

Volume 03 | Issue 03 | October 2020 | ₹250

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India

## Solar Project Acquisitions on the Rise

Even as the global solar industry grapples with the devastating economic impact of COVID-19, project acquisitions have been on the rise compared to last year





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# Foreword



**A**s an unforgettable year comes to an end, India's solar installation numbers for 2020 look much weaker than anticipated. From the pre-COVID prediction of almost 9 GW, we now anticipate actual solar installations to end up at around 3 GW.

That said, there is an unusual level of optimism in the industry going into 2021. Almost everybody expects a much stronger year, and companies are

investing with a long-term perspective.

Internationally, solar construction activity in most countries has recovered, and the momentum is strong going into 2021. In the United States, a win for Joe Biden, the Democratic candidate for U.S. President, is expected to be a big win for the renewable energy industry. Biden has a big climate plan to invest approximately \$2 trillion over ten years. His plan includes tax credits for electric vehicles, boosting research and development activity in battery energy storage, modernizing grid infrastructure, and pushing for a nationwide network of charging stations for EVs.

There have been some important pledges by nations over the past month. China announced its plan of becoming carbon neutral by 2060. Even though the plan is vague with no clear roadmap of how it will get there, it is a strong commitment nonetheless.

Japan one-upped China by announcing a pledge to become carbon neutral by 2050. The Prime Minister of Japan vowed to shift the energy generation policy away from coal towards solar. Following Japan, South Korea also pledged to become carbon neutral by 2050. South Korea has already planned to increase its share of renewable energy generation to as much as 35% by 2040. There is also a strong push in the EU to include renewable energy in their stimulus plans.

We may be reaching a tipping point on climate change as countries, one after the other, announce plans to transition to a carbon-neutral or carbon-free world. This will open up multi-trillion renewable energy, cleantech market across the globe.

In anticipation of this, markets have already been moving. Solar stocks are already in the middle of an incredible rally in 2020. The Invesco Solar ETF was up about 110% in Q3 2020, a clear indication of current investor sentiment. Of the 24 solar stocks we track globally, 12 were up over 100% at the end of Q3 - an unprecedented number.

Financial activity in the solar sector also picked up, according to Mercom's Q3 and 9M Solar Funding and M&A Report. The solar industry bounced back in Q3 with \$3.2 billion in corporate funding in 35 deals, a 43% increase compared to \$2.3 billion raised in 19 deals in Q2 2020. After a dip in Q2, project acquisition activity - an important indicator of financial health in the solar sector, bounced back in Q3.

Large-scale project development activity is mostly back worldwide, and solar component demand is on the upswing.

**Raj Prabhu**  
CEO  
Mercom Capital Group

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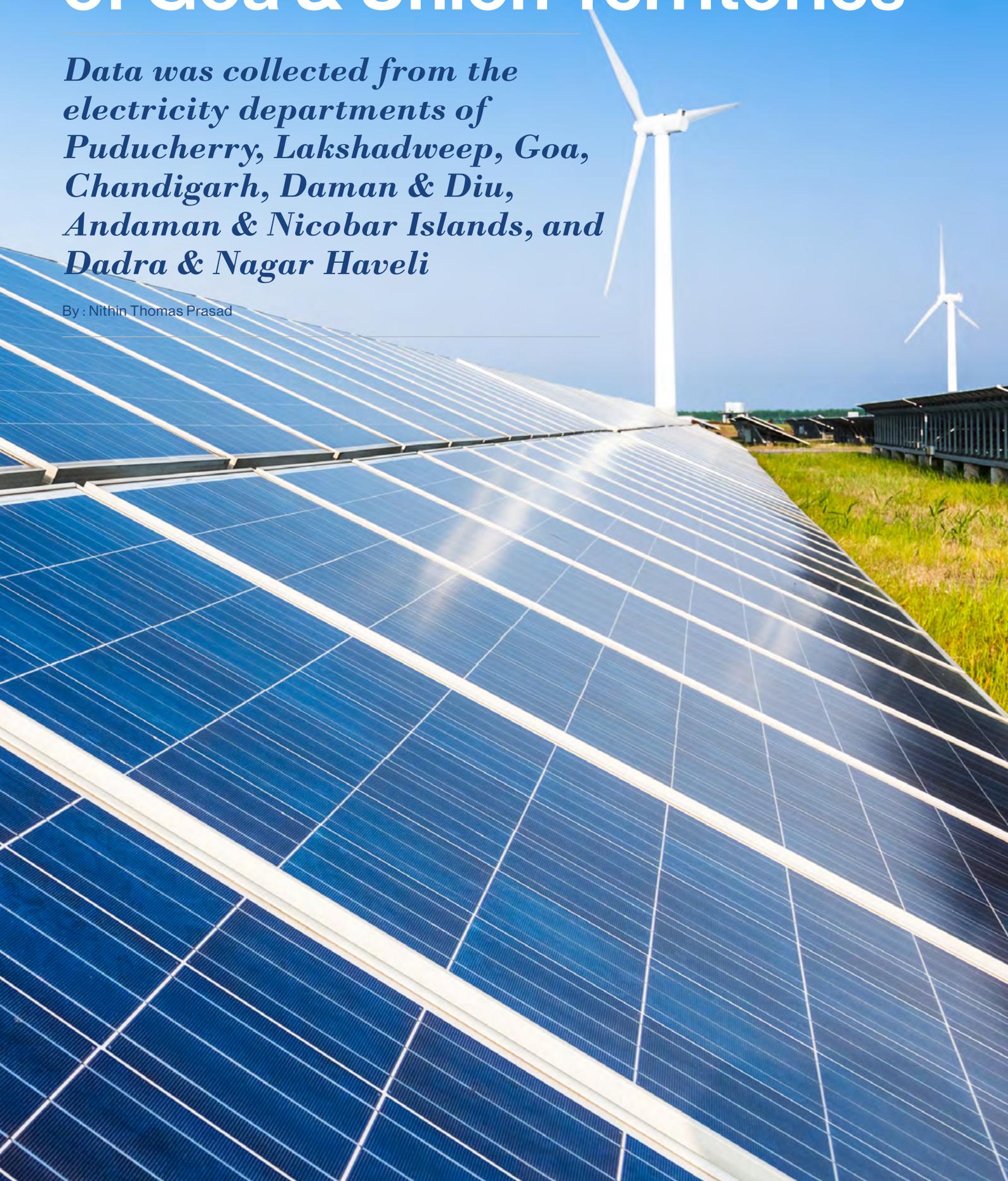
# RPO Compliance Review of Goa & Union Territories

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*Data was collected from the  
electricity departments of  
Puducherry, Lakshadweep, Goa,  
Chandigarh, Daman & Diu,  
Andaman & Nicobar Islands, and  
Dadra & Nagar Haveli*

By : Nithin Thomas Prasad

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**T**he Joint Electricity Regulatory Commission (JERC) has reviewed renewable purchase obligation (RPO) targets for FY 2019-20 based on the submitted data from its region of jurisdiction. The analysis showed that apart from Goa and Chandigarh, all other union territories failed to meet the solar RPO targets.

The data was collected from the electricity departments of Puducherry, Lakshadweep, Goa, Chandigarh, Daman & Diu, Andaman & Nicobar Islands, and Dadra & Nagar Haveli. The Commission said it had received data on RPO compliance for FY 2019-20 from all union territories and their plans to meet these targets for FY 2020-21. However, it said it noticed some inconsistencies between the data submitted and the actual submissions made by utilities during the hearing.

Consequently, it ordered all utilities to submit the actual compliance for FY 2019-20 and their action plan for FY 2020-21, including compliance data for the first quarter of FY 2020-21. The Commission's state-wise analysis of this data is provided below:

#### Goa

After examining the reports submitted by the electricity department of Goa, the Commission noted that while the state had achieved its solar RPO target for FY 2019-20, it had a 43.4 million-unit (MU) shortfall in achieving its non-solar RPO targets.

The state explained that it had signed a letter of intent (LoI) with Manikaran Power Limited to supply non-solar

## Apart from Goa and Chandigarh, all other union territories failed to meet the solar RPO targets

renewable power and an LoI with Tata Power Trading Company Limited to purchase non-solar renewable power under a short-term open access agreement.

The Commission also reviewed the action plan provided by the department and concluded that if executed successfully, it would be able to meet its entire target for FY 2020-21 by the end of the financial year. It commended the state's efforts to adhere to its RPO targets and the fact that it managed to achieve the target entirely through the physical purchase of power.

#### Lakshadweep

The Commission noted that the union territory had not met its solar and non-solar RPO targets for FY 2019-20 and had backlogs of 1.75 MU and 8.29 MU, respectively. The Lakshadweep electricity department submitted that it

hopes to achieve its entire RPO backlog by the end of the next financial year after it finishes augmenting its 1.95 MW of solar projects (with 2.15 MWh of battery storage systems) at Kavaratti, Agatti, Bangaram, and Thinnakara by the end of FY 2020-21.

The JERC directed the electricity department to enhance its solar power capacity to achieve its RPO targets and ensure 100% compliance with these targets for FY 2020-21, including its previous backlogs. It also examined its action plan and noted that the state would have to increase its efforts to fulfill its targets and clear its backlogs.

#### Dadra & Nagar Haveli

The data submitted by the Dadra and Nagar Haveli Power Distribution Corporation Limited (DHNPDC) showed a 688.97 MU shortfall for FY 2019-20, including backlogs. The solar RPO target (including backlogs) was 385.78 MU, but only 117.3 MU was achieved. Likewise, only 711.69 MU of its 1,132.32 MU non-solar RPO target was achieved.

The corporation had said that it had signed a memorandum of understanding with the Solar Energy Corporation of India (SECI) for 50 MW of non-solar power, which will be made available in FY 2020-21. It said it has also signed an MoU with SECI for 200 MW of round-the-clock (RTC) power for FY 2021-22.

Notably, the central government is currently mulling whether round-the-clock renewable energy can be another source for RPO fulfillment.

In response, the Commission directed the corporation to meet its cumulative

Status of Renewables Purchase Obligation (RPO) Compliance by Union Territories For FY 2019-20 (Including Backlogs)

Union Territories	Solar RPO (MU)	Solar RPO Met (MU)	Excess (+)/ Shortfall (-)	Non- Solar RPO (MU)	Non Solar RPO Met (MU)	Excess (+)/ Shortfall (-)	Total RPO to be met (MU)	Total RPO Met (MU)	Excess (+)/ Shortfall (-)
Goa	188.26	188.4	0.14	273.64	230.24	-43.4	461.9	418.64	-43.26
Lakshadweep	2.93	1.18	-1.75	8.29	0	-8.29	11.22	1.18	-10.04
Dadra & Nagar Haveli	385.78	117.73	-268.05	1132.32	711.69	-420.63	1518.4	829.42	-688.97
Andaman & Nicobar Islands	13.72	10.13	-3.59	17.85	5.75	-12.1	31.57	15.88	-15.69
Puducherry	324.13	5.48	-318.65	462.39	122.81	-339.58	786.52	128.29	-658.23
Daman & Diu	209.51	77.29	-132.22	337.65	22.84	-314.81	547.16	100.13	-447.03
Chandigarh	16.11	32.08	15.97	23.31	10	-13.31	39.42	42.08	2.66

Source: JERC

Mercom India Research

shortfall for FY 2020-21, preferably by procuring renewable power or buying renewable energy certificates (RECs) from power exchanges.

The Commission also reviewed the union territory's action plan for FY 2020-21 and believed that it could comply with its RPO targets if it is successfully executed.

#### **Andaman & Nicobar Islands**

The data submitted by the electricity department of the Andaman & Nicobar Islands showed that it had not met its solar and non-solar RPO for FY 2019-20. Only 10.13 MU of its 12.33 MU solar RPO targets and 5.75 MU of its 17.85 MU non-solar RPO targets were met.

The Commission noted that the cumulative target would increase further with the backlog and added to the next year's targets. It directed the electricity department to take more serious efforts to comply with its RPO targets.

In its action plan, the electricity department had submitted that it could not accurately represent the actual sales of the first quarter of FY 2020-21 due to the COVID-19 crisis and the

nationwide lockdown. It also assured the Commission that it would meet its RPO targets since it has commissioned a 20 MW solar project in July 2020.

However, the Commission believed that even if the union territory successfully executes its action plan, it would still have an RPO backlog of

18.33 MU. It directed the electricity department to increase its efforts to fulfill its targets for FY 2020-21 and clear its backlogs.

#### **Puducherry**

The Puducherry Electricity Department (PED) had submitted that it could not achieve its backlog due to the COVID-19 crisis and plans to achieve the same by purchasing RECs and physical power. It said power sale agreements (PSAs) for power from an interstate transmission system (ISTS) connected renewable energy power projects have already been signed.

Puducherry had only achieved 128.29 MU of its 313.28 MU RPO target was achieved for FY 2019-2020. The region's solar RPO compliance was also poor, and only 5.48 MU of its 1288.04 MU target had been achieved. On the non-solar front, out of its total target of 185.24 MU for FY 2019-20, only 122.81 MU had been achieved.

The Commission opined that with a total shortfall (including backlogs) of 658.24 MU for FY 2019-20, the PED must speed up purchasing RECs and

*All utilities  
have been  
asked to submit  
the actual  
compliance for  
FY 2019-20 and  
their action  
plan for FY  
2020-21*



physical power to fulfill its RPO targets. It expressed its displeasure, adding that even if the PED successfully executes its action plan, it would still have an RPO backlog of 500 MU.

### Daman & Diu

The Electricity Department of Daman & Diu's submission showed that the region had poor RPO compliance, which has resulted in a large backlog for FY 2019-20. The data showed that the region had only achieved 77.29 MU of its 209.51 MU solar RPO target for FY 2019-20 and only 22.84 MU of its 337.65 MU non-solar RPO target. Both these targets included backlogs. This highlighted an overall shortfall of 447.08 MU.

The Commission noted this shortcoming and directed the electricity department to make up for its RPO

target shortfalls until FY 2020-21 by purchasing either physical renewable power or RECs. To this, the department said that there was no REC trading session between July-August 2020, and it was unable to purchase any because of this.

Upon analysis of its action plan, the Commission observed that the region would comply with its targets if it successfully executes its plans.

### Chandigarh

The Chandigarh Electricity Department's report showed that it had achieved its solar RPOs for FY 2019-20 with only a 13.31 MU shortfall in its non-solar RPO targets. It, however, has met its overall targets. The Commission commended the region's efforts to comply with its targets, especially since

it had done so entirely by purchasing physical power.

The electricity department also submitted that it plans to meet its solar RPO targets for FY 2020-21 by using the state's existing solar power generation capacity and its non-solar targets by purchasing 40 MW of wind power for which a PSA has already been signed with SECI. It noted that it would buy RECs to meet its non-solar RPO targets if wind power is not available, adding that it could not purchase them in the current period due to financial constraints as a result of the COVID-19 crisis.

The Commission directed all the union territories to either continue with or strengthen their efforts to meet their targets for FY 2020-21, including their backlogs. ☐



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# Implication of Basic Customs Duty on Solar Inverters

*The center has proposed to levy basic customs duty on solar inverters, which many stakeholders believe might do more harm than good in the short-term*

By : Rakesh Ranjan Parashar

**T**o combat the impact of COVID-19, the government has announced various measures, and the chief of them was the “Aatmanirbhar Bharat” or self-reliant India. One of the main initiatives under this announcement was domestic manufacturing. The government aims to increase manufacturing in India, curb imports to save foreign exchange, and bring in foreign direct

investment to boost manufacturing.

To ensure these goals are achieved, the center has proposed to levy basic customs duty (BCD) on solar cells, modules, and solar inverters. By imposing BCD, the government intends to make manufacturing in India cheaper than importing to India.

The duty is proposed for solar modules, cells, and inverters. But the difference is that there are Indian manufacturers of solar cells and modules, but when it comes to solar inverters, most of them are global players who have set up manufacturing facilities in India. Unlike module manufacturers, there are hardly any local Indian manufacturers of solar inverters with a sizable market share.

#### **Background**

Manufacturers of central inverters earlier dominated the solar inverter market. The leading inverter suppliers (cumulative shipment) to the Indian solar market as of 2017 were ABB (now FIMER), SMA Solar, TMEIC, Hitachi Hi-Rel, and Schneider Electric.

