.

The minister said the use of digital technologies has significantly reduced the time taken to release survey results. Data that previously took 8–9 months to publish is now released much faster. Annual survey results are published within 90–120 days, quarterly surveys within 45–60 days, and monthly surveys within 15–30 days after completion.

To promote transparency and evidence-based policymaking, MoSPI has also revamped its Microdata Portal, making anonymised unit-level survey data available to researchers, policymakers and other stakeholders for analysis and research.

Singh further informed Parliament that the government has completed comprehensive base

year revisions for key macroeconomic indicators to better reflect India's evolving economic structure and align with international statistical standards. The base year for Gross Domestic Product (GDP) has been revised from 2011–12 to 2022–23, the Index of Industrial Production (IIP) base year has also been updated to 2022–23, while the Consumer Price Index (CPI) base has been changed from 2012=100 to 2024=100.

The latest government data highlights India's growing energy demand alongside a rapid expansion in renewable energy potential. Coupled with modernisation of statistical systems and updates to key economic indicators, these measures are expected to improve policy planning, strengthen transparency and support India's long-term economic and energy transition goals.

India's power consumption grows 11.62% to 166.46 bn units in June

India's power consumption grew by 11.62 per cent to 166.46 billion units (BU) in June compared to the same month last year due to heat wave conditions and late onset of monsoon across the country, which pushed usage of cooling appliances like air conditioners, according to official data.

The country's total power consumption was 149.13 BU in June 2025.

The peak power demand also jumped to 264.76 GW last month from 242.77GW in June 2025.

The southwest monsoon had set over Kerala on June 4, 2026. Generally, the monsoon arrives in Kerala around June 1, which marks the beginning of the southwest monsoon season (June-September).

Thereafter, the slow progress of the monsoon in June led to heat wave conditions, which increased the use of cooling appliances like air conditioners and desert coolers, thereby increasing power demand and consumption, the experts said.

They are of the view that power demand will be steady in July, as the Indian Meteorological Department (IMD) forecasts a slight rainfall deficit.

The peak power demand had jumped to an all-time record high of 270.82 GW in May, 2025, compared to 230.99 GW recorded in the same month in 2025.

The peak power demand remained at record levels for four days in a row in May this year -- hitting a high of 257.37 GW on May 18, 260.45 GW on May 19, 265.44 GW on May 20 and 270.82 GW on May 21.

The peak power demand was at a record high of 256.11 GW on April 25. Earlier, the peak power demand had touched an all-time high of about 250 GW in May 2024.

According to the power ministry, peak power demand was projected to hit 270 GW in the summer of 2026.

Last summer, the peak power demand was 242.77 GW, recorded in June 2025, but stayed below the government's estimate of 277 GW. Experts said that power demand and consumption will be steady, as the India Meteorological Department (IMD) has projected a harsh summer this year.

India's power demand growth to drive INR 50 trillion investment by FY32

India's power sector is entering a structural investment cycle that could require nearly INR 50 trillion by FY32 as electricity demand accelerates and peak power requirement rises from 271 GW to 388 GW, according to a research report by Equirus Securities

The report, titled "India Power – A Different Current," says electricity demand expanded at about 7.3% annually during FY21-FY25, the fastest among major economies, compared with around 4.5% during FY10-FY20. The report notes that demand growth has outpaced China's 6.3%, the United States (2.1%) and the global average (2.8%). Peak power demand touched a record 271 GW on May 21, 2026, and is projected to reach 388 GW by FY32, while energy demand is expected to increase from 1,707 billion units (BU) in FY26 to 2,474 BU by FY32.

Renewables to lead new investments

According to the report, meeting India's future power needs will require around INR 12-13 trillion

investment in solar, INR 3.5-4 trillion in wind, INR 4.1-6.6 trillion in thermal, and INR 2-2.2 trillion in hydro projects during FY27-FY31. The domestic battery energy storage system (BESS) market is projected to reach \$10-11 billion by FY30, while pumped storage projects represent an additional INR 1.3 trillion investment opportunity.

India's per capita electricity consumption currently stands at around 1,460 kWh, less than half the global average of approximately 3,500 kWh. The Draft National Electricity Plan (NEP) 2026 targets 2,000 kWh per capita consumption by 2030 and more than 4,000 kWh by 2047.

Demand drivers

Industrial and commercial consumers accounted for around 49% of electricity consumption in FY25, growing at 7.3% CAGR over FY21-FY25. Production Linked Incentive (PLI) schemes across 14 sectors are expected to create significant incremental industrial power demand.

With air-conditioner penetration still at just 8-10 per cent, cooling demand already contributes nearly 60 GW to India's peak load.

The report also highlights the emergence of data centres as a major demand driver. IT load has increased from around 520 MW in 2020 to 1.4-1.5 GW during 2025-26 and is projected to reach 8-9 GW by 2030, while electric vehicle charging demand could reach around 100 BU by the end of the decade. Railway electrification is expected to add another 50-60 BU, while agricultural demand continues to remain highly weather dependent.

Investment cycle more resilient

While renewable capacity additions remain strong, thermal generation will continue to play a critical role in maintaining grid stability and meeting India's rapidly growing electricity demand, the report said. Although non-fossil fuel sources account for more than 52% of the installed power capacity, thermal power continues to contribute 70-75% of actual electricity generation.

The government has increased its thermal capacity target from around 80 GW by 2032 to nearly 97 GW by 2034-35. Around 18 GW has already been

commissioned since 2023, while another 40 GW is under construction.

The report also notes that India's power system is increasingly exhibiting the "duck curve" phenomenon as rapid daytime solar generation is followed by steep evening ramp-up requirements. During solar hours, prices on the Indian Energy Exchange's Day Ahead Market (IEX DAM) have declined to around INR 1.9-2.5 per kWh, while evening prices frequently approach the Central Electricity Regulatory Commission's cap of Rs 10 per kWh.

This widening price differential is expected to accelerate investments in energy storage such as pumped storage and battery energy storage systems.

Power sector to be India's biggest AI opportunity: Report

India's biggest opportunity from the global artificial intelligence (AI) investment boom may lie not in building frontier AI models but in meeting the massive power and infrastructure needs of data centres, according to a thematic report by Shriram Mutual Fund, which argues that the AI spending cycle is "first and foremost a power demand story" for India.

In its report titled "The AI Bubble Debate: A Unit-Economics Lens," the fund house said India has limited direct exposure to the global race among AI model developers and hyperscalers, but stands to benefit through companies linked to electricity generation, transmission and power infrastructure.

"For India, the AI capex cycle is first and foremost a power-demand story," the report said, adding that "the binding constraint on the entire build-out is not GPU but electricity. Whatever the resolution of the unit-economics debate, whichever lab wins, however fast tokens deflate, electricity will get consumed."

The report said this forms the basis of Shriram Mutual Fund's continued overweight position on the power sector, with exposure across generation, transmission, transmission EPC, power financiers, diesel genset manufacturers, and the wires and cables ecosystem.

According to the report, India has "no listed frontier lab and no hyperscaler," meaning its direct exposure to the AI race is limited largely to the impact on Indian IT services demand. Instead, it said investors should focus on the physical infrastructure required to support the AI build-out globally.

The report added that even within capital goods, it prefers companies linked to AI infrastructure rather than the broader sector.

It said the fund is selectively positive on "the data-centre power and electrical-infrastructure chain (switchgear, transformers, grid, cooling and cabling)," describing them as "the 'picks and shovels' of the physical build-out" that benefit from gigawatt-scale AI infrastructure irrespective of which AI company eventually dominates.

While the report is framed around the debate over whether AI spending represents a bubble, it argues that the central issue is not whether companies are spending too much, but whether those investments generate adequate returns before the underlying infrastructure becomes obsolete.

"The entire 'bubble or not' debate collapses into one question of unit economics. Does the revenue thrown off by the compute earn an adequate return on the capital sunk into building it, before that capital depreciates? Everything else is just headline numbers," the report said.

The report also said the current AI investment cycle differs from the dot-com and telecom booms because the spending is largely being funded by some of the world's most profitable technology companies.

"On the evidence recently, it is not a solvency bubble since the spend is overwhelmingly self-funded by the most cash-generative companies on earth... It is instead a return-on-capital question, and that question is still genuinely open," the report said.

The report concluded that regardless of whether AI demand ultimately exceeds expectations or disappoints, India can still benefit by supplying the physical infrastructure required for the global expansion of AI.

Centre may seek Cabinet nod for first National Electricity Policy overhaul in 20 years

The Centre is likely to seek Cabinet approval next month for the first comprehensive overhaul of the National Electricity Policy (NEP) since 2005, setting the stage for sweeping reforms in India's power sector, including shared electricity distribution networks and the unbundling of state transmission utilities, according to a report by The Economic Times

The report said the Power Ministry could place the proposal before the Union Cabinet in August. The revised policy aims to modernise the electricity sector, improve efficiency and create a more competitive distribution ecosystem as India's energy demand continues to grow.

The ministry had circulated a draft of the revised policy in January, outlining an ambitious target of raising per capita electricity consumption to 2,000 kWh by 2030 and more than 4,000 kWh by 2047.

Among the key proposals is a mechanism to link electricity tariffs to a suitable inflation index. Under the draft, tariffs could be revised automatically every year if state electricity regulators fail to issue fresh tariff orders. The policy also recommends gradually recovering fixed costs through demand charges while reducing cross-subsidies across consumer categories.

According to the report, the draft proposes exempting the manufacturing sector, Indian Railways and metro rail systems from cross-subsidy surcharges to improve industrial competitiveness and lower logistics costs.

The revised policy also seeks to encourage greater competition in power distribution. It proposes allowing state electricity regulators, in consultation with state governments, to exempt distribution companies from the universal service obligation for consumers with a contracted load of 1 MW or more.

The proposal for shared distribution networks, which effectively enables multiple distribution licensees to operate in the same area, had earlier faced

resistance from several states. The draft also recommends setting up independent distribution system operators to manage networks where multiple distributors operate.

To address delays in power infrastructure, the draft suggests creating a risk-sharing and compensation framework to deal with mismatches between the commissioning of generation and transmission projects.

The Economic Times reported that India's power sector is expected to require investments of around Rs 50 lakh crore by 2032 and nearly Rs 200 lakh crore by 2047 across generation, transmission and distribution. To mobilise this capital, the draft policy proposes setting up dedicated financing platforms and energy-focused funds under institutions such as the National Bank for Financing Infrastructure and Development (NaBFID) and the National Investment and Infrastructure Fund (NIIF).

Ministry of Power Releases Draft CAFE-III Fuel Economy Norms for Public Consultation

The Ministry of Power has invited public comments and stakeholder feedback on the Draft Corporate Average Fuel Economy (CAFE-III) Norms, marking the next phase of India's efforts to improve fuel efficiency and energy conservation in the automobile sector. The proposed regulations are intended to apply to M1 category passenger vehicles manufactured or imported for sale in India during the period 2027-28 to 2031-32.

The CAFE-III norms are designed to enhance the fuel efficiency of passenger vehicles and support India's broader objectives of reducing fuel consumption, lowering carbon emissions and improving energy security. The proposed standards will cover vehicles falling under the M1 category, which includes passenger cars used for personal transportation.

