

# Renewable Energy Monitor

## July-August 2017

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## Policy

**Government fears solar developers may delay projects to 'gain' from fall in tariffs.** With the steep fall in solar tariffs in the last two years, the MNRE has written to all states to ensure that solar developers do not get “undue benefits” from the development by insisting that solar projects meet the deadlines initially set for them without any extensions.

Tariffs have fallen from Rs 7-8 per unit in mid-2015 to Rs 2.50-3.50 per unit at present. The lowest tariff was Rs 2.44 per unit at a solar auction conducted for projects at the Bhadla Solar Park, Rajasthan. The fall is largely due to the lowering of prices of solar cells and modules in the global market, especially in China, which has seen considerable overproduction. The MNRE is concerned that developers who signed PPAs at fairly high tariffs while solar equipment prices were also high, could earn a windfall over the next 25 years most solar PPAs are for 25 years – if they delayed buying their requirements and did so after prices had dropped.

**UP turns focus to solar power, to generate 10,700 MW by 2022.** The Uttar Pradesh government has proposed to source 8 per cent of its electricity requirements through renewable energy by 2022. According to the [Draft UP Solar Power Policy-2017](#), the state government has also proposed to meet the target of generating 10,700 MW solar power. This includes 4,300 MW from rooftop solar projects, by financial year 2022. Under the proposed policy, the government will set up solar parks with a minimum capacity of 100 MW.

The State, through the UPPCL ([Uttar Pradesh Power Corporation Limited](#)) or the distribution licensee, will offer to purchase 100 per cent of the power generated from a solar park. It will also be mandatory to have at least 50 per cent of the power generated from the parks to be sold to a UPPCL Distribution Licensee. These benefits will be extended to private solar park developers. A Central Financial Assistance of Rs 25 lakh for detailed project report for each solar park and Rs 25 lakh per MW or 30 per cent of project cost will be made available for the solar park.

### This solar policy has the following specific objectives:

- To encourage participation of Private Sector and provide investment opportunities to set up solar power projects in the state
- To support in providing environment friendly and affordable Power for All
- To promote Research & Development, innovations and skill development in the state
- To achieve its target of 8% Solar Renewable Purchase Obligation (Solar RPO) by 2022.

### In two years solar energy for residential

**sector would be cheaper than electricity grid: Solar players.** In the next two years, solar power will be cheaper than the electricity grid in the residential sector, says solar energy provider [SunSource Energy](#).

The firm successfully implemented the first two phases of a 100 MW solar project in South East Asia on 24 July 2017. Stating that while the solar energy in India has already reached 'grid parity' in commercial, industrial and utility sectors, soon this would be achieved in residential sector as well.

**State electricity boards hurting renewable power by renege on contracts.** The falling prices are hurting renewable energy producers with a series of state electricity boards now wanting to renegotiate contracts with them to re-price electricity due to falling prices in other words, there is a very real danger that SEBs will renege on contracts with renewable energy suppliers each time prices fall. In the case of Andhra Pradesh, while PPAs had been signed in 2015 at rates between Rs 4.76 and Rs 4.84 per unit, the Andhra discom now wants these rates to be renegotiated to meet the latest bids of Rs 3.46 per unit. Worse, while the central government had announced a series of incentives for renewable power generators, the AP discoms have written to the regulator to ask for these incentives to be passed on to them. In Rajasthan, more than half a dozen renewable power suppliers have filed 19 petitions alleging the SEBs frequently back down their renewable energy demands. And in Karnataka, similarly, the state-owned discom has cancelled 76MW of PPAs and the regulatory commission has said that the state has enough PPAs to meet its renewable purchase obligations.

**Government eases environmental clearance rules for solar power projects, parks.** In move that would bring relief to solar power developers, the Union environment ministry has said that provisions of the Environmental Impact Assessment notification, 2006, which mandate environmental clearance for various projects, will not apply to solar PV power projects, solar thermal power projects and solar parks. The ministry has, however, clarified that the disposal of PV cells will be covered under the provisions of Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016. It also said that the development of solar parks will be covered under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981.

**India, Germany sign pact to improve grid integration of renewable energy.** India and Germany signed an agreement on technical cooperation under the Indo-German Energy Programme – Green Energy Corridors (IGEN-GEC). The agreement was signed by India's Ministry of New and Renewable Energy and Deutsche GIZ GmbH India ([Gesellschaft für Internationale Zusammenarbeit](#)) on behalf of Germany. An official statement said that the main objective of this programme component is to improve the sector framework and conditions for grid integration of renewable energy. In 2013, Germany had decided to provide concessional loans of up to 1 billion euro through KfW ([German Development Bank](#)). In addition, it had offered to lend up to 10 million euro under technical assistance in forecasting, balancing, market design, network management and demand side energy efficiency implemented by GIZ.

