

Renewable Energy Monitor

May-June 2018

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Policy

Financial & Assorted Concessions: Sops for local production in new solar policy. In a move that could brighten the prospect for domestic solar equipment manufacturers, who are in the throes of fighting cheaper Chinese imports, the government is set to finalise a comprehensive solar manufacturing policy by the end of July. The policy will seek to incentivise local production of inputs (cells, ingots, wafers and polysilicons) to create a complete ecosystem for end-to-end manufacturing of solar panels. Most of these products are currently imported. The policy proposes a direct financial support of more than Rs 11,000 crore and an indirect support by way of assorted concessions.

Government announces national wind-solar hybrid policy. With an aim to boost renewable power generation, the government announced a [national wind-solar hybrid policy](#) on 14 May 2018, which seeks to promote new projects as well as hybridisation of the existing ones. The government has set an ambitious target of achieving 175 GW of installed capacity from renewable energy sources by 2022, which includes 100 GW of solar and 60 GW of wind power capacity. The total renewable power installed capacity in the country stood at about 70 GW last financial year.

Features of the policy

■ Objectives:

Provide a framework for large-scale hybrids, while also encouraging new technologies and methods to carry out hybridisation. It is also encouraging the procurement of hybrid power through transparent bidding processes, which could take into account capacity delivered at grid interface point, effective capacity utilisation factor (CUF), and the unit price of electricity.

■ **Integrating solar and wind can be approached in different ways:**

The policy stated: “In case of fixed speed wind turbines connected to the grid using an induction generator, the integration can be on the HT side at the AC output bus. However, in case of variable speed wind turbines deploying inverters for connecting the generator to the grid, the wind and the solar PV system can be connected to the intermediate DC bus of the AC-DC-AC converter.”

■ **Power generated from hybrids may be used for:**

- Captive purpose
- Sale to third-party through open access
- Sale to Discoms either at tariff determined by the respective State Electricity Regulatory Commissions (SERC) or at tariff discovered through a transparent bidding process
- Sale to Discoms at average power purchase cost (APPC) under Renewable Energy Certificate (REC) mechanism and avail RECs

The [policy](#) provides for a comprehensive framework to promote large grid-connected wind-solar photovoltaic hybrid system for optional and efficient utilisation of transmission infrastructure and land, thereby reducing the variability in renewable power generation and achieving better grid stability, the ministry of new and renewable energy said in a release.

Government aims to build 30 GW of offshore wind capacity by 2030. In order to beef up its clean energy portfolio, the government wants to build 30 GW offshore wind capacity by 2030, a move which may bring India in the list of leading markets in the segment. The Ministry of Power and New & Renewable Energy has earlier announced a short-term target of setting up 5 GW offshore wind capacity by 2022. The government has already invited expression of interest for 1 GW offshore wind tender in India, and has elicited interest from leading wind players in India and abroad, sources said. Leading clean energy players including Sembcorp Green Infra, ReNew Power, Mytrah Energy and France’s Engie, among others have been shortlisted by the government for the technical stage of the tender.

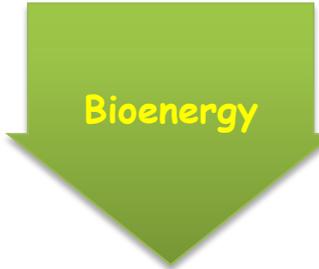
Global renewable ranking: India’s ascent reverses. India came down two spots in a year and is now ranked fourth in the renewable energy country attractive index, trailing China, the US and Germany. A report by [EY](#) attributed ultra-low wind and solar power tariffs discovered in the latest auctions, coupled with uncertainties related to proposed import duties on solar components, as the main reasons behind the renewable energy sector losing its sheen. The index had ranked India at third and second position in 2016 and 2017, respectively. The report said, “Disputes between developers and distribution companies are raising investor concerns.”