The Ministry has urged automobile manufacturers, industry associations, experts and the general public to review the draft and provide suggestions before the consultation period closes. Stakeholders can submit their comments to the Under Secretary

(Energy Conservation), Ministry of Power, or send feedback via email.

According to the Ministry, the last date for submitting suggestions and feedback is August 6, 2026. The consultation process is intended to ensure that the final framework reflects industry requirements while supporting India's transition towards cleaner, more fuel-efficient mobility.

The Draft CAFE-III Norms will also be uploaded on the official websites of the Ministry of Power and the Bureau of Energy Efficiency (BEE), allowing wider public access and participation in the policy-making process.

The proposed regulations form part of the government's ongoing strategy to strengthen energy efficiency standards, encourage technological innovation in the automotive sector and contribute to India's longterm climate and sustainability goals.

The release of the Draft CAFE-III Norms represents an important step towards improving fuel economy standards in India's passenger vehicle sector while providing stakeholders an opportunity to shape future energy efficiency regulations before they are finalised.

POWERGRID's Khavda 7 GW Transmission Project Goes Operational

POWERGRID has announced the successful commissioning of the "Transmission System for Evacuation of Power from Potential RE Zone in Khavda Area of Gujarat under Phase IV (7 GW) – Part E4."

The project became operational with effect from June 21, 2026. The company received the Date of Commercial Operation (DOCO) on July 14, 2026, confirming the project's commissioning.

The transmission system has been developed to facilitate the evacuation of renewable energy generated in the Khavda Renewable Energy Zone in Gujarat, supporting the integration of clean power into India's national grid.

POWERGRID disclosed the development to the stock exchanges under Regulation 30 of the SEBI (LODR) Regulations, 2015.

MoSPI Releases Expert Committee Report to Strengthen India's Energy Statistics Framework

The Ministry of Statistics and Programme Implementation (MoSPI) recently released the Expert Committee on Energy Statistics Report, outlining a roadmap to develop a robust, harmonised and internationally comparable energy statistics framework for India. The recommendations are aimed at improving the quality, consistency and reliability of energy data to support informed policymaking.

The Expert Committee, chaired by Dr. Rangan Banerjee, Director of IIT Delhi, included senior representatives from key energy ministries along with experts from The Energy and Resources Institute (TERI) and the Alliance for an Energy Efficient Economy (AEEE). The committee was constituted to strengthen India's energy statistics system in line with evolving national and global requirements.

Among its major recommendations, the committee proposed adopting international statistical standards, including ISIC Rev. 5, NIC-2025 and the Standard International Energy Product Classification (SIEC). It also recommended the use of uniform energy conversion factors across ministries to ensure consistency in energy data compilation and reporting.

The report introduces methodologies to improve the estimation of sector-wise coal consumption, particularly for imported coal and auctioned domestic coal, by leveraging data from the Annual Survey of Industries (ASI). It also recommends that the Bureau of Energy Efficiency (BEE) maintain a comprehensive database under the Perform, Achieve and Trade (PAT) scheme to improve industrial energy consumption analysis.

Recognising critical data gaps, the committee has proposed new methodologies to estimate biofuel consumption, electricity usage by electric vehicles

(EVs) and captive or off-grid electricity generation. These areas have remained largely underreported despite their growing contribution to India's evolving energy mix. The recommendations are expected to improve the accuracy of India's Energy Balance Table and support future refinements.

MoSPI said the report will enhance evidence-based policymaking, improve inter-agency coordination and help monitor India's progress towards its renewable energy targets and Net Zero ambitions. The ministry also emphasised that successful implementation will require sustained collaboration among all energy ministries, research institutions and stakeholders.

Conclusion

The Expert Committee on Energy Statistics Report provides a comprehensive roadmap for modernising India's energy data ecosystem, enabling policymakers with more accurate and globally aligned statistics to support the country's clean energy transition and long-term energy security.

Nepal to Export Up to 1,650 MW of Electricity to India Under New Cross-Border Power Agreement

India and Nepal have agreed to significantly enhance cross-border electricity trade, allowing Nepal to export up to 1,650 MW of electricity to India and import up to 1,400 MW through two high-capacity 400 kV transmission lines. The decision was taken during the 13th Nepal–India Joint Steering Committee (JSC) meeting held in Pokhara, Nepal, reflecting the growing strategic partnership in the energy sector.

The revised power trading arrangement will utilise the Dhalkebar–Muzaffarpur and Dhalkebar – Sitamarhi 400 kV cross-border transmission lines. While the Dhalkebar–Muzaffarpur line has been operational since 2016, the Dhalkebar–Sitamarhi transmission line is nearing completion, enabling a substantial increase in electricity transfer capacity between the two countries.

The meeting, co-chaired by Sarita Dawadi, Secretary at Nepal's Ministry of Energy, Water Resources and Irrigation, and Pankaj Kumar, Secretary at India's Ministry of Power, reviewed progress on bilateral energy cooperation. The two sides agreed to expand power trade from the earlier limit of 1,100 MW of exports and 1,000 MW of imports through the existing transmission infrastructure.

India and Nepal also approved the Detailed Project Report (DPR) for the Chameliya–Jauljibi 220 kV double-circuit transmission line, targeting completion by December 2028. In addition, both countries agreed to accelerate the formation of a joint venture between the Nepal Electricity Authority (NEA) and Power Grid Corporation of India Limited (PGCIL) to develop the Inaruwa–New Purnea and Dododhara (New Lamki)–Bareilly 400 kV transmission line projects.

The meeting further approved the DPR for the Motihari–Nijgadh 400 kV transmission line, which is expected to facilitate additional electricity exports from Nepal to India by 2034-35. It also endorsed the upgradation of the Muzaffarpur–Dhalkebar transmission line using High Temperature Low Sag (HTLS) conductors to increase transmission capacity. Technical studies will continue for the proposed Lucknow–Kohalpur (Lamahi)

400 kV transmission line.

Officials also reviewed progress on the New Butwal–Gorakhpur 400 kV transmission line, which will initially operate at 220 kV until the New Butwal substation is completed in December 2027. Under the interim arrangement, the line will enable Nepal to export up to 200 MW and import up to 130 MW of electricity. The Nepal section of the project is being developed with support from the Millennium Challenge Corporation (MCC).

The new agreement marks a significant step in India–Nepal energy cooperation, strengthening cross-border electricity trade, supporting renewable energy integration and improving regional energy security through expanded transmission infrastructure.

India's LPG production increased by 28 % following several govt measures: Petroleum Ministry

Joint Secretary for the Ministry of Petroleum and Natural Gas Sujata Sharma has said that India is the fourth largest refiner in the world, which gives the country comfort in terms of availability of products like petrol and diesel. Addressing the Inter-Ministerial briefing on recent developments in West Asia in New Delhi today, she said that as of now, India's LPG production has increased by 28 per cent following several government measures aimed at boosting domestic supply for household consumers.

She said that the country imports almost 60 per cent of LPG, and most of it comes from the Strait of Hormuz. She said that the government is making every effort to ensure that the supply to domestic consumers is ensured. She underlined that almost one lakh retail outlets are currently operating in the country, and the majority of these are with public sector oil marketing companies. Ms Sharma said that almost 50 lakh cylinders are delivered on a daily basis, and no dry-out has been reported on any of these retail outlets.

Talking about the steps the government is taking to ensure LPG supply to households, Ms Sharma said, the government is taking action on all fronts and as far as the supply is concerned, the government is putting in efforts and is trying to increase the domestic production of LPG. She said that alternate fuel options are also being activated to ease pressure on LPG and gas channels. She said, on a quarterly basis, the government does an allocation of kerosene to the states, and every quarter, it is making an allocation of almost 1 lakh kiloliter. She said, as of today, the order has been released, and another 48 thousand kilolitres of kerosene will be released to the state governments.

External Affairs Ministry Spokesperson Randhir Jaiswal said, Missions in the Gulf Cooperation Council are in constant touch with Indian nationals and are helping with commercial flight options. He said India has 9,000 nationals in Iran, and the Indian Embassy in Tehran is helping those who wish to leave Iran with alternative options.

Special Secretary in the Ministry of Ports, Shipping and Waterways, Rajesh Kumar Sinha, said that there have been maritime incidents involving Indian crew on foreign-flagged vessels. He informed that there were 78 Indian seafarers on board these vessels, of whom 70 are unhurt and have escaped. He said that, unfortunately, three casualties have been reported, and one seafarer is missing.

Mr Sinha further said that the government is closely monitoring the prevailing maritime situation in the Persian Gulf region and has strengthened monitoring and preparedness measures in view of the situation there. The government is fully committed to ensuring the safety and welfare of Indian seafarers and protecting India's maritime interests.

Joint Secretary for the Ministry of Information and Broadcasting Senthil Rajan has said that States and Union Territories have been advised to take strict measures against hoarding of essential commodities and ensure uninterrupted availability of essential supplies. He appealed to social media users not to spread misinformation and rumours and to post only credible and verified content. Mr Rajan appealed to all citizens that there should not be any panic booking of cylinders, and all steps are being taken to ensure that an uninterrupted supply is maintained.

India must fix gas market, pipelines to unlock LNG opportunity: IGU report

Expanding liquefied natural gas (LNG) import capacity alone will not be enough to drive India's long-term natural gas growth, with the country needing faster investment in pipeline infrastructure, gas distribution networks, gas-intensive industries and sweeping reforms to pricing and market design, according to a report by the International Gas Union (IGU).

While India has significantly increased its LNG regasification capacity in recent years, investment in transmission and distribution infrastructure has failed to keep pace, limiting the country's ability to expand gas consumption, the report said.

It added that reforms to pricing mechanisms, market access and regulations will be critical if India is to sustain long-term growth in gas demand.

The report comes against the backdrop of heightened concerns over India's energy security following disruptions to shipping through the Strait of Hormuz during the recent Iran conflict.

"The Strait of Hormuz crisis has underlined several import dependencies for India, particularly in gas supply chains. India's heavy reliance on Gulf-sourced LPGs and LNG, where Qatari exports are the primary source of supply, will bring into question India's historic reliance on close geographical suppliers that have proven to be vulnerable to disruption.

"These issues are not insignificant, and the current price shock will also, in the short term, upend the economics of imported gas for Indian power producers, industrial and domestic customers, for as long as it lasts."

India currently meets only about 50-52% of its natural gas demand through domestic production, with the remainder supplied through LNG imports, primarily from Qatar, Australia, the US and Russia.

Its dependence is even greater in liquefied petroleum gas (LPG), with imports accounting for around 60-65% of domestic consumption despite India being among the world's largest LPG users.

A significant portion of these imports passes through the Strait of Hormuz, exposing the country to geopolitical disruptions.

However, the IGU believes the medium- to long-term outlook could improve if tensions in the Gulf subside.

A surge in new LNG export capacity expected over the remainder of the decade is likely to keep global LNG markets well supplied, putting downward pressure on prices and improving the economics of gas consumption in India. Permanent demand destruction in other Asian markets following the recent price spike could further accelerate declines in benchmark LNG prices, making gas more competitive.

To take advantage of potentially cheaper LNG, India will need to make its domestic gas market more flexible, the report said. It recommended further

liberalisation of LNG terminal capacity bookings and system entry charges to improve market access and raise utilisation rates at import terminals.

The report also argued that gas will continue to struggle against coal unless pipeline connectivity expands substantially across the country.

