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Foreword

What difference a month makes!

In a matter of weeks, the solar industry in India has gone from upbeat to the unknown as the Coronavirus (COVID-19) pandemic has forced the Indian government to order a countrywide lockdown until April 14, 2020.

The operating solar and wind projects are still running, but payments from DISCOMs may be delayed by months, which means a cash crunch for many smaller developers. The industry is optimistic that it can get back to work in a couple of weeks, but with what we see around the world, it may take months for things to get better.

The Chinese companies tell us they are fully back, but the three largest markets - the United States, Europe, and India are not in a position to place orders anytime soon. Many were predicting supply shortages and price increases, but it looks like the component prices could slide with no demand.

Right now, the priority is to keep the lights on and get paid so that solar companies can retain their staff and be ready to make a move when things settle down.

COVID-19 is also revealing the lack of resilience in the Indian solar industry and even more so in the power sector from an operational standpoint. For example, the Solar Energy Corporation of India recently requested all DISCOMs and agencies to allow submission of invoices digitally. In this day and age, why was this process manual in the first place? For a country that prides itself as an IT superpower, it is becoming clear that even the most basic electronic functions in many parts of the world are still manual in India.

The cost of not fixing DISCOM finances is also becoming evident amid this crisis. DISCOMs are invoking the force majeure clause and curtailing power. They have been granted an exemption to not pay the generators and transmission companies for up to three months. Many DISCOMs never paid on time to start with nor charged the right tariff from consumers, and now they can potentially plunge the whole sector into a crisis.

The power sector is the backbone of the economy and is a matter of national security. Once the sector gets back to normal after the pandemic, the whole sector and the current structure needs to be thoroughly examined. The present crisis has laid bare the weaknesses in the system and revealed that the system, in its current form, cannot withstand just a few weeks of demand declines. This is an opportunity to fix and build resilience into the antiquated system to withstand short-term external shocks. Not doing anything or worse, going back to "business as usual" after the Coronavirus pandemic is outright irresponsible.

We will be revising our 2020 forecast for the solar industry in the coming weeks to take into consideration the current situation. Our pre-pandemic forecast indicated 15-20% year-over-year growth from 2019 to 2020. Now, we are looking at a possible decline for the year.

Raj Prabhu
Co-founder & CEO
Mercom Capital Group, LLC

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DISCOMs' Renewable Power Dues on the Rise

Billions are stuck in limbo as renewable developers still grapple with lackluster distribution companies across states

By : Nithin Thomas Prasad

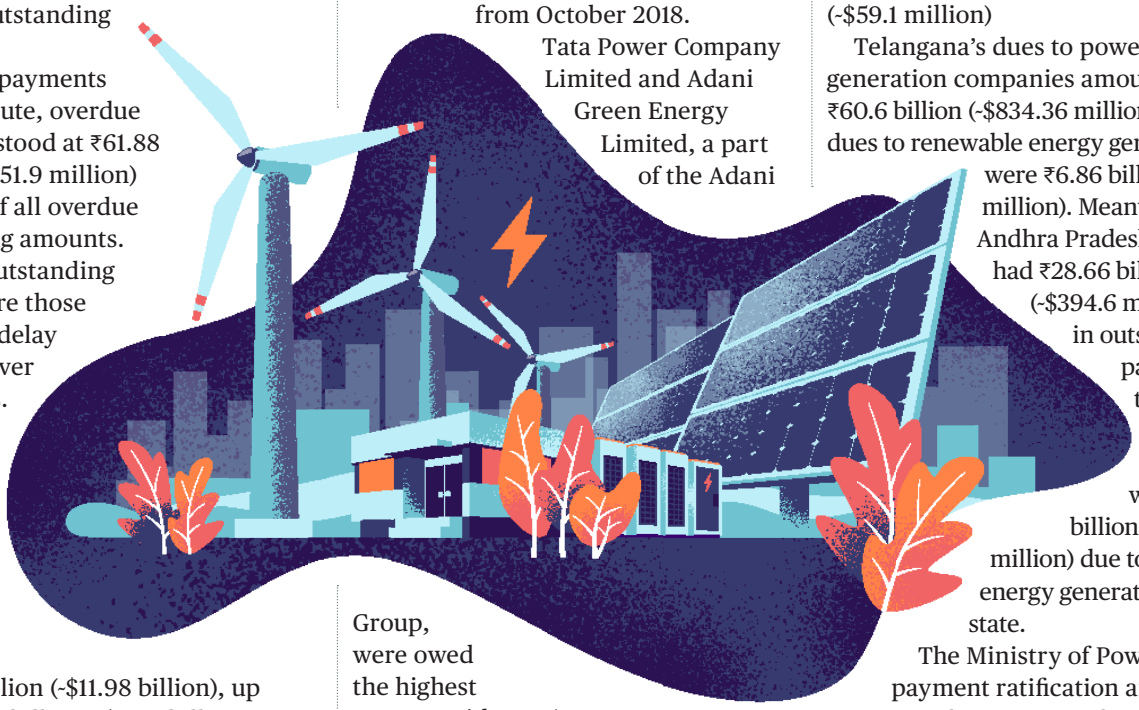
Power generators have had a hard time lately because distribution companies (DISCOMs) have not been clearing their outstanding and overdue payments on time. This has left developers in a tight spot. However, the silver lining is that many state commissions have started taking note of this and have been directing DISCOMs to clear their dues within stipulated times.

At the end of January 2020, DISCOM owed renewable energy generators ₹62.19 billion (-$856.2 million) in overdue outstanding payments. Excluding payments under dispute, overdue payments stood at ₹61.88 billion (-$851.9 million) or 8.12%, of all overdue outstanding amounts. Overdue outstanding amounts are those where the delay has been over six months.

Overall, as of January 2020, DISCOMs owed power generators ₹870.25 billion (-$11.98 billion), up by ₹200.36 billion (-$2.76 billion), or 29.9% from the same period last year.

This is a 3% increase from October 2019 when Mercom reported that outstanding dues to power generators from distribution companies stood at ₹844.45 billion (-$11.83 billion) at the end of the month. Dues were up by ₹297.76 billion (-$4.09 billion) or 54% from October 2018.

> ***DISCOMs owed power generators ₹870.25 billion at the end of January 2020***



Tata Power Company Limited and Adani Green Energy Limited, a part of the Adani Group, were owed the highest amount with ₹16.59 billion (-$228.42 million) and ₹11.87 billion (-$163.43), respectively.

Rajasthan had the highest overall dues to power generators, with ₹241.02 billion (-$3.31 billion) in outstanding payments at the end of the month. Of this, ₹223.85 billion (-$3.08) has been overdue for more than 60 days. The state's renewable energy dues stood at ₹2.03 billion (-$27.9 million).

Tamil Nadu owed the most to renewable energy generators, with over ₹26.55 billion (-$36.55 million) in overdue payments, as of January 2020. Its overall outstanding payments to power generators amounted to ₹132.97 billion (-$1.83 billion). Karnataka owed renewable generators ₹4.29 billion (-$59.1 million)

Telangana's dues to power generation companies amounted to ₹60.6 billion (-$834.36 million), of which dues to renewable energy generators were ₹6.86 billion (-$94.4 million). Meanwhile, Andhra Pradesh had ₹28.66 billion (-$394.6 million) in outstanding payments to power generation companies, with ₹14.22 billion (-$195.78 million) due to renewable energy generators in the state.

The Ministry of Power's (MoP) payment ratification and analysis portal (PRAAPTI) showed that 64 DISCOMs had 11,598 overdue invoices to 87 participating power generating companies across the country at the

end of January 2020. This is an increase from 61 DISCOMs and 6,871 outstanding invoices during the same period last year. The portal was launched in May 2018 to promote transparency in payments by DISCOMs to generators.

"Delay in the payment of power bills is at the root of what ails the power sector in India, especially the renewable energy companies. Much of the slowdown in the solar industry is directly related to payment delays by DISCOMs," said Raj Prabhu, CEO of Mercom Capital Group.

Punjab, Chandigarh, Haryana, Uttarakhand, Delhi, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Meghalaya, Nagaland, Odisha, Telangana, Goa, Karnataka, Andhra Pradesh, Karnataka, Andhra Pradesh, Puducherry, Tamil Nadu, Kerala, and Jammu and Kashmir were among the states with the most outstanding dues, according to the data on the portal.

Maharashtra, Chhattisgarh, Jharkhand, Bihar, West Bengal, Arunachal Pradesh, and Manipur were rated "good" in terms of ease of payments to DISCOMS, while Assam and Tripura were rated the "best."

The Central Electricity Authority's (CEA), which regularly reports payment dues to renewable energy companies specifically states that the total payment due for 342 renewable projects totals ₹94.03 billion ($1.29 billion) as of November 30, 2019, showing a decrease of nearly 3% compared to the figure of ₹97.356 billion ($1.356 billion) as of July 31, 2019. In total, these 342 projects have renewable energy generating capacity of nearly 14.56 GW.

A senior official at the Central Electricity Authority told Mercom, "We are still not getting the complete data from developers. Many of the small players have not submitted data".

Missing data from smaller developers could mean that the outstanding payment figures could be worse.

The three states which top the list of defaulters include Andhra Pradesh, Tamil Nadu, and Telangana. The distribution companies (DISCOMs) of these states are the biggest defaulters in paying dues for the power procured from renewable projects such as wind, hydro, and solar.

The state of Andhra Pradesh has the highest amount of dues to be paid with a figure touching ₹30.73 billion ($0.42 billion). After Andhra Pradesh, Tamil Nadu has ₹22.57 billion ($0.31 billion), followed by Telangana with an amount of ₹10.22 billion (-$0.14 billion).

Recently, the Tamil Nadu Electricity Regulatory Commission (TNERC) directed Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) to pay five wind developers a sum of ₹16.72 million ($0.23 million) as accrued interest against the delayed payment. TANGEDCO has been asked to make the payments within 60 days from the date of the order.

Around the same time, the Andhra Pradesh government approved ₹29.84 billion (-$415.67 million) to distribution companies in the state towards the payment of 25% of their losses, allowing them to clear their power dues. Of the approved amount, ₹21.99 billion (-$306.32 million) will go to central and state generating stations, and the rest will go to wind and solar generators for dues up to December 2019. This was good news for developers who are operating in the state and struggling financially. The allowance comes under the Ujwal DISCOM Assurance Yojana (UDAY) program, which aims to help the struggling state-run distribution companies by providing them the required financial assistance.

Rajasthan owed the most to power generators at ₹241.02 billion

Andhra Pradesh has been in the spotlight lately because of payment related issues. There has been a prolonged dispute between the state government and the Union government because of the state DISCOMs' inability to pay for renewable energy for over a year.

Though measures like letters of credit could potentially make things easier for developers, their implementation on the ground has been patchy so far.

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Maharashtra's Proposed Rollback of Net Metering

Maharashtra's proposal to roll back net metering for commercial and industrial customers is setting a bad precedent for the rooftop market that is already struggling to grow

By : Anjana Parikh

The state of Maharashtra in November 2019 released a draft regulation for grid-connected rooftop solar projects, which said that the state could go back to gross metering, rolling back net metering for all segments except residential. This created an uproar in the renewable energy sector, with solar installers vehemently opposing the suggestion.

Then in January 2020, the Maharashtra State Electricity Distribution Company Limited (MSEDCL) proposed for grid support charges (GSC) for net metering rooftop solar systems with a capacity of over 10 kW.

The MSEDCL argued that although net metering helps in meeting the renewable purchase obligations (RPO) targets, the adverse impact of net metering is much more on other consumers of MSEDCL due to the under-recovery of its infrastructure costs for such systems.

According to them, net metering consumers end up paying much lower charges for the network and generation capacity, which was earlier

set up for all consumers. The burden of unrecovered expenses gets passed on to other consumers of MSEDCL, the state DISCOM argued in its petition

Raising concerns over the proposed grid support charges (GSC), the Maha Solar Sangathan (MSS) requested the Maharashtra Electricity Regulatory Commission (MERC) to ask the state DISCOM (MSEDCL) to explain that when the total handling cost of electricity is ₹0.70 (-$0.01)/kWh, why has the DISCOM proposed a hefty grid support charge to the tune of ₹8.66 (-$0.12)/kWh.

A small residential consumer who hardly uses the grid for 20% of electricity is expected to pay ₹8.66 (~$0.12)/kWh

According to the MERC Grid-Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019, "the Commission may determine in the retail tariff order such grid support charges to be levied on the generated energy under net metering systems which should cover balancing, banking, and wheeling cost after adjusting the RPO benefits avoided distribution losses and any other benefits accruing to the distribution licensee. These grid support charges would be determined consumer tariff category wise, based on the proposal of the distribution licensee in its retail supply tariff petition, supported by adequate justification."

Maharashtra's net metering regulations 2019 also say that the consumers with a sanctioned load up to 10 kW will be exempted from the payment of grid support charges for net metering systems. Such loss from the exemption, says MSEDCL, should be recovered from the consumers having a sanctioned load above 10 kW to avoid the burden on the consumers that do not have net metering.

The solar association has opposed the formula used for calculating the GSC. Alleging that the MSEDCL had "dumped" the Commission's order, and has worked out its own reverse mechanism formula, "whereby they (MSEDCL) have calculated GSC by subtracting the nominal power purchase cost from the effective tariff to derive the amount of GSC.

The petition has requested the Commission to stand by its order and instruct MSEDCL to rework on the GSC with full facts and supporting proofs for all the numbers.

The association in its petition further stated that the average power purchase cost (APPC) proposed for the year 2020-21 is ₹4.47 (-$0.06)/kWh, whereas the average cost of supply is ₹7.24 (-$0.10)/kWh. Taking these points into consideration, the association argues that the total cost of MSEDCL including profit, infrastructure development, and its losses are ₹2.77 ($0.04)/kWh and the renewable energy certificate (REC) benefit from solar is around ₹2.40 (-$0.03)/kWh.

"Then, why such a high grid support charge," ask the members of the solar association in the petition.

The solar developers' association alleges that the state DISCOMs arbitrarily calculated huge losses and misled the state

According to the MSEDCL's proposal, the charges range from ₹4.46 (-$0.06)/kWh to ₹8.66 (-$0.12)/kWh for domestic consumers and between ₹5.06 (-$0.07)/kWh and ₹8.76 (-$0.12)/kWh for commercial consumers. For industrial consumers, the variation would be between ₹3.60 (-$0.05)/kWh and ₹4.08 (-$0.06)/kWh.

Further, the members of the association have alleged that when it comes to rooftop solar, the MSEDCL arbitrarily calculated its huge losses and misled the state.

"When it comes to open access, they are silent and show the open access charges as revenue," they commented.

A small residential consumer who hardly uses the grid for a maximum of 20% of electricity is expected to pay ₹8.66 (-$0.12)/kWh but open access customers who inject power and use the grid for 100% power, are not required to pay the charges. This is the heart of the argument put forth before the Commission.

The MSEDCL has claimed that the agriculture category customers consume 30 % of its units. "When the agriculture category receives supply for 33% of the time (eight hours a day), then how can they consume 30% of the state's electricity," is the argument. The petition added that with the agri-peak demand of 5,000 MW (which is 25% of the grid peak), the agricultural customers could consume a maximum of 8.25% of the total electricity.

Advocate Aditya K Singh highlighted that the introduction of grid support charge was completely illegal as it was not mentioned in the draft regulations and was directly introduced in the final order without any public consultation which is mandatory as per the Indian Electricity Act 2003," said Vipul Joisher, the convener of Maha Solar Sangathan.

According to Aditya K Singh, an advocate at HSA Advocates, MERC rooftop regulations violate the requirement of section 181(3) of the Indian Electricity Act, 2003.

Quoting sub-section (3) of section 181, he stated that all regulations made by the Commission under the Electricity Act, 2003, will be subject to the condition of previous publication. Rule 3 of the Electricity (Procedure for Previous Publication) Rules 2005, known as Previous Publication Rules, requires consideration of the objection of stakeholders before notification of any rules.

Singh added, "The Commission should have published draft and should have considered objections. It is submitted that the draft regulation did not contain any provisions for grid support charges, and the Commission introduced it without any previous publication and without the invitation of any comment, which is not in conformity with the law. The mandatory requirement of previous publication is, therefore, contravened. In the draft regulation, there was not a single provision suggesting the imposition of a charge on the generating of the electricity by rooftop consumers; the Commission should have given previous notice for such modifications. There is a material difference in the draft published, and the regulation notified, and which will have a vital effect on the rights of the parties and may lead to the closure of the entire rooftop generation stations. The final regulations introduce something which is completely foreign to the draft."