[The Economic Times, 18 July 2017](#) | [The Hindu Business Line, 25 July 2017](#) | [Economic Times, 24 July 2017](#) | [The Financial Express, 1 August 2017](#) | [Mint, 23 August 2017](#) | [The Hindu Business Line, 28 August 2017](#)



Solar

**NLC biggest winner in 1,500-MW Tamil Nadu solar auction.** India's latest solar auction, one of the biggest in the country, drew a surprisingly enthusiastic response with a big chunk of the 1,500 MW of projects on offer won by a state-owned mining company. The lowest bid in the auction in Tamil Nadu, where solar radiation is weaker than in Rajasthan, came from Bengaluru-based Raasi Green Earth Energy, which won 100 MW at Rs. 3.47 per unit, according to a list of official winners provided by one of the successful bidders. There were 18 winning bids among the 25 put in for the latest Tamil Nadu auction,

at tariffs varying from Rs. 3.47 to 3.97 per unit. The tender states that all winners will have to agree to sell the power at the lowest tariff reached or opt out. The biggest winner was public sector mining giant NLC India, which had bid for the entire 1500 MW, but was awarded 449 MW.

**Tata Power DDL to set up two pilot solar microgrids in Bihar.** TPDDL (Tata Power Delhi Distribution) plans to set up two pilot solar microgrids in Bihar in partnership with the Massachusetts Institute of Technology Center for Energy and Environmental Policy Research, General Electric and Tata Trust. With this, the company is exploring a viable business model for distributed electricity generation and electrification of remote areas. The company identified two villages in Bihar, Tayabpur and Behlolpur in Baishali district after a detailed study. The study was conducted to estimate the number of households in each village and total population, along with road network, average per capita income and willingness to pay for electricity. The Behlolpur village is situated on an island in river Ganges. The model will help in identification of suitable locations for electrification based on various factors.

**Half of 1,396-MW rooftop solar capacity added in FY17.** India had a rooftop solar capacity of 1,396 MW at the end March 2017, of which almost half was added in the previous financial year, according to a research report. Tamil Nadu had the highest rooftop solar capacity with 163 MW, followed by Maharashtra with 137 MW and Rajasthan with 88 MW. Gujarat had 87 MW, Karnataka 83 MW and Haryana 78 MW, according to the [Rooftop Solar Map 2017](#) brought out by consultancy [Bridge to India](#). A total of 590 MW was installed on rooftops of industrial establishments. Homes and commercial establishments had 304 MW and 313 MW, respectively, while public sector units put up 189 MW.

**Warburg Pincus to invest up to \$100 mn in CleanMax Solar.** In one of the largest overseas investments in the Indian rooftop solar space, [Warburg Pincus Llc](#) will invest up to \$100 million in [CleanMax Solar](#), the on-site rooftop solar power developer said. The investment by the US-based private equity firm indicates the deal-making focus on the rooftop solar space given the race to the bottom of solar power tariffs for grid-connected utility-scale projects. The deal will provide dry powder to the firm at a time when financing at low costs has become key to success. [CleanMax Solar](#) claims to be India's largest on-site solar power provider with a combined on-site capacity of around 100 megawatts (MW).

**Mr Suresh Prabhu flags off India's first solar-powered 1,600 HP train coach.** India's first solar-powered DEMU (Diesel Electric Multiple Unit) coach was flagged off by Railway Minister Mr Suresh Prabhu from the Safdarjung Railway Station in New Delhi. The country's first 1,600-horsepower DEMU coach is equipped with solar-powered hotel load system installed and commissioned by Jakson Engineers Limited. According to the official statement, the installed solar rooftop system will generate 7,200 kilowatts (KW) of energy per year that will be used for powering internal lights, fans and other electrical systems of the coach.

**DTC goes 'green', opts for solar power.** The DTC (Delhi Transport Corporation) is all set to "go green" by using solar energy and will reduce its electricity bill by 50 per cent in the coming years. DTC has joined hands with C&S Electric to set up solar power generation units at its bus depots. Grid-connected rooftop solar photo voltaic power plants have already been installed at Hari Nagar, Wazirpur and BBM bus depots, having an aggregate capacity of 347 KWP. According to experts, the step will generate electricity, help in energy saving and revenue generation.

**Crashing solar tariffs crush storage plans.** The steep fall in solar tariffs may have delighted discoms and other power consumers, but it is also having unintended consequences. It forced the SECI (Solar Energy Corporation of India) to cancel two tenders it had announced in 2016 which were to include storage capacity for the first time in India. One disadvantage of both solar and wind power is their ‘erratic’ or ‘infirm’ nature they are available only when the sun shines bright or the wind blows above a certain speed. To provide uninterrupted power, storage batteries are required alongside the solar or wind farm, but such batteries do not come cheap. Experts estimate their cost at around \$450 per KWH thus including storage adds considerably to the cost of a project and pushes the tariff up. None of the solar plants operating in the country so far include storage, but transfer all the power they produce immediately to the grid. Thus they are able to supply power for a maximum of only around 12 hours a day.

