

Renewable Energy Monitor

June 2016

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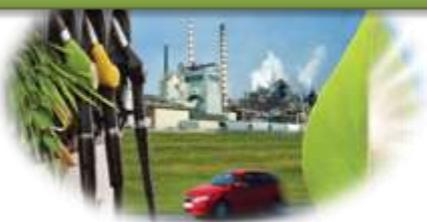
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Policy

Govt eyes 10,000 solar, wind, and biomass projects in 5 years. The government of India, set a target to start at least 10,000 solar, wind and biomass-based power projects in five years, which will serve small groups of customers, especially in rural areas. The target is part of the [draft national policy on renewable energy-based micro and mini grids](#) released by the Union MNRE (Ministry of New and Renewable Energy).

A mini grid includes a renewable energy power generator with a capacity of 10 KW and above, supplying electricity for residential, commercial, institutional or other users. Micro grids are similar, but will have capacity below 10 KW. The ministry has sought comments from all stakeholders by 20 June.

Scope of the Policy

- **Objective** – is to promote the deployment of micro and mini grids powered by RE sources such as solar, biomass, pico hydro, wind etc. in un-served and underserved parts of the country by encouraging the development of State-level policies and regulations, that enable participation of ESCOs.
- **Target-** the Ministry targets to achieve deployment of at least 10,000 RE based micro and mini grid projects across the country with a minimum installed RE capacity of 500 MW in next 5 years (taking average size as 50 kW). Each micro and mini grid project should be able to meet the basic needs of every household in vicinity, and also aspire to provide energy for services beyond lighting such as fan, mobile charging; productive and commercial requirement.
- **Application-**The principal elements of the policy are applicable to all States in the country. The recommendations of the policy are exclusively for RE micro and mini grids and intended

to support the development of the sector. The Ministry encourages States to develop their own dedicated policy or programme based on these recommendations.

At an average capacity of 50 kW per project, the government expects these 10,000 units to create a total installed capacity of 500 MW of micro and mini grid projects. The policy notes that a large number of rural homes still have no access to electricity and decentralized renewable energy solutions are a way to address challenges of reaching the last mile.

Govt lines up Rs 16k cr to support solar rooftop projects. The government has lined up almost \$2.5 billion (about Rs16,800 crore) for providing low cost finance to achieve the target of installing 40 GW grid-connected solar rooftop systems. The MNRE (Ministry of New and Renewable Energy) Secretary Upendra Tripathy said the ministry is in negotiations with the KfW Development Bank to secure soft loans of 1 billion euro. The World Bank has committed a loan of \$620 million, with the Asian Development Bank and the New Development Bank pledging \$500 million and \$250 million, respectively. This will enable participating commercial banks such as SBI, PNB and Canara Bank to extend loan at or near base rates.

High operating costs burn up solar units' funds. Dust, high temperatures and the dearth of water are contributing to a significant increase in the cost of operating solar power plants in the country, according to industry leaders. Some of these factors, such as the level of dust particles and the type of dust, vary from region to region within the country, while other factors such as the hardness of the water and the shortage of a skilled labour force are more general problems faced by plants across the country. The cleaning cost is about Rs.2 per module. Apart from treating the water, the unavailability of a steady water supply also proves to be a problem for solar plant operators.



Source: Ministry of New and Renewable Energy

Delhi Government approves solar policy. The Delhi government approved the solar policy, which aims at making the Capital “an environment-friendly solar city.” The policy recommends the installation of 1 GW (1,000 Mega Watts) solar power capacity in Delhi by 2020, which is proposed to be doubled to 2 GW during the next five years. “The policy outlines a combination of regulations, mandates, incentives, and tax breaks for the growth of rooftop solar power in the Capital and has been prepared by the Government of Delhi in consultation with the Dialogue and Development Commission after extensive consultations with local and international experts.

MNRE Plans Phase II of Solar Parks, Doubles Target to 40,000 MW. The MNRE (Ministry of New and Renewable Energy) is planning a second phase of setting up solar parks across the country, twice as ambitious as the first. Unlike the previous one, the new round will set aside a portion where the solar power producer will also have to set up facility to store the energy in batteries.