Earlier, the MSEDCL highlighted that of the 288.8 MW rooftop solar capacity installed as of March 2019, only 11.13 MW (4% of the total capacity), has been installed by the residential segment while the other subsidized consumers have installed the remaining 96%.

Meanwhile, solar developers in the state fear that if the draft regulation if approved and implemented in Maharashtra, it would result in the "complete death of the rooftop solar industry."

Even though distributed generation and especially rooftop solar have multiple benefits from reducing air pollution, T&D losses, meeting RPO goals, and providing freedom for consumers to generate their own power, states have been discouraging net-metering and making it very difficult for rooftop installations for fear of losing valuable customers and revenue.

MNRE to Get Stricter on DCR Violators

The ministry says those solar developers who use imported solar cells and modules for projects under the DCR category are likely to be dealt with strictly

By : Anjana Parikh

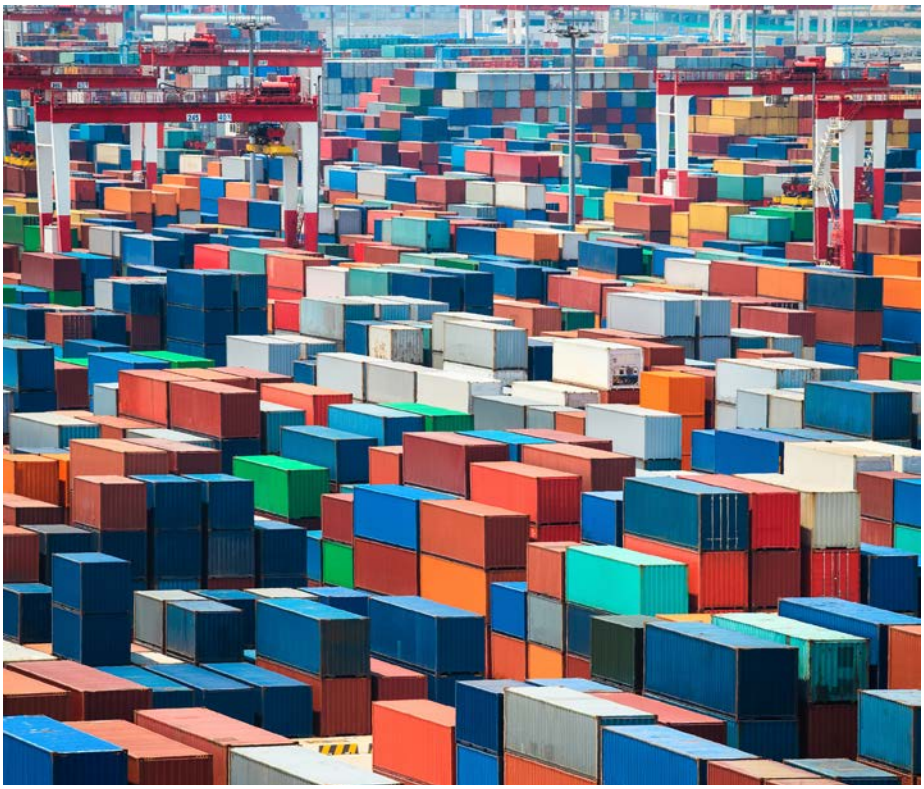
The government of India encourages domestic manufacturers of solar cells and modules by way of Domestic Content Requirement (DCR) policy wherever permitted by the World Trade Organization (WTO).

The Ministry of New and Renewable Energy (MNRE) recently announced that the government has decided to take strict action against those solar project developers that are using imported solar cells and modules to develop projects under the Domestic Content Requirement category.

In India, the DCR category of projects was introduced to provide a guaranteed market for local solar component manufacturers.

The ministry has come up with a plan of action to curb such discrepancies. Punishment will range from the filing of criminal cases under the Indian Penal Code, blacklisting of developer for ten years, forfeiting of relevant bank guarantees, and disciplinary cases against the concerned government official.

The only time imported modules could be used in DCR projects was to replace defective cells or modules in the open category. This ruling was applicable to all the PPAs that were executed then as well as the PPAs that were in the process of finalization.



According to Pavankumar Siddhi, the managing director of Sungrace Energy Solutions, the current situation of the Indian solar industry is such that some of the solar cell manufacturers of the country are overbooked and are not able to supply the solar cells.

"If any solar module manufacturer has a Bureau of Indian Standards (BIS) certificate using any one of the indigenous solar cells, they should be allowed to manufacture modules with any other indigenously manufactured solar cells of the same technology," said Siddhi.

Imported modules can be used in DCR projects only to replace defective cells or modules in the open category

It is not news that some manufacturers have been importing solar components and mislabeling them to be used for DCR projects. The MNRE had issued an order in 2018 to curb this practice, but not much has happened since then.

India's Solar Imports Dipped in 2019

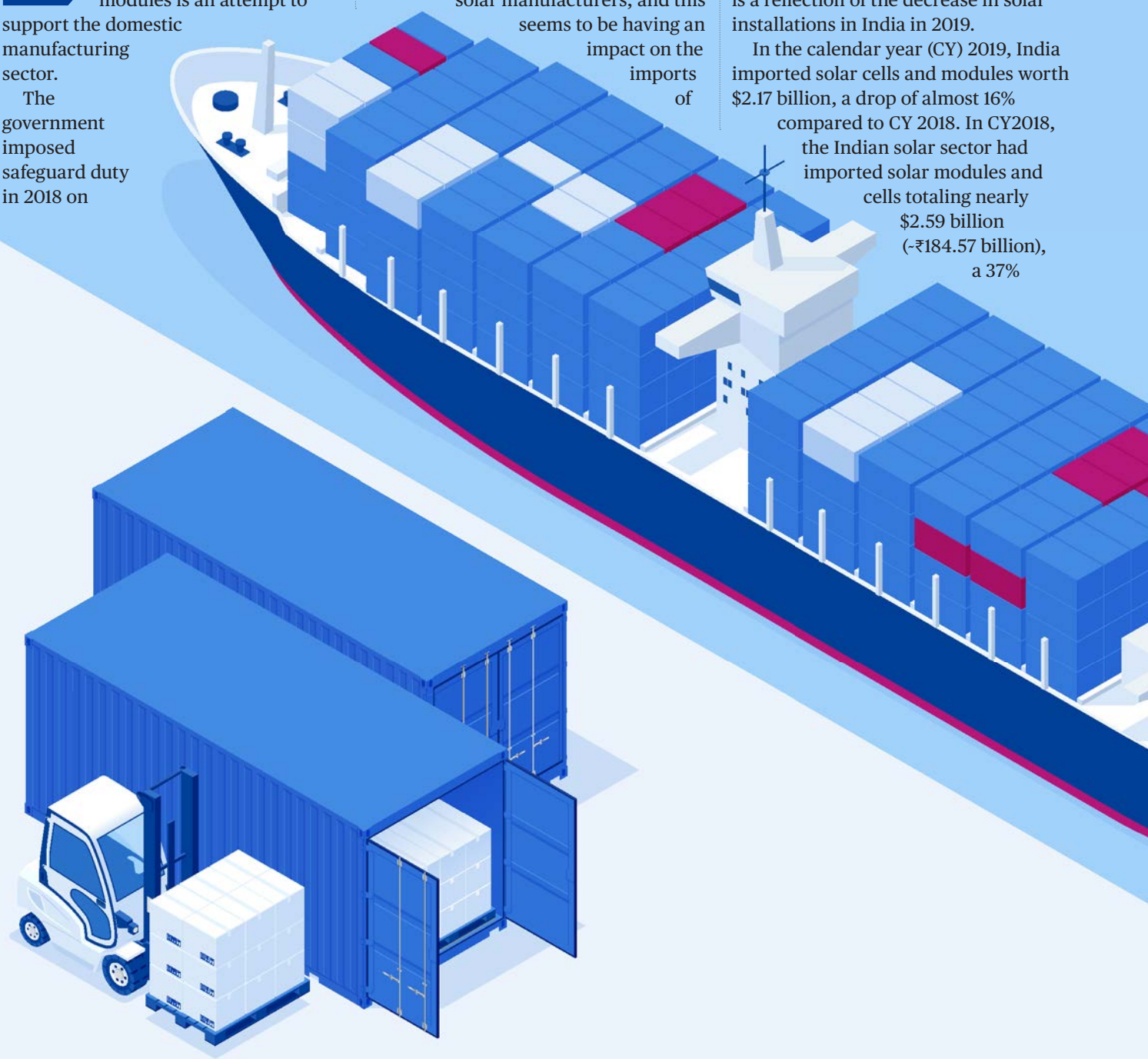
While solar imports registered a decline for the second year in succession, exports grew by a phenomenal 137% in 2019

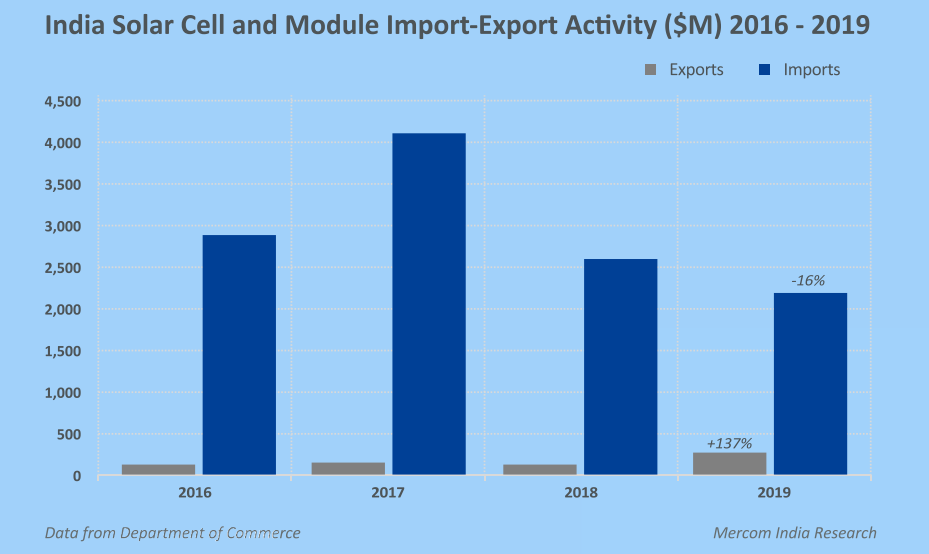
By : Rakesh Ranjan Parashar

The decision by the Indian government to impose a duty on imported cells and modules is an attempt to support the domestic manufacturing sector.

The government imposed safeguard duty in 2018 on solar cells and modules imported from China and Malaysia for a period of two years to protect the interests of the solar manufacturers, and this seems to be having an impact on the imports of the solar cells and modules which saw a decline in the calendar year 2019. However, most of the import decline is a reflection of the decrease in solar installations in India in 2019.

In the calendar year (CY) 2019, India imported solar cells and modules worth $2.17 billion, a drop of almost 16% compared to CY 2018. In CY2018, the Indian solar sector had imported solar modules and cells totaling nearly $2.59 billion (~₹184.57 billion), a 37%





Solar Exports in Calendar Year 2019

India's exports to the United States continued strong, accounting for nearly 76% of total market share, followed closely by Vietnam, Belgium, and Turkey. Exports of solar modules and cells to the United States amounted to $192 million, whereas exports to Vietnam and Belgium amounted to $21 million and $7 million, respectively.

Solar Imports and Exports in Q4 2019

India's solar imports saw a decline of 12% in Q4 2019 compared to Q3 of CY 2019. However, the imports grew by 12% as compared to the same period last year. Exports of solar modules and cells from India saw an increase of 74% in Q4 2019 compared to Q3 2019, whereas exports grew by 732% as compared to the Q4 2018.

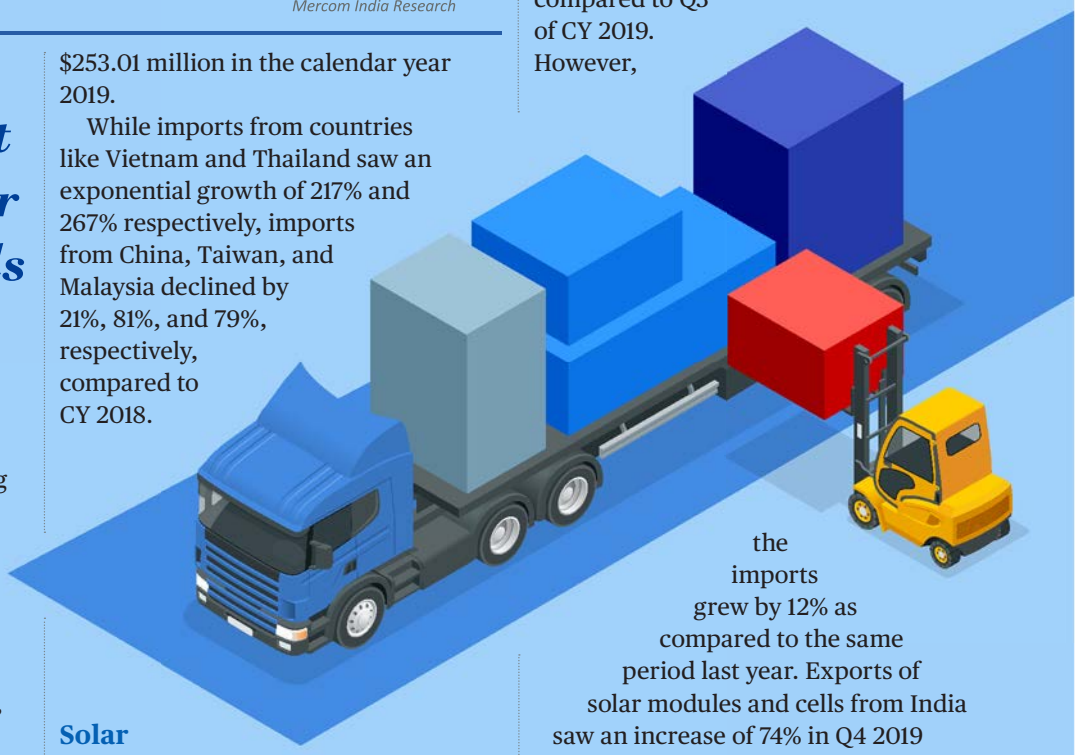
In Q4, 2019, China was the largest exporter of solar modules and cells to India, with a market share of nearly 85%, followed by Vietnam and Thailand with 5.5% and 4%, respectively.

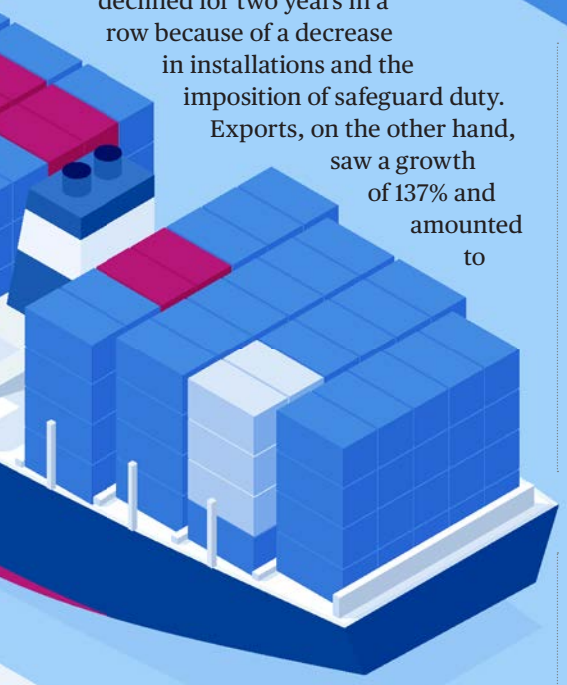
China was again the largest exporter of solar modules and cells to India in CY 2019

decline from the $4.12 billion (-₹269 billion) recorded during the preceding year (CY 2017).

Solar imports have now declined for two years in a row because of a decrease in installations and the imposition of safeguard duty. Exports, on the other hand, saw a growth of 137% and amounted to $253.01 million in the calendar year 2019.

