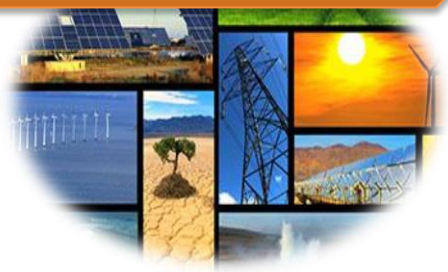
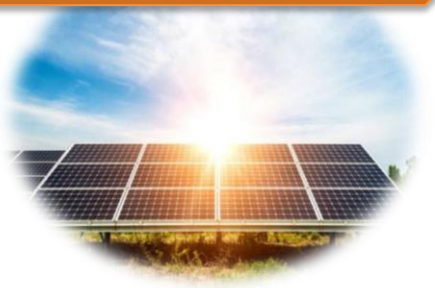
Renewable Energy Monitor
Oct-Dec 2019

Policy



- Solar, wind farms soon along India-Pak border
- Renewable energy sector adds 4,273 MW in H1
- India asks state-run firms to clear over $1 bn, owed to green energy firms
- COP 25: India calls for speedier expansion of international solar alliance
- Govt forms team to certify facilities of solar power equipment makers
- Cabinet approves pact with Saudi Arabia for renewable energy cooperation

Solar



- India, Germany to collaborate on Mumbai Metro and solar energy projects
- Solar set for boom after a gloomy 2019
- India sets up 31,696 MW solar power generation capacity
- India installed 181,000 solar power pumps for irrigation in three years under PM-KUSUM scheme

Wind

- Tamil Nadu is India's top producer of wind energy but the challenges are many.
- Several wind power projects miss completion deadlines
- Wind woes increase in India
- Wind to become largest power source by 2050, says Irena
- Global offshore wind industry to reach $1 trillion business by 2040: Report

Corporates

- NTPC to invest Rs 50,000 crore to add 10 GW solar energy capacity by 2022
- Temasek-EQT joint venture to launch India green energy platform
- Vikram Solar brings solar power to 3 more airports in India
- Azure Power secures 2 GW solar power project contract in India
- Skoda installs 8.5 MWp rooftop solar power plant at Chakan facility
- AIIB announces $210 million loan for irrigation & solar energy projects.
- Minimise carbon footprint: Zoho sets up solar farm to power its operation

Policy

Solar, wind farms soon along India-Pak border. To address the issue of land availability for clean energy projects, India will set up solar and wind projects on fallow land along its international border with Pakistan. Accordingly, a 30km long and 20km wide parcel of land has been identified along the border in Kutch district of Gujarat and stretches along the border in Bikaner, Barmer and Jaisalmer districts of Rajasthan. The Ministry has requested both Rajasthan and Gujarat to identify suitable land near international border (20-25 KM strip) where solar and wind projects can be installed.

Renewable energy sector adds 4,273 MW in H1. Solar power accounted for more than two-thirds of additional capacity at 2,921 MW. Even as industry analysts warn of slowdown in the renewable energy sector, the segment has added 4,273 MW of new capacity to the grid during the first half of this fiscal, which is one of the highest additions in a first-half year period in the last several years. However, the addition to capacity during the April-September 2019 is only 36 per cent of the target (11,802 MW) set for the fiscal.

India asks state-run firms to clear over $1 bn, owed to green energy firms. India has asked state lenders to provide over $1 billion to government power distribution companies to clear longstanding debts to green energy firms that could hinder further investment, three sources familiar with the plan said on 26 November 2019. The companies owe solar and wind power generators including Goldman Sachs-backed ReNew Power and Softbank-backed SB Energy over 97 billion rupees ($1.35 billion), according to the Central Electricity Authority, an arm of the federal power ministry.

COP 25: India calls for speedier expansion of international solar alliance. More countries should join the International Solar Alliance (ISA) to reduce dependence on fossil fuels to meet growing energy requirements, Union Environment Minister Mr Prakash Javadekar said in Madrid on 9

December 2019. Speaking at a ministerial plenary on the sidelines of the 25th session of the Conference of Parties under the UN Framework Convention of Climate Change (UNFCCC COP25) in Madrid, he added there was a need to speed up this alliance to trap solar energy in a big way.

Govt forms team to certify facilities of solar power equipment makers. India has set up a team to certify all solar power generation equipment makers who want to do business in the world's largest green energy market. The move aims to boost domestic manufacturing and protect its domestic companies from cheap and sub-standard imports. Manufacturers are lining up for certification as the implementation of the new solar power generation equipment sourcing guidelines will start on 1 April. At play is India's renewable energy programme, which would require $80 billion in investments till 2022.

Cabinet approves pact with Saudi Arabia for renewable energy cooperation. The Union cabinet approved signing of a MoU between the MNRE (Ministry of New and Renewable Energy) and the Ministry of Energy of the Kingdom of Saudi Arabia for cooperation in the field of Renewable Energy on 24 December 2019. The MoU aims at setting up a framework for cooperation between the two parties in the fields of solar, wind, biogas and geothermal energy. It also aims at the development and localization of renewable energy value chain and developing and boosting uses of solar energy-based small applications for commercial and residential buildings.

