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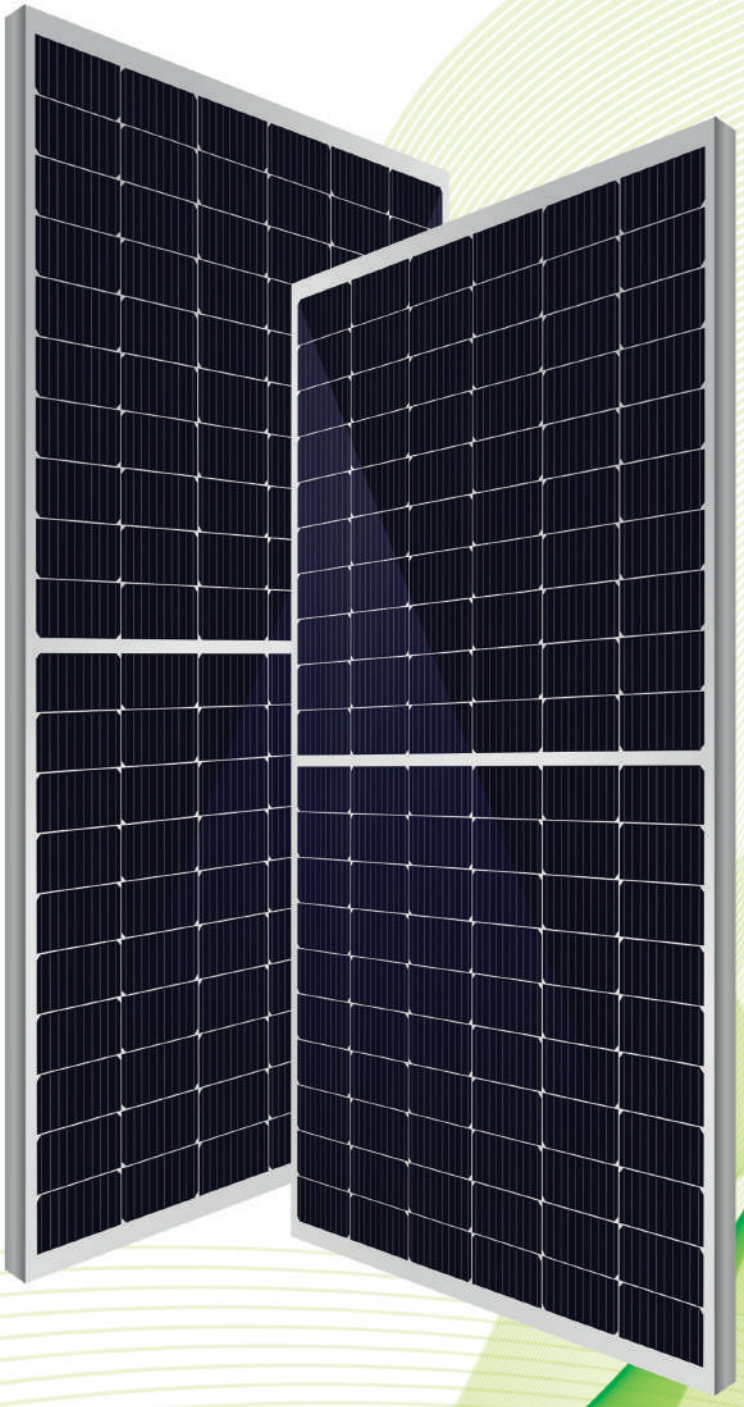

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GROUP EDITOR
Prasanna Singh
prasanna@saurenergy.com

DIRECTOR
Prateek Kapoor
prateek@saurenergy.com

DEPUTY EDITOR
Manish Kumar

CONTENT
Chitrika Grover

SR. MANAGER - MEDIA SOLUTION
Girish Mishra
girish.mishra@saurenergy.com

DESIGNER
Waqar Unis

WEB DEVELOPMENT MANAGER
Jitender Kumar

WEB PRODUCTION
Balvinder Singh

SUBSCRIPTIONS
Harsh Gupta
subscription@saurenergy.com

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From the Group Editor
SAUR ENERGY

We don't usually focus on a single state for a cover feature, but with Uttar Pradesh, we are talking about no ordinary state. India's fourth largest and most populated state would be the sixth largest country in the world if the criteria was just population. It is no secret that just a few states like UP, Bihar, Bengal are beginning to be a real drag on not just India's overall growth but also its renewable targets. That is why it made sense to take a deep dive into just what is changing in UP that many more people are more hopeful today.

A target of 22 GW by 2027 is certainly reassuring, but even crossing 15 GW will be no mean feat, on the current base of just below 5500 MW. But with its specific challenges, it is also obvious that UP needs to look beyond the one size fits all formula. It may not have as large a C&I segment, it may have to look to subsidise storage rather than solar eventually, and it certainly needs to exploit rooftops for all they are worth. The story by Deputy Editor Manish Kumar takes a long hard look before ending on a hopeful note.

In other news, it has been fascinating to see how quickly the sector is evolving, with higher public participation through IPOs and the resulting scrutiny. Much needed, one might add. Low solar prices have certainly enabled hopes to soar, and it is anyone's guess when the tide will turn. When it does, we can only hope that we donot regret not doing enough in this period of record low costs.

Prasanna

PRASANNA SINGH
Group Editor

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International Briefs

BrightNight Australia Links Mortlake Energy Hub To National Grid

The Australian Energy Market Operator approved BrightNight's 360 MW Mortlake Energy Hub connection to the National Electricity Market. It will generate renewable energy for nearly 140,000 Victorian homes, over 1% of the state's total electricity consumption. Australia aims to go net-zero by 2050.

Global Floating Wind Industry Reached 270 GW In FY24: IRENA

Global floating wind industry reached approximately 270 MW of operational capacity in 2023. With 244 GW of new projects in development, the International Renewable Energy Agency (IRENA) highlights its growing competitiveness and role in energy transition strategies.

Zinc-Bromine Batteries Set To Find Usage In Energy Storage

Flowless zinc-bromine batteries (FLZBB) are a promising alternative to flammable lithium-ion batteries due to non-flammable electrolytes. However, self-discharge has been an issue. Researchers developed a nitrogen-doped mesoporous carbon-coated electrode that suppresses self-discharge, enhancing FLZBB performance for energy storage systems.

JSW Steel USA Plans To Invest $110 Mn To Upgrade Offshore Wind Projects

JSW Steel USA, a subsidiary of JSW Steel Ltd., plans to invest $110 million in steel plate mill modernization in Baytown, Texas. This investment will produce high-quality monopile steel plates, supporting the US Administration's goal to deploy 30 GW of offshore wind by 2030.

SolarPower Europe Sets Unified Cybersecurity Standards For PV

Digitalization in energy can enhance efficiency and flexibility in managing decentralized resources. SolarPower Europe's report suggests digital solutions could save €32 billion by 2030 and €160 billion by 2040. The report aims to establish a unified cybersecurity standard for solar PV, mitigating technological risks.

China Adding Solar Capacity At 17 GW Per Month In 2024

China continues its rapid solar capacity expansion, adding 102.48 GW of new PV capacity between January and June 2024, following a record-breaking 2023. The National Energy Administration (NEA) reports this growth as China aims to enhance its renewable energy infrastructure.

Largest BESS In Netherlands Commissioned By PowerField

Dutch IPP PowerField commissioned the Netherlands' largest co-located Battery Energy Storage System (BESS) at a 28 MW solar PV plant. The 52 MWh BESS in Wanneperveen combines solar and storage, supported by Dutch government grants for co-located projects starting January 2025.

Jakson Green Secures Rs 2.96bn Credit Facility From First Abu Dhabi Bank

Jakson Green secured a Rs 2.96 billion credit facility from First Abu Dhabi Bank (Mumbai) to fuel its international expansion. Uzbekistan will be the first beneficiary with upcoming solar PV and battery storage projects, advancing Jakson Green's energy transition efforts.

Repsol, EDF Ink Deal For Offshore Wind Project In Spain & Portugal

Repsol and EDF Renewables agreed to collaborate on future offshore wind tenders in Spain and Portugal. The Iberian Peninsula offers significant growth opportunities. Repsol plans to invest between €3 and €4 billion net until 2027 to develop its renewable project portfolio.

Spanish Rules For Floating Solar Plants Set A New Benchmark

The Spanish cabinet passed regulations for floating solar PV (FPV) installations on reservoirs. The Ministry for Ecological Transition's scientifically conservative approach followed public consultations. These regulations aim to facilitate future floating solar plants, advancing Spain's renewable energy goals.

Brazil Leads Among G20 Countries With Higher RE Capacity: EMBER

Brazil powered 89% of its electricity from wind and solar in 2023, leading G20 countries in renewable electricity generation. According to EMBER, Brazil's advancements in renewable energy solidify its position as a leader in South America's energy transition.

Sri Lanka Gets First ADB Backed Agrivoltaics Project

Sri Lanka inaugurated its first Agrivoltaic demonstration project, an 85 kWp initiative backed by the Asian Development Bank (ADB). Collaborating with various local authorities and the University of Peradeniya, the project aims to integrate agriculture and solar energy for sustainable development.

Canadian Solar Delivers 498 MWH DC BESS For AYPA Power Project

Canadian Solar will deliver a 498 MWh DC standalone battery energy storage system for Aypa Power's Bypass Project in Fort Bend County, Texas. Scheduled for completion in Q3 2025, this project will support the growing energy demand in the Greater Houston area.

Paris Olympics: How Green Energy Is Changing Global Sports

The 2024 Paris Olympics will feature a photovoltaic carport covering 1,000m² and a 400m² floating mobile solar farm on the Seine. These projects aim to promote renewable energy and demonstrate sustainability initiatives during the global sporting event.

US Plans $65Bn Investment In Offshore Wind, But Faces Constraints

The American Clean Power Association (ACP) projects a $65 billion investment in offshore wind projects by 2030, supporting 56,000 jobs. Current projects include 12 GW with active offtake agreements, such as Vineyard Wind and Coastal Virginia Offshore Wind.

SolarDuck, RWE Install Offshore Floating Solar Pilot Off Dutch Coas

SolarDuck and RWE installed the offshore floating solar pilot project 'Merganser' 12 km off the Dutch coast. The project aims to test structural, mooring, and electrical designs, gaining insights for large-scale commercial deployment of offshore floating solar PV systems.

Schneider Electric Gets $3.75M For Electric Stove Outreach

Schneider Electric Energy Access Asia (SEEAA) and Spark+ Africa Fund closed a $3.75 million Series A in ATEC to support the global expansion of market-leading IoT electric stoves. This investment will aid outreach across Asian and African markets.

SolarAfrica Begins Work For 1 GW Project On SunCentral Solar Farm

SolarAfrica commenced construction on the Rand 5 billion development project, marking Phase 1 of its flagship utility-scale project. This initiative addresses South Africa's renewable energy challenges, contributing significantly to the struggling grid's capacity.

Australia's ARENA Announces $100 Million Solar ScaleUp Challenge

The Australian Renewable Energy Agency (ARENA) launched the global Solar ScaleUp Challenge, aiming to identify solar innovations to reduce costs and accelerate deployment. Shortlisted submissions could access up to AU $100 million in grant funding, with final submissions due by 14 August 2024.

Global Battery Demand Can Quadruple To 4,100 GWh By 2030, Says Report

Global battery demand is expected to quadruple to 4,100 gigawatt-hours (GWh) between 2023 and 2030 as electric vehicle (EV) sales continue to rise. As a result, OEMs must hone in on their battery strategies, according to a new report by Bain & Company.

Over 250,000 electric cars were sold globally every week in 2023, more than the total sold in a year just a decade ago.

3M Invests In Green Hydrogen Equipment Maker Ohmium

In its continuing effort to expand into emerging climate technologies, US based 3M has completed a strategic investment in Ohmium International, a developer of electrolyzer systems for green hydrogen production. The investment is part of 3M's commitment to advancing technologies that support the transition to a low-carbon economy and may help the company explore further decarbonizing its own operations.

In April 2023, Ohmium raised $250 million in its Series C funding round led by TPG Rise Climate. 3M is one of nearly 30 blue-chip corporations that invested in the inaugural TPG Rise Climate fund and joined its TPG Rise Climate Coalition.

China Overcapacity 'Overrated', Say China Researchers

Ju Jiandong, Director of the Center for International Finance and Economic Research at PBC School of Finance at Tsinghua University and Feng Lu, Assistant Researcher with the Center for International Finance and Economic Research at PBC School of Finance at Tsinghua University make the case that overcapacity in the green energy sector is a temporary phenomenon. Writing for China Watch, a think tank powered by China Daily, the two made the case that the overcapacity should be viewed from a global, dynamic perspective, and not the 'short term' actions like those taken by the US and other markets which have imposed tariffs on Chinese goods, especially in the energy sector, particularly Solar, and now, EVs

Schneider Electric Gets $3.75M For Electric Stove Outreach

Schneider Electric Energy Access Asia (SEEAA), an impact fund managed by Schneider Electric, an energy management and automation company, along with Spark+ Africa Fund closes US$3.75M Series A in ATEC to support global expansion across Asian and African markets for its market-leading IoT electric stoves.

With this Series A, ATEC will also continue its core investment in R&D – in particular, the latest developments in IoT and Web 3.0 and bringing these benefits to households in the Global South. ●

Detailed versions of all these stories can be found on SaurEnergy.com

Rajasthan To Allow Pvt Edu Centers To Use Net-Billing During Vacations

The Rajasthan Electricity Regulatory Commission (RERC) has now approved its proposal to allow educational institutions in Rajasthan (including private entities) to use net-billing provisions for their rooftop solar connections.

Earlier, the Commission had brought out a draft regulation to allow educational institutions to use the benefit of net-billing for two months in a year when the schools are closed and captive power demand reduces drastically. The draft rules named– RERC (Grid Interactive Distributed Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024 besides talking about this provision also proposed changes to a few other rules to expedite the growth of rooftop solar in the state.

The draft regulations while talking about the proposed provision had said, "Provided also that such Educational Institutions, recognized by GoI/GoR, which have opted for Net-Metering arrangement, may opt Net Billing for a period of any two months during a financial year, for which they have to intimate the distribution licensee before the commencement of such period."

The suo motto order, approving the amendments said that during the course of the stakeholder consultation the Jaipur Vidyut Vitran Nigam Limited (JVVNL) said that the move could create confusion to the discoms.

"The representative on behalf of Jaipur Vidyut Vitran Nigam Ltd (JVVNL) during public hearing on 23.07.2024, submitted that according to the proposed amendment the eligible Educational Institution which is originally under Net-Metering arrangement may opt for Net- Billing arrangement for a period of any two months during financial year, which may cause confusion in the billing process of the Discoms," RERC said in the order.

On this matter, RERC said, "The Commission also observes that Educational Institutions remain closed during vacations, which are predetermined due to which they are not able to consume power from the RE plant installed by them under Net-Metering arrangement and are not able to use the net billing mechanism even though such mechanism is specified in the Regulations. In order to address the above situation and to balance the interest of both the Educational Institution and Discoms, the Commission has proposed these amendments. ●

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Gov Extends E-Mobility Scheme With A Budget Of Rs 778cr

In 2019, the Indian government approved the 'Faster Adoption and Manufacturing of Electric Vehicles in India Phase II (FAME India Phase II)' to promote electric mobility. Recently, the government extended the duration of the Electric Mobility Promotion Scheme (EMPS) 2024 by two months, now running until September 30, 2024. Additionally, the scheme's outlay has been increased to Rs. 778 crores.

Initially, a total outlay of Rs. 10,000 crores was allocated for the FAME policy, which commenced on April 1, 2019. The first phase had a budget of Rs. 895 crores, while the second phase focused on the electrification of public and shared transportation. The second phase aims to support:

- 7,090 e-buses
- 500,000 e-3 wheelers
- 55,000 e-4-wheeler passenger cars
- 1 million e-2 wheelers

The Electric Mobility Promotion Scheme 2024 (EMPS 2024), was launched by the Ministry of Heavy Industries through a gazette notification dated March 13, 2024. It was designed to enhance the adoption of electric vehicles (EVs) in India. Originally scheduled from April 1, 2024, to July 31, 2024, the scheme has been extended to September 30, 2024, with its total budget increased to Rs. 778 crores.

This scheme supports the Government of India's green initiatives and aims to foster the growth of the EV manufacturing ecosystem. It applies to, electric two-wheelers (e-2W) and electric three-wheelers (e-3W), including e-rickshaws, e-carts, and L5 category vehicles The scheme particularly targets commercial electric two-wheelers (e-2Ws) and electric three-wheeler (e-3Ws) but also includes privately or corporately owned e-2Ws.

Revised Targets

The revised scheme targets support for 560,789 electric vehicles, including 500,080 electric two-wheelers (e-2Ws) and 60,709 electric three-wheelers (e-3Ws), of which 13,590 are rickshaws and e-carts, and 47,119 are L5 category vehicles. These incentives are available only for EVs equipped with advanced batteries. The scheme's funding is limited and targets specific numbers for each category.

Aatma Nirbhar Bharat

The scheme supports the Prime Minister's vision of Aatmanirbhar Bharat by fostering a competitive and resilient domestic EV manufacturing industry. The Phased Manufacturing Programme (PMP) encourages domestic production and strengthens the EV supply chain, creating significant employment opportunities.

Two-Wheeler EVs Under FAME

According to a recent parliamentary report by Minister of State for Steel and Heavy Industries, Bhupathiraju Srinivasa Varma, the government spent Rs. 4,375.59 crores on electric two-wheelers under the FAME scheme from April 1, 2019, to March 31, 2024. The second highest expenditure was Rs. 1,322 crores on electric buses. Spending on electric three-wheelers and four-wheelers totaled Rs. 399.12 crores, bringing the total expenditure on electric vehicles to Rs. 6,942.32 crores.

To further promote clean mobility, the Ministry of Heavy Industries has increased the outlay under FAME India Phase II from Rs. 10,000 crores to Rs. 11,500 crores.

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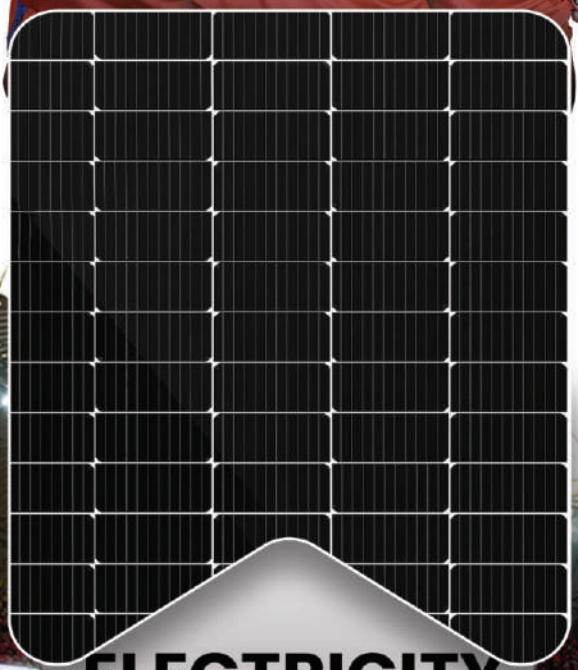

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11% Of Indian Module Capacity With ALMM Is TOPCon Production

The latest Approved List of Models and Manufacturers (ALMM) for solar module makers in India revealed that several enlisted companies have now added new TOPCOn technology production lines. This is in addition to the production lines for mono-PERC which has now dominated the Indian solar market and the phasing out of redundant polycrystalline technology.