While imports from countries like Vietnam and Thailand saw an exponential growth of 217% and 267% respectively, imports from China, Taiwan, and Malaysia declined by 21%, 81%, and 79%, respectively, compared to CY 2018.

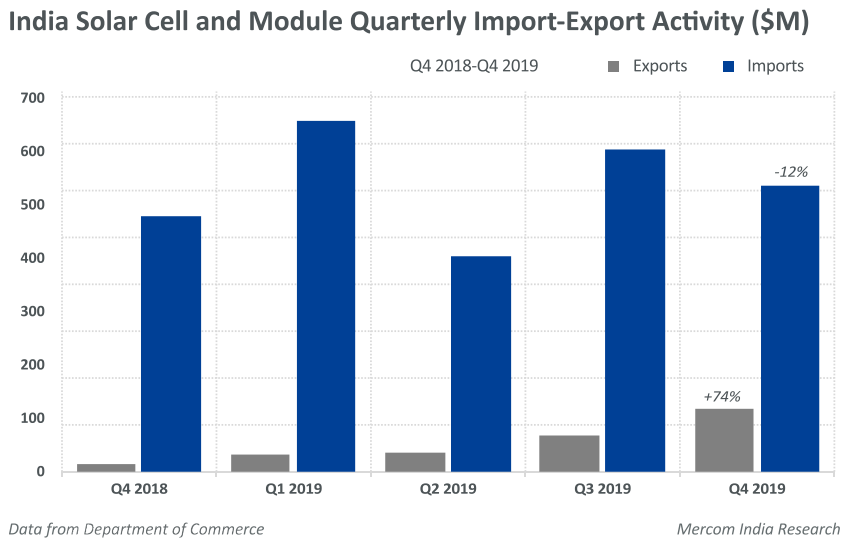




Solar Imports in Calendar Year 2019

China was the largest exporter of solar modules and cells to India in CY 2019, with a market share of nearly 78%, followed by Vietnam, Singapore, Thailand, and Hong Kong. If we consider imports in CY 2019 to CY 2018, we find that there has been rapid growth in imports from countries like Vietnam and Thailand, while imports from countries like China, Malaysia, and Taiwan have declined after the imposition of the safeguard duty on imports.

76% of India's exports went to the United States



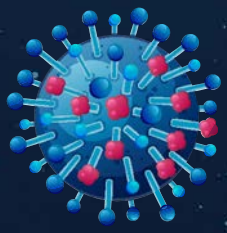
The United States was the biggest market for Indian exporters of solar modules and cells, accounting for nearly 87% of market share, followed by Turkey and Nepal, which accounted for 5.2% and 2.9%, respectively.

In the first nine months of CY 2019, India imported solar cells and modules worth $1.6 billion (-₹115.7 billion), a drop of around 22% compared to CY 9M 2018. However, exports in 9M 2019 amounted to approximately $135 million (-₹9.5 billion), an increase of about 46%.

In a latest development, basic customs duty on the import of solar cells and modules into the country will remain 'zero' for now, even as the duty has been raised to 20%. Speaking to Mercom, an official of the Ministry of Finance said that there is a basic customs duty exemption (notification 24/2005 Customs dated March 1, 2005) in place for these items. Unless the earlier notification is amended to exclude the solar cells and modules from customs duty exemption, the components will continue to have 0% duty.

The import activity is forecasted to increase in 2020 as the solar installations are expected to rise in the year. However, in the short-term, imports may decline in the first quarter as supply from China is restricted as the country grappled with the coronavirus outbreak.

India Classifies



CORONAVIRUS

Outbreak As Force Majeure

Considering the mayhem caused by the pandemic Coronavirus, Ministry of Finance has announced that it will now be considered as a case of natural calamity

By : Anjana Parikh

Recognizing Coronavirus outbreak as force majeure removes futures uncertainty

The global outbreak of novel coronavirus or COVID-19 has changed the lives of millions across the world. Hundreds of thousands across the globe have been affected, and the deadly virus has already spread to multiple countries, causing severe damage to the economy.

Speculations are high that the disruption caused by COVID-19 will have a severe impact on domestic renewable projects like other industries. The delay across the supply chain will have a significant effect on the construction of the projects and their operations.

Amid the increasing disruptions in the supply chain due to the spread of deadly coronavirus in China and other parts of the world, the Ministry of Finance (Department of Expenditure Procurement Policy Division) recently issued a clarification that coronavirus will be covered in the force majeure clause (FMC) and should be considered as a case of natural calamity. Further, the ministry has stated that this clause can be invoked wherever appropriate.

A force majeure (FM) clause means that if there are extraordinary events like those beyond human control such as wars, riots, crimes, or natural calamities, then this clause can free both the parties from contractual liability from fulfilling their obligations under the contract.

However, the ministry has clarified that the clause does not excuse a party's non-performance entirely but only suspends it for the duration of a period.

One of the conditions for this clause is that during any such extraordinary event, the firm must notify force majeure as soon as it occurs and cannot be claimed ex-post facto (retrospectively).

The ministry has further clarified that there may be a force majeure situation affecting the purchase organization only. In such a situation, the purchase organization needs to inform the supplier of the necessary action.

"If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of force majeure for a period exceeding 90 days, either party may at its option terminate the contract without any financial repercussion on either side," the ministry has notified.

Like other industries, the renewable energy sector in India has also been under the coronavirus scare.

A developer said, "It's good that the government has recognized the coronavirus outbreak as force majeure. Since there is no dispute about this anymore, the developers do not have to approach the regulatory commissions. Still, it is unclear how the implementing agencies will take this forward and what kind of extensions will be given."

Another developer commented, "We will approach the implementing agencies and write to them requesting for an extension of the commissioning deadline. Based on the project capacity, the extension given could be three months or more. The implementing agencies will then scrutinize the request and take the necessary decision."

Recently, Sterling and Wilson, in their Bombay Stock Exchange (BSE) filing, mentioned the impact of the deadly virus on the execution of its projects. The company had pointed out that as most materials were expected to be dispatched in February/March 2020, the impact on revenue is expected to be significant.

"The management is continuously monitoring and evaluating the impact of revenue and profitability. Despite all the challenges, our revenues for Q4 FY20 would be ₹15-20 billion (~$210 million--$280 million)," stated the company.

The National Solar Energy Federation of India (NSEFI) had also written to the Ministry of

New and Renewable Energy (MNRE), asking for coronavirus to be seen as force majeure. The association also pointed out that most solar projects are interstate transmission system (ISTS)-connected and delays in commissioning these projects would also result in the levy of transmission charges/point of connection charges by the Power Grid Corporation of India (PGCIL) due to the operationalization of Long Term Open Access (LTOA). Considering this, the association had also requested an extension in the date of the operationalization of LTOA.

A company must notify force majeure as soon as it occurs and cannot be claimed ex-post facto

India installed 7,346 MW of solar capacity in the calendar year 2019, a 12% decline year-over-year (YoY), compared to 8,338 MW in 2018, according to Mercom India Research's newly released Q4 & Annual 2019 India Solar Market Update. There is about 23.7 GW of large-scale solar projects under development currently.

The outbreak of the deadly virus is going to affect the global solar supply chain adversely besides impacting the global economy on the whole, and the signs have already begun to show. However, an accurate estimate of the impact will be known only after the pandemic subsides and all the affected countries, limp back to normalcy.

A Standardization Cell to Streamline Renewable Systems' Quality

Quality and standardization of renewable systems and its components are crucial for a country with an ambitious renewable target of 175 GW by 2022

By : Anjana Parikh

India has set a goal of reaching 175 GW of renewable capacity by 2022. To achieve this target, the government and other stakeholders have been constantly working on improving the standards for renewable energy systems and their components.

Without standardized and quality components, the journey of sustainability is bound to be thwarted and keeping this in mind, the Ministry of New and Renewable Energy (MNRE) has now decided to set up a Renewable Energy Standardization Cell (RESC).

The objectives of the cell are to identify the areas in renewable energy where standards need to be developed and identify international standards such as International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) for applications in Indian climatic conditions. In case of any modifications, they should be first done and tried in test laboratories for revision suitable for the country's climatic conditions. The MNRE also states that another objective is to initiate the process of developing standards involving experts from research and development (R&D) institutions, test labs, and industry.

According to the ministry, the standardization cell will interact with the relevant subject experts from research and development institutions, test labs, industries, and Bureau of Indian Standards (BIS) to seek inputs for developing and updating Indian standards in the relevant subjects.

"The draft will be provided to the BIS for further action," states the MNRE's letter.

The MNRE's move is in relation to the National Lab Policy for testing, standardization, and certification for the renewable sector.

In January 2020, BIS requested the Ministry of New and Renewable Energy to set up a standardization cell in the MNRE as part of their Standards National Action Plan (SNAP).

The objective of the cell is to identify the areas where standards need to be developed

The standardization cells will act as a channel of communication, facilitate the identification of new subjects and relevant experts for standardization in different sectors.

Recently, the ministry also opened an Industry and Investors' Facilitation Centre, which would work as a focal point to provide all the information regarding programs and policies of the government and resolve issues related to renewable energy investors and industry.

India is an extremely price-sensitive market where aggressive biddings often lead to cut-throat margins for developers. It is extremely important for the government to acknowledge the drawbacks of the domestic solar industry and intrudce checks and balances where necessary. With a renewable standardization cell, such issues can be addressed before it is too late.

MNRE Addresses Transmission Infrastructure Delays

The cost for the transmission infrastructural delays is often borne by the generators even when they are not at fault, the MNRE acknowledged

By : Anjana Parikh

Last year, the Central Electricity Regulatory Commission (CERC) issued a draft regulation for sharing inter-state transmission charges and losses. According to the draft, the transmission charges will be shared among the designated inter-state transmission system (ISTS) customers so that the yearly transmission charges are fully covered and any adjustment on account of the revision of transmission charges are recovered.

The Commission had proposed that the regulations will apply to all the designated inter-state transmission system (ISTS) customers, inter-state transmission licensees (ISTL), customers, inter-state transmission licensees (ISTL), national load despatch center (NLDC), regional load despatch centers (RLDCs), state load despatch centers (SLDCs), and regional power committees (RPCs).

Expressing its view on the CERC's

Most developers are suffering due to the gap between the commissioning of the transmission system and renewable projects

proposed draft order, the Ministry of New and Renewable Energy (MNRE) recently issued a memorandum to address the time gap between the commissioning of the transmission system and renewable energy generating projects.

The ministry has requested the CERC to look into MNRE's suggestions regarding the 'Sharing of Inter-State Transmission Charges and Losses,' Regulations, 2019, which called for comments and suggestions in October 2019.

The CERC had also proposed that the transmission charges will be shared among the designated ISTS customers so that the yearly transmission charges are fully covered, and any adjustment on account of the revision of transmission charges are recovered.

The MNRE has highlighted that there is a major issue regarding the time gap between the commissioning of the transmission system and renewable energy projects where the cost for transmission for the delay is to be borne by the generators even when they are not at fault. The MNRE has stated that most solar and wind developers are suffering due to the gap between the commissioning of the transmission system and renewable projects.

If the projects get delayed due to force majeure, then the cost of delay in transmission is borne by the developer

If the projects get delayed due to force majeure (unforeseeable circumstances), then the cost of delay in transmission is borne by the developer. If the project is delayed due to force majeure and the transmission system is commissioned before the commissioning of the projects, the cost of transmission during that period of delay should be socialized, the ministry has recommended. "Socialized" in this context means the charges need to be equally borne by the designated ISTS customers, including state transmission utilities and distribution licensees.

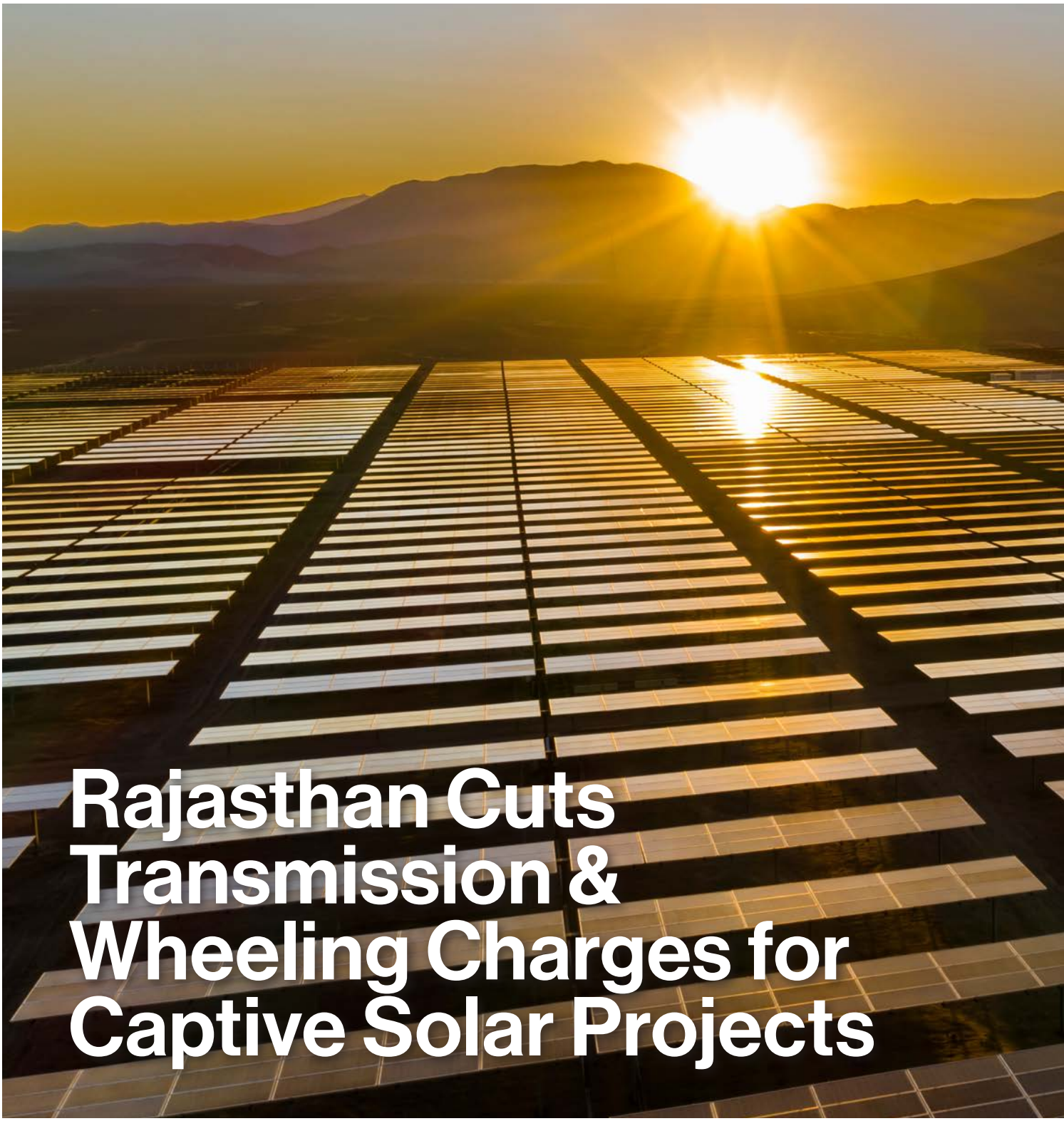
However, in case the projects get delayed due to reasons attributed to the developer, then the cost of transmission should be borne by the developer.

The MNRE has also emphasized that if the transmission system has been delayed and the renewable projects are already commissioned before time, then the cost of the power generation should also be socialized.

However, if the transmission system gets delayed due to any reason other than force majeure, then the concerned agency responsible for commissioning the transmission system will be accountable for the generation.

The lack of transmission infrastructure has been a major concern for solar and wind developers in the country. A PGCIL report states that with the expected doubling of electricity demand over the coming decade, India's transmission and distribution system will also require significant expansion.