Gujarat power regulator raises RPO to 17% for the next five years. Gujarat Electricity Regulatory Commission has enhanced the renewable power obligation from the current 10 per cent to 17 per cent for the next five years. The move comes at a time when the state is witnessing a marginal shortfall in honoring the obligation. According to a senior official at state discom Gujarat Urja Vikas Nigam Ltd, the state’s RPO stands at 9.5 per cent as against the required 10 per cent. To be implemented in a phased manner, the RPO for the next five years will see the wind energy being increased by a marginal 0.1 per cent as compared to solar power which saw an increase by 1.25

per cent every year. To meet the requirement, the state discom will continue to follow the competitive bidding process.

Gujarat govt to provide grid-linked solar panels to over 12,000 farmers. With an aim to generate additional income for farmers, the Gujarat government will provide grid-connected solar panels to over 12,000 cultivators who have already taken regular electricity connections for irrigation purpose. The grid-connected solar panels are being provided to farmers under a scheme called Suryashakti Kisan Yojna (SKY).

[The Financial Express, 1 May 2018](#) | [The Economic Times, 14 May 2018](#) | [The Financial Express, 15 May 2018](#) | [Business Standard, 5 June 2018](#) | [The Economic Times, 20 June 2018](#) | [Business Standard, 24 June 2018](#)



Bioenergy

Cabinet approves National Policy on Biofuels 2018. The Union Cabinet has approved National Policy on Biofuels 2018. The policy has the potential to bring in multi-crore private investment in second generation ethanol production. Second generation ethanol refers to alcohol generated from unconventional raw material such as agro waste. The policy will drive over Rs 10,000-crore investment in this sector by the Oil Marketing Companies which together have plans for a dozen such ethanol plants.

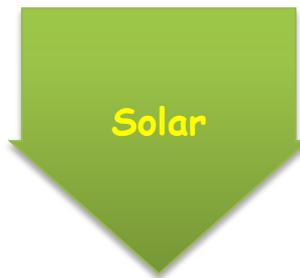
These are to support the ethanol-blended fuel programme announced by the Centre. The Policy categorises biofuels as "Basic Biofuels" viz. First Generation (1G) bioethanol & biodiesel and "Advanced Biofuels" - Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc. to enable extension of appropriate financial and fiscal incentives under each category. The Policy expands the scope of raw material for ethanol production by allowing use of Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum, Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes, unfit for human consumption for ethanol production.

Punjab to boost setting up of biomass plants to stop stubble burning pollution. To rid Punjab of stubble burning pollution, the Punjab State Government has entered into agreements with four big companies and has also started work on setting up the biomass power plants. Big companies of the country are willing to invest in the state and we have already entered into contract with four companies Hindustan Petroleum Corporation Limited, Indian Oil Corporation, Verbio India Private Limited and Rika Biofuel Development Limited which will produce biogas or bio CNG or bio-ethanol from the paddy straw. Hindustan Petroleum will create bio ethanol from paddy straw which is blend in petrol and diesel. It will set up its plant in Nasibpura village of Talwandi Sabo tehsil in Bathinda district.

MNRE plans to launch integrated bio energy mission. The Ministry of New & Renewable Energy aims to launch an Integrated Bio Energy Mission with an estimated outlay of Rs 10,000 crore from 2017-18 to 2021-22. The plan was announced by Ms Varsha Joshi, Joint Secretary, Ministry of New & Renewable Energy, at the first meeting of the Bio Energy Advisory Committee of the Ministry. The Integrated Bio Energy Mission would aim to contribute to achieve greenhouse gas emissions reduction targets as agreed in the Nationally Determined Contributions at COP 21 in Paris. The mission would be achieved through progressive blending/substitution of fossil fuels such as coal, petrol, diesel, natural gas and LPG with biomass pellets, bioethanol, biodiesel, biomethane and similar green fuels for both electrical and non-electrical uses.

Biogas plants to be set up at cow shelters in Rajasthan. Biogas plants with the capacity of over 100 cubic metres will be set up shortly at 25 gaushalas in Rajasthan with 50% subsidy on investment costs paid by the State government's Gopalan Department. Rajasthan will be the first State to produce manure from biogas plants at the cow shelters. State Cooperative and Gopalan Minister Mr Ajay Singh Kilak said that the subsidy up to Rs.40 lakh each would be paid to the gaushalas by the department, while each biogas plant would produce 5 to 10 metric tonnes of manure every day. The 25 plants will produce about 1 lakh metric tonnes of manure every year, proving a boon to farmers for cultivation of crops.

