

# Renewable Energy Monitor

April 2016

## Policy initiatives



- Haryana makes solar plants mandatory
- New policies to boost generation of power from biomass, biofuel and hydro power output
- Government looking to boost made in India solar panels
- Government plans push for hydro-power
- Renewable energy projects got loans of over Rs 29,000 crore
- Manufacturers to gain from solar power policy push
- Ministry to tweak solar power purchase obligations
- Panel suggests 15-point action plan to link renewable energy to electricity grid

## Solar



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- Solar boat makes its debut in Andhra Pradesh
- IDFC Alternatives in talks to invest Rs 600 crore in ACME Solar
- IGIA upgrades solar power plant
- Domestic firms take lead in solar park tender in Karnataka
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- MNRE forms 3 panels to improve quality control of solar modules and products

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**Haryana makes solar plants mandatory.** States have been realizing the potential of solar energy and offering incentives. Haryana has made solar power plants mandatory for housing societies, industries and other specified categories of buildings. Under [Haryana's solar power policy for 2016](#), the state government is providing various incentives including industrial status, exemption from change of land use approval and cess, freewheeling and banking facility, exemption of T&D and cross subsidy charges.

Besides, the government has decided to purchase solar power over and above the solar Renewable Purchase Obligation (RPO). The Government has revised the National Solar Mission target of Grid Connected Solar Power projects from 20,000 MW by 2022 to 1,00,000 MW by 2022.

A total investment of around Rs 6,00,000 crore has been estimated to achieve the target of 100 GW. Solar power projects are installed by both, private and public sector companies. Banks and Financial Institutions have given green commitments to finance up to 78,850 MW. The organisations setting up the projects raise equity and loan from domestic as well as international sources.

### Objectives

- To promote generation of green and clean power in the State using solar energy.
- To create conditions conducive to the participation of private and public sector as well as PPP in the promotion and setting up of up Solar Energy based power projects in the State.
- Productive use of wastelands / non – agricultural lands thereby leading to socioeconomic transformation and a reduction in regional disparities in development.
- Employment generation and skill up gradation of the youth.
- To put in place an appropriate investment climate that would leverage the benefits of Clean Development Mechanism (CDM) and result in lower Greenhouse gas (GHG) emissions.
- Co-creation of Solar Centres of Excellence and pools of technical professionals which would work towards applied research and commercialization of indigenous and cutting edge technologies involving applications of solar energy generation and appliances.
- Spreading of environmental consciousness among all citizens of the State especially the youth and school going children.
- Decentralization and diversification of the energy portfolio and to increase the share of renewable solar power.

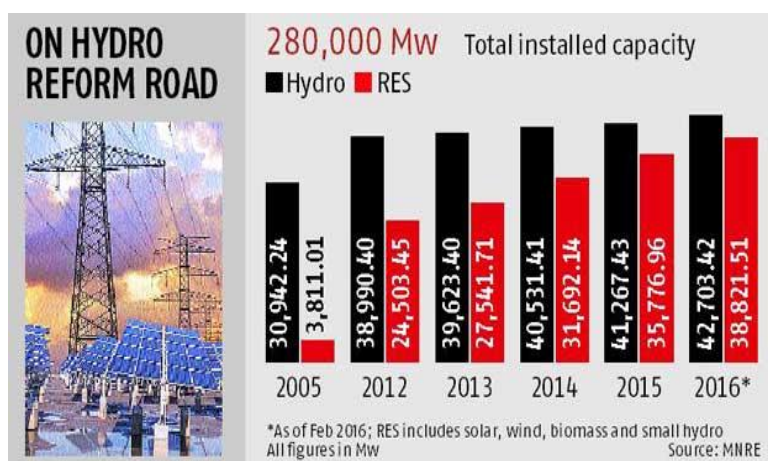
**New policies to boost generation of power from biomass, biofuel and hydropower output.** The government will unveil a raft of new policies to boost hydropower and electricity from biomass, biofuels and cogeneration as well as significant increase in the use of electric cars, Power, Coal and Renewable Energy Minister Mr Piyush Goyal said. The government will also correct transmission bottlenecks, improve last-mile grid connectivity and take steps to increase demand for electricity as many power plants are running at a low capacity, the minister said at conference organised at the launch of energy portal [ETEnergyworld.com](#). He said the country can also expect initiatives to correct transmission bottlenecks and replacement of diesel generators with reliable supply, which would generate demand for electricity from underutilised power stations and reduce the use of standby generation that is often very polluting. The ministry is banking on large scale rural electrification,