A close analysis of the ALMM list, released by the Ministry of New and Renewable Energy (MNRE) revealed that 10 solar module (11%) manufacturing units in India are producing solar modules with TOPCon technology. The ALMM list has a total of 93 registered solar module manufacturing units.

The 10 solar module manufacturers who are currently into the business of producing this advanced technology-based solar modules included-Waaree Renewable, Gautam Solar, Mundra (Adani) Solar, Premier Energies, RenewsSys, Luminous, Rayzon, Emmvee, Pahal Solar and Ganesh Bharat. For example-Gautam Solar offers TOPCon panels in 16 categories ranging from 270Wp to 575Wp. Among its own TOPCon modules, Waaree offers has its max capacity of 615Wp. RenewSys, on the other side offers TOPCon modules upto 635Wp. Many of these companies including Gautam Solar are also producing bifacial TOPCon solar modules.

Solar Module Makers Who Are Into TOPCOn Production
Waaree Renewable
Mundra Solar
Luminous
RenewSys
Premier Energies
Rayzon
Emmvee
Gautam Solar
Pahal Solar
Ganesh Bharat

A number of these companies are now trying to tap the residential rooftop solar market with the advent of PM Surya Ghar scheme. A number of these firms are now coming up with TOPCon bifacial solar modules in the DCR category to cater to the needs of residential rooftop consumers who want higher efficiency in smaller areas.

TOPCon (Tunnel Oxide Passivated Contact) technology is an advanced solar cell technology which ensures higher yield from the same area of solar panels compared to the less effective alternatives. This has come to the fore when several solar module manufacturers had earlier told Saur Energy about their plans to add new production lines of this technology in several renewable energy expos.

Industry experts claimed that unlike other advanced solar cell technology like HJT (Hetero Junction Technology), TOPCon needed lesser new capital for the solar module manufacturers who were into the production of mono-PERC production line. However, the real numbers on the ground would be different as all the current capacities and cumulative capacities of the solar module manufacturers in many cases are not enlisted in the ALMM list.

With the pace of deployment of TOPCon technology, it is likely that in the next few months, the ALMM list see more enlisted TOPCon models by different solar module makers in India.

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Adani Renewable Adds 250 MW Of New Wind Project At Khavda

Adani Renewable Energy, a subsidiary of Adani Green Energy, recently operationalized its new 250 MW of energy wind energy capacities at the Khavda Renewable Park in Gujarat, touted to be world's largest renewable energy park with a targeted capacity of over 30 GW. This comes after the Indian renewable company announced operationalizing 1 Gigawatt (GW) of solar capacities at Khavda. The firm has plans to add 30 GW of renewable capacities at Khavda. With the addition of the new capacities, the Rann of Kutch region has got a fillip.

The new plant features on-shore wind turbines with a capacity of 5.2 MW. With this development, the total operational capacity at Khavda now stands at 2,250 MW. Khavda, touted as Adani's most ambitious green project till date has seen a surge not only in solar projects but wind projects too. The operationalization of Adani Renewable Energy, a wholly-owned step-down subsidiary of Adani Green Energy Limited's recent project has made Khavda a hotspot for wind projects in Gujarat. Khavda is said to have a size five times of the total size of Paris. ●

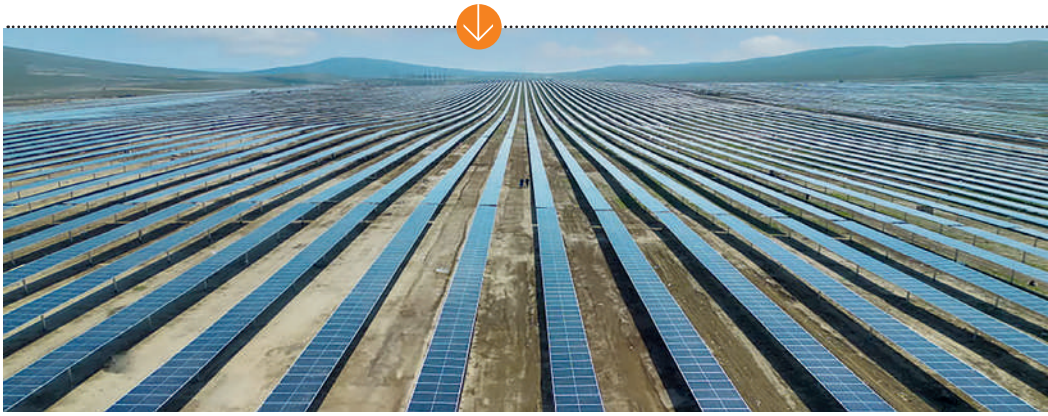
Sungrow, Hero Future Energies Ink 850 MW Supply Agreement

Sungrow signed a strategic agreement with Hero Future Energies (HFE), to supply 850 MW of inverters, expanding its presence in clean energy space.

Sungrow a PV inverter and energy storage system provider for renewables signed an agreement with Hero Future Energies (HFE), the renewable energy arm of Hero Group. Through this agreement, the company claims to expand its presence in the clean energy space. The inverter solutions will be delivered to multiple HFE projects located in India.

Under the agreement, Sungrow will supply the latest 1500V inverter solutions from their Bengaluru factory which feature an IP 65-rated design, enabling an optimized LCOE for projects. The solutions are ideal for projects in harsh conditions, like deserts. Given the industry-leading protection capability and smart forced air-cooling technology, the solutions can work without derating even in extreme weather conditions.

Sunil Badesra, Country Head, Sungrow India, said the Company considers "Clean power for all" as its mission, coupled with innovative solutions. He further added that the company is very excited to have secured this contract and will leave no stone unturned in fulfilling its commitment to HFE." "Sungrow has a long-standing partnership with HFE for more than 5 years. We are grateful for the ongoing faith and backing from Hero Future Energies and are pleased to work with this top-notch entity again on their future projects, reinforcing our commitment to accelerate the adoption of clean energy throughout the country," said Badesra. ●



KPI Green Gets 100 MW Hybrid Project From Aether Industries

KPI Green Energy Limited recently received a new order for a 100 MW hybrid captive solar power project under the captive power producer (CPP) segment from Aether Industries Limited.

Aether Industries Limited is a chemical manufacturer in India focused on producing intermediates and chemicals involving complex and differentiated chemistry and technology core competencies. The projects are scheduled to be completed in the financial year 2024-25, in various tranches. ●

ReNew Commissions 400 MW Solar Project In Jaisalmer, Rajasthan

NASDAQ listed ReNew, on July 23 inaugurated a 400 MW solar project in Rajasthan, as part of a 600 MW PPA signed with the Solar Energy Corporation of India Limited (SECI) to generate clean energy in Rajasthan for the next 25 years. The project was inaugurated by Rajasthan Chief Minister Bhajan Lal Sharma in the presence of Deputy Chief Minister Diya Kumari, Energy Minister Puspendra Singh Ranawat, SECI Chairman R.P. Gupta, and ReNew's Founder, Chairman and CEO Sumant Sinha, among other dignitaries.

The 600 MW solar power plant, spread over 2000 acres of land and across multiple villages in the Pokran and Bhaniyana tehsils of Jaisalmer district, Rajasthan, is expected to generate about 1331 million units of electricity annually. Additionally, the project offers a competitive PPA tariff at Rs. 2.18/kWh.

Inaugurating the project, Chief Minister Shri Bhajan Lal Sharma commented, "The production of renewable energy from the 400 MW solar power plant in Jaisalmer today by ReNew is an important step towards making the state self-reliant. Production of the remaining 200 MW will start by October." He further added, "Adding renewable capacity will reduce the cost of power resulting in lower tariffs for consumers and also savings for the government. Through this plant, electricity will be supplied to Rajasthan discom at very cheap rates."

ReNew also conducts various water conservation activities in water-stressed districts like Jaisalmer, including de-silting of community lakes and construction of traditional water harvesting structures, providing water to more than 700 underprivileged families. Deputy Chief Minister, Smt. Diya Kumari added, "I thank ReNew for this important milestone. There is a huge opportunity for the renewable sector in Rajasthan. Not much work has been done in the state for the last five years in the area of energy and water security. In line with the Prime Minister's vision of Viksit Bharat, we are targeting to make Rajasthan Viksit."

Sumant Sinha, Founder, Chairman & CEO, ReNew, said "I am proud that we were able to complete this project in a record time, enough to power 300,000 households. Presently, 4000 MW of ReNew's gross ~10GW of operational capacity is situated in Rajasthan with investments of over Rs 21,000 crore, including a 4 GW solar module manufacturing facility in Jaipur. We are fully committed to Rajasthan when it comes to expanding our portfolio upwards from 10 GW in the next few years."

The project is connected at Jaisalmer-II (Bhensara) of Rajasthan Rajya Vidyut Prasaran Nigam Limited ("RVPNL") and is the largest solar project connected to RVPNL. SECI has also executed a Power Sale Agreement (PSA) with Rajasthan Urja Vikas Nigam Limited (RUVNL)/Rajasthan Discom for the same duration.

The project is using solar modules made by ReNew, making it the first project of this scale to use solar modules made in Jaipur.

Waaree Subsidiary Indosolar Commences 1.30 GW Solar Module Facility

Indosolar Limited, a subsidiary of Waaree Energies Limited today announced the inauguration of its solar module manufacturing facility in Noida. The company in a media statement today said that with a production capacity of 1.30 GW, this factory marks a milestone in its domestic manufacturing and is expected to accelerate employment opportunities, and contribute towards propelling India's journey towards achieving net-zero emissions.

Hitesh Doshi, Chairman and Managing Director at Indosolar said, "This new factory epitomizes our commitment to advancing solar technology and promoting sustainability. Through our manufacturing processes and our dedicated team's expertise, we aim to propel India's renewable energy agenda forward while creating employment opportunities for the local community. Moreover, this facility is expected to contribute towards fulfilling the surging demand for high-quality solar panels across the nation. We look forward to collaborating closely with our stakeholders to contribute towards the widespread adoption of solar power and to a more sustainable future for all."

Is India Ready For Online Rooftop Solar Deals?

As Amazon (and Flipkart with its own Big Billion days sale), one of the top two e-commerce sellers in India prepare for yet another Prime day sale this July, readers might be surprised with some of the solar deals on offer. On Amazon, you can currently get solar modules from reputed brands like Waaree, Adani, Microtek, Luminous and others at costs that look truly attractive. Other smaller players have also ventured into the game of online sales, directly to the consumers.

For instance, a pack of 2 Mono Perc 540 W modules from Waaree can be had for just Rs 23,199, or more simply, 1 Kw solar at that price. Keep in mind that module costs are usually about 50% of the total project cost on rooftop solar, and you are looking at a price well within Rs 50,000 possibly for a one Kw set up. And this is today, perhaps the actual prime day sale might bring better solar deals.

There are similar options from Adani Solar as well. Moving on to a higher grade of modules, Waaree's 540 W Bi facial solar panels in a pack of 10 can be had for around 115,000. That is solar modules for a 5.4 KW system. For perspective, you will be lucky to get a quote under Rs 350,000 for a similarly sized system from most installers in India.

So should you rush to book your panels online?

Not so fast. Setting up solar rooftop systems in India take a while, thanks to the nature of the work, and the involvement of local discoms. If you want the benefit of government subsidies under the PM Surya Ghar scheme, you should be even more careful, as your vendor might not be willing to work for you if you buy the modules yourself. So, make sure to keep your selected vendor in the loop if you are going to consider online buying. Similarly, watch out for the DCR (Domestic Content Requirement) content clause in the government scheme, as modules offered online may not necessarily have DCR certification.

Today, your solar will be set up, in the best case, in 45-60 days. That means, chasing an attractive deal might not look such a great idea if get stuck subsequently, on any of the issues listed above. What these online prices will help you understand is hopefully negotiate a better deal with your solar installer for a rooftop installation.

What you can seek is deals on smaller, sub kW sizes, where no subsidy is available or sought by you. These are cases where a single panel or two will meet a need like some solar lighting, or charge a battery that can in turn charge mobiles, and other small electronic items. Or the many recreational use cases of solar that are already listed on these sites.

Of course, if you have plans for a solar setup larger than 3 kW (The government limit for subsidies under PM Surya Ghar), then you might just find a deal that lowers your project cost significantly. But in all cases, stick to the known and tested brands, as online attracts many operators out to make a quick buck. ●

Heliene And Premier Energies Partner To Build US PV Cell Facility

Canadian solar module manufacturing firm Heliene recently collaborated with Premier Energies to create a solar cell manufacturing facility in the US. Under the terms of a recentlay executed agreement, the new facility can produce an annual aggregate capacity of 1 GW NType cells to supply Heliene's US cell requirement as well as Premier's.

With this joint venture and new cell plant, the companies are investing in the growing US solar industry and capitalizing on important incentives and tax credits for domestic clean energy manufacturing introduced under the Inflation Reduction Act (IRA) of 2022.

This joint venture builds on a longstanding partnership between Heliene and Premier Energies. Heliene currently sources solar cells from PEPPL's Hyderabad facility for use in module manufacturing at its Mountain Iron, MN location.

"Premier Energies has been a valued partner of Heliene's for many years now and we share a commitment to providing the highest-quality, most reliable products to solar customers. With demand for US-made modules and components growing, now is the perfect time to embark on the next phase of our partnership with this joint venture," said Martin Pochtaruk, CEO of Heliene. "Our new cell manufacturing facility will not only expand the footprint and impact of each of our companies, but it will also establish us as true leaders in the effort to friend-shore up the US solar manufacturing supply chain."

The IRA introduced important tax credits for the domestic production of solar cells, modules and components, but new US-based cell manufacturing capacity is still required to meet increased demand for solar modules and projects. Heliene and Premier Energies' planned facility will directly address this demand. Cells produced at the new site and incorporated into existing US module manufacturing operations will also support developers seeking additional tax credits and incentives for their solar projects, including the lucrative domestic content bonus adder.

"As pioneers in solar technology and with our years of experience in solar cell manufacturing, Premier Energies is proud to partner with a fellow innovator and industry leader in Heliene," said Chiranjeev Saluja, Managing Director at Premier Energies. "This joint venture will leverage the best of both companies' resources and knowledge to tap the largely unaddressed demand for US cell manufacturing."

Under the terms of the joint venture, Heliene will contribute construction, project management, human resources, financial resources and management, facility operations, supply chain and logistics, and regulatory expertise. Premier will contribute cell technology engineering and operational expertise in the manufacturing process of the cells, manufacturing equipment selection, financial resources, raw material vendor relationships and supply agreements management. The Companies will announce further details on the project's scope and timeline shortly. ●

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WILL UP BE A SOLAR STAR?

At a recent Solar Trailblazers event in Lucknow in July, organised by Saur Energy, Uttar Pradesh Deputy Chief Minister **Brajesh Pathak** told a hall-packed audience that this is the 'best time' in India to go for solar. He was referring to the higher subsidies given to the rooftop solar consumers under the ambitious PM Surya Ghar scheme and a number of other conductive state policies. UP has been under a BJP led government since 2017, with Chief Minister Yogi Adityanath in charge since then.

"India had never seen such a high subsidy for rooftop solar consumers till now. In Uttar Pradesh, we have also amended our solar policies to make it more conductive for the growth of the solar sector. There were issues in the extension of net-metering for several other categories which have now been sorted out through our UP Solar Policy 2022," Pathak said.

Uttar Pradesh, the most populous Indian state and the fourth largest geographically, currently has 5,346 MW of renewable energy capacities. This makes the state among the top 10 Indian states with highest renewable energy capacities. It is currently ranked 8th after renewable rich states like Rajasthan, Gujarat, Karnataka, Maharashtra , Madhya Pradesh and others. Of course, jumping ranks will be very tough when one considers the gap between UP and fifth placed Maharashtra, at 1.7 times. Or the ambitious renewable targets of Andhra Pradesh and Madhya Pradesh. The two states above it at number 6 and 7, respectively.

Notwithstanding its inherent challenges of dearth of large land parcels to host large solar parks and adverse conditions to host wind energy projects, UP has finally got around to finding other ways to add several forms of clean energy capacity to its energy mix.

According to the latest data from the Ministry of New and Renewable Energy (MNRE), ground-mounted solar projects, biomass power and hydro projects are spearheading the growth of its green power capacities. On the other hand, its growth in rooftop solar (now

Brajesh Pathak
Deputy Chief Minister, Govt. Of Uttar Pradesh

under PM Surya Ghar scheme) has been dismal till now with a total capacity of only 265 MW.

The latest State Budget of UP revealed that the state has moved from its total solar capacity of 288 MW in 2017 to 2,600 MW in 2024. The state is also working to establish solar parks in the Bundelkhand region with a total capacity of 4,000 MW.

On the other hand, State Finance Minister Suresh Khanna in his budget speech said that works are now on to boost the works of its proposed Green Energy Corridor Project-II in UP to easily evacuate green power from the state. The state is also working to make Ayodhya and Varanasi as India's latest Solar Cities.

An analysis by PRS Legislative said that UP in 2024-25 has earmarked 6.7% of its total budgetary expenditure for its energy sector which is higher than the average of other states of 4.8%. However, the state currently has the highest installed capacity of thermal power sources like coal and gas. However, experts opine that the it has done well on several alternative modes of clean energy and has the potential to do more in the days to come. Solar and thermal coupling for instance, which allows solar projects to be set up anywhere else, could be one option for the state

Potential In UP

Hamstrung severely by land related issues, advances in floating solar and agro voltaics might yet open up new avenues for the state. **Jaideep Saraswat,** Associate Director (Energy) from climate and energy think tank Vasudha Foundation told Saur Energy that UP has a good potential in floating solar and agro voltaics.

"UP has around 4,192 water bodies spanning in an area greater than 15000 sq-mts. Out of this 2,192 water bodies are perennial. UP has a floating solar potential ranging from 9.5 GW to 4.3 GW while it has 22 GW of total potential in utility-scale projects," he said. He however, added that the lack of land in UP to host large utility-scale projects, limitations of discoms and lack of awareness on off-grid solar interventions in rural UP mar the avenues of the sector.