In the first phase, formulated in 2014-15, vacant land capable of hosting solar panels to produce 20,000 MW had to be earmarked and acquired, and the necessary infrastructure, such as transmission lines, put in place for developers to set up projects. By the end of March this year, 33 such areas in 21 states that could house 19,900 MW of projects had been identified -it takes about 5-6 acres to build 1MW of installed capacity. While infrastructure at these places is at various stages of completion, some of the parks are ready to be handed over to project developers. Auctions have been held to allot some of these. In Phase-II, the ministry wants to identify land capable of accommodating 40,000 MW in 25 states.

Renewable energy capacities at 42.8 GW pip hydro generation. Helped by policy initiatives and early stage private investments in solar and wind power, the renewable energy sector has for the first time surpassed hydro power generation. According to the Central Electricity Authority data, the total capacity of renewable energy sector increased to 42,849.38 MW, surpassing the total capacity of hydro power sector at 42,783.42 MW, out of the nation's total installed capacity of a little over 3 lakh MW on April 30, 2016. The total capacity of the thermal sector stood at 2,11,420.40 MW, the data showed. According to PWC's Mr Kameswara Rao, the renewable energy investments in solar and wind have benefited from a strong central policy and several years of early-stage private sector investment, respectively. In contrast, hydro power suffered from multiple challenges, including non-availability of long-term financing; the cost imposed by royalty power (from 12 per cent to 36 per cent) to be offered free to the state government; and limited opportunities for the private sector, he said.

Govt releases draft national wind-solar hybrid policy. The government has sought for public comments for **draft** National Wind-Solar Hybrid Policy which aims at providing a framework to promote large grid connected wind-solar PV system for optimal and efficient utilisation of transmission infrastructure among others. The goal of the policy is to reach wind-solar hybrid capacity of 10 GW by 2022, it said, adding that the "policy aims to encourage new technologies, methods and way-outs involving combined operation of wind and solar PV plants.

Objectives and Goals of the policy

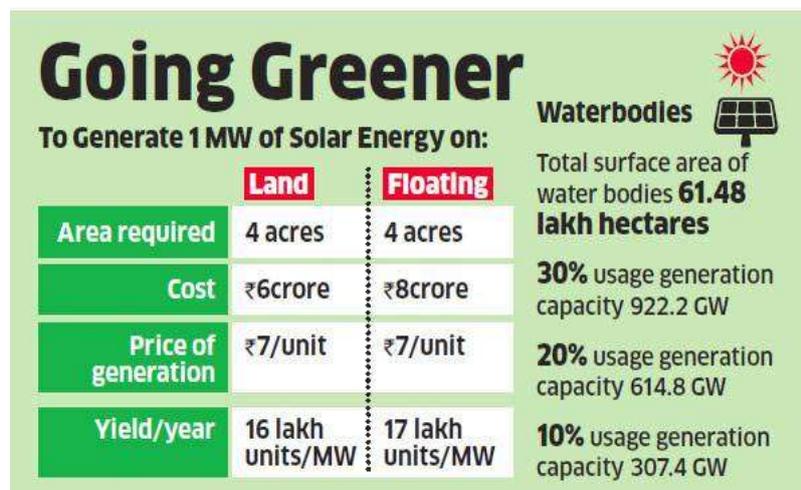
- The main objective of the Policy is to provide a framework for promotion of large grid connected wind-solar PV system for optimal and efficient utilization of Page 3 of 6 transmission infrastructure and land, reducing the variability in renewable power generation and thus achieving better grid stability.
 - Policy aims to encourage new technologies, methods and way-outs involving combined operation of wind and solar PV plants.
 - The Goal of the Policy is to reach wind-solar hybrid capacity of 10 GW by 2022.
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Superimposition of wind and solar resource maps show that there are large areas where both wind and solar have high to moderate potential. The existing wind farms have scope of adding solar PV capacity and similarly there may be wind potential in the vicinity of existing solar PV plant. Under the

category of wind-solar hybrid power plants, wind and solar PV systems will be configured to operate at the same point of grid connection. There can be different approaches towards integrating wind and solar depending upon the size of each of the source integrated and the technology type.

Green power policy: Scaling up hydel's share in energy mix. The power ministry has formed two sub-committees to look at the overall legal and regulatory framework of hydropower, while another panel has been constituted with the objective of looking into the various financing options. A specific mandate in the legal regulatory framework is being considered. The other committee is constituted with the terms of reference of looking at innovative financing instrument for funding the hydropower projects. The tariff framework under discussion aims at addressing the specific requirements of the hydro sector, as the tariff is higher in the first year and then gradually decreases as and when loan is repaid and depreciation comes down. As a result, states are typically reluctant to buy hydropower because the initial tariff is high. The government has now given that flexibility to the developers to modify the depreciation rate so that the tariff is either flat or it increases with the passage of time, something that was not available to developers.

