Renewable Energy Monitor

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Policy

- Renewable companies line up for solar rooftop projects Tariff ranges from Rs 3-Rs 7 per unit for pan India projects
- 25 states fail to meet solar capacity target this fiscal
- TRAI proposes setting up renewable energy targets in telecom sector
- Storage- linked renewable energy to reach Rs 5 kWh by 2022

Solar

- India's solar capacity may double to 18 GW in 2017
- Azure Power commissions largest solar power project (150MW) in North India
- Cross-subsidy of power tariffs lure businesses to solar energy
- Israel harnessing sunshine with world's tallest solar tower
- Energy Budget 2017-18: Solar power to feed 7,000 railway stations says Finance Minister

Wind

- Suzlon to execute 226.8 MW wind power project in Andhra Pradesh
- Tata Power Renewable Energy commissions two projects in Andhra Pradesh, Tamil Nadu
- Suzlon, Gamesa achieve milestones in wind-power capacity installation
- SECI's 1GW wind power tender sees high interest
- Tamil Nadu receives most bids for wind energy projects

Bio

- India's kitchen-waste biogas tech goes to Fiji
- Industry body seeks policy to mandate usage of biodiesel

Investments

- World Bank's IFC invests $125 million in Hero Group renewable energy unit
- Investment Corporation of Dubai eyes India renewable energy investments

Policy

Renewable companies line up for solar rooftop projects tariff ranges from Rs 3-Rs 7 per unit for pan India projects. In one of the largest tenders for the rooftop solar power projects, sector majors lined up to bid in a wide range of tariff - from Rs 3 per unit to Rs 6.9 per unit. The capital expenditure quoted by the companies is in nominal range of Rs 59,000 per kWp to Rs 79,000 per kWp.

Against the tender of 500 MW, the bidding agency SECI **(Solar Energy Corporation of India)** received bids totaling 602 MW. SECI would provide 30 per cent capital subsidy to the lowest cost bidder. The tender is for rooftop solar projects for residential and institutional segments. SECI will disburse 20% subsidy at the time of commissioning with balance 10% provided one year after commissioning. The sector tracking agency mentioned that the Indian rooftop market is currently growing at over 100% annually aided by fundamental shift in the sector and this tender will provide a major boost to the residential and institutional market segments.

25 states fail to meet solar capacity target this fiscal. In terms of renewable power purchase obligations during 2015-16, only six states exceeded their targets, according to the government. With six years left for India to achieve its goal of generating 100 GW of electricity from solar projects, 25 states have fallen short of adding capacity by some 2,000 MW so far in 2016-17.

Exceeded	Achieved	Laggards	Not any
Andaman & Nicobar	Tamil Nadu	Maharashtra	Manipur
Meghalaya	Maharashtra	Uttar Pradesh	Goa
Karnataka	Rajasthan	Haryana	
Nagaland	Gujarat	Jharkhand	
Himachal Pradesh	Haryana	Odisha	
Andhra Pradesh	Madhya Pradesh	Jammu & Kashmir	
	Chhattisgarh	West Bengal	
	Punjab		

The biggest laggard's states miss the mark by more than 100 MW. The remainder achieved up to 59% of their targets, with two states not meeting any. Similarly, it is estimated that 22 states and UTs require over 9,080 MW of non-solar power capacity to fulfill their obligations to purchase energy from other renewable sources.

TRAI proposes setting up renewable energy targets in telecom sector. TRAI (Telecom Regulatory Authority of India) has sought consultations on a sustainable approach to telecommunications,

according to its report **Consultation paper on approach towards sustainable telecommunications, Jan 2017**. The regulator has sought views on approach for calculating the carbon footprint, and the need for appointing third party auditors of a telecom network. TRAI states that with 3G becoming pervasive, the energy demand is likely to increase by two to three folds at least because data transfer would consume more energy. Further, the introduction of 4G, with a speed transfer rate 10 times higher than the 3G, will substantially increase the energy consumption patterns of the telecom sector.