#### **ABB, TMEIC, Hitachi Hi-Rel have manufacturing facilities in India.**

But later, with the advent of string inverters and the aggressive price competition by Chinese manufacturers, the landscape changed. The solar inverter market (2019 shipment) was led by Huawei, Sungrow, TBEA, ABB, and TMEIC.

## *There are hardly any local Indian manufacturers of solar inverters with a sizable market share*

Recognizing the growing demand for inverters, Chinese manufacturers, including Sungrow, and TBEA have also opened manufacturing units in India.

#### **Case for BCD**

K N Sreevatsa, Country Head at FIMER (formerly ABB), said: “Currently, we pay a 10% duty on components

imported for manufacturing inverters. When a fully built inverter is imported into India against an MNRE certification, the duty is 5%...manufacturing in India is at a big disadvantage. I would welcome any duties on inverters as it would create a level playing field.”

Supporting the levy, Sreevatsa said: “This is a good step to support local manufacturing and reduce dependency on imports in the inverters business... this would also help generate jobs and address unemployment problems in India...several inverter manufacturers are coming to India for setting up units. We see it as a positive step, and this is going to bridge the demand-supply gap.

Honey Raza, Head of Sales in India at Solis, a Chinese inverter supplier, also agrees. According to him, BCD will lead to enhanced R&D efforts by public and private entities toward inverter development in the country.

“The proposed move...would also lead to the development of a robust supply chain and reduce foreign exchange outgo,” he said.

### Supply chain ecosystem

Many foreign companies, including Siemens, FIMER, TMEIC, Delta, Sungrow, and TBEA, have manufacturing facilities in India.

However, they are mostly dependent on imports as India lacks a component manufacturing supply chain.

While the center plans to impose BCD on imports on fully-built inverters, stakeholders want the government to lay a clear roadmap for developing a robust and effective supply chain for domestic inverter components.

Sunil Badesra, Business Head at Sungrow India Pvt Ltd, said: “...many critical components of high quality

## *Several foreign companies have already invested in inverter manufacturing in India*

are still not available for local sourcing within India. With the right kind of support and incentives from the government, there is a need to integrate the component manufacturing with the local supply chain and increase the

value addition within India.”

While the government is pushing for manufacturing inverters in India, the pressing need is to promote critical inverter components like the insulated gate bipolar transistors (IGBT) to be manufactured in India.

Badesra added that a calibrated approach with a long-term view is necessary. It will ensure the development of a complete supply chain within India. This supply chain will cater to local original equipment manufacturers and drive the segment holistically towards the objective of an Aatmanirbhar Bharat.

### Balance of duty

Industry players feel that BCD will boost domestic manufacturing. It, however, needs to be effectively levied on the end product as well as on components. A balanced levy will ensure growth in the segment.

Badesra says the imposition of BCD on solar inverters would have to be equally supported by reduced duties on components until local component supplies in India reaches a level where they are competitive.

“The government has to make sure that any duty is well thought out and does not disrupt the sector, which



is already reeling due to COVID. A thorough review of Indian inverter manufacturing capacity by technology and components needs to be performed by the government, followed by a stakeholder roundtable, which Mercom will be happy to organize. Without doing this, duties will be imposed without a true understanding of potential implications,” said Raj Prabhu, CEO of Mercom Capital Group.

#### **BCD could hurt local inverter businesses in the short-term**

Many stakeholders believe that imposition of BCD on solar inverters might harm the inverter business in the short-term.

“Retaliatory tariff by other countries on the Indian exports could have an impact on the domestic industry. In the short-term, we see a slump in the rooftop space. Ground-mounted solar project developers will have to suffice with the limited players available in India,” said Raza.

#### **BCD may increase solar power project costs**

While industry players welcome the move, some say it might hurt the current solar projects under construction.

Raza from Solis commented that

the imposition of BCD may help manufacturers in India but may also hurt solar power developers in the current scenario. “It is doubtful that the government will put aside concerns of developers and EPCs (engineering, procurement & construction) and take such a unilateral stand on BCD. Even if there is any such increase in duty, it would be limited between 2% and 4% from the present BCD rates, which is 11% inclusive of cess,” he added.

“It might increase the (solar power) project cost unless safeguarded by any ‘Change in Law’ or grandfathering clause,” said Badesra from Sungrow.

“...considering the pipeline of

*Chinese manufacturers, like Sungrow and TBEA, have opened manufacturing units in India*

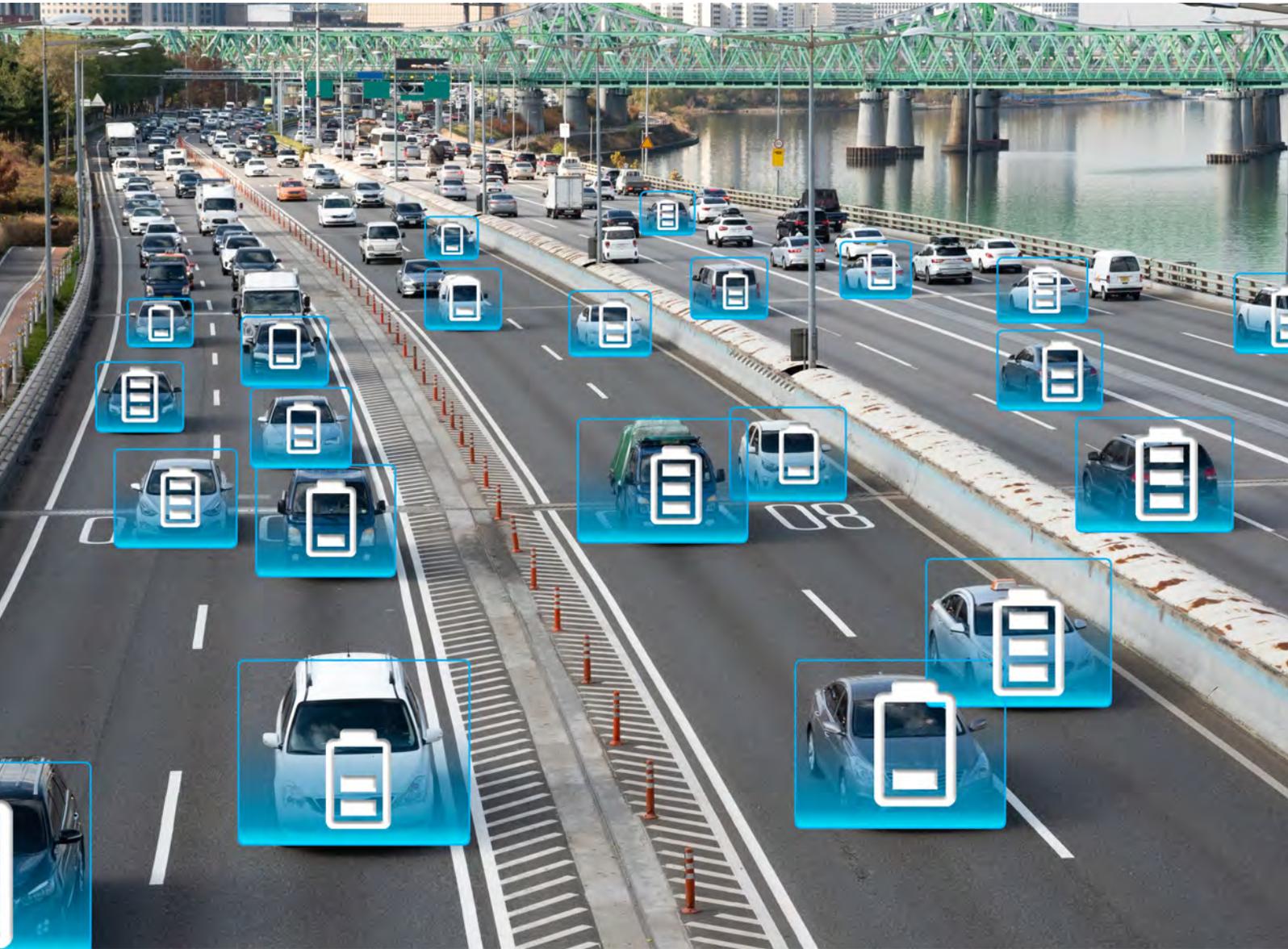
huge capacities in the next two years, demand will certainly outweigh the local manufacturing capacity of solar inverters and hence the supply of domestic goods. So, the imposition of BCD might also have some impact on this mismatch, including commercial numbers of the utility-scale projects,” he warned.

#### **Government needs to think through before imposing BCD**

The government’s aim of promoting inverter manufacturing in India needs to be well-planned with stakeholder inputs. Considering the availability of critical components locally is challenged, the government needs to incentivize component manufacturing before levying duty on the finished product in the case of solar inverters.

“A number of foreign companies have already invested in inverter manufacturing in India (unlike cell or module manufacturing). The government needs a balance between manufacturing self-reliance and meeting the 100 GW solar goal set by the Prime Minister. Mercom has forecasted less than 4 GW of solar in 2020 - creating more uncertainty will start to affect demand in 2021 negatively,” commented Prabhu. ☺





# Timeline to Ensure Localization of EV Components Extended

*The effective date for the indigenization for most EV components that fall under the phased manufacturing program has been shifted to April 1, 2021*

By : Nithin Thomas Prasad

## Effective Date of Indigenization of xEV parts for Phased Manufacturing Program (PMP) Under Phase-II of FAME India Program

Category	e-2W	e-3W	e-3W	e-4W	e-4W	e-Buses
Item Description	L1 & L2	E-Rickshaw & E-Cart	L5	M1	N1	M2/M3
HVAC	NA	NA	NA	B	B	E
Electric compressor	NA	NA	NA	E	E	E
Power & control wiring harness along with connectors	A	A	A	B	B	E
MCB/circuit breakers/electric safety device	A	A	A	E	E	E
AC charging inlet Type-2	NA	NA	NA	E	E	E
DC charging inlet CCS2/CHAdeMO	NA	NA	NA	E	E	E
DC charging inlet BEVC DC 001	NA	NA	NA	E	E	NA
Traction battery pack	A*	A*	A*	A*	A*	E
Wheel rim integrated with Hub motor	E	B	B	E	E	E
DC-DC converter	E	E	B	E	E	E
Electronic throttle	E	E	E	E	E	E
Vehicle control unit	E	B	E	E	E	E
On board charger	E	B	E	E	E	E
Traction motor	E	E	E	E	E	E
Traction motor controller/inverter	E	E	E	E	E	E
Instrument panel	E	E	E	E	E	E
Lighting: Headlamp, Tail lamp, Indicators, Interior Lamp, Flasher, etc.	E	A	A	E	A	A
Body panel	E	A	A	E	A	A

**Note:**

- Revisions are highlighted in yellow

- Traction battery packs are to be assembled domestically, for which battery cells and associated thermal and battery management system may be imported.

All other parts, components, assemblies or sub-assemblies, other than those mentioned above should be domestically manufactured and assembled. CMVR notified safety components should be tested by the testing agencies notified under rule 126 of CMVR, 1989

**Definitions: NA-Not Applicable**

Code	Effective date of indigenization of xEV parts
A	From April 1, 2019
A*	From July 1, 2019
B	From October 1, 2019
C	From April 1, 2020
D	From October 1, 2020
E	From April 1, 2021

**Imported source** includes direct as well as indirect import.

**Indigenous source** implies domestically manufactured/assembled and tested.

**T**he Ministry of Heavy Industries and Public Enterprises (MHIPE) has extended the effective date for the indigenization of xEV parts under its Phased Manufacturing Program (PMP).

xEV is the generic name for all electromotive vehicles, including hybrid, plug-in, and fuel-cell electric vehicles. The notification was issued to all the testing agencies under the second phase of the government's Faster Adoption and Manufacturing of Electric Vehicles in India (FAME India Phase II) program.

The effective date for the indigenization of multiple items and components across xEV categories in the ministry's list was shifted to April 1, 2021. These items include electric compressors, heating, ventilation, and air conditioning systems, traction battery packs, DC converter, electric throttles, among others. The revised deadlines are highlighted below:

**Background:**

The Union Cabinet had approved

the Phased Manufacturing Program back in March 2019 to support the development of large-scale, export-competitive integrated batteries and cell-manufacturing giga-scale projects

*xEV is the generic name for all electromotive vehicles, including hybrid, plug-in, and fuel-cell electric vehicles*

in India. The program will be valid until 2024 and aims to help localize production across the entire electric vehicle's value chain.

The ministry had issued a revision to the program back in May. It said that traction battery packs were to be assembled domestically. For these, battery cells and the associated thermal and battery management systems may be imported. It also said that all other parts and components other than those mentioned in the list below should be domestically manufactured and assembled. These xEV parts should have safety components notified by the central motor vehicle rules and must be tested by the testing agencies.

A little earlier, Mercom had reported that the government extended the validity of the FAME-II program for all approved electric vehicle models. The validity was extended by three months, up to December 31, 2020. The extension comes to effect from October 1, 2020. All the approved vehicle models would need to be re-validated by December 31, 2020. 📍





# Letter of Undertaking: New Way to Submit Bank Guarantee

*The new additions to the guidelines for the tariff-based competitive bidding process are likely to make the development of solar projects easier for generators*

By : Rahul Nair

**T**he Ministry for New and Renewable Energy (MNRE) issued amendments to its guidelines for the tariff-based competitive bidding process to procure power from grid-connected solar projects. The amendments address the minimum period of controlling

shareholding to be maintained by the developers and the alternative arrangement for deposits and bank guarantees in the form of a letter of undertaking (LoU).

**Minimum paid-up share capital**  
If the successful bidder is a single

company, its shareholding in the special purpose vehicle or company executing the power purchase agreement (PPA) should not fall below 51% in one year from the commercial operation date (COD) of the project. Earlier, this time frame was three years. Similarly, for a consortium, the members' combined

shareholding should not fall below 51% in the one year from the COD.

Further, the successful bidder should ensure that its promoters would not cede control of the bidding company or consortium in one year from the COD, which was earlier set at three years.

Many developers had shared their discontent with Mercom that the timeline to maintain the controlling shareholding (51%) for three years was too long and unreasonable, restricting short-term equity investment in the sector. The new amendment is good news for the developers.

Maintaining the shareholding up to three years essentially meant that investors looking for an exit by selling their projects in the secondary market will have to wait for a period of 4-5 years from the point of award.

#### **Deposits and Bank Guarantees**

As per the amendment, bidders should furnish the earnest money deposit (EMD) in the form of a bank guarantee or an LoU. If the solar power generator fails to execute the PPA within the stipulated period, the procurer will forfeit the EMD. Earlier, the EMD was only considered through bank guarantees.

Recently, the Union Power Minister R.K. Singh approved the proposal to accept letters of undertaking from three non-banking financial institutions that can be used like bank guarantees in renewable tenders. These three lenders are the Indian Renewable Energy Development Agency Limited (IREDA), Power Finance Corporation Limited (PFC), and REC Limited (REC). Such letters will serve the same purpose as a bank guarantee issued by any public sector bank. The terms and conditions would also be similar to any bank guarantee that promises to pay the procurer on demand within a given timeline.

The MNRE had been considering an alternative to the earnest money deposits and performance guarantees. The ministry had given the

implementing agencies time to provide their comments. Currently, EMDs ranging between ₹400,000 (-\$5,500)/MW to ₹1 million (\$14,000)/MW plus 18% Goods and Services Tax (GST) are being collected from the developers along with their bid. This is generally in the form of bank guarantee valid up to 9 months from the date of bid submission.

Costs from bank guarantees and processing fees on their own may not seem extremely high, but developers often face cash flow issues when auctions are delayed or canceled and reissued and the money is stuck.

Stranded EMDs and performance bank guarantees have been adding to the liquidity problems for developers. This alternative arrangement could bring in the much-needed relief to the developers.