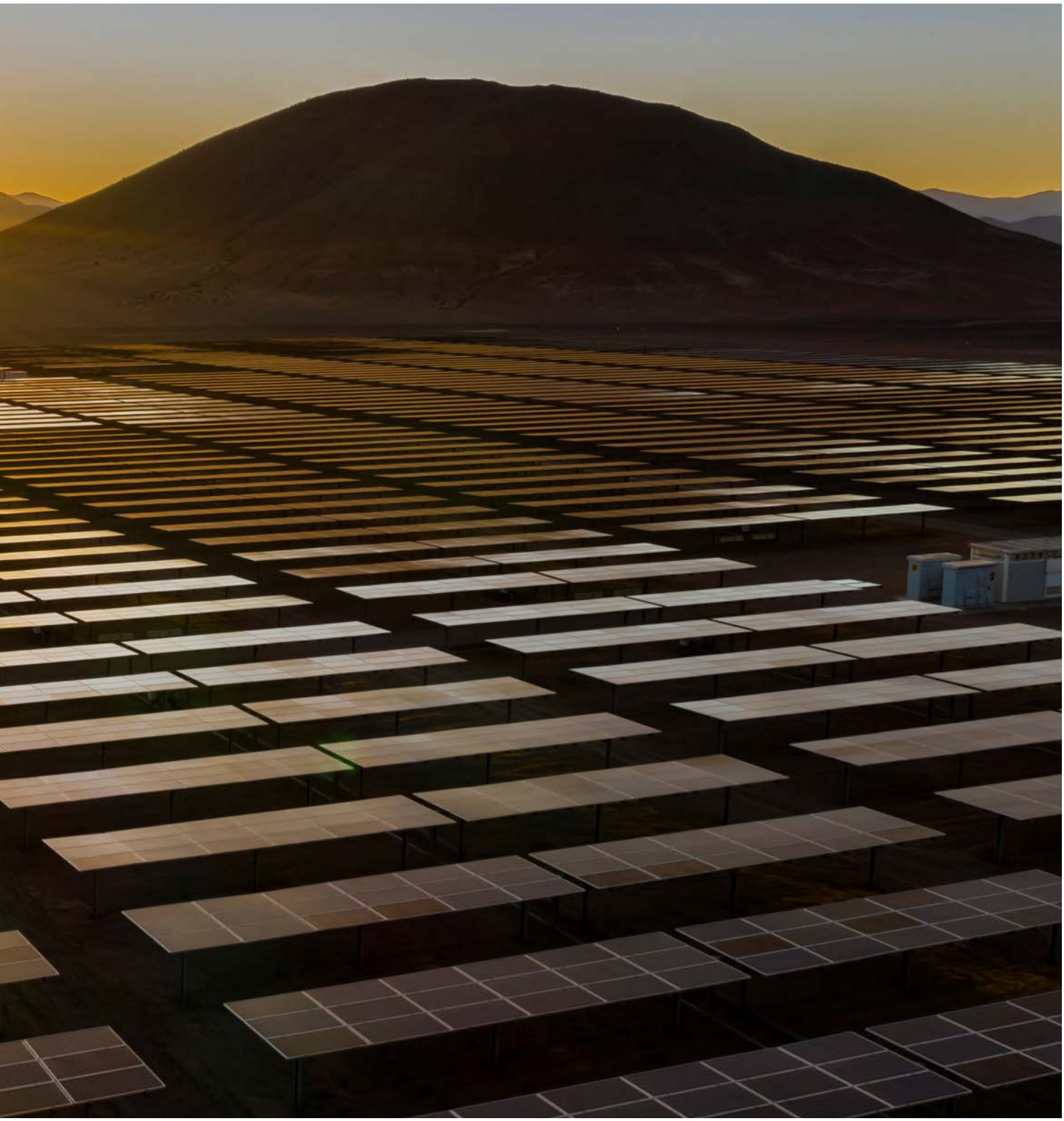
A $200 billion (~₹13.8 trillion) investment program through 2030 would create the opportunity for India to establish an internationally connected smart grid capable of managing increased power demand and incorporating much greater diversity in electricity generation, including distributed rooftop solar and battery storage.



Rajasthan Cuts Transmission & Wheeling Charges for Captive Solar Projects

The state has adopted directives for banking of power, wheeling charges, power projects with storage systems, and rooftop solar projects

By : Rakesh Ranjan Parashar



Rajasthan released its Solar Energy Policy 2019 in December last year with a goal to achieve an ambitious target of 30 GW by the financial year 2024-25. While the government is trying to fast-track the shift from conventional sources to renewable energy, work still needs to be done to make Rajasthan a major contributor for achieving the national target of 100 GW solar capacity by 2022.

Taking a step in that direction, the Rajasthan Electricity Regulatory Commission (RERC) recently came out with a suo-motu order regarding the directives issued by the state government for the banking of power, transmission and wheeling charges, power projects with storage systems, and rooftop solar projects.

The Commission stated that it had introduced the banking facility for renewable energy projects in its

earlier regulations. Under the existing regulations, banking is allowed only for the captive consumer. However, according to the policy directive, the banking facility has been extended to the third-party sale also. The Commission stated that the policy directions of the state government regarding annual banking need to be taken into consideration by the DISCOMs. The Commission directed the DISCOMs to approach the state government for claiming financial support.

For projects set up for captive or third-party sale within the state or for projects with a capacity of 500 MW (solar, wind and wind-solar hybrid, with or without storage,) the transmission and wheeling charges will be levied as follows:

- For solar power projects set up for captive use and third-party sale, it will be at 50% of standard transmission and wheeling charges for seven years
- For solar power projects with a storage system and repowered wind projects set up for captive use and third-party sale, the charges would be at 25% of standard transmission and wheeling charges for seven years
- For solar power projects set up for electric vehicle charging stations for captive use and third-party sale, there will be a 100% exemption in standard transmission and wheeling charges for ten years from the date of establishment of the EV charging station

For solar power projects set up for captive use, the transmission and wheeling charges will be 50% of the standard transmission and wheeling charges

Accordingly, the Commission directed the DISCOMs to claim subsidy in line with the Commission's regulations and initiate the provisions of exemption in transmission and wheeling charges.

The state government had stated that power up to 5% of RPO targets in MW (solar & non-solar combined) would be procured from solar projects with storage systems by Rajasthan DISCOMs at a tariff discovered through competitive bidding besides their RPO target. Accordingly, the Commission directed the DISCOMs to implement the state government's policy for projects with storage systems.

The policy directive provides that under net metering, the DISCOMs will allow solar rooftop of up to 50% of the capacity of the distribution transformer. Further, benefits such as banking facility and payment of surplus energy by DISCOMs under net-metering will also apply to government buildings.

The Commission further noted that the existing RERC net metering regulations provide for a limit of 30% on the capacity of the distribution transformer for setting up a rooftop solar PV project. However, the policy directive says the limit is 50%. So, the Commission emphasized that the limit of 50% should be adopted.

Under net metering, the DISCOMs will allow solar rooftop of up to 50% of the capacity of the distribution transformer

The Commission said that providing the benefit of payment of surplus energy to the state government buildings and the provision for limiting the payment for surplus energy to the domestic consumer category was recently incorporated through an amendment in the current RERC net metering regulations. In line with this, the Commission directed the DISCOMs to file a petition indicating the requirement of change in regulations for the consideration of the Commission.

The Commission stated that gross metering, as mentioned in the policy directive, is a welcome step towards the promotion of solar energy. The Commission, in its order, stated that DISCOMs should assess their needs for gross metering and then enter into a power purchase agreement (PPA).

The Commission directed the DISCOMs to conduct the impact assessment study of these government directives and furnish the report of impact assessment study to the Commission after the completion of one year. The Commission also asked the DISCOMs to submit the status of recovery of additional financial implications due to the government policy directives.

Last year, the state launched its Solar Energy Policy 2019. The policy aims to deploy 25 GW of solar energy capacity in the state by 2020-2021 and 50 GW over the next 5-6 years to meet the renewable purchase obligations of distribution companies.

While the Commission has adopted most of the directives issued by the state government, it has directed the DISCOMs to evaluate the impact of these directives and how it is going to affect the growth of the solar sector in the state. The order has made several things clear regarding banking, transmission and wheeling charges, power projects with storage systems, and rooftop solar projects. In one of the sunniest states of the country, policy clarity on these fronts is likely to help the pace of installations.

2019's Wind Installations Fail to Impress

India installed only 2.4 GW of wind power capacity in CY 2019 with the cumulative wind power capacity standing at 37.5 GW

By : Anjana Parikh

Like other segments of the renewable energy industry, the wind energy sector has been facing multiple challenges on several fronts over the past few years, and 2019 proved to be no different. The industry is struggling to cope with the slowing economy, low tariffs, curtailment, and multiple duties and tariffs.

The wind sector witnessed the end of the feed-in-tariff mechanism in 2017, following which all projects were placed under the auction-based regime.

While the concentration of wind resources is mostly in the southern and western parts of the country, these states are also known for curtailing wind power.

Wind installations were flat in India with 2.4 GW of wind power capacity added in CY 2019, compared to 2.3 GW 2018. The cumulative wind power installations stood at 37.5 GW at the end of 2019, according to the data from government agencies, compiled by Mercom India Research.

Wind installations levels have significantly declined after the reverse auction mechanism was introduced in the wind sector after several years of growth. Before the auctions were introduced, wind projects were mostly developed by private companies for captive consumption or sale to the state. But all of this changed in 2017 when the reverse auction was introduced.

The growth after the introduction of auctions has been underwhelming as low bids, and tariff caps have reduced participation of bidders resulting in under subscription in many of the tenders.

During Q1 2019, just 488 MW of wind was added but saw an increase of 52.2% in Q2 2019 with 742.5 MW. The rate of installation in Q3 dipped sharply by 24% to 562 MW. However, installations in Q4 2019 went up again in Q4 2019 with 575 MW.

Out of the 4.2 GW of tenders issued by SECI, only 2.6 GW were auctioned in 2019

For the past four years, from 2016 to 2019, the state of Tamil Nadu has been leading wind installer in the country. In 2016, the state's wind capacity was 7.7 GW, which increased to 9.3 GW in 2019.

The second-best state for wind power is Gujarat. In 2016, the state had installed 4.4 GW of wind projects, which rose to 7.5 MW by the end of 2019.

Recently, the Gujarat Electricity Regulatory Commission released a discussion paper to initiate the regulatory process for setting the wind power procurement tariff for the financial year.

The Commission has proposed to determine the tariff for all prospective wind projects based on the rates discovered through competitive bidding and discontinue the practice

of setting the generic tariff for wind power projects.

Most of the wind potential exists in Andhra Pradesh, Gujarat, Tamil Nadu, Karnataka, Madhya Pradesh, Maharashtra, and Rajasthan.

"2019 was another weak year for the wind sector in India. Low tariff caps have made projects financially unattractive. Most of the wind resource-rich sites are gone, and land for wind projects is difficult to come by. Windy states are also known for curtailment. The wind sector needs some fresh ideas and policies to get the momentum back going into 2020," said Raj Prabhu, CEO of Mercom Capital Group.

Uncertainty in the wind sector increased, as the new government in Andhra Pradesh went ahead with its decision to renegotiate the Power Purchase Agreements (PPAs) for wind and solar power projects signed during the former Chief Minister Chandrababu Naidu's tenure.

In 2019, almost 4.2 GW of tenders for wind projects were issued by Solar Energy Corporation of India (SECI) under the interstate transmission system (ISTS) VII, VIII, and IX. Out of this, 2.6 GW were auctioned.

Under the ISTS hybrid, SECI issued a cumulative capacity of 3.6 GW of wind projects under Tranche I to Tranche III. Out of this, 1.56 GW was auctioned under ISTS-hybrid Tranche I and Tranche II.

A senior executive at a large wind developer told Mercom that until 2016-17, feed-in-tariff led the rise of wind installations.

"Later, the government released competitive bidding guidelines. It was during this time that we saw quite a few SECI tenders for wind projects. Developers and investors were interested mostly in SECI tenders due to its financial security. Except for Gujarat and Maharashtra, not many states received good responses from the developers," he added.

Referring to 2019, the senior executive added that there were a few tenders from the government received a lukewarm response from developers, and there were also delays in signing the power purchase agreements (PPA) from the distribution companies. Land acquisition and evacuation are also an issue for further development of such projects.

2019 was another weak year for the wind sector in India

Talking about projections for 2020, he said, "In the short-term, the growth of wind installations will depend on the economic situation of the country. But for the medium to long-term, if the economic situation improves, it will be a positive sign for the industry as well."

Meanwhile, the National Institute of Wind Energy recently stated that the installable wind potential of the country is estimated to be at 695 GW at 120 meters above ground level. Out of the estimated figure, nearly 347 GW of wind projects can be installed on cultivable lands, followed by wastelands where 340 GW capacity could be possible.

Unleashing the Potential of Open Access

Open access prevents the power market from becoming a monopolistic setup and offers a great way to get affordable power at competitive rates

By : Priya Sanjay

Open access is a great way to democratize the power sector. It enables power consumers to buy power from the open market economically by giving the consumer a choice to choose from a host of power suppliers.

The total installed solar capacity in the open access market reached 3.6 GW at the end of the calendar year (CY) 2019, and the pipeline of projects under development and in pre-construction phase is estimated to be approximately 1.5 GW, according to Mercom India Research's newly released report, Open Access Solar Market in India - Key States.

The report finds that the open access solar market in India has been offering parallel opportunities for stakeholders, including large corporates, solar project developers, investors, and power distribution companies, to participate in the solar growth story.

Karnataka was the largest market for open access based on cumulative installations as of December 31, 2019, followed by Andhra Pradesh, Maharashtra, Uttar Pradesh, Telangana, and Haryana.

Karnataka was a very attractive state for open access projects through 2018, when the state showed how open access could thrive in a conducive environment helping it become the top solar state in India. But now the state has become much more restrictive.

Uttar Pradesh, Haryana, Tamil Nadu, Maharashtra, and Andhra Pradesh have favorable policies for captive and group captive projects. The average open access tariff in these states range from ₹3.50-5.00/kWh (~$0.047- 0.068/kWh) with a yearly escalation of 1-2% depending on the contract terms.

Attractive state policies haven't necessarily turned successful on the ground. According to the report findings, approvals are tough, and government agencies are making open access projects implementation harder.

Third-party sales and captive power generation primarily make up the open access market in India

Open access provides an excellent prospect for developers and investors who are hesitant to participate in aggressive reverse auctions and invest in large-scale projects. It is also an

ideal model for those who do not want to go for smaller rooftop installations and limit themselves to specific geographies.

Open access solar also provides an attractive option for larger power consumers of over 1 MW in selecting their power suppliers, accessing quality power, reducing power costs, and going green.

Third-party sales and captive power generation primarily make up the open access market in India. But due to a slew of charges and regulations, third-party sale projects have come to a standstill. Under the captive power generation, a single entity sources the power. The same captive power sourced by a group of companies is known as group captive projects.

Long-term open access power purchase agreements (PPAs) are preferred by developers, while a lot of consumers favor short-term contracts. Under the group captive model, the PPAs are largely for 15-20 year terms. Short-term PPAs witnessed an increase of 6% to 12% over the past decade from the financial year (FY) 2009 to FY 2019. Short-term contracts generally range from one month to one year.

A sizeable investment can be unlocked from corporates and multinationals in open access projects

The report found that open access consumers in top states pay transmission and wheeling charges and additional cross-subsidy charges of about ₹2.32-3.79/kWh ($0.031- 0.051/kWh). These charges are in addition to the open access tariffs in the states.

There is a growing demand for serious players to develop open access projects and sell power to multinational companies (MNCs) that are choosing group captive solar to go green. These companies have strict norms to ensure the counterparty or the open access developer is financially sound and will stay invested for the long-term.

Industries like steel manufacturing, mining, refineries, cement manufacturing, chemical manufacturing, which operate round the clock, have a massive requirement for power, according to the report. These industries always opt for cheaper power irrespective of the source. Open access makes sense for such industries with high, round the clock power demand as their consumption can be off-set by cheaper renewable power.

The government needs to be aware that open access solar projects need adequate policy support to takeoff. The central government needs to urge the states to enable consumers and developers by giving them more regulatory flexibility and reducing the number of charges levied on them.

"to meet their renewable obligations. Instead of encouraging and working towards the country's goal of 100 GW of solar by 2022, states have instead erected hurdles at every step," commented Raj Prabhu, CEO of Mercom Capital Group. "A serious push from the center to get states to reduce regulatory hurdles is needed for the open access market to take off again."

MNRE's New Fee Structure Under ALMM

In its latest clarification, the ministry has come out with a new fee structure for the solar module and cell manufacturers to enlist under approved list of models and manufacturers

By : Priya Sanjay

The government's clarification regarding the registration under the Approved List of Models and Manufacturers (ALMM) of solar modules has come as a surprise to many solar manufacturers and large manufacturers as they can now end up paying a hefty application fee to enlist under ALMM.