correcting transmission bottlenecks, improvement in last mile connectivity, and replacement of diesel generators to increase the demand.

The government will take major policy initiatives to boost hydro power generation, improve the transmission network and further accelerate the use of energy-efficient LED bulbs, which are now selling in such large volumes that their prices have crashed below Rs 60. Consumers have gained enormously from the LED lighting programme as it reduces their monthly electricity bill significantly, while prices of such products have crashed. The government is determined to resolve legacy issues that have choked India's energy sector and had already tackled the shortage of coal, which had plagued the thermal power sector.

**Government looking to boost made in India solar panels.** In a bid to push Make in India, the government will soon announce a policy to boost end-to-end manufacturing of solar equipment like polysilicon, wafers, cells and panels. The incentives under this policy to will be given to those setting up manufacturing units worth Rs 1000 crore or more. The focus of the policy is to reduce the cost of electricity and capital. Solar equipment manufacturing is an energy-intensive sector, and so special attention is being given to enable manufacturers to procure electricity at the cost of generation without the additional levies of surcharge. This policy is being designed by the Department of Industrial Policy and Promotion in association with the Ministry of New and Renewable Energy and will be taken to the Cabinet for its approval, soon. The Make in India policy already recognizes solar manufacturing as an industry with “strategic importance”. Apart from providing equipment supply security, a recent KPMG report *Solar Manufacturing in India* says that a sustainable domestic manufacturing industry can save \$42 billion in equipment imports by 2030 and create 50,000 direct jobs and at least 125,000 indirect jobs in the next 5 years.

**Government plans push for hydropower.** After setting the power distribution segment on a reform road, the Union government is planning to rescue the languishing hydro power sector, with a three-pronged approach. The first move would be to increase the ambit of small hydro projects to 100 Mw from current 25 Mw. Also, a considerable amount of hydro capacity would be planned in states that share borders with Nepal and Bhutan. This would help achieve the renewable energy targets of states and also bring a large number of projects under the net of government subsidy and other tax benefits. The installed capacity of hydro power projects has remained 40,000 MW for the past three years, while that of the renewable energy sector has increased about 20 per cent in the same period. In the past decade, RE (solar and wind power) has grown by 89 per cent, while hydro has staggered at 28 per cent.



Source. Business Standard, 11 April 2016

The government will also make available the tax benefits and subsidies that small hydro enjoys to larger projects. This is done in hope of reviving private investment in the sector and also gives opportunity to small players to expand capacity at the same location. At present, subsidies of Rs 1.5 crore to Rs 20 crore per MW are given to small hydro projects. Renewable energy also enjoys accelerated tax benefit. Close to 4000 Mw of projects have installed capacity of 25 MW, while around 6,000 Mw is in range of 25-100 MW. The focus is on hydro-rich states - Uttarakhand, Arunachal Pradesh and Sikkim.

**Renewable energy projects got loans of over Rs. 29,000 cr.** Banks and non-banking financial companies (NBFCs) disbursed Rs 29,529.60 crore for renewable energy projects between February 2015 and March 21, 2016 or 41.5 per cent of the Rs 71,201.54 crore sanctioned for the period, the government said. Over the last few years, some private banks in India have signed deals with development banks to provide loans at concessional rates. The Indian Renewable Energy Development Agency (IREDA) is also providing loans at low rates following its recent agreements with banks like KfW, Nordic Investment Bank, World Bank, Asian Development Bank, the European Investment Bank, and Japan International Cooperation Agency.