The MNRE has also clarified that performance bank guarantees could be released to solar project developers as long as they do not have any defaults in their contractual obligations or to those who have claimed relief under the force majeure clause of their agreements. The notice was issued in response to projects stuck due to the ongoing COVID-19 situation. 📌

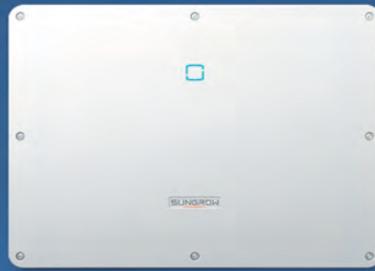
## ***IREDA, PFC, and REC can issue the Letter of Undertaking***



# SUNGROW

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120<sub>CW</sub><sup>+</sup>

Deployed  
Worldwide

15%<sup>+</sup>

Global Market  
Share

NO.1

Largest  
PV Inverter  
R&D Team

120<sup>+</sup>

Countries with  
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20<sup>+</sup>

Years in the  
Solar Industry

## 3 GW India Manufacturing Unit

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# A Winning Combo: Floating Solar on Hydro Projects

*Floating solar on top of water bodies, which have existing hydropower projects, can generate 7.6 TW of renewable energy annually, a recent research study suggested*

By : Harsh Shukla



**A** hybrid system combining floating solar and hydropower projects may have the potential to generate a significant amount of clean energy annually.

According to a research report by the National Renewable Energy Laboratory (NREL), the addition of floating solar projects on the top of water bodies, which already have hydropower stations, can annually generate around 7.6 TW of clean energy from the solar photovoltaic systems alone. For comparison, the global final electricity consumption was just over 22,300 TWh in 2018, the most recent year for which statistics are available.

The report finds that the collaboration of floating solar project with hydropower project has several benefits. A hybrid system can reduce the transmission cost by connecting both systems to a common substation, and both systems can balance each other. A hybrid system equipped with a pumped-storage hydropower project can store surplus solar energy generated by

floating solar panels.

The researchers estimated that the floating solar projects could be installed on the top of existing hydropower facilities at 379,068 freshwater reservoirs worldwide. However, additional data is required before implementation, as several reservoirs may be dry during parts of the year.

The researchers stated that floating solar projects are still in the early stages of development in the United States. However, they are popular overseas due to the shortage of space for ground-mounted projects. Previously, researchers from NREL evaluated that the installation of floating solar projects on human-made reservoirs could produce around 10% of the nation's

annual electricity generation capacity.

“This does not represent what could be economically feasible or what the markets could actually support. Rather, it is an upper-bound estimate of feasible resources that considers waterbody constraints and generation system performance,” said Nathan Lee, Researcher with NREL’s Integrated Decision Support group and lead author of the research report.

In India, floating solar projects have immense potential, and in recent years, there has been an increasing number of tenders for such projects. It is particularly useful in hilly states and other areas where land availability for large-scale project development is an issue. ■

## *Floating solar projects could be installed atop existing hydropower facilities at 379,068 freshwater reservoirs worldwide*

# Open Access Projects in Haryana Asked to Supply Power to DISCOMs

*The Haryana electricity regulator has approved requests from the state's distribution company for procuring solar power from open access projects in the interest of the state's consumers*

By : Rakesh Ranjan Parashar

**T**he Haryana Electricity Regulatory Commission (HERC) approved the draft power purchase agreement (PPA) to be executed between LR Energy Private Limited and the Haryana Power Purchase Center (HPPC) for the purchase of 20 MW of solar power for 25 years. The regulator's order said that the open access solar project would supply power to the state DISCOMs.

The Commission directed LR Energy to file a separate petition for the determination of the tariff.

The HPPC is a joint forum created and owned by the state distribution licensees, namely, Uttar Haryana Bijli Vitran Nigam Limited and Dakshin Haryana Bijli Vitran Nigam Limited.

## *Haryana DISCOM's decision to procure power from Amplus' open access project has landed in court*

### **Background**

HPPC had filed a petition to approve the draft PPA with LR Energy to purchase 20 MW of solar power for 25 years at a tariff to be determined by the Commission. The project is being developed in Haryana's Bhiwani district as an open access/captive power project. The project achieved final connectivity for the sale of power under open access on October 10, 2019. The construction of the project is in the advanced stages, nearing completion.

The HPPC noted that with its current arrangements, it would have a total installed capacity of 1.19 GW of solar and 1.5 GW non-solar renewable energy power by the end of the financial year (FY) 2021-22 to meet its renewable purchase obligation (RPO) targets.

Considering the anticipated upward revision of solar RPO targets beyond 10.5%, additional solar power will be required to fulfill the anticipated solar RPOs for FY 2022-23.

The state DISCOM further said that since the project is close to being commissioned, it can immediately supply power that will count towards meeting RPO from FY 2020-21 onwards.

The Commission has the power to determine a project-specific tariff for the solar project if the developers opt for it.

The HPPC added that the project was conceptualized as an open access/captive power project. In case this project starts selling power under the captive route, this will lead to loss of cross-subsidy surcharge and additional surcharge from the industrial consumers who will be the captive users of the project. At this stage, these charges amount to ₹1.77 (-\$0.02)/kWh, and that will be a direct loss to the DISCOMs, which will be ultimately borne by the end consumers.

“In the overall interest of the consumers of the state, it may be preferred that the project sells power to the DISCOMs rather than selling to consumers under the captive route,” said the state DISCOM.

Besides this, with the project being set up in Bhiwani, power distribution losses would also be low, the developer said. It will also generate employment for the local population.

**Commission’s Analysis**

After considering all the facts, the Commission approved the draft PPA to be executed with LR Energy Private to purchase 20 MW of solar power for 25 years. It directed the generator to file a separate petition for the determination

***HPPC - If the project starts selling power under the captive route, it will lead to losses for the DISCOM***

of tariff.

In its order dated June 01, 2020, the Commission had already noted that the DISCOMs had defaulted in meeting their solar RPO targets. The shortfall in meeting the solar RPO up to FY 2018-19 was 1,850 million units (MUs). Further, during FY 2019-20 (until December 2019), the shortfall in their solar RPO stood at 1,532 MUs.

The Commission noted that though the state had decided to waive off the backlog due to the ongoing pandemic, it had directed the DISCOMs to make every possible effort to meet the RPO targets.

The Commission cited the case of Amplus Sun Solutions, where it approved HPPC’s draft PPA with Amplus Sun Solutions Private Limited. The PPA was signed for 50 MW of solar power from its project in Bhiwani.

**Another similar case**

Earlier, Haryana Power Purchase Center had filed a petition seeking approval of the PPA with Amplus Sun Solutions from a grid-connected solar project in the Bhiwani district of Haryana at a tariff to be determined by the Commission.

Amplus had developed the 50 MW



solar project as an open access/captive power project under the Haryana State Solar Policy 2016. The project was registered with the Haryana Renewable Energy Development Authority (HAREDA) for captive consumption and was granted connectivity to sell power under open access on August 28, 2019. Last year, Amplus had secured approval from the Haryana State government for two of its solar PV projects totaling 150 MW to supply solar power under open access route to industries in the state.

Just like in the case of LR Energy, the regulator noted that in case the project starts selling power under the captive route, it will lead to loss of cross subsidy surcharge and additional surcharge from the industrial consumers who will be the captive users of this project. “In the overall interest of the consumers of the state, the project should sell power to the DISCOMs rather than selling directly to consumers under the captive mode,” said the Commission. The project has been set up in Bhiwani, near the load center, which will result in lower power distribution losses.

Further, HERC stated that HPPC believes that the sourcing of solar power from this project by the DISCOMs would be in the overall interest of all

concerned, including the consumers.

Considering all these factors, the Commission approved HPPC’s draft PPA to be executed with Amplus Sun Solutions for the purchase of 50 MW of solar power for 25 years.

Interestingly, this decision to procure 50 MW of solar energy from Amplus has landed in court. The Punjab and Haryana High Court has ordered this petition would be treated as public interest litigation.

The petition was filed by Monika Sharma and others and represented by Advocate Tushar Sharma. The case was against HPPC’s decision to purchase power from Amplus Sun Solutions’

## *Haryana’s shortfall in meeting the solar RPO up to FY 2018-19 was 1,850 MU*

50 MW solar project in Bhiwani on negotiation mode. The power purchase agreement was also ratified by the Haryana Electricity Regulatory Commission (HERC) at a tariff to be determined later by the Commission.

The petitioners in the plea have stated that the decision is “manifestly arbitrary, illegal, unjustified, irrational, unreasonable, mala fide and biased” and is allegedly contrary to the Electricity Act provisions. They urged that the solar power be procured only through a competitive bidding route.

The petitioners alleged that the state electricity regulator has not ensured the interests of the consumers and has allowed Amplus to charge a higher tariff than what may have been charged by an equally competitive company.

After hearing the matter, the bench of Justice Amol Rattan Singh observed:

The petitioners are not the only ones affected in this case. The decision to buy power from Amplus’ solar project without competitive bidding would affect the public across Haryana; therefore, the petition qualifies to be treated as PIL.

Consequently, the petition was ordered to be treated as PIL, to be put up before a division bench. ☐





# CERC Reminds Ministry of Power of Its Jurisdiction

*CERC reminded the Ministry that the objective of the Electricity Act, 2003 was to distance the regulatory responsibilities of the government and pass it on to the regulatory commissions*

By : Rakesh Ranjan Parashar

**T**he Central Electricity Regulatory Commission (CERC) has issued an advisory for the recent draft rules proposed by the Ministry of Power (MoP), asking it to work in harmony by honoring the respective jurisdiction carved out in the Electricity Act 2003.

The CERC has asked the MoP to consult with state governments before framing rules. The Ministry has recently proposed new rules on various provisions like change in law, must-run status, transmission system planning, recovery of inter-state transmission charges, and late payment surcharge.

The central regulator noted that the draft rules for Electricity Rules 2020 that cover clauses like change in law, and late payment surcharge rules, are available on the Ministry website; but those on transmission system planning are not available. It requested greater transparency and probity from the Ministry on such matters.

“The draft rules may not only be put on the website for wide publicity and soliciting responses of wider stakeholders, but the responses received may also be disclosed on the website for stakeholders at large to appreciate the impact of such rules,” noted CERC.

The Commission further added

that the objective of the Electricity Act 2003 was to distance the regulatory responsibilities of the government and pass it on to the regulatory commissions. The Electricity Act 2003 demarcates the central government’s powers, state governments, central electricity authority, and the appellate tribunal of electricity (APTEL).

The CERC further noted that the central government could make the national electricity policy and the tariff policy in consultation with the state governments and the Central Electricity Authority (CEA). The central and state Commissions are to be guided by such a policy.

In light of the facts mentioned above, the Commission has advised the Ministry not to proceed with the framing of rules on these subjects. The Electricity Act 2003 envisages coordination between the central

government and the Commission through various provisions.

Aditya K Singh, Associate Partner at HSA Advocates, commented, “This letter has been issued by CERC suggesting the government to restrain from framing the proposed rules. CERC feels that the subjects covered under the draft rules are the substantive functions of the Central Commission. CERC further says the objective of the Electricity Act was distancing the regulatory responsibilities from the government and vesting it in the Regulatory Commission.”

Earlier, the MoP had issued a draft proposal for the amendment of the Electricity Act 2003 to address contract enforcement, among other vital issues. The Ministry had invited for comments, suggestions, and objections from stakeholders. Many states have raised objections to the proposed amendments. ☐

## *The central regulator asked the Ministry to consult with state and central regulatory commissions for policy matters*



# Just 295 MW of Wind Projects Installed in Q3

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*Although the numbers are low, the installations rose compared to the previous quarter's 136 MW. However, the installations were 48% lower than they were in Q3 2019*

By : Nithin Thomas Prasad

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Wind Installations in India were up about 117% in the third quarter of 2020 (Q3 2020), with about 295

MW of installations compared to the previous quarter's 136 MW, according to data from the Ministry of New and Renewable Energy (MNRE).

Installations were lower by about 48% lower compared to the same quarter last year, which saw nearly 562 MW of wind installations, the data showed.

Cumulative wind installations in the country stood at 38.1 GW as of September 30, 2020, representing a marginal 0.8% increase. At the end of the previous quarter, cumulative installations stood at 37.8 GW.

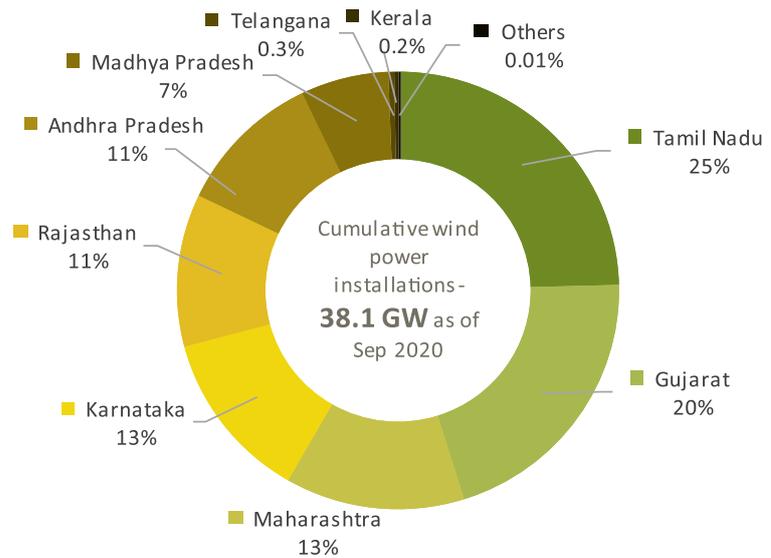
Tamil Nadu and Gujarat were the only two states which added wind capacity during the quarter, about 221 MW and 73 MW, respectively. No other states reported wind installations during the quarter

In terms of cumulative wind installations, Tamil Nadu remained at the top with about 9.4 GW of installations, accounting for an overall market share of 25% in the country. Gujarat stood second with 7.8 GW of installations, while Maharashtra remained in third place with 5 GW wind projects. These states represented 21% and 13% share of installations in the country, overall.

In the first nine months of 2020 (9M 2020), 619 MW of wind projects have been installed. This is a 65% decline from the same period last year, which saw 792 MW in installations.

In Q2 2020, the MNRE's data showed

### India - Cumulative Wind Power Installations by States (%)



Source: MNRE

Mercom India Research

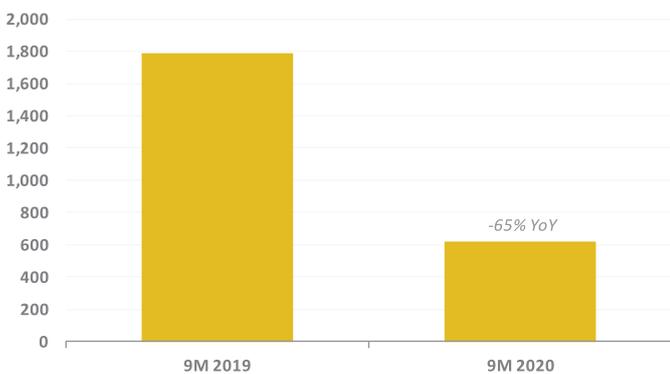
India had installed 136 MW of wind power projects in the second quarter. This was a whopping 82% decline in installations compared to 743 MW in the same period last year and a 28% fall from 187 MW in the previous quarter (Q1 2020).

In April, the Global Wind Energy Council released a new report that

analyzed how COVID-19 impacted the global wind industry, including India. According to the report, to comply with the lockdown, both local and international turbine original equipment manufacturers and components manufacturers had temporarily suspended their production activities in India.

## Tamil Nadu and Gujarat were the only two states which added wind capacity during the quarter

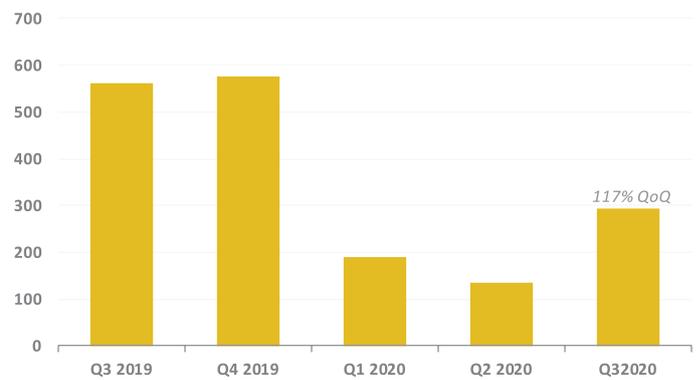
India - Wind Power Installations 9M 2019 - 9M 2020 (MW)



Source: MNRE

Mercom India Research

India - Wind Power Installations by Quarter (MW)



Source: MNRE

Mercom India Research



# Power Ministry Wants Lower Late Payment Surcharge for DISCOMs

*With the ever-increasing dues of DISCOMs, the government recently said that the rate of late payment surcharge in the sector is “extremely high”*

By : Rakesh Ranjan Parashar

**T**he Ministry of Power has proposed Late Payment Surcharge Rules 2020. The government has noticed the extremely high rate of late payment surcharges prevailing in the sector. It had found that the high rates were determined at a time when the cost of borrowing was also high. But now that the rates of interest have reduced, it finds the need to reduce the late payment surcharge to reflect the current interest rates.

