

# Renewable Energy Monitor

## Oct-Nov-Dec 2017

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## Policy

**Govt to float tender for adding 20 GW of solar energy capacity.** The government on 24 November 2017 set out a roadmap for auctioning of wind and solar power to achieve the target of 175 GW capacity installation by 2022. Of this, 3.6 GW have already been bid out and 17 GW will be bid out by March. Additionally, 30 GW will be bid out in 2018-19 and 30 GW in 2019-20. Out of the wind capacity installation target of 60 GW, 32 GW have already been commissioned and the government intends to issue bids of cumulative capacity of about 8 GW this year. Of this, 5 GW have already been bid out, 1,500-2,000 MW will be bid out in January 2018 and 1,500-2,000 MW in March 2018. A total of 10 GW will be auctioned in the financial year ending 2018 and 10 GW in the year ending 2019, leaving a margin of two years for commissioning of the projects.

**Government proposes Rs 23,450-crore roof top solar scheme.** The Ministry of New and Renewable Energy has proposed **SRISTI** (Sustainable Rooftop Implementation for Solar Transfiguration of India) the scheme to incentivise the installation of roof top solar projects in India. The scheme will integrate discoms as an implementing agency in Phase-II of rooftop solar scheme, the statement added. The proposed scheme aims to achieve a national solar rooftop target of 40 GW till 2021-2022. It is proposed that a Central Financial Assistance will be provided only for installation of roof top solar plants in residential sectors. The residential users may install the plant of capacity as per their requirement and the respective State Electricity Regulatory Commission regulation. But, the subsidy support will be limited up to 5 KWP capacity of plant.

**Renewables capacity crosses 60 GW.** In a significant development, India's total renewable energy capacity crossed 60,000 MW in the September 2017 quarter. The country added 10,000 MW in the last nine months; the cumulative clean energy capacity had crossed 50,000 MW in the December quarter 2016. During the first six months of this fiscal, the total capacity added stood at 2,913 MW against 3,164 MW in the year-ago period. While the wind power sector is struggling for

capacity addition, solar segment continues to maintain momentum. Of the 2,913 MW capacity added this fiscal, solar power accounted for 2,349 MW, followed by wind at 421 MW, according to the MNRE. As on September 30, 2017, the total grid-connected installed renewable power capacity in India stood at 60,158 MW. Out of this, wind power's total capacity was 32,701 MW. Solar ground-mounted segment's capacity was 13,982 MW, while rooftop category had a capacity of 790 MW. Bio-power segment had a total capacity of 8,182 MW, while small hydro and waste-to-power accounted for 4,390 MW and 114 MW, respectively.

**Renewable ministry cautions anti-dumping body against imposing high duties on imported solar gears.** The renewable energy ministry has cautioned anti-dumping authorities against imposing high duties on imported solar equipment on the grounds that this can raise tariffs, make many projects unviable and seriously impede the growth of the sector. In a note to the DGAD (Directorate General of Anti Dumping), the ministry said domestic capacity is far short of the requirement of India's 100 GW target of solar power by 2022, and that developers should be given sufficient notice about any duty to be levied because "sudden imposition" can disrupt ongoing projects and create legal complications. The ministry wants to support local units, but it has argued that if at all a duty is imposed on imported solar cells, panels or modules, "it should be moderate so that there is not too much impact on solar power tariffs, otherwise the growth of the solar sector may be negatively affected".

**Solar Alliance to set up 1000 GW of solar energy by 2030.** The International Solar Alliance, a new intergovernmental body set up India's behest at the Paris climate change conference in 2015, has set its eyes on installing 1000 GW of solar energy by the year 2030. The 1000-GW objective, more of a desire when the ISA was launched IN 2016, has now become its official target. The announcement came on a day when the climate change conference in Bonn recorded some concrete progress in some areas of negotiations, ahead of the last two days of the ministerial rounds of meetings where political decisions would be taken to resolve the deadlock over contentious issues.