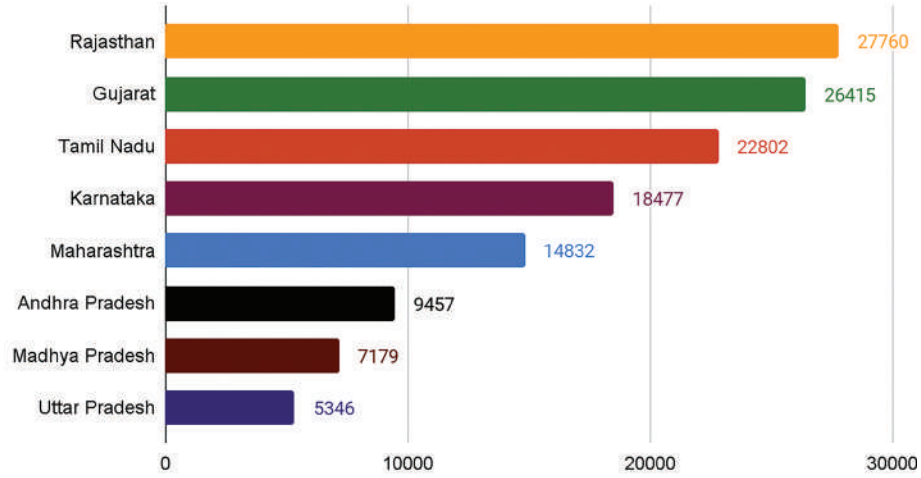
Anubha Shukla, Chief Commercial Officer of Husk Power, however sees immense potential for mini-grids and off-grid solutions for the Medium, Small and Micro Enterprises (MSME) sector in the state. Her company already operates mini-grids in the state and works with the MSME sectors to provide energy security through these decentralised models. Speaking at the same Solar Trailblazers event in Lucknow, she pointed out that there are 90 lakh registered MSMEs in the state which are paying higher commercial tariffs to run their businesses successfully.

Jaideep Saraswat
Associate Director (Clean Energy), Vasudha Foundation

"If you look at the landed cost of electricity that these MSMEs are paying, it's higher than what solar could deliver today. In India, specifically we work in weak grid areas. They pay commercial tariffs for the government grid supply which is around Rs 8-Rs 9 per unit range. However, they are also using alternative power systems like diesels, inverters and others . So their cumulative landed cost of power is anywhere from Rs 25 to Rs 40 per unit. Thus, they are willing to pay a competitive rate if they can get a reliable source of power through solar mini grids," she said.

Shukla said that the company stopped treating power as a subsidized commodity and started selling clean power in weak grid areas at rates that were affordable to these MSMEs. "This model has worked fantastically for us. So for states like UP, instead of having centralised solar power system, we can have smaller decentralised solar mini grids

States With Highest Renewable Capacities In India



Source: CEA *Compiled By:* Saur Energy

Anubha Shukla
CCO, Husk Power

to ensure reliable power which is also green," she added.

It is noteworthy that the Uttar Pradesh New & Renewable Energy Development Agency (UPNEDA) also used mini-grids to ensure energy security in many rural areas and recently issued a slew of tenders to revive many of these decentralised solar units.

State Plans To Boost RE

The state recently came out with its Solar Policy with an aim to boost its total solar capacity upto 22,000 MW by the end of 2026-27. This vision document of the government plans to do this by adding 14000 MW of utility-scale projects, 4500 MW of residential rooftop projects, 1500 MW of non-residential rooftop solar projects and 2000 MW of solar projects under PM-KUSUM. The state believes that with this, the state can generate 30,000 new jobs.

The policy also talks about several incentives for solar project developers which can also propel the growth of solar projects in the state. One of the other key proposals in the policy was giving state subsidies for the rooftop solar projects and bringing several government buildings, government educational centres and others under the ambit of net-metering regime.

Ajay Kumar, Senior Project Officer (SPO) of UPNEDA said that with the new policy, the government is giving land parcels at lease at the rate of Rs 15,000 per acre per year and government land at lease at Re 1 per acre per year to establish solar projects in the state. He also said that several joint ventures of the state entities with organisations like the Solar Energy Corporation of India (SECI), Tehri Hydro Power and with NHPC have been done to expedite the expansion of large renewable projects.

"On the PM Surya Ghar scheme, out of the 1 crore household national target, UP has been given the target of 25 lakh households. We currently have around 1000 vendors registered with us for the rooftop solar programme and in the next few months, we expect the numbers to go upto 2,000," he said.

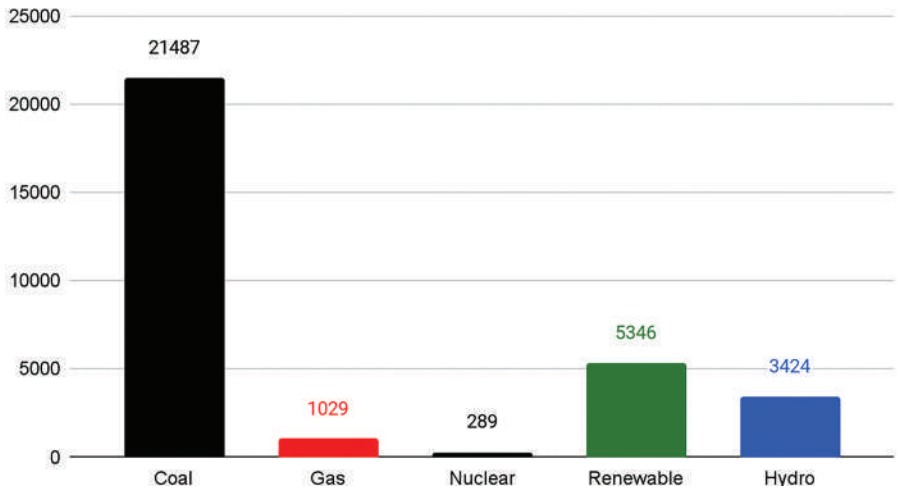
Ajay Kumar
Senior Project Officer (SPO), UPNEDA

Not only solar projects, solar module manufacturing has also made inroads to the state. As per the latest Approved List of Models and Manufacturers (ALMM), Uttar Pradesh is home to five enlisted solar module manufacturers namely- Jakson Engineers, Alpex Solar, Bluebird Solar, Fujiyama Power and Integrated Batteries India with a cumulative capacity of 1,036 MW. Most of them are situated in Greater Noida region.

Future ahead and challenges

Arvind Semwal (Head, Sales and Marketing-North & East India) from

Installed Capacity Of Power In UP (Fuel-Wise)



Source: MNRE *Compiled By:* Saur Energy

The Top 5 Challenges & Opportunities For Solar In UP So What Does UP have that is going for Solar?

Opportunities:

A Low installed base is its own opportunity, if you are an optimist. With PM-KUSUM and PM Surya ghar only coming into their own now after learnings, one has reason to believe the rooftop opportunity and agri sector opportunity is huge in UP.

Floating solar. Even as floating solar has its own set of challenges and need to further check for environmental impact, UP's many thermal stations could do well to replicate the large floating solar capacities already up at many thermal stations in India.

Green Open Access, RPO obligations. Together, these will ensure a proactive approach to adding renewable energy to the mix among large consumers as well as UP's notorious discoms, which have hitherto been reluctant to embrace solar in the grid. Even though industry is limited, large MSME clusters in districts like GB Nagar, Moradabad, Aligarh etc offer opportunities to design specific packages that can lead to broader inclusion into the solar mission.

Political Backing. As highlighted earlier, with a state government working in sync with the centre, UP at least doesn't have the kind of political resistance many ither states have suffered from. Already, we are seeing solar make progress on government owned properties and institutions in a big way.

Low Wind Potential. As one of the states with the least potential for wind energy, in many ways, UP doesn't have any option but to consider Solar to meet its clean energy targets. Solar plus storage will also be a key part of this transition, as storage costs drop further, as widely expected.

Challenges:

For UP, almost all the challenges are dwarfed by the most basic one. Land. Other than the relatively arid Bundelkhand region that has been prone to droughts, land availability across the state for large projects of over 50 MW is a significant challenge. Other than land, the state, as one of the poorest in India, will always face the twin issues of capital and affordability. Heavily dependent on subsidies and government backing, it will continue to do so to meet its ambitious 22 GW target.

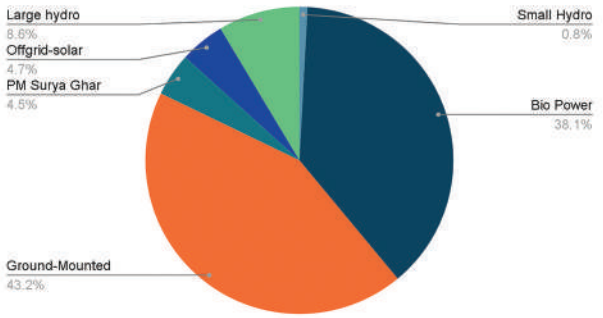
Discoms that are slow, inefficient and reluctant to change remain a key challenge, and need a lot of work to make an impact on ground.

Arvind Semwal
Head, Sales and Marketing-North & East India, Adani Solar

Adani Solar said that with the high population in the state, the total power demand in the state is set to rise which offers new avenues for the solar industries to look towards the state.

He said, "As the power demand will surge in the state, there are high chances of more people and industries shifting to clean power. Policies for the promotion of solar energy have also progressed in the state. Earlier there was some disconnect of the state nodal renewable agency, vendors and the discoms which have been narrowed down in years with the right conductive

Capacities Of Renewable Power In UP (Fuel-Wise)



Source: MNRE *Compiled By:* Saur Energy

policies. I expect in the next 2-4 years UP is set to see a boom in solar power adoption."

Solar industry associations from the state said that despite the growth of renewable energy, the role of discoms play a key role but these discoms themselves are mired in their own complexities.

"Discoms are under pressure. First, they have been obligated to fulfil their Renewable Purchase Obligations (RPOs), otherwise they are bound to pay a penalty. There are also cases where the senior officials from some discom divisions are transferred even after meeting the RPOs but the subsequent loss of revenues. In such situations, discoms are also in a dilemma on what to do under such circumstances (balancing RPOs and

revenues). A lot of working hours of solar vendors are also often wasted in the paperwork for net-metering and other formalities with the discoms," **Sanchit Garg,** Founder of the UP Solar Energy Development Association (UPSEDA) said.

He however admitted that some of these works have now been eased out by the government. "One good thing that has happened is the shifting of load enhancement formalities from offline to online mode. This has saved the solar vendors from several other paper works, formalities and follow ups with the discoms," he added.

Shravan Gupta, Managing Director of Surat based Module maker Cosmic PV Power (based in Surat) said that buoyed by the pro-solar policies and expected rise of the solar industry in the state, his company has planned a warehouse for solar modules at Gorakhpur in UP. "I have tracked the Gujarat solar market for the past few years. Now I can say that in the next 2-3 years the scenario in UP is set to change with fresh changes in net-metering policies, more support to rooftop solar schemes through additional state subsidies."

Tariq Hasan Naqvi, Chairman - National Solar & Bio- Energy Committee, IIA meanwhile said that some course corrections are needed to expedite the growth of PM-KUSUM in the state. He said, "Under the PM-KUSUM scheme, there are issues with the long PPAs with the farmers. Several farmers are reluctant to give away their land for a PPA which can go upto 25 years as land prices keep on increasing periodically and then find it a non-profitable business then. I think the government can consider amending the PPA norms where the PPA rates could be revised every five years."

Shravan Gupta
Managing Director, Cosmic PV Power

Conclusion

In the last few years, UP seemed to be trying to amend some of the existing policy bottlenecks in the renewable sector to expedite its growth towards clean power. Provisions for land parcels for utility-scale projects, the recent expansion of solar parks in Ayodhya and proposed plans for Jhansi Solar park are new ways to boost utility-scale projects in the state. Post new policies from the Centre and State Solar Policy, even the UP State Electricity Regulatory Commission (UPERC) has also followed it up with the right regulations for solar projects in the state. One among these was the doing away of the Technical Feasibility Report (TFR) for rooftop solar projects below 10 MW and making it an automatic process.

Sanchit Garg
Founder, UPSEDA

Tariq Hasan Naqvi
Chairman - National Solar & Bio- Energy Committee, IIA

However, despite issue of Standard Operating Protocol (SoP) by the UPPCL, its subsidiary discoms continue to flout these SoPs in terms of timeline compliance for solar projects related to net-metering, commissioning and other delays issues. A special focus on the MSME sector is likely to boost at least the rooftop solar segment in the state which had been underperforming in the state till now. Dropping battery storage costs also augur well for a state where clean RTC power is a huge challenge. ●

India's CSP Plans, China's CSP Progress

Solar Thermal plants, a stop start technology for solar at scale is back in the news after SECI CMD RP Gupta announced plans for a 500 MW Concentrated Solar Power (CSP) tender by the end of the current financial year recently. The announcement has put the focus back on a solar based technology that has struggled to deliver, and consequently, scale up. However, it's not all gloomy, as the news comes just when China (who else?) has just announced the largest ever Solar Thermal plant, with a rated capacity of 700 MW. The Chinese announcement comes even as the world's largest Concentrated Solar Plant at Morocco, the 510 MW Noor Complex Solar Power plant, remains the only large scale CSP plant working. The Ivanpah plant in the US was shut down within a few years following multiple technical issues and underperformance.

Touted as the world's largest solar thermal power plant in China's Gansu province, it comes with the world's first twin-tower solar thermal plant design as a part of its clean energy complex consisting of solar, thermal and wind power plants. The 220 m towers will combined with the rest to produce over 1.8 billion kwh of electricity annually at the complex.

Covering an area of 800,000 m2, the solar thermal project consists of technology only seen before in the United States in 2014, in the Mojave Desert. The Ivanpah Solar Electric Generating System (since shut) relies on an alternate method of harvesting the sun's power that's been steadily developing since the early 1980s. Known as solar thermal of concentrated solar power (CSP), these systems rely on mirrors known as heliostats to bounce sunlight to a central gathering point. There, the concentrated beams heat a transfer fluid that in turn heats a working fluid. This fluid then evaporates and turns a steam turbine which generates electricity.

The Chinese plant differentiates itself from the American plant by incorporating two towers, with mirrors made of special materials that are capable of reaching a staggering 94% reflection efficiency. With two towers, 30000 mirrors allow for an efficiency enhancement of close to 24%, according to plant project manager Wen Jianghong. Each tower stands at 200 meters tall, with the mirrors from each tower forming two large overlapping circles that focus sunlight onto each tower.

As for power storage, the plant makes use of non-standard molten salt power generation. The molten salt stored in the towers serves as a thermal battery, storing excess heat during the day whilst releasing it during the night to keep the generators running continuously.

The dual-tower solar plant is expected to be operational by the end of 2024. Success here would certainly be a massive boost for CSP proponents, who have faced indifference in recent years as Solar PV prices dropped to levels where CSP was simply too expensive and complicated to be taken seriously, despite its inherent promise of RTC power.

With projects like these, China is currently set to reach its 1200GW renewable capacity goals by 2025, an impressive 5 years ahead of schedule.

We Are Set To Expand Battery Recycling

Anupam Kumar

Co-founder and CEO of MiniMines

*In an interview with Saur Energy, **Anupam Kumar**, Co-founder and CEO of MiniMines talks about the journey and challenges of the firm. The company works in the Li-ion battery recycling sector. Excerpts*

Q How did the journey of MiniMines start?

We founded the company in 2021. I started the company with other co-founder Anupam Kumar and Arvind Bhardwaj. We were driven by a vision to tackle the dual challenges of high electric vehicle (EV) costs, lack of critical minerals, massive import dependency worth 7 billion USD, and environmental sustainability. With our backgrounds in chemical engineering, metal recovery, nanotechnology, and cell manufacturing, we combined our expertise to develop a solution that addresses the critical issues of lithium-ion battery recycling and the components of lithium-ion batteries.

In 2021, we pooled our resources and started MiniMines. Our solution was a groundbreaking Hybrid-HydrometallurgyTM process that efficiently recycles lithium-ion batteries, extracting lithium, nickel, and cobalt with over 96% purity. This process is not only highly efficient but also environmentally friendly, using only one-tenth of the carbon footprint compared to traditional methods and saving approximately 200,000 tonnes of water per tonne of batteries recycled.

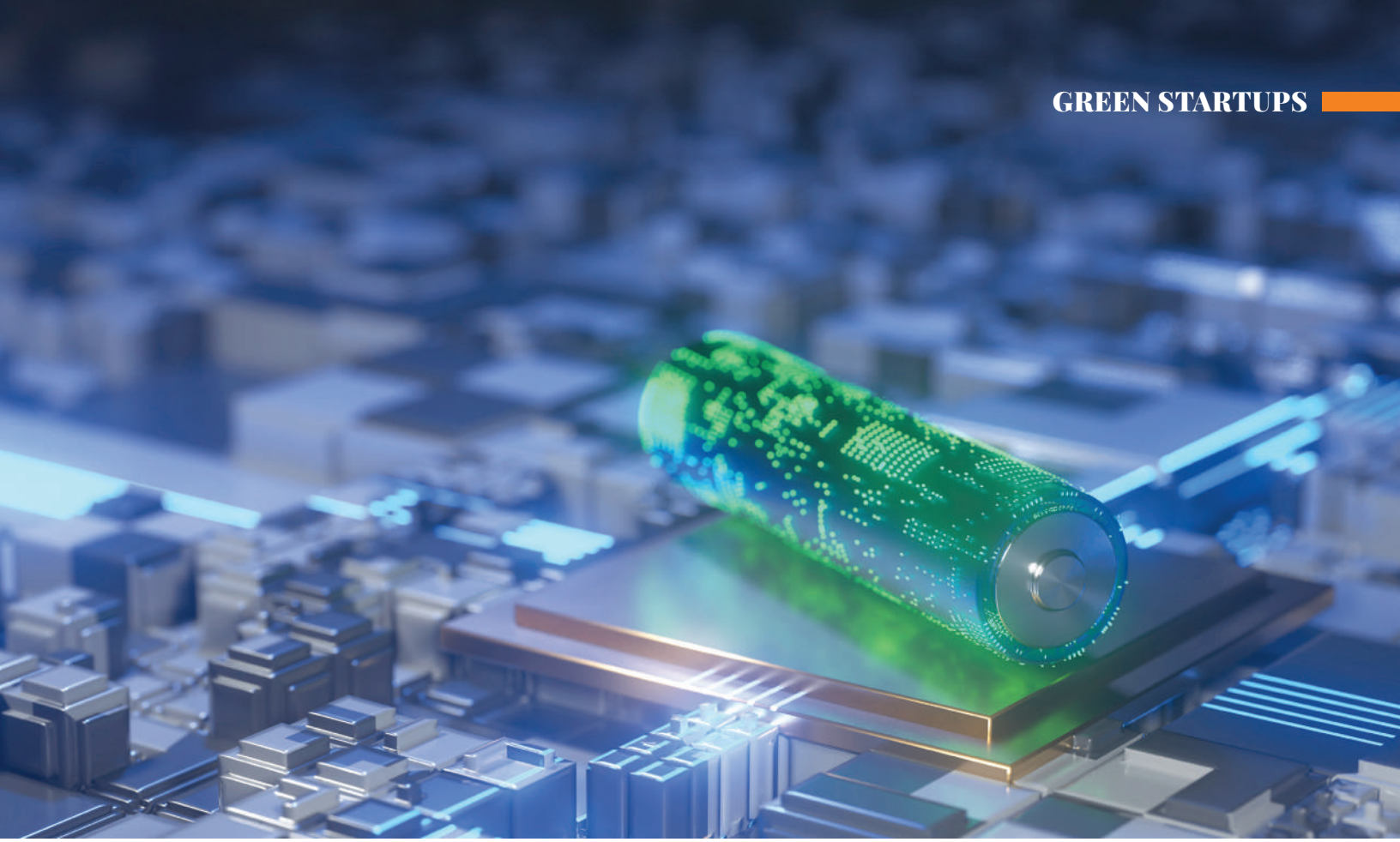
Q How has the firm been going till now?