This late payment surcharge is payable by a distribution licensee to a generating company for the power procured or by a user of the transmission system to a transmission licensee due to delay in payment of monthly charges beyond the due date.

The late payment surcharge will be payable on outstanding payments after the due date at the applicable bank rate or at the rate provided in the agreement for the supply of power (whichever is lower).

The due date is generally mentioned in the power supply agreement or the power transmission agreement. If it is not mentioned in the agreement, it will be taken as 45 days from the conclusion

of the power supply or the transmission for the month or the agreed period.

The surcharge on the outstanding payment will increase by 50 basis points each month after the first month's expiry, subject to a maximum of the applicable bank rate plus 200 basis

***The proposal states that the surcharge will increase by 50 basis points each month***

points. The rate will not be higher than the rate provided in the agreement for the purchase or transmission of power.

The regulations further state that all the payments by the DISCOM to a generating company for the power procured or payments by the user of a transmission system to a transmission licensee will be first adjusted toward

the late payment surcharge. After that, the payment will be assigned against monthly charges starting from the bill that is the longest overdue.

The stakeholders can submit their comments and suggestions by October 29, 2020. The rules will come into force on the date of their publication in the official gazette.

Mercom has been tracking the regulatory orders on late payment surcharges. Earlier, the MoP had suggested that the power generation and transmission companies reduce the late payment up to 12% annually for the DISCOMs.

In the past few months, many states like Punjab, Bihar, and Karnataka reduced the late payment surcharge because of the COVID-19 pandemic.

Late payment surcharges are paid overdue bills by DISCOMs, which has only been mounting. As of July 2020, the DISCOMs owed renewable generators nearly ₹103.11 billion (-\$1.4 billion) in overdue payment (excluding dues under dispute) spread across 579 invoices. The outstanding dues to renewable generators stood at ₹7.17 billion (-\$97.25 million), with ₹123.7 million (-\$1.68 million) under dispute. ■

# Global Leaders of Battery Storage Innovations

*The recent study says that large consumer electronics companies like Samsung and Panasonic exhibited a strong specialization in lithium technologies*

**A**sian consumer electronics players and carmakers are driving research and development in the battery and energy storage arena, according to a joint study by the European Patent Office (EPO) and the International Energy Agency (IEA).

According to the study, the top five patent applicants for battery and energy storage between 2000 and 2018 were Samsung, Panasonic, LG, Toyota, and Bosch. They generated over a quarter of all patent

applications.

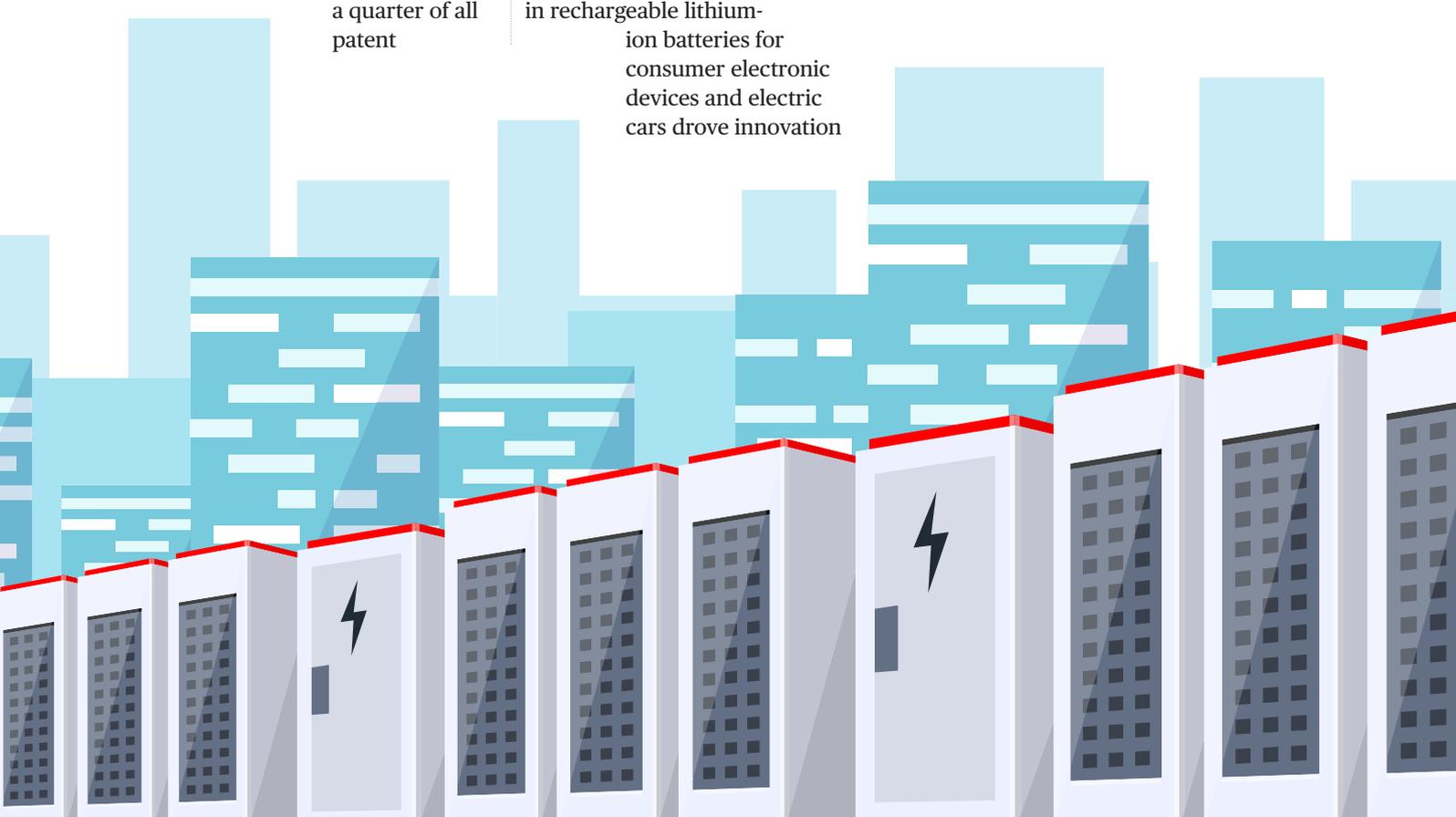
Developing better and cheaper electricity storage is a challenge for the future. Simultaneously, the world requires 10,000 GWh of batteries and other forms of energy storage by 2040 to meet climate and sustainable energy goals. It is close to 50 times the size of the current market, the study predicts.

### Patenting Activity

Batteries also accounted for nearly 90% of all patenting activity in electricity storage. Advances in rechargeable lithium-ion batteries for consumer electronic devices and electric cars drove innovation

in the sector.

Asian companies accounted for nine of the top ten global applicants behind international patent families (IPFs) related to batteries, and two-thirds of the top 25. Other applicants in the list were four German companies – Bosch, Daimler AG, BASF, and Volkswagen, two U.S. companies – Ford and General Motors, the French Alternative Energies and Atomic Energy Commission (CEA), and Ireland-based Johnson Controls. IPFs refers to the whole set of patents



covering the same invention in one or more countries.

Samsung led the cell-level innovation, accounting for 9.1% of all applications. It filed 8.7% of all IPFs in cell manufacturing and 11.9% in cell engineering.

“The consumer electronics major was very active in battery integration (8.7%) and exhibited a strong specialization in lithium technologies compared with other chemistries,” EPO said in the study.

## Lithium-ion technology has fueled most battery innovations since 2005

LG Electronics focused on Li-ion chemistry, with a relative specialization in manufacturing cells (7.4%) and its integration into equipment such as battery packs (7.2%).

Panasonic had a more diverse and balanced portfolio with relatively strong positions in both Li-ion and other chemistries – 7.1% in both cases.

Bosch’s strengths were not in developments at the cell level but, thermal management and integration-related technologies (battery packs). Toyota held similar positions in these fields along with cell manufacturing.

The dire necessity to improve battery storage capacities have fuelled a flurry of research and a 14% rise in patent applications between 2005 and 2018 - four times higher than the average for all technologies, the study indicated. Since 2005, businesses have filed more than 65,000 patent applications in electricity storage. The annual number of IPFs rose steeply, from around 1,500 in 2005 to over 7,000 in 2018.

### Lithium-ion - Leading battery technology

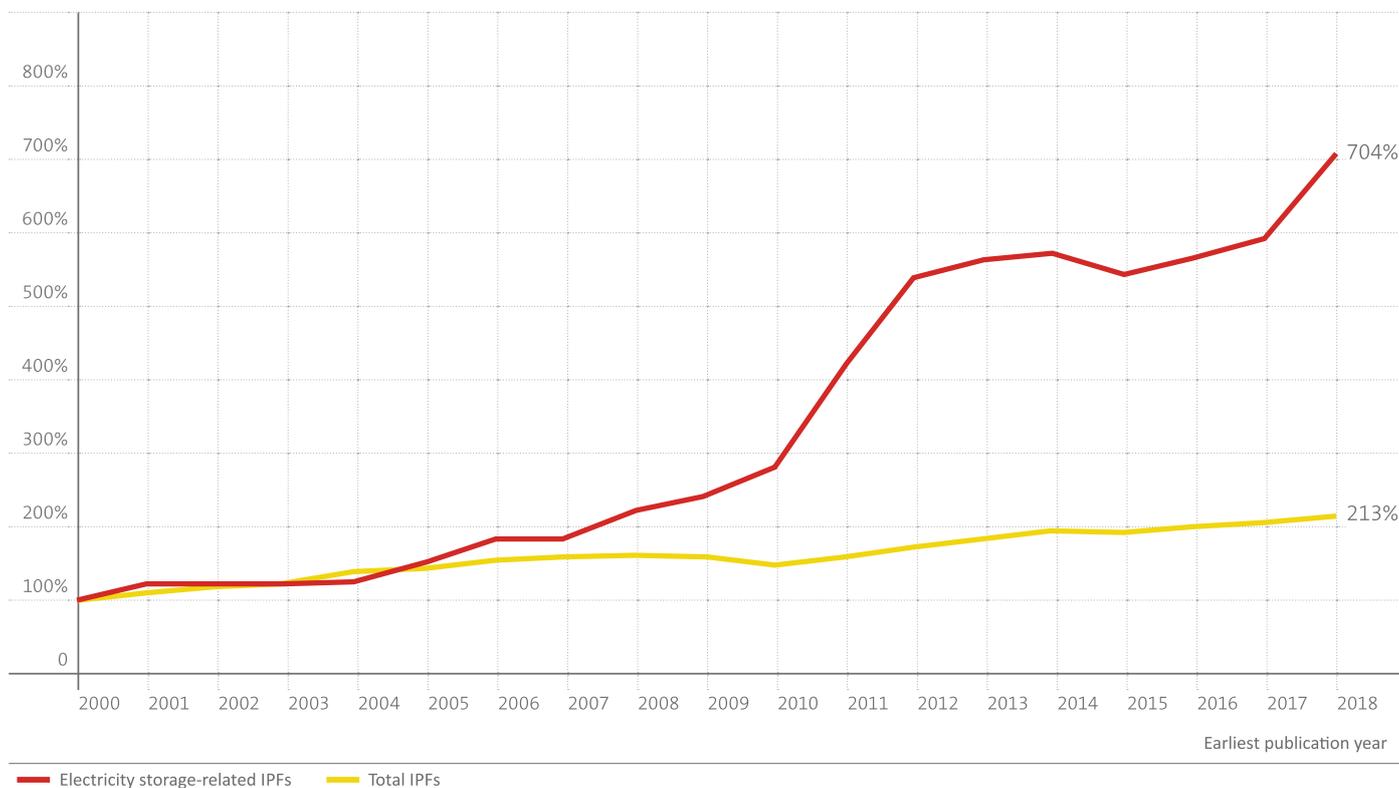
The report finds that lithium-ion (Li-ion) technology, dominant in portable electronics and electric vehicles, fuelled most battery innovations since 2005. In 2018, advances in Li-ion cells were responsible for 45% of patenting activity related to battery cells, compared to 7% for cells based on other chemistries.

Inventive competition has mostly been focused on Li-ion battery cathodes, as they are the limiting factor in determining energy density and cost reductions.

According to the study on patents, battery prices dropped by nearly 90% since 2010 for Lithium-ion batteries for electric vehicles and around two-thirds over the same period for stationary applications, including electricity grid management.

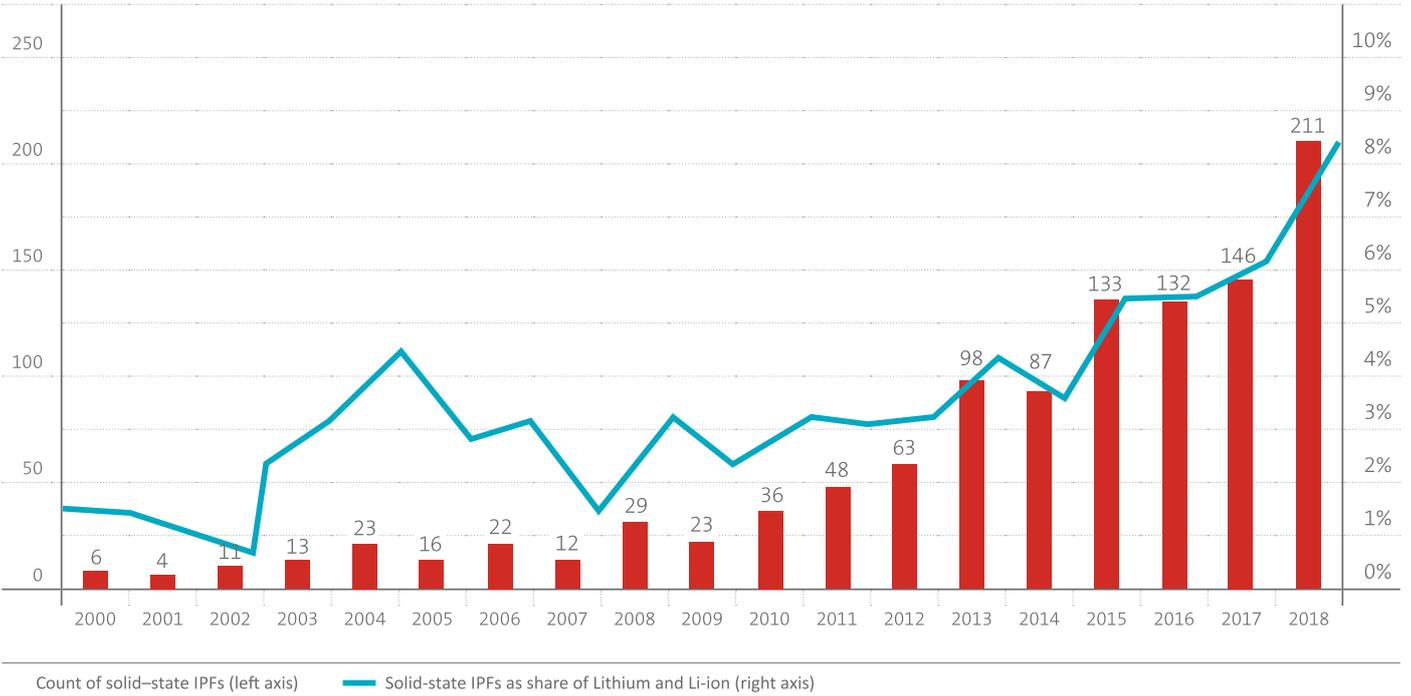
Between 2000 and 2018, inventions in the battery segment accounted for nine out of ten electricity storage patents, far outweighing electrical (9%), thermal (5%), and mechanical (3%)

Trends in electricity storage innovation, 2000-2018



Source: European Patent Office

IPFs related to solid-state lithium-ion technology, 2000-2018



Source: European Patent Office



electricity storage solutions.