[Business Standard](#), 16 May 2018 | [The Hindu Business Line](#), 17 May 2018 | [The Pioneer](#), 12 June 2018 | [The Hindu Business Line](#), 14 June 2018 | [The Economic Times](#), 20 June 2018 | [The Hindu](#), 14 June 2018



Solar manufacturing schemes face hurdles over subsidy, WTO rules. A subsidy scheme for promoting solar power equipment manufacturing is awaiting approval of the finance ministry while another one that offers assured power off take to manufacturers is embroiled in WTO ([World Trade Organisation](#)) regulations. Officials said a Rs 160 billion capital subsidy was available to domestic and foreign players to set up end-to-end solar power equipment manufacturing in India. Under the M-SIPS scheme, the subsidy is to be disbursed after the setting up of the facility.

Dwarka society taps sun's energy to light up homes. By installing rooftop solar plant, connected to a 100KW grid, the Shiv Bhole Cooperative Group Housing Society in Dwarka became the first CGHS to go live as part of BRPL ([BSES Rajdhani Power Limited's](#)) solar city initiative. The solar plant is the first one launched on January 7 this year, under the Solarise Dwarka initiative being implemented by BRPL in collaboration with GIZ India ([Deutsche Gesellschaft für Internationale Zusammenarbeit](#)) under its Indo-German solar partnership project. The plant was inaugurated by Dr Wolfram Klein, head of Division India, South Asia German Federal Ministry of Economic Cooperation and Development in presence of Mr Amal Sinha, CEO-BRPL.

Solar power plant EPC to attract 18% GST: AAR. In a ruling that could spike the cost of setting up solar power plants, the AAR (Authority for Advance Ruling) for GST in Maharashtra said that engineering, procurement and construction activities will be considered as 'work contract' and liable to be taxed at 18%. The authority, pointed out that commissioning of such plants have an element of permanency about them as they cater to identifiable consumers, and a contract between an EPC contractor and the counter-party is entered into on the premise that the plant would continue to be situated at the place of construction.

USIBC bemoans low renewables tariffs in India. US-based investors want slackening of the regulatory regime in India's power sector and see lowering of tariffs in the renewable energy segment as a threat. The sentiments of the USIBC (US- India Business Council) echo the belief of many experts that aggressive bidding has pulled solar and wind tariffs down to unsustainable levels amid rising interest rates and the end of quantitative easing by the US. Weakening of the rupee is likely to raise the cost and reduce the flow of cheap capital into the sector. Though the government allows 100% FDI in the power sector, the pricing and tariff determination for generation, transmission and distribution is controlled by government regulators.

Five of the world's top 10 solar parks are coming up in India, says report. Five out of the world's biggest under-construction solar parks, designed to accommodate total solar power capacity of 7,475 MW, are in India. When one of them Bhadla Industrial Solar Park, in Rajasthan — houses solar plants to its fullest capacity (2,225 MW), it will be the world's biggest. When it comes to operating solar plants, India has two of the world's top ten, says a [report](#) titled, 'Solar is driving a global shift in electricity markets rapid cost deflation and broad gains in scale' on emerging solar trends produced by the US-based IEEFA ([Institute for Energy Economics and Financial Analysis](#)), a research body backed by a bunch of philanthropic organisations including the [Rockefeller Brothers](#)