"If gas is going to compete more effectively with coal, new transmission lines - underpinned by competitive transport tariffs - will be needed to provide reliable supply to the north, east and centre of the country where the gas network exists but is sparse."

It noted that inadequate pipeline utilisation in coal-dependent regions has kept delivered gas prices elevated, discouraging industrial consumers from switching fuels.

"Progress will require reforms to market design, regulation and pricing, as well as further liberalisation of terminal capacity bookings and system entry charges."

According to the report, lower international gas prices alone will not be enough to lift domestic consumption. Higher investment in infrastructure, improvements in commercial contracting and broader market reforms will be essential to expand the role of natural gas in India's energy mix.

The report also questioned India's existing wholesale gas pricing framework, arguing that meaningful investment will remain constrained without fundamental reforms.

India's gas pricing mechanism has undergone multiple revisions over the past decade, shifting from a regulated regime to hub-linked pricing in 2015 before moving to an oil-linked formula in 2022. While the latest mechanism helped moderate prices after the global energy crisis, domestic gas prices have remained above \$7 per million British thermal units even though the earlier hub-linked formula would have resulted in lower prices, the report noted.

Although recent geopolitical tensions have raised concerns about India's dependence on LNG imports, the IGU said these risks can be reduced by diversifying import sources.

It added that any easing of shipping disruptions through the Strait of Hormuz, coupled with weaker LNG demand elsewhere in Asia, could quickly bring down global gas prices, creating an opportunity for India to accelerate gas adoption— provided it addresses longstanding infrastructure bottlenecks and market constraints.

ONGC starts drilling first deepwater well in Mahanadi basin under Samudra Manthan mission



State-owned Oil and Natural Gas Corporation (ONGC) on Saturday commenced drilling its first deepwater exploratory well in the Mahanadi offshore basin, marking the start of an ambitious campaign to tap India's deep and ultra-deepwater hydrocarbon resources.

ONGC spudded exploratory well, MN-DW18-1-H-D under the government's Samudra Manthan mission, the firm said in a statement.

The well is being drilled around 23 nautical miles from the Konark discovery off the Odisha coast, building on ONGC's recent Utkal and Konark discoveries that have strengthened the hydrocarbon prospectivity of the Mahanadi Offshore Basin.

The drilling campaign forms part of the push to accelerate exploration of India's offshore oil and gas reserves. In his Independence Day address on August 15, 2025, Prime Minister Narendra Modi had called for harnessing the country's untapped offshore hydrocarbon potential.

In line with that vision, the government has opened nearly one million square kilometres of previously restricted offshore areas for exploration, paving the way for fresh acreage to be offered under upcoming rounds of the Open Acreage Licensing Policy (OALP).

India's eastern and western offshore basins, extending to water depths of up to 3,000 metres, are

estimated to hold more than 5,600 million metric tonnes of oil equivalent (MMTOE) of hydrocarbon resources.

Recent exploration successes in the Cauvery, Mahanadi and Andaman basins have further strengthened the outlook for offshore exploration, according to the statement.

To support the deepwater exploration programme, ONGC in January this year launched its flagship Deepwater Exploration Mission Centre, DeepX, in Mumbai. The centre integrates the company's geoscientific expertise, advanced interpretation capabilities, specialised training and global collaborations under its "One Company, One Data" philosophy.

The company said the commencement of drilling marks the beginning of one of India's most challenging deepwater exploration campaigns, aimed at boosting domestic oil and gas production, reducing import dependence and strengthening the country's energy security.

"The commencement of drilling marks the beginning of one of India's most challenging deepwater exploration campaigns. Every prospect evaluated, well drilled and discovery made will contribute towards enhancing domestic production, reducing import dependence and strengthening India's energy security and self-reliance," the statement said.

Bharat Petroleum to expand retail offerings, EV charging network



State-run Bharat Petroleum Corporation Ltd (BPCL) is revamping its marketing strategy to sell more than just fuel as it looks to expand its market share. The country's second-largest fuel retailer, with a market capitalisation of ₹1.33 lakh crore, plans to invest ₹10,000-12,000 crore this fiscal to expand its retail offerings and services aimed at making travel easier and more convenient.

The company is targeting an increase in its market share from 29.9% currently to 32% by 2030, a senior company official said. "We are moving away from being product-centric to solution-centric. We want to immerse ourselves in the customer's energy journey," Subhankar Sen, Director (Marketing), BPCL, told ET, adding it would be the company's biggest-ever marketing investment.

A key part of the strategy is expanding its EV charging network. BPCL has installed fast chargers every 100-150 km on major highways under its eDrive brand. It said it has covered about 50,000 km of highways, enabling EV travel on routes such as Mumbai-Bengaluru, Mumbai-Srinagar and Mumbai-Kerala. The network currently records over 1.72 lakh charging sessions every month.

BPCL believes concerns over charging availability and driving range continue to discourage EV adoption. It expects its charging network to help address these issues. The company is also expanding its Drive Fresh initiative, which provides clean washrooms at fuel stations. It is scaling up Be Cafe, its food and beverage brand, across fuel stations as well as airports, malls and high streets.

Eastern India set for city gas distribution growth, PNGRB highlights expansion efforts



Eastern India is poised to become the next major growth centre for India's city gas distribution (CGD) sector, industry leaders said at the 14th City Gas Distribution Conference-cum-Exhibition in Kolkata.

Addressing the conference, Jayant Narayan Das, member of the Petroleum and Natural Gas Regulatory Board (PNGRB), highlighted the regulator's efforts to expand the country's gas distribution network, particularly in West Bengal and the Northeastern states.

The official said PNGRB's DPNG Drive 2.0 enabled more than 12 lakh household PNG connections within three months in India. Das said wider adoption of PNG would help reduce dependence on LPG cylinders while supporting the Centre's vision of developing a gas-based economy.

The conference brought together policymakers, city gas distribution companies, gas suppliers, gas traders, equipment manufacturers, and technology providers.

India's Natural Gas Consumption Drops 6.5% in Q1 FY27 Amid Costly LNG Imports

India's natural gas consumption fell 6.5% year-on-year to 16 billion cubic metres (bcm) during the April-June quarter, according to The Economic Times report, citing oil ministry data.

The decline was driven by lower LNG imports and reduced domestic production, which together limited gas availability. LNG imports stood at 7.7 bcm, down 8.6% from the same period last year, while domestic production fell 4.3% to 8.3 bcm.

India imports nearly half of the natural gas it consumes, making domestic demand sensitive to changes in international LNG prices and supply conditions.

Higher LNG Prices Weigh on Imports

LNG imports became costlier after the Iran conflict disrupted supplies from the Gulf region. Qatar, India's largest LNG supplier under long-term contracts, faced supply disruptions, prompting buyers to arrange cargoes from alternative sources. Spot purchases increased even as prices remained elevated.

The Japan-Korea Marker (JKM), the benchmark for Asian spot LNG, averaged \$20 per million British thermal units (mmbtu) in March, compared with \$10.7 per mmbtu in February.

It averaged \$16.9 in April, \$18.3 in May, and \$16 in June. Fresh tensions involving the US and Iran have again pushed the benchmark above \$20 per mmbtu.

Domestic Production Continues to Ease

Lower domestic output added to supply constraints during the quarter. Production from private-sector fields declined 7.5%, mainly due to lower output from Reliance Industries' KG basin blocks.

Production by state-run companies fell 2%. Private operators contribute about 37% of India's domestic natural gas production.

Most of India's LNG is imported under long-term contracts linked to crude oil prices, while supplies from the US are indexed to the Henry Hub benchmark.

Henry Hub prices remained comparatively stable during the period, making US cargoes relatively more competitive despite higher freight costs.

Conclusion

India's gas consumption fell in the first quarter of FY27 as domestic output and LNG imports declined simultaneously. Elevated global LNG prices added to supply constraints during the period.

India's ethanol mission sees state-run fuel firms spend Rs 1.72 lakh crore

Public Sector Oil Marketing Companies (OMCs) spent Rs 48,757 crore on ethanol procurement during Ethanol Supply Year (ESY) 2023-24, Rs 73,996 crore during ESY 2024-25 and Rs 49,577 crore up to June in ESY 2025-26, the government informed Parliament recently.

In a written reply in the Rajya Sabha, Minister of State for Petroleum and Natural Gas Suresh Gopi said PSU OMCs procure fuel-grade ethanol from domestic sugarcane- and grain-based feedstocks under the Ethanol Blended Petrol (EBP) Programme.

"OMCs procure ethanol from domestic sources, including sugarcane-based feedstocks such as C-heavy and B-heavy molasses, sugarcane juice and sugar syrup, as well as grain-based feedstocks including damaged foodgrains, surplus rice with the Food Corporation of India (FCI) and maize," the minister said.

The minister further informed that as of July 16, 2026, PSU OMCs had registered 501 ethanol manufacturing units for the supply of denatured anhydrous ethanol under the Ethanol Blended Petrol Programme.

"As on 16.07.2026, Public Sector Oil Marketing Companies (OMCs) have registered 501 ethanol

manufacturing units for supply of denatured anhydrous ethanol under the Ethanol Blended Petrol (EBP) Programme," Gopi said in the written reply.

According to the reply, Indian Oil Corporation Ltd (IOCL), Bharat Petroleum Corporation Ltd (BPCL) and Hindustan Petroleum Corporation Ltd (HPCL), through its subsidiary HPCL Biofuels Ltd, are also engaged in the production of fuel-grade ethanol.

IOCL has an installed production capacity of 228 kilolitres per day and produced 712 kilolitres in ESY 2025-26 up to June 30. BPCL has an installed capacity of 200 kilolitres per day and produced 76 kilolitres, while HPCL Biofuels has an installed capacity of 120 kilolitres per day and produced 9,373 kilolitres during the period.

The reply also showed that Uttar Pradesh recorded the highest sale of ethanolblended petrol by PSU OMCs at 124.98 crore litres during ESY 2024-25, followed by Maharashtra at 110.66 crore litres, Tamil Nadu at 92.18 crore litres, Karnataka at 79.24 crore litres and Gujarat at 56.29 crore litres.

The government said the registered supplier base and domestic procurement network continue to support the implementation of the Ethanol Blended Petrol Programme across the country.

E20 Petrol Improves Performance, Cuts Emissions with No Engine Damage: Government

The Government of India recently told the [Rajya Sabha](#) that E20 petrol provides better acceleration, smoother ride quality and nearly 30% lower carbon emissions compared with E10 petrol, while extensive scientific studies and real-world vehicle data have found no evidence of engine damage, corrosion or reduced vehicle life. Responding to a question in Parliament, Minister of State for Petroleum and Natural Gas Suresh Gopi said the higher ethanol blend enables cleaner and more complete combustion, contributing to near-zero particulate matter emissions and improved urban air quality.

According to the Ministry of Petroleum and Natural Gas, E20 fuel underwent comprehensive evaluation

before its nationwide rollout. The assessment included laboratory studies and field trials conducted by the Automotive Research Association of India (ARAI), Society of Indian Automobile Manufacturers (SIAM), Indian Oil Corporation (IOC), Indian Institute of Petroleum (IIP) and leading automobile manufacturers. The studies examined engine durability, drivability, cold start performance, corrosion resistance, material compatibility, fuel efficiency and emissions, concluding that E20 petrol is safe for use under prescribed standards.