**Countries leading the race**

Asia has been leading in lithium-ion battery manufacturing. Of the top ten global applicants behind IPFs related to batteries, nine are based in Asia. Japan and the Republic of Korea are leading the global battery technology race.

China is likely to retain its recently acquired number one position over the next five years. The U.S. and Sweden may emerge third and fourth by 2025, respectively, according to a recent forecast by Bloomberg New Energy Finance’s (BNEF) ‘Global Lithium-Ion Battery Supply Chain Ranking.’

In Europe, innovation in electricity storage is dominated by Germany, which alone accounts for more than half of IPFs originating from Europe. Over the period 2000-18, U.K. companies and inventors filed a total of 652 IPFs in battery technology, putting the U.K. in third place among European countries, after Germany (with 5,080 IPFs) and

France (1,354).

Smaller companies in the U.S. and Europe, universities, and public research organizations also played a significant role. For the U.S., small and medium enterprises accounted for 34.4%. Universities and research organizations filed 13.8% of IPFs.

**Emerging Technologies**

The report highlights two rapidly emerging energy storage technologies, which can address several weaknesses inherent to li-ion batteries and other alternatives if successful.

Redox flow batteries may provide a safer, more durable, and scalable alternative to Li-ion batteries for some applications. Also, supercapacitors can complement li-ion batteries by addressing specific needs such as fast-charging and discharging.

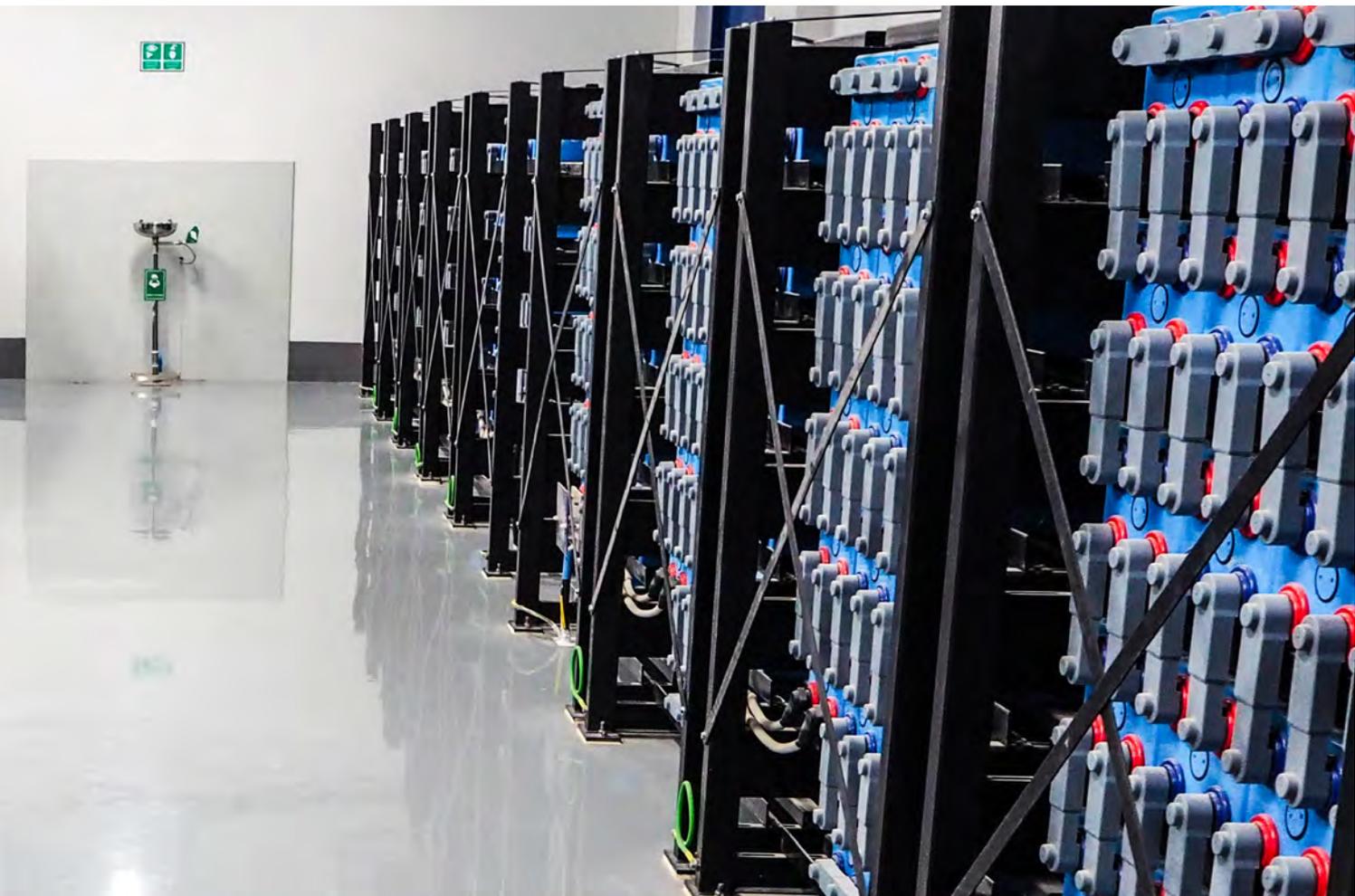
The top five patent applicants in redox flow batteries during 2000-2018 include Sumitomo Electric Industries, Lockheed Martin, United Technology,

Acal Energy, and LG Electronics.

Panasonic, Samsung, Toyota, Semiconductor Energy Laboratory, and TDK topped the list of patent applicants for supercapacitors.

Notably, battery energy storage companies received \$536 million (-₹39.58 billion) in VC funding in 1H of 2020, and Lithium-ion technology has received most of the funding to date. ☺

*The world  
requires  
10,000 GWh of  
batteries and  
other forms of  
energy storage  
by 2040*



# Solar Projects Acquisitions on the Rise

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*Even as the global solar industry grapples with the devastating economic impact of COVID-19, project acquisitions have been on the rise compared to last year*

By : Nithin Thomas Prasad

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Mercom Capital Group's latest 9M and Q3 2020 Solar Funding and M&A Report showed that total corporate funding - including venture capital (VC) funding, public market, and debt financing jumped 43% during the third quarter of 2020 to \$3.2 billion (₹234.2 billion) from \$2.3 billion (₹169.3 billion) in the previous quarter.

The report covered 309 companies and investors from around the world. It finds that despite disruptions due to the COVID-19 crisis, project acquisition activity was up 52% in the first nine months of 2020 (9M 2020), with about 24.3 GW of solar projects acquired. Last year, only 16 GW of projects were acquired in the same period.

Project acquisitions in Q3 2020 were a staggering 244% higher at 9.5 GW

compared to just 2.8 GW in Q2 2020. Compared to the same quarter last year with 4.4 GW of acquisitions, activity was up 119%.

The report also showed that corporate funding during the quarter was up 8% year-over-year (YoY) but was down 13% overall during the first nine months of the year with \$7.9 billion (-₹578.1 billion) compared to \$9 billion (-₹658.6 billion) in the same period last year.

According to the report, global venture capital funding also increased in Q3 2020, with about \$183 million (-₹13.4 billion) secured through 15 deals. This represented a 182% spike from the previous quarter, which saw \$65 million (-₹4.8 billion) across just five deals. However, compared to Q3 2019, funding was 12% lower from \$208 million (-₹15.2

billion) raised through 11 deals.

Meanwhile, the solar sector saw a 61% decline in venture capital, with only about \$394 million (-₹29.8 billion) raised in the first nine months of 2020. Venture capital funding in 9M 2019 stood at \$1 billion (-₹73.2 billion).

Some of the top VC deals in 9M 2020 included \$72 million (-₹5.31 billion) in funding raised by Sunseap Group, \$50 million (-₹3.7 billion) raised by Zero Mass Water, \$40 million (-₹2.9 billion) by Ecoppia, \$37 million (-₹2.7 billion) raised by the Sunseap Group in another deal, and \$35 million (-₹2.6 billion) raised by Lumos.

Public market financing accounted for \$1.3 billion (-₹95.1 billion) to the solar sector through four deals in Q3 2020. This was 75% higher than the \$737 million (-₹53.9 billion) raised in five deals in Q2 2020. Compared to the same quarter last year, public market

**“After declining in Q2, financing activity was up across the board, whether it was VC, private equity, public market, or debt financing, a clear sign the market is bouncing back after a prolonged shutdown. Transactions in the works that could not make progress in Q1 and Q2 were getting closed in Q3, resulting in a funding surge. Project acquisition activity - an important indicator of the financial health in the solar sector, bounced back strongly in Q3,”** said Raj Prabhu, CEO of Mercom Capital Group.

**“Solar stocks are on an incredible run so far this year. Of the 24 solar stocks Mercom tracks globally, 12 were up over 100% at the end of Q3 - an unprecedented number,”** Prabhu added.

***42 corporate  
M&A  
transactions  
were announced  
in 9M 2020***



financing was only up about 2%.

Debt financing stood at about \$1.8 billion (-₹131.7 billion) raised through 16 deals - 20% higher than the \$1.5 billion (-₹109.7 billion) raised from nine deals in the previous quarter. Compared to Q3 2019, debt financing was up 16%, the report said. It added that solar debt financing in the first nine months

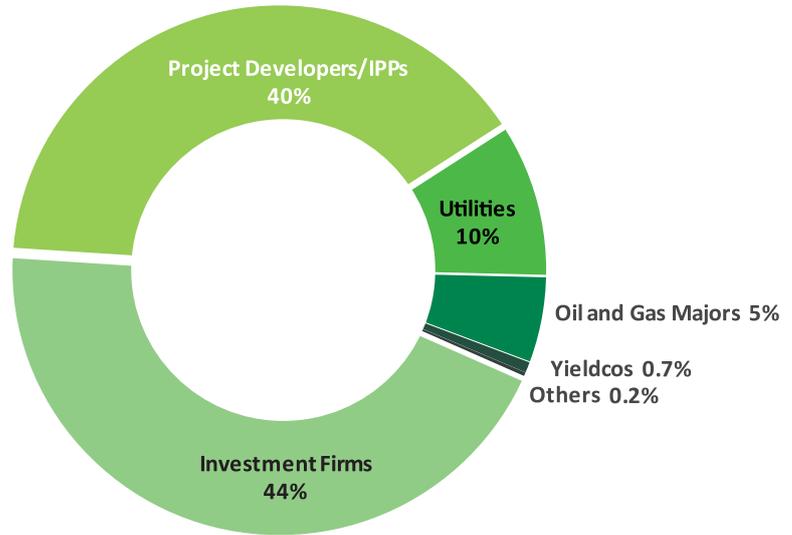
## 24.3 GW of solar projects have been acquired so far in 2020

of 2020 stood at \$5.4 billion (-₹395.2 billion) raised through 32 deals, 6% lower than 9M 2019.

In terms of solar securitization deals, the report said that about \$1.6 billion (-₹117.1 billion) was raised in 9M 2020. It noted that three residential and commercial solar funds announced in Q3 2020 reeled in about \$400 million (-₹29.3 billion).

There were 42 corporate mergers and acquisition (M&A) transactions that were announced in 9M 2020. Only 11 of these had disclosed their deal values, which totaled \$7 billion (-₹512.2 billion). In 9M 2019, there were 57 transactions. The value of the ten disclosed deals from these cumulatively totaled \$600 million (-₹43.9 billion). Seventeen solar M&A transactions were executed in Q3

Solar Project Acquirer Mix (%) 9M 2020



Source: Mercom Capital Group

2020. This included \$6.8 billion (-₹497.6 billion) from five disclosed deals. Sunrun executed the largest transaction in 9M 2020 worth about \$3.2 billion (-₹234.2 billion) in an all-stock transaction

Project acquisition activity was up 52% in 9M 2020, with 24.3 GW of solar projects acquired, compared to 16 GW acquired in the same period last year.

It said that investment firms were the most active project acquirers in Q3 2020, picking up about 4.2 GW of projects. Project developers and independent power producers stood second in terms of acquisition activity

and picked up 3.8 GW of projects during the quarter.

Utilities (distribution companies) acquired 912 MW of projects, oil and gas majors picked up 514 MW, while yield companies and other companies bought 86 MW.

The report concluded that solar projects continued to remain attractive investments.

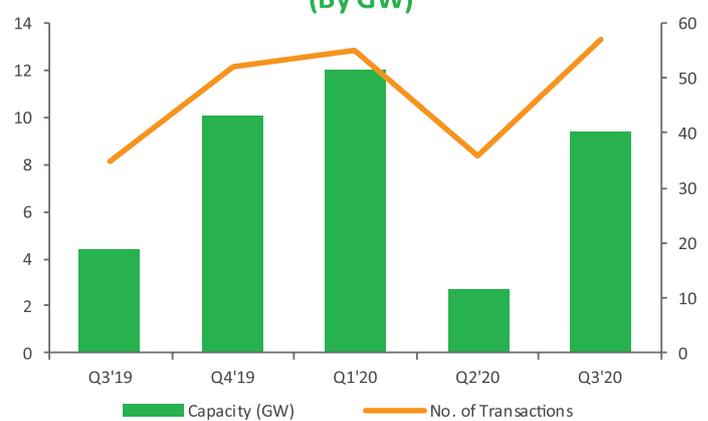
In July, Mercom's report showed that total corporate funding dipped 25% to \$4.5 billion (-₹336.09 billion) in the first half of 2020 from \$6 billion (-₹448.13 billion) in the same period last year. 📉

Solar Corporate Funding Q3 2019-Q3 2020 (By \$M)



Source: Mercom Capital Group

Solar Project Acquisitions Q3 2019-Q3 2020 (By GW)



Source: Mercom Capital Group

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# SECI Paid Over ₹4.5 Billion to Renewable Generators in September

*The agency paid ₹70.8 million in goods and services tax and safeguard duty reimbursements to solar power developers and about ₹639.6 million in rooftop and venture gap funding subsidies*

By : Nithin Thomas Prasad

**T**he Solar Energy Corporation of India (SECI) paid out nearly ₹4.53 billion (-\$61.6 million) for solar and wind power purchases in September 2020, according to the latest data.

This amounted to about 82% of its payments during the month. Wardha Solar (Maharashtra) Private Limited, Green Infra Wind Power, and Clean Solar (Bhadla) Private Limited were the highest paid in power dues.

The payments have slightly reduced in September when compared with the previous month. Mercom reported that SECI paid nearly ₹4.6 billion (-\$62.4 million) to solar and wind developers in August 2020, which amounted to almost 84% of the total amount disbursed during the month.

The agency disbursed ₹70.8 million (-\$966,632) in reimbursements to solar power developers. It reimbursed ₹27.1 million (-\$369,996) towards Goods and Services Tax (GST) claims and about ₹22

million (-\$300,366) towards Safeguard Duty claims, both as per the annuity method. The central agency reimbursed ₹21.6 million (-\$294,905) towards GST claims to solar power developers.

Wardha Solar, Azure Power India Private Limited, Parampujya Solar Energy Private Limited, and Clean Sustainable Energy Private Limited were among the companies that received the largest refunds towards GST and safeguard duty claims.

In terms of subsidies, SECI released ₹639.6 million (-\$8.7 million) under the venture gap funding (VGF) program and about ₹47.1 million (-\$643,056) under the rooftop program.

Wardha Solar, Vena Energy Solar Ravi India Power Resources Private Limited, and Suryam International Private Limited received the most subsidies under these programs.