Our innovative approach quickly gained recognition. We received a $0.5 million grant from Oil India Limited, and our 1.5-tonne pilot unit in Bengaluru was validated by Niti Aayog. Our process has demonstrated the potential to extract enough lithium-ion, nickel, and cobalt from spent batteries in India to power up to 6.6 million EVs, highlighting the immense impact of our work.

Now, we are constantly seeking ways to improve and expand our operations. Our immediate goal is to scale up our recycling capacity of 10,000 TPA and establish a full-scale facility capable of processing larger volumes of battery waste. Additionally, we aim to partner with battery manufacturers and producers to fulfill their Extended Producer Responsibility (EPR) obligations, ensuring comprehensive lifecycle management, second-life batteries and recycling of batteries.

How do most of the Indian battery recycling firms recycle lithium and how MiniMines stand out?

In India, many battery recycling firms rely on traditional methods that often involve high energy consumption and significant environmental impact. These methods, including pyrometallurgical and mechanical processes, tend to be less



efficient in recovering pure metals and generate substantial waste. At MiniMines, we stand out through our innovative Hybrid-HydrometallurgyTM process.

This technique not only achieves over 96% purity in extracting lithium, nickel, and cobalt but also significantly reduces carbon emissions and water usage. The process involves extracting, separating, and purifying metals from spent batteries with minimal waste generation and water reuse, making it far more sustainable and efficient. This sustainable approach allows us to create a circular economy for lithium-ion batteries, ensuring valuable materials are efficiently recovered and reused.

Q How do you see the fate of other battery technologies?

While lithium-ion batteries currently dominate the EV market, other battery technologies are being explored to address specific challenges. Solid-state batteries, for instance, promise higher energy densities and improved safety by replacing liquid electrolytes with solid ones. Lithium-sulphur batteries offer the potential for even greater energy storage and reduced costs due to the abundance of sulphur. However, these technologies face significant hurdles, such as scalability, cost, and longevity. One major point to highlight is that lithium-ion batteries will always be significant due to their energy density and packing density. The perfect energy-to-volume ratio they offer is critical for many end-use applications and their performance, making it difficult for them to be replaced where these ratios are essential.

As research progresses, these alternative batteries may complement or eventually compete with lithium-ion batteries, but for now, lithium-ion remains the most viable option for widespread EV adoption due to its proven performance and established manufacturing infrastructure.

Q What is MiniMine's recycling capacity now?

Currently, MiniMines operates a 1500-tonne pilot unit in Bengaluru. This facility is designed to efficiently process and recycle lithium-ion batteries, extracting valuable metals with high purity levels while minimizing environmental impact. The pilot unit serves as a proof of concept for MiniMines' innovative recycling technology and showcases its potential to scale up operations. The company aims to expand this capacity significantly shortly, leveraging its successful pilot to establish larger facilities capable of meeting the growing demand for recycled battery materials in the EV industry.

Q What are your future plans for MiniMines?

One of our primary goals is to scale up our operations significantly. Currently, our pilot facility in Bengaluru has demonstrated the viability and efficiency of our patented hybrid-hydrometallurgy process. We plan to establish a full-scale recycling facility capable of processing larger volumes of spent lithium-ion batteries. This expansion will enable us to meet the growing demand for recycled materials as the EV market in India continues to expand. We are also exploring further innovations in recycling technologies and seeking additional funding to support our growth and enhance our impact on the EV sector and environmental sustainability. ●

Waaree To Start Module Production In US From September

Hitesh Doshi

Founder & CMD, Waaree Energies

From an initial module manufacturing capacity of 30 MW in Surat in 2007, Waaree Energies has come a long way indeed. And helming the company through that journey from 30 MW to 12 GW now, and counting, is its founder and CMD, ***Dr. Hitesh Doshi.*** *Dr. Doshi has not only seen the solar sector take birth, drop roots and grow in India, he has been an integral part of the journey all the way. A strong advocate of make in India, Doshi made his bet on solar manufacturing when few others would, and has had to wait patiently for that conviction to pay off. Today, not just the parent firm Waree Energies, but Waree Renewable Technologies, the groups listed EPC arm, are flying high. The IPO of Waaree Energies itself remains the most awaited one from the sector. SaurEnergy's Group Editor* ***Prasanna Singh****, caught up with the busy Dr Doshi for a video chat.*

Q Dr. Doshi, how do you see the global solar market right now in terms of changing price dynamics?

For the last few months prices are moving downwards. A number of Chinese companies are incurring huge losses. We have seen the financial results of more than six Chinese companies in the last two weeks which are reporting cash loss at the gross levels. This was not on the expected lines. When we were speaking last time, we were saying that at least the companies will incur the loss. They will stop at the price where they can recover their cash loss. Unfortunately for them and fortunately for the customers, there are still a lot of tough battles to fight and the competition is going on. They are fighting with each other.

So it is really difficult to tell you to what extent the prices can further plunge. Because, when the companies decide to continue making losses, we don't know how much losses they want to make and where they want to put a halt. But I will stay with my statement that these prices are definitely much lower than I had thought. And this is a time for anyone who wants to go for solar.

Q What is Waaree's roadmap now towards solar module manufacturing and backward integration?

At the time of manufacturing solar

modules in India, the value addition is more than 60 percent (from cell to module). So, whatever is the price of these solar modules today and the price of solar cells, the delta is more than 60%. That gives us an edge over any other assembly or manufacturing in India. And of course, when there is a large value addition, there's a large opportunity for ancillaries like solar glass, aluminium, battery tech. This is also followed by large avenues for the service providers, including the transport and other sectors.

To your question, we are all set to start solar cell manufacturing of capacities upto 5.4 GW in the next quarter. Earlier, we had also won the government's Production Linked Incentive (PLI) scheme for a capacity of 6 GW in addition to this. In the coming days we will start the work in a maximum of six to eight weeks with the land availability. That project will also be ready in the next 18 months. We have no plans to stop at solar cells. We are going for manufacturing of ingots and wafers back-to-back as well. Leaving just polysilicon manufacturing outside our own plans.

Q How do you see the preparedness of the country towards the target of 300 GW of solar capacities by 2030?

As far as manufacturing is concerned, the government has given a clear roadmap. You had only published the news that India's solar module manufacturing capacity has surpassed 50 GW. We can see more than 10 GW of applications under process. So, maybe in the next month or later, once this inspection gets over of all the factories, we'll see the 60 GW figure being crossed.

On the installation side, we saw India adding 15GW-16 GW of new solar capacities last year. With this one thing that became evident was that the India solar module manufacturing capacity is much more than what is required. In the next 18 months, we are likely to see a good scaling up of domestic solar cell capacity beyond domestic demand. In the next 2 years, ingots and wafers will also be there in the Indian market.

The manufacturing is much more than required. The challenges today in executions and land and the government is working on that. We are seeing a lot of new projects coming for the grid. Once these challenges are addressed, I think we will have much higher capacities on the ground.

Q Is the availability of DCR solar modules a challenge for the Indian solar module makers now?

The DCR (Domestic Content Requirement) demand mismatch is a temporary phenomena because of this demand supply gap. But, as there are a lot of solar module manufacturing companies, they are starting their DCR cell production soon. So I believe this gap will also be addressed with the larger pipeline of the production.

Q Waaree has recently bagged several large module orders of over 200 MW per order. Has it affected your supplies and delivery timings?

We have very good stock inventories. We have recently opened an additional factory in Greater Noida for offering the next-day delivery to the customers. Usually the large developers post their orders in advance which may vary from one year to six months. They also get a time period of around 18-24 months to execute these plans. So there are two markets-one is for these large orders which allow us enough time and other one is the retail market that demands faster deliveries. Waaree is well prepared to service both these now.

Q Would it be fair to say that exports to the US have been a huge reason for the financial stability of the large Indian module manufacturers?

Indian module manufacturers who are offering the quality, who have proven their performance, who have all the required certifications, documentation, that's the first requirement. And today, Indian manufacturers exporting to the US have become efficient enough to make a case for buying over other alternative countries. The exports are definitely key, but not critical.

Q But the margins obviously are far better there in the US market?

Almost the same now. There is competition from across the globe today, so it's a great market for customers.

Q What do you feel about the PM Surya Ghar Scheme? Do you believe it's making a difference on the ground yet?

It's too early. We are speaking about one crore roofs. And after announcing the scheme, a lot of changes have been made in terms of state regulations, permissions, approval. As more and more deployment is going, more and more learnings are coming up. As we get learnings the government is

Waaree Energies turnover in FY23 rose 132% over FY22 to Rs 6860 crores, even as profits rose over 530% to about Rs 500 crores

acting proactively on that. They're using a lot of IT. They're changing the rules, focusing on ease of installations almost. I have seen that every week something new is coming up. Personally, I think this is a game changer and we will see demand exceed the 1 crore target over the next few quarters.

Q What about the C&I sector? Because traditionally, we've all been covering utility scale a lot more with a little bit of C&I. But now of course, top EPC firms which are listed announcing fresh C&I wins all the time. Do you believe C&I segment could be as big or bigger than utility scale in India soon?

We supply our modules to the C&I scales on a regular basis and we are seeing steady demand in that market. Today, for anybody who is using power, for him, solar is making sense. Not just captive or grid power, economically, I will say almost across the country, solar is there at the top of the consideration stage. Economically, it makes sense. So yes, we will certainly see C&I continue to drive strong solar demand as well, and possibly as much as utility scale soon.

Q What about the prospects in green hydrogen for solar? Because, again, as I understand it, for the Indian target of 5 million tons per annum, just for that renewable capacity required might be almost 120 gigawatts, theoretically. When do you think this demand actually start becoming visible in the market? Because right now, obviously, it's mostly talk.

See, the tenders are already there now for green ammonia and green hydrogen. The first large one has come out now, and the second is there in the market. So obviously these projects, we will see on the ground since the tenders are getting allotted. Tenders have their own process and timelines. Let us say in two to three years, we will see the production of green hydrogen as well as its impact on renewables capacity in the country.

Q Speaking of tenders, I'll move on to the fact that one of the striking things about the solar sector has been the heavy regulatory overhang, right from manufacturing where you have PLI schemes to the pressure of Chinese imports and countermeasures to the high dependence on utility scale solar through tenders. Even at the retail level, there is the matter of going through state discoms for installations and more. Have you considered what is that one single measure which could change things?

One nation, one regulation, helps a lot. We have seen it where it has worked, but definitely it is difficult in the energy sector. The way government is working, and we have seen now in solar rooftop, how the policies are coming. I think we will continue to see this focus on ease of doing business, as solar is the pre-eminent option when it comes to meeting key green targets.

Q I remember two to three years back, writing about the fact that in China, they were almost 50 to 60 solar firms listed, whereas India barely had one or two. And this lack of access to public market was a huge challenge for Indian firms. Today, of course, its a different picture with multiple firms accessing markets and your own IPO eagerly awaited. What do you feel about the valuations being commanded by firms in India?

So valuation is purely a market driven phenomenon and the investor's perception. Not something I am an expert at or have a view. But there is no doubt that opportunities exist in the sector, and there is a long runway of growth and opportunities for strong firms. Our own IPO plans are moving head, the draft prospectus is with SEBI for approval, we will move as soon as the process is complete.

Q What About your US manufacturing plans?

Those plans are on track. Plant Machinery is on the way, and we expect to start production from September this year.

Q In India, we are seeing that most solar capacity is concentrated in the top 5 states or so. Does that worry you? Any state where you have higher expectations now?

Who is the first or second? That doesn't matter a lot. The important thing is whether the other states are understanding that this is the way to go. In my opinion, yes. We are seeing everyone is talking about it. That is the important thing, and we expect many more states to start playing catch up soon. ●

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Solar TRAILBlazers Conference and Awards

Glimpses From Solar Trailblazers

Saur Energy recently organised 'Solar Trailblazers' at Lucknow in Uttar Pradesh on July 05, 2024. The event was meant to brainstorm on several issues related to solar power from the city which is home to several solar module manufacturers, EPC players and startups. This was followed by an award ceremony to recognise the change makers. Glimpses from the mega event

UP Deputy CM Brajesh Pathak addresses Saur Energy's Solar Trailblazers event in Lucknow

The event saw participation of 170+ participants from the solar industry

Integral University, Lucknow received the Solar Trailblazers Award Under the Below 1 MW Category

AIIMS-Gorakhpur received the Solar Trailblazers Award below 1 MW Category

Maheswari Mining and Energy receives Solar Trailblazers Award under the Above 1 MW Category

Team of Saur Energy pose with the audience during the event

Reppresentatives from Adani Solar, RAVC Solutions and Vasudha Foundation debated on the potential of solar in UP

Deye Inverter, Cosmic PV Power, Homescape By Amplus, Aatmanirbhar Solar & Dhash PV took part in the discussion on rooftop soolar

Officials from Husk Power, OMC Power & UPSEDA deliberated on mini grid potential in UP

Representatives from Usha Shriram and Jinko Solar talk about the prospects of Solar Jobs in UP

5 Key Points for India on the Road to 300 GW Solar by 2030

India missed its 2022 goal of achieving 100 GW of installed solar capacity. The fact that this target is still unmet highlights the need for significant efforts to overcome various challenges if the country is to realize its vast solar potential. This is even more important considering last year's government resolution of adding 50 GW of renewable energy capacity annually for the next 5 years, i.e., from Financial Year 2023-24 till Financial Year 2027-28, to achieve the target of 500 GW by 2030. To meet this target, the country must achieve at least 300 GW of fresh solar capacity, if not more, to even come close to its 2030 renewable energy goal. Look at it this way, almost 70 per cent of India's solar capacity for 2030 is still to be created. Quite simply, that means the methods of old not necessarily have to be carried forward!

While the plan is set in motion, the country would need to put some sincere efforts on certain fronts to avoid missing such deadlines.

SaurEnergy identifies 5 key points India needs to get right to ensure a 300 GW cumulative solar capacity by 2030.

1 Policy Consistency

Frequent policy changes, such as the ALMM saga, safeguard duties, basic customs duties, and increasing goods and services tax rates, have hindered solar progress in recent times. It made it difficult for the investors, developers, and financiers, to stick to long-term commitments, thus restricting seamless solar implementation in the country. To achieve 300 GW of solar capacity by 2030, policy stability must be maintained.

India's current solar policies include tax relaxations, subsidies, and the Production Linked Incentive (PLI) scheme. The PLI scheme, launched with an outlay of INR 24,000 crore, aims to achieve a giga-watt (GW) scale manufacturing capacity for high-efficiency solar PV modules. Project developers benefit from a ten-year income tax exemption on all project earnings, the ability to recover 40 per cent of costs in the first year through accelerated depreciation (AD), and a tax waiver on 100 per cent of profits for ten assessment years from the initial assessment year. Additionally, the PM Surya Ghar Muft Bijli Yojana pushed rooftop solar with subsidies of up to 40 per cent of the installation cost of solar systems directly to people's bank accounts and offers concessional bank loans.

Further exemptions include sales tax, excise tax, and customs duty. While the latter takes care of rooftop solar demand to an extent, the PLI scheme and other measures have ensured adequate domestic manufacturing capacity. The only remaining piece of the puzzle might be domestic pricing vis a vis import cost.

Initiatives like these are crucial for achieving 300 GW of solar capacity by 2030 as long as they remain consistent and do not change frequently.

2 Green Financing

Renewable projects in India face investment risks from payment delays to regulatory challenges, which contribute to financing barriers to mobilising investment. India needs humungous financing to realise its renewable potential, including solar. As per one Ember report, India would need an investment of USD 293 billion to meet its solar and wind targets. The report further notes that India's financing capacity must increase nearly threefold on average by 2030 from an investment capacity of approximately USD 75 billion in the previous eight years.

To meet these expectations, India needs to tap into public markets and green financing options. Green financing bridges the gap by attracting capital from both public and private sectors, incentivizing businesses to adopt sustainable practices, and empowering individuals to invest in a greener future. Various financial instruments, such as Green Bonds, Green Deposits, and Green Fixed Deposits, are available to promote green development.

The Indian green bond market has seen impressive growth, with issuances reaching a total of USD 21 billion by February 2023. The private sector has been a major driver, accounting for about 84 per cent of the total issuances. Additionally, the government issued sovereign green bonds in 2023, taking a

significant step in mobilizing resources for green infrastructure projects. A rash of solar IPOs have also indicated optimism around the sector, and improved access to financing for quality firms.

India needs more green financing for its net-zero climate ambitions to come to fruition. According to a 2023 RBI report, India's green financing requirement is estimated to be at least 2.5 per cent of GDP annually until 2030.

3 Strengthening State Discoms

Distribution companies are often perceived as the weak link in the power supply chain due to their financial instability and inefficiencies. Their substantial unpaid dues further undermine the sector's viability, and they frequently obstruct the growth of open-access and rooftop solar projects. Achieving the necessary solar growth in India requires improving the system of discoms, starting with professionalizing these companies.

To enhance their financial health, regulatory commissions must set remunerative tariffs. The loss levels assumed by these commissions while determining retail tariffs should be realistic and not overly stringent. Addressing managerial inefficiencies is also crucial for improving the financial health of discoms. It's not just about having meters and infrastructure but also about the commitment to reduce loss levels. Additionally, the government should promptly pay all its dues, including subsidies.

Integrating renewable energy can help reduce power purchase costs through solar rooftop installations, which can curtail demand and enhance supply by injecting power into the grid. Properly structured rooftop solar projects can be highly beneficial for discoms, offering multiple advantages. They can help utilities reduce transmission and distribution (T&D) losses, strengthen the grid, and improve reliability. Rooftop solar can also reduce the investments needed in T&D networks and almost eliminate recurring subsidies, as the cost of procuring solar at the end of the distribution grid is much lower than the cost of supplying power to the same customer.

4 Managing the Skill Shortage

India's goal to reach net-zero carbon emissions by 2070 and use 50 per cent renewable energy by 2030 has significantly increased job opportunities and the demand for skilled workers in the solar power industry. In 2022, India's solar sector employed 282,000 workers in both on-grid and off-grid systems, a number expected to grow substantially in the coming years. Importantly, green job opportunities are opening up outside the country as well, creating a massive opening to deploy Indian workers productively.

