



Making strides on RE frontier

India is emerging as a clean energy leader as it keeps focus on 'Make in India' vision

With India is fast emerging as a renewable energy leader, it has opened frontiers for foreign investment. At the same time working hard on the much-talked about 'Make in India' vision.

Strides are being made — be it in the form of new records in tariffs or the mushrooming of projects and adopting a leadership role in a body like International Solar Alliance, a major international conglomerate for solar energy.

While the focus of the clean energy mission has been on increasing domestic manufacturing in India, government has spoken of the need to have end-to-end solar manufacturing in the country. The importance of strengthening domestic manufacturing in order to realize the national renewable energy targets has been recognized.

As the government is working to develop solar-manufacturing in the country, global manufacturing companies can set up base in India, capitalizing on its low-cost labour, favourable policies and tax incentives are set to make the country a hub for the export of renewable energy equipment.

Strengthening domestic manufacturing of solar panels and wind turbines, at competitive prices, would further the objectives of the Make in India initiative, and provide an impetus to the solar and wind industry. Mr Sundeep Gupta, Vice-Chairman & Managing Director, Jakson Group says that the group is planning to invest INR 700 crores in setting up a solar module and cell manufacturing facility in India, which will be fully operational by 2020. The new facility will have annual capacity of 1 GW of solar modules and 250 MW of solar cells when completed. "The government aims to add 100 GW of Solar and 60 GW of wind power capacity in the country by 2022, which presents a lot of opportunities for renewable manufacturing in India. India is capable of producing high quality solar products at par with the best in the world. Incentives like MSIPS subsidy and some other incentives under the state industrial policies are currently available for new investments in solar manufacturing," he says.

● ● **WIND SECTOR IS TRULY MAKE IN INDIA:**

Wind energy is the most mature of the RE sector spread over 30 years with various learning on policy, technology and evolution of many regulatory interventions with power being a concurrent subject in the country.

India is fast emerging as a wind manufacturing hub. "In fact, we are manufacturing the same quality product as are done in the world leaders, the US and Germany. We have the same kind of skill, technology and expertise for a truly capital intensive industry. The PM of India gave us a target that the country must produce 65 GW from wind energy and the industry going by this pace is definitely going to achieve it. The Indian industry is capable of delivering the vision of the PM. After China, which is number one, the US and Germany, India is number four," explains Chairman of Indian Wind Turbine Manufacturers' Association Sarvesh Kumar.

Over 75 percent components of the wind turbine are made here. India has a price advantage and the product is accepted all over the world, in comparison with solar



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where 90 percent of the equipments are assembled in India, he says.

India has exported to the tune of 7 GW and generated revenue of 7 billion dollars in last six to seven years.

Original Equipment Manufacturers (OEMs) have played a vital role from inception to bring in state-of-the-art and latest technology in the country. There are over 20 manufacturers, over 60 models ranging from 250 KW to 3 MW of wind turbines. The manufacturers not only supply equipment but are able to provide end to end solution for the customer.

Post 2000, there is a paradigm shift from small and retain investors to IPPs who are able to invest 100 to 200 MW or more per annum financed by private equities and global players which has really accelerated the market. Government has encouraged many schemes like AD, Generation Based Incentive (GBI) which would be revenue neutral for those who do not require depreciation.

The success of wind really lies in the robust supply chain hub saving both foreign exchange and lead time. The manufacturing capacity in India is estimated at 9500 MW with 19 manufacturers of 60 models and ramping up to 12000 to 15000 MW can be done very easily which can be used both for domestic as well as exports. It is a proud statement that delivered projects in India is perhaps the lowest cost in the world, says Kumar.

●● DOMESTIC MANUFACTURING IN SOLAR:

Currently, India has installed solar PV manufacturing capacity of round 3 GW for solar PV Cells and around 7 GW for solar PV modules, however, the actual production is 1 GW and 3 GW respectively. In India, solar PV power plants installed in the year 2016-17 were about 5.5 GW and the target for 2017-18 is around 10 GW. Thus, from above, it is visible, that the installed manufacturing capacity of solar PV cells

and modules is not capable of catering the annual demand of country.

Government of India provides incentives for solar manufacturing under Modified Special Incentive Package Scheme (M-SIPS) of Ministry of Electronics and Information Technology (MeitY). M-SIPS provide a capital subsidy to promote large scale manufacturing in the Electronic System Design and Manufacturing (ESDM) sector which includes Solar Photovoltaic units across the value chain. The scheme provides subsidy for capital expenditure - 20% for investments in Special Economic Zones (SEZs) and 25% in non-SEZs.