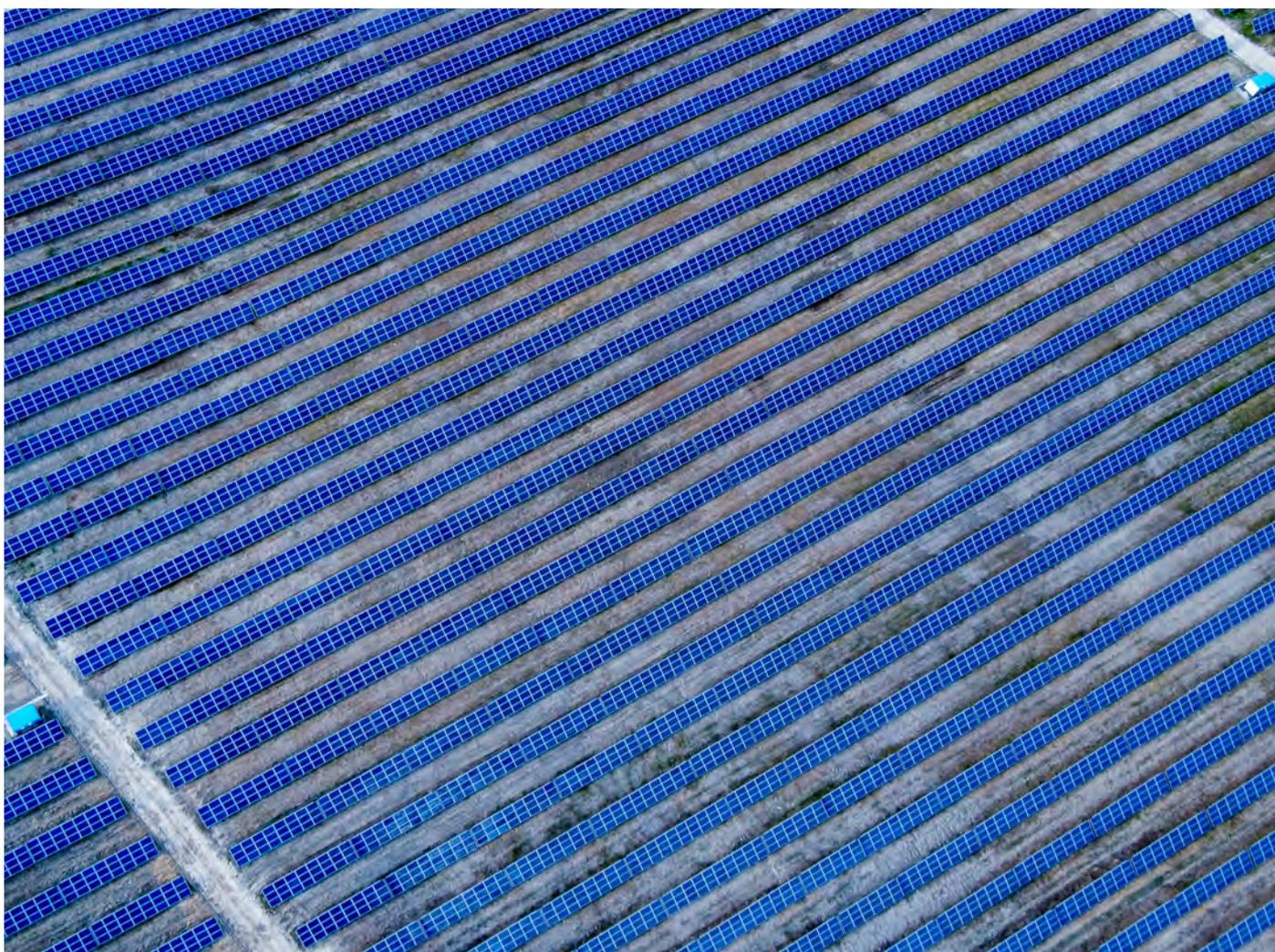
SECI also spent ₹31.4 million (-\$428,704) towards transmission charges during the month to the

distribution companies of Gujarat, Madhya Pradesh, and Rajasthan.

The agency's data also showed that it had refunded interest on central financial assistance (CFA) to the tune

## *SECI spent ₹31.4 million on transmission charges during the month*

of ₹78.4 million (-\$1.07 million) to the Ministry of New and Renewable Energy. It also provided CFA worth ₹9.4 million (-\$128,338) to the ministry. Under earnest money deposit refunds, SECI disbursed ₹53,547 (-\$731), as per the data. 📊



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# Funding Soars for Battery Storage Companies

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*The total corporate funding for the battery storage, smart grid, and energy efficiency sectors in the first nine months of 2020 stood at \$4.7 billion*

By : Nithin Thomas Prasad

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**G**lobal corporate funding (including venture capital funding, public market, and debt financing) for the battery storage, smart grid, and energy efficiency sectors was up 165% in the third quarter of 2020 (Q3 2020) at about \$3.2 billion, according to Mercom Capital Group's latest report.

This was a steep increase from the previous quarter, which saw \$1.2 billion in funding. It was also 777% higher than the same period last year, which only saw \$365 million raised through 20 deals.

The report revealed that despite the ongoing COVID-19 crisis, total corporate funding for the battery storage, smart grid, and energy efficiency sectors in the first nine months (9M 2020) stood at \$4.7 billion. This was a 75% increase from the same period last year, which saw \$2.7 billion in funding.

**Battery Storage:**

Corporate funding for battery storage companies in 9M 2020 was up 62% from the same period last year. Companies raised \$3.5 billion through 35 deals, compared to \$2.2 billion raised through 32 deals previously. Corporate funding raised during Q3 2020 stood at \$2.8 billion through 16 deals. This was an increase from the previous quarter's \$472 million raised through 10 deals.

On the other hand, Venture Capital (VC) funding during Q3 2020 was up 78% at \$661 million raised through seven deals from the \$372 million raised from eight deals in the previous quarter. The report cited Northvolt's \$600 million equity raise as the primary reason for the jump.

In 9M 2020, funding was down 25% at \$1.2 billion raised through 21 deals

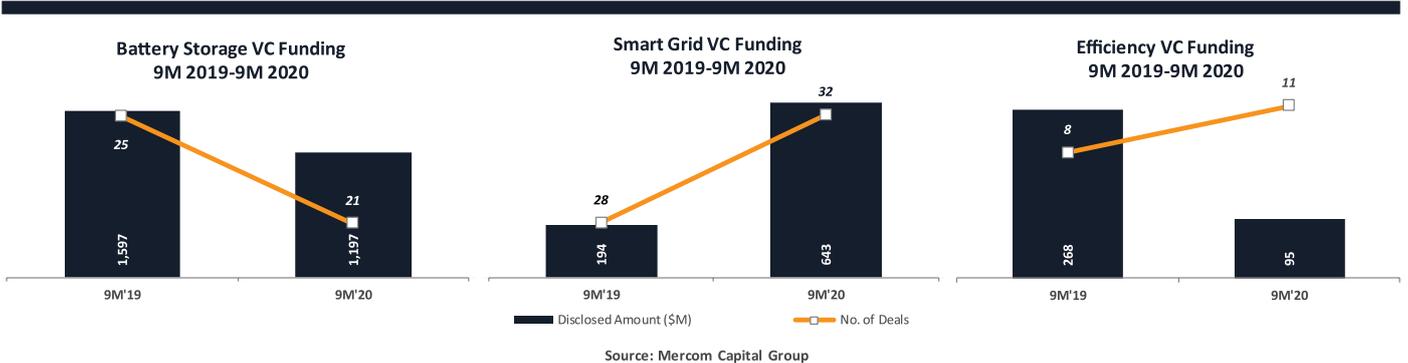


compared with the \$1.6 billion through 25 deals in the same period last year.

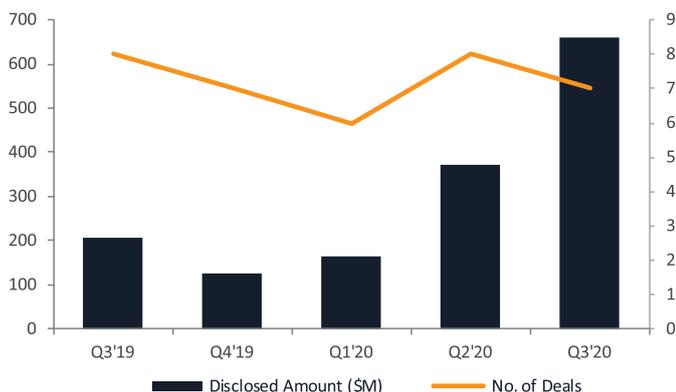
The report said that the top five VC funding deals in 9M 2020 included \$600 million raised by Northvolt, \$200 million raised by QuantumScape, \$100 million raised by QuantumScape, \$71 million by Demand Power Group, and

\$46 million by Highview Power. In all, 28 VC investors participated in battery storage funding in Q3 2020, the report added.

Battery storage technology companies also raised \$2.1 billion in debt and public market financing during Q3 2020. In 9M 2020, companies raised



**Battery Storage VC Funding Q3 2019-Q3 2020**



Source: Mercom Capital Group

\$2.3 billion through 14 deals.

Q3 2020 also saw three mergers and acquisition (M&A) transactions in the sector, down from four each in the previous quarter and the same quarter last year. There were 11 M&A transactions in 9M 2020.

There were four project M&A transactions in the third quarter of 2020, up from four in the previous

quarter and the same quarter last year. In 9M 2020, there were 15 transactions - up from eight in 9M 2019.

**Smart Grid:**

Smart Grid VC funding stood at \$368 million raised through 11 deals in Q3 2020, compared to the previous quarter's \$194 million through 14 deals. This was

much higher compared to the meager \$39 million raised through six deals in Q3 2019. 9M 2020 witnessed a 231% climb to \$643 million raised through 32 deals from \$194 million raised through 28 deals.

The five largest smart grid VC funding deals in 9M 2020 included \$127 million raised by ChargePoint, \$125 million

by Star Charge, \$60 million raised by SmartRent, \$53 million by Probus Smart Things, and \$43 million by Smart Wires.

In 9M 2020, announced debt and public market financing for Smart Grid companies stood at \$10 million raised through three deals compared to \$45 million raised from two deals in 9M 2019.

There were 12 smart grid M&A transactions in Q3 2020 compared to one in Q2 2020 and five in Q3 2019. In the first nine months of 2020, there were 18 transactions, compared to 23 in 9M 2019.

*Venture Capital funding for battery storage in Q3 2020 was up 78% QoQ*



Battery Storage, Smart Grid, and Efficiency Top M&A Transactions in 9M 2020

Company	Terms/Amount (\$M)	Acquirer	Country
 <b>ABB</b> Power Grids (80.1% stake)	6,850	<b>HITACHI</b>	Japan
 <b>OSI</b> powering the future	1,600	 <b>EMERSON</b>	USA
 <b>COOPER</b> Lighting Solutions	1,400	 <b>Signify</b>	Netherlands

Source: Mercom Capital Group

**Energy Efficiency:**

Energy Efficiency technology companies raised about \$48 million through four deals in Q3 2020 compared to \$40 million from four deals in the previous quarter and \$61 million from three deals in Q3 2019.

9M 2020 saw \$95 million raised through 11 deals, down from \$268 million from eight deals in the same period last year.

The top VC funding deals in 9M 2020 included \$29 million raised by Palmetto, \$18 million by Juganu, \$12 million by BrainBox AI, \$12 million raised by Virtual Power Systems, and \$10 million

by SmartAC.com.

Announced debt and public market financing in 9M 2020 stood at \$500

*Corporate funding for battery storage companies in 9M 2020 was up 62% YoY*

In 9M 2020, there were four such M&A transactions, down from nine in the same period last year.

There were three VC funding deals involving Indian companies. On the battery storage front, Grinntech, a startup that develops and manufactures lithium-ion batteries for electric vehicles, raised \$2 million from four investors.

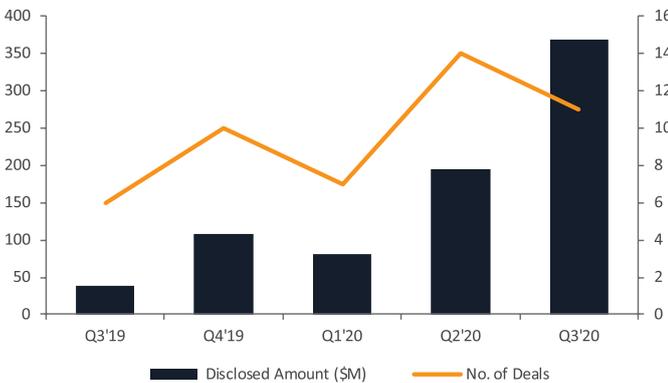
Meanwhile, on the smart grid segment, early-stage VC fund house Unicorn India Ventures announced a \$53.4 million investment in Probus Smart Things, a smart grid automation startup.

Separately, Inflection Point Ventures, an active angel platform, invested an undisclosed amount in Eden Smart Homes, an IoT (internet of things) startup.

In July, Mercom reported that global VC funding for battery storage, smart grid, and efficiency companies in the first half of 2020 was down 51% at \$858 million from \$1.8 billion in 1H 2019.

Recently, a joint study by the European Patent Office and the International Energy Agency showed that Asian consumer electronics players and carmakers are driving research and development in the battery and energy storage arena. 📌

Smart Grid VC Funding Q3 2019-Q3 2020



Source: Mercom Capital Group

million from one deal, up from \$56 million raised in two deals in the same period last year.

In terms of M&A transactions involving energy efficiency companies, there were three deals in Q3 2020 compared to none in the previous quarter and one in the same quarter last year.

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**DIGITAL**  
transformation

# Indian Solar Industry on its Way to Digitalization

*E-Tendering platforms helped the renewable sector remain operational over the last few months amid the COVID crisis, proving to be a case in point for the required overhaul of the industry*

By : Nithin Thomas Prasad

**T**he ongoing COVID-19 crisis has accentuated the need to automate and digitalize practices and processes in the renewable energy sector. There is enormous potential for the industry to adopt smarter solutions to increase efficiency and decrease delays through and post-pandemic.

Although alternatives already exist, the pace at which the industry is adopting them has remained slow. The pandemic has revealed the flaws in the government processes, which is overly reliant on manual in-person processes and interactions. Whereas organizations adopting automation have fared better during the pandemic.

For example, DISCOMs with robust online payment systems reported a better rate of payment collections after lockdown. The Bangalore Electricity Supply Company had told Mercom that about 61% of their bill collections came through online payment gateways like Electronic Service (ECS), debit or

credit card, and net banking. The Tata Power Delhi Distribution, a power utility supplier, catering to seven million customers in the north and north-west Delhi, said it received over 90% of its bill payments in digital mode during the lockdown.

The Ministry of New and Renewable Energy has asked all the State Electricity Regulatory Commissions amid the pandemic to allow the online listing of petitions and hear urgent matters through video conferencing after receiving a request from renewable energy developers.

There are more cases to be made for speeding up automation and digitalization in the industry. Many processes could be made more efficient by implementing solutions that are already in the market.

A prime example is the digitalization of the e-procurement process for renewable projects. Electronic procurement and tendering platforms have helped the Indian renewable



sector remain operational over the last few months amid the COVID crisis. Government organizations like the Solar Energy Corporation of India (SECI) and NTPC Limited continued to float projects despite the nationwide lockdown and associated issues.

E-procurement platforms like the Central Public Procurement Portal (CPPP) were developed by the National Informatics Centre of the Ministry of Electronics and Information Technology, in association with the Procurement Policy Division of the Ministry of Finance. The CPPP was set up to provide a single point of access to procure information issued by different government ministries and departments.

Central and state government organizations currently float renewable projects on their respective portals based on the CPPP platform or others. However, platforms like Bharat-ElectronicTender.com have been around since 2010 and have gained popularity with their additional efficiency and security benefits.

Arjun Kohli, Director, ISN Electronic Tender Services, the company managing and operating the Bharat-ElectronicTender.com portal, explained

*Soon,  
e-tendering  
platforms will  
also allow  
for bids to  
be evaluated  
online*

that since 2015, government agencies like NTPC, SECI, Rewa Ultra Mega Solar (RUMS), among others, have achieved multiple record tariffs using their e-tendering and e-auctioning platform.

“ElectronicTender has worked with government and multilateral agencies on specialized processes required for achieving the best results since its inception, and about 120 government organizations have used it so far. Since 2015, this has become the default tendering system as far as renewable energy project tendering is concerned,” Kohli added.

Kohli explained that their e-tendering

platform allowed for competitive bidding to be conducted in a much more efficient, transparent, and secure manner. The objective of e-procurement was always to increase transparency and efficiency in the overall competitive bidding process. In addition to this, costs have also gone down.

He explained that most of the major achievements by the government in terms of tariffs, including the recent record-low of ₹2.36 (-\$0.032)/kWh in SECI’s auction for 2 GW of the interstate transmission system (ISTS) connected solar projects (Tranche IX) was achieved through the Bharat-ElectronicTender.com platform.