The government also clarified that legacy vehicles, which were not originally certified for E20 fuel, have shown no significant variation in performance or abnormal wear and tear. Supporting this claim, it cited data from a leading automobile manufacturer that serviced 2.84 crore vehicles during FY 2025-26, including nearly 1.5 crore vehicles not initially designed for E20 compatibility, without reporting any E20-related corrosion, abnormal engine wear or reduction in component life. A leading two-wheeler manufacturer reported similar findings, while another major original equipment manufacturer (OEM) monitored 1.4 crore vehicles operating on E20 fuel and found no evidence of ethanol-induced corrosion over an extended period.

The ministry added that ARAI continues to validate vehicles through rigorous international-standard testing before they reach consumers, ensuring safety and performance. The government's findings reinforce India's Ethanol Blended Petrol (EBP) Programme, which aims to reduce dependence on imported crude oil, lower greenhouse gas emissions, support farmers through increased ethanol production and promote cleaner, more sustainable transportation across the country.

The government's latest statement strengthens confidence in E20 petrol, highlighting its environmental benefits, improved vehicle performance and safety. Backed by extensive testing and data from millions of vehicles, E20 is expected to play a key role in India's clean mobility and energy security goals.

Reliance-BP's KG-D6 gas output falls 7% in June quarter as natural decline continues



Natural Gas Production at the KG-D6 fields operated by Reliance Industries Ltd and BP Plc fell nearly 7 per cent year-on-year in the June quarter, as the natural decline that began in mid-2025 continues.

In an April-June quarter earnings presentation at analyst call, Reliance said gas output in Q1 averaged 24.8 million standard cubic meters per day, down from 26.6 mmscmd in April-June 2025.

The output was lower than 25.2 mmscmd in the preceding January-March quarter.

Production from the second-wave of discoveries in the KG-D6 block peaked in January-March 2024 to 30.6 mmscmd but has since been on the decline. Output has since fallen by 19 per cent.

Reliance did not immediately provide additional details on production volumes or a timeline for arresting the decline.

At the analyst call, a company official said, "In KG-D6, whilst there is a natural decline, it's lower than what we had expected, so we have a plan to offset this natural decline, which I'll talk about shortly." As the operator of KG-D6 block, Reliance holds a 66.67 per cent stake while BP has the remaining 33.33 per cent.

Reliance has so far made 19 gas discoveries in the KG-DWN-98/3 or KG-D6 block in the deepsea of Bay of Bengal. Of these, D-1 and D-3 -- the largest among the lot -- were brought into production in April 2009, and MA, the only oilfield in the block, was put into production in September 2008. While the MA field stopped producing in September 2018, output from D-1 and D3 ceased in February 2020.

Reliance had faced sharper than anticipated decline in output at D-1 & D-3, whose production planning happened before BP came in. The wells it had drilled saw unanticipated water and sand ingress in wells, leading to output fall.

India has adequate coal stocks to meet thermal power demand, with 42.8 MT available: Power Ministry



विद्युत मंत्रालय
MINISTRY OF
POWER

India has adequate coal stocks at thermal power plants to meet electricity demand, with 42.8 million tonnes (MT) available as of July 12, 2026, sufficient for 14 days at 85 per cent plant load factor (PLF), the Ministry of Power said recently.

The Ministry said coal-based generation capacity, including lignite-based capacity, stood at around 230.8 GW and accounted for 69.54 per cent of total electricity supplied between April and June 2026. During non-solar peak demand hours, maximum generation from these plants reached about 188.8 GW, or nearly 75 per cent of the total generation of 251.4 GW.

"Also, sufficient coal is being received at present by the Thermal power Plants to meet the daily demands," the Ministry said in a written reply in the Rajya Sabha.

The government said coal supply to thermal power plants is being monitored daily through a joint committee comprising the Ministry of Power, the Railways and the Ministry of Coal. Priority has also been accorded to coal rakes and dispatches to power houses.

An Inter-Ministerial Committee comprising the Chairman of the Railway Board and the Secretaries of the Ministries of Coal and Power is also meeting regularly to review coal supplies to thermal power plants, the press release mentioned.

The Ministry said scheduled maintenance of thermal units is planned in advance, taking into account the demand scenario for different months. "It is a standard practice to minimize scheduled maintenance during the peak months," it said, adding that the Central Electricity Authority monitors maintenance schedules and permits deferment on a case-to-case basis when increased demand requires such action.

The government has also taken steps to improve grid flexibility and integrate renewable energy into the power system. The Central Electricity Authority (Flexible Operation of Coal-based Thermal Power Generating Units) Regulations, 2023 mandate coal-based thermal power units to achieve a minimum technical level of 40 per cent in accordance with the phasing plan specified by the CEA.

During FY2025-26, 9,470 MW of thermal capacity was added, while another 2,260 MW has been commissioned during the current financial year.

Energy storage is also being expanded to support the grid during non-solar hours. Around 2,669 MW of Battery Energy Storage Systems and 7,426 MW of Pumped Storage Projects have been commissioned so far. These systems store surplus power generated during solar hours and utilise it primarily when solar generation is unavailable.

The information was given by Minister of State for Power Shripad Naik in a written reply in the Rajya Sabha.

India's Captive and Commercial Coal Production Rises 14.9% to 17.88 MT in June

India's captive and commercial coal mining sector continued its strong growth trajectory in June 2026, with coal production rising 14.9% year-on-year to 17.88 million tonnes (MT), reflecting improved operational efficiency, higher capacity utilisation, and sustained policy support from the Government.

According to the Ministry of Coal, coal dispatch from captive and commercial mines also remained robust, reaching 18.55 MT during June 2026, ensuring a steady supply of coal to power plants and industries.

Coal production during the month increased from 15.56 MT in June 2025 to 17.88 MT in June 2026, highlighting the continued expansion of India's domestic coal mining sector.

During the first quarter of FY2026-27 (April-June), cumulative coal production from captive and commercial mines registered a 5.35% increase over the corresponding period of the previous financial year, while coal dispatch recorded a 1.70% year-

on-year growth, demonstrating sustained demand across key sectors.

The Ministry of Coal attributed the sector's positive performance to policy reforms, regulatory facilitation, operational improvements, and continuous engagement with stakeholders, which have helped improve mine productivity and strengthen production planning.

According to the ministry, the sector has recorded a compound annual growth rate (CAGR) of approximately 10.7% in coal production between FY2024-25 and FY2026-27, reflecting a consistent upward trend in domestic coal output.

A major development during the quarter was the commencement of production from three new coal mines — Urtan, Dhirauli, and Bikram. Together, these mines contribute a combined Peak Rated Capacity (PRC) of 7.51 million tonnes per annum (MTPA), significantly enhancing India's coal production capacity.

Among these, the Urtan coal block holds particular strategic importance as it is a coking coal mine. Coking coal is an essential raw material for steel manufacturing, and increased domestic production is expected to reduce India's dependence on imported coking coal, strengthen raw material security for the steel industry, and improve supply chain resilience.

The Ministry noted that the operationalisation of the new mines will enhance domestic coal availability, improve energy security, and support the expanding requirements of the power, steel, cement, and other industrial sectors.

The continued increase in coal production also aligns with the Government's objective of achieving greater self-reliance in the coal sector, reducing import dependence, and ensuring uninterrupted fuel supplies to support India's growing economy.

Conclusion

The 14.9% increase in coal production during June 2026 highlights the strong performance of India's captive and commercial mining sector. Backed by policy reforms, new mine operationalisation, and

improved efficiency, the sector is strengthening domestic coal availability, supporting the energy and steel industries, and advancing the Government's vision of Atmanirbhar Bharat through enhanced energy security and reduced import dependence.

Coal India Chairman Holds Key Talks in US on Coal Export & Technology Collaboration



Shri B. Sairam, Chairman of Coal India Limited, along with Shri Sanoj Kumar Jha, Additional Secretary, Ministry of Coal, Government of India, represented India at the prestigious U.S.–India Round Table on 'U.S. Coal Export and Coal Technology Opportunities'

held in Washington, DC.

The high-level round table was organised by the National Mining Association (NMA), USA, and the U.S.-India Strategic Partnership Forum (USISPF), in partnership with the U.S. Department of Energy and the U.S. Department of Commerce.

It focused on exploring stronger bilateral cooperation in coal trade and advanced clean coal technologies.

Following the main discussions, the Indian delegation held a bilateral meeting with senior U.S. government officials to deliberate on practical opportunities for enhancing collaboration between the two nations in the coal and energy sectors.

Strategic Significance

This engagement comes at a time when India is looking to secure reliable and cleaner coal technology solutions while ensuring long-term energy security. Participation by Coal India's Chairman signals the company's proactive approach towards international partnerships, technology upgradation, and responsible coal utilisation.

The round table provided a platform for Indian stakeholders to engage directly with American industry leaders and policymakers on coal export potential and deployment of modern coal technologies.

Govt sees good response to pre-application conference for Rs 37,500-cr coal gasification scheme

The government recently held the pre-application conference for its flagship Rs 37,500 crore scheme for promotion of surface coal gasification projects, which saw keen participation from public sector undertakings, private companies, technology providers and prospective applicants.

This assumes significance in the wake of rising import bill for critical chemical feedstocks, growing policy emphasis on energy security and Make in India plan along with the recent global supply-chain disruptions that have highlighted the need for domestic alternatives.

The conference was chaired by Additional Secretary in the coal ministry Sanoj Kumar Jha.

"The conference witnessed enthusiastic participation from public sector enterprises, private companies, technology providers, and prospective applicants, reflecting strong industry interest in the government's flagship initiative to promote cleaner and value-added utilisation of domestic coal," the coal ministry said in a statement.

During the session, the ministry provided clarifications on the Scheme Guidelines and the Request for Proposal (RFP), covering eligibility criteria, evaluation methodology, financial incentives, and the application process, while comprehensively addressing queries raised by the participants.

Approved by the Union Cabinet in May, the scheme aims to accelerate the development of surface coal, lignite gasification projects and support the production of high-value downstream products such as synthetic natural gas, ammonia, methanol, DRI, synthetic fuels, and chemicals.

Coal gasification converts coal into synthesis gas (syngas), and steelmakers use this as a cleaner fuel and chemical reducing agent.

It replaces imported natural gas and is injected into blast furnaces to reduce reliance on expensive, imported coking coal.

Former steel secretary Nagendra Nath Sinha said the scheme is a significant step towards strengthening the foundations of 'Atmanirbhar Bharat' in the steel sector.

The reform is equally significant from the perspective of decarbonisation and technological transformation. It creates an enabling ecosystem for advanced technologies such as coal gasification and facilitates easier integration of Carbon Capture, Utilisation and Storage (CCUS), paving the way for production of costcompetitive green steel. This will strengthen India's preparedness for emerging global carbon regulations, including the European Union's Carbon Border Adjustment Mechanism (EU CBAM), while enhancing the export competitiveness of Indian steel.

"Most importantly, the announcement has generated renewed confidence across the steel industry. It sends a clear policy signal that India is committed to simultaneously advancing raw material security, industrial competitiveness and sustainability. Such forward-looking measures will encourage fresh investments, accelerate technology adoption and capacity expansion, and reinforce India's position as a globally competitive steel manufacturing powerhouse," he said.