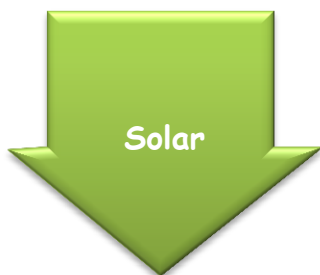
**Manufacturers to gain from solar power policy push.** Niti Aayog-coordinated policy is expected to go to cabinet shortly, may include offtake guarantees, 100% payment guarantees and stringent offset. India is readying a major solar push to build on recent successes with a brand new policy to aid manufacturing of equipment that's going to be in great demand if the government's plans fructify. The proposed policy aims to create enabling conditions for solar generation capacity and could include offtake guarantees, 100% payment guarantees, an institutional hedging mechanism for foreign currency funds and a stringent offset. The National Clean Energy Fund's corpus could be used to provide capital subsidies to domestic manufacturers, reeling under financial stress, for technological upgradation. This fund could also be used to for providing hedging support. Viability gap funding could be offered to developers as part of the package. A new bidding framework is being designed in line with the government's solar plan. The policy is being designed based on the recommendations of a high level, inter-ministerial panel that was set up by the department of industrial policy and promotion.

**Ministry to tweak solar power purchase obligations.** Following objections from certain States like Himachal Pradesh to a mandatory 10 per cent target for solar purchase obligations by 2022, the Ministry for New and Renewable Energy has decided to prescribe different levels for each State based on solar irradiance and propensity to absorb such electricity. But, the level will not be below eight per cent at any given time. Solar irradiance is the power per unit area produced by the Sun in the form of electromagnetic radiation. Under the Renewable Purchase Obligations (RPO) as part of the Tariff Policy issued by the Ministry of Power, it is mandatory for States to purchase a certain portion of their electricity needs from solar power plants. States can meet their RPO requirements through purchasing solar, wind or bio-gas generated power. In 2016-17, the solar power component of the RPO is set at three per cent.

**Panel suggests 15-point action plan to link renewable energy to electricity grid.** A technical committee on Large Scale Integration of Renewable has suggested a **15-point Action Plan** in their **report** for facilitating large-scale integration of renewables in the country, in a secure and reliable manner. The Committee constituted by the Ministry of Power has recommended measures such as bringing flexibility in conventional power generation, frequency control, generation reserves and other such measures to integrate renewable energy into the national electricity grid. While some of the actions have been completed with active support of Central Electricity Regulatory Commission, State Energy Regulatory Commission (SERC), National Institute Wind Energy and other stake holders, there are a few

which are still pending include Regulatory Framework for Forecasting, Scheduling and Imbalance Settlement for Renewable Energy (RE) generators at 23 States. Only six States so far have issued the regulations.

[The Economic Times](#), 1 April 2016 | [The Times of India](#), 1 April 2016 | [The Hindustan Times](#), 1 April 2016 | [The Hindu](#), 1 April 2016 | [The Economic Times](#), 3 April 2016 | [Business Standard](#), 11 April 2016 | [The Economic Times](#), 14 April 2016 | [The Hindu Business Line](#), 14 April 2016 | [The Hindu Business Line](#), 18 April 2016



**A cloud hangs over VAT exemption for solar power.** Residents who install solar power systems on their rooftops may not get the benefit of VAT exemption as promised by the Delhi government earlier. The VAT department has reportedly taken strong objection to the exemption promised under the [draft Solar Policy](#) and has refused to allow the same. Offering a host of concessions, the Delhi Solar Policy, which is currently being reviewed by Chief Minister Mr Arvind Kejriwal, was to provide exemption from VAT and entry tax on all solar panels, inverters, energy meters, and other devices purchased for installation of solar plants in Delhi. The VAT department has not approved of the exemption stating that it would lead to revenue loss. Another hurdle in the policy is that of an electricity tax which the municipal corporations have sought to charge as per the Electricity Act on every household that generates solar power.