Other aspects of the project tendering process are also gradually being made digital. Because of the Coronavirus pandemic, organizations have shifted to virtual means to conduct pre-bid meetings. This is only expected to spread to other aspects of the bidding process as well.

Currently, online platforms are being used for bid submission and opening. Soon, e-tendering platforms will also allow for bids to be evaluated online.

“We hope that detailed online evaluation of bids with comprehensive audit trails, conducted by multiple



multi-member online committees, will also be done in the future using ElectronicTender platforms. So far, ElectronicTender platforms have facilitated detailed online bid submission, online public bid-opening and allied processes with unquestionable integrity and transparency, whereas evaluation has so far been offline. This could move online in the future, and assist the government in achieving greater work-from-home work-culture, in handling more effectively the COVID-19 pandemic threat, and also lower vehicle-related pollution levels,” said Jitendra Kohli, Managing Director, ElectronicTender.com (India) Private Limited.

“Pre-tendering processes, like planning and approval from internal and external authorities, could also be made online. The features are already available on ElectronicTender platforms, but organizations have not yet started using these,” he added.

Contrary to popular belief, automating and digitalizing processes can help create employment opportunities rather than removing them. If implemented properly, these solutions could outweigh any additional costs and adverse repercussions in the

## *The pandemic has revealed the flaws in the government processes, which is overly reliant on manual in-person processes*

long run.

“Automation and digitalization do not hurt employment. Thanks to the increase in efficiency and output, more manpower is required to handle the additional manual processes. You will always need a workforce. You are still creating employment by implementing automation solutions,” said an official from a cell manufacturing company.

A lot can be achieved just by implementing more intelligent systems

across the renewable industry. Plenty of these options are already available. It remains to be seen how quickly they are adopted and implemented into everyday processes across value chains.

Components like smart meters have helped DISCOMs significantly amid the ongoing pandemic. These systems allowed utilities to monitor power consumption and collect dues more efficiently.

“Automating processes can increase efficiency, decrease costs and delays. With all the technology available, there is no reason why renewable companies cannot apply for licenses and permits online. To their credit, government officials have adopted video conferences and online meetings enthusiastically, and are recognizing the efficiencies of going digital. The next big step is being able to sign documents remotely, which is already a common practice in many parts of the world. For all its ugliness, the pandemic has forced the adoption of certain technology faster than thought possible.” Said Raj Prabhu, CEO of Mercom Capital Group. The momentum should continue, and digitalization/ automation of practices and processes should become a top government priority.”

# India's Power Supply Deficit Shrinks

*Compared to the same period last year, the power supply deficit narrowed down to 0.3% from 0.5%, while the total peak deficit eased down to 0.2% compared to 0.7%*

By : Nithin Thomas Prasad

India's power supply deficit narrowed down to 0.3% in the first half (1H) of the financial year (FY) 2020-2021, according to data from the Central Electricity Authority (CEA). This was an improvement from the same period last year, which saw a 0.5% deficit.

The CEA said that between April and September 2020, 625.5 billion units (BU) of power were supplied against a demand of 627.6 BU, highlighting a deficit of 2.1 BU or 0.3%. In the same period last year, 683.4 BU of energy was supplied against a demand of 687.1 BU, resulting in a 3.7 BU deficit.

The six-month period also saw a peak power deficit of 0.2%, an improvement from the same period last year, which saw a 0.7% deficit. The country met 176.9 BU of peak demand with 176.6 BU of power, a 307 million-unit (MU) shortfall.

The northeastern region experienced the worst power and peak supply deficits at 3.1% and 5.1%. The CEA's data showed that around 8.6 BU of power demand was met with a supply of about 8.3 BU - a 268 MU shortfall. In terms of peak power, the region saw a peak demand of 3.3 BU for which only 3.1 BU was supplied, falling short by 167 MU.

In the same period last year, the region experienced power and peak power supply deficits of 4.9% and 3.6%, respectively.

As was the case in Q2 2020, the southern and western regions were the only ones with no supply and peak supply deficit during the half. The eastern region saw a 236 MU shortfall from its 74.6 BU of demand, representing a 0.3% deficit. It did not experience any peak deficits.

The western region - comprising Chhattisgarh, Gujarat, Madhya Pradesh,

Maharashtra, Daman and Diu, Dadra and Nagar Haveli, and Goa - completely met 175.8 BU of power demand and 51.1 BU of peak demand during the half.

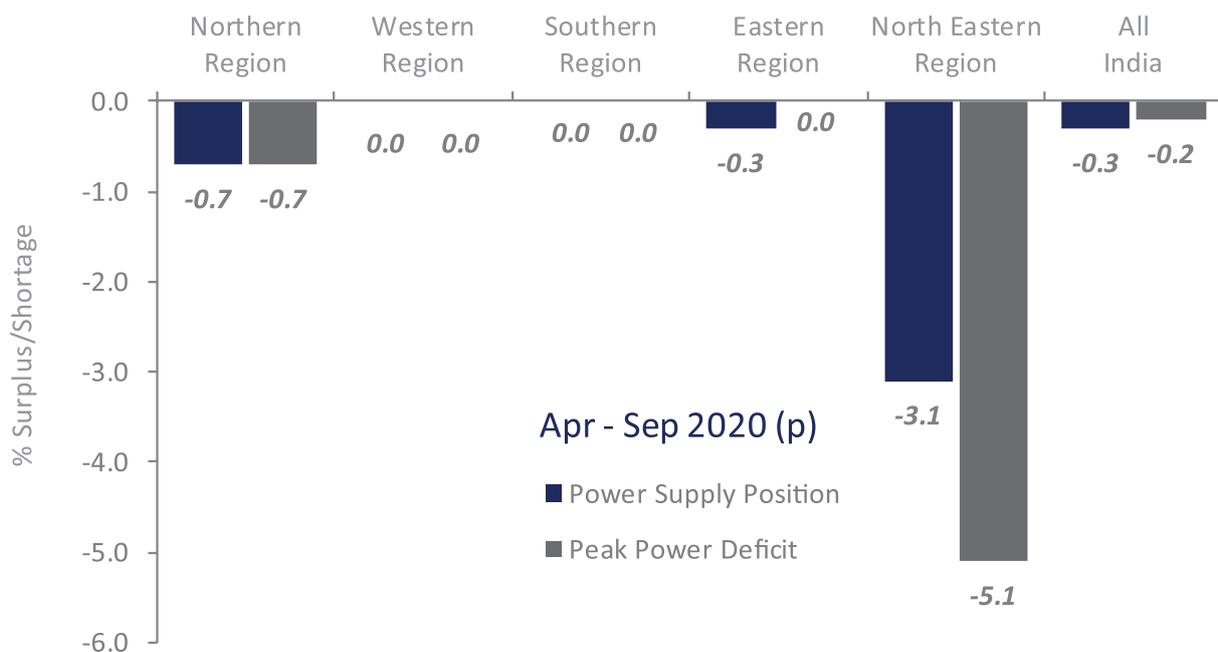
Similarly, the southern region - comprising Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu, Puducherry, and Lakshadweep - also met power demand of 156 BU and peak demand of 45.7 BU in their entirety.

Meanwhile, the northern region saw power and peak supply deficits of 0.7% each. Between April and September 2020, the region saw a power demand of 212.6 BU, which was met with 211 BU of supply. This represented a 1.6 BU shortfall. It also saw 68.3 BU in terms of peak demand, which was met with a supply of 67.8 BU. There was a 482 MU shortfall.

In August, data from POSOCO, the National Load Despatch Centre, showed that India's power demand rose after dipping during the COVID-19-induced nationwide lockdown. The data showed that after the lockdown was lifted, the average daily power demand stood at 3,595 MU for the period between June 1, 2020, and August 27, 2020. 📍

## The northeastern region experienced the worst power and peak supply deficits

Region-wise Power Supply Position and Peak Demand for Apr-Sep 2020 (Provisional)



Data from CEA

Source: Mercom India Research



# Uncertainty Looms Over ALMM Implementation

*The deadline for ALMM implementation has passed, and there's still no clarity on its execution process or its implications on the sector*

By : Rakesh Ranjan Parashar

**T**he deadline for implementing the approved list of models and manufacturers (ALMM) has passed, and the industry is still in limbo. There's no update yet on the new deadline as the previous deadline of September 30, 2020, has passed. The industry is also waiting for clarity on the implementation process as the pandemic will be affecting regulations mandating inspection of facilities in India and outside.

The ALMM was proposed to enlist eligible models and manufacturers of solar cells and modules complying with the BIS (Bureau of Indian Standards) certification. Enlisting in ALMM is mandatory for manufacturers supplying to the government-owned solar projects. The list was announced to monitor the quality of components being used in government-owned solar projects.

Though the Ministry of New and Renewable Energy (MNRE) issued the ALMM order in October 2018, the implementation deadline has seen several extensions. The last was September 30, 2020, due to the ongoing COVID-19 pandemic.

Speaking on the implementation

of ALMM, one of the top executives working with a leading solar developer said, "I'm not sure if the government is serious or not, as they have not issued any clarification. Many have applied and paid the fees, but I feel this is going to take time."

Mercom had written about the pros and cons of the government's decision to go ahead with the ALMM order. The order has raised more questions than it has answered. While some players believe that ALMM listing would take the solar industry forward, others said that the process is redundant and would cause more harm than good.

With the restrictions due to the COVID-19 situation, traveling within the country is not considered safe, let alone international site visits, which will be extremely unsafe, expensive, and impractical. The ALMM regulation, which mandates inspection of manufacturing facilities in and outside India, needs to be revised before it is

implemented.

In July, MNRE issued a notice that the ALMM would only apply to bids held 30 days after the order is finalized and published. The ministry also said that it is setting up a committee to review the issues with the ALMM. The committee was to recommend the manner and date of implementing the ALMM order and submit its report within 15 days of being constituted.

There is no information to date if the committee has been set up, and if it was, what the recommendations were.

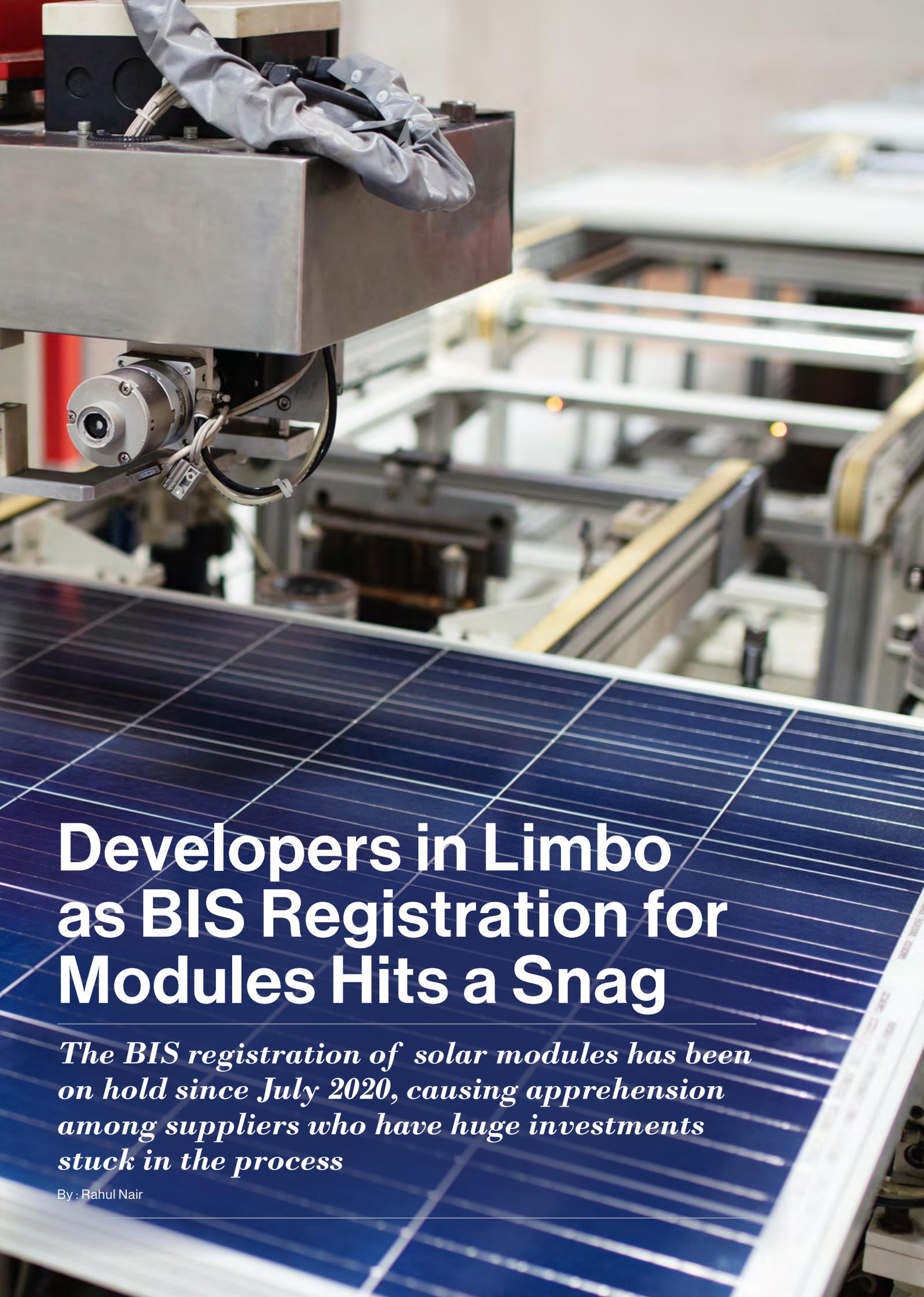
"ALMM is not a big issue anymore. Bids will not be affected unless ALMM is announced, and in all likelihood, it will either be postponed or withdrawn," opined another executive at one of the top solar developers.

Industry stakeholders Mercom spoke to believe that ALMM has been kept as a backup if basic customs duty (BCD) fails to come in to ensure that the domestic market is incentivized. ☐

## *The deadline for ALMM implementation was September 30, 2020*







# Developers in Limbo as BIS Registration for Modules Hits a Snag

*The BIS registration of solar modules has been on hold since July 2020, causing apprehension among suppliers who have huge investments stuck in the process*

By : Rahul Nair

**A** three-month-long delay in procuring registration certificates issued by the Bureau of Indian Standards (BIS) for a new model of solar modules is severely hampering the solar industry.

According to sources in the Indian solar module industry, BIS has not issued registration certificates for imported modules since July 2020. These certificates are mandatory for customs clearance at the docks where the module shipments arrive. The module number is usually verified against the BIS certificate, and the shipment is cleared for entry into the country.

When Mercom reached out to MNRE officials, they agreed to the delays in issuing BIS certificates and attributed it to the overhauling of systems and processes at the Bureau. The ministry has communicated with the stakeholders, addressing the issue

before it leads to further delay, Mercom was informed.

### Testing Process

The module manufacturers/suppliers are mandated to test each model of solar modules imported or locally made with a BIS accredited laboratory. The application process is online and paperless.

In India, three labs provide the certification; Underwriters Laboratories (UL) Bengaluru, TUV Rheinland Bengaluru, and Hiphysix Pune. Considering there are not many testing facilities compared to the number of models of solar modules to be certified,

the manufacturers are in a long line waiting to schedule the testing. The testing process lasts about three months.

Once the tests are concluded, the labs directly upload the results on the BIS portal and inform the module supplier through an email. Generally, the suppliers get the registration certificate from the BIS portal within 3-4 days. The certificate is valid for two years, and it is produced before the customs officials for inspection before releasing the shipment from the docks.

### The Issue

According to a module supplier, “Instead of receiving the certification in

## *BIS certificates are mandatory for customs clearance at the docks*



3-4 working days, we haven't received the certificates in the last three months, since July 2020. For every single model that we test, we invest up to ₹2.5 million (-\$33,931), and if I send ten different models for testing, I am spending ₹25 million (-\$339,310)." There are new technologies and models of modules coming in with higher efficiencies and power ratings. Cost is acting as a barrier in complying with the mandate that each model is to be tested, keeping the markets deprived of such advanced technologies.

A developer who has imported solar modules has been caught between since the modules are waiting for the BIS registration. In case the delay extends any further, the project commissioning could be hampered.

According to the module supplier, the imported modules already come with an International Electrotechnical Commission (IEC) certification that is

accepted globally; however, India still insists on the BIS certificate.

