

MONTHLY

REUPDATE

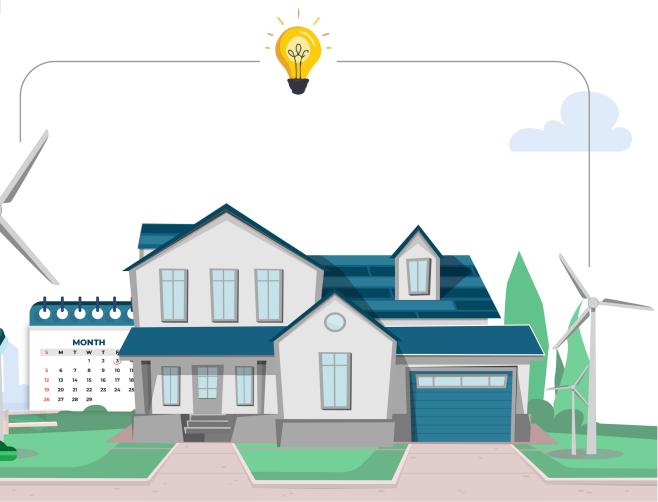
APRIL 2024

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No.1 PV Inverter global shipment

Source: S&P Global Commodity Insights



375_{GW+}

PV Inverter Global Installation 24gw+

PV Inverter India Shipment

245_{GW}

PV Inverter annual production capacity

10_{GW}

India Manufacturing Unit

27

Years in the Solar Industry 25

UPTO 25 Years Spare Support in All Models

35_{GWh}

Annual capacity of ESS



Accepted by all IPP/EPC



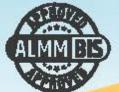
















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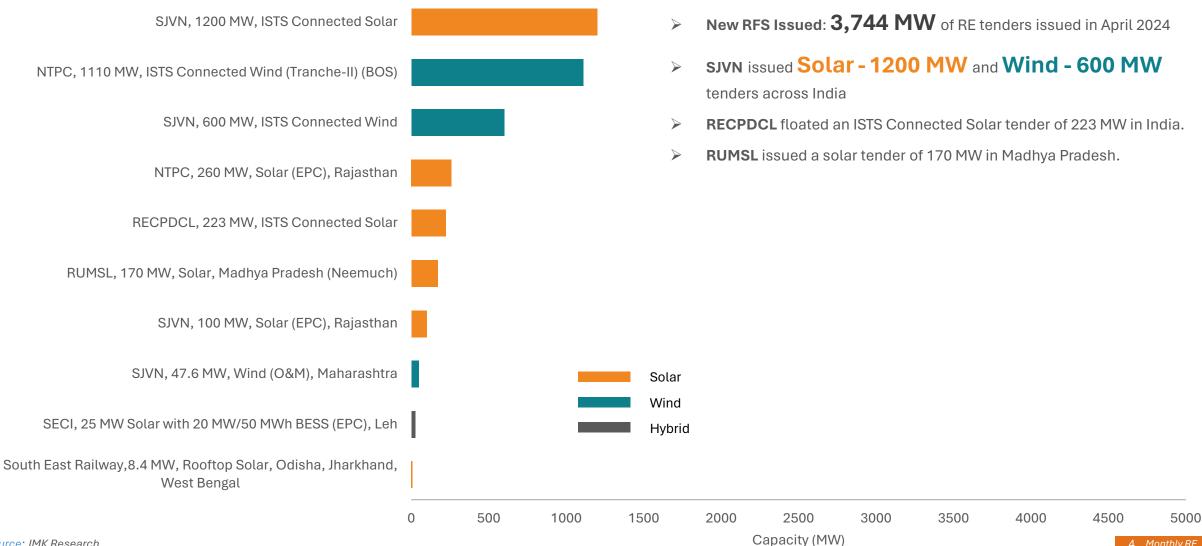


TENDERS





NEW RE TENDERS ISSUED IN APRIL 2024



Source: JMK Research

TENDERS ISSUED



| Tender Name | Technology | Tender Scope | Capacity (MW) | Minimum CUF | Commissioning timeline from PPA signing (months) | Bid Submission Date |
|---------------------------------------------------------------------------------------------|---------------------|---------------------|---------------|----------------|--------------------------------------------------------|---------------------------|
| SJVN, 1200 MW, ISTS Connected Solar, Apr 2024 | Utility Scale Solar | Project Development | 1200 | 19% | 24 | 17th-Jun-2024 |
| NTPC, 1110 MW, ISTS Connected Wind (Tranche-II) (BOS), Apr 2024 | Wind | BOS | 1110 | - | - | 27th-May-2024 |
| SJVN, 600 MW, ISTS Connected Wind, Apr 2024 | Wind | Project Development | 600 | 22% | 24 | 12th-Jun-2024 |
| NTPC, 260 MW, Solar (EPC), Rajasthan, Apr 2024 | Utility Scale Solar | EPC | 260 | - | - | 6th-Jun-2024 |
| RECPDCL, 223 MW, ISTS Connected Solar, Apr 2024 | Utility Scale Solar | Project Development | 223 | 22% | 18 | 13th-May-2024 |
| RUMSL, 170 MW, Solar, Madhya Pradesh (Neemuch), Apr 2024 | Utility Scale Solar | Project Development | 170 | - | - | 7th-Jun-2024 |
| SJVN, 100 MW, Solar (EPC), Rajasthan, Apr 2024 | Utility Scale Solar | EPC | 100 | - | - | 13th-May-2024 |
| SJVN, 47.6 MW, Wind (O&M), Maharashtra, Apr 2024 | Wind | O&M | 47.6 | - | - | 2nd-May-2024 |
| SECI, 25 MW Solar with 20 MW/50 MWh BESS (EPC), Leh, Apr 2024 | Hybrid | EPC | 25 MW/50 MWh | - | 18 | 13th-May-2024 |
| South East Railway (SER),8.4 MW, Rooftop Solar, Odisha, Jharkhand, West Bengal, Apr 2024 | Rooftop Solar | - | 8.4 | - | 8 | 30th-Apr-2024 |