However, a skill shortage has emerged as a major obstacle to India's solar growth. According to the 'Solar Spectrum of New India' survey, about 90 per cent of respondents acknowledged the need for specialized skills in solar panel installation, and 45 per cent believe skilled labour is unavailable locally.

To address this, developing a skilled workforce must be a strategic priority for policymakers aiming to accelerate solar expansion. This requires increased investment and funding for training programs and workforce upskilling, particularly since the country has long neglected this area. The policy makers need to realise that India can't reach milestones set for 2030, and even 300 GW solar capacity is a stretch, if a skilled workforce in the sector is not ready to take the charge.

While government initiatives like the Suryamitra Skill Development Programme are training technicians for on-the-ground industry work, there is also a need for qualifications to prepare individuals for specialized jobs in project management, design, cost evaluation, and consulting. Only a few institutes in the country offer exclusive degree courses in Solar Energy, though the discipline is included in various Renewable Energy programs. The sector needs more focused efforts to bridge this skill gap.

5 Ensuring Existing Schemes Deliver the Promises

India has been proactive in formulating ambitious solar schemes like PM SuryaGhar and PM KUSUM. Launched in 2019, the Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM KUSUM) Scheme aims to help farmers install solar pumps and grid-connected solar and renewable power plants. In August 2022, the scheme was extended until March 2026, to add 34,800 MW of solar capacity and a total central financial support of INR 34,422 crore.

The PM Surya Ghar Muft Bijli Yojana, launched on Feb 15, 2024, targets solar rooftops and aims to provide free electricity to households across India. Under this scheme, households receive a subsidy covering up to 40 per cent of the cost to install solar panels on their roofs. It is expected to benefit 1 crore households and save the government INR 75,000 crore per year in electricity costs.

India has also embarked on a major grid strengthening exercise, which needs to be accelerated if the transmission sector is to keep pace with renewable additions. Similarly, energy storage initiatives need to pick up pace now, again, to ensure energy from solar hours is utilised fully.

While these targets promise a significant boost to India's solar capabilities, proper implementation is the real challenge. Having already missed its 2022 solar target, India must ensure that these schemes deliver on their promises. Achieving these targets is crucial for the country's renewable energy goals for 2030, and for achieving at least 300 GW solar capacity by that time. ●

What Did India's Green Industries Say About Budget 2024?

Hours after Finance Minister Nirmala Sitharaman announced the Union Budget 2024, the industry leaders also reacted to the budget announcements. Many of them talked about the benefits and challenges of the industry in the light of the announcements. The minister, in her budget speech talked about imposing Customs Duty on solar glass imports and include more exempted capital goods for the production of solar cells and solar modules in India.

Following are some of the views expressed by the industry leaders from India's green industries.

Sumant Sinha
Founder, Chairman & CEO, ReNew

"The Finance Minister's announcement that the Government will release a policy document on India's energy transition pathway and policy on pumped storage will provide much needed long term clarity for investments across the value chain. The continuation of the PM Surya Ghar Muft Bijli scheme, on the back of an overwhelming response for its subscription, underscores the growing appetite for clean energy solutions among citizens, aligning perfectly with our national sustainability goals. Additionally, with nuclear energy poised to be a cornerstone of our energy mix, and innovative nuclear technologies being developed in partnership with the private sector, the future looks promising."

Srivatsan Iyer
Global CEO, Hero Future Energies

"The impetus on PM Surya Ghar Muft Bijli Yojana will help fast track adoption of roof top solar. The proposed investment in Pumped Storage programmes is a much-needed step that will ensure smoother integration of RE, leading to more reliable supply of green power and grid stability. The focus on transitioning hard to abate industries to greener alternatives will catalyze the C&I sector's journey towards net zero. Introduction of a taxonomy for climate finance will help attract much needed capital for boosting climate resilience. Finally, the expanded duty exemptions will also help propel the RE sector ahead. This is a positive budget for the sector that should help continue the momentum of India's energy transition."

Amit Paithankar
CEO, Waaree Energies.

"The exemption of customs duties on 25 critical minerals and the reduction of duties on two others is a decision that may boost resource efficiency and high-tech manufacturing in the solar sector. The expansion of the list of exempted capital goods for solar manufacturing may further strengthen Country's ability to enhance domestic production capabilities, reducing reliance on imports and fostering self-reliance. Additionally, guidelines for energy efficiency and emission targets for 'hard to abate' industries may reduce India's carbon footprint. Also, the support announced for pump storage projects is critical for maintaining grid stability and ensuring round-the-clock energy availability."

Amit Jain
Global Chief Executive Officer
Sterling & Wilson Renewable Energy Group

"The announcement to fully exempt 25 critical minerals and reduce BCD on two of them will assist the renewable energy sector, since it shall provide a major fillip to the processing and refining of such minerals and help secure their availability. The proposed policy to promote pumped storage projects for electricity storage will help facilitate smooth integration of growing renewable energy share thereby reducing challenges posed by its variable and intermittent nature. Expansion of India's renewable energy infrastructure - both greenfield and brownfield will require skilled workforce to ensure efficient project execution, while reducing cost and time overruns. We therefore welcome the government's focus towards upskilling 20 lakh youth over a 5-year period and upgrading 1000 Industrial Training Institutes." ●

Preeti Bajaj
MD & CEO, Luminous Power Technologies

The PM Surya Ghar Muft Bijli Yojana is a revolutionary initiative that has garnered an overwhelming response, with over 1.28 crore registrations and 14 lakh applications. This sets a strong precedent for sustainable energy adoption in India. The Government's proposal to expand the list of exempted capital goods used in the manufacturing of solar panels is a significant step towards promoting solar energy and driving the energy transition. Aligning with India's commitment to achieving net zero, we will continue evolving and innovating our efforts towards the adoption of rooftop solar since solar energy holds the potential for contributing to a better planet and a sustainable future." ●

Gyanesh Chaudhary
CMD, Vikram Solar Limited

By allocating a substantial Rs. 7,327 crore for solar projects and introducing initiatives like the PM Surya Ghar Muft Bijli Yojana, which aims to provide free electricity to one crore households, the government has demonstrated a strong commitment to clean energy. This budget is a catalyst for the growth of the Indian solar industry, empowering millions of households with access to affordable and clean electricity. Moreover, by supporting ancillary sectors like pump storage and creating a conducive environment for innovation through tax incentives for solar cell and panel manufacturing, the budget has laid a robust foundation for India's energy transition." ●

Sameer Gupta
Chairman & MD, Jakson Group

"The Union Budget 2024 is a major milestone for the nation, fostering economic growth, infrastructure development, and energy independence. The PM Suryaghar Muft Bijli Yojana, aimed at installing rooftop solar panels in 1 crore households to provide 300 units of free electricity, is transformative in making sustainable energy accessible. This will boost solar adoption in the residential sector and drive economic growth. Special attention has been given to MSMEs and manufacturing. The support includes a Credit Guarantee Scheme, term loans for machinery, and technology financing packages. These measures will help MSMEs scale up and enhance competitiveness." ●

Prashant Mathur
CEO Saatvik Energy Pvt. Ltd

"The FY25 budget is pragmatic and progressive with adequate focus on energy transition, which is crucial to build a sustainable future. The response to the PM Surya Ghar Muft Bijli Yojana is heartening and we are confident that solar

rooftops will be adopted on a mass scale in the coming years. The budget has further strengthened the domestic solar manufacturing industry by expanding the list of exempted capital goods for use in production of solar cells and panels. The budget's proposal to not extend the exemption of customs duties for solar glass and tinned copper interconnect will also give a boost to domestic solar equipment ecosystem. Importantly, the government's proposal to do away with customs duty on 25 critical minerals will promote manufacturing in emerging segments like battery storage."

Shravan Gupta
MD, Cosmic PV Power

"One of the most notable measures is the extension of tax incentives for renewable energy investments, including the Investment Tax Credit (ITC), which allows manufacturers and consumers to deduct a significant percentage of the cost of solar installations from their federal taxes. This provision not only stimulates demand for solar panels but also encourages manufacturers to ramp up production and innovate in technology. Additionally, increased federal funding for research and development in renewable energy technologies is set to enhance the competitiveness of domestic solar panel manufacturers."

Pratik Agarwal
Chairman, Serentica

"The budget's emphasis on energy transition and decarbonisation of hard-to-abate sectors is commendable. Emission goals for hard-to-abate industries, and promoting pumped storage projects, will catalyse this transition. Implementation here will be the key to realising the full potential of this opportunity."

Capt Ishver Dholakiya
MD & Founder, Goldi Solar

"The Union Budget 2024 is a forward-looking and progressive plan. The government's focus on climate risk mitigation, women's workforce development, and energy security positions India as a leader in sustainable development. Exempting capital goods for solar manufacturing will reduce costs and boost domestic production. The PM Suryaghar Muft Bijli Yojana, offering up to 300 units of free electricity monthly to 1 crore households, will enhance rooftop solar adoption. Goldi Solar applauds these efforts towards a clean energy ecosystem and the 'Make in India' vision."

SK Gupta
CFO, AMPIN Energy Transition

"The industry expects that some of the critical demands for promoting renewable energy in the county should be met through suitable amendments in the budgetary provisions: Classifying renewable industry as a part of 'Priority Sector lending' and helping make available project finance at very competitive rates for RE projects, rationalization of indirect tax-GST rates on turbines and modules to be 5% each against existing 12%, exemption of ALMM for Corporate &Industrial projects and need for greater push on developing & promoting in house R & D facilities for development of latest technologies for cell, module manufacturing and their backward integration. "

Utkarsh Singh
Co-Founder & CEO, BatX Energies

"The reduction of Basic Customs Duty (BCD) and exemption of 25 essential minerals from custom charges is set to lower production costs for battery manufacturing and recycling, enhancing the affordability and accessibility of electric vehicles (EVs) in India.

Budget 2024: Govt Imposes New Customs Duty On Solar Glass

Union Finance Minister Nirmala Sitharaman presented the Union Budget for 2024-25 before the Parliament. The minister talked about several steps taken by the government towards India's sustainable energy transition besides rolling out some more plans of the government to boost the growth of the renewable energy industry in the sector. She also talked about the plans to reduce the input costs for the production of solar cells and solar modules in India and protect the domestic solar glass industries.

One of the key features of the Budget was related to imposing Customs Duty against the import of solar glass into the country for solar cell/module production. "Energy transition is critical in the fight against climate change. To support energy transition, I propose to expand the list of exempted capital goods for use in the manufacture of solar cells and panels in the country. Further, in view of sufficient domestic manufacturing capacity of solar glass and tinned copper interconnect, I propose not to extend the exemption of customs duties provided to them," she said.

This comes at a time when the Indian solar glass manufacturers like Borosil Renewables had been demanding reimposing duties against the dumping of cheap Chinese solar glass which were threatening the growth of domestic solar glass industry in the country.

Further details mentioned in the budget document revealed that the government has planned to impose new Customs Duty on the import of solar glass from zero to 10 percent with effect from October 1, 2024. It also increased the Customs Duty of inned Copper Interconnect for manufacture of solar cells or modules from zero to 5 percent from October 1, 2024.

She also talked about the plan of the government to boost the growth of Pumped Hydro Storage Projects to ensure expedition of variable renewable energy in the country. The minister also put forth new data to show the increased interest of the people in the country towards PM Surya Ghar scheme. "In line with the announcement in the interim budget, PM Surya Ghar Muft Bijli Yojana has been launched to install rooftop solar plants to enable 1 crore households obtain free electricity up to 300 units every month. The scheme has generated remarkable response with more than 1.28 crore registrations and 14 lakh applications, and we will further encourage it,: she said.

Talking about the need to boost the growth of pumped hydro projects, she said in her budget speech, "A policy for promoting pumped storage projects will be brought out for electricity storage and facilitating smooth integration of the growing share of renewable energy with its variable & intermittent nature in the overall energy mix."

She also talked about boosting the growth of nuclear energy in the country with new interventions. "Nuclear energy is expected to form a very significant part of the energy mix for Viksit Bharat. Towards that pursuit, our government will partner with the private sector for (1) setting up Bharat Small Reactors, (2) research & development of Bharat Small Modular Reactor, and (3) research & development of newer technologies for nuclear energy. The R&D funding announced in the interim budget will be made available for this sector."

The minister also said that the government would incentivise the MSME sector if they shift to clean power sources. "An investment-grade energy audit of traditional micro and small industries in 60 clusters, including brass and ceramic, will be facilitated. Financial support will be provided for shifting them to cleaner forms of energy and implementation of energy efficiency measures. The scheme will be replicated in another 100 clusters in the next phase," she said. •

Budget 2024 Announcements On PSP, Thermal- Hit Or Miss?

As the dust settles on the budget announcements, by all accounts the budget continues to lose relevance in terms of the sort of disruptive changes it could bring earlier.

For the renewable sector, that means even as the loud clamor for a reduction of GST rate on equipment like turbines and modules from 12% to 5% was ignored, hope remains that it might be taken up at at subsequent meetings of the GST council. Other demands like classifying renewable lending as 'Priority sector lending' for banks seem to have been ignored completely for now. At least until the next budget. Ditto for the really long shot of yet another tweak on the ALMM requirements for C&I segment, where the government has clearly decided to wait at least till September to evaluate impact on the ground. From all indications, the mindset is not to tweak any more. When asked, a government source told us that the one consistent issue for the industry has been consistency in policies, and they should welcome this new found resolve to stay unmoved.

More Thermal Versus Solar Plus Storage Or Hybrid Renewables?

The announcement of the 2400 MW thermal power project at Pirpainti in Bihar, with an estimated cost of Rs 21,400 crore seems like a surrender to politics, as a project this size will take a minimum of 60 months, probably a few cost overruns, and much else to finally deliver power at 60-70% plant load. At a cost that is expected to be at least Rs 4.25 per unit or higher. Those numbers are scarily poor when compared with the same investment in say, solar incentives with battery storage. With the government's own SECI discovering solar plus storage prices at Rs 3.41 per unit recently even after

accounting for longer duration backup, one suspects the final cost, at under Rs 5 per unit would easily beat coal fired power from Pirpainti in the medium to long term. Not to mention the fact that it would probably be up and running in 36 months or less. Faced with rising power demand, the government has clearly gone with the familiar over the new, the polluting over clean. The risk of failure has been considered unacceptably high with renewables, an unfair situation considering how little time it has been since renewables will truly allowed to flourish at well under a decade.

Policy On PSP Projects

In yet another case of bending to more influential (read-larger) developers, the announcement of a policy on Pumped Storage Projects is iffy, at best. It is no-one's argument that PSP will be a key part of the mix for India's renewable ambitions and a stable grid. But construction times, and perfecting the optimum design and development of these is no easy matter. PSP also remains a big boys game with its high capex requirements and complicated approvals process. Which makes the fact that any impact of whole sale backing for PSPs will show an impact only post 2030 a truism. In other words, a focus on PSP over say, battery based storage or a strengthened transmission grid to handle more renewables earlier, seems designed to justify the focus on thermal for now. Or nuclear for that matter, where actual impact on the ground will be visible post 2035, if at all, considering the pace of capacity additions. SMRs, or Small modular reactors are also nowhere in the picture in India yet, even as we seem to be counting on them too early. As of May 2024, eight PSPs are operational in India with a cumulative storage capacity of 4,745 MW, according to the Central Electricity Authority. Four projects of 2,780 MW are under-construction and 33 projects of 42,150 MW are undergoing feasibility studies. With potential investments of over Rs 2.5 lakh crores tied to these, the government may have found the attraction of PSPs irresistible politically.

Support For Domestic Manufacturing

While the budget has not dissappointed here with the broader scope of support for solar BOS and solar glass makers, the government will also need to keep an eye on the impact on end consumer prices. Protection will need to walk a fine line between establishing energy security with a strong domestic industry, but also the kind of low prices India needs to sustain capacity additions in renewables. These trends should play out clearly over the remaining part of this year. But industry insiders who say that we could be paying 15-20% less with a liberalised import regime will find no takers for their arguments really unless solar prices for say, SECI were to cross Rs 2.75 or more.

On the positive side, capacity domestically will be boosted tremendously with the formal launch of production at the Reliance Gigafactories which will add almost 10 GW in one go just for solar modules. Cell manufacturing will also be boosted significantly by next year, perhaps even to self sufficiency levels if all goes to plan for multiple manufacturers expanding or venturing into cell manufacturing.

Budget 2024: Provision For Critical Minerals, Lithium To Boost EV Growth

The latest budget announced by Union Finance Nirmala Sitharaman announced several interventions that can fuel the growth of Electric Vehicles (EVs) and battery industries across the country.

In the recent budget released by the minister in the Parliament, she announced to reduce the Basic Customs Duty (BCD) to zero on critical minerals and numerous components. This move aims to bolster sectors heavily reliant on rare earth minerals, such as high-tech electronics, nuclear energy, and renewable energy.

Key changes related to the EV and battery sector include:

- Full exemption of Customs Duties on 25 Critical Minerals and reduction of BCD on two others, facilitating crucial sectors.
- Reduction of BCD on certain customs duties on gold and silver from 15% to 6%, and on platinum from 15.4% to 6.4%, aimed at enhancing domestic value addition in precious metal jewellery.
- Removal of BCD on ferro nickel and blister copper to lower the production costs of steel and copper.
- The Finance Minister emphasized a comprehensive review of the Customs Duty rate structure in the next six months to streamline trade processes, remove duty inversion, and minimize disputes.

The budget also introduced concessions on copper wire used in manufacturing photovoltaic ribbon and semiconductor devices, as well as evacuated tubes for solar water heaters. It specified materials for EVA sheets and toughened glass with low iron content for solar thermal collectors.

- Furthermore, the zero customs duty rate on specified parts and capital goods for lithium-ion cell manufacturing and electric vehicle battery packs has been extended until March 31, 2029. New capital goods have been added to the list of exempted items for the manufacture of solar cells and modules.

These measures are designed to stimulate growth in critical sectors, promote domestic manufacturing, and bolster India's sustainable development agenda.

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SAEL Makes Debut In Global Bond Markets With $305mn Green Bond

SAEL group has successfully issued its first US dollar-denominated bonds in the international markets. This bond marks the group's first issuance in the international capital markets, providing the Company access to a deep, alternative pool of liquidity to complement funds available through domestic Indian lenders, the firm said today.

The US$ 305 million green bond was jointly issued by SAEL Limited along with 5 wholly-owned subsidiaries (together referred to as the "Restricted Group"). The Restricted Group comprises of 334 MW of renewable energy assets across solar and waste to energy. Notably, this is the first renewable energy issuance from India with waste-to-energy assets.

The transaction was structured as a project-finance style security financing (including 100% share pledges and charge over all assets) with a cashflow waterfall mechanism. The bonds were issued at a yield of 7.80% for a tenor of 7 year (weighted average life of ~5.3 years) and are expected to be rated BB+ by Fitch. This transaction marks a major milestone in Company's efforts to diversify its borrowing profile.