The source further added that the BIS certificate refers to an old IEC standard which is outdated, "For example, when the IEC does salt mist corrosion test, the severity level is 6, while BIS is at severity level 2. Last year, the BIS certificate was based on the IEC 2005 edition, which was outdated around 2-3 years back. The BIS specification is very diluted. They should consider IEC certification, which is accredited across the world and has a higher standard."

Some module suppliers informed that they are improving the power rating almost every six months, which means they have to spend on BIS certification every six months. This is not how international certification standards work. Fire rating test was not available until one year after BIS was launched, and manufacturers were given exemptions for it.

The ministry is changing the BIS registration guidelines in the wake of the government's Aatmanirbhar Bharat (self-reliance) initiative, Mercom was told. But the stakeholders are unaware of these developments leading to undue anxiety and lack of communication.

Interestingly, the MNRE has now extended the exemption for the BIS certification for solar module manufacturers with a production capacity of less than 50 MW. The exemption will now last as long as the IEC certification for their products is valid, provided the certificates were obtained before April 16, 2018, the Ministry said in a notification. It added that once the certificates expire, manufacturers are expected to register under the BIS mandatorily.

According to Mercom India Research, nearly 80 module manufacturers in the country have a production capacity under 50 MW. 



# Industry News and Policy Briefs

The Indian Railways announced that **960 railways** stations have solar installations in place to meet their power requirements. These solar systems are part of the Railways' endeavor to expand the usage of renewable energy. The Railways has set the target of 100% electrification by the year 2023.

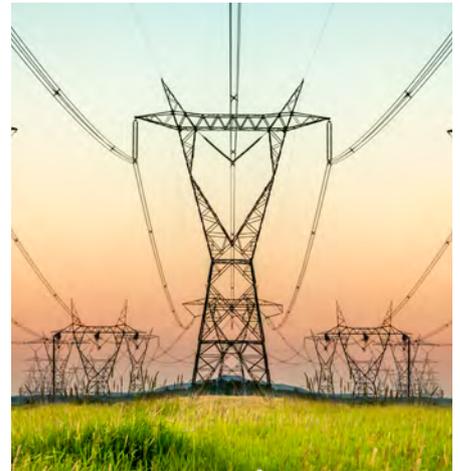
In a letter addressed to the Secretary of the MNRE, the Chairman of the Federation of Indian Chambers of Commerce and Industry, urged the ministry to intervene in the **Andhra Pradesh tariff reduction case** that is being heard in the state's High Court.



The **Delhi** Government announced that it would soon introduce a subsidiary plan under its recently launched **EV policy** for buyers of electric vehicles. The government plans to pay the subsidies within two days to eligible EV buyers in Delhi through a software developed by the ICICI Bank.

The **Shapoorji Pallonji Group** told its subsidiary company, **Sterling and Wilson Solar Limited** (SWSL), that it would defer the payment of the loan amount of over ₹10 billion (~\$135.8 million) that were outstanding as of September 30, 2020. Sterling and Wilson Solar reported a **63% fall in profits** year over year during the quarter ended June 30, 2020 (Q1 2020-21).

The government of **Andhra Pradesh** approved ₹9 billion (~\$123 million) to meet the expenditure of the state distribution companies (DISCOMs) in line with the **payment mechanism** notified by the central government. The state government also decided to introduce Direct Benefit Transfer on the subsidy extended as free electricity to farmers. This program will initially start with one district by December 2020. Andhra Pradesh will be one of the first states to adopt this program.



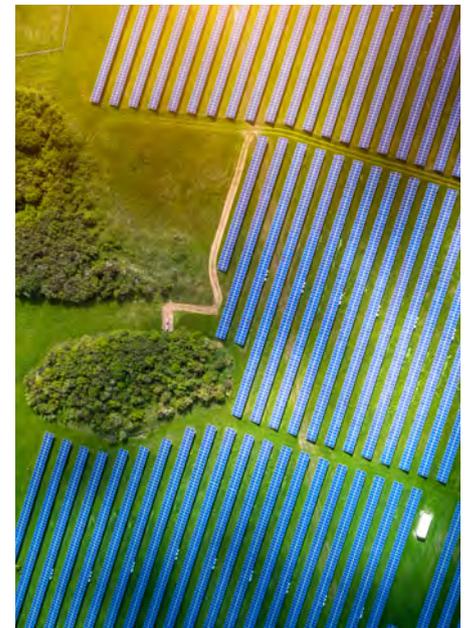
**Mahindra Renewables Private Limited** (MRPL) **terminated the sale** of its subsidiary Neo Solren Private Limited, to Gujarat-based CLP India Private Limited. MRPL is a part of Mahindra Susten, the solar engineering, procurement, construction (EPC) arm of the Mahindra Group.

**Gas Authority of India Limited** (GAIL), in its Annual Report for 2019-20, said its total renewable energy portfolio consisted of 118 MW of wind power capacity and **12.3 MW of solar power capacity**, totaling nearly 130 MW.



**China's foreign direct investment** (FDI) in the Indian non-conventional energy segment was just **3.14% of the total Chinese FDI** over the last five years, said minister of state for finance, Anurag Singh Thakur, in Lok Sabha.

The **Indian Energy Exchange** (IEX) said trading in the **Green Term-Ahead Market** (GTAM) witnessed an encouraging response since its launch and registered trade of three million units (MU) in the first 11 days.



The **Neyveli Lignite Corporation** released its annual report for 2019-20, which showed that it commissioned **1,421 MW of renewable projects** in 2019-20.

The Power Finance Corporation Limited, in a filing on the Bombay Stock Exchange (BSE), said that it had approved the **infusion of ₹1.5 billion** (-\$20.4 million) in a joint venture company.

Heavy Industries and Public Enterprises Minister Prakash Javadekar said in Lok Sabha that the government had provided a **demand incentive of ₹950 million** (-\$12.9 million) towards 27,201 electric EVs until September 10, 2020.



Later in the month, he told the Lok Sabha that power supply agreements for **16.8 GW** of renewable energy projects are yet to be signed. These projects were floated by the Solar Energy Corporation of India (SECI).

**Gujarat** Chief Minister Vijay Rupani announced that the state government would offer **subsidies** to encourage battery-operated two-wheelers and three-wheelers.



The **Directorate General of Trade Remedies** initiated a mid-term review after a change in the name of an exporter from Korea in the **anti-dumping investigation** for imports of aluminum and zinc coated flat products used in solar projects from China PR, Vietnam, and Korea RP.



Power companies retired almost **14 GW of coal-based generation** capacities over the last 18 years, power minister R.K. Singh informed the Lok Sabha. He also announced that over 300,000 households had been electrified through **solar-based standalone systems**.

**REC Limited** received the approval to raise its overall **borrowing limit** to ₹4.5 trillion (-\$60 billion). The foreign currency borrowing allowed is equivalent to \$12 billion (-₹884 billion).

The **MNRE** also issued a notification asking solar PV manufacturers and associations to provide the list of machinery and capital goods required for the inclusion in List 19 for exemption from **Basic Customs Duty**.

The **Ministry of Heavy Industries** and Public Enterprises extended the effective date for the indigenization of xEV parts under its Phased Manufacturing Program. The effective date of indigenization for most components across xEV categories has been shifted to **April 1, 2021**.



The Asian Development Bank announced that it signed an agreement to invest **\$15 million** (-₹1.1 billion) in **Avaada Energy Private Limited** to expand its solar generation capacity in the country.

The **MNRE** proposed initiating a centralized tendering process for the current year's target of 450,000 standalone solar pumps under Component B of the **PM-KUSUM** program.

## News in Brief

NHPC announced that it entered a power sale agreement with **Chhattisgarh State Power Distribution Company Ltd.** (CSPDCL) to supply **400 MW** of solar power.



The **Power Grid Corporation of India** received the Cabinet Committee of Economic Affairs' approval to monetize its transmission projects through the **Infrastructure Investment Trust** (InvIT) model.

The **Ministry of Power** signed a Memorandum of Understanding with three state-run major power utilities: SJVN, NTPC, and Power Grid Corporation of India Ltd (PGCIL) to increase power generation and **transmission capacity**.

**Adani Green Energy Limited** said it had completed **205 MW** of operational solar assets in Punjab, Karnataka, and Uttar Pradesh from Essel Green Energy Private Limited and Essel Infraprojects Limited.



The **Goa Electricity Department** recently told Mercom that more than 114 consumers had installed rooftop solar systems across Goa. Many of these connections are under the **net-metering** arrangement. Consumers can export the surplus electricity from the solar system into the grid and get the equivalent amount adjusted in their bills.

## Policy Updates States

The **Delhi Electricity Regulatory Commission** announced that it would not raise the electricity tariffs for the financial year 2020-21 due to the COVID-19 outbreak. DERC said that the new electricity tariff would be applicable in Delhi from September 1, 2020. The Commission has waived off a **20% surcharge** under the time of day (ToD) tariff (tariffs that vary by time) for September 2020 to support non-domestic, public utilities, and domestic consumers due to the ongoing pandemic. Delhi also reduced **fixed charges by 50%** for industrial and non-domestic consumers.



Gujarat issued amendments to its **wasteland allotment policy** for wind, solar, and hybrid (wind and solar) power projects. According to the amendments, the renewable power project developers selected by SECI will have to commit to installing 50% of the total generation capacity in three years and 100% in five years.



**Tamil Nadu Electricity Regulatory Commission** issued a notice specifying amendments to the state's electricity supply and distribution code, according to which the limit of electricity demand has been increased to **150 kW** from the previous limit of 112 kW.

## Center

The MNRE extended the validity of its biomass-based cogeneration program. The program has been extended until **March 31, 2021**, or until the recommendations of the 15th Finance Commission come into effect, whichever comes first. The program was set to end in March 2020.



The **MNRE** also issued a policy clarification for the KUSUM program. According to the clarifications, for Component B and Component C of the program, the state share of subsidy will be a minimum of **30% of the applicable benchmark cost** or the cost discovered in auctions, whichever is lower.

The **Central Electricity Regulatory Commission** issued a staff paper that said that thermal power projects **retrofitting pollution control systems** on commissioned units would be allowed to recover their costs in parts from buyers during the tenure of power purchase agreements. The CERC has suggested that 90% of the cost of installation can be recovered over the life of the emission control equipment, which is also estimated at 25 years; the rest 10% could be salvage value.



The government extended the validity of the second phase of the **Faster Adoption and Manufacturing of Electric Vehicles (FAME)-II** program for all approved electric vehicle models. The validity has been extended by three months and up to **December 31, 2020**.

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ReneSola is rapidly growing global brand of Solar PV Modules. Having cumulative references of more than 20GW worldwide and more than 2.5GW in India, ReneSola serves a large number of customer base worldwide ranging from a small rooftop owner to very large solar farm developers. Phone +86-18106152828  
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www.renesola.com

### REC Solar

REC Group is an international pioneering solar energy company with 23 years of Scandinavian heritage, having its manufacturing facility in Singapore and globally known for its technological leadership in solar panel manufacturing. REC (India) Private Limited - Office no. 1056, Regus Business Centre, Unitech Cyber Park, Tower B, Floor 10, Sector 39, Haryana, Gurugram, India- 122001  
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### Risen Energy

Risen Energy engaged in developing and manufacturing photovoltaic applications, products includes mono and poly crystalline modules, HJT PV module and energy storage, supplying to Utility scale and distributed solar applications. 2nd Floor, Novel Tech Park, # 46/4 GB Palya, Hosur Road, Kudlu Gate, Behind Trident Hyundai Showroom Bengaluru 560068. phone +91-80-4091 5484, 093100 78313  
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# Major Tender and Auction Announcements in September

*This is a list of major tenders and auctions from September. A comprehensive list can be found on Mercom's Tender and Auction Tracker and Alerts. Please contact [info@mercomindia.com](mailto:info@mercomindia.com) for more information*

## Top Large-Scale Solar Tenders

Gujarat Urja Vikas Nigam Limited issued a request for selection (RfS) to purchase power from **500 MW** of grid-connected solar photovoltaic (PV) projects. Projects under construction, those that are not yet commissioned, or projects that are already commissioned but do not have any long-term PPA with any agency will be eligible for this tender.

The Solar Energy Corporation of India invited bids for a

**100 MW (AC)** solar power project with a 50 MW/150 MWh **battery energy storage system (BESS)**. The project is slated to be developed at Rajnandgaon in Chhattisgarh.

The Gujarat State Electricity Corporation Limited invited bids for a **210 MW** grid-connected solar power project in Gujarat's Jamnagar district. After the commissioning of the project, the contract will also include operation and maintenance for ten years.



## Other Tenders

The Kargil Renewable Energy Development Agency issued a tender for 51 solar pumps with a cumulative capacity of **1.153 MW in Kargil**. The project is expected to cost around ₹20 million (-\$271,531).

The Military Engineer Services invited bids for **3 MW of solar projects** at two locations in the Leh region. It intends to set up a 1.5 MW project along with battery energy storage systems (BESS) rated at 0.75 MW/2.5MWh each at Tangtse and Durbuk.

The Punjab Energy Development Agency, on behalf of the **Bhakra Beas Management Board**, invited bids to develop a 2 MW grid-connected ground-mounted solar power project at Pong Dam, BBMB Talwara in Punjab.

NHDC, a joint venture between NHPC Limited and the Government of Madhya Pradesh, has floated a balance of system (BOS) tender for the engineering, procurement, and construction (EPC) of **1,035 MW of solar projects** in Madhya Pradesh.

The Transmission Corporation of Andhra Pradesh sought bids for increasing the capacity of **interconnecting transformers** in the state's solar parks. It would include constructing four 220kV bay extensions at the 400kV Talaricheruvu substation for Urichintala solar park in the Anantapuramu district.

The Defense Research and Development Organization's Estate Management Unit has issued a notice inviting tender for the **operation and maintenance** (O&M) of a 1 MW solar power project at the Research Center Imarat, Hyderabad.

The Rajasthan Electronics and Instruments Limited, a joint venture between the government of India and the state of Rajasthan, has invited bids for the supply of **300,000 solar cells** with wattages of 4.5W, 4.6W, and 4.67W under the domestic content requirement (DCR) category.

## Rooftop Solar Tenders

The Energy Efficiency Services Limited invited bids for **7.5 MW of rooftop solar projects** on various government buildings in the union territory of Andaman. The tender has been divided into two lots. Lot 1 covers northern Andaman with a cumulative capacity of 2.68 MW, and Lot 2 covers middle Andaman with a total capacity of 4.7 MW.

The Odisha Renewable Energy Development Agency invited bids for the empanelment of vendors to install 4 MW of grid-connected residential rooftop solar projects across the state. The projects will be installed in Bhubaneswar, Cuttack, Berhampur, Rourkela, and Balasore.



### Bidding Deadline Extension

RITES, an engineering consultancy company specializing in transport infrastructure, has extended the bid submission deadline for setting up **1 GW of land-based solar power projects** on various zonal railways land across India.

The Solar Energy Corporation of India yet again

extended the timeline for its tender for 97.5 MW of grid-connected rooftop solar systems on government building across the country. The extension has been announced in the backdrop of **disruptions caused due to the coronavirus** outbreak and the subsequent lockdown.

### Retenders

The Kerala State Electricity Board Limited invited bids to procure **200 MW power from solar projects** on a long-term basis for 25 years. KSEB had initially floated the tender in December 2018, and CIAL infrastructures had emerged as the lone bidder with a bid for 10 MW. Given the inadequate response from the generators, KSEB canceled the tender.

The Haryana Power Generation Corporation invited fresh bids to install **57 MW of grid-connected ground-**

**mounted solar projects** at three sites in the state. This was a retender of the capacity that was floated in September 2019.

The West Bengal Power Development Corporation Limited invited bids for setting up a **10 MW grid-connected floating solar project** at Sagardighi Thermal Power Project in Murshidabad. This is a retender of the capacity that was issued in March this year.

### Auction

The REC Power Distribution Company Limited (RECPDCL), a wholly-owned subsidiary of REC Limited, announced that it was the lowest bidder in SECI's e-reverse

auction. RECPDCL quoted **₹2.58 (\$0.035)/kWh** for setting up 10 MW of solar projects at Bagru in the Jaipur district of Rajasthan, according to Mercom's sources.



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Online Smart Service



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