Mint, 10 October 2019| The Hindu Business Line, 11 October 2019 | The Economic Times, 26 November 2019| The Economic Times, 10 December 2019| Mint, 15 December 2019| The Economic Times, 24 December 2019

India, Germany to collaborate on Mumbai Metro and solar energy projects. India and Germany will collaborate on Mumbai Metro and solar energy projects as part of a bilateral cooperation in energy and urban development sectors, a senior official of Germany's Ministry of Economic Cooperation said on 27 November 2019.

The government-to-government negotiations come after the visit of German Chancellor Angela Merkel to India earlier in November 2019 for the 5th Indo-German Inter-Governmental Consultations to strengthen bilateral ties. Seventeen agreements were signed between India and Germany in the fields of agriculture, maritime technology, ayurveda and yoga among others, during her visit.

Solar set for boom after a gloomy 2019. Solar installations in year 2020 are set to exceed 10 GW after a year hit by political uncertainties, module price increases associated with safeguard duty and a fewer number of awarded tenders. The outlook for battery energy storage installations for solar projects, however, is bleak as such combinations in India can cost 3-5 times more in 2020 than standalone renewable projects.

India sets up 31,696 MW solar power generation capacity. The government on 28 November 2019 said a total 31,696 MW of grid connected solar power generation capacity has been set up in the country till October 2019. The government's target is to installing 1,00,000 MW grid connected solar power capacity by December 2022, Minister of State for Power and New and Renewable Energy Mr R K Singh said. Tenders for another 36,278 MW capacity projects have been issued and with new tenders of around 15,000 MW planned in remaining period of 2019-20 and 2020-21.

India installed 181,000 solar power pumps for irrigation in three years under PM-KUSUM scheme. More than 181,000 solar power pumps have been installed in the country over the past three years for meeting the electricity demand for irrigation under the Pradhan-Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM-KUSUM) scheme being implemented by the Ministry of New and Renewable Energy (MNRE). MNRE had issued approval for implementation of PM-KUSUM scheme throughout the country in March. The scheme has three components providing for; installation of 10,000 MW capacity through renewable energy-based small power plants of 2 MW capacity each in the rural areas; installation of 1.7 million off-grid solar water pumps; and solarization of 1 million existing grid-connected agriculture pumps.

The Economic Times, 27 November 2019| The Economic Times, 29 November 2019| PV Magazine, 30 December 2019| The Economic Times, 30 December 2019

Wind

Tamil Nadu is India's top producer of wind energy but the challenges are many. According to data from the Ministry of New and Renewable Energy (MNRE), Tamil Nadu produced 10,147.1 million units of power from wind energy in 2014-15. It however, saw a dip the subsequent year, falling to 7,273.23 million units of power in 2015-16. While Tamil Nadu remains the top producer in wind power generation, those in the industry point to the fact that it's nowhere close to achieving its full capacity.

Mr K Kasturirangan, the President of IWPA says, the quantity by which generation is increasing is falling and in due course the generation will show a decline. Another crucial issue faced by Wind Energy Generators (WEGs), within its sector is the delayed payment scheduled from TANGEDCO (Tamil Nadu Generation and Distribution Corporation).

Several wind power projects miss completion deadlines. Several wind power projects have missed their completion deadlines. Wind energy companies (developers) blame the delay mainly on non-availability of land. Ever since wind power projects began in February 2017 to be awarded through auctions to energy companies on the basis of who offers to sell power at the lowest prices, there have been 16 successful auctions so far (not counting the cancelled ones). Eighty projects, worth 14,412.64 MW of capacity have been awarded to wind developers. Each auction has its own deadline for completion of projects awarded under it. By now, 5,087 MW of projects should have come up, against which the achievement is 1,707 MW.

Wind woes increase in India, world's cheapest market, as delays pile up threatening nation's renewable-energy ambitions. More and more wind farms face delays in India as developers struggle to make their projects work in the world's cheapest market. About 2 GW of wind power generation auctioned by the federal government since February 2017 is running behind schedule, according to BloombergNEF. That number has more than quadrupled since February, threatening to derail the nation's renewable-energy ambitions. Developers are having difficulty finding affordable land, getting financing and connecting to grids after accepting some of the world's lowest green energy tariffs over the past two and a half years. On top of that hangs the uncertainty whether they will be paid on time by power distribution companies, known locally as discoms.

Wind to become largest power source by 2050, says Irena. The IRENA (International Renewable Energy Agency) has released a new report named 'Future of Wind' in which it has suggested that wind energy could be the single largest source of power generation by mid-century. The report

says that wind has the capability of satiating one-third of global power needs and reducing a quarter of energy-related carbon emissions. This is possible if global wind energy installations upsurge over ten times at about 6,000 GW by 2050 from the 2018 level of 500 GW. This entails advancement in certain key factors like economies of scale, more competitive supply chains and technological innovations alongwith an annual investment of over $300 billion in 2050 (from less than $100 billion in 2018).