**India adds 4.8 GW of solar capacity in H1.** India has added 4,765 MW of solar power generation in the first half of 2017, surpassing the 4,313 MW installed during 2016. Of this, 1,869 MW was added in the second quarter of 2017, according to [Mercom India Research](#). While large-scale solar installations aggregated to 1,639 MW in Q2 2017, rooftop installations accounted for 230 MW. In the first half of 2017, large-scale solar installations made up 4,290 MW (90 per cent) and rooftop installations totalled 475 MW (10 per cent) of the total. Cumulative solar rooftop installations crossed a significant milestone of 1 GW at the end of Q2 2017.

**After Uttar Pradesh, Jharkhand manages to renegotiate solar tariffs.** Solar power developers who won the mega auction of 1,200 MW of projects in Jharkhand 16 months ago have agreed to reduce tariffs, which will help them sign power purchase agreements. Jharkhand is the second state after Uttar Pradesh to renegotiate solar tariffs arrived at through an auction. But while UP went back on signed PPAs, Jharkhand has not actually signed any because the state distribution company found it too costly. Developers had offered a tariff of Rs 4.99 per unit of power to the JREDA (Jharkhand Renewable Energy Development Agency) at a recent meeting. Among projects offered at 45 different locations in the state, winning bids ranged from Rs 5.08 to Rs 7.95, depending on size and location of the project.

**Greenko Solar to acquire stake in Pennar’s renewable energy unit.** Pennar Industries Ltd, a Hyderabad-based engineering company, said its board has agreed to sell a stake in its subsidiary Pennar Renewables Pvt. Ltd to Greenko Solar Energy Pvt. Ltd, the solar energy arm of Greenko Energy Holdings. Pennar Industries, established in 1988, is engaged in manufacturing precision engineering products such as cold rolled steel strips, precision tubes, railway coaches, pre-engineered building systems, sheet metal components and road safety systems.

**Tata Power-DDL wins solar innovation, excellence award 2017.** Tata Power Delhi Distribution (Tata Power-DDL) has won the prestigious solar innovation and excellence award 2017 under innovative project rooftop scale category. The company has been awarded for taking innovative and positive steps to promote sustainable development of rooftop solar projects in Delhi. The award ceremony was organised by [‘Mission Energy Foundation’](#) in association with the Ministry of New and Renewable Energy.

[The Economic Times, 3 July 2017](#) | [The Economic Times, 7 July 2017](#) | [The Economic Times, 14 July 2017](#) | [Mint, 14 July 2017](#) | [Business Standard, 15 July 2017](#) | [The Statesman, 19 July 2017](#) | [The Economic Times, 20 July 2017](#) | [The Hindu Business Line, 8 August 2017](#) | [The Economic Times, 9 August 2017](#) | [Mint, 15 August 2017](#) | [The Pioneer, 17 August 2017](#)





**Inox wind on road to insolvency after NCLT clears process.** Wind power solutions company Inox Wind is headed for insolvency after the NCLT (National Company Law Tribunal) Chandigarh bench ordered the commencement of the process in response to an operational creditor's plea, in the first such case in the renewable energy sector. The company has been facing tough times, reflecting the dichotomy in the renewable energy sector where capacity is growing driven by the government's solar energy push, but where wind energy players are forced to compete with the sharply lower tariffs quoted by the solar power sector. In May, the management of Inox Wind had told equity analysts that a substantial part of its order book will turn insignificant as the sector moves from feed-in tariff-based system to auction based market.

**Reverse auction of second tranche of 1 GW wind power projects delayed.** The reverse auction for the second tranche of 1,000 MW wind power projects, for which bids of more than 2,800 MW have already been received, will not be conducted before the second half of August. The auctions will now take place only after the CERC (Central Electricity Regulatory Commission) clarifies the procedure for allocation of transmission connectivity. The CERC ruling will also have a bearing on the aggression to be shown by the bidders. The government's first wind auction held in February discovered record-low tariff of Rs 3.46 a unit, which is 17-30% lesser than the feed in tariff prices in windy states.

**Transmission preference for wind projects.** The government has told the central power regulator that winners of wind project auctions be given preference in transmission facilities, a move that should help achieve the target of 60,000 MW of wind energy by 2022 but has upset firms that did not win projects. Mr Anand Kumar, Secretary at the Ministry of New and Renewable Energy, has communicated this to the Central Electricity Regulatory Commission days before the quasi-judicial body hears the matter.