MNRE ropes in Germany-based KfW Development Bank to fund two floating solar projects. After solar parks developed over vast tracts of land, the next big thing in renewable energy could be solar parks floating on water bodies. The MNRE (Ministry of New and Renewable Energy) has initiated a study to assess the potential of floating solar parks in India. It has roped in Germany-based KfW Development Bank to build two large floating solar projects in Maharashtra and Kerala at an initial investment of about Rs 300 crore.



The Economic Times, 28 June 2016

MNRE official said the KfW-funded floating solar park would be a showcase project that would demonstrate the technical viability of large solar projects and to begin with, at least 40 MW of floating solar capacity would be set up. Mr SP Gon Chaudhuri, chairman of the Kolkata-based Renewable Energy College said initial estimates suggest that the India could generate at least 310 GW of green power from such floating solar parks. The MNRE has entrusted the National Institute of Solar Energy and the Renewable Energy College to jointly undertake the study. They will rope in the National Remote Sensing Centre to evaluate the potential for floating solar plants. There are 61.48 lakh hectares of still water surfaces in India, of which reservoirs are 29.26 lakh hectares and tanks and ponds are 24.24 lakh hectares, according to the agriculture ministry. Floating solar panels are more efficient than those on land because the water bodies cool them. Several companies and states have started looking at the option of such plants. The solar panels will be set up on floating platforms

anchored firmly so that they do not drift. The main saving is on the land price and yield. The surface of the water body can be rented out at a minimal rate because they can be put to no other use.

[Mint](#), 3 June 2016 | [The Economic Times](#), 3 June 2016 | [The Hindu](#), 5 June 2016 | [The Economic Times](#), 7 June 2016 | [The Hindu](#), 7 June 2016 | [The Economic Times](#), 8 June 2016 | [Business Standard](#), 15 June 2016 | [The Indian Express](#), 16 June 2016 | [The Economic Times](#), 28 June 2016 | [The Economic Times](#), 28 June 2016



Rajasthan leads India's solar power ambitions. According to Ministry of Renewable Energy, Rajasthan topped in the country with a total installed solar capacity of 1264 MW out of the total 5129 MW of installed solar power capacity in all states as of January 2016. And Rajasthan is likely to remain the national leader in solar energy in the coming years. This change has come about owing to a number of factors including Rajasthan's 300-330 days of sun and highest solar radiation of 6.0-7.0 KWH/ m² in the country. Moreover, availability of large tracts of flat and underdeveloped barren land, a favourable policy environment, positive market dynamics and a national push to solar energy have made Rajasthan the leading solar energy producing state in India. The Rajasthan government announced a new Solar Energy Policy in 2014 which primarily focuses on creating an investment friendly atmosphere in the state's solar sector. The government aims to achieve the target of installing 25 GW of installed solar capacity through public, private and individual efforts. The Government aims to achieve this target by encouraging private investment through measures like provision of government land to set up solar parks, easing of registration and processing procedures, reduction of security amount for from Rs 25 lakh per MW to Rs 10 lakh per MW and reduction of the eligibility criteria of net-worth requirement to Rs 1 crore/MW from Rs 3 crore/MW.

Solar-powered trains to be a reality soon. The Indian Railways has initiated steps to run solar-powered locomotives on mainline routes, a move that could reduce the dependence on fossil fuels. In a recent directive, the Railway Board instructed the West Central Railway to firm up a power-purchase agreement with the Rewa Ultra Mega Solar. In a breakthrough move, the railways have initiated steps to run solar-powered locomotives on mainline routes. While the Centre has pushed ahead with plans to utilise solar energy to light up train compartments, the initiative to use the energy for "traction purposes" (to haul Power Project (RUMPL) for the purchase of 50 MW of solar power for "traction needs" of the Indian Railways. The RUMPL – a joint venture of the [Solar Power Corporation of India](#) and the [Madhya Pradesh Urja Vikas Nigam](#) that is being billed as the world's largest solar trains) has been set in motion for the first time. Studies have estimated that solar power can meet only a fraction of the energy required to haul trains. But even if a small percentage of it can be used, the dependence on fossil fuels can be reduced to a great extent. Power project – will produce 500 MW of solar power when complete in 2019.