Source: JMK Research





KEY ANNOUNCEMENTS

Other key announcements that were made during this month were:

NTPC invites expressions of interest (EOI) to set up a 50 MW concentrated solar
project with an 8-hour operational thermal energy storage system, to be
developed on a build-own operate basis (BOO). The deadline for bid submissions
is May 9th, 2024. Bidders must provide 50 MW of renewable energy power,
ensuring a minimum annual Capacity Utilization Factor (CUF) of 70% during 8
hours of peak demand and non-solar hours of concentrated capacity in MW.

• Indian Oil Corporation (IOC) has issued a tender for a green hydrogen unit (GHU) of 10 KTA (thousands tonnes per annum) capacity on a build-own-operate (BOO) basis at its Panipat refinery petrochemical complex. The first hydrogen gas delivery is scheduled for 30 months from the letter of award. Bidders must submit an earnest money deposit of INR 54.9 million.

AUCTION COMPLETED

| Tender Name | Technology | Capacity Tendered (MW) | Capacity Allotted (MW) | Winner Details |
|------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NTPC, 1000 MW, ISTS Connected Wind Solar Hybrid (Tranche V), Feb 2024 | Wind Solar Hybrid | 1000 | 1000 | Sprng Energy-150 MW (INR 3.41/kWh) Ampin Energy -150 MW (3.42/kWh) Juniper Green Energy-150 MW (3.43/kWh) Renew -300 MW (INR 3.44/kWh) Avaada -250 MW (INR 3.47/kWh) |
| SECI,400 MWp domestically Manufactured solar modules with domestic manufactured cells, Pan India, Dec 2023 | Domestic Manufacturing | 400 | 400 | Swelect Energy: 100 MWp(INR 22.66/Wp) Grew Energy:200 MWp(INR 22.66/Wp) Renew:100 MWp(INR 22.66/Wp) |

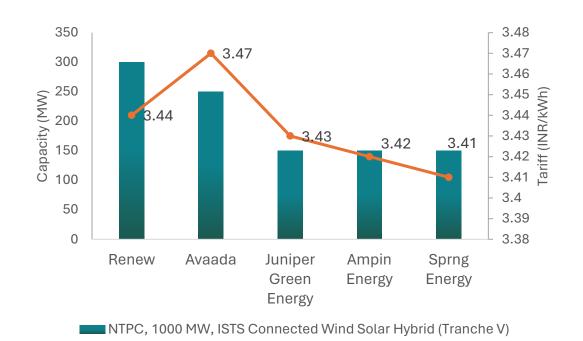
Source: JMK Research 6 Monthly RE

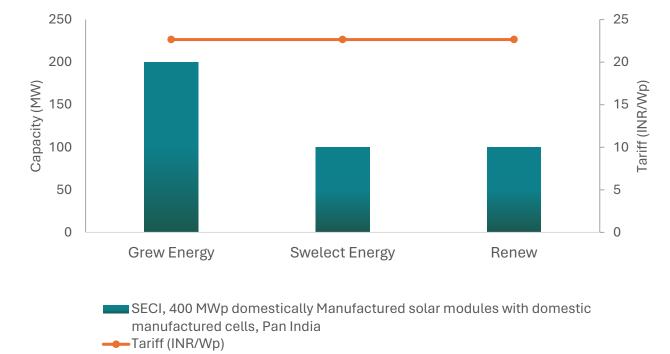


WINNERS DETAILS IN LATEST RE AND MANUFACTURING TENDERS

Traiff (INR/kWh)

- In April 2024, NTPC's **1000 MW Wind Solar Hybrid** Capacity was auctioned and allotted to various RE developers.
- > SECI concluded the auction of its **400 MWp domestically Manufactured solar modules** with domestic manufactured cells this month.





• In addition, **Amara Raja Infra Pvt. Ltd** (ARIPL) has secured a solar balance-of-system (BoS) project of 500 MW/700 MWp from Greenko in Andhra Pradesh. The project scope includes engineering, procurement, and construction of the entire BoS for the 700 MWp project.