**Solar boat makes its debut in Andhra Pradesh.** An eco-friendly solar-powered boat was launched on the pristine waters of River Krishna in Vijaywada. The 12-seater pontoon-shaped vessel can cruise at a speed of 7 knots for an estimated range of over 35 miles, Champions Yacht Club, a Goa-based yachting and boating service company which is launching the new facility.



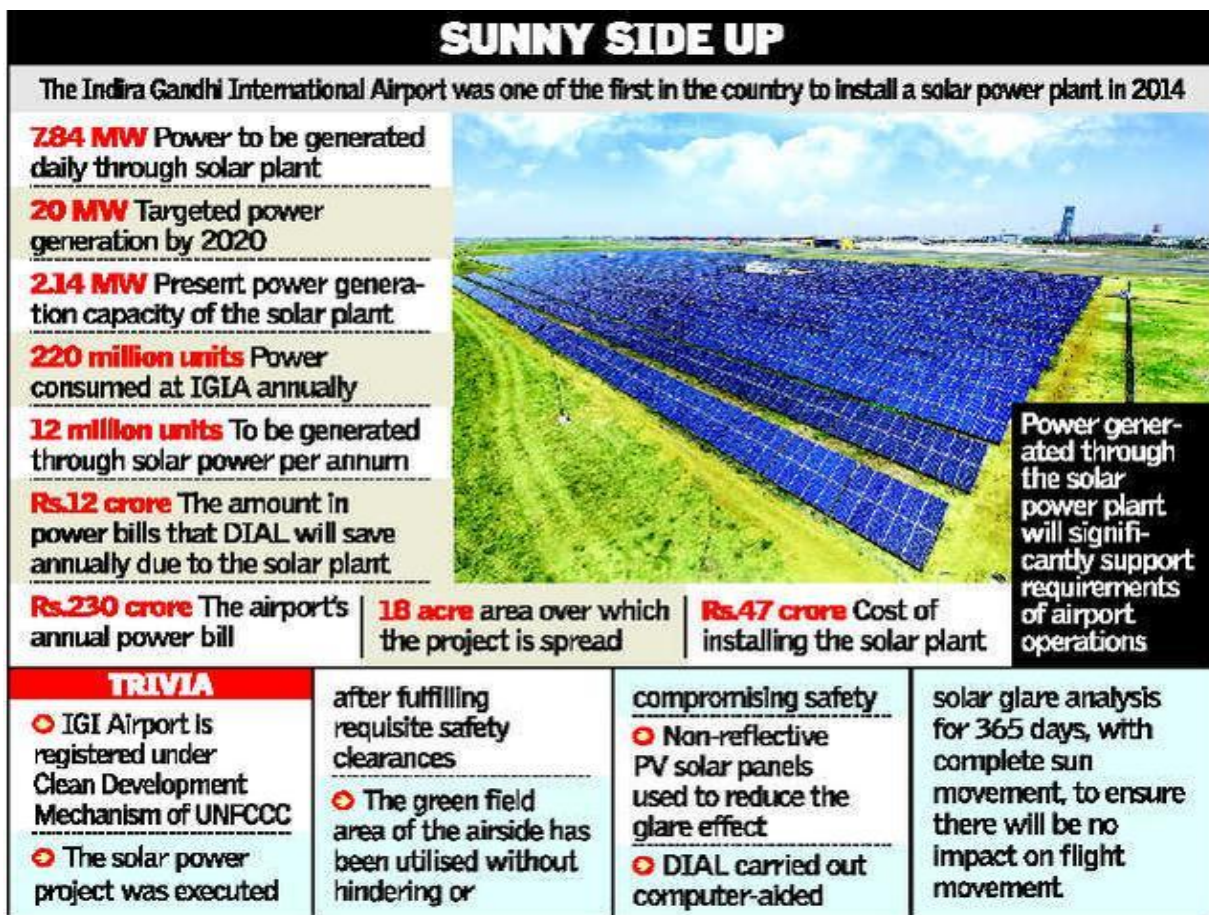
Photo: V. Raju

The solar boat, facilitating clean and efficient cruise, has been imported from China. Solar-powered boats get their energy from the sun. Using electric motors and storage batteries charged by solar panels fitted to the roof, these boats can significantly reduce or eliminate use of fossil fuels. The boat will be rented out on hourly basis for kitty parties and other parties by small groups.