MNRE has been working on developing proposals for two-pronged strategy to support domestic solar manufacturing in India:

- (i) Supporting existing solar PV manufacturers to enable them to compete against the foreign suppliers MNRE is analyzing the cost differential between domestic solar PV manufacturers and foreign solar PV manufacturers, at each stage of solar PV production chain and the reasons for such cost differential. Appropriate ways and means are being looked at, to bridge this cost gap to make domestic solar PV manufacturers globally competitive.
- (ii) Support to domestic manufactures by creating captive markets MNRE has initiated a 2nd phase of CPSU scheme of 7500 MW, which provides for installation of entire capacity of solar projects based

on domestically manufactured solar PV cells and modules. The scheme is under process of approval. Similarly, MNRE has the Grid-connected Rooftop Solar Scheme under which domestic solar PV modules are required to be installed for projects under CFA/ Incentive.

(iii) Incentivizing setting up of fully vertically integrated, state-of-the-art solar PV manufacturing facility in India MNRE is working at encouraging development of world-class, fully vertically integrated, state-of-the-art solar PV manufacturing facility in India. It seeks to address the issues of technology obsolescence and fragmented, small-scale of operation that are the major challenges currently being faced by the Domestic Solar PV Manufacturing Industry. The vision is to build a world class manufacturing industry that is not only globally competitive, but is also an important component of overall Energy Security of the country. The Ministry is considering getting a study done on the critical elements involved in the entire solar production chain, the optimum scale of operation and the overall cost structure of such a production facility. Such a study will help in better formulation and focusing of overall Government policy in this regard.

“With a strong policy focus on renewable energy penetration in the long run & supportive regulatory framework in place, renewable energy capacity addition has seen a considerable growth both in wind and solar over the last 5-7 year period, which is also supported by an improving tariff

competitiveness of these non-conventional energy sources,” says Sabyasachi Majumdar, Senior Vice President and Group Head, Corporate sector ratings, ICRA Limited. “While wind energy equipment requirement is met through domestic manufacturing capacity which is in surplus in relation to annual domestic demand as anticipated in the long run, solar equipments (mainly PV-based) are predominantly import based due to their relative cost economics against the domestically available solar PV modules. While the policy target of 175 GW by FY 2022 is significant, clarity on the manufacturing policy for Make in India is critical for domestic module manufacturers which would enable them both to counter threat of import competition & visibility over the demand, given that the import competition is intense especially from China,” he explains.

●● CHALLENGES:

One of the challenges that the solar association has brought to notice is the case that solar cell manufacturing companies in the US, China, Taiwan, Malaysia and EU have been dumping their cells in Indian markets, earning profits at the expense of indigenous cell manufacturers. According to experts, as per WTO norms, the international companies have to be given equal opportunities in supply of solar cells/modules and indigenous suppliers, presently, won't be able to handle the handle to demand without foreign imports. Dolf Gielen, Director Innovation and Technology Centre (IITC) Manufacturing industry can be the

basis of creating new jobs. There are jobs in solar, wind, biomass and hydro power. These jobs are across the supply chains. These supply chain structure is different for different sectors. “While we may not be easy to compete with the Chinese on the cell manufacturing, but there is opportunity in the other half of the solar project like inverters etc. Regarding government policies to support manufacturing industry, innovation required and government needs to play a role in logistics, excessive funding and skilled staff. Moreover, going by various examples in Europe, anti-dumping may not work well and needs to be looked at strategically.”

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DV Giri, Secretary General, IWTMA says certain challenges lie in logistic costs and lines of credit through Exim Bank. Dialogue is on between the industry and Ministry of Commerce and the administrative ministry MNRE to look at the tremendous opportunity that are possible to export from the current USD 500 million to USD 2 to 3 billion per annum.

K.N. Subramaniam, CEO, PV Systems, Moserbaer Solar, India is far behind China when in terms of cost, capacity and general ecosystem, speaking at the session Make in India: Policy Gaps at the recently-concluded World Renewable Energy Technology Congress in New Delhi said, “But India entrepreneurs need to have faith that if we start work today, in next 2-3 years, we see an ecosystem coming up. To do this, we need to set up at least 4 major manufacturing hubs in the country. For a robust solar manufacturing system, the basis requirement would be availability of continuous uninterrupted power supply and that at subsidized cost.”

According to Ritu Lal, VP, Business Development, Amplus Energy Solutions, research and development has to be at the core if we want to excel in manufacturing. “Also, apart from solar panels, an area which we must focus should be storage as it is an essential component of the renewable energy revolution.”

