



# SECTOR SPECIFIC REPORT

# RENEWABLE

# ENERGY

AUGUST 2025 EDITION







# 01 | INDIA HITS 50% CLEAN ENERGY CAPACITY MILESTONE AHEAD OF 2030 DEADLINE

India has reached a key goal in terms of clean energy by generating 50% of its total installed electricity capacity from non-fossil fuel sources. This has been met **five years earlier than the 2030 target outlined in the Paris Agreement's Nationally Determined Contributions (NDCs)**. It reflects the country's rapid transition towards sustainable energy and its firm commitment to mitigating climate change.

Based on official government data, **as of June 2025, India's total installed power capacity stands at around 485 GW**, with over 242 GW coming from non-fossil sources such as renewable energy, large hydro, and nuclear power. Renewable energy alone, primarily from solar and wind projects, accounts for more than 185 GW. Large hydroelectric plants provide close to 49 GW, while nuclear facilities contribute approximately 9 GW. The share of thermal power, mainly from coal and gas, has declined sharply from about 70% in 2015 to under half today—marking a decisive shift in the nation's energy mix.

## Not 2030. Not Later. India Did It in 2025.

### 5 Years Ahead of Schedule

50% Power Capacity from Clean, Non-Fossil Sources

**484.8 GW** Total Installed

**242.8 GW** from Non-Fossil Sources



Source: <https://ddnews.gov.in/en/india-achieves-50-renewable-energy-capacity-target-ahead-of-2030-deadline-pralhad-joshi/>

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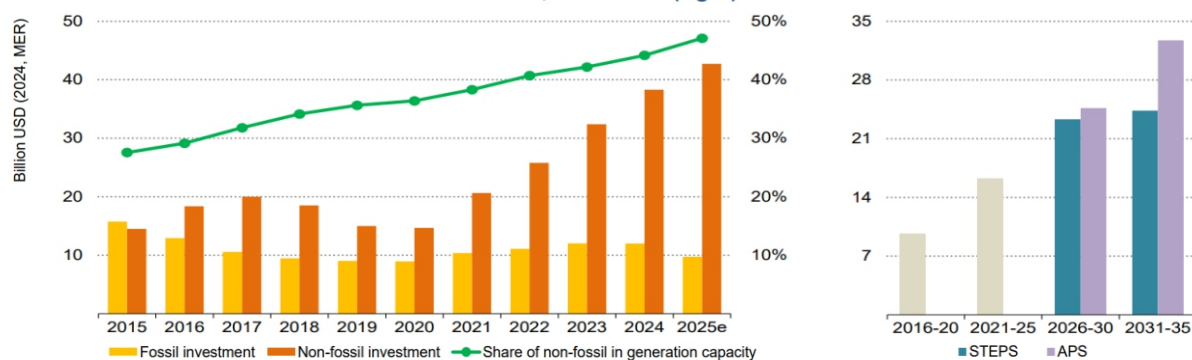
Designed to maximize resource efficiency



The growth in clean energy has been driven by sustained investments in generation capacity, transmission infrastructure, and technological advancements. Public and private sector collaboration has accelerated project implementation while reducing costs, making renewable energy increasingly competitive with conventional sources. Efforts to integrate variable renewable power into the grid have also improved, supported by modern forecasting tools and flexible generation systems.

**India is on track for 50% of its power generation capacity to be from non-fossil sources, ahead of its target year of 2030, on the back of surging solar PV investment**

Investment in power generation capacity in India, 2015-2025e (left), and annual average solar PV investment in India, 2016-2035 (right)



Solar PV investment has accounted for over half of non-fossil power generation capacity investment in recent years. To stay on track with India's net zero by 2070 ambition, India would need USD 1.3 trillion in cumulative investment in clean power to 2035.

Source: <https://www.mercomindia.com/global-investment-energy-sector-3-3-trillion-2025>

Alongside capacity growth, **India is moving forward in emerging segments such as battery storage, offshore wind, and green hydrogen.** These advancements aim to enhance supply reliability, promote industrial decarbonisation, and enable long-term sustainability in the power sector. Equally important is the focus on recycling and re-purposing components from solar and wind projects, addressing future waste management needs.



Source: <https://www.ibef.org/industry/renewable-energy>

Achieving the 50% milestone ahead of the targeted timeline reflects the success of consistent planning and effective execution. Now, **the future aim is to attain the 500 GW of non-fossil capacity by the year 2030.** With strong momentum already in place, India's clean energy transition is accelerating, and the shift to a greener power system is firmly on track.