**Delhi to source 1,000 MW solar power by 2019.** By 2019, Delhi would have over 1,000 MW of clean energy, lessening the burden on fossil fuel, said power minister Mr Satyendar Jain. After six months of deliberations, all three discoms and the power ministry have agreed in principle to switch to green energy. The power department has also approved subsidies for solar pumps for Delhi farmers. Central PSU Solar Energy Corporation of India is the nodal agency and would be in charge of the tender process over the next three months. The solar panels, though, would be set up elsewhere in the country; Delhi would only buy the power generated.

**UPERC adopts Rs 7.02/unit solar tariff for nine bidders for 12 years.** The Uttar Pradesh Electricity Regulatory Commission has adopted Rs 7.02 per unit as the solar tariff for the year 2015-16 for nine bidding companies who have already commissioned their projects for 12 years. For the remaining six bidders, whose projects have not been commissioned, and which the UPPCL wants to terminate, the commission said that since these companies had filed petitions against the pre-termination notices and the matter is under its consideration, it will pass necessary orders on them separately. Of the nine companies who have commissioned their projects, Essel Infraprojects is set to gain as it was the lowest bidder at Rs 7.02/unit, while Adani Green Energy was among the highest at Rs 8.44. Sukhbir Agro and Shree Radhey Radhey, both quoted the highest tariff of Rs 8.60 a unit. Solar tariffs have come down to Rs 2.44 per unit in the latest reverse auction conducted by the Solar Energy Corporation of India.

**Goa unveils solar power policy.** The Goa Cabinet approved the much-awaited Solar Power Policy, under which the State expects to generate 150 MW of solar power by 2021, Chief Minister Manohar Parrikar said. The policy would come into force by the end of current financial year. It is divided into three categories, which includes even a unit producing up to 100 KV power. Residential societies, which can generate less than 100 KV power would be compensated by the government under this policy as per the Joint Electricity Regulatory Commission rates depending on the gross metering. The units producing more than 100 KV power will be compensated on net metering as the unit operator would be participating in the reverse gridding of the power. The policy also encourages power generation by individuals, who either have their own land where they can set up the unit or can procure NOC from the land owners for it.

[The Times of India](#), 4 November 2017 | [The Hindu Business Line](#), 13 November 2017 | [The Indian Express](#), 15 November 2017 | [The Economic Time](#), 25 November 2017 | [The Economic Times](#), 26 November 2017 | [The Financial Express](#), 30 November 2017 | [The Hindu Business Line](#), 6 December 2017 | [The Hindu Business Line](#), 21 December 2017



**Wartsila set to tap India's solar power potential.** The 5-billion euro Finnish energy systems provider, Wartsila, is looking to develop India as its biggest Asian market for battery storage solutions, given the huge potential from the country's solar power play. India's solar-power capacity has grown exponentially to around 14 GW and the government has set an ambitious target of 100 GW by 2020, but storage has been a missing link thus far and the government is now acknowledging the need for it. Therefore, the government wants the

industry to set up battery-manufacturing units in India as a sharp decline in prices of batteries between 2010 and 2017 has made battery-backed solar power more viable.

**New interpretation of customs rule leaves solar developers stranded.** A new interpretation of customs rules has jeopardised India's solar energy projects, with officials demanding payment of import duties on crucial inputs that were previously always shipped in without any levy, leaving developers stranded as 90% of these modules are not produced in India. This has held up about 1,000 containers of solar modules at the Chennai port, affecting almost all the leading developers because customs authorities have suddenly started classifying solar modules as "electrical motors and generators," which attract a levy of 7.5%, plus 2% education cess and 1% secondary and higher education cess, industry executives said. The Ministry of New & Renewable Energy is seized of the matter and has written to the finance ministry.

**Mahindra Susten to build India's 1st battery-backed solar project in Andaman.** Mahindra Susten, a part of the Mahindra & Mahindra group, is close to setting up India's first battery-backed solar power project of utility scale in the Andaman and Nicobar islands. The company has emerged lowest bidder in a tender invited by state run-NLC (formerly Neyveli Lignite Corporation), beating Adani Group, Hero Future Energies, among others with a bid of Rs 288 crore. As a part of a government initiative to encourage battery-backed solar power project, two other public sector companies Solar Energy Corporation in India and NTPC were to award similar projects but have scrapped it after inviting bids. Mahindra Susten would be doing the engineering, procurement and construction work for the project which is scheduled to be commissioned in 18 months from the beginning of the projects.