**Wind power tariff hits new low of Rs 3.42 per unit.** The price of wind-based electricity touched a new low of Rs 3.42 per unit at the auctions held on 29 August 2017 by Tamil Nadu's state-owned electricity distribution company, [Tangedco](#). The latest tariff is lower than the Rs 3.46 per unit discovered in the maiden wind auction held by the central government in February, and far below the range of Rs 3.71-6.04 under the feed-in-tariffs (FiT) system that allows cost-based compensation to wind power units. Analysts said the continuous fall in wind power prices will hit the generators' internal rate of return (IRR), especially since it follows the withdrawal of generation-based incentives by the government. However, the lower tariffs have reduced the market risk, as discoms are unlikely to renege on the purchase obligations.

**Environmental impact assessment not needed for wind projects.** The government's expert forest panel has given its approval to a 40 megawatt (MW) wind power project in Andhra Pradesh—on the basis of a single contested study on migratory birds saying an environmental impact assessment is unnecessary for wind power projects which produce renewable energy. Its recommendation comes despite the wildlife division of the Ministry of Environment, Forest and Climate Change advocating the need for an EIA. This is not the first time that environment ministry's forest advisory committee has cleared a wind power project despite objections from other expert members. In June 2017, the panel approved clearance of 297.38 hectares of forest land in Kutch district of Gujarat for a 400MW wind power project, overriding objections that it posed a risk to migratory birds that frequent the area in winters, and bats.

[The Economic Times, 15 July 2017](#) | [The Financial Express, 28 July 2017](#) | [The Economic Times, 16 August 2017](#) | [The Financial Express, 30 August 2017](#) | [Mint, 31 August 2017](#)



## Investments

**Tata Power to invest \$90 million in renewable energy arm TPREL.** [Tata Power Co. Ltd](#) plans to invest around \$90 million in equity capital in its renewable energy arm TPREL ([Tata Power Renewable Energy Ltd](#)) as the company seeks to develop its immediate pipeline of 320 MW of solar assets, two people aware of the development said. [TPREL](#) currently owns around 2 GW of solar and wind assets, including the assets that it acquired from [Welspun Energy](#).

In all, Tata Power owns over 3GW of green assets, including its hydropower assets. TPREL had in June 2016 1.1GW of solar and wind assets of Welspun Renewables Energy Pvt. Ltd, a part of the \$3 billion Welspun Group, across eight states in India. Of this, about 990 megawatts MW is in solar projects and about 150 MW in wind projects. As part of the plan, the company invested around Rs170 crore in TPREL last quarter, said one of the two people cited above, requesting anonymity as he is not authorized to speak to reporters.

**Jakson Group to invest Rs 700 crore to set up new solar plant.** It is investing Rs 650-700 crore in a new plant in Gujarat that will have a capacity of 1,000 MW of solar modules and 250 MW of solar cells in three years, Jakson Group CMD Mr Sameer Gupta said. Jakson is funding the project through internal accruals and debt in the ratio of about 30:70.

**India among top ten green bond market.** Energy research firm [Bridge to India](#) noted that with the combined issuance of \$4 billion, India has put itself among the top ten green bond markets in the world. The feat was supported by Greenko and Azure Power together raising \$1.5 billion in two weeks. Azure Power it would issue an inaugural \$5 million green bond offering, maturing in 2022. The other companies that have raised global funding through green bonds are ReNew Power, NTPC, Rural Electrification Corporation (REC), IDBI Bank, Axis Bank, Yes Bank and L&T Infrastructure Finance.

**Indus Towers to invest Rs 350 crore on green drive.** [Indus Towers](#) will spend Rs 350 crore this financial year to convert its diesel run sites to green energy as the country's largest telecom tower provider braces for a short-term disruption due to consolidation in the Indian industry. The company, with almost 123,000 towers, is confident of strong growth in the medium to long term, after its two major shareholders and tenants Vodafone India and Idea Cellular merge over the next year, triggering rationalisation of overlapping towers, said Mr Bimal Dayal, CEO Indus Towers.

**Mitsui set to pick up stake in OMC Power.** In perhaps the first such deal in India's mini-grid space, [Japan's Mitsui and Co.](#) will acquire a stake in OMC Power Pvt. Ltd, two people aware of the development said. The 1 billion Japanese yen (about Rs59 crore) investment is also a first by one of Japan's largest companies in India's renewable energy sector. Mitsui has been present in India in sectors such as steel, agri-processing and pharma.

[Mint, 19 July 2017](#) | [The Economic Times, 24 July 2017](#) | [The Financial Express, 1 August 2017](#) | [The Economic Times, 24 August 2017](#) | [Mint, 30 August 2017](#)