Source: JMK Research 7 Monthly RE



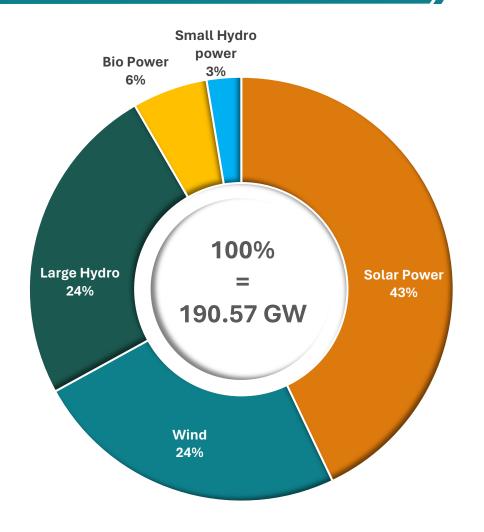
INSTALLED CAPACITY



INSTALLED CAPACITY

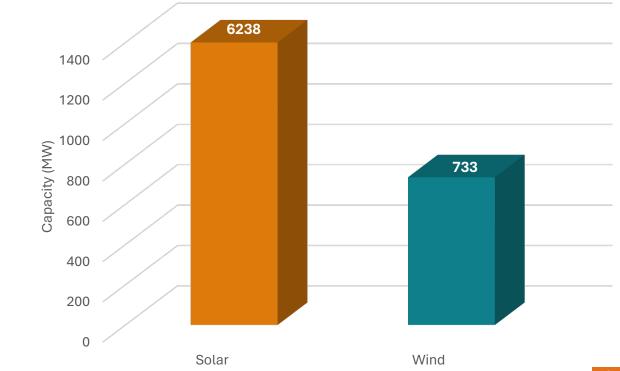


CUMULATIVE RE INSTALLATIONS AS OF MARCH 31ST, 2024



- In Financial Year 2024 (FY), approximately **15,033 MW Solar capacity** and **3,253 MW of Wind capacity** was added.
- In March 2024, a combined total of **6,971 MW** of solar and wind capacity was added, taking the cumulative **RE capacity to 190.57 GW**.

CAPACITY INSTALLED IN MARCH 2024



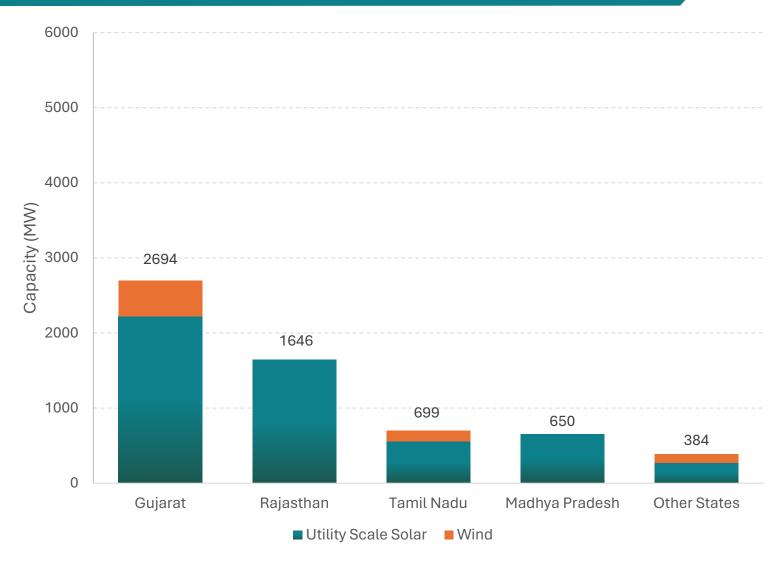
Source: MNRE, JMK Research

Note: Solar includes utility-scale solar, rooftop solar and off-grid/distributed solar segments

STATE WISE INSTALLED CAPACITY



STATE-WISE UTILITY SCALE SOLAR AND WIND INSTALLED CAPACITY IN MARCH 2024



- In March 2024, Gujarat added the maximum utility scale solar & wind capacity of about 2220 MW, and 474 MW, respectively.
- While Rajasthan stands at second place with 1646 MW capacity and Madhya Pradesh at third position with 650 MW capacity in terms of utility scale solar installations.



RE PROJECT UPDATES



RE PROJECTS UPDATES



LIST OF KEY RE PROJECTS COMMISSIONED IN APRIL 2024

| Developer Name | Technology | Capacity | State |
|----------------------|---------------------|----------|-------------|
| Juniper Green Energy | Solar | 105 MW | Maharashtra |
| Ampin Energy | Solar (Open Access) | 100 MW | Rajasthan |
| NTPC | Solar | 57 MW | Rajasthan |
| Juniper Green Energy | Wind | 25.2 MW | Gujarat |
| Schwing Stetter | Solar | 1MW | Tamil Nadu |

Source: JMK Research

KEY ANNOUNCEMENTS

Other key announcements that were made during this month were:

- **Engie** is planning to invest INR 7000 crore to install 2 GW of solar capacity by 2025. The company has already secured five projects in Rajasthan and Gujarat. Currently, Engie operates about 1.1 GW of renewable assets, and in the past 18 months, it has secured an additional 1.25 GW capacity through renewable tenders.
- Torrent Power has announced the commencement of 450 MW hybrid renewable energy projects. These hybrid projects are expected to be developed across multiple locations, harnessing the abundant renewable energy resources available in different regions of the country.

- Waaree Energies announced that it has secured a 220 MW solar module supply contract from Sprng Energy for a new project in Gujarat.
 - Waaree Energies has received a Letter of Intent (LOI) from Gujarat Industries
 Power Co. Ltd (GIPCL) to supply 400 MW of bifacial PV modules for the 2,375 MW
 RE Park near Great Rann of Kutch in Gujarat.
- Hartek Power announced that it has secured a significant EPC contract worth of INR 474 crore (around \$57 million). The project entails the development of a 300 MW groundmount solar PV power plant spread across 1,209 acres in Rajasthan.