**GIP-led investors group to buy Equis for \$5 billion in largest ever clean energy deal.** A group of investors led by GIP (Global Infrastructure Partners) will acquire Equis Energy for \$5 billion. The other investors in the largest clean energy deal till date include Canada's PSP Investments (Public Sector Pension Investment Board) and China's CIC Capital Corporation among others. The sale includes the liabilities of \$1.3 billion and the Indian portfolio of the Singapore-based renewable energy developer, comprising green energy platforms Energon and Energon Soleq. Equis Pte. Ltd (Equis) and Global Infrastructure Partners (GIP) announced on 26 October 2017 the execution of binding documentation for the sale of 100% of Equis Energy for \$5.0 billion (including assumed liabilities of \$1.3 billion) in cash to GIP and co-investors. The transaction is subject to customary regulatory approvals and is expected to close in the first quarter of 2018.

**Shapoorji Pallonji Group in talks to sell stake in solar portfolio.** The process of consolidation continues in India's green energy space with diversified conglomerate Shapoorji Pallonji Group in talks to sell a stake in its solar power project portfolio. The privately held SP Group, which had \$5 billion in revenue in 2016, is seeking a financial investor given that financing at the lowest cost holds the key to success. This has been amply made evident in India's successive solar contract bid rounds. Backed by low financing costs and falling module prices, India's solar power tariff fell to a record Rs2.44 per kilowatt hour in May before firming up to Rs2.65 per KWH in an auction by the Gujarat government.

**Rohini mall gets India's 1st solar carport plant.** The country's first rooftop solar carport was inaugurated at a mall in Rohini. The solar plant, which has come up on the rooftop of a parking space at Unity One, can generate 300 KW of electricity daily and will meet 80% of the mall's daily needs, significantly reducing its carbon footprint. The plant, jointly developed by Tata Power Delhi discom and Tata Power Solar, will help the mall save Rs 50 lakh annually on electricity bills. The initiative is set up as part of NAPCC (National Action Plan on Climate Change) and is in line with the climate change agenda for Delhi and National Solar Mission. While inaugurating the plant, power minister Mr Satyendar Jain appreciated the efforts towards adopting solar power and reiterated Delhi government's commitment towards promoting rooftop solar power.

**Low solar tariffs impacting sector's health: Industry.** Rock-bottom solar power tariffs might spell good news for consumers and the environment alike, but for developers, it is now a matter of concern. Ironically, the problem is of their own making to a large extent. With aggressive bidding, solar power tariffs have been pulled down to Rs 2.42-2.65 per unit in the latest rounds, and this has made it difficult for companies to stay afloat. As a result, they have been sourcing inferior quality equipment like rooftop solar panels, inverters and mounting structures. And while suppliers offer guarantees and warranties for replacement, enforcing these becomes a challenge when products are sourced from tier-2 and tier-3 producers in China. Sources indicate that smaller suppliers vanishing in a few years is also not uncommon. Mr Gyanesh Chaudhary, MD and CEO of Vikram Solar, India's largest supplier of Solar PV panels, says the problem has always existed, but is likely to become a serious issue when many more projects come on-stream over the next couple of years.

**Chinese solar panels cloud prospects of \$2 billion investment in domestic units.** Indian solar module makers are struggling to stay in business as the price differential with imports has widened to 10-12%, prompting developers to opt for overseas supplies and stunting government's 'Make in India' campaign. Nearly all major domestic players such as Indosolar, Tata Power Solar, Adani Group, Jupiter Solar and state-run Bhel are struggling to remain viable in the face of

undercutting by cheaper supplies from modules manufactured by Chinese-owned companies located in the mainland and outside. The situation is similar to what happened a decade back when the government set out on an ambitious plan to expand thermal generation capacity. Developers opted for cheaper equipment from China to offer low tariffs, which nearly pushed domestic manufacturers to the brink till the government levelled the field with quality and other norms. Cheaper imports last year helped pull down solar power tariff to Rs 2.44 per unit, or lower than coal-fired electricity. But a rush of imports has made domestic manufacturers fear for their \$2 billion investment.