The Ministry of New and Renewable Energy (MNRE) recently issued a clarification regarding the compulsory requirements of registration for solar manufacturers under the ALMM.

The clarification deals with the definition of the model, application fee, and provisions for manufacturers currently exempted from BIS certification for ALMM application purposes.

As per the clarification, the model, as mentioned in the ALMM guidelines, refers to modules or cells of the same nominal power output rating. All BIS approved modules or cells with the same nominal output rating will be treated as one model.

Since a single model of a module has a range of power wattage, the ALMM application form provides for specifying both the mean wattage and the applicable range of wattage. However, such a range of wattage may vary from among manufacturers based on the method used by them for categorizing the model.

The application fee for one model of module or cell will be ₹5,000/MW

The clarification states that all the modules based on the same technology (monocrystalline, multi-crystalline, mono-PERC, bifacial, half-cut, and others) and having the same number of cells and having power ratings within ±5% of the mean wattage will be treated as one model.

The clarification issued by the MNRE states that the applicable range of wattage up to a variation of ±5% of the mean wattage of the module will only be permissible.

So, if two different modules have the same technology and the same number of cells and identical power ratings or slightly varying within the permissible variation range of ±5% from the mean wattage will be treated as one model. Similarly, if two modules have some differences in technical features, they will not be treated as one model. The same is the case with PV cells, where all the cells based on the same technology and having power ratings within ±5% of the power rating of the mean wattage will be treated as one model.

According to the amendment, the application fee for one model of module or cell will be ₹5,000 (-$70)/MW of the total installed manufacturing capacity for solar PV modules or cells. The amendment also mentions that for PV module manufacturers having total installed manufacturing capacity of modules less than or equal to 50 MW, the application fee for one module will be ₹2,500 (-$35)/MW of the total installed manufacturing capacity of solar modules or cells. Earlier, there was no provision for small PV module manufacturers having capacity less than or equal to 50 MW.

In case an application consists of multiple models, the application fee will be as mentioned above, with an additional 1% for every model. In case the applicant is already enlisted for a particular model of the solar PV module or cell and applies for another model of the solar PV module or cell, the application fee for the additional model will be 10% of the prevailing normal application fee. However, if in subsequent applications, there are multiple models, then the fee will be 10% of the prevailing application fee and 1% for every additional model.

According to the document, the solar PV manufacturers who are exempted from BIS registration are eligible to enlist their solar PV modules. However, the validity of their enlistment in ALMM will be in line with the validity of the exemption from BIS certification.

For manufacturing capacity less than 50 MW, the application fee for one module will be ₹2,500/MW

Modules

If a manufacturer applies to enlist several models of PV modules comprising different technologies and with a different number of cells and power ratings:

- For the first model: ₹5,000 (~$70)/2,500 (~$35) as applicable multiplied by total installed manufacturing capacity (MW) of modules of the applicant manufacturer manufacturing under the same brand name.
- For all other models (irrespective of technology, number of cells, and power ratings): ₹5,000 (~$70)/2,500 (~$35) multiplied by 0.01 again multiplied by total installed manufacturing capacity (MW) of modules.

Cells

If the applicant applies to enlist several models of solar PV cells comprising different technologies and power ratings.

- For the first model: ₹5,000 (~$70) multiplied by total installed manufacturing capacity (MW) of cells of the manufacturer across different technologies but manufacturing under the same brand name.
- For all other models: ₹5,000 (~$70) multiplied by 0.01 again multiplied by total installed manufacturing capacity (MW) of cells of the manufacturer across different technologies but manufacturing under the same brand name.

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If the solar PV manufacturer has enlisted his products under ALMM without BIS certification, the manufacturer will have to obtain BIS registration and submit the documents to MNRE at least one month before the date of the expiry of the ALMM enlistment.

Based on the clarification, large manufacturers with multiple product lines will end up paying a hefty fee to enlist under ALMM. The fee structure also punishes innovation by charging fees if companies constantly release new models with increased efficiency or better technology. The fee structure does not seem to be fair in its current form and must be further reviewed to encourage innovation and new technologies.

One of the manufacturers told Mercom, "Due to the recent clarification issued by MNRE regarding the ALMM, all the top five suppliers are going to set up a meeting with the MNRE next week to bring some liberal policy on this topic."

The fee structure punishes innovation by charging companies that continually release new models

In September last year, MNRE had issued a notification shedding light on its earlier order regarding the compulsory registration under the Approved List of Models and Manufacturers of Solar Photovoltaic Modules. The MNRE had then said that the list would consist of List-1, which specifies the models and manufacturers of solar PV modules, while List-II will specify the models and manufacturers of solar PV cells. Both the lists will come into effect from March 31, 2020.

The Indian solar market has grown at an exponential rate in the last five years, and the demand for solar modules and cells has been strong. While the move by the government seems to be positive for local manufactures, it is making it difficult for big solar manufacturers who will have to pay a hefty amount for registration under ALMM. Many module suppliers believe that the Indian government's decision and implementation of these quality control measures are slowing down the launch of new products and is preventing solar developers from accessing the latest in solar technology.

EPC Prices Slowly Becoming Sustainable

With the growing solar industry, the engineering, procurement, and construction (EPC) services in India have evolved with increased competition. Most of the EPC players have been forced to cut their margins due to aggressive bidding and the additional cost of safeguard duty. Because of safeguard duty, financing difficulties, land, and regulatory issues, EPC players commissioned a lower number of projects than previously forecasted in 1H 2019. The project pipelines of EPCs have become weaker as competition has intensified with new EPC players entering the market with aggressive pricing. Many large developers have also brought the EPC services in-house to save on costs.

This has made it difficult for small EPC players to sustain the pressure and remain in the market. Most of the smaller players do not have the financial capability to develop large scale projects and are shifting to rooftop solar.

Rays Power Infra was the 5th largest third-party EPC player by cumulative capacity as of the first half of 2019, according to Mercom India Market Leaderboard 1H 2019. Established seven years ago, the company has come a long way and is now an established player in turnkey solar EPC services space.

Rahul Mishra, CEO Of Rays Power Infra, talked to Mercom about the expectations of the company from the solar market in 2020 and the challenges faced by EPC players.

What are your thoughts on the current market conditions?

The solar sector has witnessed a lot of backward steps from the state governments/utilities. For example, Andhra's issue of not honoring PPAs, the state withdrawing banking retrospectively on open access projects, delayed payment cycle by Telangana utilities, net metering withdrawal by many states for rooftop project, and others.

This has adversely affected the growth of the solar sector, the investment cycle, and debt disbursements. While the central government is trying to push things in a positive direction to attract more investments in the industry, the states are not responding positively. I believe the sector is currently in a state of change and will gradually come out of this challenging situation. Over the next couple of years, with lenders push and regulatory reforms, the sector will see the growth again with significant investments coming into solar, storage, and hybrid technologies. Also, larger reform is required from the center towards transmission and distribution, which will foster the overall growth.

How is the price competition? Have the margins improved?

Currently, the pricing is slowly normalizing to sustainable levels, which can be more bankable on the IPP side, making projects financeable and acceptable to the lender community, and a bit of over-aggression seems to be stabilizing. Also, given the market conditions and limited debt financing availability, the developers have been a bit more cautious about bidding. On the EPC end, the competition is still fierce, and the margins have deteriorated, given the competition.

What is your unique value proposition as an EPC company?

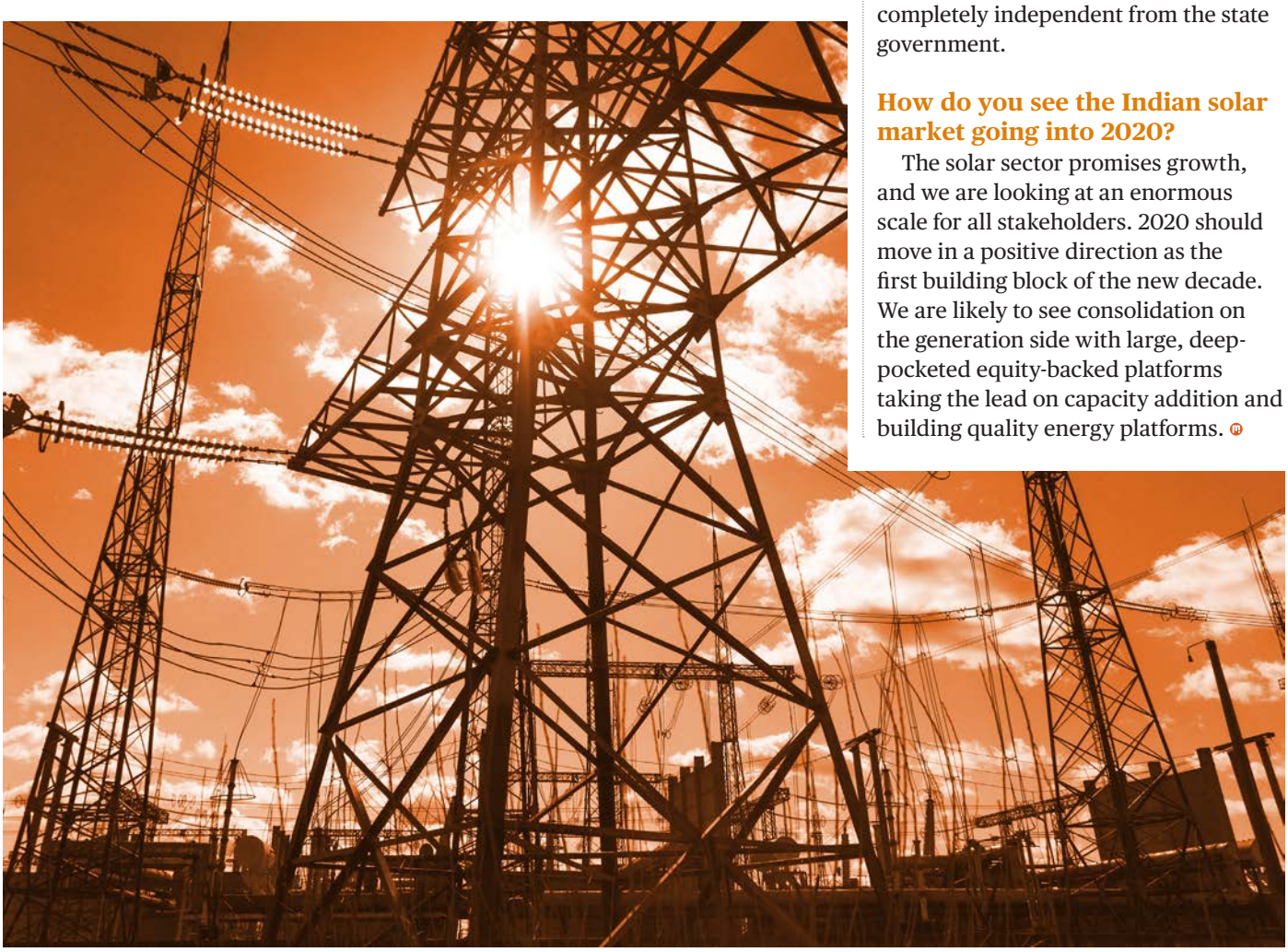
Rays Power stands unique because of its development capabilities, along with being an EPC company. We have strong project development capabilities across over 12 states in India and have acquired more than 10,000 acres of land across states in India and developed and commissioned projects over 900 MW under both utilities and C&I (open access and rooftop) business. Not may EPC companies have development capabilities at scale for both utility as well as C&I (open access and rooftop) businesses.

What are some changes needed for the market to improve?

The center and the state need to work together in improving investor sentiment and boosting confidence in the sector. Also, the lenders need to be encouraged to lend to the industry and this can only happen with state utilities making payments on time and honoring all PPAs. The recent intervention by the central government for opening of LCs for procurement of power is a positive step, and the same needs to be enforced for all in-firm renewable energy PPAs within all states for projects under operation in the state and selling power to the utilities of the same state. Similarly, the state regulatory commissions' appointments should be managed by CERC or the center rather than the state governments to make it completely independent from the state government.

How do you see the Indian solar market going into 2020?

The solar sector promises growth, and we are looking at an enormous scale for all stakeholders. 2020 should move in a positive direction as the first building block of the new decade. We are likely to see consolidation on the generation side with large, deep-pocketed equity-backed platforms taking the lead on capacity addition and building quality energy platforms.



Andhra DISCOMs Continue to Fight Net Metering

The state distribution companies have requested the state's electricity regulatory commission to only allow gross metering for rooftop solar systems

By : Priya Sanjay

Last year, the government of Andhra Pradesh announced a new solar policy and set a target of adding another 5 GW of solar power in the next five years.

But now, Andhra Pradesh's distribution companies (DISCOMs) have proposed an amendment to the existing rooftop solar policy. The proposal says that the applicable tariff for solar rooftop projects for either net or gross metering should not exceed the difference of pooled variable cost and balancing cost or the applicable tariff at the time of commercial operation date (CoD), whichever is less.

The state DISCOMs further requested the state's electricity regulatory commission (APERC) to only allow gross metering for rooftop solar systems in the state.

In gross metering, a consumer is compensated at a fixed feed-in-tariff for the total number of units of solar energy generated and fed into the grid. The consumer then pays the DISCOM at a retail supply tariff for the solar power consumed. On the other hand, in net metering, the exported solar power is adjusted in the electricity bill against the power consumed. This involves a bidirectional net meter that records both import and export of power.

Considering the guidelines mentioned in the state's Solar Power Policy 2018, the Andhra Pradesh Southern Power Distribution Company (APSPDCL) and the Andhra Pradesh Eastern Power Distribution Company Limited stressed that DISCOMs would benefit from gross metering over net metering from which they say they are losing revenue.

The state DISCOMs have also suggested a generic tariff be set based on the costs involved instead of making payments based on the average pooled power purchase cost (APPPC).

According to the existing solar policy, the consumers are free to choose either net or gross metering options for the sale of power to DISCOMs. The applicable tariff for either of the cases was decided to be equal to the APPPC agreed to by the Commission for the year during which the project is synchronized with the grid. The existing policy also says that the applicable tariff at the time of commercial operation date (CoD) will be paid for 25 years in case of projects executed under both net metering and gross metering basis.

According to the policy, energy settlement must be done every month. Groups of persons or societies setting up solar rooftop projects will be treated as a collective generation for the supply of power to the households of each society or group member. In the case of apartments or group houses, standard service meters may be used for net metering. The energy generated will be adjusted against the consumption of energy from the DISCOM by the developer or consumer every month. In the case of groups or societies, the energy generated should be prorated as per the installed capacity share, as mentioned in the agreement with the DISCOM.

In the case of excess generation, which is after the energy adjustment in any month, payment should be made by the DISCOM every quarter for the net energy at the APPPC cost as determined by the APERC for the year. The cost determined should be of the year in which the project is synchronized with the grid, and the applicable tariff at the time of commercial operation will be paid for 25 years.

DISCOMs argue that they are currently paying for the infrastructure cost of solar power

If there's excess consumption in any month, then the payment will be made by the developer or group or society for the net energy at the tariff determined by the APERC every year.

In the case of gross metering, the payment for energy generated from the rooftop solar system will be computed at the APPPC. This amount will be adjusted against the total billing demand for the consumption of energy for the developer or consumer from the DISCOM every month. The DISCOM will pay the balance after the adjustment for the month. However, a limit will be defined for the developers beyond which the DISCOMs will not make any payment.

The DISCOMs have also argued that they have to pay for the infrastructure cost incurred for supplying the power to the consumers. Moreover, they have to pay fixed costs to APTRANSCO and generating companies along with meeting their distribution business costs.

For net metering, the DISCOMs are paying to the consumer for the units consumed effectively at the relevant tariff of that category. Citing an example, the APSPDCL stated that in the case of commercial consumers, the DISCOM is paying ₹9 (-$0.12)/kWh, whereas, in the case of industrial or domestic consumers, the tariff paid would be around ₹5.50 (-$0.07)/kWh. For the surplus units that are fed into the grid, the DISCOM is paying the rate of ₹4.50 (-$0.06)/kWh.

Compared to net metering, the DISCOMs are paying ₹4 (-$0.05)/kWh for all units generated by the rooftop solar system in case of gross metering. Further supporting their cause of gross metering, the DISCOMs have highlighted that solar tariffs in the country have plummeted to ₹2.50 (-$0.03)/kWh, and therefore the net-metering arrangement is "more dangerous."