Global offshore wind industry to reach $1 trillion business by 2040: Report. The global offshore wind capacity is set to increase fifteen-fold by 2040 to reach about $1 trillion of cumulative investment. This increase is contributed by falling costs, supportive government policies and rapidly progressing technology, such as larger turbines and floating foundations, according to the Offshore Wind Outlook 2019, International Energy Agency report. Between 2010 and 2018, the global offshore wind market grew nearly 30 per cent annually. The industry will expand by 13 per cent every year, adding 20 GW per year by 2030.

Down to Earth, 23 October 2019|Down to Earth, 28 October 2019| The Hindu Business Line, 14 November 2019| The Economic Times, 5 December 2019| The News Minute, 20 December 2019

Corporates

NTPC to invest Rs 50,000 crore to add 10 GW solar energy capacity by 2022. State-owned power giant NTPC is planning to add 10 GW of solar energy generation capacity by 2022, which entails an investment of around Rs 50,000 crore, to be funded mainly by green bonds, a source has said. At present, NTPC has installed renewable energy capacity of 920 MW, which includes mainly solar energy. It has formulated a long term plan to become a 130 GW company by 2032 with 30 per cent non-fossil fuel or renewable energy capacity.

Vikram Solar brings solar power to 3 more airports in India. The solar plants commissioned at Dibrugarh (Assam), Gaya (Bihar) and Gondia (Maharashtra) take the Kolkata based module manufacturer and EPC contractor's cumulative airport project portfolio to more than 4 MW. Kolkata based Vikram Solar has commissioned three new solar plants for AAI (Airport Authority of India), after airport projects in Kolkata and Kerala. The new solar projects have a cumulative capacity of 1165 KW (or 1.1 MW), taking the module manufacturer and EPC contractor's cumulative airport portfolio to more than 4 MW.

Temasek-EQT joint venture to launch India green energy platform. Singapore's Temasek is teaming up with Swedish private equity group EQT to launch a new renewable energy platform for India that will build wind and solar farms ground up and acquire assets to bulk up. A group of four senior executives from ReNew Power, led by Chief Executive Officer Parag Sharma, is leaving their current organisation to lead this new platform 02 Power as the operating management team. The two sponsors have promised an initial equity commitment of $500 million as the seed capital. On the back of that, the company will be raising leverage two to three times to fund both greenfield and brownfield ground-mounted projects in wind and solar electricity. The focus will also be on presence across the value chain and hybrids, battery storage and other frontier clean-energy initiatives.

Azure Power secures 2GW solar power project contract in India. Indian independent solar power producer Azure Power is set to develop 2GW interstate transmission (ISTS) solar power project in the country. The company received a letter of award (LOA) from Solar Energy Corporation of India

(SECI), a Government of India enterprise. The power project will be developed somewhere in India and will be commissioned in multiple 500MW phases annually starting from 2022. It is slated to become fully operational by 2025. Additionally, the LOA includes a greenshoe option that will allow Azure Power to double the capacity of the project.

Skoda installs 8.5 MWp rooftop solar power plant at Chakan facility. European car major Skoda Auto Volkswagen India on 17 December 2019 announced the installation of its 8.5 MWp rooftop solar photo voltaic (PV) power generation plant at the company's Chakan facility near Pune. In 2018, the company had inaugurated its first major 980 KV solar PV installation at its Aurangabad manufacturing plant. It currently produces up to 1.5 million kWh and contributes to the reduction of upto 922 tonne of carbon dioxide emissions annually. Touted as the largest-ever such a project in the auto industry globally and one of India's largest rooftop installations, it will produce 12.2 million kWh of energy annually and contribute between 15 -20 per cent of the plants total electrical consumption, the company said.

AIIB announces $210 million loan for irrigation & solar energy projects. The Beijing-based AIIB (Asian Infrastructure Investment Bank) announced a total loan of $210 million for irrigation and solar energy projects in India. The multilateral institution will lend $145 million to improve irrigation services and strengthen flood risk management in West Bengal, while $65 million has been earmarked for a 250 MW solar project in Rajasthan promoted by Hero Future Energies. India is the second-largest shareholder of the bank and the largest recipient of its loan and equity commitments. The total commitments to the country stand at $3 billion, which is about a third of total of $10 billion.

Minimise carbon footprint: Zoho sets up solar farm to power its operation. In a bid to cushion the impact of tech development on the environment and minimise its carbon footprints, Software-as-aServices (SaaS) firm Zoho has set up a 5 MW on-grid solar energy farm near Trichy to power its offices and data centres. Located at the village of Abinimangalam near Trichy, while the solar plant serves local power needs of the region in an agreement between Zoho and TN's electricity authorities, the company is then offered credits to set off against their own energy consumption. Zoho zeroed in on the on-grid model of power generation, where they generate power and patch it on to power local needs near the plant, and set-off the credits to power their own operations. Zoho's energy partner for the initiative is Rigel Energy Management.

The Economic Times, 7 November 2019|PV Magazine, 12 December 2019|Power Technology, 13 December 2019|The Economic Times, 17 December 2019| Business Standard, 20 December 2019| The Economic Times, 26 December 2019|The Times of India, 26 December 2019