RE PROJECTS UPDATES



- Mahindra and Mahindra Group, through its renewables arm Mahindra Susten, is planning to develop a 150 MW hybrid renewable energy project in Maharashtra with an investment of about INR 1,200 crore (\$143.82 million). The project is to generate 460 million kWh of energy annually and can reduce CO2 emissions by 420,000 tonnes. It will primarily cater to commercial and industrial customers and aims for commissioning within the next two years. This project is expected to increase Mahindra and Mahindra RE share from 34% in FY 2023 to 60% in FY 2026.
- NTPC has set a target to add 5 GW of power generation capacity in the current financial year (FY 2025). The company plans to add 3 GW of renewable energy and 2 GW of thermal power capacity in the ongoing fiscal year. In FY 2024, NTPC added 3.924 GW of new capacity to its portfolio, bringing its cumulative installed capacity to nearly 76 GW. Presently, the group has an operational renewable energy capacity of 3.5 GW, with a pipeline of more than 20 GW.
 - NTPC Green Energy Ltd (NGEL) and Indus Towers Ltd (ITL) have agreed to collaborate on developing grid-connected renewable energy projects, such as solar, wind, and energy storage solutions.

- Envision Energy and Hero Future Energies have formed a framework agreement to
 advance collaboration in renewable energy for supplying wind turbine generators
 (WTGs), battery energy storage systems (BESS), and green hydrogen technologies.
 Envision Energy will provide 588 MW of 3.3 MW WTGs to Hero Future Energies, producing
 approximately 2,200 GWh of clean energy annually over the next 1.5 years.
- SJVN's 15 MW Nangal Pond floating solar project in Himachal Pradesh has suffered a
 setback due to weather-related damage to already installed modules. SJVN won the
 project bid with a competitive offer of INR 3.26/kW and had aimed to commission the
 project by August, but the setback may delay this timeline.





MONTHLY RE GENERATION

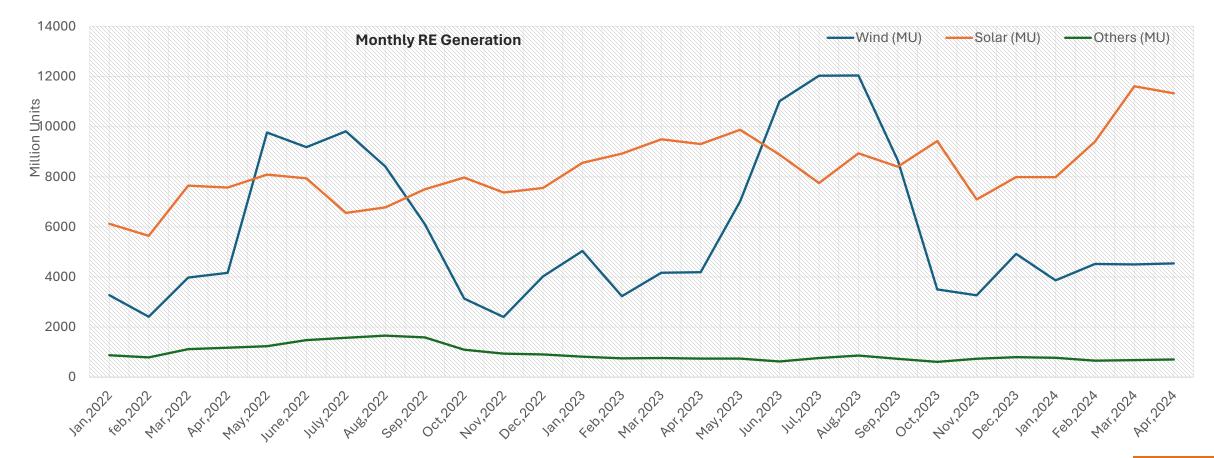


MONTHLY RE GENERATION



SOURCE-WISE RENEWABLE ENERGY GENERATION (MU) - INDIA

- In April 2024, Renewable energy sources generated **16,577 MU**, which is 1.27% less than the RE generation in March 2024.
- Solar energy generation decreased by 2.4% and wind generation increased marginally by 1% on a month-on-month basis in April 2024.









In April 2024, a total of **\$2482 million** was raised in the RE sector in India. The key investments during the month were:

- AdaniConneX, a joint venture between Adani Enterprises and EdgeConneX, has secured India's largest sustainability-linked financing of up to \$1440 million, with an initial investment of \$875 million.
- Avaada Energy has closed a significant refinancing deal, securing about \$535 million from the National Bank for Financing Infrastructure and Development (Nabfid) for the development of four ISTS Connected solar projects in Rajasthan.
- o **JSW Energy** board has approved the raising of \$599 million (INR 5,000 crore) through the issuance of equity on qualified institutional placement basis.
- o **REC Limited** has availed a green loan of 60.5 billion Japanese Yen (\$ 388 million) from Italian export credit agency SACE to finance green projects in India.