Currently, the consumers are free to choose either net or gross metering options

"While fixing the tariff for a generating company or a distribution company, the return on equity allowed is around 15% to 16%. In cases of rooftop solar projects, the tariff is not fixed on a scientific basis and not supported by any logic or reason," the APSPDCL added.

Justifying their rationale, the DISCOMs have argued that initially, the per MW infrastructure cost of solar PV panels was around ₹130 million (-$1.8 million) to ₹140 million (-$1.9 million). To promote clean energy, net and gross metering systems were then introduced. The Ministry of

New and Renewable Energy (MNRE) also provides a capital subsidy to the consumers and developers. So, the generation cost of rooftop solar is falling year after year while the retail supply tariffs of consumers are increasing.

"The present per MW installation cost of a solar rooftop project is around ₹50 million (-$675,292). This has become an incentive to solar rooftop developers and is affecting the DISCOM revenues," the DISCOM stated.

The DISCOMs have also requested the Commission to decrease the period of long-term contracts from 25 years to 10 years.

As per the APSPDCL's comments, the renewable purchase obligation (RPO) for 2020-21 is 15%, and the present quantity of renewable energy availability is around 25% of its energy requirement. So, the state has met the RPO beyond the threshold limit.

"The smooth integration of 8,515 MW of renewable (solar and wind power) power which is variable in nature with the state grid demand of 9,000 MW to 10,000 MW is a difficult task," it added. Adding to it, APEPDCL pointed out that under the falling price of solar and wind power generation and the incentives granted to these generators, it is necessary to withdraw the existing incentives.

The DISCOMs have also pointed out

DISCOMs - Financial burden of power generation needs to be borne by the end consumers

that the financial burden resulting from the solar rooftop power generation ultimately needs to be borne by the end consumers of the state.

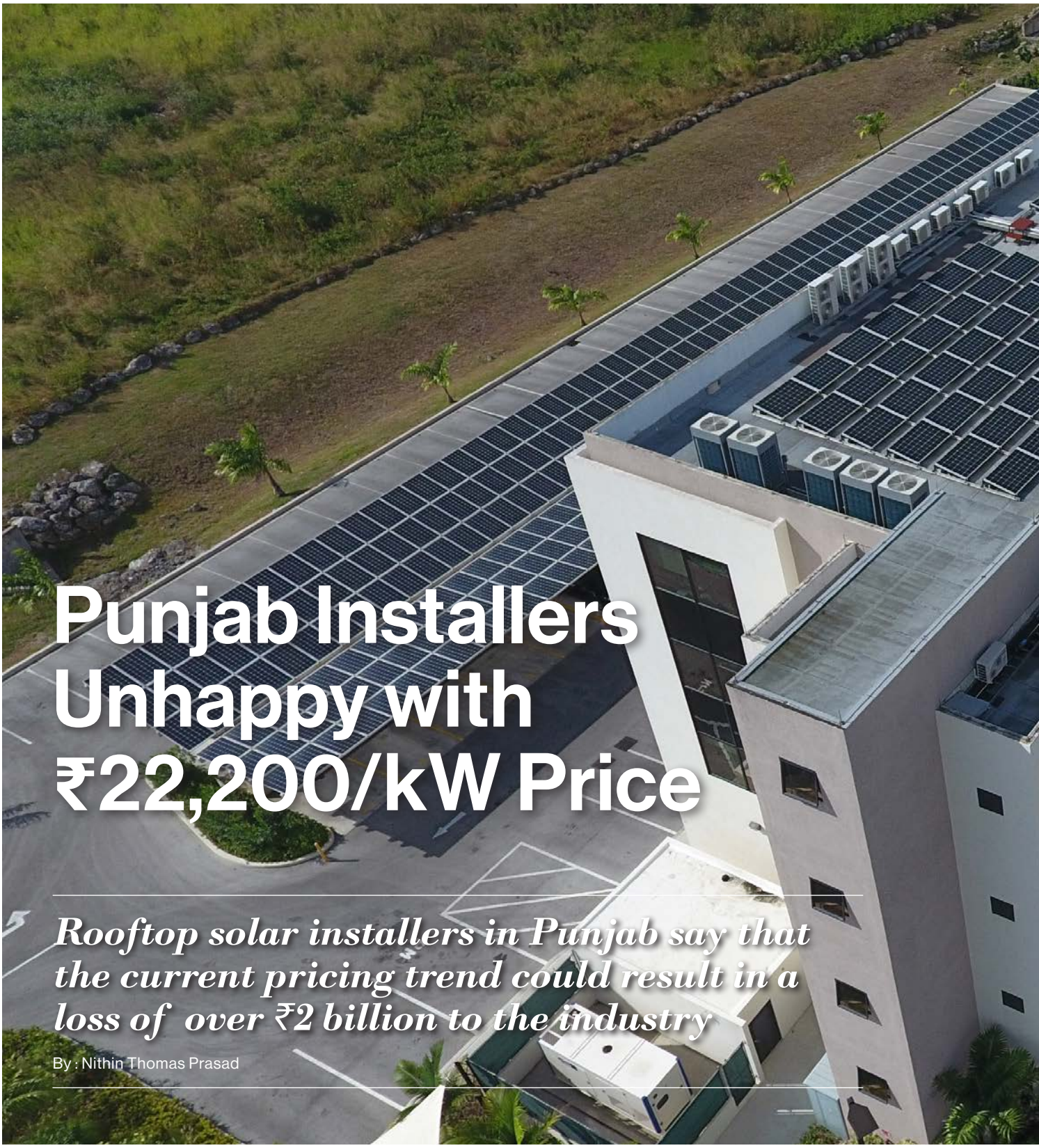
"Making payments at higher rates to rooftop solar developers compared to reasonable return amounts is leading to unnecessary enrichment of rooftop solar developers," the letter further said.

According to Mercom India Research's Q4 & Annual 2019 India Solar Market Update, the 2019 numbers indicated that rooftop installations declined for the first time in five years, adding 1,104 MW, a 33% year-over-year decline. Among other challenges, the net metering policy continues to be a drag on India's rooftop solar sector, calling for serious policy push by the government to get the market to the next level.

The demand for the roll-back of the net-metering mechanism has also been raised in other states.

For instance, in December last year, the KERC had issued an order which proposes various business models for rooftop solar. The Commission also felt that there was a need for a proactive and constructive role by the distribution licensees to facilitate smaller consumers to install solar systems at optimal cost, either through investment form the consumers or through third party investments by the distribution licensees themselves.

The story is similar in the state of Maharashtra. Maharashtra State Electricity Distribution Company Limited (MSEDCL) has proposed considerable grid support charges (GSC) for net metering rooftop solar systems with a capacity of over 10 kW.



Punjab Installers Unhappy with ₹22,200/kW Price

Rooftop solar installers in Punjab say that the current pricing trend could result in a loss of over ₹2 billion to the industry

By : Nithin Thomas Prasad

While rooftop solar projects in the country have been rising in popularity, especially in the residential segment, the sector continues to be weighed down by regulatory issues, lack of awareness among consumers, high upfront costs, and inconsistent policy environments. One of the more recent issues rooftop solar installers have been facing is subsidy disbursement delays.

Following a recent announcement by the Punjab State Power Corporation Limited (PSPCL) about new subsidies

for residential rooftop projects, the Renewable Energy Member Welfare Association (REMA), a body of solar integrators in the state, wrote to the PSPCL expressing its concerns on the matter.

In the announcement, the state set subsidies for grid-connected rooftop solar systems ranging between 1 and 10 kW in the residential sector, which brought prices down to as low as ₹22,200 (-$299.5)/kW, including subsidies.

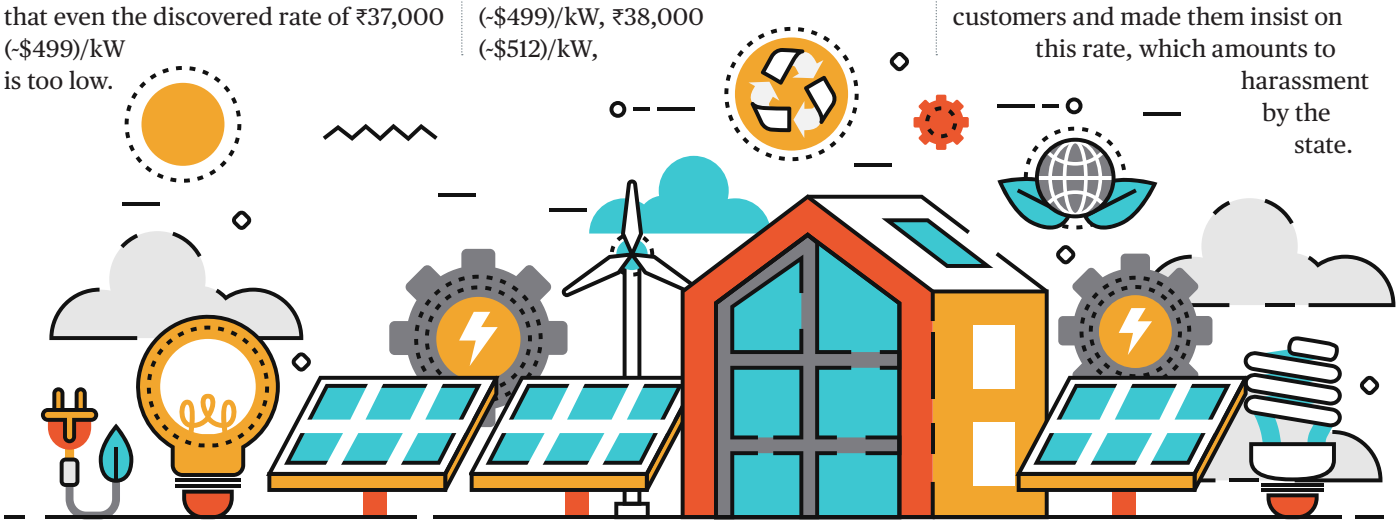
System integrators in the state expressed their displeasure at this

Rooftop solar system price of ₹37,000/kW are over 30% lower than the MNRE's benchmark prices

pricing. They explained that it would not even cover the basic material costs required to set up a solar power system and that the price was unrealistic.

The lowest discovered price in the state for rooftop solar projects ranging between 1-10 kW in capacity is ₹37,000 (-$499)/kW. In contrast, the Ministry of New and Renewable Energy's (MNRE) benchmark price is ₹54 (-$0.73)/W, an over 30% difference.

System integrators have complained that even the discovered rate of ₹37,000 (-$499)/kW is too low.



This rate was realized during bidding for another rooftop solar project issued by the National Thermal Power Corporation (NTPC) in the state. Instead of recognizing this as a price discovered in a specific bid since that was quoted by a government giant like the NTPC, the PSPCL made this the benchmark price for rooftop solar systems in the state.

"The L1 price of ₹37,000 (-$499)/kW was quoted by a player who is not even working right now. They did not even apply for more than 50 kW of projects, which clearly shows their intent to disrupt the market and let other players incur losses," Sarth Manrao, an executive member at the Renewable Energy Member Welfare Association told Mercom.

"After deducting the subsidies, the amount comes down to ₹22,200 (-$299.5)/kW, which is highly impractical for projects with 3 mm structures, domestic modules, five years of comprehensive maintenance and no commitments by the PSPCL for subsidies to be reimbursed," Manrao added.

Following the low bid, solar vendors were forced to work under these discovered prices. As per the MNRE guidelines, vendors were to deduct subsidies from ₹37,000 (-$499)/kW, ₹38,000 (-$512)/kW, ₹35,500 (-$479))/kW for projects between 1-10 kW, 10-100 kW, 100-500 kW in size.

The association stated that this price was too low even to cover the basic cost of materials required and that it would lead to unavoidable goods and services tax (GST) and tax loss to the government. It added that if no action is taken, the situation will hamper the country's progress towards its national solar targets.

It also estimated that over 200 residential rooftop solar installers operating in the state could potentially close down their businesses. The customer would be forced to bear the brunt, and there would be widespread financial malpractices.

Manrao further added that this would affect Punjab's solar target of 30 MW this year, of which, none has been completed, which could lead to a loss of ₹2 billion (-$26.98 million) to the industry and ₹200 million (-$2.69 million) in GST losses to the government. Additionally, over 20,000 jobs are at risk, and new rooftop solar businesses are at the risk of shutting down as well.

He also told Mercom that the Punjab Energy Development Authority had floated a tender for 5 kW of solar projects at 880 government schools in the state. In this tender, a rate of ₹52,000 (-$700)/kW was discovered, closer to the MNRE's benchmark. However, the PSPCL forced them to adopt a rate of ₹37,000 (-$499)/kW. PSPCL also made calls to registered customers and made them insist on this rate, which amounts to harassment by the state.

Not only will the industry suffer, but the government and the economy will also incur losses because of the situation. Most importantly, the environment will miss 30 MW of solar installations in the state this year that would go a long way in contributing to the green energy revolution and reducing thousands of tons of carbon emissions annually, Manrao explained.

While the Punjab state government has been proactive in enforcing

Rooftop solar system prices after subsidies are at ₹22,200 (~$299.5)/kW

attractive rates and subsidies, it has left system integrators in the state unhappy. According to them, there is simply way too much interference by the state distribution company (DISCOM), and the prices are extremely unfair and impractical. And the fact that there have been no commitments to the installers about subsidies being reimbursed, making the situation grimmer.

Earlier this month, the PSPCL announced subsidies for grid-connected rooftop solar systems ranging between 1 and 10 kW in the residential sector, which it said would make solar very affordable.

The PSPCL noted that this subsidy is not available for installations in the non-residential sector like social, government, educational, public sector undertakings, statutory or autonomous bodies, private commercial, and the industrial sectors.

The state body said that it had selected agencies and vendors for the installation of these grid-connected rooftop solar systems in the residential sector, and the projects must be installed and commissioned only through these empanelled vendors to be eligible for the subsidy. It was also added that the solar cells and modules used in these projects must fall under the Domestic Content Requirement (DCR) category.

Government agencies should pay subsidies on time, and let free markets take their course

PSPCL noted that the discovered rate for the installation of these systems (with subsidy) is ₹37,000 ($510)/kWh. Since the government of India already provides a 40% subsidy for systems up to 3 kW and 20% on systems between 3 kW and 10 kW, the state has directed vendors to bill the consumers only the remaining amount after deducting the subsidy. For example, for a 1 kW system, the vendor shall charge the consumer only ₹22,200 ($307) which is ₹37,000 ($510) minus ₹14,800 ($205) (@ 40% subsidy).

In September 2019, the Ministry of New and Renewable Energy (MNRE) had issued a clarification regarding the subsidy applicable for rooftop solar installations by individual residential households under phase-II of grid-connected rooftop solar program. According to the MNRE statement, rooftop solar installations up to 3 kW will qualify for a subsidy of 40%. For rooftop solar installations above 3 kW, and up to 10kW will get a subsidy of 40% for the first 3 kW and 20% for the remaining capacity, and for installations above 10 kW, it is 40% for the first 3kW and 20% for the remaining 7 kW. However, there's no subsidy beyond 10 kW capacity.

"This is a good example of what ails the rooftop segment in India. When government agencies latch on to the lowest bids, regardless of who placed the bid, and they force everyone else to match it, they are setting the sector up for failure. Government agencies need to do two things: 1) pay subsidies on time, and 2) let free markets take their course. If they don't do that, they will continue to stifle the rooftop markets and the investments and jobs that come with it," said Raj Prabhu, CEO of Mercom Capital Group.

Government Invokes Force Majeure for Coronavirus

Declared as a pandemic by the World Health Organization, Coronavirus has claimed thousands of lives across the globe

By : Ankita Rajeshwari

Amid the increasing doubt on the supply chains due to the spread of deadly Coronavirus, the government has announced some positive measures that may come as a respite amid slumping economic activity.

Recently, the Ministry of New and Renewable Energy (MNRE) issued an official memorandum, which states that the time extension in scheduled commissioning of renewable projects due to the disruption of supply chains will be treated as a 'force majeure' event.

A force majeure (FM) clause means that if there are extraordinary events like those beyond human control such as wars, riots, crimes, or natural calamities, then this clause can free both the parties from contractual liability from fulfilling their obligations under the contract.