The paper notes that there is a need to devise formulas suitable for calculation of carbon footprints from the grid supply and Diesel Power Generator sets. The TRAI paper has also stressed on the need to enable an effective implementation approach for energy efficient solutions. TRAI has also called for a methodology for setting new renewable energy targets in the telecom sector and the timeframe for achieving those targets.

Storage- linked renewable energy to reach Rs 5 kWh by 2022. Solar power with storage is already available at half the cost, compared with power from diesel-run generators, according to industry watchers. According to industry watchers, the biggest constraint to solar-and wind-powered projects is their inability to provide sustained power throughout the day. Even though solar-power tariffs have crashed to Rs 4-6/kWh (from Rs 16/kWh and above) in the past two years, the current technology of battery-linked storage pushes costs to Rs 12-14/kWh for those seeking 24-hour solar power. Explaining the rationale for the lowered tariffs, Mr Vikram Kailas, Managing Director and CEO, Mytrah Energy noted that the cost of storage-linked solar power is already near Rs 8-10/kWh for housing societies in Gurgaon and Hyderabad. The industry is estimating a 3 per cent y-o-y decrease in costs for parts, and another 3 per cent y-o-y increase in efficiency. By those numbers, the industry estimates a 4-6 per cent y-o-y reduction in costs for both wind and solar.

Mint, 6 January 2017| Business Standard, 7 January 2017| The Economic Times, 16 January 2017| The Hindu Business Line, 17 January 2017|Mint, 19 January 2017| The Hindu Business Line, 22 January 2017

India's solar capacity may double to 18 GW in 2017. Solar energy capacity in India could nearly double to 18 gigawatt (GW) this calendar year as large projects get commissioned, despite the short-term hurdles of power curtailment and weak tendering in some states, according to sector experts and power producers. India had a total of 9 GW of solar capacity, including rooftop projects, as of December. During 2016, the country added about 4 GW of solar capacity the fastest pace till date. A large number of projects are expected to be completed in the current year. During 2017, the solar sector is likely to add close to 9 GW of capacity taking its overall capacity to 18 GW and the country into the league of nations such as China, the US and Japan in terms of solar capacity, according to consultancy Mercom Capital Group Llc.

Azure Power Commissions Largest Solar Power Project (150 MW) in North India. Azure, a leading solar power producer in India, announced that it has commissioned the largest 150 MW solar power project in north India, in the state of Punjab in December 2016. For this project, Azure Power had signed a solar power implementation agreement with PEDA **(Punjab Energy Development Agency)** under its Solar Policy Phase III. The 150 MW solar power plant represents a portfolio of three projects of 50 MW each. The weighted average tariff on these projects is Rs 5.63 (US$ 8.5 cents) per kWh and the company will supply power to **Punjab State Power Corporation Limited** for 25 years. Spread across 713 acres of land in Punjab, the project was commissioned ahead of the contracted scheduled date. By leasing project land, Azure Power has created discretionary long term cash flow for the local

community. The solar power plant will help in electrifying the nearby areas and will create an estimated 1,000 jobs in the locality.

Cross-subsidy of power tariffs lure businesses to solar energy. The practice of forcing industries to cross-subsidize household consumers' power tariffs is leading to an unprecedented shift among businesses towards captive solar power with some committing to go fully reliant on clean energy. Cost of producing solar power, which was over Rs 12 per kilowatt hour (unit) in 2010, has dropped sharply over the years. The latest auction, which was held in November, saw takers for solar power projects willing to sell power at Rs 3 a unit. The fall in solar power generation cost has now made it attractive for businesses to go for captive solar power plants, including rooftop plants that supply power cheaper than from the grid, which is expensive on account of the cross-subsidy that industrial consumers are saddled with.

Israel harnessing sunshine with world's tallest solar tower. Israel is starting to make an effort, setting a goal of generating 10 per cent of its energy from renewable sources by 2020, up from the current 2.5 per cent. **The Ashalim project**, deep in the Negev desert, is made up of three plots, with a fourth planned for the future, each with a different solar technology. Together, the fields will be Israel's largest renewable energy project when completed by 2018. They are set to generate some 310 megawatts of power, about 1.6 per cent of the country's energy needs enough for about 130,000 households, or roughly 5 per cent of Israel's population, according to **Israel's Electricity Authority**.