As India advances towards its target of 300 million tonnes of steelmaking capacity by 2030, securing critical raw materials will be indispensable. With nearly 90 per cent of the country's coking coal requirement met through imports, the steel industry remains exposed to global supply disruptions and price volatility.

Decline in Coal Imports

The total coal imported by the thermal power plants in FY 2025-26 was 45.4 Million Tonnes (MT) as compared to 62.5 MT in FY 2024-25 with a decline of around 27.4 %. Further, the coal imported by plants designed on imported coal was 2.88 MT in April, 2026 as compared to 3.97 MT in April, 2025, showing a decline of around 27.45%.

The key measures taken by the Government to reduce coal import dependency for power sector are as under:

- i. The Annual Contracted Quantity (ACQ) has been increased upto 100% of the normative requirement, in the cases where the ACQ was either reduced to 90% of normative requirement (non-coastal power plants) or where the ACQ was reduced to 70% of normative requirement (coastal power plants). Increase in the ACQ would result in more domestic coal supplies, thereby, reducing the import dependency.
- ii. Government has decided in 2022 that coal to meet the full Power Purchase Agreement (PPA) requirement of all the existing linkage holders of Power Sector shall be made available by the coal companies irrespective of the trigger level and ACQ levels. This decision of the Government of meeting the full PPA requirement of the linkage holders of the Power Sector shall reduce dependence on imports.
- iii. Imported Coal Based (ICB) Plants have been allowed to secure coal under the Revised SHAKTI Policy, 2025. The coal availability for ICB Plants under this Policy shall reduce dependence of these ICB plants on imported coal.
- iv. Existing Fuel Supply Agreement (FSA) holders have been allowed to secure coal under the Revised SHAKTI Policy, 2025 after procuring 100% of the ACQ coal under existing FSA. Coal availability beyond the ACQ to existing FSA holders will benefit the power producers to meet the full requirement of the power plants.
- v. The coal linkages under the recently created CoalSETU window under the Non-Regulated Sector linkage auctions would increase the availability of washed coal in the country and consequently lead to reduction in coal imports.

The Ministry of Coal launched an Integrated Coal Logistics Plan in coordination with concerned Ministries and stakeholders to assess and address

the issues in the coal logistics chain. This includes development of 33 critical railway projects, expansion of First Mile Connectivity (FMC) infrastructure, augmentation of rail evacuation capacity in consultation with the Ministry of Railways and promotion of multimodal transportation through rail, coastal shipping and inland waterways. To strengthen coal evacuation, 139 FMC projects having 1319 MT capacity are planned to set up by FY 2029-30. Further, coal PSUs are also implementing eight railway projects to ease coal evacuation in coal bearing States.

As per the current import policy, coal is kept under Open General License (OGL) and consumers are free to import coal from the source of their choice as per their contractual prices on payment of applicable duty. However, the Government has allowed Imported Coal Based (ICB) Plants to secure coal under the Revised SHAKTI Policy, 2025. The focus of the Government is on increasing the domestic production of coal and to eliminate non-essential import of coal in the country. The removal of GST compensation cess has made the domestic coal competitive vis-a-vis imported coal.

Further, the coal PSUs continue to provide coal at affordable prices keeping in view, inter-alia, the regulatory provisions applicable thereto to each sector. Over the past eight years, the notified price of the majority of coal grades in respect of Coal India Limited (CIL) has seen only a marginal increase of ₹20 per tonne. Further, CIL has also conducted three tranches of Short-term Auctions and one Tranche of Long/Medium Term Auction under Window-II of Revised SHAKTI Policy in 2026 (till June, 2026) in which sufficient quantity of coal made available has benefited power plants to book coal at near zero premiums to meet their short/medium/long term requirements.

This information was given by Union Minister of State for Coal and Mines Shri Satish Chandra Dubey in a written reply in Rajya Sabha recently.

National Green Hydrogen Mission drawing global investment: Pralhad Joshi



Union Minister for New and Renewable Energy Pralhad Joshi said the National Green Hydrogen Mission is drawing global investment, forging international partnerships, and opening new markets for Indian green hydrogen and its derivatives, as Japan extended its Contract for Difference (CfD) subsidy support to the ACME-IHI green hydrogen project.

Minister welcomes Japan's subsidy extension

Joshi said the Mission, launched under Prime Minister Narendra Modi, is building a strong and future-ready ecosystem for the sector, according to a statement issued by the Ministry of New and Renewable Energy (MNRE).

"I welcome Japan's decision to extend its CfD subsidy support to the ACME-IHI Green Hydrogen project. It reflects the growing global confidence in India's green hydrogen ecosystem and our emergence as a trusted partner in the global clean energy transition," Joshi said.

ACME signs offtake deals with Japanese firms

ACME Cleantech Solutions Private Limited (ACME Group) has entered into long-term offtake agreements with two Japanese companies — IHI Corporation for green ammonia, and Mitsubishi Gas Chemical Company, Inc (MGC) for green methanol, the statement said.

Under the arrangement with IHI Corporation, ACME will supply 4,05,000 tonnes per annum (405 kTPA) of green ammonia in total. The deal is backed by Japan's CfD scheme for low-carbon ammonia, which is administered by the country's Ministry of Economy, Trade and Industry (METI) and offers price support to Japanese buyers, underpinning the long-term commercial viability of the imports.

Separately, ACME has signed a 10-year agreement with MGC to supply 1,00,000 tonnes per annum (100 kTPA) of green methanol from its Paradip facility. The project is aligned with global decarbonisation

goals, particularly for the maritime sector, and has been designed to meet the European Union's Renewable Fuels of Non-Biological Origin (RFNBO) requirements as well as International Maritime Organization (IMO) standards for cleaner marine fuels.

Partnerships to strengthen India-Japan clean energy ties

Joshi said the agreements would have a broader impact on bilateral cooperation. "These partnerships will boost the production and export of green ammonia and green methanol, strengthen India-Japan Clean Energy cooperation and accelerate the global transition to sustainable energy," he said.

India Curtailed 8,133 GWh of Solar Power Amid Record Summer Electricity Demand

Grid Controller of India Limited (Grid-India),



in its latest report, has highlighted the growing role of solar power in meeting a significant share of India's energy demand. Shripad Yesso Naik, in his latest written response in Parliament, highlighted the growing trend of solar power curtailment, showing

a marginal rise in curtailment between April and May, with a June 2026 dip resulting in the loss of approximately 8,133 GWh of renewable energy.

Outlining the impact of solar power curtailment and the restrictions imposed to maintain grid security, a cumulative figure of around 2,417 GWh of solar power was curtailed in April 2026, 3,235 GWh in May 2026, and around 2,481 GWh in June 2026. The minister's response shows that although solar generation kept pace with rising electricity demand, the curtailment arose due to a mismatch between the commissioning of transmission lines and renewable energy projects.

Month / Year	Solar Curtailment (GWh)
April 2026	2417
May 2026	3235
May 2026	3235
June 2026	2481
Total:	8133

The report underlines the increasing dependence on renewable energy even as concerns over solar power curtailment and grid security continue to emerge. The trend reflects the growing challenge of integrating rapidly expanding renewable capacity with supporting transmission infrastructure. Demonstrating the link between renewable energy curtailment and the rising contribution of renewables to electricity demand,

Renewable energy curtailment is implemented to ensure the reliable and secure operation of the grid. In response to these challenges, the Government of India (GoI) is undertaking several major initiatives to strengthen grid infrastructure and reduce the need for renewable power curtailment.

CERC Policy Support Lends Momentum to Curtailment Prevention

Curtailment has become an increasingly important issue, particularly as India witnessed a rapid rise in solar capacity additions in 2025. Highlighting the scale of the issue, an Ember energy think tank report found that the total recorded curtailment was equivalent to about 18% of the average monthly solar generation of around 13 TWh during the period.

Between late May 2025 and December 2025, around 2.3 terawatt-hours (TWh) of solar generation was curtailed. Compensation ranging between INR 5,750 million and INR 6,900 million (approximately USD 63 million to USD 76 million) had to be paid for this curtailed generation.

To prevent such scenarios, the government has put in place several key policy measures aimed at reducing renewable power curtailment. These include the implementation of the Central Electricity Regulatory Commission (CERC) General Network Access (GNA) Regulations, which came into effect on October 1, 2023.

As part of the interim arrangements, available transmission margins are being utilized, including through Temporary General Network Access (T-GNA), to facilitate the evacuation of generation capacity until the planned transmission systems are commissioned, wherever feasible. Plants with GNA access do not face any curtailment as a rule.

In addition, the Central Electricity Authority (CEA) has notified the Flexible Operation of Coal-based Thermal Power Generating Units Regulations, 2023, which are intended to improve grid flexibility and support the integration of variable renewable energy.

Further, the Central Transmission Utility (CTU) regularly monitors the progress of both generation and transmission projects through Joint Coordination Committee (JCC) meetings involving generators, Transmission Service Providers (TSPs), and other stakeholders. These coordination mechanisms are aimed at aligning the commissioning of renewable energy projects with the availability of transmission infrastructure, thereby helping to reduce curtailment and improve overall grid reliability.

India ranks 3rd globally in installed renewable energy capacity

India now ranks third globally in installed renewable energy capacity. A new report by Morgan Stanley says India's renewable energy transition will help reduce external dependence, but its success will depend on how quickly the country localises critical segments such as solar cells, wafers, and polysilicon.

According to data from the Ministry of New and Renewable Energy, domestic solar module capacity has nearly doubled, from 38 gigawatts in March 2024 to 74 gigawatts in March 2025. Solar cell capacity has also increased from 9 gigawatts to 25 gigawatts.

However, the report notes that India still relies heavily on imports for key upstream components. In the financial year 2025, India imported around 35 million solar modules worth about 1.6 billion US dollars, with an estimated 60 to 80 per cent sourced from China.

Overall, non-fossil fuel capacity in India has now crossed 50 per cent of total installed capacity, reaching 262.7 gigawatts. Solar and wind energy account for the bulk of recent additions.

India's Renewable Energy Capacity Rises to 288.58 GW; Solar Leads with 162.15 GW



India has significantly expanded its renewable energy capacity, with installed capacity rising nearly four times from 76.38 GW in 2014 to 288.58 GW as of June 30, 2026, according to information shared by the Ministry of New and Renewable Energy (MNRE) in the Rajya Sabha.

In a written reply, Minister of State for New and Renewable Energy Shripad Yesso Naik said solar power continues to dominate India's renewable energy landscape with an installed capacity of 162.15 GW. It is followed by wind power (57.44 GW) and large hydropower (57.24 GW), while bio power contributes 11.75 GW to the country's renewable energy portfolio.

The minister informed Parliament that India's total non-fossil fuel-based electricity capacity stood at 297.36 GW as of June 30, 2026. This includes 288.58 GW of renewable energy and 8.78 GW of nuclear power, highlighting the country's steady transition towards cleaner sources of electricity.

The renewable energy sector has also attracted substantial investments over the past decade. Between FY2014 and FY2026, India received USD 45.72 billion in Foreign Direct Investment (FDI) in renewable energy. During the same period, domestic financial institutions—including 12 public sector banks, IREDA, Power Finance Corporation (PFC), REC, India Infrastructure Finance Company Limited (IIFCL), National Bank for Financing Infrastructure and Development (NaBFID) and SIDBI—collectively deployed Rs 12.32 lakh crore to support renewable energy projects.