**02**

## **ALMM MANDATE FOR SOLAR PV CELLS SET FOR IMPLEMENTATION BY JUNE 2026**



**India is all set to take a significant step for manufacturing solar photovoltaic (PV) cells by enforcing the Approved List of Models and Manufacturers (ALMM) regulations from 1<sup>st</sup> June 2026.** This initiative by the Ministry of New and Renewable Energy (MNRE) is designed to boost domestic solar manufacturing, ensure product quality, and enhance the nation's energy security.

The ALMM framework, introduced in April 2021, initially covered only PV modules. Its expansion to include PV cells represents a major milestone in India's renewable energy roadmap. Currently, **the country's solar manufacturing capacity stands at approximately 91 gigawatts (GW) for PV modules, with PV cell capacity at around 27 GW.** Under the mandate, only cells and modules from manufacturers listed in the ALMM will be permitted for use in government-backed and certain regulated solar projects.



Source: <https://www.thehindubusinessline.com/economy/policy/almm-mandate-for-solar-pv-cells-unchanged-implementation-from-june-2026/article69866294.ece>

In July 2025, MNRE issued an amendment clarifying compliance guidelines for projects awarded through government tenders, including those under Section 63 of the Electricity Act, 2003. It outlines that the **ALMM criteria for cells will apply one month post the official release of the approved list.** This timeline gives project developers a defined preparation period, helping them adjust supply chains without disrupting commissioning schedules.



Source: <https://www.saurenergy.com/solar-energy-news/indias-enlisted-module-manufacturing-capacity-touches-90-gw>



The policy's broader objective is to **reduce India's dependence on imported solar equipment, particularly from China**, which has long dominated the sector by supplying competitively priced components. By prioritizing domestically produced PV cells, the government expects to stimulate industrial investment, generate skilled employment, and bring cell production closer in line with module manufacturing capacity.



**Mandatory Use of ALMM-Listed Solar PV Cells to Begin One Month After List Publication**

Source: <https://www.energetica-india.net/news/-mnre-amends-alm-order-for-solar-pv-cells-mandate-to-apply-one-month-after-list-publication->

The **ALMM expansion will also foster innovation** as manufacturers strive to meet stricter quality and performance benchmarks. For developers, the policy provides greater procurement certainty while reducing risks.



By combining increased local manufacturing capabilities with stringent quality checks, the ALMM policy for PV cells is set to strengthen renewable energy ecosystem and secure supply chains. Further, it will help **India to achieve its larger goal of self-sufficiency in renewable energy technology, while meeting ambitious clean energy targets.**



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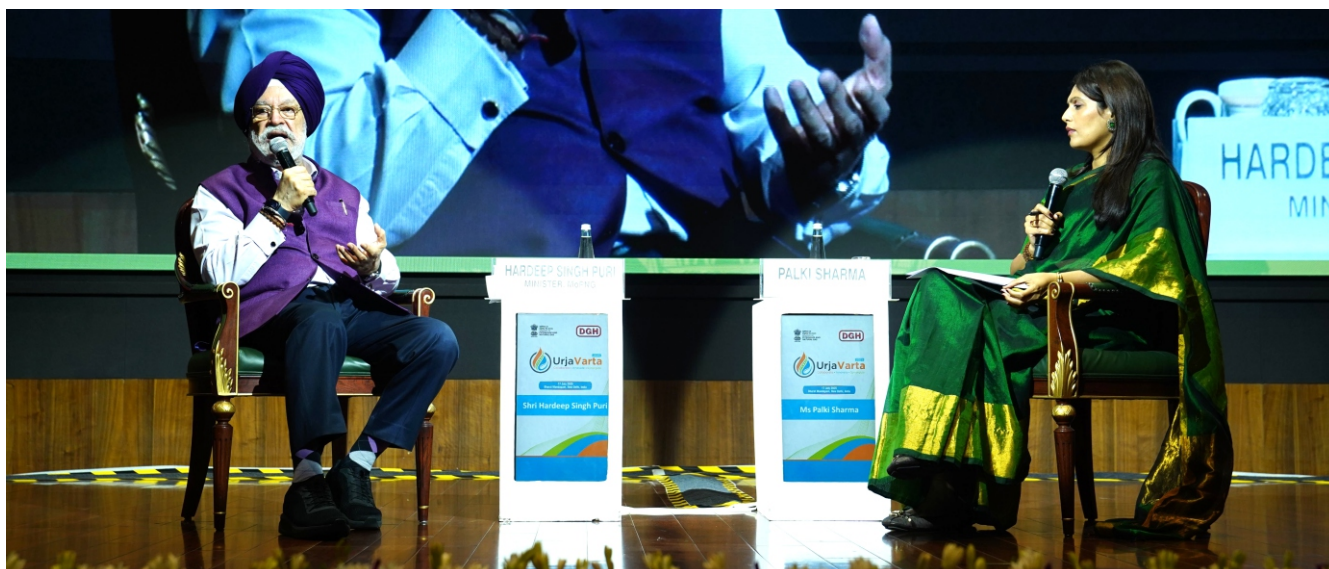