Fourteen of the Largest Under-Construction Utility Solar Projects

| No | Project Name | Size (MW) | Country | Proponent |
|----|--|-----------|-----------|--|
| 1 | Bhadla Industrial Solar Park | 2,225 | India | Rajasthan Solar Park Development Company Ltd, ESSEL, IL&FS, Adani RE Power Ltd |
| 2 | Pavagada Solar Park (Shakti Sthala) | 2,000 | India | Karnataka Solar Power Development Corporation |
| 3 | China Minsheng Investment Wuzhong Yanchi PV | 2,000 | China | China Minsheng Investment Group |
| 4 | Scatec Solar Benban V PV Plant | 1,800 | Egypt | Scatec Solar ASA |
| 5 | Ananthapuramu - I Solar Park | 1,500 | India | Andhra Pradesh Solar Power Corporation Pvt Ltd |
| 6 | Mohammed bin Rashid Al Maktoum Solar Park | 1,013 | UAE | DEWA, ACWA Power, TSK, Masdar consortium, EDF |
| 7 | Kadapa Ultra Mega Solar Park, Andhra Pradesh | 1,000 | India | Andhra Pradesh Solar Power Corporation Pvt Ltd |
| 8 | Quaid-e-Azam Solar Park | 1,000 | Pakistan | Xinjiang SunOasis, Zonergy |
| 9 | Rewa Solar Park | 750 | India | Rewa ultra Mega Solar Ltd |
| 10 | Enel Villanueva PV Plant | 754 | Mexico | Enel Green Power SpA |
| 11 | Cauchari Solar Project | 300 | Argentina | Jemse SE |
| 12 | Sakuto Solar Power Project | 258 | Japan | Pacifico Energy |
| 13 | Solara4 PV Plant | 221 | Portugal | WElink Energy |
| 14 | Bungala Solar Farm | 220 | Australia | Enel Green Power & Dutch Infrastructure Fund |

Source: Company & Press reports, IEEFA estimates

(Source: IEEFA, May 2018)

[Fund](#) and the [Rockefeller Family Fund](#). These two are the 1,000-MW ultra mega project in Kurnool, Andhra Pradesh and the Adani group's 648-MW Kamuthi project in Tamil Nadu.

SoftBank, IL&FS team up to power 20 GW solar parks . The SoftBank Group is tying up with infrastructure conglomerate IL&FS to develop more than 20 GW of solar capacity in India by 2025 to support Prime Minister Mr Narendra Modi's ambitious renewable energy road map for the country. This comes less than two months after the Japanese group teamed up with China's GCL System Integration Technology for a \$930 million (Rs 6,350 crore) India solar power venture. [SB Energy](#) is the platform for the investment and the [IL&FS](#) deal is likely to be a part of that plan [SB Energy](#) has already won bids for setting up 1400 megawatts (1.4 GW) of projects in India, including 300 MW at the Bhadla III Solar Park developed by [Saurya Urja Company](#) of Rajasthan Ltd, a JV of IL&FS Energy and the Rajasthan government.

India won't levy duty on solar gear imports. The government has decided not to impose safeguards duty on solar equipment from China and Malaysia, overruling the directorate general

of safeguards' recommendation of a 70% levy that had delighted local manufacturers but alarmed developers who felt that the steep rise in input costs would make projects unviable. The Delhi High Court disposed of a petition challenging the proposed duty after the government's counsel said the directorate general of safeguards' recommendation was not binding. The counsel showed the court confidential minutes of a meeting held by the standing committee on safeguards, which had decided not to impose the duty.

[Business Standard](#), 3 May 2018 | [The Times of India](#), 5 May 2018 | [The Financial Express](#), 9 May 2018 | [The Financial Express](#), 12 May 2018 | [The Hindu Business Line](#), 22 May 2018 | [The Economic Times](#), 28 May 2018 | [The Economic Times](#), 31 May 2018



Wind energy fans power-short Gujarat as Adani and Essar switch off. At a time when Adani and Essar have discontinued supply of power to the tune of 3,000 MW in Gujarat, the state has found respite through wind power generation. According to state government and industry sources, wind power generation has touched an almost all-time high of 2,800 MW.

The high renewable energy availability comes as a respite amid [Adani](#) and [Essar](#) discontinuing supply to GUVN ([Gujarat Urja Vikas Nigam](#)), the state power distribution entity. Of the state's three independent power producers (IPPs) which are struggling, only the Tata's CGPL has been able to resume supply to GUVNL, thereby honouring its power purchase agreement (PPA). [Adani](#) and [Essar](#), with a combined 3,000 MW in PPAs, have been supplying almost zilch. The state government has made good the balance amount it needs peak demand has crossed 16,000 MW through the open market. That is, through the IEX ([Indian Energy Exchange](#)), at prices higher than the existing PPAs. Government and industry sources say Gujarat is drawing 2,500-2,800 MW from IEX and other sources.