INVESTMENTS AND DEALS

| Company Name | Deal Type | Sector | Investor | Deal value |
|---------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| AdaniConnex | Debt | Sustainability | ING Bank N.V., Intesa Sanpaolo, KfW IPEX, MUFG Bank Ltd., Natixis, Standard Chartered Bank, Société Générale, and Sumitomo Mitsui Banking Corporation | \$1440 million |
| <u>Avaada</u> | Debt | Solar | National Bank for Financing Infrastructure and Development (NaBFID) | \$535 million |
| JSW Energy | Equity | Renewable Energy | Qualified Institutional Placements (QIPs) | \$599 million |
| REC Limited | Debt | Renewable Energy | Italian Export Credit Agency, SACE | \$388 million |

Source: JMK Research



INVESTMENTS AND DEALS

| Company Name | Deal Type | Sector | Investor | Assets Acquired (MW) | Stake Acquired | Deal value |
|---------------------------------|-------------|----------|-----------------------------------------|----------------------|----------------|----------------|
| GPS Renewables | Debt | Biofuel | PNB, HDFC Bank, Yes Bank, and others | - | - | \$50 million |
| Husk Power Systems | Debt | Minigrid | ElectriFI | - | - | \$4 million |
| O2 Renewable Energy | Equity | Wind | Dalmia Cement (Bharat) | - | 18.13% | \$0.97 million |
| Bhadla Three SKP Green Ventures | Acquisition | Solar | CSEC | 300 | 100% | \$0.46 million |

- Onix Renewable is planning to launch its Initial Public Offering (IPO) in 2024. The IPO aims to secure financial investments in renewable energy, including solar, wind, and hybrid solar-wind projects, as well as to strengthen solar panel manufacturing and green hydrogen initiatives.
- BluPine Energy has achieved financial closure of 120 MW solar project in Gujarat and has secured debt-financing from HDFC Bank for INR 418 crores. The project is under a PPA with Gujarat Urja Vikas Nigam Ltd (GUVNL) valid for 25 years from date of commercial operation.
- Rays Power Infra, an integrated solar power company, has completed its pre-IPO round
 as a part of its fundraising process. According to the official press release, individual and
 institutional investors that participated in the private placement included Kamlesh
 Navinchandra Shah financial advisor, Vijay Mohan Karnani founder of Vimana Capital,
 Ashok Kumar and Tushar Anand from Alkem Family House, Rakesh Laroia a financial
 investor and few other renowned investors. This Pre-IPO round of 54 crores reflects a
 strong endorsement of Rays Power Infra's business model, growth prospects, robust
 order book position and management team.

JMK Research & Analytics

- Varun Beverages is planning to invest up to 14% in both Huoban Energy 11 and Aspiration Creative Ventures, with cash considerations of INR 2.90 crore and INR 2.24 crore, respectively, totaling INR 5.14 crore. These investments aim to secure solar power generation and supply for VBL's facilities in Maharashtra and Uttar Pradesh.
- **NLC India** is planning to sell renewable assets worth an estimated amount of INR 60 billion (\$720 million) by the end of this fiscal year. The company will put nearly 1.4 GWs of mostly solar plants in the market.
- SJVN Green Energy (SGEL), a wholly owned subsidiary of SJVN, has signed a joint
 venture and shareholders agreement with Assam Power Distribution Company (APDCL)
 to execute renewable projects/parks within the APDCL or SJVN jurisdiction areas and
 on a pan-India basis. SGEL will hold 51% of the ownership of the new JV company,
 while APDCL will own the remaining 49%.
- Naveen Jindal group is aiming at developing captive clean fuel for steel operations with INR 15,000 crore investment plan with majority of the projects planned in Rajasthan and Karnataka.
- **Serentica Renewables** is planning to invest up to INR 30,000 crore by FY2027 in its projects, focusing on achieving 17 GW of renewable energy capacity by 2030, with 10 GW targeted by 2027, particularly in the commercial and industrial (C&I) sector.

- IREDA has recorded its highest-ever annual loan sanctions and disbursements in fiscal 2023-24. The company has sanctioned loans amounting to INR 37,354 crore and disbursed loans worth INR 25,089 crore during the fiscal year 2023-24.
 - The annual loan sanctions grew 14.63% to INR 37,354 crore in 2023-24 from INR 32,587 crore in 2022-23.
 - Similarly, the annual loan disbursements rose by 15.94% to INR 25,089 crore in 2023-24 from Rs 21,639 crore in 2022-23.
- British International Investment (BII) and Dutch bank FMO have committed a \$50 million joint loan facility to help BECIS, a leading energy-as-a-service (EaaS) provider to expand its rooftop solar portfolio in India and Southeast Asia to nearly 350 MW by 2025.
- NTPC Green Energy has selected four investment banks—IDBI Capital Markets &
 Securities, HDFC Bank, IIFL Securities, and Nuvama Wealth Management to handle its
 INR 10,000 crore initial public offering (IPO). The funds raised from the IPO will support
 both ongoing and future projects of the NTPC subsidiary, focusing on solar energy,
 green hydrogen, and green ammonia.

JMK Research & Analytics

- Adani Green Energy is planning to secure a \$400 million offshore loan for an upcoming renewable energy project (RE). The loan duration is anticipated to span between 7-10 years, with its pricing potentially tied to the secured overnight financing rate.
 - In addition, Adani Energy Solutions plans to raise \$400 million to \$500 million through a private placement of Regulation-D notes, targeting U.S. institutional investors. The bonds will be backed by infrastructure assets and the company is aiming for longer-tenor bonds maturing in 20-30 years.
 - Adani group is all set to allocate approximately INR 2.3 lakh crore towards renewable energy in India by 2030.
 - ➤ Of the total investment, INR 1.5 lakh crore will be directed towards scaling up the capacity for solar energy and wind power generation at Khavda in Gujarat's Kutch, increasing it from the current 2 GW to 30 GW.
 - ➤ Additionally, investments totaling INR 50,000 crore will be dedicated to developing 6-7 GW similar projects in the country.
 - ➤ Furthermore, an additional INR 30,000 crore will be allocated for the establishment of solar cell and wind manufacturing capacities at Mundra in Gujarat.
- Indian Oil Corporation (IOC) is planning to invest INR 5,215 crores in building 1 GW renewable energy capacity in India with an equity investment of INR 1,304 crores. It aims to set up standalone ground-mounted solar or onshore wind or wind-solar hybrid projects in a phased manner.