**03**

## **INDIA OUTLINES STRONG UPSTREAM ENERGY PLAN AT URJA VARTA 2025**



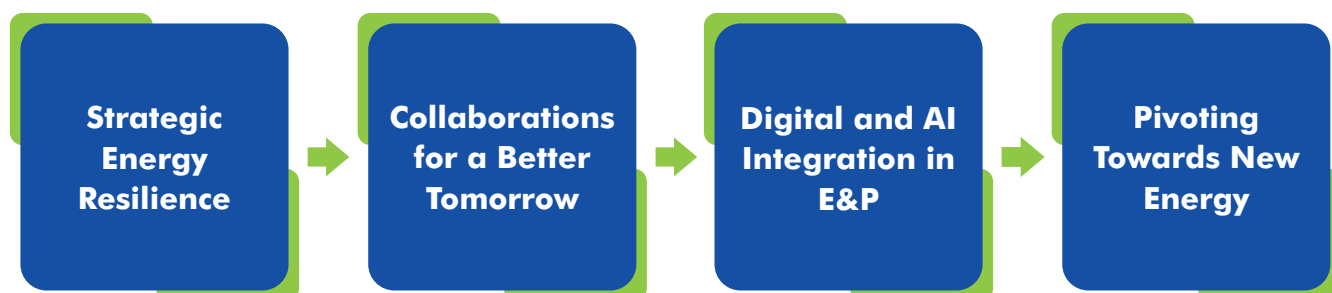
At UrjaVarta 2025, hosted on July 17 at Bharat Mandapam in New Delhi, India introduced an ambitious and future-oriented plan for advancing its upstream energy sector. The landmark event showcased the nation's commitment to transforming its oil and natural gas exploration and production (E&P) sector, essential for meeting rising energy demands driven by economic and industrial growth.



Source: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2145595>

The Ministry of Petroleum and Natural Gas presented a detailed roadmap focussed on energy security, policy reforms, technological innovation, and expanding international collaborations. In light of global geopolitical uncertainties, including disruptions in the Middle East and Eastern Europe, **India is actively diversifying crude oil imports from 27 to 40 source countries.** This approach strengthens resilience and ensures stable energy supplies.

## FOUR CORE THEMES



**Offshore exploration opportunities, particularly in the Andaman Basin, stood out as an area of significant promise,** drawing comparisons to globally successful basin developments. Over the next decade, the government aims to invest an estimated Rs 30–35 lakh crore in energy infrastructure to drive sector expansion.

Key measures included amendments to the **Petroleum and Natural Gas (PNG) Rules** to simplify business operations, the initiation of Hydrocarbon Resource Assessment Studies for precise resource mapping, and signing of strategic MOUs—such as joint efforts between industry leaders for advanced geological research. Additionally, the **establishment of a National Data Repository cloud platform will enable centralized and transparent data management.**

Urja Varta 2025 also featured over 50 innovative technical projects and over 15 breakthrough technologies presented by E&P companies and startups. An Inter-Ministerial Round Table with 22 states and Union Territories emphasized the importance of coordinated efforts at all levels. During the discussion, the government highlighted **India's contribution of 16% to the global oil demand and is projected to contribute around 25% of the incremental demand by 2045.**

### TRANSFORMATIVE REFORMS DISCUSSED

Oilfields Regulation and Development Act (ORDA) - Restructured

Petroleum and Natural Gas Rules (PNG Rules 2025) - Revised

Hydrocarbon Exploration and Licensing Policy (HELP)

Model Revenue Sharing Contracts (MRSC)



Source: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2145595>

The guiding principles of **Urja Varta 2025** aim to **maximize India's hydrocarbon potential while progressing towards sustainability and self-reliance.** This event underscored India's ambition to develop a transparent, and investor-friendly upstream energy framework, strengthening its role as a rising global energy leader.





**04**

## **SECI CROSSES 60 GW MARK IN POWER SALE AGREEMENTS FOR RENEWABLE ENERGY PROJECTS**



**By July 2025, the Solar Energy Corporation of India Limited (SECI), a Navratna Central Public Sector Enterprise (CPSE) functioning under the Ministry of New and Renewable Energy, reached a significant milestone. It has completed Power Sale Agreements (PSAs) totalling more than 60 gigawatts (GW) for renewable energy projects across the country. This success represents a significant advancement in India's journey toward a cleaner, greener, and more sustainable energy future.**



Source: <https://hdfcsky.com/news/seci-achieves-60-gw-milestone-in-power-sale-agreements>

**The PSAs span a variety of renewable technologies, including solar, wind, and hybrid energy systems.** Through these long-term arrangements, SECI guarantees the sale of electricity generated by large-scale projects to distribution utilities nationwide. This mechanism reduces financial risk for developers, ensures payment security, and boosts investor confidence—factors that are essential for accelerating renewable energy deployment across India.