Wind power tariffs may be sustainable around Rs 3/unit: Crisil. Wind power tariff is likely to be sustainable at around Rs 2.9-3 per unit in fiscal 2019 because of reduction in payment and offtake risks, lower capital cost per generated unit, and conducive debt financing, says Crisil Ratings. The agency pointed out that payment risk in projects has reduced as SECI ([Solar Energy Corporation of India](#)), set up by government through the ministry of new and renewable energy, is increasingly taking up the role of the principal counter-party. According to [Crisil](#), waiver of inter-state transmission charges will also make wind power more attractive for non-windy states such as New Delhi, Uttar Pradesh, Jharkhand and Bihar.

Tamil Nadu taps record wind energy for 2017-18, leads clean energy chart. [Tangedco](#) (Tamil Nadu Generation and Distribution Corporation) harnessed 13,000 million units of wind energy and 2,905 million units of solar energy in 2017-18. Tamil Nadu is the only state to have used so much of green energy in 2017. The state has saved not less than 5,406 million tonnes of carbon on this count. On July 27, 2017, [Tangedco](#) harnessed wind energy to the extent of 5,095MW. In 2017-18, it was proposed to add wind power capacity to the extent of 4,500MW. Work is still going on. Apart from [Tangedco](#) floating tenders on its own to increase the wind power capacity, Power Grid Corporation of India will add 800MW of wind power in Tamil Nadu. This year, the maximum wind energy harnessed in a day is 4,200MW.

[Business Standard](#), 4 June 2018 | [The Economic Times](#), 19 June 2018 | [The Times of India](#), 1 June 2018 |


 Investments

Greenko Group buys Orange Renewable at billion-dollar valuation. [Greenko Group](#) has agreed to buy [Orange Renewable](#) from Singapore's AT Capital Group at an enterprise value of \$1 billion, Greenko Group founder Mr Mahesh Kolli said. Greenko, backed by sovereign wealth funds GIC Holdings Pte Ltd and Abu Dhabi Investment Authority, will make an equity payout of around \$300 million, said Mr Kolli, who is also president and joint managing director of Greenko.

Once the transaction is completed, Greenko's total renewable energy operational capacity will increase by 1 gigawatt GW to 4.2 GW, the second largest in India after [ReNew Power Ventures Pvt. Ltd.](#) The Hyderabad-based company also has 600 MW of clean energy projects under construction.

Incubator on clean energy research to come up in Delhi. Keeping to its role of being a key participant in the global initiative on clean energy research, India has announced setting up the first international incubator to promote innovation in this field. The incubator will come up in the capital with a total investment of around \$5 million. The incubator, being set up in public-private partnership, will promote entrepreneurship and innovations in the area of clean energy and provide opportunities to innovators across the Mission Innovation countries to test their technologies in local market. US, China, Japan, South Korea, Australia, Brazil, Canada, UAE, UK, Mexico, Sweden, France and Germany are among the other member countries of this group. The participating countries, as part of the initiative, have pledged to double their collective investments in energy R&D funding of over \$15 billion annually to over \$30 billion by 2021. These countries collectively, at present, account for more than 80% of the world's total public financing of clean energy R&D.

Japan's SoftBank to invest up to \$100 bln in India solar power generation. SoftBank Group Corp has decided to invest \$60 billion-\$100 billion in solar power generation in India, Japanese public broadcaster NHK reported on 15 June 2018. SoftBank and the Indian government are expected to make an announcement soon after final arrangements and made, the report said without naming its sources. The company is expected to make the investment through a fund backed by Saudi Arabia's government, NHK said. Saudi Arabia is the largest investor in SoftBank's Vision Fund which raised over \$93 billion in 2017.

Brookfield to sharpen focus on renewable energy sector in India. Canada-based Brookfield Asset Management Inc. is looking to increase its focus on renewable energy in India. The asset manager has so far been focussing largely on the real estate and roads segment. Brookfield has approximately \$40 billion in assets under management for its renewable energy business, with 840 power-generating assets and over 2,300 employees across hydro, wind and solar energy segments.

[Mint](#), 4 June 2018 | [The Times of India](#), 8 June 2018 | [The Economic Times](#), 15 June 2018 | [Mint](#), 29 June 2018