- Tata Power Solar Systems Ltd (TPSSL) has partnered with the Indian Bank to offer collateral-free loans to residential customers adopting rooftop solar systems in India. This collaboration supports the PM Surya Ghar Muft Bijli Yojana scheme, providing financing for PV installations ranging from 3 to 10 kW.
 - Through the PM Surya Ghar Muft Bijli Yojana, homeowners can access loans up to INR 2 lakh for installations up to 3 kW, with an annual interest rate of 7%, a 10% margin money requirement, and repayment tenure of up to 10 years.
 - For installations between 3 kW and 10 kW, eligible applicants can secure loans up to INR 6 lakh with a 20% margin money requirement. Interest rates range from 8.4% to 10.8% per annum.
- **REC** sanctioned loans worth INR 3.59 lakh crore in FY 2024, marking a 33.66% increase from the previous year(FY 2023) when it sanctioned INR 2.68 lakh crore.
 - Out of this total, INR 1.36 lakh crore were allocated to renewable energy (RE) projects, a significant rise from the INR 23,371 crore approved for green projects in FY 2023.
 - As of March 31st, 2024, the company's loan book stood at INR 5.09 lakh crore, reflecting a 17.13% increase compared to FY 2023.



GTAM TRADED VOLUME





GTAM TRADED VOLUME AND PRICE TREND

The **IEX** traded a total of **13.5 MUs in GTAM in April 2024**, which is **275% higher** than the volume traded in the previous month. The reason for the significant increase is the high demand for power during the summer months. The average trade price in IEX-GTAM for April 2024 was INR 7.19/kWh.





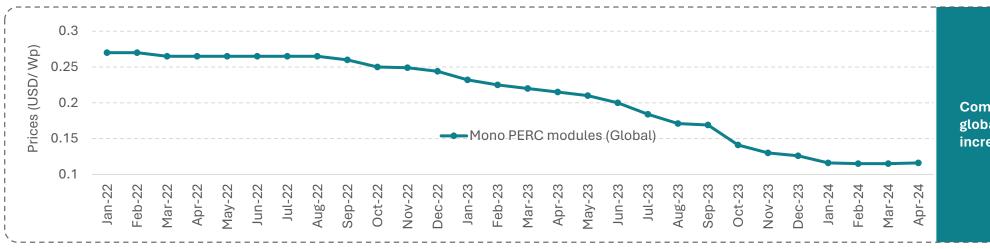
MODULE PRICE TRENDS



MODULE PRICE TRENDS

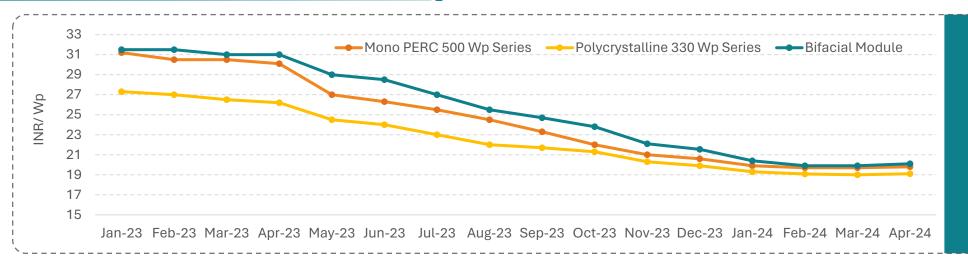


GLOBAL SOLAR MODULES PRICE TRENDS



Comparing on m-o-m basis, price for global mono PERC modules have increased by ~0.9% in April 2024

AVERAGE PRICE TRENDS FOR DOMESTIC MODULES



Comparing on m-o-m basis, prices for domestic modules have increased in April:

Mono PERC 500 Wp – INR 19.8/Wp (up by 0.51%).

Polycrystalline 330 Wp – INR 19.1/Wp (up by 0.52%).

Bifacial Modules – INR 20.1/Wp (up by 1%).



MARKET UPDATES



KEY MARKET UPDATES



SOLAR MANUFACTURING

Alpex Solar to establish a solar panel factory in Uttar Pradesh

- Alpex Solar acquired industrial land via an e-auction by the Uttar Pradesh State Industrial Development Authority (UPSIDA), costing approximately INR 15.04 crore for 7 acres.
- This land in Mathura district will be utilized to establish a solar panel manufacturing facility.

Shirdi Sai Electricals invests INR 15000 crore to set up solar module factory in Andhra Pradesh

- Shirdi Sai Electricals plans to invest INR 15,000 crore in establishing an integrated solar cell-to-module manufacturing facility at Ramayapatnam in Andhra Pradesh.
- The initial phase of this investment, conducted through its subsidiary Indosol Solar, aims to develop capacities for 5 GW of modules, 5 GW of wafers, 5 GW of ingots, and 5 GW of glass.
- The company will initially invest INR 1300 crore to set up a 500 MW manufacturing facility, expected to be operational by the end of 2025. The entire project, with a capacity of 30 GW, is part of the government's Production Linked Incentive (PLI) scheme for the solar industry.