Tata Power acquires Welspun's renewable energy assets. Tata Power has acquired the renewable energy (RE) subsidiary of Delhi-based Welspun Energy. It is estimated to be a Rs 9,900-crore deal. Tata Power's subsidiary, Tata Power Renewable Energy Ltd (TPREL), signed a share purchase agreement with Welspun Energy to acquire Welspun Renewables Energy Pvt Ltd (WREPL). "This represents the largest transaction in renewables in India," said Tata Power. It did not disclose the deal size and the seller made no comment. Welspun Energy is itself a subsidiary of the Mumbai-based Welspun Group, a multinational corporation with interests in energy, steel and textiles. The portfolio Tata has bought comprises 990 Mw of solar power projects and about 150 Mw of wind power projects. Of this, 1,000 Mw is operational and the rest in "advanced stages of execution", said Tata Power. The assets of

Welspun Energy have been on the block for a year; this newspaper had reported last year about companies being interested in buying. Japan's SoftBank, on these, dropped out, as did Hero Future Energies and ReNew Power, said senior executives. After the new purchase, TPREL would have an RE portfolio of 2,300 Mw, making it the largest such in this segment, in India. It had till now 294 Mw of capacity; another 500 Mw of assets were being carved out of Tata Power through a court process. And, almost 400 Mw of solar and wind power projects are under implementation, the company said.

Adani Wins Solar Bid in Chhattisgarh. An Adani Group company has won the project to set up a 100 MW solar power unit in Chhattisgarh, in an auction where none of the bidders quoted below the reserve price. Parampujya Solar Energy, an arm of Adani Green Energy, sought the lowest viability gap funding (VGF) of Rs 59 lakh per MW among three bidders in the latest solar auction conducted by (SECI) Solar Energy Corporation of India. The reserve price in SECI's reverse auction is Rs 4.43 a unit. The winner has to supply electricity at the price it bid. The Ministry of New and Renewable Energy provides VGF, or subsidy, of up to Rs 1 crore per MW to solar developers. The losing bids by Azure Power and Spectrum Coal and Power sought VGF of Rs 84 lakh and Rs 89 lakh, respectively. In two other recent solar auctions as well - 400 MW in Andhra Pradesh in May and 125 MW in Uttar Pradesh in March - the winning tariff had been Rs 4.43 per unit. Solar tariffs fell steeply in 2015, but this year, except for a single bid for a 70 MW project at the Bhadla Solar Park in Rajasthan of Rs 4.34 per unit, developers have refused to go below the SECI reserve price of Rs 4.43 per unit.

ABB links TN solar project to national grid. ABB, a Swedish-Swiss multinational corporation headquartered in Zurich, announced it had commissioned five substations to integrate a 648 MW solar project in Tamil Nadu to the national transmission grid. Mr Claudio Facchin, President of ABB's Power Grids division said, a total of 360 MW from the solar project is currently grid-connected and at full capacity this facility will account for nearly 10 per cent of the India's current solar capacity of around seven GW.

Delhi Metro puts green energy on new track. In order to mitigate carbon footprints, DMRC has decided to maximise the use of renewable energy. The first step towards this was to utilise all possible rooftops for harnessing solar energy; for this, a target of 50 MWp by 2021 has been decided. Under the Central Financial Assistance plan of the Union government, 6.5 MWp has been commissioned and rooftop capacity of 10 MWp (total) is likely to be commissioned shortly. However, DMRC's demand is likely to shoot up to 300 MW by March 31, 2018, when the third phase of its network expansion will be completed. In preparation for that, it is exploring the possibility of getting solar power from off-site plants. Thus, it recently tied up with Rewa Ultra Mega Solar, an equal venture of Madhya Pradesh Urja Vikas Nigam and the Solar Energy Corporation. DMRC says 60 per cent of its daytime energy requirement will be met from Rewa. Besides, it has also signed an initial agreement with Solar Energy Corporation of India for a similar arrangement, with likely capacity of 100 MWp. Power from the World Bank-supported Rewa project is likely to be available from September 2017. The Madhya Pradesh government invited tenders for 750 MW in March. The project is planned to be split into three units of grid-mounted solar photovoltaic power plants of 250 MW each. Mr Manu Srivastava, chairperson, Rewa Ultra Mega Solar, and principal secretary, new and renewable energy, Madhya Pradesh government said the Rewa project would be supplying solar power to meet almost the entire daytime requirement of DMRC and would also enable the Rewa project to supply bulk of the power within the state during peak demand hours of midday.