Crossing the 60 GW threshold underscores both the magnitude of projects facilitated by SECI and the consistent policy backing from the Government of India to expand clean energy generation. **These well-structured agreements form a substantial part of the country's operational and pipeline renewable capacity,** highlighting tangible and measurable progress towards achieving ambitious national climate and energy objectives by the end of this decade.



Source: <https://www.businessworld.in/article/seci-crosses-60-gw-in-power-sale-agreements-561963>



### 60 GW POWER SALE AGREEMENTS

Converts solar, wind,  
and hybrid projects

Long-term contracts  
with distribution  
utilities

Provides payment  
security to developers

Boosts investor  
confidence

Supports India's  
clean energy targets

Beyond large-scale procurement, **SECI is increasingly focussing on new areas to strengthen the renewable energy ecosystem.** Key priorities include deploying advanced energy storage technologies to improve grid reliability, enhancing domestic manufacturing capabilities for renewable components, and promoting the production and utilization of green hydrogen and green ammonia. These initiatives aim to diversify India's clean energy portfolio and support the transition to a low-carbon economy.



Source: <https://risingkashmir.com/renewable-energy-powering-indias-economic-growth/>

Since its inception, SECI has played a pivotal role as the nodal agency for renewable energy tenders, consistently adopting transparent competitive bidding practices to drive efficiency and fair pricing. **Its structured approach to project allocation and market facilitation has significantly contributed to attracting private investment and fostering growth in India's green energy landscape.** Through these efforts, SECI continues to serve as a central driver of the nation's renewable energy expansion.



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# **05** | **WIND ENERGY POSITIONED AS A CORNERSTONE OF INDIA'S RENEWABLE ENERGY STRATEGY**



**India is placing wind energy at the heart of its renewable energy ambitions**, making it a major driver of the nation's transition toward a sustainable and self-reliant future. **At the Global Wind Day 2025 conference in Bangalore**, the Ministry of New and Renewable Energy reaffirmed that wind power is central to achieving the goal of generating 50% of electricity from non-fossil fuel sources by 2030 and reaching net-zero emissions by 2070.

**The country ranks fourth globally in installed wind capacity and third in total renewable energy generation.** With 51.5 gigawatts (GW) of installed wind capacity, India has seen a 150% expansion in the past ten years. The goal for 2030 is to achieve 100 GW of wind power capacity, with 30 GW projected from offshore installations. This progress is supported by favourable policy measures, a growing domestic manufacturing base, and a 53% rise in renewable energy allocations this year to 26,549 crore, with a significant portion dedicated to wind energy.



Source: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2136468>



Source: <https://www.thestatesman.com/business/wind-energy-pivotal-to-indias-renewable-energy-strategy-pralhad-joshi-1503445841.html>

However, challenges remain. These include integrating wind, solar, and energy storage systems to ensure uninterrupted supply; lowering tariffs from the current 3.90 per unit to improve affordability; and enhancing the efficiency of turbine manufacturing to strengthen exports. **India produces 33 turbine models, from 225 kW to 5.2 MW**, developed by 14 manufacturers, serving both domestic and global markets.

Several states have emerged as leaders in driving wind energy capacity. The states of **Karnataka, Tamil Nadu, and Gujarat** were **praised for their significant contributions** and continuous efforts in expanding wind energy infrastructure. Their achievements highlight how state-level initiatives, combined with national policy support, can accelerate the pace of clean energy adoption.

## FIVE PRIORITIES OF GOVERNMENT IN WIND ENERGY SECTOR

- ✓ Expanding wind projects in Madhya Pradesh, Telangana, and Odisha
- ✓ Launching offshore projects in Gujarat and Tamil Nadu
- ✓ Promoting storage-linked green power systems
- ✓ Modernizing the power grid using AI-based forecasting
- ✓ Boosting local manufacturing across the wind sector



Source: <https://www.saurenergy.com/solar-energy-news/karnataka-leads-wind-energy-surge-with-record-capacity-in-fy25>

**The launch of the Wind Energy Roadmap and Manufacturing Roadmap provides a structured path for scaling wind power across the country.** Together, these strategies reinforce India's vision of building a greener future in which wind energy stands as a central force in achieving sustainable growth and energy security.





## 06 | EXPERT INSIGHT



**“Renewable energy is not more expensive than fossil fuel when you factor in lifecycle costs.”**

**Shri Piyush Vedprakash Goyal**  
**Minister of Commerce and Industry**  
**Government of India**

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