**IDFC Alternatives in talks to invest Rs 600 crore in ACME Solar.** The rush of money that the Indian renewable energy sector saw in 2015 has continued into 2016, as investors look to cash in on the opportunity, a stable regulatory environment and the government's commitment to the global community to fight climate change. In the latest instance of investor interest in the renewable space,

IDFC Alternatives, the asset management arm of infrastructure-focused lender IDFC Ltd, is in talks with Delhi-based ACME Solar to invest Rs 600 crore (approx \$90 million). ACME, according to its website, has solar projects in several states such as Punjab, Andhra Pradesh, Rajasthan and Tamil Nadu. IDFC Alternatives is also in talks to acquire Welspun Renewables' 1.1 GW of renewable assets for around Rs 10,000 crore.

**IGIA upgrades solar power plant.** In a bid to reduce its carbon footprint, the Indira Gandhi International Airport (IGIA) will meet a substantial chunk of its energy needs through solar power. The airport was one of the first in the country to install a solar power plant with a capacity to generate 2.14 MW in 2014. Private air operator Delhi International Airport Ltd (DIAL) said it has enhanced the plant's capacity by over three times — 7.84 MW.



Source: The Hindu, 13 April 2016

The airport will upgrade the capacity to 20 MW by 2020. The plant will help save up to Rs.12 crore annually or about five per cent of its current power bill of nearly Rs.230 crore. The airport consumes about 220 million units of power annually and the plant will help generate 12 million units every year. DIAL has installed the solar panels on the airside to avoid hampering flight movement. The entire project is spread over 18 acres and was built at a cost of around Rs.47 crore. The power generated through the plant is diverted to a main receiving sub-station, which further distributes it to the different airport terminals and other facilities.

**Domestic firms take lead in solar park tender in Karnataka.** In the tender for setting up 500 MW capacity for a solar park in Karnataka, four Indian solar companies outbid foreign players to win major capacities. Rattan India-promoted Yarrow Infrastructure, which quoted the lowest bid of Rs 4.78 a unit, won the contract to set up 50 MW capacity. This was closely followed by Adani Power, Acme

Solar, Tata Power and Fortum Finnsurya with same bid of Rs 4.79 per unit. They all quoted the bid for 100 MW — two power units of 50 MW each. Fortum, a Finnish energy utility, is the only foreign company to win a project in this tender. With the current win, RattanIndia's solar portfolio has increased to more than 290 MW. Once connected to the grid, the electricity generated from the park will be sold to NTPC, under a 25-year power purchase agreement. The project is expected to be connected to the grid before end-2017. These bids witnessed aggressive bidding since Karnataka has very high solar insolation in the country. ReNew Power, backed by Goldman Sachs in India, won 50 Mw by quoting Rs 4.8 per unit. All bids were in the open category of solar cell procurement.

**India appeals against WTO solar ruling.** India has appealed to the World Trade Organization's highest court—the Appellate Body—to dismiss a lower panel ruling that effectively struck down the government's local content requirements for solar cells and modules for promoting renewable energy following a dispute raised by the US. New Delhi appealed against several issues of the panel concerning the interpretation of Article III: 8 (a) dealing with government procurement and Article XX (d) and XX (J) of general exceptions under which domestic content requirements were justified. In a separate development, the US trade representative cautioned India that a fresh trade dispute by New Delhi against the alleged local content requirements and subsidies provided by several US states and supported by US federal administration will not be helpful, according to PV Tech, an American publication.