Transferring Power

- The park developed by Rewa Ultra Mega Solar will have three units of 250 MW each. The solar power developers within the park will connect their units with the inter-state transmission system being set up by the Power Grid Corporation of India, and supply electricity to the Madhya Pradesh government's power distribution companies and the Delhi Metro Rail Corporation.
- From the day of the commissioning of the initial capacity of each unit, DMRC will provide Rewa Solar with its power drawal schedules one day in advance by 10 am every day. Based on the drawal and generation schedules, Rewa Solar will prepare the final schedule for DMRC and the discoms on a day-ahead basis. After matching DMRC's requisitions, the solar plant will schedule the balance power to the discoms, subject to a maximum of 200 MW from a unit.
- Rewa Solar will submit the final drawal schedules to the discoms and DMRC by noon each day. If DMRC fails to provide Rewa Solar with its day-ahead power drawal schedules or Rewa is unable to prepare the final drawal schedule, power will be drawn on that day in 20:80 ratio: DMRC will take 20 per cent of the power and state discoms the rest of it.

Solar power plants get good response in state Haryana. The rooftop solar power plant (RSPP) system has received good response in the state. The Haryana Renewable Energy Development Agency (HAREDA) gives 30 per cent subsidy on the RSPP. The keen interest of residents in the RSPP can be gauged from the fact that since April 1, 2015, 16,200-kW projects have been installed in the private sector without subsidy. Not only private sector, but various departments of the state government have also send proposals to HAREDA for the sanction of 4,000-KW projects in their respective buildings. The HAREDA authorities have sent proposals to the high powered purchase committee of the government for the finalisation of equipment rates.

SOLAR POWER IN STATE		District Capacity (kW)	
District	Capacity (kW)	District	Capacity (kW)
Karnal	600	Panchkula	19
Rohtak	500	Ambala	15
Sirsa	500	Bhiwani	10
Jhajjar	447	Faridabad	5
Gurgaon	185		
Hisar	45		
Sonepat	20		



The Tribune, 17 June 2016

Experts say the government must promote solar power generation, as it is the only sector which can help the authorities arrange cheaper power and make the state self-dependent in power generation.

In March, HAREDA mandated installation of solar plants over rooftops across the state. As per directions, all new residential buildings built on 500 sq yards or above within the limits of the municipal authorities must have a plant of minimum 1 kW or 5 per cent capacity of the total sanctioned load of the building.

SDMC inks 20 megawatt pact for solar power projects. The **SDMC** (South Delhi Municipal Corporation) aims to generate 20 MW solar energy by installing solar panels on the rooftops of its 400 buildings and spare land. For the solar power generation, the SDMC signed a MoU with the **SECI** (Solar Energy Corporation of India). As per the MoU, both parties have agreed to collaborate, identify and develop potential sites for execution of solar power projects. The SECI, a Central public sector undertaking under the ministry of new and renewable energy, possesses expertise in the field of solar power project and will undertake all the activities pertaining to planning, design, manufacture, supply, installation, testing, commissioning, operation and maintenance of the grid connected to rooftop solar plants. The SECI will also coordinate with local Discoms in association with SDMC for net metering of the generated energy as per the prevailing regulation of the DERC. The civic body will make available rooftops of municipal buildings on zero lease rental basis to the SECI or its authorised representatives for implementation of the project. The SDMC will also provide project cost, determined through the competitive bidding process, for the execution of projects. SDMC commissioner Mr P.K. Goel said that both parties have entered into an MoU initially for two years for generation of around 10MW solar power on rooftops of 400 municipal buildings, including schools and 10MW on spare vacant land of the corporation.