GREEN HYDROGEN

India's green hydrogen attracts a total of \$125 billion investment opportunity by 2025

- According to the investment bank of Avendus Capital, the green hydrogen and green ammonia sectors in India will attract a total investment of \$125 billion along the entire value chain.
- Out of this total investment, setting up renewable energy generation plants will account for \$80 billion. Additionally, \$30 billion will be needed for green hydrogen production, \$10 billion for green ammonia production, and there's a \$5 billion investment opportunity in electrolyser manufacturing.

IFFCO to buy 2 lakh tonne ammonia produced using renewable energy from Acme

- IFFCO to buy 2 lakh tonne of ammonia manufactured via renewable energy from Acme.
- Ammonia will be produced at Acme's plant in Gopalpur, Odisha
- IFFCO will use the ammonia supplied by Acme for manufacturing complex fertilisers at Paradeep unit in Odisha and Kandla unit in Gujarat.

KEY MARKET UPDATES



GREEN HYDROGEN

Ohmium collaborates with Tata Projects to bolster green hydrogen initiatives in India

- Ohmium provider of PEM electrolyzers has announced its partnership with Tata Projects which will manage the entire EPC process including engineering, design, integration, and optimization.
- It aims to deliver cost-effective solutions for green hydrogen production in India.

Green Hydrogen India Market update Q1 2024(Jan-Mar)

- In Q1 2024, Solar Energy Corporation of India (SECI) issued a tender to develop a manufacturing capacity of 1500 MW for electrolyser under the Strategic Interventions for Green Hydrogen Transition (SIGHT) scheme (Tranche-II).
- SECI concluded two auctions under the SIGHT scheme: The first auction concluded for Electrolyser Manufacturers (EM's) to set up manufacturing facilities of 1500 MW for Electrolysers in India (Tranche-I, Component I).
- Another Auction concluded for selecting GH producers with a total capacity of 4,12,000 Metric tons (MT) /annum to establish production facilities in India (Mode-1-Tranche-I, Component II) under the SIGHT Scheme.
- L&T has commissioned its first domestically built electrolyzer with a capacity of 1 MW at the GH plant in Hazira, Gujarat and Jindal Stainless Steel (JSL) inaugurated its first GH plant in Hisar, Haryana.

Renew partners with JERA to evaluate Joint Development of Green Ammonia Project in India

- Renew has signed an agreement with JERA for the establishment of a Green ammonia production project in India which utilizes 500 MW of renewable energy in Paradip, Odisha.
- The project aims to produce 100,000 tons of green ammonia annually by 2030 and JERA has the right to offtake the Green ammonia for Japan.

STORAGE

India's Pumped hydro capacity will reach 4.7 GW to 55 GW by 2031-32

- India aims to achieve a target of \$100 billion annually in gross foreign direct investment (FDI), as the nation actively seeks investors interested in diversifying away from China.
- This target entails attracting at least \$100 billion over the next five years, with an annual average FDI exceeding \$70 billion during the period ending in March 2023. This objective represents a reversal from the declining trend observed last year.

OTHER MARKET UPDATES



India's Energy demand projected to increase by 2.5 times by 2047

- India's energy demand is projected to increase by 2.5 times by 2047. Currently, approximately 84% of energy is generated from coal, but the government aims to reduce CO2 emissions by 686 million tonnes by 2030. This reduction target includes 250 million tonnes from industries, with a specific focus on steel, cement, pulp & paper, petrochemicals, and aluminum sectors.
- To meet these CO2 emissions targets, the focus needs to be on energy efficiency and demand electrification. These measures have the potential to reduce CO2 emissions by 51% by 2047.

Adani Green achieves an operational capacity milestone of 10 GW in Renewable energy

- Adani Green Energy announced reaching an operational capacity milestone of 10 GW in renewable energy, including 7,393 MW in solar, 1,401 MW in wind, and 2140 MW in wind-solar hybrid.
- The company aims to achieve 45 GW of renewable energy by 2030. As part of this plan, it is constructing the world's largest renewable energy plant with a capacity of 30 GW in Khavda, Gujarat, covering an area of 538 square kilometers, almost equivalent to the size of Mumbai city.

ReNew crosses 10 GW of gross renewable energy assets

- ReNew announced that it has completed construction of 1.94 GW of renewable energy assets (1,174 MW of solar and 768 MW of wind energy) in FY 2023-24, taking the cumulative capacity set up by the company to over 10 GW. Taking into account the assets it sold, ReNew's revenue-generating capacity stood at 9.52 GW as of 31 March 2024.
- In FY 2023-24, ReNew contributed about 10% of India's total solar and wind energy generation. The company has a wind portfolio of 4.7 GW, representing 10.5% of India's total wind energy capacity.
- The company also aims to double its renewable energy portfolio to 20 GW within the next four years.

No more extension for solar project timelines, Centre exceeds bid target for FY24

- The government is looking at putting an end to the practice of giving extensions on timelines for the completion of solar power projects in a bid to achieve its ambitious target of 500 GW of non-fossil-based power capacity by 2030.
- The government has bid out 51 GW of renewable energy capacity in FY24, against the target of 50 GW. Capacity addition would accelerate further from FY26, according to the government.