The government said India remains well on track to achieve its target of 500 GW of non-fossil fuel energy capacity by 2030. The rapid growth has been supported by significant progress in

the domestic manufacturing of solar cells and solar modules, strengthening the country's clean energy ecosystem and reducing dependence on imports.

Looking ahead, the government believes the next phase of renewable energy expansion will require greater integration of renewable generation, battery storage, transmission infrastructure and grid resilience. Emerging growth areas include green hydrogen, battery energy storage systems (BESS), pumped hydro storage, offshore wind projects and round-the-clock renewable energy solutions.

Renewable energy is also becoming increasingly important for enhancing the competitiveness of industries such as steel, aluminium, chemicals, automobiles and textiles. The government noted that renewable sources contributed nearly one-third of India's record peak electricity demand of 256 GW, underlining their growing role in ensuring reliable and sustainable power supply.

India's renewable energy sector continues to record rapid expansion, supported by strong policy initiatives, rising investments and increased domestic manufacturing. With 288.58 GW of installed renewable capacity and continued focus on storage, transmission and clean energy technologies, the country is progressing steadily towards its 500 GW non-fossil fuel capacity target by 2030.

Alternative energy sources key to meeting India's rising power demand, says Chairperson Parliamentary Panel on Energy

Alternate and green energy sources will play a key role in meeting India's rising electricity demand, especially during extreme summer heat, Shrirang Appa Chandu Barne, Chairperson of the Parliamentary Standing Committee on Energy, told ANI.

After a meeting of the committee, Barne said the committee reviewed the country's clean energy roadmap, with a special focus on expanding wind energy capacity to meet the growing demand for

electricity. He said the panel discussed the potential of wind energy in India and was briefed on the government's target to increase power generation from wind energy by 2030, along with the progress made so far.

According to Barne, details were shared with the committee regarding the target to generate electricity from wind energy by 2030, including all the output, and complete information regarding the progress made was shared with the panel.

The government aims to maximise electricity generation capacity over the next decade through these clean energy pathways.

The committee evaluated detailed strategies to expand renewable capacity alongside existing solar infrastructure projects to establish a more resilient national grid.

Addressing the immediate challenges of summer load spikes and delayed seasonal rains, Barne acknowledged that rising temperatures across Indian states directly correlate with heavy electricity consumption.

"In the whole country, if you take a look at every city, the heat has increased. The use of AC and other equipment has increased the electricity consumption," Barne said.

"In the future, the government should pay attention to this. By 2032, the electricity consumption in the country will increase," he stated. Speaking about the country's storage capacity, Barne noted that "The storage will increase. The storage capacity will also increase. And I think this problem will not occur in the future." "See, the government's intention is that till 2032, there should be more and more electricity generation," Barne said.

"And to stop pollution, green energy should be used as much as possible," he added. "And to bring awareness in people's minds, every citizen's mind, the government is working hard. In the city where the population is increasing, there should be more use of green energy," Barne explained.

The Chairperson noted that the government is trying to reduce pollution, referencing that the Delhi government has tried to achieve this. He emphasised that the government is trying to use green energy in every big city, making repeated efforts to ensure that pollution is reduced. The objective is not just for the Delhi government, but efforts are being made everywhere to control pollution.

The discussion on alternative energy sources is also touched upon fluctuating international fuel markets, which influence the domestic pricing of conventional fossil fuels. "When the prices of petrol and diesel are increasing internationally, then the prices of petrol and diesel are increased by the government," Barne said.

"Sometimes the prices are reduced by the government. Depending on the current situation, the government should think about this and reduce the prices," he noted.

MNRE Approves INR 436.93 Crore RE-RTD Programme to Boost Renewable Energy Research And Perovskite Solar Innovation

The Ministry of New and Renewable Energy (MNRE) has approved the continuation of the Renewable Energy Research and Technology Development (RE-RTD) Programme for the 16th Finance Cycle, covering the period from 2026-27 to 2030-31. The programme has been sanctioned with a total budget of ₹436.93 crore and comes into effect immediately. The initiative aims to strengthen India's renewable energy research ecosystem, promote indigenous technologies, and support the development of affordable and efficient clean energy solutions across the country.

A major share of the approved funding has been allocated to strategic research initiatives. Out of the total budget, ₹200 crore has been earmarked for establishing a Perovskite photovoltaic (PV) manufacturing pilot line along with related projects. Perovskite solar technology is considered one of the most promising next-generation solar technologies due to its potential for high efficiency and lower manufacturing costs. Another ₹86.93 crore has been allocated to settle committed liabilities from projects undertaken during the 15th Finance Cycle. The

remaining funds will support research and development activities, technology design, pilot demonstrations, incubation centres, testing facilities, and policy research in the renewable energy sector.

The programme provides different levels of financial support depending on the type of organization. Government research institutions, academic organizations, and non-profit research bodies will be eligible for up to 100% financial assistance for approved projects. Private companies, startups, and private research institutions can receive up to 50% funding. However, this support can increase to 70% for projects focused on advancing technologies from lower Technology Readiness Levels (TRL-3 or TRL-4) to commercial deployment stages (TRL-6 to TRL-9), as well as for selected emerging technology sectors.

For startups, MNRE has introduced a new funding mechanism through government equity participation using Compulsorily Convertible Preference Shares (CCPS). This approach is intended to protect public investment while allowing startups to retain operational independence without direct government involvement in management.

The programme also includes the launch of the Mission for Advancement in High-impact Areas in Renewable Energy (MAHA-RE), which will be implemented jointly with the Anusandhan National Research Foundation (ANRF). Under this collaboration, MNRE may provide up to ₹200 crore to ANRF on a co-funding basis to support high-impact renewable energy research and innovation.

To ensure effective implementation, MNRE will establish a dedicated Project Management Unit (PMU), supported with an annual budget of ₹75 lakh. The PMU will monitor project progress, maintain a centralized digital dashboard, coordinate with stakeholders, and track performance. Independent Project Monitoring Committees will regularly review ongoing projects, recommend fund releases, assess completed research, and ensure that projects remain on schedule.

Research proposals will be accepted through periodic open calls, unsolicited submissions, invited proposals from experts and industry leaders, and

calls issued through the ANRF platform. After technical evaluation by expert panels, final project approvals will be made by the R&D Project Appraisal Committee chaired by the Secretary of MNRE. The programme also emphasizes intellectual property protection and commercialization, allowing institutions to retain ownership of innovations while granting the government a royalty-free license for official use. Verified technologies developed under the scheme will be listed on the national R&D portal to encourage wider industry adoption and commercialization.

India's Installed Wind Power Capacity Reaches 57,443 MW: Govt

India's installed wind power capacity has reached 57,443 MW, reflecting the country's continued progress in expanding its renewable energy portfolio, the government informed the Lok Sabha recently.

In a written reply, Union Minister of State for New and Renewable Energy Shripad Yesso Naik said that wind energy projects generated 106 billion units (BU) of electricity during FY 2025–26. He added that power generation from wind projects has shown consistent growth over the past three financial years.

According to the Global Wind Energy Council (GWEC) Report 2026, India ranked fourth globally in cumulative wind energy installations as of December 31, 2025, underscoring the country's growing role in the global clean energy transition.

The minister said the government has implemented a series of measures to accelerate the development of wind energy and other renewable energy sources. Under the Green Energy Corridor Scheme, investments have been made in new transmission lines and substation capacity to facilitate the evacuation of renewable power from generation sites to the national grid.

To encourage investments in clean energy, the government has also waived Inter-State Transmission System (ISTS) charges for eligible solar and wind power projects and introduced a graded ISTS charge mechanism for projects commissioned after the notified timelines. In

addition, a comprehensive transmission plan up to 2030 has been prepared to support India's rapidly expanding renewable energy capacity.

Naik informed Parliament that 100% Foreign Direct Investment (FDI) is permitted in the renewable energy sector under the automatic route, providing a favourable investment environment for domestic and international developers.

The government has also notified the Renewable Purchase Obligation (RPO) and Renewable Consumption Obligation (RCO) trajectory up to 2029–30. The RCO, applicable to designated consumers under the Energy Conservation Act, 2001, mandates renewable energy consumption and includes specified procurement from decentralised renewable energy sources. Non-compliance will attract penalties.

To further strengthen the sector, the government has issued revised standard bidding guidelines for grid-connected solar, wind, wind-solar hybrid, and Firm and Dispatchable Renewable Energy (FDRE) projects. It has also launched a Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects, implemented Electricity (Rights of Consumers) Rules, 2020 to facilitate net metering up to 500 kW, and introduced the National Repowering and Life Extension Policy for Wind Power Projects, 2023 to improve the productivity of ageing wind farms.

India's expanding wind power capacity and rising electricity generation demonstrate the country's commitment to achieving its renewable energy and climate goals. Backed by supportive policies, improved transmission infrastructure and investment-friendly reforms, the wind energy sector is expected to play an increasingly important role in India's transition towards a cleaner and more sustainable energy future.

India's installed solar capacity rises 57-fold since 2014 to 162.15 GW, Govt tells Parliament

India's installed solar power capacity has increased 57-fold since 2014 to reach 162.15 GW as on June 30, 2026, the government informed Parliament

recently. In a written reply in the Lok Sabha, Minister of New and Renewable Energy Pralhad Joshi said the country's installed solar capacity has grown from 2.82 GW in 2013-14 to 162.15 GW as on June 30, 2026, reflecting significant expansion under the National Solar Mission.

He stated, "India has achieved a tremendous growth in the solar capacity installation in the country since 2014. The total installed solar capacity now stands at 162.15 GW as on 30-06-2026, which is about 57-fold expansion, when compared to 2.82 GW installed as on 2013-14".

The government also said that India is now the third-largest country in the world in terms of installed solar capacity, according to the International Renewable Energy Agency's Renewable Energy Capacity Statistics 2026 report.

Providing details of the country's solar infrastructure, the minister said the Development of Solar Parks and Ultra Mega Solar Power Projects scheme has been designed to provide developers with essential infrastructure, including land, power evacuation facilities, roads, water facilities and other supporting infrastructure.

According to the reply, 56 Solar Parks with a total capacity of 39,461 MW have been sanctioned across 14 States. Out of these, solar power projects with a cumulative capacity of 18,919 MW have already been commissioned. The government also highlighted progress under the Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules. It said letters of award have been issued for setting up around 48.3 GW of fully or partially integrated solar PV module manufacturing units covering polysilicon, ingot-wafer, cell and module manufacturing. As on 31.06.2026, around 42 GW of solar PV module manufacturing capacity, 11.5 GW of solar PV cell manufacturing capacity and around 2 GW of ingot-wafer manufacturing capacity have been set up. This includes around 3.4 GW of fully integrated thin-film solar PV module manufacturing capacity.

The government said investments of around ₹73,400 crore have been made under the PLI scheme as on 30.06.2026. It also said imports of solar modules

have declined from around \$4,354 million in FY 2023-24 to around \$994 million in FY 2025-26, citing data from the Department of Commerce.

On rooftop solar, the government said the PM Surya Ghar: Muft Bijli Yojana, launched in February 2024, aims to install rooftop solar systems in one crore households.