CLP India buys into Suzlon solar venture. Marking its debut in solar energy, **CLP India**, one of the largest foreign investors in the Indian power sector, announced it was buying a 49 per cent stake in a Suzlon Group company. The joint venture will be setting up a 100 MW solar project at Veltoor in Telangana's Mahbubnagar district, an investment of Rs 760 crore. The two companies signed an agreement last Tuesday. Suzlon would continue to hold 51 per cent in SE Solar, a Special Purpose Vehicle it had set up for the project. CLP India has the option to acquire the other 51 per cent a year after the project's commissioning. This is the second deal announced in the solar energy segment in less than a fortnight. Tata Power announced acquisition of Welspun Renewables Energy on June 12, in a deal worth Rs 9,249 crore. The Veltoor unit is expected to be commissioned by May 2017 and will be funded 80 per cent by debt and 20 per cent by equity. The power purchase agreement (PPA) for the project has already been signed with the **TSPDC** (Telangana Southern Power Distribution Company), for 25 years. Power will be supplied at a fixed Rs 5.59 a unit (kw/hour).

Solar cell breakthrough. A team of South Korean scientists have used unconventional materials and processes in a path-breaking project to create ultra-thin and extremely flexible solar cells. Each cell is a micrometre thick (100 times thinner than a single strand of human hair) and can be wrapped around a pencil. The scientists claim that the technology is both more bendable and less fragile than other ultra-thin solar cells, which are typically 3.5-4 times thicker. Moreover, the cells require fewer raw materials than the regular panels and thus are more economically viable to mass-produce. Aside from the cost, the pliability of the photovoltaics enables the construction of structures with increased surface area, so that more solar power can be absorbed. While experts are contemplating on their use for powering wearable devices, ultra-thin cells can address the energy problem. Use of these photovoltaics can also ease the economic burden for reaching the government's target of 100 GW of solar power by 2022, which is expected to cost approximately \$100 billion. With the country already having inaugurated the world's first solar-powered airport, Cochin International, the ultra-thin cells can provide a low-cost

green solution, powering up more airports across the country. Thin film solar cells have already entered the private sector as HHV Solar has developed the equipment for setting up a production facility. One can only hope that the government, too, takes notice of the vast capabilities of this advanced technology in order to cost-effectively reach its goal and provide a cleaner future for the nation.

23 rooftop solar power plants set in NDMC schools. The New Delhi Municipal Council (NDMC) commissioned 23 rooftop solar power plants on NDMC school buildings as a part of its renewable energy strategy under the National Solar Mission. The 23 plants will generate 1.13 MW solar energy and after completion of first phase of installation on 34 NDMC buildings, 2.27 MW solar energy will be added in the power grid.

[The Statesman](#), 1 June 2016 | [The Hindustan Times](#), 6 June 2016 | [Business Standard](#), 13 June 2016 | [The Economic Times](#), 13 June 2016 | [The Hindu](#), 13 June 2016 | [Business Standard](#), 15 June 2016 | [The Tribune](#), 17 June 2016 | [The Asian Age](#), 21 June 2016 | [Business Standard](#), 21 June 2016 | [The Financial Express](#), 23 June 2016 | [The Pioneer](#), 25 June 2016



Wind Energy Developers in Rajasthan Face Losses as Discoms. Wind energy developers in Rajasthan have been facing losses for the last two months because the state discoms have been arbitrarily curtailing their intake of wind power, at times two or three times a day. These 'backdowns' by the state load dispatch centres (SLDCs) have cost the developers around Rs 100-150 crore in the months of April and May. At the root of the problem lies the 'erratic' or 'infirm' nature of wind energy, which can vary considerably even in a single day depending on the speed at which the wind is blowing. In the current pre-monsoon season, winds are often at their highest speeds and sometimes generate power far in excess of the average, which the SLDCs, fearing the grid might trip from overload, are loath to take. The Rajasthan Electricity Regulatory Commission has directed that wind power be given priority over power from conventional sources -wind has 'must run' status. But in practice it is much more convenient for SLDCs to use sources which provide reliable and uninterrupted power, citing security concerns for curtailing wind power.

Gamesa to merge with Siemens to create largest wind power business. Spanish renewable energy group Gamesa said it would merge its wind turbine assets with those of German engineering group Siemens, in a deal that will create a global giant in wind power. The announcement comes following months of negotiations between the two sides and reports in the Spanish media that an agreement had been reached. Wind power has up until now been the smallest and least profitable of Siemens' eight divisions. Siemens, which in 2014 failed in its bid to buy French rival Alstom, builds a wide variety of products that range from gas turbines to trains to medical equipment. The German company is dominant in the offshore wind market while Gamesa is strong in the onshore segment. Gamesa has another strength—it is strong in emerging markets, especially in Spain's former colonies in Latin America. The company is also well positioned in Brazil, is the market leader in India and the top non-Chinese wind farm maker in China.