OTHER MARKET UPDATES



12th report on Annual Integrated Rating and Ranking of Power Distribution Utilities released

- As per the report, of the 55 discoms covered in the 12th Integrated Ratings, 14 distribution companies received the highest A+ rating, four have received A, seven have received B, 13 have received B-, 11 have received C and six have received the rating of C-.
- The top five positions go to Adani Electricity Mumbai Limited of Maharashtra at first position, Torrent Power Surat of Gujarat at second position, Torrent Power Ahmedabad of Gujarat at third position, followed by Gujarat's state power utilities Dakshin Gujarat Vij Company Limited and Uttar Gujarat Vij Company Limited at fourth and fifth positions, respectively.
- In addition, two private utilities, Tata Power Northern Odisha Distribution Limited and Dadar, Nagar & Haveli and Daman & Diu Power Distribution Corporation Limited too have received A+ rating, however, they have not been included in the main ranking list since they have not completed three full years of operations.

Government of India released Energy statistics of 2024

- The most recent energy statistics for 2024 have been unveiled by the Indian government. This report underscores a rise in energy consumption per person, signaling enhanced electricity accessibility nationwide.
- Furthermore, the report indicates a significant transition towards renewable energy, with its share in total primary energy supply climbing to 3.81% in 2021-22 and reaching 20.34% in total electricity generation by 2022-23.

Globally 510 GW of RE capacity was added in 2023

- In 2023, renewable energy installations reached record levels, growing by 50% compared to 2022, with 510 gigawatts (GW) added globally.
- However, experts warn that current growth rates won't meet climate goals, calling for a tripling of capacity by 2030. Solar energy led the way, contributing to 73% of growth and representing 37% of global renewable capacity.
- Wind energy also expanded significantly, adding 116 GW, mainly in China. Despite progress, challenges like supply chain disruptions and rising costs remain. To accelerate deployment and meet climate targets, efforts are needed to diversify energy sources, support renewable industries, and ensure a smooth transition to clean energy worldwide.

9.8GW new offshore wind farms installed globally in 2023

- According to World Forum Offshore Wind (WFO), globally 9.8 GW of offshore wind capacity was added in 2023 with a rise from 9.4 GW in 2022 which increases the cumulative installed offshore capacity to 67.4 GW.
- China leads the chart with 31.5 GW of capacity. 2023 also marked installation of 88 MW floating offshore wind farm in Norway with the highest being 1.5 GW capacity off the Dutch coast.
- 25 new offshore wind parks became operational last year with 6.3 GW, 3.9 GW and 2.4 GW currently under development in China, UK and Taiwan respectively. 16 GW of offshore wind farms were undergoing.



POLICIES AND REGULATIONS



POLICIES AND REGULATIONS



CENTRAL LEVEL REGULATORY UPDATES

| Tender Name | Issuing Agency | Date of Issue |
|---------------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| MNRE updated ALMM list with an enlisted capacity of 44.6 GW in April 2024 and First Solar makes the entry in the list | MNRE | 29th-Apr-2024 |
| MNRE extends the timeline for seeking comments/suggestions on draft guidelines for implementation of PM Surya Ghar Yojana | MNRE | 23rd-Apr-2024 |
| Ministry of Power clarifies the guidelines for GENCOs to sell surplus power in the Market | MoP | 22nd-Apr-2024 |
| MNRE guidelines for rooftop solar in the residential sector | MNRE | 16th-Apr-2024 |
| MNRE updated ALMM list with an enlisted capacity of 41.5 GW in April 2024 | MNRE | 10th-Apr-2024 |
| Ministry of New & Renewable Energy (MNRE) extended the deadline for R&D proposal submission of Green Hydrogen | MNRE | 9th-Apr-2024 |
| CERC issues Fees and Charges of Regional Load Despatch Centre and other related matters Regulations, 2024 | CERC | 4th-Apr-2024 |

STATE LEVEL REGULATORY UPDATES

| Tender Name | Issuing Agency | Date of Issue |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| Uttarakhand Electricity Commission issued Tariff Order for FY 2024-25 | UERC | 26th-Apr-2024 |
| Gujarat Electricity Regulatory Commission (GERC) approved an additional surcharge of INR 1/kWh for Open access consumers from April to Sept 24 | GERC | 8th-Apr-2024 |

Source: JMK Research 32 Months

POLICIES AND REGULATIONS



STATE LEVEL REGULATORY UPDATES

| Tender Name | Issuing Agency | Date of Issue |
|--------------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| HERC sets an INR 3.65/kWh generic tariff for 1000 kW Anuradha Solar Power Project | HERC | 2nd-Apr-2024 |
| Telangana State Electricity Regulatory Commission (TSERC) issued Green Energy Open Access (GEOA) Regulations 2024 | TSERC | 1st-Apr-2024 |
| Madhya Pradesh Electricity Regulatory Commission (MPERC) unveils the regulation for Renewable energy Integration in 2024 | MPERC | 14th-Mar-2024 |
| TSERC refuses to impose grid support charges (GSC) on solar rooftop setups | TSERC | 27th-Mar-2024 |
| PSERC issued grid interactive rooftop solar photovoltaic systems (1st amendment) Regulations, 2024 | PSERC | 11th-Mar-2024 |
| GERC approved a tariff of INR 2.81/kWh for GUVNL to procure a 200 MW solar power in Gujarat | GERC | 1st-Mar-2024 |



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- 4. Wind sector in India
- 5. Rooftop Solar Market

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|----------------|------------------|-----------------|-----------|
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| ✓ | ✓ | ✓ | ✓ |
| √ | √ | ✓ | √ |
| √ | √ | ✓ | √ |
| All Reports | Any 3 Reports | Any 1 Report | |
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