The Ministry added that it had received inputs from various developers and renewable energy associations requesting that this calamity should be considered as force majeure event for the grant of appropriate time extension in scheduled commissioning date (SCoD) of renewable projects in line with the force majeure clause in concerned contractual agreements.

India is now under lockdown until April 14th

After examining the issue, the Ministry has decided that all renewable energy implementing agencies of the MNRE should treat delay on account of Coronavirus, as force majeure. The Ministry has also decided that the renewable energy implementing agencies can grant a suitable time extension for projects on account of Coronavirus based on the evidence produced by developers.

Further, the Ministry decided that all project developers claiming the disruption and seeking time extensions should make a formal application to Solar Energy Corporation of India (SECI) or the National Thermal Power Corporation (NTPC) or other implementing agencies, giving documentary evidence in support of their claim.

While considering the requests for an extension, the implementing agency should ensure that the claimants were affected due to the disruption in the supply chains due to Coronavirus in the period for which the extension has been claimed.

Moreover, the state departments have also been requested by the Ministry to treat the delay on account of the disruption of the supply chains due to Coronavirus as force majeure.

Last month, the Ministry of Finance had issued a clarification that Coronavirus will be covered in the force majeure clause and should be considered as a case of natural calamity. Further, the Ministry had said that this clause could be invoked wherever appropriate. However, the ministry has

clarified that the clause does not excuse a party's non-performance entirely but only suspends it for the duration of a period. One of the conditions for this clause is that during any such extraordinary event, the firm must notify force majeure as soon as it occurs and cannot be claimed ex-post facto (retrospectively).

The ministry has further clarified that there may be a force majeure situation affecting the purchase organization only. In such a situation, the purchase organization needs to inform the supplier of the necessary action.

"If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of force majeure for a period exceeding 90 days, either party may at its option terminate the contract without any financial repercussion on either side," the ministry has notified.

Like other industries, the renewable energy sector in India has also been under the coronavirus scare.

MNRE will allow time extension in scheduled commissioning of delayed renewable projects

A developer told Mercom, "it's good that the government has recognized the coronavirus outbreak as force majeure. Since there is no dispute about this anymore, the developers do not have to approach the regulatory commissions, but it is unclear how the implementing agencies will take this forward and what kind of extensions will be given."

Another developer commented, "we will approach the implementing agencies and write to them requesting for an extension of the commissioning deadline. Based on the project capacity, the extension given could be three months or more. The implementing agencies will then scrutinize the request and take the necessary decision."

Recently, Sterling and Wilson, in their Bombay Stock Exchange (BSE) filing, mentioned the impact of the deadly virus on the execution of its projects. The company had pointed out that as most materials were expected to be dispatched in February/March 2020, the impact on revenue is expected to be significant.

"The management is continuously monitoring and evaluating the impact of revenue and profitability. Despite all the challenges, our revenues for Q4 FY20 would be ₹15-20 billion (-$210 million--$280 million)," stated the company.

The economic toll of the pandemic is yet to be ascertained, but it can be safely concluded that no industry is immune from the downward slump brought in by Coronavirus. In the next few months, we are likely to get a clearer image of the damage caused by this outbreak at both macro and micro levels.

Indian Solar Industry Grapples with Coronavirus Pandemic

The effects of Coronavirus virus have reached India disrupting component supplies resulting in project commissioning delays, among other issues

By : Nithin Thomas Prasad

The Coronavirus pandemic has rattled the global economy, and the short-term prospects look bleak. No industry is immune from the repercussions of the reak, which has claimed thousands of lives worldwide.

Global supplies have been severely affected. The disruption has spread much farther than China because of the scale at which the country's manufacturing operates. Most other solar markets are also reeling under the pandemic and have closed down in one form or the other.

The Indian solar industry was already facing several challenges and is coming off a weak year. Solar installations in 2019 only amounted to 7.3 GW, a 15% decline year-over-year. In its Q4 & Annual 2019 India Solar Market Update, Mercom forecasted 8.5 GW of solar installations for 2020 before the coronavirus pandemic started affecting the markets.

Indian solar project developers are concerned about the delays their projects might face because of the production slowdown in China and the lockdown orders in India, which are in effect until April 14, 2020.

In a recent online survey conducted by Mercom India Research, almost 70% of the respondents said their business would be affected by over 15% due to Coronavirus.

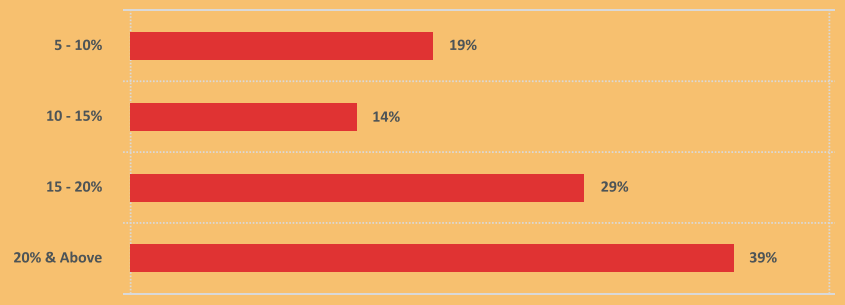
83% of the survey participants expect solar component supply shortages because of Coronavirus.

According to Mercom's India Solar EXIM Tracker, China was the largest exporter of solar modules and cells to India in the calendar year (CY) 2019, with a market share of nearly 78%.

"The outbreak of coronavirus has led to delays in the procurement of modules, panels, inverters, and other small components, further leading to a delay in commissioning deadlines," said Sanjeev Aggarwal, managing director, and chief executive officer (CEO) at Amplus Solar, a rooftop solar developer.

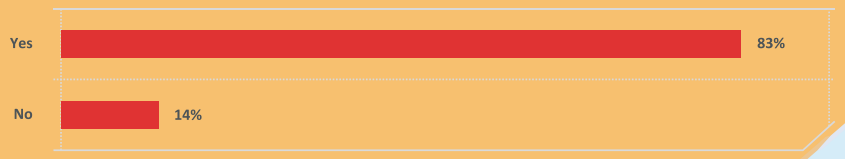
"If demand remains unmet, it can lead to an increase in the cost for the developers, who will have to opt for other expensive markets. This will eventually lead to a hike in prices. Thus, this issue is bound to affect the entire industry world over, if not rapidly catered to,"

Mercom Solar Survey:
By how much is coronavirus affecting your revenues adversely?



Mercom India Research

Mercom Solar Survey:
Do you anticipate supply shortages due to coronavirus?



Mercom India Research

Aggarwal added. Lockdowns in China have forced manufacturers to run their facilities at lower utilization rates or to stop operations completely. Even manufactured modules are facing delays because of export and import restrictions at ports.

"The pandemic has disrupted production and transport in China, and this has severely impacted the delivery timelines of key equipment. The virus outbreak has caused an increase in the cost of PV modules, which will thereby increase the solar tariffs," said Pinaki Bhattacharyya, CEO Amp Energy India.

"Although it is an evolving situation, and the long-term impact of the pandemic is still to be seen, the Indian government has declared it as a force majeure situation for project developers who would miss deadlines due to the effect of the coronavirus outbreak," Bhattacharyya added.

Module prices are expected to go up, at least in the short term due to both the China situation and because of the higher costs of Indian modules, should developers opt to source locally. This will increase overall project costs. On the other hand, declining demand may bring the prices down or keep them at the same levels.

"Since most of our raw materials come from China, our production and product delivery schedules have been interrupted because of the outbreak and the restrictions," said Abhishek

In India, Chinese solar modules and cells hold a market share of nearly 78%

Ranjan, Assistant Manager (Quality) at Premier Solar Systems, an Indian solar PV manufacturer.

"We are forced to use raw materials sourced domestically despite higher costs and lower quality. We are left with no other choice until the situation improves," Ranjan added.

However, considering the adverse impact of the Coronavirus pandemic on the global economy, the Ministry of New and Renewable Energy (MNRE) has issued an official memorandum which states that the time extension in scheduled commissioning of renewable projects due to the disruption of supply chains will be treated as a 'force majeure' event.

"We have already written to the SECI and other agencies notifying them of the outbreak and requesting them for an extension of the deadline for our projects. We are unable to procure components, and thanks to this, a lot of pending orders from Q1 will get delayed even further. Multiple vendors have written to us saying that their shipments and delivery schedules have been impacted," said an executive from a large Indian solar project developer.

Delays due to the outbreak will be considered as force majeure events in India

"We are continuing with other activities like engineering and plant-related work at these sites, but it is presently difficult to assess the impact on the project timelines because of the situation," the executive added.

However, the Ministry has clarified that the clause does not excuse a party's non-performance entirely but only suspends it for a specified duration.

Further, the Ministry decided that all project developers claiming the disruption and seeking time extensions should make a formal application to Solar Energy Corporation of India (SECI) or the National Thermal Power Corporation (NTPC) or other implementing agencies, giving documentary evidence in support of their claim.

"We are beginning to receive force majeure notifications from some of our suppliers related to this unfortunate development," said Murali Subramanian, President of Azure Power, an independent power producer (IPP), on an earnings conference call.

"While we do not expect this to have much effect on our operations for the next couple of months if the supply chain is indeed affected for a prolonged period, we believe that the force majeure clauses in our power purchase contracts will allow us extensions on our projects under construction without any penalty," he added.

Recently, speaking in the Rajya Sabha, Union Power Minister, R.K. Singh, explained that the Indian solar

industry is under no compulsion to import cells, modules and other equipment from China. He noted that they were free to meet their requirements from domestic or other sources.

However, he stated that the Ministry of Finance has already clarified that the "force majeure" clause may be invoked when considered appropriate in cases where the disruption to supply chains due to the coronavirus pandemic can be shown.

"Because of the situation in China, there is a shortage of wafers in the market right now, and we are unable to utilize our plants at full capacity. We are expecting this to be the situation for at least two more months," said an executive from a prominent Indian solar cell and module manufacturing company.

"To meet expenses in the coming two months, we will have to increase our prices until everything is settled in China," the executive said.

The government's move allowing the force majeure clause to be invoked for cases where genuine delays and disruptions is a good start for the industry. The relief it gives for the developers is similar to the "change in law" clause that was allowed previously for delays and inconveniences due to the imposition of safeguard duty.

Meanwhile, in China, solar manufacturers with facilities far away from Wuhan city of Hubei Province, the center of the epidemic, have reported that their operations have not been seriously affected. Some, like Growatt, with their facility located in Shenzen City, about 1,200 km away from Wuhan, have confirmed that they resumed production on February 14, 2020.

The Chinese solar inverter manufacturer added that most of its material suppliers are located in or around Shenzen, and the outbreak has had little impact on its supply chain and transportation. It said it had taken precautionary and protective measures for its employees and facility and that so far, none of its employees have been affected by the virus.

"Growatt has worked with clients on shipments and inventory before the Chinese New Year. So, our demand and supply in overseas markets are not affected by the outbreak. Shipments planned in February are expected to be delayed a little bit, but overall, we have no big issues," said Rucas Wang, Regional Director at Growatt.

The outbreak has led to delays in supplies of modules, panels, inverters, and other components

Although some Chinese manufactures are confident that it will have little impact, the outbreak in China has resulted in a supply chain disruption that has had rippling effects across industries in the world. Because of the intensity of the epidemic, all

provinces and cities were forced to implement protocols for public health emergencies. This delayed the resumption of public work to prevent the infection from spreading resulting in a shortage of human resources.

"Manufacturing, testing, and exporting are nearly normal across the country except for the regions that have been affected the worst by the infection," said a spokesperson from Heraeus, a German solar photovoltaic manufacturer with facilities in China. It added that it resumed production on February 10th, with the government's approval.

Most of the Chinese manufacturers Mercom spoke to said that they expect the impact of the outbreak to be temporary and that they expected things to go back to normal in another three to six weeks. They also were optimistic about the prospect of everything settling down by March. But that has not been the case.

"It will take at least six weeks for things to recover from the present situation. The industry has to resume and overcome the challenges; otherwise, the rising economic cost will be drastic, resulting in cash flow issues," according to inverter manufacturer, Ginlong Solis.

At the same time, some manufacturers have not been affected severely by the outbreak. "Our solar inverter and UPS factories are located in Fujian province, where operations are not severely affected. Any order demand or service will still be strongly and promptly supported," said Kehua Tech, a solar inverter manufacturer.

Other Chinese suppliers, Mercom spoke to said that the situation could take a few more months to normalize.

Most Indian developers were waiting to place their orders in April or May so that the shipment would arrive in July after the safeguard duty expired, expecting shipments to arrive in Q4 2020. In these cases, project deadline extensions will be critical, they added.

A SECI official told Mercom that the developers affected by module supply issues could approach them for extension of project commissioning deadlines under the force majeure clause. Once the cases are reviewed individually, the timeline extensions will be awarded based on the developers' requests after assessment. Developers need not approach the regulatory commission on this issue. It was also pointed out that the transmission lines for some of the projects that are to be completed by October, will not be ready until December 2020.

"What started as a supply chain disruption mostly stemming from China has now spread downstream into development activities in India. The more immediate challenge for the Indian solar industry is to gauge the impact of the coronavirus pandemic in the country and when work can safely resume after the current lockdown," said Raj Prabhu, CEO of Mercom Capital Group. "The solar industry is entering unchartered territory. It is more important than ever to follow safety protocols, but at the same time maintain momentum and keep moving forward," he added.

Impact of COVID-19 on India's Renewable Industry

India is currently under a 21-day lockdown to arrest the outbreak of the pandemic with only essential services operating with minimum workforce

The World Health Organization has declared COVID-19 a pandemic, that has disrupted life across the globe. While millions have been affected by it so far, Coronavirus has claimed several thousand lives and counting. The global economy has come to a standstill with businesses shutting off their operations temporarily in various parts of the world.

The impact of Coronavirus has finally reached the Indian clean energy sector. Mercom had forecasted solar installations in India to grow by 17% year-over-year due to a strong pipeline of projects. The Coronavirus pandemic has upended the industry, which depends on a global supply chain for components. Now, with India announcing a country-wide lockdown for three weeks, the industry needs to navigate through the effects and uncertainties in the coming days.

During this period, Mercom will cover the effects of Coronavirus on the industry and keep informing

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#1

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the readers on the most important developments that could affect the clean energy business across the country. Here are some important headlines from March:

Amid COVID-19 Lockdown, Power To Be Scheduled Despite 50% Reduction in Payment Security

March 30, 2020 - Considering the outbreak of coronavirus (COVID-19), which has severely affected the economy, the Ministry of Power (MoP) has issued a directive which states that the power may be scheduled even if the payment security mechanism (PSM) is reduced by 50% against the initial contract. The order will be valid until June 30, 2020. "Due to this (COVID-19 pandemic), many consumers of the distribution companies (DISCOMs) are unable to pay their dues. This has critically affected the liquidity position of the DISCOMs, thereby impairing their ability to make timely payments of generating and transmission companies and maintaining Letter of Credit," states the circular.

Indian Solar Industry Confronts Coronavirus Crisis

March 27, 2020 - The Coronavirus pandemic is proving to be the solar industry's biggest challenge this year, and the repercussions are being felt across industries all over the globe. Global supplies have been severely affected. The disruption has spread much farther than China because of the scale at which the country's manufacturing operates. Indian solar project developers are concerned about the delays their projects might face because of the production slowdown in China and the lockdown orders in India, which are in effect until April 14, 2020.

RBI Cuts Repo Rate to 4.4% to Boost Economic Activity Amid Coronavirus Pandemic

March 27, 2020 - As the country grapples with the Coronavirus (COVID-19) outbreak, the Reserve Bank of India (RBI) announced that the repo rate has been reduced by 75 basis points (bps) to 4.4%. The RBI Governor Shakti anta Das added that the fixed-rate reverse repo rate has also been reduced by 90 basis points to 4%. The fixed-rate reverse repo rate sets the floor of the liquidity adjustment facility (LAF) corridor. LAF is used to help banks adjust the mismatches in liquidity by enabling them to quickly borrow money in case of any emergency.

COVID-19 Lockdown: MNRE Extends Deadline for All Renewable Projects Under Construction

March 27, 2020 - The Secretary of Ministry of New and Renewable Energy stated that all renewable energy projects currently under implementation would be given an extension of time in light of the ongoing lockdown due to the Covid-19 pandemic. The duration of the lockdown and the time required to remobilize the workforce will also be taken into consideration while granting the extension.