Suzlon commissions 4.2 MW wind project in Gujarat. Wind turbine maker Suzlon Group announced the completion and commissioning of its 4.20 MW maiden wind project for Ahmedabad Municipal Corporation. The project, located at Nakhatrana, Kutch, comprises of two units of Suzlon's latest product variant, S97-120 meter hybrid tower wind turbine, the company said. The project will help in offsetting 9,000 tonnes CO2 emissions annually. S97-120 meter is the world's tallest all-steel hybrid

tower which ensures 12-15% higher energy yield and further enables viability of sub-optimal wind sites, according to the release. It achieved best-in-industry Plant Load Factor (PLF) of 35% for a period of 12 months after its launch in November 2014. As of March 2016, Gujarat's total wind installations stood at 4,038 MW, out of which 1,842 MW has been contributed by Suzlon.

Wind energy companies slam Gujarat proposal on central subsidy. The Centre, through the Ministry of New and Renewable Energy (MNRE), provides all renewable energy developers a subsidy or generation based incentive (GBI) - usually 50 paise per kWh - over and above the tariff they are paid by the discom. The GERC wants half this incentive passed on to the discom. Both the Wind Independent Power Producers Association (WIPPA) and the Indian Wind Energy Association (InWEA) have criticized the proposal in written submissions to the GERC. The protest over GBI is only one of a long list of objections wind developers have put forward to the GERC's proposals. The GERC has suggested raising the tariff Gujarat discoms pay wind developers from Rs 4.15 per kWh at present to Rs 4.19, but the developers feel it is far from enough. "The proposed tariff of Rs 4.19 per kWh is the lowest in the country," says the InWEA paper. It notes that despite the emphasis on renewable energy in recent times, and the fact that wind installed capacity has been rising rapidly at the national level, "in the last three years, the capacity addition in Gujarat has been lower than in the previous three, 2010-2013." Though Gujarat, in terms of wind power potential, is one of the best in the country, wind power investments have been going to other states due to Gujarat's policies.

[The Economic Times](#), 17 June 2016 | [Mint](#), 25 June 2016 | [The Hindu Business Line](#), 26 June 2016 | [The Economic Times](#), 28 June 2016



Bioenergy

Govt plans Rs 10,000 crore bioenergy mission next fiscal. The Centre is planning to launch an integrated bioenergy mission with an outlay of Rs 10,000 crore from next fiscal to enhance use of bio-fuels like ethanol and biogas for reducing consumption of fossil fuels. The objective of the mission would be to reduce green house gases emissions as agreed in the Nationally Determined Contributions at COP21.

The Centre wants to achieve this objective by progressive blending or substitution of fossil fuels such as coal, petrol, diesel, natural gas and LPG with biomass pellets, bio-ethanol, bio-diesel, bio-methane, and similar green fuels, both for electrical and non-electrical uses. The government had decided to constitute a technical committee under Mr A K Dhussa, former Advisor, MNRE, to formulate the action points into schemes, and thence to formulate the base document for the mission.

Ethanol, bioenergy no threat to food security: report. Bioenergy produced from crops does not threaten food supplies, researchers funded by the US government, World Bank and others said in a report, dealing a potential blow to critics of the country's biofuels program. Energy and food security can be simultaneously improved through well-designed biofuel and bioenergy development programs, according to a report released by a team of experts from 10 institutions. The report confronts some of the public's misconceptions about the food security impacts of biofuels, and offers clarity on the source of these perceptions.

One of the key goals of the report, "[Reconciling Food Security and Bioenergy: Priorities for Action](#)," is to point out that food and energy security are complementary goals, as embodied in the United Nations-led 2030 Sustainable Development Goals (SDGs), and as also reflected in the Paris Agreement under the UN Framework Convention on Climate Change (UNFCCC). The authors outline a number of

ways in which development-focused efforts to promote food security and secure clean and reliable sources of energy for local populations can align in a synergistic way.

The report identifies science-based steps to ensure that biofuels, food crops and natural resources can be managed sustainably together. Published in the journal [Global Change Biology Bioenergy](#), the report is the final knowledge product generated by an international and multidisciplinary collaboration that was initiated at an international conference on Biofuels and Food Security, hosted by the International Food Policy Research Institute in November 2014.