As on 18.07.2026, 47.26 lakh households have benefited under the scheme. The government said rooftop solar helps reduce distribution losses and lowers peak power demand as electricity is generated close to the point of consumption.

The reply further stated that the country's total installed solar capacity of 162.15 GW includes 125.60 GW of utility-scale projects, 30.11 GW of rooftop projects and 6.43 GW of off-grid projects, reflecting balanced growth in both large-scale renewable energy generation and grassroots energy access.

India's energy storage requirement set to jump from 1 GWh to 888 GWh by 2035-36: Report

India will require 888 GWh of energy storage system capacity by 2035-36, up from 1 GWh currently, according to an industry report released recently. The report highlighted how energy storage is now the key pillar in strengthening grid reliability and enabling the country's renewable energy ambitions, a statement said.

India will require 888 GWh of energy storage system (ESS) capacity by 2035-36, from the existing 1 GWh scale, according to the 'India BESS Market Review' released by India Energy Storage Alliance (IESA) and Customized Energy Solutions (CES) at India Energy Storage Week (IESW) here recently.

The inaugural session of IESW 2026 featured industry leaders and delegates from 15 countries. Debmalaya Sen, President of IESA, said on the occasion that the IESW 2026 is more than an industry summit; it's a testament to how far India has come on its clean energy journey. The 888 GWh target by 2035-36 signals a new era where energy

storage is at the centre of our energy ambitions, Sen added.

Organised by IESA, the three-day event at Yashobhoomi (IICC) brings together over 200 exhibitors and more than 10,000 industry leaders for policy discussion, technical exchange, and announcements that will define India's clean energy transition.

Radiance Renewables CEO Nitin Bhatia said he believes solar plus battery energy storage is the way forward.

The report further shows that India's installed BESS capacity increased 11-fold in just six months, from 0.78 GWh in December 2025 to 8.7 GWh in H1 2026, and the country is on track to surpass 10 GWh of installed BESS capacity by the end of the year.

In H1 2026, 47 GWh of ESS tenders were floated, bringing the total tender pipeline to 260 GWh.

Tanya Singhal, Vice President, Country Head - India, Global Energy Alliance for People and Planet, said that to build a truly flexible and resilient grid, storage must be integrated at the generation, transmission, distribution, and consumption levels.

Eighteen BESS projects have been commissioned so far, with 70 per cent of the capacity addition in H1 2026 coming from merchant BESS installations.

India's manufacturing momentum is also accelerating, with current Li-ion battery cell manufacturing capacity at around 2 GWh and announced targets of approximately 110 GWh by 2030.

Cell/pack to container capacity is expected to reach 180-200 GWh by 2030. Venugopal Rao Maddisetty, Chairman and Managing Director, Pace Digitek, said that energy storage is now an indispensable national infrastructure, enabling renewable energy to become dispatchable, stabilising the grid, and enhancing resilience.

The report underscores that, despite global supply chain volatility and rising battery prices, India's BESS sector has demonstrated remarkable resilience and

is now recognised as one of the world's fastest-growing markets.

Nikhil Bhuta, Director, DC&T (Belding India), said that to secure the future, India must build and master storage systems domestically, owning the value chain and setting cost curves for the world.

NTPC REL Invites Bids for 110 MW Khavda Wind Project BoS Package

NTPC Renewable Energy Limited (NTPC REL) has invited bids for the Balance of System (BoS) package for its upcoming 110 MW wind energy project at Khavda in Gujarat. The tender was issued on July 16.

The project forms part of NTPC REL's renewable energy expansion in the Khavda renewable energy zone, which is emerging as one of India's largest clean energy hubs.

The scope includes the survey and design of the 33 kV overhead transmission network, associated road infrastructure, supply, erection, testing and commissioning of the overhead line system connecting wind turbine unit substations (USS) to pooling substations (PSS), and construction of internal access roads linking turbines to the main road network.

Bid Schedule and Security Requirements

The bidding documents will be available for download from July 16 to July 26, 2026. NTPC REL has scheduled the pre-bid conference for July 27, with bidder queries also closing on the same day. Interested companies must submit both techno-commercial and price bids by 3:00 PM IST on August 10, while the techno-commercial bids will be opened 30 minutes later.

Bidders are required to furnish a bid security of ₹50 lakh. The tender documents are available free of cost, although bid security must be submitted separately in the prescribed format.

Technical and Financial Eligibility

To qualify technically, bidders must have successfully designed, supplied, erected, tested and commissioned at least 25 kilometres of 33 kV or

higher voltage overhead transmission lines over the past seven years. The referenced projects must have been operational for a minimum of one year before the techno-commercial bid opening date, with the required experience achieved through no more than two contracts.

On the financial front, applicants must demonstrate an average annual turnover of at least ₹40.78 crore during the preceding three financial years.

ACME Solar Signs 300 MW Wind-Solar Hybrid Power Purchase Agreement with SECI

ACME Solar Holdings Limited has signed a 25-year Power Purchase Agreement (PPA) with the Solar Energy Corporation of India Limited (SECI) for a 300 MW ISTS-connected wind-solar hybrid renewable energy project under Hybrid Tranche IX. The agreement has been executed through the company's wholly owned subsidiary, ACME Renewtech Fifth Private Limited.

Under the agreement, ACME Solar will develop the 300 MW hybrid renewable energy project and supply electricity to SECI at a tariff of ₹3.25 per unit. The project is scheduled to commence power supply by 30 June 2028 and will operate under a 25-year contract from the Scheduled Commencement of Supply Date (SCSD).

The project will be connected to the Inter-State Transmission System (ISTS) using ACME Solar's existing grid connectivity in high solar irradiation and wind resource zones. Under the PPA, the project will maintain a minimum annual Capacity Utilization Factor (CUF) of 30%. The tariff has already been approved and adopted by the relevant Central and State regulators.

With the execution of this agreement, ACME Solar's PPA-signed portfolio has increased to 6,870 MW out of its total contracted renewable energy portfolio of 8,070 MW. The company currently has 2,990 MW of operational contracted capacity, 5,080 MW under construction, and approximately 3.62 GWh of battery energy storage system (BESS) capacity within its portfolio.

Nuclear power capacity to reach 22 GW by FY32, says Jitendra Singh



India's nuclear power generation capacity is expected to reach 22 gigawatts (GW) by FY32 from the current 8.78 GW, following the completion of projects at various stages of implementation under the Nuclear Energy Mission roadmap, Union Minister of State in the Prime Minister's Office, Personnel, Public Grievances and Pensions, Atomic Energy and Space Jitendra Singh said in a written reply in Parliament recently.

An additional 32 GW of nuclear power capacity is envisaged beyond FY32 by the Nuclear Power Corporation of India (NPCIL), comprising indigenous Pressurised Heavy Water Reactors (PHWRs) and Light Water Reactors (LWRs). This would take the country's nuclear power capacity to about 54 GW by 2047. The remaining 46 GW is expected to be set up by public sector enterprises, state governments, the private sector and joint ventures under different business models, comprising reactors based on different technologies.

The Nuclear Energy Mission was announced in the Union Budget for FY26 with the objective of achieving 100 GW of nuclear power generation capacity by 2047. The government introduced the SHANTI Act, 2025, to support the mission and open the sector to private participation. It also aims to develop and operationalise at least five indigenous small modular reactors (SMRs) by 2033.

The Bhabha Atomic Research Centre (BARC) has undertaken the design and development of three SMRs: the 220-megawatt (MW) Bharat Small Modular Reactor (BSMR-200), the 55 MW Small Modular Reactor (SMR-55), and the High Temperature Gas Cooled Reactor (HTGCR) of up to 5 MW for hydrogen production.

For all three reactors, in-principle approval for engineering and construction has been received. Tarapur in Maharashtra has been approved by the Atomic Energy Commission (AEC) as the site for the BSMR-200 and SMR-55.

The proposal for administrative and financial sanction for the BSMR-200 has been cleared by the AEC, and approval from the Empowered Technology Group (ETG) has also been obtained.

The HTGCR of up to 5 MW is being designed and developed by BARC as a nuclear heat source for suitable thermochemical cycles, such as the copper-chlorine cycle, for hydrogen production. The proposed site for the reactor is BARC, Visakhapatnam, and siting consent has been received, the minister said. He added that the terms of reference for obtaining environmental clearance had been received from the Ministry of Environment, Forest and Climate Change (MoEFCC).

IGCAR signs technology transfer deals to commercialise nuclear research, boost deep-tech startups

The Atal Incubation Centre at the Indira Gandhi Centre for Atomic Research (AIC FAST) stepped up efforts to commercialise nuclear research by signing incubation and technology-transfer agreements spanning space electronics, quantum technologies and advanced manufacturing.

The event, themed "Translation of IGCAR Technologies: From Lab to Land...and to Space", marked an incubation agreement to develop radiation-hardening strategies for GPU-based computing in space environments, an area critical for next-generation satellites and space missions. The agreement was exchanged between IGCAR Director Sreekumar G Pillai and AIC FAST Director N Subramanian with Chennai-based deep-tech startup Big Bang Boom Solutions, which is mentored by former ISRO scientist Mylswamy Annadurai.

Addressing the gathering, Annadurai, former Director of the UR Rao Satellite Centre, said India's deep-tech ambitions would depend on stronger collaboration between premier research institutions and startups, with incubation centres playing a key role in translating laboratory innovations into commercial products.

Daniel Babu P, Head of the Technology Transfer and Collaboration Division at the Bhabha Atomic Research Centre (BARC), outlined the Department

of Atomic Energy's technology-transfer and incubation framework, while StartupTN briefed entrepreneurs on incentives available to startups licensing technologies from national research institutions.

In another key development, IGCAR transferred its lithium niobate (LiNbO₃) crystal growth technology, a strategic material for photonics and quantum devices under the National Quantum Mission, to Hosur-based Raana Semiconductors Pvt Ltd. It also licensed its patented deep-penetrating flux formulation for TIG welding to Chennai-based X10T.

Naveen Jindal Group in talks with US, French tech companies for proposed nuclear projects

Naveen Jindal Group has initiated discussions with global nuclear technology providers including France-based EDF and Westinghouse of the US for its proposed nuclear power projects in India, a person in the know said.

The Group is also in discussions with state-owned Nuclear Power Corporation of India (NPCIL) to explore possibilities of sourcing technology for future nuclear projects with large module reactors (LMRs) of 700 MW and above.

The steel-to-ports conglomerate plans to develop around 18 GW of nuclear power capacity across multiple states with an estimated investment of Rs 2 lakh crore, contributing to the government's target of achieving 100 GW of nuclear power capacity by 2047.

While evaluating sites across more than nine states, the Group has simultaneously initiated discussions with leading global nuclear technology providers. These include France's EDF, US-based Westinghouse and several other international technology companies, alongside NPCIL, to evaluate advanced reactor technologies for deployment in India, the person said.

The discussions include EDF's 1,650 MW European Pressurised Reactors (EPRs), Westinghouse's 1,150 MW AP1000 reactors, NPCIL's indigenous 700 MW Pressurised Heavy Water Reactor (PHWR)

technology, as well as other globally available reactor technologies under evaluation.

The final technology mix will be selected after assessing safety, scalability, commercial viability and long-term operational performance, the person added.