Laxit Awla, Chief Executive Officer, SAEL said. "This is an excellent outcome for us, as this has established our international capital market presence. We will continue to strengthen our position in capital markets with strong execution and operational performance."
For this strategic fund-raising effort, the Company engaged in a global roadshow to meet with institutional debt investors across Asia, Europe and the US over the past week. For the $305 million issue, the company witnessed large demand from high quality global investors. Despite the reduction in pricing by 32.5 bps from initial guidance, orderbooks continued to grow to over US$ 1.85 bn - implying an oversubscription of greater than six times. A total of 139 investors participated in the final issuance, with 61% of the funds raised from Asia, 20% from EMEA and 19% from the US. The deal attracted high-quality demand, with 88% of funds raised from asset managers, 7% from insurance companies and pension funds, and remaining 5% across other investors such as financial institutions / banks etc.

"The record orderbook oversubscription for SAEL's debut issuance by more than 6x reaffirms the faith of investors in SAEL's business model and the opportunities presented by renewable industry. Backed by marquee partners such as Norfund and DFC, SAEL is the largest operator of waste-to-energy assets in India and along with its solar capacity, it expects to expand its portfolio to 5 GW in next 2 years" said Varun Gupta, Chief Investment Officer of SAEL.

JSW Energy Reports 80% Rise In Net Profits In Q1

JSW Energy has published its latest financial results for the first quarter of Financial Year 2024-25. The information submitted by the company before BSE revealed that the company has raised its net profit by around 80 percent on a Year-on-Year (YoY) basis.

As per the details, the company reported a total Profit After Tax (PAT) at Rs 290 crore in Q1FY24. On the other hand, its net profit for Q1FY25 stood at Rs 522 crore, reporting an increase in the profits by 80 percent. The company also said that its revenue also increased from Rs 3013 crore (Q1FY24) to Rs 3043 crore in the latest quarter, hinting at an increase of one percent.

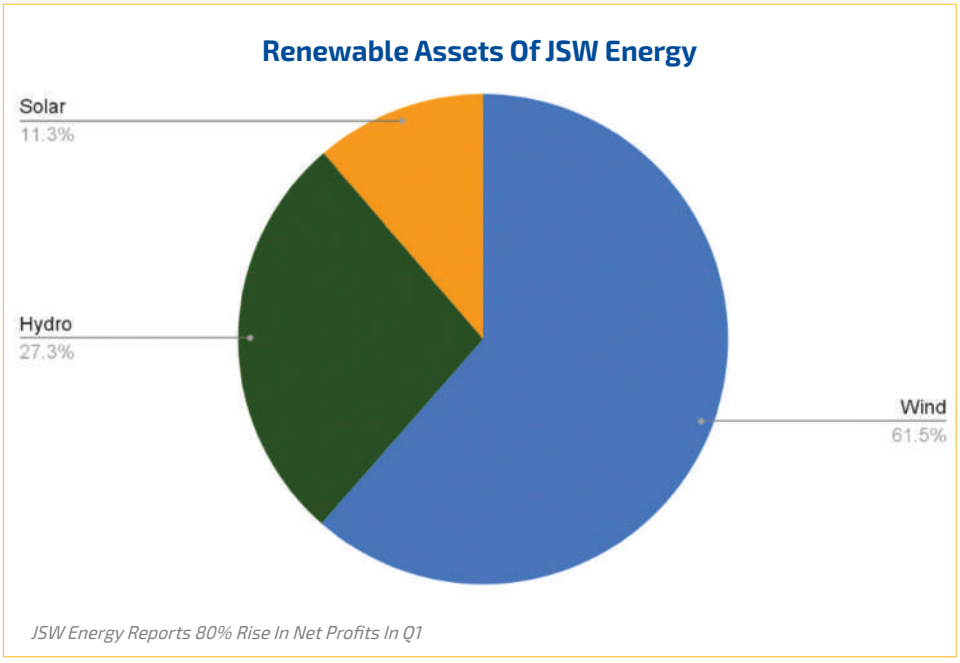
On the other hand, the company also reported an increase in EBIDTA from Rs 1307 crore (Q1FY25) to Rs 1581 crore in the latest quarter. It also said that its renewable energy generation also went up by 44 percent on YoY basis. It also reported an increase of hydro power generation by 61%.

The company said that during Q1 of FY25, JSW Energy signed PPAs for 2,025 MW of renewable energy capacity which included 1 GW from both solar and wind sources. During the same period the company won renewable energy bids having a total capacity of 900 MW (600 MW hybrid projects each and 300 MW solar.

At the same time, the company also commenced construction of 1 Gwh of SECI projects with expected commissioning by June 2025. It has also started works for 3,800 TPA of Green Hydrogen project which is expected to be commissioned by Q4 of FY25. Renewable Energy Asset Ownership

The public filing documents from JSW Energy revealed that the company has around 5,650 MW of renewable energy projects in pipeline for which the LOA/ LOI have been issued. On the other hand, the company has also signed PPA for 2,025 MW of energy projects.

The company now has 3,676 MW of wind project assets, 1,631 hydro project assets and 675 MW of solar assets. JSW Energy said that its total installed renewable capacity increased from 3,059 MW in Q1FY24 to 4,028 MW in Q1FY25.



JSW Energy Reports 80% Rise In Net Profits In Q1

Shakti Pumps Reports Stunning Profits In Q1

Indian solar pump manufacturer Shakti Pumps (India) Limited (SPIL) has now published its financial results for the first quarter (Q1) for the financial year 2024-25 ending June 30. The Madhya Pradesh-based renewable energy company has reported an increase in its net profit on a Year-On-Basis (YoY).

The financial results revealed that the company's revenue increased to Rs. 567.6 Crores in Q1FY25 as compared to Rs. 113.1 Crores in Q1FY24. It also reported an increase in its Profit After Tax (PAT) to Rs. 92.6 Crores in Q1FY25 from Rs. 1.0 Crores in Q1FY24. PAT Margin expanded to 16.3% in Q1FY25 from 0.9% in Q1FY24.

The company in its corporate filing before BSE said that its EBITDA stood at Rs. 135.9 Crores in Q1FY25 as against Rs. 7.9 Crores in Q1FY24. EBITDA Margin stood at 23.9% in Q1FY25 as against 7.0% in Q1YF24, largely driven by economies of scale and higher execution rate, it said.

The company is known for its production of solar stainless-steel submersible pumps, pressure booster pumps, pump-motors, controllers, and inverters among other products. Besides supplying their products in India, the company also has revenues from their exports to other countries. The company management attributed the increase in their profit margins to the plunge in prices of the raw materials and economies of scale.

Why Profit Margins Rose?

"We are pleased to report an outstanding start to the Financial Year 2025, with the first quarter demonstrating robust revenue growth and enhanced profitability. This commendable performance is attributable to the accelerated execution of the existing orders in both domestic and export markets. Furthermore, the improvement in margins was achieved due to a decline in raw material prices, coupled with economies of scale resulting from higher execution during the quarter," Dinesh Patidar, Chairman of Shakti Pumps (India) Limited said.

The management of Shakti Pumps said that they continue to maintain a healthy order book of approximately Rs 2,000 crores as on 30th June 2024, which is expected to be implemented in the next 15 months. "We are also optimistic about the prospective order inflow from various states in the upcoming quarters, which we believe will contribute significantly to our growth trajectory." Patidar said.

Q1 Results: Sterling & Wilson Reports Profit, Gets Rs 2,170cr Orders

Sterling and Wilson Renewable Energy Limited (SWREL) in its first quarterly results for financial year 2025 (FY25), reported profits with a continued revenue growth of 78% (year-over-year) YoY.

The renewable EPC received a order inflow of Rs. 2,170 crores and claims to receive a strong rebound in its revenue in Q4 FY24. continues its growth trajectory driven by a consistent improvement in financials and overall performance. This is the second consecutive quarter witnessing a positive EBIDTA, PBT, and PAT.

Post its QIP, the company has regained its market standing as the leading solar EPC in India. The financials are also moving in the right direction with net debt improving to Rs. 97 crore in June 2024 compared to Rs. 116 crore in March 2024. SWREL also declared a substantial gross margin of 11%, reinforcing its competent position in the market and continuing to solidify its focused business growth.

Speaking on the quarter results, Amit Jain, Global CEO, of Sterling and Wilson Renewable Energy Group shared, "Our results reflect our strong business revival and robust ordering momentum. We are happy to be selected by some of our esteemed customers for some of their large projects and our teams are well-geared to meet the massive growth opportunity ahead of us. With a robust project pipeline and strong balance sheet, we are confident of tapping the huge growth and are well-positioned

to continue this upward trajectory and deliver enhanced value to all our stakeholders."

Rays Power Experts Raises Rs 20 Cr Equity Funding

Rays Power Experts, a leading full-service solar park developer in India, has raised INR 200 million in equity funding. The lead advisor for this transaction was Swastika Investmart Limited. The funding round included investments from prominent investors such as the Sunil Singhania family office, Vyom Wealth Advisors, Lalit Dua of Rajasthan Global Securities, Vineet Arora of NAV Capital, and Moheet Agarwal.

The funding infusion of capital will enable Rays Power Experts Pvt Ltd. to expand its footprint and undertake new domestic and international solar projects. Currently, the company has executed 6 solar parks with more than 300 ground mounted projects in it, making it one of the largest solar park developers in India with 95% market share in open access market of Rajasthan. It has executed numerous Solar EPC projects for C&I segment, and has a presence across 10 states in India mainly Rajasthan, MP, Haryana, Delhi along with an international presence in the UK and Sweden. The company is also planning to expand into other European countries, UAE, et al with this infusion of funds.

Sunil Nyati, Managing Director of Swastika Investmart Ltd., commented, "Their impressive track record and ambitious plans for expansion make them a key player in the renewable energy sector. Their esteemed clients include specific properties of Taj Hotels Jaipur, Radisson Blu, Marriott Hotel, The Leela, NHPC, SJVNL, Borosil, Inox Air, Jaquar, Airport Authority, Delhi Metro, and many more. This funding will allow them to capitalize on new opportunities and further their mission of promoting sustainable energy solutions."

Rahul Gupta, Founder and Director of Rays Power Experts Pvt. Ltd, commented, "We are thrilled to secure this funding at such a crucial time. This capital will accelerate our expansion into new projects and international markets. Swastika Investmart's invaluable support and expertise were key in securing this investment. We aim to continue leading in renewable energy solutions with these funds." With a vision of bolstering India's vision of embracing a healthier energy mix, Rays Power Experts has successfully installed 800MWs of solar solutions across India.

Rays Power Experts has executed its single largest project of 187 mw in Dhadla Raj for its client Rising Sun.

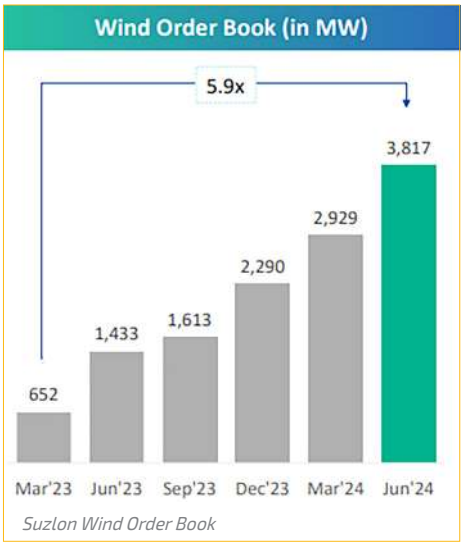
The Indian solar EPC (Engineering, Procurement, and Construction) industry has experienced a robust CAGR of 15.4% from 2016 to 2024. As the world's 5th largest solar power generator, India is ambitiously targeting 270 GW of solar power generation by 2030.

Q1 Results:
Suzlon Registers 199% Growth In Net Profits

Indian Wind Energy Company Suzlon Group announced the financial results for its first quarter (Q1) for Financial Year 2024-25. In its filing before BSE, the company reported a consolidated 199 percent growth in its net profits on a Year-on-Year (YoY) basis. Compared to the last quarter, the Pune-based company reported a 19% growth in its net profits, figures submitted by the company revealed.

Suzlon reported a total net profit of Rs 302.29 crore in the latest quarter (Q1), compared to the total profit of Rs 254.12 crore in Q4 of FY24 and Rs 100.90 crore in Q1 of FY24.

On the revenue front too, the company has seen a rise on a Year-on-Year (YoY) basis. However its revenue plunged marginally on a quarterly basis. The company reported a total revenue of Rs 2,044.35 crore in Q1FY25. During the same quarter in FY24, the company had reported a total revenue of Rs 1,361.68 crore. However, during the last quarter (Q4FY24), the company had reported a higher revenue of Rs 2,207.43 crore.



Suzlon Wind Order Book

Thus on a QoQ basis, the company reported a negative revenue growth of 7.3 percent. However on a YoY basis, Suzlon reported a growth of around 50%.

One of the highest deliveries

Not only this, the Suzlon Group also claimed to register one of the highest Q1 deliveries in seven years at 274 MW. The renewable energy solutions provider has an order book of 3.8 GW claiming it to be one the largest since its inception (29 years).

The wind energy company made a net cash position of Rs 1,197 crores as of 30th June 2024. The company also reported an 86% increase in EBIDTA at Rs 370 crores with a 200% increase in PAT at Rs 302 crores.

Girish Tanti, Vice Chairman, Suzlon Group, said, "We have consistently outperformed ourselves across all performance parameters for the last several quarters. This is a good indication of our readiness to meet industry demand and leverage the tailwinds of the sector. Our largest-ever order book of 3.8 GW gives us great visibility for the future. With significant deliveries of our flagship product series, 3.x MW S144 in Q1 FY25, we are in a strong position to service our current order book."

JP Chalasani, Chief Executive Officer, Suzlon Group, said, "We are consistently performing in line with our business plan with one of our best Q1 performances in a long time. However, our top priority remains timely execution of our robust order book while upholding the highest standards of quality and ESG."

Himanshu Mody, Chief Financial Officer, Suzlon Group, said, "The results speak for themselves. With revenue of Rs 2,016 crores and EBIDTA of Rs 370 crores, we have shown good top-line and bottom-line performance with increased margins. It is important to note that all our businesses have shown improvement in operational performance with tight control on costs, resulting in well-rounded and solid results." ●

ALMM: India's Solar Module Manufacturing Capacity Touches 50.8 GW

India's total enlisted solar module manufacturing capacity has now touched 50.8 Gigawatt (GW), the latest ALMM list issued by the Ministry of New and Renewable Energy (MNRE) revealed. The recent Approved List of Models and Manufacturers (ALMM) lists a total of 93 solar module manufacturing plants in India, against the earlier figure of 90.

The last released ALMM list by the MNRE in May this year pegged the total solar module capacity at 48 GW. The recent addition of around 2.5 GW of new capacities came from the rise in production capacity by Emmvee, Credence, Gautam Solar and other solar module manufacturing companies.

The largest new capacity was reported by Emmvee which reported the highest new capacity addition of 1504 MW. With the new capacity additions, Emmvee has now become the among the top six solar module manufacturers in terms of total production capacity.

Two new solar module manufacturing companies PV Power from Maharashtra and Lubi Electronics from Gujarat also made it to the list with capacities of 86 MW and 40 MW respectively.

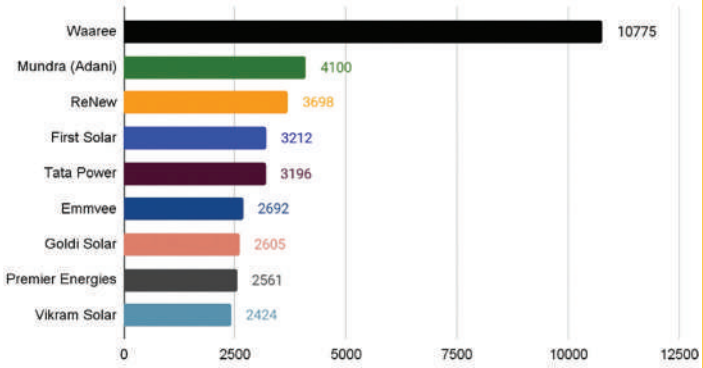
Moreover, several solar module manufacturing companies also increased its production capacities, the new ALMM list indicated. For example Citizen Solar's ALMM enlisted capacity went on from 70 MW to 150 MW. Credence Solar also increased its capacity rom 125 MW to 500 MW. Insolation Solar reported a rise in its capacity from 430 MW to 617 MW. Gautam Solar also increased its capacity from 319 MW to 710 MW.

In terms of the highest enlisted solar module manufacturing capacity Waaree continued to take the lead with a total enlisted capacity of 10.77 GW. It was followed by Mundra Solar (Adani) with 4.1 GW capacity, ReNew (3.6 GW), First Solar (3.2 GW), Tata (3.19 GW), Emmvee (2.69 GW), Goldi Solar (2.60 GW) and Vikram Solar (2.4 GW).

A number of companies meanwhile also enlisted their TOPCon bifacial solar modules at a time when the demand for the new technology in rooftop solar is slated to rise with the launch and expansion of PM Surya Ghar.

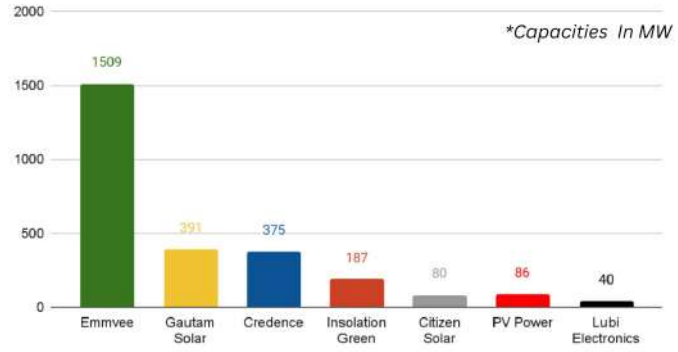
With the rise in the domestic solar module manufacturing capacity, the country now can take the lead in supplying domestic solar modules for the small and large solar projects in India and counter its dependency to China. This has also come at a time when the tariff barriers and non-tariff barriers like imposition of ALMM has made it tough for the Chinese solar module manufacturers to dump their cheaper modules for the solar projects in India. ●

HIGHEST ALMM ENLISTED CAPACITIES



Source: ALMM List, July 2024 *Compiled By: Saur Energy*

NEW CAPACITY ADDITIONS



Source: ALMM List, July 2024 *Compiled By: Saur Energy*

India's Solar Capacity Crosses 85 GW, Installations Pick Pace

India's total solar energy capacity has now surpassed 85 Gigawatt (GW), latest data from the Ministry of New and Renewable Energy (MNRE) said. The ministry said that with the addition of the new solar capacities in June this year, India's total renewable capacity (excluding large hydro) touched 148 GW.