From green slime to jet fuel: algae offers airlines a cleaner future. As airlines struggle to find cleaner ways to power jets and with an industry-wide meeting on CO2 emissions just months away, scientists are busy growing algae in vast open tanks at an Airbus site at Ottobrun, near Munich.

The [European aerospace group](#) is part-financing the [Munich Technical University](#) project to grow algae for biofuel and, although commercial production is a long way off, hopes are high.

Prof Thomas Brueck, Munich TU's faculty of industrial biocatalysis, says that the biofuel from algaculture could cater for 3-5% of jetfuel needs by about 2050. Algae can grow 12 times faster than plants cultivated on soil and produces an oil yield about 30 times that of rapeseed. However, although aviation biofuel made from feedstocks such as flax or used cooking oil is already available, limited stocks and low oil prices mean only a few airlines, including Lufthansa and KLM, are using it on a trial basis. "To substitute 100% of the kerosene use today, we will not do it with algae alone. We need a combination of different technologies to actually enable that substitution," Prof Brueck said. Airbus also says the technology, in which it and the Bavarian government are investing more than €10 million (\$11 million) between them, is still at an early stage and is not financially viable for airlines just yet.

Capital's first bio-methanation plant to be set up in Ghazipur. Delhi's first bio-methanation plant in Ghazipur is to be set up by East MCD to dispose of illegal waste generated from slaughterhouses and to produce bio-gas from them. This will not only help in managing discharge of waste on a daily basis but a huge quantity of waste produced since the commissioning of the slaughterhouse will also be treated. As per the report, the proposed plant will come up on a 0.9 acre and will come up in the close proximity of the slaughterhouse and live stock market in the Ghazipur. The plant will have a capacity to treat 70 metric tonne illegal waste per day and a total of Rs10.05 crore will be spent on it which will be borne by a private player. As the plant will be constructed on a PPP model, the civic body will pay the treatment cost to the private body which will not only bear the construction cost but will also ensure its upkeep and maintenance. The concessionaire will be free to sell the products — energy, compost, fertilizer, etc generated from the plant to any party at any price.

[Firstpost](#), 14 June 2016 | [The Financial Express](#), 14 June 2016 | [Mint](#), 20 June 2016 | [The Pioneer](#), 21 June 2016

Corporates

NTPC to explore more addition of renewable energy to portfolio. NTPC will revisit its corporate plan to explore further addition of renewable energy to its power generation portfolio. NTPC will enter wind power projects with plans to set up 1,000 MW. The state-run company is firming up plans also to set up 10,000 MW solar plants. NTPC is targeting 128 GW of capacity by 2032.

As per the plan, drafted in 2010, renewable generation should constitute 28% of the installed capacity by that time. Its plan to add more renewable energy is in sync with nation's aim to generate 175 GW green power by 2022. India's Intended Nationally Determined Contribution under the UN Framework

Convention on Climate Change, submitted on October 1, targets to reduce carbon emission intensity by 33-35% by 2030 from 2005 level and achieve about 40% power capacity from resources based on non-fossil fuels.

NHPC to invest Rs 3,000 crore on solar, wind projects. State-run NHPC (National Hydroelectric Power Corporation) is planning to invest around Rs 3,000 crore over the next five years to set up solar and wind projects across the country. The company is looking at opportunities in states like Maharashtra, Andhra Pradesh, Kerala, Uttar Pradesh and Tamil Nadu, among others. NHPC Director (Technical) Mr Balraj Joshi said NHPC is looking at opportunities and plan to invest around Rs 3,000 crore over the next five years to set up solar and wind projects across the country. The company proposed to develop 400 MW pumped storage project, which will be developed on solar hybrid model. Pumped storage projects store and generate energy by moving water between two reservoirs at different elevations. On the solar front, it has signed an MoU with Solar Energy Corporation of India (SECI) to set up projects to the tune of 250 MW. In Kerala, NHPC will be setting up a 72 MW solar project, while in Maharashtra it has planned a 50 MW one. In Uttar Pradesh, NHPC already has an agreement with Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA) to jointly develop a 50 MW plant. NHPC had in 2014 signed a pact with the Kerala government to develop wind projects in the state. Last year, the company had also approved setting up of a 50 MW wind project in Rajasthan.

[The Economic Times](#), 7 June 2016 | [The Times of India](#), 28 June 2016