**Dumping duty on solar panels sees hard lobbying.** The Directorate General of Safeguards & Anti-Dumping held the first oral hearing to investigate allegations of dumping imported solar cells and modules. While all parties exchanged the data on imports and the harm caused by imports at the meeting, most solar project developers operating in India took a stand against any anti-dumping duty. The domestic solar panel manufacturing industry, in its petition, had submitted that around 80 per cent of the market had been cornered by imports. The domestic industry, through the ISMA (Indian Solar Manufacturers' Association), has taken the position that as imports harm the indigenous sector, a retrospective duty should be imposed on the importers.

[The Economic Times, 10 October 2017](#) | [The Economic Times, 13 October 2017](#) | [The Economic Times, 18 November 2017](#) | [Mint, 26 October 2017](#) | [Mint, 27 October 2017](#) | [The Times of India, 28 November 2017](#) | [The Indian Express, 3 December 2017](#) | [The Times of India, 11 December 2017](#) | [Business Standard, 13 December 2017](#)



**Wind power tariff fall to historic low of Rs 2.64/unit.** The wind power sector witnessed a new record at midnight during the second round of bidding for 1000 MW of power projects by the Centre. Tariff fell by 23 per cent in just six months to a new low of Rs 2.64 per unit in an auction held on Wednesday by SECI (Solar Energy Corporation of India). ReNew Power and Orange Sirong quoted the lowest tariff to win 250 MW and 200 MW, respectively. INOX Wind and Green Infra Wind Energy followed suit and won 250 MW each at Rs 2.65 per unit. These are fixed tariffs for 25 years. Adani Green Energy got 50 MW at Rs 2.65 per unit.

**Wind power capacity addition put on fast track, 4,500MW up for auction.** The government is planning to auction 4,500 MW wind projects in the next four months to upscale the wind capacity addition in the country, sources say. The successive bids come in backdrop of meagre wind capacity addition this year, as the government is looking to enhance its capacity installation in the wind sector. The auctions will be conducted by SECI (Solar Energy Corporation of India).

**ReNew Power to buy wind power business of KC Thapar Group for Rs 1,000 crore.** ReNew Power is making a Rs 1,000-crore acquisition of wind power assets of the KC Thapar Group, helping India's biggest renewable energy player strengthen its position in the rapidly consolidating sector. ReNew Power will acquire three fully operational plants with a total capacity of 103 MW in Andhra Pradesh in one of the biggest deals in renewable energy sector in 2017, as the market leader shifts its strategy from primarily organic growth to big acquisitions. Re-New Power competed with a dozen Indian and foreign bidders for the assets. The projects comprise 79 MW at Molagavalli in Kurnool district and 24 MW at Borampalli in Ananthapur district, supplying power to Andhra Pradesh discoms at Rs 4.80 per unit at 25 year long-term contracts.

**‘Specify wind zone for projects during auction’.** Wind auctions should specify which wind zone the projects being bid for are to be located in, or should have different base prices for different zones. If not, wind developers in high wind velocity zones get an unfair advantage, the IWPA (Indian Wind Power Association) has said in a recent letter to the MNRE (Ministry of New and Renewable Energy). The two wind auctions held by Solar Corporation of India (SECI) so far in February and October 2017, as well as the one conducted by Tamil Nadu in August, did not include any conditions relating to wind zones. The IWPA has pointed out that there are five different wind zones in the country, as classified by the National Institute of Wind Energy. Wind speeds, and accordingly wind power densities, vary between 220 wind energy per metre square in Zone 1 to above 440 in Zone 5. Accordingly, the capacity utilisation factors (CUFs) of the wind projects set up too vary from 22% in Zone 1 to 35% in Zone 5, which in turn affects the tariffs at which wind developers in the different zones are able to supply power. Wind projects set up in zones with higher wind power densities can supply cheaper power,

putting those in lower wind power areas at a disadvantage in auctions unless the wind zone is specified, the letter notes.