The ministry's monthly progress report said that India added 1,197 MW of new solar capacities in June 2024. A total of 237 MW of new wind capacity was also added during this period. With the latest addition of new capacities India's total solar capacity touched 85,474 MW while its wind capacity touched 46,656 MW.

The total installed capacity of solar and wind power in India now stands at 131 GW which is around 88% of the total renewable energy capacity of India (excluding large hydro).

The pace of additions of new solar and wind energy capacities in the first six months seemed to be faster in 2024 than 2023. In the first six months of 2024, India has added around 14 GW of solar and wind capacities.

Progress & Expectations

The country added a total of 12,156 MW of new solar energy capacity in the first six months of 2024. This is higher than the total solar energy capacity of 6,794 MW added by the country in the initial six months of 2023, a comparison of the yearly data of MNRE by Saur Energy revealed.

In the wind sector, India added a total of 1,920 MW of new wind capacity in the first six months of 2024. During the first six months of 2023, India had reported 1,844 MW of new wind energy capacities.

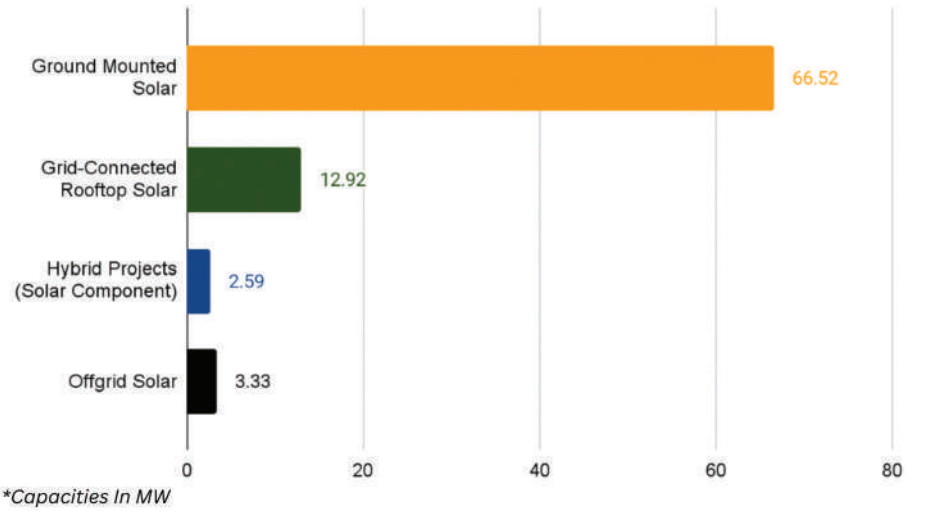
If the country continues to add new solar and wind capacities this year, it could add around 30 GW of new capacities annually. This comes at a time when the country has planned to add around 500 GW of clean energy from non-fossil fuels (including large hydro) by 2030.

Regional Disparity

Notwithstanding the expansion of renewable energy capacities, the growth in solar and wind is mostly seen conspicuously in South India and Western Indian states. In North India only Rajasthan seems to be the trailblazers.

For example Gujarat is now leading in the country with the highest installed capacity of 28405.9 MW. The state with its pro-renewable policies has led to a noticeable growth in solar and wind power. Its remarkable progress in rooftop solar with the highest capacity of 3818 MW has made it the leader in the sector.

However, the growth is eastern Indian states like Bihar, Jharkhand and Chattisgarh states still seem to be lagging behind.



GIB Row: MERC Allows Compensation To Azure Power Subsidiary

The Maharashtra Electricity Regulatory Commission (MERC) in its latest order ordered compensation to a subsidiary of Azure Power in the light of judgement of the Supreme Court on the issue of Great Indian Bustards (GIB). This comes after the Azure Power Thirty Four Private Limited (APTFPL) moved the State Commission, seeking compensation.

The petitioner had set up a 130 MW (AC) solar power plant in the Bap taluka of Rajasthan. APTFPL had entered into a Power Purchase Agreement (PPA) with the Maharashtra State Electricity Distribution Co. Ltd (MSEDCL) in 2018 for the supply of the solar power produced from this solar plant.

Earlier in April 2018, MSEDCL had issued a tender seeking procurement of 1000 MW of solar power. Azure Power was then selected as one of the successful bidders for the tender and bagged a 130 MW from the block.

In 2019, a writ petition was filed before the Supreme Court seeking to protect two species of birds namely Great Indian Bustard (GIB) and Florican. The petitioner had sought certain directions regarding the installation of overhead power lines, etc. by the power generating companies. In 2021 the apex court imposed certain conditionalities for laying powerlines. Further, for existing overhead lines steps like installation of bird diverters were suggested.

The company said that the project lay within the GIB potential area and had to install bird diverters as mitigation measure. It told the CERC that the installation of the new equipment led to inflated project cost and demanded compensation. He pleaded the CERC to consider this as a 'change of law' event' for the same.

The CERC in its written order accepted the plea of Azure Power to consider this as a 'change of law'. It said, "The Commission notes that in present case, bid submission date was 27 April 2018 and project was commissioned on 6 September 2019. Supreme Court has issued GIB Order on 19 April 2021 i.e. post commissioning of the project. GIB order mandates APTFPL to install bird diverters on overhead lines. Such requirement of installation of bird diverters is modification of prevailing conditions in which APTFPL was operating. Hence, Supreme Court's GIB Order mandating installation of Bird Diverters on overhead lines qualifies as Change in Law event under the present PPA."

APTFPL submitted that, total of 4200 bird diverters have been installed having a cumulative cost of Rs. 86,27,511/- at the Project site. While opposing above submissions, MSEDCL contended that there is no one to one corelation of the locations wherein the bird divertors are installed, the court proceedings revealed.

"In this regard, the Commission notes that in similar matters of payment of compensation on account of Change in Law, the Commission had opined that lumpsum payment would avoid further carrying cost on account of deferred payment. Further, Generator may willingly offer some discount on lumpsum payment. Considering all these aspects, the Commission had provided liberty to MSEDCL to decide whether it intends to opt for payment of the compensation on lumpsum basis or per unit basis over the PPA tenure. Accordingly, MSEDCL shall communicate its option of paying Change in Law compensation to APTFPL within a month from date of this Order," MERC said in its order.

India To See 8% Rise In Electricity Consumption In 2024: IEA Report

A new report from the International Energy Agency (IEA) said that India's total electricity consumption is set to rise by around 8 percent in 2024. It also said that power consumption is set to rise significantly in countries like China, India and the United States (US). IEA's latest report titled 'Electricity Mid-Year Update' talked about the global power demand trends. The numbers assume significance in terms of the pressure that is already visible in India for instance, to ramp up generation capacity to insure against outages. That has meant going back to thermal power in a big way, certainly much more than was anticipated even as recently as 2021.

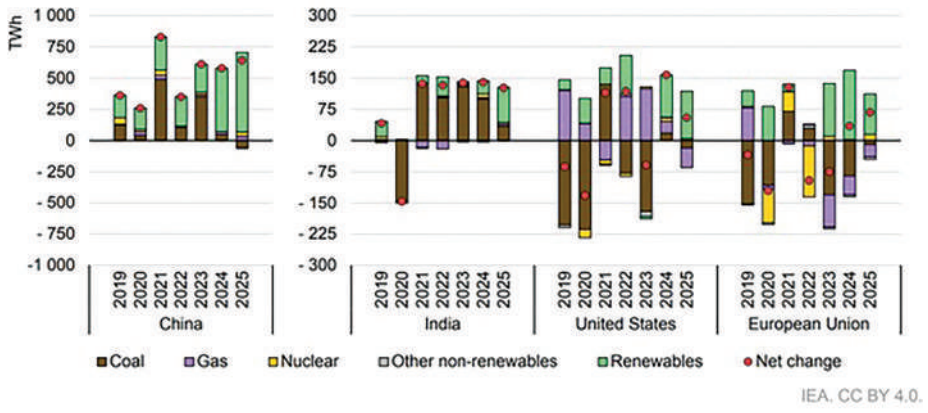
The report said that over the 2024-2025 forecast period of this report, global electricity consumption is expected to increase at the fastest pace in years, fuelled by robust economic growth, intense heatwaves and continued electrification worldwide. "The growth is driven by strong electricity demand in multiple regions and countries, especially in the People's Republic of China (hereafter, "China"), India and the United States. We expect this demand trend to continue in 2025, with growth also at 4%. In both 2024 and 2025, the rise in the world's electricity use is projected to be significantly higher than global GDP growth of 3.2%. In 2022 and 2023, electricity demand grew more slowly than GDP," the report said.

Talking about the trends and forecasts from India, the IEA report said, "The growth is driven by strong electricity demand in multiple regions and countries, especially in the People's Republic of China (hereafter, "China"), India and the United States. We expect this demand trend to continue in 2025, with growth also at 4%. In both 2024 and 2025, the rise in the world's electricity use is projected to be significantly higher than global GDP growth of 3.2%. In 2022 and 2023, electricity demand grew more slowly than GDP."

"India, the fastest growing major economy in the world, is forecast to post an 8% rise in electricity consumption in 2024, matching the rapid growth it saw in 2023. This is supported by strong GDP growth and increased cooling demand due to long and intense heatwaves," the report said. It also added, "In the first half of 2024, the country grappled with heatwaves of record duration, with peak load reaching a new high and putting exceptional strains on power systems. Assuming a return to average weather conditions, we expect electricity demand growth in India to ease moderately to 6.8% in 2025," the IEA report said.

The report said that the IMF forecast in their April 2024 World Economic Outlook that India's GDP growth will average 6.8% in 2024 and 6.5% in 2025. "Indian per capita electricity consumption is currently 20% of that in the European Union. Along with strong economic activity, purchasing of new appliances and air conditioning units will continue to support electricity demand. ●

Year-on-year change in electricity generation by source in selected regions, 2019-2025



Notes: Other non-renewables includes oil, waste and other non-renewable energy sources. The figures for 2024 and 2025 are forecast values.

SECI Discovers Rs 3.41 Price In 1200 MW Solar Plus ESS Tender

SECI's 1200 MW Solar with 1200 MWh BESS tender, floated in March this year, turned up a surprise in terms of the price discovery of Rs 3.41 per unit from the winning bidder, Pace Digitek Infra Private Limited.

This price discovery matches and in some cases beats the recent price discoveries from plain vanilla RE hybrid tenders and is almost at a discount of 1 rupee when considered with peak power tenders. This was the first Solar + BESS tender under BOO mode which was successfully bid for. While Pace won 100 MW with a bid of Rs 3.41/unit, JSW Neo Energy won 500 MW with a bid at Rs 3.42 , followed by Acme Solar with a 350 MW win, and Hero Solar with 250 MW, also at Rs 3.42. For JSW Energy, the win marke yet another major addition to their green storage portfolio.

The tariff discovery is the lowest ever for a Solar + Storage tender, especially one with ESS sizing of at least 0.5 or 600 MWh. Its testimony to the lower module prices seen in recent months as well as falling ESS prices, both of which are expected to remain low as the bidders move to the next stage.

The low prices also augur well for faster renewables additions as lower storage costs will ensure momentum is maintained on solar additions. Watchers in the C&I segment, even while knowing that final prices will be higher, will also be thrilled as prices in 2025-26 are definitely going to be lower than those from just a few months ago.

Post the signing of the PPA for 25 years as per tender conditions, winning bidders will have 24 months to set up their projects in any part of India. Most of the bidders here have shown a marked preference for Rajasthan in most of their projects till date.

This was the first Solar + BESS tender under BOO mode which was successfully bid for. Min annual CUF is 17% (10% to -15% range for 1st 10 yrs, thereafter 10% to -20% till 25th year). ESS Discharge has been set at 2 hours in a day (one cycle), to be informed to developer on a day ahead basis by DISCOM as per requirement. Part commissioning is allowed, min capacity 50 MW.

For the little known Pace Digitek Infra, the win marks a major move for its solar ambitions. The Bengaluru based firm has been an OEM supplier and O&M firm to optos and telecom tower firms till now, with a recent foray into Solar. ●

S#	Bidder's Name	Quoted Value	Loaded Value	Currency	Date/Time of Bidding	Bidder's Quantity	% Difference greater than Rank-1 Bid Value
1	PACE DIGITEK INFRA PVT LTD	3.41	3.41	Indian Rupee	16-Jul-2024 17:55:47 RTZ	100.00	0%
2	Hero Solar Energy Private Limited	3.42	3.42	Indian Rupee	16-Jul-2024 17:54:31 RTZ	250.00	0.29%
3	ACME Solar Holdings Limited	3.42	3.42	Indian Rupee	16-Jul-2024 17:54:35 RTZ	350.00	0.29%
4	JSW Neo Energy Limited	3.42	3.42	Indian Rupee	16-Jul-2024 17:54:53 RTZ	600.00	0.29%
5	NTPC Renewable Energy Limited	3.43	3.43	Indian Rupee	16-Jul-2024 17:36:52 RTZ	300.00	0.59%
6	Solarcraft Power India 8 Pvt Ltd	3.50	3.50	Indian Rupee	16-Jul-2024 17:07:37 RTZ	150.00	2.64%
7	Rays Power Infra Limited	3.50	3.50	Indian Rupee	16-Jul-2024 17:08:53 RTZ	100.00	2.64%
8	Hexa Climate Solutions Private Limited	3.67	3.67	Indian Rupee	16-Jul-2024 15:38:37 RTZ	200.00	7.62%
9	ReNew Solar Power Private Limited	3.71	3.71	Indian Rupee	16-Jul-2024 15:19:43 RTZ	300.00	8.80%

Storage Moves Centre Stage

JSW Neo, Powerica, And Torrent Power Emerge Winners In SECI's 1.35 GW Wind Tender

SECI has now announced the winners of the 1350 MW ISTS-connected Wind Power Projects in Gujarat under Tranche XVI. The tender was released on 30th November 2023 and the results have come after almost eight months. The projects cover wind projects in the states of Gujarat and Karnataka, and Rajasthan.

For projects in Gujarat, JSW Neo Energy (JSW Energy) and Powerica emerged winners with overall allotments of 700 MW and 50 MW respectively. JSW bid Rs 3.61 for its win, while Powerica won 50 MW with a bid of Rs 3.70/unit. Torrent which received a 100 MW project at a tariff of Rs. 3.60 per unit.

Torrent, the Gujarat based Power group with footprints across distribution and generation in the state, surprisingly won 100 MW in Karnataka with an aggressive bid at Rs 3.60 for 100 MW, even as JSW emerged the big winner with a further 325 MW allotment at Rs

3.68, including a 175 MW greenshoe option where it matched Torrent at Rs 3.60/unit.

The 1350 MW projects were to be developed at ISTS substations in the three states, i.e., Gujarat, Karnataka, and Rajasthan. The break-up of maximum capacities that will be awarded in these 3 States is as follows, Gujarat will receive a 1000 MW project, Karnataka will get 250, and lastly, Rajasthan will get a 100 MW project. SECI allocated this project and tied up the additional capacity of up to 700 MW under the 'Greenshoe Option' the tender had mentioned the break-up of the Greenshoe capacities among the three states. It gave Gujarat 500 MW along with 150 MW and 50 MW to Karnataka and Rajasthan respectively.

The big winner is obviously JSW New energy, which has emerged as one of the biggest developers in recent months based on bidding it participated in since late 2023. The renewable arm of the JSW group has been building up an impressive portfolio of renewable energy along with energy storage projects under PPA with SECI and other government owned agencies. Interestingly, unlike other leading developers that have solar heavy portfolios, JSW has been quite comfortable with wind energy, inking some large supply deals too in the process for deliveries well into the next two years.

Gujarat: Gensol Bags Rs 600cr Order From PGVCL For PV Project

Gensol Engineering won the bid for 116 MW (150 MWp) of solar projects in Gujarat with an estimated revenue of around Rs 600 crore. These projects will be distributed across 27 diverse locations, all under the purview of Paschim Gujarat Vij Company Ltd. (PGVCL), the state electricity distribution company.

Gensol Engineering is a Gujarat-based solar power Engineering, Procurement, and Construction (EPC) services company. These projects aim for feeder-level solarisation and are anticipated to be operational within 12 months, following the issuance of the Letter of Award (LoA). The solarisation of agricultural feeders that are either already segregated or primarily serve agricultural loads by installing grid-connected solar projects to meet their annual power requirements. At the feeder level, solar power projects can be deployed to fulfill the power needs of single or multiple agricultural feeders from a distribution sub-station.

Gensol has the experience across Solar (Gensol Solar EPC (India & Middle East) and Scorpius Trackers), EV leasing (Let'sEV), and EV Manufacturing (Gensol EV). Gensol Solar EPC has executed over 770 MW of diverse solar projects, encompassing rooftop, ground mount, and floating solar installations across almost all states of India.

Gensol also claims to contribute to the future of Battery Energy Storage Systems (BESS) in India by offering energy storage solutions combined with advanced energy management systems.

O2 Power, Juniper Green, JSW and Datta Infra Win NTPC 1000 MW Hybrid Tender Award

NTPC's 1000 MW Hybrid power tender (NTPC Tranche VI) finally has a winners roster. Leading in terms of allotment is JSW Neo Energy (300 MW), O2 Power's TEQ Green Power IX Pvt Limited (250 MW), Juniper Green Energy Private Limited (150 MW), and Datta Infra's Adyant Enersol Private Limited with a 70 MW allotment. While Juniper recorded the lowest bid at Rs 3.43/unit, the rest bid at Rs 3.45 to win. Missing out due to a variance of 0.87% from the lowest bid is Avaada Energy which bid for 500 MW.

The tender allows bidders to set up ISTS connected solar and Wind energy projects anywhere in India.

Notable winners this time have been Datta Infra, that has probably got the largest bid ever for itself this time, besides the steady addition to JSW Neo's pipeline with yet another significant tender that has a significant wind component. Datta Infra hitherto has been involved in helping renewable firms acquire land for renewable projects, besides providing other ancillary egal services.

The tender from NTPC had been announced in March this year , with the last date for bids in April. The Single Stage Two Envelope approach consisted of Envelope-I: Technical Bid and Envelope-II: Financial Bid, in addition to Reverse Auction which was concluded recently. India's wind energy is seeing a strong resurgence this year on the back of mounting orders backed by a pipeline of hybrid, FDRE and RTC tenders. Momentum is expected to be maintained and industry experts expect to see wind energy additions touch over 4 GW per annum by 2025-26.

The winning price of Rs 3.43 remains well within acceptable limits for Hybrid tenders, and experts opine that these prices are sustainable with marginally lower rates also possible in future bids.

JSW Neo Secures 192 MW Hybrid Power Project From GUVNL

JSW Neo Energy Limited (JSW Neo), received a Letter of Intent (LoI) from Gujarat Urja Vikas Nigam Limited (GUVNL), for a 192 MW grid-connected hybrid power project, including an additional 96 MW under the green shoe option.