**Renewables capacity to increase 8.8 GW: ICRA.** India's renewable energy sector could add 8.8 GW of new capacity in 2016-17, on the back of a record capacity addition of 6.9 GW in the previous year, an ICRA Ratings report has projected. The new renewable capacities in 2015-16 were chiefly driven by significant increases in solar and wind capacity, which grew by 3 GW and 3.3 GW, respectively. The ratings agency estimated an increase of 5.7 GW in solar capacity in 2016-17. However, it predicted that there could be a decline in new capacity addition in the wind sector due to a substantial reduction in preferential tariff for new wind energy projects to be commissioned in Madhya Pradesh, and a slowdown in the signing of fresh PPAs & delays in payments by the state-owned utility in Maharashtra. However, ICRA also pointed to several factors that could still pose a risk to the RE sector.

**MNRE forms 3 panels to improve quality control of solar modules and products.** The Ministry of New and Renewable Energy (MNRE) has set up three committees to improve quality control of solar modules and products. One panel will prepare a policy for testing laboratories, another will set technology and product standards and the third will look into regulations governing solar products. Facilities for testing solar modules in India are limited - a National Institute of Solar Energy laboratory in Gurgaon and two private labs in Bengaluru, one run by Germany-based TÜV and the other by UL, headquartered in the US. The Electronics Test & Development Centre in Bengaluru and the Electronics Regional Test Laboratory in Kolkata are awaiting accreditation from the National Accreditation Board for Testing and Calibration for testing solar modules. The lab committee will decide how many more facilities are required and if testing and certification should be enforced on all solar manufacturers. Many domestic manufacturers get modules tested before selling, although it is not mandatory.

[The Hindu](#), 1 April 2016 | [The Hindu](#), 9 April 2016 | [Mint](#), 12 April 2016 | [The Hindu](#), 13 April 2016 | [Business Standard](#), 13 April 2016 | [Mint](#), 21 April 2016 | [The Hindu](#), 21 April 2016



**Wind energy sector faces tough times as sops scaled down.** Wind power companies are headed for tough times as the key incentives enjoyed by the sector are being scaled down. For one, the Budget had cut down the upper limit of accelerated depreciation (AD, a tax benefit scheme for the wind power sector under which part of the project cost is paid back) from 80 per cent to 40 per cent with effect from April 1, 2017.

Another benefit enjoyed by the wind power sector, generation-based incentive (GBI), will also cease to exist from March 31, 2017. Under GBI, wind power units will receive 50 paise for every unit of power produced.

Of the 25,188 Mw of wind power in the country, around 70 per cent is built on AD. The remaining are independent power projects, which avail of the GBI benefit. The sunset date of GBI is March 2017. In 2012, when the wind sector was without any financial assistance, capacity addition fell to 1,700 Mw - half of what was added in the year before. During 2013-14, it managed to touch 1,950 Mw. In the current year, wind power has touched 1,700 MW out of the target 2,400 Mw.

India is the fifth largest wind power producer in the world. According to experts, stagnation looms over the sector as investors are shying away. Nearly 500 MW of wind power projects are in the market for resale or equity hunting.

Year	Capacity added	Installed capacity
2010-2011	2349.4	14052.47
2011-2012	3216.55	17269.02
2012-2013	1740.7	19009.72
2013-2014	2094.7	21104.42
2014-15	2311.7	23416.12
2015-16*	1773.68	25217.29
* as on February 2016		
<i>Source: Indian Wind Turbine Manufacturer's Association (IWTMA)</i>		

**Developers in a spot as MPERC reduces tariff for wind energy.** Wind power developers are up in arms over the Madhya Pradesh Electricity Regulatory Commission's (MPERC) order reducing the levelised tariff for wind energy from Rs 5.92 per kWh to Rs 4.78 per kWh from the start of the new financial year. The tariff will be applicable to all new wind energy projects commissioned after April 1. Wind Independent Power Producers Association (WIPPA) President Mr Sunil Jain said the new tariff is unviable and the fall is the steepest ever in wind energy. The MPERC calculates the tariff after taking into consideration numerous factors -- capital cost of setting up a wind farm, plant load factor (PLF), operational expenses, plant life, depreciation and more.