**Wind auction guidelines set minimum plant size at 25 MW.** A wind energy project secured through auctions should have a minimum size of 25 MW if it supplies power to one state and 50 MW if it supplies to more than one state, say the guidelines for wind auctions. Wind energy projects should have a CUF (minimum capacity utilisation factor) of 22% and will be penalised if they fall below that mark. If the CUF is higher than specified in the bid document, the excess power will be paid for by the buyer at 75% of the tariff decided.

#### New Framework

- ▶ Wind developers must indicate the location of their projects in their applications
- ▶ Show evidence within seven months of the signing of the power purchase agreements (PPAs) that they have actually acquired full rights for 25 years to all the land they will need to set up their projects,
- ▶ The period of a power purchase agreement (PPA) should be minimum 25 years.
- ▶ If there are any changes in the relevant laws over the 25 years of the contract that cause financial losses to the developers, they have to be compensated for it by the power procurer.
- ▶ They also lay down that if the discom concerned is unable to evacuate the power agreed upon at any particular time for no fault of the wind energy generator, it must offset this loss by accepting the same amount of additional power over the next three years and paying for it.

[Business Standard, 6 October 2017](#) | [The Economic Times, 16 October 2017](#) | [The Economic Times, 21 November 2017](#) | [The Economic Times, 7 December 2017](#) | [The Economic Times, 12 December 2017](#)



## Investments

**\$1 billion guarantee can lead to \$15 billion investment for solar energy.** A USD 1 billion guarantee could crowd in up to USD 15 billion of investments for 20 GW of solar PV capacity in more than 20 countries, says a study by [Common Risk Mitigation Mechanism](#). The CRMM is a multilateral market platform, which received initial support from 17 countries with high solar potential, including India, France, Australia, Mali, Namibia, and Nigeria.

The study was released 13 November 2017 at the India Pavilion at the COP23 climate negotiations in Bonn. It outlines the 20 GW plan as a pilot phase with its eventual aim to leverage billions of dollars of impact capital to catalyse USD 1 trillion of domestic and international private institutional capital, and transform global renewable energy markets. The idea is to develop a sustainable financial ecosystem, centred around an international guarantee mechanism, which could pool various types of risks and pool projects across many countries to lower the costs of hedging against those risks.

**'Indian renewable energy firms among lowest rated'**. Indian renewable energy companies are among the most poorly rated investment grade companies in the Asia-Pacific region, according to a report by ratings agency [Fitch, 2018 Outlook on Asia-Pacific Utilities](#). "Most of the issuers are owned by their respective sovereigns due to the strategic importance of energy supply," Fitch's said. "These entities also have strong standalone profiles given solid and stable cash flow generation. At the bottom end are the Indian renewable issuers with ratings that reflect lower plant utilisation, limited operating history, volume risk, weaker counterparties, and weak but improving financial profiles." The agency expects renewable energy to make up a larger portion of India's electricity generation, bolstered by untapped generation potential, strong policy support and lower tariffs.

**India needs over \$200 bn of investment in renewable infrastructure.** India is on track to catalyse \$200-300 billion of new investment in its renewable energy infrastructure in the next decade with global capital inflows playing an increasingly crucial role. India's decarbonisation policy is in line with global trends which, since 2011, have been seeing investments in renewable energy infrastructure running at two-three times of that for new fossil fuel capacities, Mr Tim Buckley, Director of IEEFA (Energy Finance Studies Australasia with the Institute for Energy Economics and Financial Analysis), said. At present, India relies on thermal power generation for 80 per cent of its electricity, while hydro supplies a significant 10 per cent and renewables just seven per cent.

[The Hindu, 20 November 2017](#) | [The Economic Times, 21 November 2017](#)