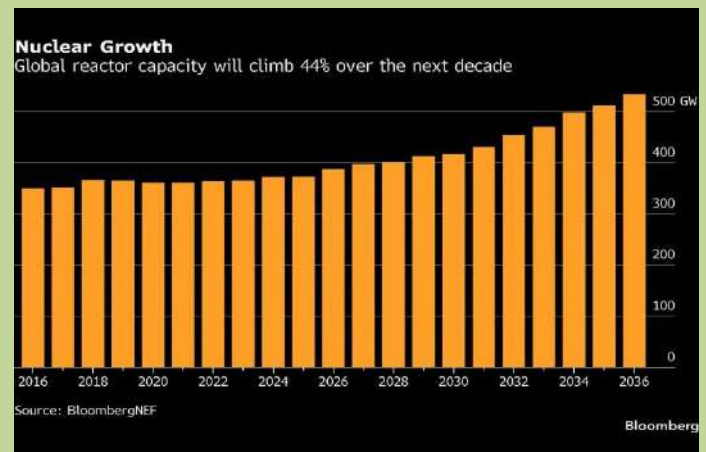
Naveen Jindal Group is among the few corporate houses to announce plans to invest in India's nuclear power sector following the legal amendments introduced by the government to facilitate greater private sector participation.

Jindal Nuclear Power Private Limited, is evaluating potential sites in Gujarat, Odisha, Andhra Pradesh, Tamil Nadu, Jharkhand and Chhattisgarh, among other states. The proposed projects will deploy large module reactors of 700 MW and above.

Nuclear power output to rise 44% in 10 years; India, China key drivers

Global nuclear capacity is set to climb 44% over the next decade after years of tepid growth, spurred by growing demand for electricity and aggressive efforts to build reactors in China and India.

The world may have as much as 535 gigawatts of installed nuclear power by 2036, up from 372 last year, according to a report recently from BloombergNEF. China had 59 gigawatts of reactors under construction at the end of 2025 and is on track to reach a total of 102 by the end of the decade, a figure that would propel it past the US to become the world's biggest nuclear nation.



The industry is benefiting from several key trends. The international effort to rein in climate change is boosting demand for carbon-free power from reactors. At the same time, electricity demand is surging, driven by industrial users, increasingly electrified homes, and power-hungry data centers. Meanwhile, rising social acceptance of nuclear power is pushing utilities and governments around the world to reconsider policies that have hindered development.

Capacity growth will likely be tempered by slow regulatory processes that have historically dragged on new nuclear projects. In the US, where the technology is getting strong support from the Trump administration, there's only one commercial plant under construction, though BNEF expects the pace to accelerate in the coming decade.

"Nuclear power has essentially been 'running in place' since the Fukushima disaster in 2011," according to the report. "This status quo is set to change."

Parliament Question: Nuclear Energy Mission for Viksit Bharat

The Nuclear Energy Mission (NEM) announced in the Union Budget 2025–26 with the objective of achieving 100 GWe nuclear power generation capacity by 2047 to support the vision of Viksit Bharat and the goal of net zero carbon emissions by 2070. Further, the mission also aims to develop and operationalise at least five indigenous Small Modular Reactors (SMRs) by 2033.

In this regard, BARC has undertaken design and development of SMRs namely;

- a. 220 MWe Bharat Small Modular Reactor (BSMR-200);
- 55 MWe Small Modular Reactor (SMR-55); and
- b. Up to 5 MWth High Temperature Gas Cooled Reactor (HTGCR) for hydrogen production.

Parliament has enacted the SHANTI Act, 2025, focussed on the Nuclear Energy Mission of the Government of India, to achieve a target of 100 GW by 2047. This Act opens the nuclear energy sector to the private participation.

Government has drawn up a roadmap for reaching the 100 GW nuclear power capacity by 2047 as announced in the Nuclear Energy Mission. As per the roadmap, the present nuclear power capacity of 8.78 GW is expected to reach about 22 GW by 2031-32 on progressive completion of projects presently at various stages of implementation. Another 32 GW of nuclear power capacity is envisaged to be set up beyond 2032 by NPCIL, comprising of indigenous Pressurised Heavy Water Reactors (PHWR) and Light Water Reactors (LWR) by 2047 taking the capacity to about 54 GW. As per the roadmap, the balance of 46 GW is expected to be set up by other Public Sector Enterprises (Central & State), State Governments, Private sector and Joint Ventures in different business models, comprising of reactors of different technologies.

- a. The BSMR-200 is an indigenous Pressurized Water Reactor (PWR) based power reactor. The current status of the BSMR-200 is mentioned below;
 - In-principle approval for engineering and construction of BSMR-200 has been received.
 - Proposal for Administrative & Financial sanction is cleared by Atomic Energy Commission (AEC) and the approval of Empowered Technology Group (ETG) has been obtained.
 - Atomic Energy Commission has approved Tarapur, Maharashtra as site for BSMR-200.
 - The SMR-55 is based on Pressurised Water Reactor design. The current status of the SMR-55 is mentioned below;
 - a. In-principle approval for engineering and construction of SMR-55 has been received.
 - b. Atomic Energy Commission has approved Tarapur, Maharashtra as site for SMR-55
 - Up to 5 MWth HTGCR is being designed and developed by BARC as nuclear heat source for suitable thermochemical cycle, such as copper-chlorine cycle, for hydrogen production. The current status of the HTGCR is mentioned below;
 - a. In-principle approval for engineering and construction of HTGCR has been received.
 - b. The proposed site for the reactor is BARC, Vizag. Siting consent has been received.

- c. Terms of Reference (ToR) for obtaining environmental clearances has been received from the Ministry of Environment, Forest and Climate Change (MoEF&CC).

The SHANTI Act-2025 envisages participation of private entities in the field of nuclear energy including R&D in the field to promote indigenous nuclear technology. Also, BARC is engaging Indian industries through knowledge sharing and handholding for new technology developments for the SMRs, thus developing nuclear vendors for self-reliance in the field of nuclear technology encouraging R&D ecosystem in private sector.

To facilitate participation of private sector in nuclear power generation, the SHANTI Act establishes the regulatory body (Atomic Energy Regulatory Board) so as to give it a statutory status and to carry out its functions independently. Under the SHANTI Act, the regulatory body will be able to draft their own regulations and regulatory documents, carry out regulatory oversight, take enforcement action, and make recommendations to Central Government. In addition, the SHANTI Act will provide enhanced legislative and regulatory framework for continued excellence in nuclear safety keeping pace with large scale expansion of nuclear power program.

India has a robust system of implementation of Nuclear Safety and Security for all existing in Nuclear Power Plants including Tarapur Atomic Power Station in Palghar District.

Highest priority is accorded to safety and security in all aspects of nuclear power viz. siting, design, construction, commissioning, and operation. Nuclear power plants are designed adopting safety principles of redundancy, diversity and provided with fail-safe design features following an overlapping defence-in-depth approach. This ensures that there are multiple barriers between the source of radioactivity and the environment. Nuclear power plants are constructed to highest quality standards and the operations are performed adopting well laid out procedures by highly qualified, trained and licensed personnel. There is also a robust internal and independent regulatory mechanism in place and periodic safety reviews are carried out both by Nuclear Power

Corporation of India Ltd. (NPCIL) and the Atomic Energy Regulatory Board (AERB) to ensure safety of the plant.

The nuclear waste handling, treatment, storage and disposal are carried out as per the well laid down procedures and guidelines stipulated by the AERB in accordance with the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 and the requirements of AERB

Safety Code on 'Management of Radioactive Waste (AERB/SC/RW)'. The adherence to these is verified through periodic inspection conducted by AERB. The handling and disposal area is kept under surveillance by the facility management. The environmental monitoring is carried out by Environmental Survey Laboratories (ESLs) of BARC.

Comprehensive safeguards and well-established procedures are implemented to ensure the safe storage, handling, and disposal of nuclear waste. Waste management practices are governed by stringent regulatory standards and are designed to protect operating personnel, the public, and the environment. Radioactive waste is segregated based on its activity level, treated using appropriate techniques such as chemical decontamination, absorption, ion exchange/membrane separations and volume reduction, and then conditioned into stable forms suitable for storage. Engineered storage systems with multiple containment barriers, radiation shielding, and leak detection mechanisms are employed to prevent any release of radioactivity. Waste handling operations are conducted using remote or shielded systems, wherever necessary, and under strict radiological surveillance. Regular monitoring, periodic safety reviews, and adherence to approved waste disposal protocols ensure continued safety throughout the lifecycle of waste management.

This information was given by Union Minister of State for Prime Minister's office and Personnel, Public Grievances and Pensions, Atomic Energy and Space, Dr. Jitendra Singh, in a written reply in the Lok Sabha recently.

**India Energy Debate on
“Curtailment of Solar Power: Concerns,
Challenges, Options and Actions”
Wednesday, 15th July 2026**

India Energy Forum organised its monthly “India Energy Debate” on Curtailment of Solar Power; Concerns, Challenges, Options and Actions” on 15th July 2026 at India International Centre, New Delhi.

Shri R V Shahi, President, India Energy Forum and Former Secretary, Ministry of Power welcomed all the Panelists and participants, shared his views and moderated the Debate. Shri Shahi addressed the escalating crisis of solar power curtailment, noting that Rajasthan has experienced up to 80% curtailment, while other regions face 40-50% reductions. DISCOMs are failing to evacuate power, prompting developers to seek legal remedies through the Central Electricity Regulatory Commission (CERC) for financial compensation. He highlighted that there is an urgent need for structural reforms, grid optimization, and regulatory action to protect India's renewable energy targets.

The other distinguished Panelists who shared their views were: Shri Alok Kumar, Former Secretary, Ministry of Power; and Shri I S Jha, Former Member, CERC and former CMD, PGCIL.

Former Power Secretary Shri **Alok Kumar** addressed the India Energy Forum, stating that while solar expansion is a success, significant curtailments stem from mismatched transmission planning and low demand growth during solar hours. Kumar emphasized that achieving zero curtailment is not cost-effective, urging a shift toward more affordable,

localized solutions like rooftop solar and a policy pivot toward supporting wind and hydro energy over excessive solar subsidies.

Former CERC Member **Shri I S Jha** highlighted that rapid, unbalanced growth of solar power (150 GW by 2026) outpacing wind and transmission infrastructure is the core cause of curtailment. He advocated for replacing long-distance transmission with localized battery storage at pooling stations to mitigate congestion, alongside stricter coordination between generation planning and transmission capacity.

During the Q&A, participants raised issues like Grid Optimization: Combining CSP with thermal storage allows existing transmission lines to be utilized at maximum capacity (85%+ time) instead of sitting underutilized; Pollution Reduction: Shifting from coal-based industrial combustion to local CSP heat and hydrogen production directly addresses the root cause of urban air pollution and Economic Viability: CSP can deliver reliable, dispatchable renewable energy natively without relying on heavy government subsidies like Viability Gap Funding (VGF) or Production Linked Incentives (PLI) etc.

Shri S M Mahajan, Secretary General, IEF gave a Vote of Thanks. The debate was largely attended by members of the IEF and had an interesting and meaningful discussion. He mentioned that, it was encouraging to note that, as reported, 50% of demand is, being met by RE sources. He also shared the forthcoming events of IEF.