Energy Budget 2017-18: Solar power to feed 7,000 railway stations says FM Arun Jaitley. Announcing the Union Budget for the 2017-18, Finance Minister Mr Arun Jaitley said that around 7,000 railway stations will be fed using solar power and work has already began in 300 stations in that respect. The project is expected to feed at least 7,000 stations with solar power in the medium term. This work will be taken up for 2000 stations as part of the government's 1000 megawatt solar mission.

Economic Times, 4 January 2017|Mint, 6 January 2017| Mint, 6 January 2017| Millennium Post, 7 January 2017| Mint, 25 January 2017| India.com, 31 Jan 2017|

Suzlon to execute 226.8 MW wind power project in Andhra Pradesh. Renewable energy major Suzlon Group has announced that it has bagged a 226.8 MW wind power project from a leading independent power producer (IPP), to be executed in Anantapur district of Andhra Pradesh. The order covers 108 units of S111 90m tubular tower with rated capacity of 2.1 MW each. The project is scheduled for completion by March 2017. Suzlon has entered into an exclusive supply and installation agreement, including engineering and construction of the project. It will also be responsible for operation and maintenance services for the first 10 years. The project has the potential to power up over 1,20,000 households and reduce 0.48 million tonnes of CO2 emissions per annum.

Tata Power Renewable Energy commissions two projects in Andhra Pradesh, Tamil Nadu. TPREL (Tata Power Renewable Energy Ltd), Tata Power's wholly-owned subsidiary, has commissioned 36 MW wind capacity of a 100 MW wind farm (under construction) at Nimbagallu in Andhra Pradesh, and a 49 MW solar plant at Kayathar, Tamil Nadu, under WREPL (Welspun Renewable Energy Pvt Ltd). With these, the operating renewable energy capacity of TPREL goes up to 1,876 MW, comprising 841 MW wind, 915 MW solar, and 120 MW waste heat recovery capacity as of today. In FY16, Tata Power Renewable Energy increased its operational capacity by 1169 MW. TPREL completed the acquisition of WREPL in 2016 to become the largest renewable energy company in India. The company has also

added 304 MW wind capacity in 2016, which are under development and construction in Gujarat, Andhra Pradesh, Madhya Pradesh and Karnataka.

Suzlon, Gamesa achieve milestones in wind-power capacity installation. At the end of one year and the beginning of another, wind turbine manufacturers Suzlon and Gamesa have crossed certain milestones. Suzlon achieved 10,000 MW of wind power capacity installations in India. Gamesa sold over 1,500 MW of turbines in calendar year 2016. Because a MW of capacity sells for Rs 7 crore, Gamesa's sales means that the company's turnover in 2016 crossed the Rs 10,000-crore mark. Suzlon has said 35 per cent of the wind turbines standing on Indian soil is its. Industry sources said Gamesa a company that is only six-years-old in India, sold over 1,500 MW in 2016. Cumulatively, Gamesa has close to 4,000 MW of turbines in India. The company aims to raise its sales to 4,000 MW a year from 2020.

SECI's 1GW wind power tender sees high interest. In what may help reduce wind energy tariffs in the country, the 1 gigawatt (GW) tender floated by state-run SECI **(Solar Energy Corp. of India)** has received 2.6 times the quantum of bids offered for the grid linked capacity. Experts say this may potentially bring down wind energy tariffs which currently ranges from Rs 3.9 per unit to Rs 5.9 per unit. Bids totaling 2,600 MW have been received from 13 companies including Adani Power, Hero Future Energies Pvt. Ltd, Renew Power and Inox Wind for the two-stage process technical and financial.