India Will Not Levy Late Fee on Bills of Entry of Imported Cargo Amid COVID-19 Outbreak

March 27, 2020 - Amid the novel coronavirus (COVID-19) outbreak, the office of the Principal Commissioner of Customs (ACC-Import) issued a notice stating that late fee charge will not be levied on those bills of entry on the import general manifests (IGMs) that are filed between March 21 to 31, 2020, or filed late on or before April 3, 2020.

Staff at Renewable Generating Stations Allowed to Work During COVID-19 Lockdown

March 27, 2020 - Because of the ongoing lockdown due to coronavirus (COVID-19) outbreak, the Ministry of Home Affairs issued an order that all offices of the government of India, its autonomous and subordinate offices and public corporations will remain closed except certain essential services, including power generation and transmission units. Further, the ministry stated that to maintain uninterrupted power supply across states, power generation (including renewable power generation) is designated as an essential service.

Supreme Court: No Hearing of Petitions and No New Petitions Can be Filed Due to Covid-19

March 26, 2020 - The Supreme Court of India had indefinitely extended the period of limitation on filing petitions, applications, suits, appeals, and other proceedings at courts and tribunals across the country in light of the present circumstance caused by the Covid-19 pandemic. Further, the court said it had taken Suo-moto cognizance of the challenges faced by the country on account of the existing limitations. Still, it has decided to extend the restriction period, which will be declared on March 15, 2020.

Finance Ministry Announces Economic Relief Measures Amid Coronavirus Outbreak

March 24, 2020 - In the wake of the deadly Coronavirus (COVID-19) outbreak, which has affected the global economy, India's Finance Minister Nirmala Sitharaman announced relief measures for taxpayers and businesses as the country is fighting to curb the pandemic. The relief measures were announced, especially on statutory and regulatory compliance matters related to several sectors. Many renewable companies who are affected will likely get some relief as they face a few tough months ahead.

Renewable Supply Chain Disruption Due to Coronavirus to Be Treated As Force Majeure

March 23, 2020 - Considering the adverse impact of the Coronavirus pandemic on the global economy, the Ministry of New and Renewable Energy has issued an official memorandum which states that the time extension in scheduled commissioning of renewable projects due to the disruption of supply chains will be treated as a 'force majeure' event.

Coronavirus to be Covered Under Force Majeure Clause, Says Ministry of Finance

February 20, 2020 - Amid increasing doubt on the supply chains due to the spread of deadly Coronavirus in China, the Ministry of Finance (Department of Expenditure Procurement Policy Division) issued a clarification that Coronavirus will be covered in the force majeure clause and should be considered as a case of natural calamity. Further, the ministry has stated that this clause can be invoked wherever appropriate.

Industry News and Policy Briefs

The month also saw **Mahindra & Mahindra** Limited announce that its subsidiary, **Mahindra Renewables** Private Limited, has agreed to sell its entire stake in three subsidiaries to **CLP India** Private Limited (CLP) for ~₹3.40 billion ($47.35 million). The three subsidiaries include Cleansolar Renewable Energy Private Limited (CREPL), Divine Solren Private Limited (DSPL), and Neo Solren Private Limited (NSPL).

February saw a significant increase in the trade volume of both solar and non-solar renewable energy certificates in February. A cumulative sum of 1,299,737 solar **RECs** was traded on the **Indian Energy Exchange** (IEX) and **Power Exchange India Limited** (PXIL). Out of the total, 984,157 and 315,580 solar RECs were traded on the IEX and PXIL, respectively.

In another development, the **Union Minister of Coal and Mines,** Pralhad Joshi, recently announced India's plans to stop the import of thermal coal from **2023-2024.** Coal-based power makes up the largest share of power generation in India. However, considering that India has the fifth largest coal reserves in the world, stopping imports is not significant news on its own.

Also, in February, **Sterling and Wilson,** a Shapoorji Pallonji Group company, released its consolidated and standalone financial results for the third quarter (Q3) and nine months ended on December 31, 2019. The revenue of the company for the nine months of the financial year (FY) 2019-20 stood at **₹35.150 billion** (~$492.9 million), and the gross profit margin for the same period stood at 13.1% as compared to 9.3% for the nine months of FY19. The gross profit margin for Q3 FY20 was 7.8% as compared to 17.4% during the same period in FY19.

The **National Institute of Wind Energy** (NIWE) stated that the installable wind potential of the country is estimated to be at **695 GW** at 120 meters above ground level. Out of the estimated figure, nearly **347 GW** of wind projects can be installed on cultivable lands, followed by wastelands where **340 GW** could be possible.

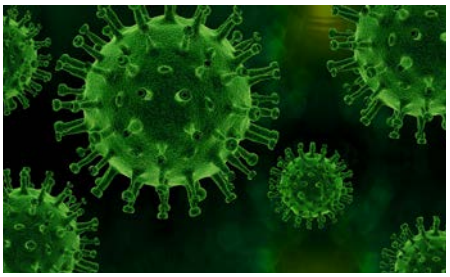
In February, **MNRE** also issued a clarification regarding the compulsory requirements of registration for solar manufacturers under the **Approved List of Models and Manufacturers** (ALMM). The clarification deals with the definition of the model, application fee, and provisions for manufacturers currently exempted from BIS certification for ALMM application purposes. The clarification deals with the definition of the model, application fee, and provisions for manufacturers currently exempted from BIS certification for ALMM application purposes.

Also, the **Ministry of new and Renewable Energy** (MNRE) decided that strict action will be taken against those solar project developers that are using imported solar cells and modules to develop projects under the **Domestic Content Requirement** (DCR) category. In India, DCR category projects were introduced to provide a guaranteed market for local solar component manufacturers.

The **MNRE** has opened an **Industry and Investors' Facilitation Centre,** which would work as a focal point to provide all the information regarding programs and policies of the government and resolve issues related to renewable energy investors and industry.

The **Indian Oil Corporation Limited** (IOCL) announced that it has partnered with **Phinergy**, an Israeli battery manufacturer, to produce metal-air batteries, which could potentially be used in electric vehicles (EVs). These batteries can be tailored for different needs like electric mobility and other stationery purposes.

February also saw the **Andhra Pradesh government** announce that it is planning to develop 10 GW of solar power projects as a permanent solution to supply free power to farmers in the state. Currently, the government incurs more than **₹100 billion** (-$1.39 billion) to meet the agriculture subsidy, lift irrigation power charges, and aquaculture subsidy every year.



Amid increasing doubt about the supply chains due to the spread of **Coronavirus** in China, the Ministry of Finance (Department of Expenditure Procurement Policy Division) issued a clarification that Coronavirus will be covered in the **force majeure clause** (FMC) and should be considered as a case of natural calamity. Further, the ministry has stated that this clause can be invoked wherever appropriate.

The month also saw four leading solar developers in the state petition the **Appellate Tribunal for Electricity** (APTEL) against the **Karnataka Electricity Regulatory Commission's** (KERC) order, which was issued in December 2019. The developers including, **Amplus Solar, Fourth Partner Energy, ReNew Power, and Cleantech Solar,** filed petitions separately, requesting the Commission to bring all the stakeholders on board before coming to any conclusion.

Total, a French oil and gas major, entered into an agreement with **Adani Green Energy Limited** (AGEL) to acquire a **50% stake** in a joint venture company for **$510 million** (-₹36.26 billion). The agreement will lead to the transfer of **2,148 MW** (AC) of operating solar assets, which are currently owned by AGEL to the new joint venture company. AGEL will own the remaining 50% stake in the company.

The **MNRE** has directed wind power developers in the vicinity of Air Force station at Bhuj to comply with the **no-objection certificate** (NOC) issued by the **Ministry of Defense**. One of the mandatory requirements is the standard obstruction markings and lightings as per IS 5613 notification and International Civil Aviation Organization (ICAO) standards on wind turbines.

The **Andhra Pradesh** government approved **₹29.84 billion** (-$415.67 million) to distribution companies in the state towards the payment of 25% of their losses, allowing them to clear their power dues. This is good news for developers who are operating in the state and struggling financially. The allowance comes under the Ujwal DISCOM Assurance Yojana (UDAY) program, which aims to help the struggling state-run distribution companies by providing them the required financial assistance.

The **Andhra Pradesh High Court** asked the state's distribution companies including, **Southern Power Distribution Company Limited** (APSPDCL) and **Eastern Power** Distribution Company Limited (APEPDCL), to clear the dues of wind developers within two weeks. The dues currently amount to a whopping **₹1.7 billion** (-$24.3 million). The high court asked the DISCOMs to reply to every petitioner in the case within two weeks.

Adani Green, a part of the Adani Group, announced its financial results for the nine months and quarter ending December 31, 2019. The total revenue for the company from operations in the first nine months of the financial year stood at **₹18.53 billion** (-$260.12 million), up by 35% on a year-on-year (YoY) basis.

The month saw the **Energy Efficiency Services Limited** (EESL), a joint venture of public sector units under the Ministry of Power, announce that it has successfully installed one million smart meters across India under the **Smart Meter National Program** (SMNP). Speaking on occasion, the Union Power Minister, R.K. Singh, informed that electric vehicles deployed by EESL have already completed 20 million cumulative kilometers.

In February, the **Ministry of New and Renewable Energy** (MNRE) designated **National Thermal Power Corporation** (NTPC) as the renewable energy implementing agency to facilitate the application of connectivity and long-term access in the interstate transmission system network. According to the **Central Electricity Regulatory Commission** (CERC), a renewable energy implementing agency is a company or an entity designated by the central or state government to act as an intermediary procurer to select and buy power from renewable energy generating stations and sell it to one or more distribution licensees.

The **Rajasthan Electricity Regulatory Commission** (RERC) set the pre-fixed levelized tariff for Component-A of the KUSUM program at **₹3.14** (-$0.044)/ kWh. The Commission added that the set tariff adequately reflects the higher cost for small-sized projects.

The **Tamil Nadu Electricity Regulatory Commission** (TNERC) issued a consultative paper for procuring solar power by distribution licensees and has asked all the stakeholders to submit their comments and suggestions by March 13, 2020. The report states that the total capacity of renewable power in the state is 14.14 GW.

February saw a significant increase in the trade volume of both solar and non-solar renewable energy certificates in February. A cumulative sum of 1,299,737 solar **RECs** was traded on the **Indian Energy Exchange** (IEX) and **Power Exchange India Limited** (PXIL). Out of the total, 984,157 and 315,580 solar RECs were traded on the IEX and PXIL, respectively.

With the ongoing confusion in the solar industry over the imposition of **Basic Customs Duty (BCD),** MNRE issued a notification asking solar PV manufacturers and associations to submit a list of machinery and capital goods which they would like to be included in the BCD exemption list. The MNRE consulted with the Ministry of Finance over the issue of exemption of BCD on the import of capital goods required for setting up manufacturing units for manufacturing solar cells, modules, wafers, ingots, and polysilicon.

The **Gujarat Electricity Regulatory Commission** (GERC) invited public opinion on a draft paper discussing issues in establishing tariff for solar power procurement by distribution licensees. The last date for sending comments and suggestions is March 4, 2020. The Commission released the discussion paper for feedback to initiate the regulatory process for setting the **solar power procurement tariff** for the financial year.

In another development, **MNRE** asked states to prepare innovative business models for implementing Pradhan Mantri-Kisan Urja Suraksha Evan Utthan Mahaabhiyan **(PM-KUSUM)** program. Citing the example of business models for the solarization of pumps adopted in Haryana, Gujarat, and Maharashtra, the MNRE has asked other states to follow suit.

The **MNRE** issued a notification to set up 50 GW of ultra-mega renewable energy parks in Gujarat and Rajasthan. The ultra-mega parks with a capacity of 25 GW each will be located at Khavada in Gujarat and Jaisalmer district in Rajasthan. The land will be made available to the developers for setting up of solar, wind, and solar wind hybrid projects at these locations.

The **Transmission Corporation of Andhra Pradesh** (APTRANSCO) issued a notice to the **Andhra Pradesh Electricity Regulatory Commission** (APERC) seeking amendments to the existing regulations for forecasting, scheduling, and deviation settlement for variable renewable energy projects.

Though distribution companies can take the help of state nodal agencies for implementing the second phase of the rooftop solar program, they have to be at the forefront of its implementation process. This was the crux of the latest suggestions from the MNRE, which also said that the maximum time required for the entire process of rooftop solar installation should be between 2.5-5 months after the consumer submits his request.

The **GERC** invited public opinion on a draft paper discussing issues while **determining tariffs** for procuring power from wind projects. The Commission released the discussion paper for feedback to initiate the regulatory process for setting the wind power procurement tariff for the financial year.

Major Tender and Auction Announcements in February 2020

This is a list of major tenders and auctions from the month of February. A comprehensive list can be found in Mercom's Tender and Auction Tracker and Alerts. Please contact info@mercomindia.com for more information

Top Large-Scale Solar Tenders

Here is a quick recap of the major tenders that were announced in February 2020:

The National Thermal Power Corporation **(NTPC)** issued a detailed request for selection (RfS) for **1.2 GW** of Interstate Transmission System (ISTS) connected solar projects across the country. The ceiling tariff for the tender was set at **₹2.78 (~$0.038)/kWh.**

The Gujarat State Electricity Corporation Limited **(GSECL)** floated a tender for **185 MW** of grid-connected solar projects ranging between 20 MW and 40 MW in capacity at various substations of the Gujarat Energy Transmission Corporation (GETCO).

Vedanta Limited, a diversified natural resources company, has issued a request for proposal (RfP) to install **100 MW** of solar projects in Jharsuguda district of Odisha. The solar project is to be located within and around its aluminum plant in Jharsuguda, on land owned by Vedanta. Vedanta has stated that a tariff cap of **₹3 (~$0.04)/kWh** will apply to the project.

The Assam Power Distribution Company Limited **(APDCL)** has reissued a request for selection (RfS) to procure a cumulative capacity of **100 MW** of power from grid-connected solar projects in four regions of the state through a tariff-based competitive bidding process. The tender was initially issued in January 2018. These projects are set to be developed under four tenders of 25 MW each. The ceiling tariff for the tender has been revised to **₹4 (~$0.056)/kWh** from the earlier ₹4.48 (~$0.07)/kWh.

Top Rooftop Solar Tenders

The Indraprastha Power Generation Company Limited **(IPGCL)** has floated a tender for the empanelment of firms for the supply, installation, and commissioning of rooftop solar systems. These grid-connected rooftop solar systems, ranging between 1 kW-10 kW and 10 kW-500, will be set up at various locations in Delhi. Of the **30 MW** capacity, 10 MW is slated for each of Delhi's three distribution companies.

The Mumbai Metropolitan Region Development Authority **(MMRDA)** has floated a tender for **4.43 MW** of rooftop solar projects at a station site of the Mumbai Metro Rail Project. These rooftop solar projects are to be built at Lines 7 and 2A of the Mumbai Metro Rail Project under the Renewable Energy Service Companies (RESCO) model for 25 years.

The Bharat Sanchar Nigam Limited **(BSNL)** has invited bids for **2.5 MW** of grid-connected rooftop solar PV projects on BSNL buildings in different zones of Maharashtra. The project will be developed under the RESCO model.

Major Auctions

The Uttar Pradesh New and Renewable Energy Development Agency **(UPNEDA)** announced the auction results for its **500 MW** solar tender. The winners of the auction were **NV Vogt Singapore,** who won a capacity of 50 MW at a tariff of ₹3.17 (-$0.044)/kWh., in consortium **Jakson** with **Al-Jomaih,** won a total capacity of 100 MW at ₹3.18 (-$0.045)/kWh. **Vijay Printing Press** won capacity of 25 MW, while Talettutayi Solar Projects Eight Private Limited **(SolarArise)** won a capacity of 9 MW under the bucket filling method. Both quoted a tariff of ₹3.18 (-$0.045)/kWh.

The Solar Energy Corporation of India **(SECI)** auctioned **1.2 GW** of the interstate transmission system (ISTS) connected solar projects (Tranche VIII). In the auction, SBE Renewables Fifteen Private Limited **(SoftBank), AMP Energy Green, and Eden Renewable Alma** won capacities of 600 MW, 100 MW, and 300 MW, respectively at the tariff of ₹2.50 (-$0.0348)/kWh. **ReNew Solar** won only 200 MW capacity out of the 600 MW; it bid at ₹2.51 (-$0.035)/kWh under the bucket-filling method.

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