JSW Neo Energy, a subsidiary of JSW Energy was awarded this project against a tariff-based competitive bid invited for setting up of 500 MW grid-connected hybrid power projects (Phase II) along with a green shoe option for additional capacity up to 500 MW.

After this capacity award, the company's total locked-in generation capacity increases to 16.2 GW including a total locked-in Hybrid capacity of 2.1 GW. It expects to have an installed generation capacity of 10 GW by FY25, up from 7.5 GW currently.

With this project, the company further strengthens its energy solution offerings while moving towards an energy products and services company. JSW Energy has a total locked-in generation capacity of 16.2 GW comprising 7.5 GW operational, 2.3 GW under construction across the wind, thermal, and hydro, and RE pipeline of 6.3 GW (PPAs signed for 2.0 GW).

The company also has 4.2 GWh of locked-in energy storage capacity through a battery energy storage system and a hydro-pumped storage project. The company aims to reach 20 GW generation capacity and 40 GWh of energy storage capacity before 2030.

JSW Energy Ltd has established its presence across the value chains of the power sector with assets diversified in power generation, and transmission. JSW Energy began commercial operations in 2000, with the commissioning of its first 2x130 MW thermal power plants at Vijayanagar, Karnataka. Since then, the company has enhanced its power generation capacity from 260 MW to 7,536 MW having a portfolio of Thermal 3,508 MW, Wind 1,962 MW, Hydel 1,391 MW, and Solar 675 MW ensuring diversity in geographic presence, fuel sources, and power off-take arrangements. The company is presently constructing various power projects to the tune of 2.6 GW, with a vision to achieve a total power generation capacity of 20 GW before the year 2030.

SJVN Issues Tender For 1.2 GW Hybrid Projects Across India

SJVN recently released a tender for the selection of hybrid power developers for setting up 1200 MW ISTS-connected wind-solar hybrid power projects in India.

The tender mandates the hybrid power Developer (HPD) to set up a project that includes a transmission network up to the Interconnection/ Delivery Point. The project is undertaken to supply wind-solar hybrid power to SJVN, at its own cost. Those developers are allowing participants who have already installed Wind Solar Hybrid Power Plants. It also invites bids from bidders who are constructing such plants and have untied capacity may also participate in the bid.

The SJVN document said, "The project set the limitation on the minimum quantum of power that the bidder can offer at 50 MW and above for projects connected to inter-state transmission systems. These limitations are subject to the condition that the rated power capacity of one resource (wind or solar) is to be at least 33% of the total contracted capacity. Whereas, it placed the maximum quantum of power at 400 MW. Whereas, the total cumulative capacity of power to be awarded under this RfS is 1200 MW."

The bidder is expected to submit a single bid offering a minimum quantum of contracted capacity of 50 MW and a maximum quantum of 400 MW. The contracted capacity is quoted in multiple of 10 MW only.

The document mentioned, that those developers who have already installed wind-solar hybrid power plants or are in the process of constructing such plants can also participate in the bid. In such case, they will be given the benefit of a longer period of PPA, commensurate to the duration between the actual date of commencement of supply of power and SCSD.

The tender stated, "Wind-Solar Hybrid Power Projects are required to be designed for interconnection with the ISTS substation at a voltage level of 220kV or above. It set the minimum project size of a single hybrid power project at 50 MW to be interconnected at an ISTS delivery point."
The earnest money deposit (EMD) is Rs. 12,26,000 per MW per project. This amount is subject to a maximum of Rs. 25 Crore to be submitted in the form of a bank guarantee along with the response to RfS. Whereas, the last date and for submission of online bids is 28th August 2024.

SWREL Gets Two Projects In Rajasthan And Karnataka

Leading EPC firm Sterling and Wilson Renewable Energy Limited (SWREL), received two domestic orders. One order is for an EPC project for a GWH-scale stationary battery energy storage project in Rajasthan. This project is for a 500 x 2 (1,000 MWhr) standalone BESS plant in the region. Additionally, the company also secured a 20 MW floating solar project in Karnataka from the same client. This is the company's third such floating solar project in the country. The renewable EPC provider is expected to execute this project by 2025. Currently, the total installed capacity of BESS in India only stands at 219 MW/hr as of March 2024. As per the National Electricity Plan (NEP) 2023 of the Central Electricity Authority (CEA), the energy storage capacity requirement is projected to be 82.37 GWh (47.65 GWh from PSP and 34.72 GWh from BESS) in years 2026- 27. With this order, therefore, SWREL will gain a leading position in India's fast-growing BESS market.

Speaking on the order win, Amit Jain, Global CEO, of Sterling and Wilson Renewable Energy Group shared, "As we have seen during last 12 to 18 months, there have been multiple tenders, bids, and projects for either standalone Storage or Hybrid (Renewable + Storage) in India, making it a very important step for us as a Company and for the nation to move towards firm dispatchable renewable power."

The company returned to net profits in its first quarterly results for financial year 2025 (FY25) with a continued revenue growth of 78% (year-over-year) YoY. The renewable EPC received an order inflow of Rs. 2,170 crores and received a rebound in its revenue in Q4 FY24. With a strong pipeline of renewable tenders that have been awarded, Sterling and Wilson should be well placed to build its own order book strongly this year.

India Looks At An Electric Tractor Boom With Rise Of Manufacturers

The Indian agricultural industry is now slowly catching up to the electric vehicle race with policymakers talking about achieving 30% electric mobility by 2030. Exports claim that these e-tractors offer better torque and power efficiency compared to its diesel counterparts. Although the sector seems to be in the infancy days of expansion, but the increased interest of automobile companies is set to change the game soon.

The Tractor and Mechanization Association reports that 1,24,542 tractors were exported from India in the fiscal year 2022–2023, making it one of the top exporters of tractors worldwide.

In the nation, diesel remains the most used fuel for tractors. From October 2020 and September 2021, slightly over 2.6% of `

Transition of Indian agricultural

In 2019, The Central Mechanical Engineering Research Institute, created the smallest electrical tractor in the Indian market, priced at just over Rs 1 lakh.

Cellestial Mobility has launched three electric tractors, or e-tractors, as part of its foray into the EV market. The company's entry into other areas of the electric vehicle market was made possible by the introduction of e-tractors. High-tech elements like cutting-edge batteries and clever farming instruments will be included in these next e-tractors. To ensure that these e-tractors have the newest and greatest features to satisfy farmers' needs, the company will collaborate with leading technological partners.

The top tractor producer in India, International Tractors Limited (ITL), unveiled five new models last year, including the electric Solis SV Series. According to the business, these machines combine cutting-edge technology, strength, and adaptability to boost farming communities' productivity and efficiency all around the world. The company stated in a press statement that all of its goods, including the SV series, are equipped with cutting-edge emission control systems and top-notch technology. These products include the Series S, Series C, Series H, and Series N.

By utilising its robust production base in India and extensive global dealer network, ITL provides farmers globally with premium products at highly competitive prices. Series C will be available globally, although Series H, Series S, and Solis SV models are launched globally.

More Players Jumping Onto The Bandwagon

Autonxt Automation has made public the X45H2, an electric tractor. With 32KW of power and a 38.4KWh battery, the X45H2 electric tractor can run for up to eight hours. For effective operation, hydraulic systems and automated steering are installed. Crop Health Analysis and other intelligent features improve its performance. This sturdy, liquid-cooled motor developed in India is appropriate for high-torque applications.

Bullwork mobility has also launched two variants of electric tractors. Bullwork has used its Vamana platform to make a miniature tractor. This equipment features a unique power system that produces powerful torque, about equal to a compact tractor with 15 horsepower. It also has a 540 revolutions per minute (RPM) PTO, which enables it to work with a variety of agricultural tools and hydraulic systems for additional applications.

The e-Tractor has a high torque engine that was developed domestically and is ideal for heavy-duty applications. Their in-house powertrain design, with a total power output of 30Kw, guarantees optimal efficiency. It can go up to 32 km/h at its fastest. This machine has a continuous running time of 6 to 8 hours, supports fast charging, and has autonomous capabilities. It is capable of 30 to 50 horsepower. ●

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E-mail : marketing1@grandeurhk.com

IFAT INDIA 2024

website : www.ifat-india.com

START DATE : 16 Oct 2024
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E-mail : info@mm-india.in

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E-mail : registration@re-plus.com

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Phone : +91 93792 29397
E-mail : m.vagt@dlg.org

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website : solarenergyexpo.com

START DATE : 14 Jan 2025
END DATE : 16 Jan 2025
Location : Warsaw, Poland
Phone : +48 517 121906
E-mail : info@warsawexpo.eu

FORUM SOLAR PLUS 2024

https://www.forum-solar-plus.de/

START DATE : 26 Nov 2024
END DATE : 27 Nov 2024
Location : Berlin, Germany
Phone : +49 151 6754 7946
E-mail : lai@conexio-pse.de

ROENERGY ROMANIA 2024

website : www.roenergy.eu

START DATE : 25 Sep 2024
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Location : Timisoara, Romania
Phone : +40 357 426266
E-mail : info@roenergy.eu

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website : http://setaasia.com

START DATE : 15 Aug 2024
END DATE : 17 Aug 2024
Location : Bangkok, Thailand
Phone : +66 94 3379588
E-mail : info@gat.co.th

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website : www.ees-southamerica.com

START DATE : 27 Aug 2024
END DATE : 29 Aug 2024
Location : Sao Paulo, Brazil
Phone : +49 7231 58598299
E-mail : merz@solarpromotion.com

ENERGAÏA 2024

website : www.energaia.fr/en

START DATE : 11 Dec 2024
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Location : Montpellier, France
Phone : +33 4 67078546
E-mail : energaia@montpellier-events.com

GLOBAL ENERGY MEET 2025

website : globalenergymeet.com

START DATE : 03 Mar 2025
END DATE : 05 Mar 2025
Location : United States
Phone : +1 469 8542280
E-mail : gem@uniscigroup.net

POWERGEN INTERNATIONAL 2025

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Phone : +1 774 2474044
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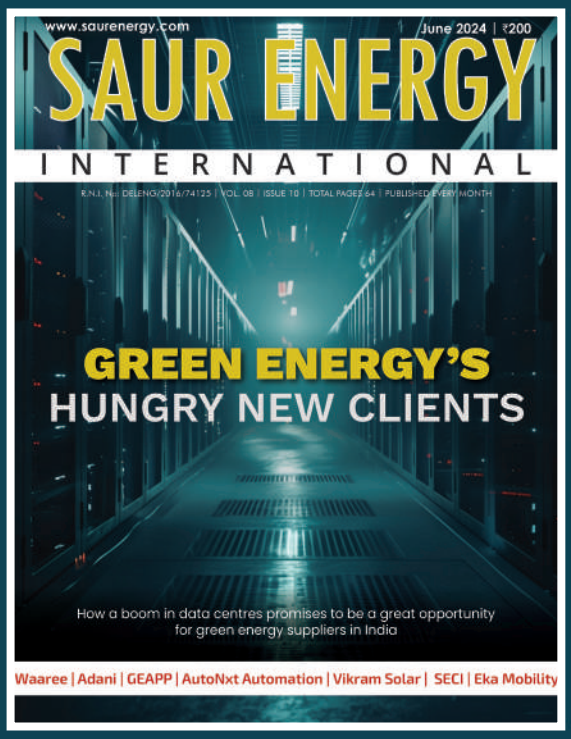

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Project Manager
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Location: Hyderabad, India

Job Description:
Provides technical support for NEXTracker customers worldwide, ensuring a best-in-class customer experience and providing product and systems expertise to maximize customer value

Essential Responsibilities:
- Develop and maintain technical understanding of PV solar tracking systems and associated tools
- Supports the Project Manager, Senior Project Manager, and/or Program Manager in all activities that drive Customer Satisfaction and order fulfillment
- Have strong customer care experience and be able to effectively communicate resolutions for customer concerns
- Responsible for processing RFIs, NCRs, RMAs, transmittals, Change Orders, Lien releases
- Support NEXTracker product procurement and logistics
- Possible on site work to evaluate/document construction progress and respond to Customer queries

Eligibility Criteria:
- Bachelor's Degree in Mechanical Engineering or equivalent experience
- Strong knowledge of PV technology and its applications
- Excellent customer service skills
- Experience in supply chain procurement and logistics
- Understanding of dealing with customer support and O&M issues
- Extensive hands-on experience with photovoltaic tracking solar systems a plus
- Excellent verbal and written communication skills

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Shift Engineer – Solar – Production
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Location: Haridwar, India.

Job Description:
Ensuring day wise production as per day wise plan of RBD,Stranding and Armouring. Identify and resolving atleast one safety issue in each areas of Wire Drawing,Stranding,Armouring in every month. Ensuring the Uptime(run time) of the section of Wire Drawing,Stranding and Armouring Section to be more than 80% i.e OR more than 80%.

Essential Responsibilities:
- Oversee materials and inventory management.
- RSO Certified with E-beam accelerator machine operation experience
- Routine/ annual Maintenance of E-Beam machine
- Manage timely data collection to update operations metrics to achieve productivity targets, reduce cost per kms,, eliminate errors, and deliver excellent internal customer service.
- Plan and execute the production in most efficient way and monitor the materials, consumable and resources to ensure their efficient use

Eligibility Criteria:
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- Functional – Operational
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Associate Tech Lead – Electrical Engineering
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Location: Bangalore, India.

Job Description:
Associate Tech Lead will work as part of the Electrical Engineering team and have responsibility for the design and development of Electrical Subsystems for various product lines (New Product Developments (NPD), Quality improvement and Productivity projects). The role will have strong focus on new technologies, processes and applying these technologies to various product lines.

Essential Responsibilities:
- Create detailed documentation of Electrical / Electronic components, including detailed specification drawings and Application Specification Documents.
- Design and Development of Electrical/ Electronic solutions for HVAC & Transport Refrigeration systems, working in conjunction with internal Subject Matter Experts & external experts, delivering solutions that meet all project scope requirements, including Design for Manufacture and Design for Service.

Eligibility Criteria:
- Degree in an Electrical / Electronic / Controls Engineering discipline
- Approximately 8-10 years of experience in design and manufacturing in the industrial, or automotive industry desired.
- Must be adept at report writing and presenting technical information to a wide audience.
- Experience in Product Development and Electrical Systems development as per Marketing Requirement Document (MRD), Product Requirement Document (PRD) and Regulatory Requirements (RR)
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Larsen & Toubro limited

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Location: Chennai, India

Job Description:
The person shall be responsible for the complete design and detailed engineering for Solar Power plants in Gigawatt scale. The PEM shall manage the entire design for a project or a set of projects as assigned including co-ordination with other disciplines viz., Electrical, instrumentation and Mechanical

Essential Responsibilities:
- Review of Foundation Layout PV Solar Tracker Structures, Foundation marking including levels above Ground suitable for Tracker movement and Robotic cleaning equipment movement in an optimised manner
- Review of Site Grading Works for optimised solutions
- Review of Road, drain, boundary fence and gate
- Review of Equipment foundations in Solar Plant (IDT Transformer, HT Panel, LA)
- Review of detail drawings for Precast / Steel or RCC Cast Insitu Buildings and foundation for all buildings and equipments
- Work schedule allocation to civil and structure team.
- Monitoring on time submission of Design deliverables.
- Checking of Bill of Quantity and Material with respect to ACE and previous projects.
- Review and monitoring of quantity escalation with respect to ACE, timely reporting to Management for necessary action.
- Interaction with site for clarification on drawing.

Eligibility Criteria:
- 15+ years, experience in Design in construction Industry, Renewables Power plant background. Exposure to PV Tracker Support Designs would an added advantage.
- Should be well versed in design using American Standards. Exposure to Saudi Standards and SEC standards would be an added advantage.

Apply: https://bit.ly/4cUmxYb

Deputy Manager
Avaada

Avaada Group is a visionary energy conglomerate with a presence across the entire spectrum of the energy transition value chain, including the production of Solar Modules, Renewable Power Generation, and the development of large scale projects for Green Hydrogen, Green Methanol, Green Ammonia, and Sustainable Aviation Fuel.

Location: Maharashtra, India.

Job Description:
We are looking for a skilled Maintenance Shift In charge (AM/DM) to set up, troubleshoot and carry out all maintenance activities. He will ensure the efficient running of Solar PV Module Plant machines. A great maintenance shift in charge should be reliable and able to work with attention to detail and safety standards.

Essential Responsibilities:
- Responsible for managing overall maintenance activities of solar module manufacturing plant i.e. Troubleshooting & Maintenance of pre-lamination, Automation & Post –lamination machines.
- Knowledge of maintenance & troubleshooting of Multibusbar Stringer, Auto Lay-Up, Auto tapping, EL, Laminator, Framing, Conveyor line, HI Pot, Flashers, AutoModule Sorting.
- Knowledge of various types of sensors (Contact & Non-Contact type)
- Knowledge of PM Module of SAP is desirable.
- Knowledge of Communication Protocol of PLCs, HMI, Servo Drives.
- Understanding of PLC Logics

Eligibility Criteria:
- Degree/Diploma in Electrical/Electronics/Instrumentation/Mechanical
- Proven hands-on experience of minimum 10 years' experience out of which at least 5 years in Solar PV Module manufacturing plant.
- Working knowledge of diverse high-speed machinery (Stringer, Auto bussing, Laminator & Framing, Sun Simulator etc.) and measurement tools (Vernier caliper, micrometer, multimeter, clamp meter, dial gauge, filler gauge etc.).
- Adherence to health and safety regulations.

Apply: https://bit.ly/3SJ164D

Assistant General Manager – Business Development (Solar O & M
ReNew Power Limited

At Sembcorp, our purpose is to drive energy transition.

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Location: India.

Job Description:
To support Solar ISP in the domain of bidding, new customer acquisition and development for processes for improving functional effectiveness of tasks associated with O&M to help achieve KPIs of the department.

Essential Responsibilities:
- Responding to RFPs for O&M Services: Craft compelling proposals in response to Requests for Proposals (RFPs) for O&M services, ensuring alignment with organizational goals and customer requirements.
- Bidding for Acquisition of New O&M Sites: collaborating with relevant stakeholders to ensure competitive and successful bids.
- Billing/Invoicing and Tracking: Oversee the billing and invoicing process, ensuring accuracy and timeliness, and implement robust tracking mechanisms to monitor payment status and revenue generation.
- New Customer Acquisition: Develop and implement strategies to acquire new customers for O&M services, leveraging market insights and networking opportunities.
- Cost Optimization and Revenue Recovery: Identify opportunities for cost optimization within O&M operations and implement strategies to enhance revenue recovery.

Eligibility Criteria:
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IYER NARAYANAN
M: +91 99673 53437
E: iyer.narayanan@informa.com

JULIAN THOMAS
M: +91 99404 59444
E: julian.thomas@informa.com

AMITAVA SARKAR
M: +91 93792 29397
E: amitava.sarkar@informa.com

FOR SPEAKESHIP OPPORTUNITIES

AMIT SHARMA
M: +91 99109 55222
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