Tamil Nadu receives most bids for wind energy projects. Tamil Nadu has received bids for setting up 1,794 MW of wind projects or 69 per cent of total bids, in India's first ever competitive bidding for wind projects. The SECI **(Solar Energy Corporation of India)** had rolled out the tender for procuring 1000 MW of wind power under competitive bidding. The power generated would be sold to the 'non-windy' States. The tender has been oversubscribed, with 13 developers submitting bids equivalent to 2.6 GW against the 1 GW called for, according to research firm Ambit Capital. As much as 69 per cent of the bids are for Tamil Nadu and 27 per cent were for Gujarat. According to the report, firms which bid for setting up 250 MW of projects each in Tamil Nadu include Inox Wind, Mytrah, Sembcorp and Leap Green. Firms like Gamesa, Adani and Hero bid for setting up 150 MW each of projects in the State. With bids from other firms, the overall bids received for setting up projects in Tamil Nadu totalled 1,794 MW. Gujarat received interest for setting up projects totalling 700 MW and Karnataka received bid for 100 MW.

The Hindu Business Line, 11 January 2017| The Hindu Business Line, 12 January 2017| The Hindu Business Line, 16 January 2017| Mint, 16 January 2017| The Hindu, 19 January 2017

Bio

India's kitchen-waste biogas tech goes to Fiji. Technology developed in India for kitchen-waste biogas production is all set to be implemented in the island-nations of Fiji and Vanuatu. Mysuru-based NIE-CREST (**National Institute of Engineering's Centre for Renewable Energy and Sustainable Technologies)** will implement two indigenous technology-based projects in the countries.

Dr S Shamsundar, Director of NIE-CREST, said the centre has designed kitchen-waste biogas units of different capacities for Fiji and Vanuatu. Stating that IUCN **(International Union for Conservation of Nature**) is emphasizing the need for the use of green technology, he said the centre has agreed to fund a 1-tonne capacity kitchen-waste biogas unit for a prison in Suva, capital of Fiji. The plant can process 1,000 kg of kitchen waste a day to produce biogas.

Industry body seeks policy to mandate usage of biodiesel. The apex industry body for biodiesel has sought continuation of central excise exemption and requested the Centre to introduce a national policy to mandate usage of the green fuel. BDAI (**Biodiesel Association of India**) in its pre- budget memorandum to the Government has said India needs promotional policy and favourable taxation rates for the green fuel. The BDAI called upon the Finance Ministry for continuation of Excise Duty exemption on Biodiesel (B-100) and its inputs even after April 1, 2017 till notification of revised **National Biofuels Policy**. The Association said promoting green fuel biodiesel would go long way in curbing vehicular emission and to protect environment.

The Hindu Business Line, 19 January 2017| The Financial Express, 26 January 2017|The Times of India, 30 January 2017|

Investments

World Bank's IFC invests $125 million in Hero Group renewable energy unit. IFC (**International Finance Corporation**), the private sector investment arm of World Bank has invested $125 million **in Hero Future Energies**, the renewable energy arm of the Hero Group, for an undisclosed equity stake.

IFC, together with IFC Global Infrastructure Fund, a private equity fund managed by IFC Asset Management Company, will invest $125 million in equity, enabling Hero Future to set up 1 gigawatt (GW) of greenfield solar and wind plants over the next 12 months across India.

The investment will help the Hero Future Energies expand its renewable energy capacity, the statement said. IFC had disclosed in August that it has initiated discussions for making the investment in the renewable energy firm. Hero Future has a target of reaching 2.7 GW in renewable energy capacity by 2020. It is led by chairman and managing director Rahul Munjal, and has a presence in 12 states in India with a capacity of over 360 megawatt (MW) across solar, wind and rooftop installations.

Investment Corporation of Dubai eyes India renewable energy investments. Dubai's sovereign wealth fund, Investment Corp. of Dubai (ICD) through its subsidiary **Dubal Holding Llc** is scouting for investments in an Indian renewable energy platform. India is the UAE's second largest trading partner, with the two countries sharing a "comprehensive strategic partnership". India, which requires large infrastructure investment, has been trying to persuade the UAE's $800 billion sovereign wealth fund to invest in the country. Some of the other sovereign funds and government owned investment firms investing in India include Singapore's Temasek Holdings (Pvt.) Ltd and Abu Dhabi's Mubadala Development Co. Experts say an investment by ICD will be a ratification of India's strategy on renewable energy sources.