**3460 MW wind energy capacity addition in FY16 exceeds target.** Over a third of capacity added was by Madhya Pradesh, which commissioned 1291.90 MW. India added a record 3460 MW of wind

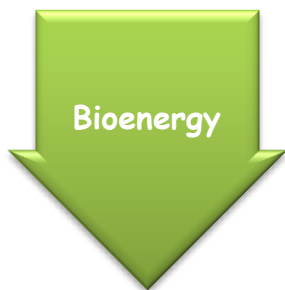


energy capacity in 2015-16, way ahead of its target of 2,400 MW. The previous highest was 3197 MW added in 2011-12.

More than a third of the capacity added in 2015-16 was by Madhya Pradesh, which commissioned 1291.90 MW, according to figures released by the Indian Wind Turbine Manufacturers Association (IWTMA). The next largest addition was in Rajasthan, 687.90 MW, while Gujarat, adding 385.65 MW, and Andhra Pradesh, adding 362.50 MW, were in third and fourth place. Only eight states in India-- Madhya Pradesh, Rajasthan, Gujarat, Andhra Pradesh, Telangana, Karnataka, Maharashtra and Tamil Nadu--have winds strong enough to make wind energy generation viable. Tamil Nadu has the highest cumulative capacity but added only 197.15 MW in 2015-16. At the end of 2015-16, India's cumulative wind energy a's cumulative wind energy capacity stood at 26,904.16 MW against 23,443.61 MW in 2014-15. India has set itself a target of 60,000 MW of wind energy by 2022. Despite the hype around solar, India actually added more capacity in wind than in solar (3,018 MW) in 2015-16. Wind still remains the primary source of renewable energy, with solar energy's cumulative capacity way behind at 6,753.38 MW.

**Suzlon Energy to merge three arms.** Wind turbine maker Suzlon Energy Ltd (SEL) will merge its three wholly owned subsidiaries SE Blades Ltd, SE Electricals Ltd and Suzlon Wind International Ltd with itself in order to “optimize” working capital and reduce costs. Suzlon Energy will also de-merged the company’s tubular tower manufacturing division from its subsidiary Suzlon Structures Ltd and merged the same with flagship company Suzlon Energy. Tubular structure is a component on which wind turbines are erected. Such a restructuring would not have an impact on overhead costs or result in reduction of staff.

[Business Standard](#), 1 April 2016 | [The Economic Times](#), 5 April 2016 | [The Economic Times](#), 28 April 2016 | [Mint](#), 28 April 2016 | [The Hindu](#), 29 April 2016



**India gets its first 2G Ethanol plant in Uttarakhand.** Union Minister Mr Harsh Vardhan inaugurated the country's first second-Generation (2G) Ethanol plant at Kashipur in Uttarakhand. The plant, which has a capacity to consume 10 tonne of biomass per day, is based on the globally-competitive indigenous technology of converting lingo-cellulosic biomass to Ethanol. It is a Feedstock-independent technology developed by DBT-ICT Centre for Energy Biosciences at the Institute of Chemical Technology (ICT) Mumbai, supported by Department of Biotechnology, Ministry of Science and Technology and the Biotechnology Industry Research Assistance Council (BIRAC).

The Government has set a mandate of 5 per cent blending of renewable biofuel in both petrol and diesel. While diesel biofuel blending is near zero, the petrol blending today stands at an overall of about 3 per cent in the form of first generation (1G) or molasses-based Ethanol. While the annual requirement of 1G-ethanol stands at about 500 crore litre, the current total installed capacity is about just 265 crore litre.

[The Economic Times](#), 22 April 2016