

Demand Positive

Manufacturing industry hopes for better times ahead

During the past year, the renewable energy sector witnessed some noteworthy developments in terms of capacity addition. However, the manufacturing segment struggled to compete with foreign players. Although the government's Make in India initiative offers a ray of hope to the industry, it may take some time for its effects to be reflected in the market. Leading manufacturers comment on the noteworthy developments during the past year and their implications for the renewable energy manufacturing industry, as well as the response to the Make in India initiative, the challenges that remain unaddressed and the road ahead...

What have been the noteworthy developments in the renewable energy sector over the past one year? How is the manufacturing segment expected to benefit from these?

Vivek Bhardwaj

Over the past one year, the cost of solar modules, which account for about 66 per cent of the total cost of a solar project, has reduced by more than 20 per cent, with a reduction in the prices of consumables like polysilicon. This has considerably reduced the gap between the levelised cost of electricity of solar and coal. The segment is witnessing greater investment from European companies, with the introduction of the solar park concept, which has lower land acquisition and regulatory risks. During the next one year, eight to ten European companies are expected to foray into the Indian solar market.

The industry is more segmented towards the utility sector and less towards the commercial and residential sectors. Therefore,



Vivek Bhardwaj
Sales Director
Jinko Solar

"The Make in India initiative will help in boosting the country's solar equipment manufacturing industry."

the order size is high. The big four manufacturers, known as the super league, are taking the bulk of the utility orders.

Ashish Khanna

The past one year has seen rapid progress in the solar energy segment, stimulated by the government's focus on providing 24x7 affordable clean energy under the Power for All by 2022 initiative. The World Bank's reported decision to allot \$1 billion in support of India's solar generation plans bears testimony to the country's solar potential. This may be one of the World Bank's largest-ever funding for solar power in any country.

Against this background, solar energy could be explored as a major contributor to the economy. This is possible through a higher focus on solar manufacturing, which will help in saving precious forex and develop into a business model for forex earnings by exporting solar modules and related services.



Ashish Khanna
Executive Director
and Chief Executive
Officer, Tata Power
Solar

"The government should foster solar manufacturing as it can contribute immensely to the economy."

Sivarajan Ramachandran

One of the noteworthy developments has been in the grid-connected inverter space. It gives us the leverage to use inverters even in the 150 V-250 V range, which the imported ones do not have now. Its striking features include the operation of grid-connected inverters in non-net metering mode. As our products are being designed and manufactured in India, this gives us both regional knowhow and a commercial edge over our peers from the West. Su-Kam is the pioneer of enhanced solutions in this space, contributing to the success of the manufacturing segment in our country.

Tulsi Tanti

Financial year 2015-16 was a historic year not only in terms of wind capacity addition but also for investments. The industry attracted an investment of over \$3.16 billion and the cumulative installations of the sector increased to about 64 per cent of the country's total grid-interactive renewable energy capacity. Annually, wind ener-



Sivarajan Ramachandran
Chief Technology
Officer, Su-Kam
Power Systems

"What is needed is the culmination of skilled industry-ready manpower that understands industry issues."

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gy has surpassed all its previous records with over 3,400 MW of installations in 2015-16. This was propelled by the advancement in technology and the establishment of a conducive policy environment through the renewable purchase obligation, the renewable generation obligation, the Green Energy Corridors project, interstate transmission charges waiver, the Ujwal Discom Assurance Yojana, which gives state utilities greater credibility to invest in renewable energy, and the recent approval for the repowering policy. The draft Wind-Solar Hybrid Policy and the National Renewable Energy Act have also been announced.

The Make in India initiative will give a boost to the capital goods sector and provide a further impetus to manufacturing. It will also make India an export-oriented economy and a technological hub for the world.

Kailash Lal Tarachandani

From barely 20 MW in 2011, India's installed solar capacity has increased to 8.62 GW as of September 30, 2016. The installed wind energy capacity rose from 2.3 GW in 2011 to 27.44 GW, with an estimated potential of 302 GW at a 100 metre height. This shows remarkable progress in renewable energy capacity addition.

The Repowering Policy, the Reserve Bank of India guidelines on renewable energy financing and the Surya Mitra skill development scheme are some of the multidirectional efforts of the government to

make this sector more efficient and lucrative. Some state electricity regulatory commissions have announced preferential tariffs for the purchase of power from wind energy projects. This shows the commitment of state agencies towards the adoption of renewable energy.

The domestic manufacturing sector, especially solar, is yet to see a supportive environment and, according to the Ministry of New and Renewable Energy (MNRE), India's cell and module manufacturing capacity now stands at 1,212 MW and 5,620 MW respectively, which is less than the capacity of a single Chinese manufacturer, Trina Solar. A fundamentally competitive manufacturing sector needs a thriving ecosystem, access to leading technologies, efficient infrastructure and low-cost capital.

How has the industry's response been to the Make in India initiative? Is it expected to achieve the objectives of the renewable energy sector?

Vivek Bhardwaj

The Make in India initiative will definitely help in boosting the solar equipment manufacturing industry in the country.

Ashish Khanna

There is a need to develop the fast growing local solar market. There has been considerable interest in manufacturing following the Make in India initiative. While there are some incentives for manufacturing solar products, primarily modules and cells, any significant effort from the indus-

try will come only when the government provides it with more robust, long-term sustainable policy support by ensuring a level playing field to compete with global players. The objective of the National Solar Mission is to reduce the cost of solar power generation through long-term policy support, large-scale deployment goals, aggressive R&D and the domestic production of critical raw materials, components and products. The government is promoting the adoption of renewable energy by offering various incentives such as generation-based incentives (GBIs), capital and interest subsidies, viability gap funding, concessional finance and fiscal incentives. The government should also be fostering the solar manufacturing space as it has immense scope for contributing to the economy.

Sivarajan Ramachandran

Industries are benefiting greatly by the Make in India initiative and hence, have welcomed it. To make this a successful initiative, it is important to develop skilled manpower and bridge the gap between the industry and universities. To ensure that this initiative aligns with the goal of a sustainable renewable energy sector, both the industry and the government should take constructive steps to train students.

Tulsi Tanti

India has the fourth largest renewable energy portfolio globally and can be transformed into a manufacturing hub for renewable energy technologies. There is enormous scope for indigenising technology and component manufacturing. India is still heavily reliant on imports, especially for solar photovoltaic cells and other components. By securing the supply chain for wind, solar and other renewable technologies in India, we can not only reduce their cost, but also create value addition and employment in the country.

Industry players also need to scale up and raise the bar, if they wish to leverage the emerging opportunities and growing thrust on renewables. Further, it is impera-



Tulsi Tanti
Chairman and
Managing Director,
Suzlon Group

"The Make in India initiative will give an impetus to the capital goods sector and boost manufacturing."



Kailash Lal Tarachandani
Chief Executive
Officer, Inox Wind

"The government needs to cut transaction taxes, pass the land acquisition bill & institute carbon taxes."

tive for the industry to raise quality standards and asset value optimisation efforts. Indian wind and solar industries must adopt global best practices to leverage the next phase of growth.

We have numerous opportunities to bring down the life-cycle cost of energy from wind further, by leveraging technology and optimising the supply chain. Going forward, the industry must endeavour to transform renewables into baseload power.

Kailash Lal Tarachandani

The MNRE organised the first-ever Renewable Energy Global Investors' Meet and Expo as a follow-up to the Make in India initiative. This event was the first major platform for investment promotion in the sector at the central government level to signal its commitment to the development and scaling up of renewable energy to meet energy needs in a sustainable manner. About 30 financial institutions or lenders committed to finance 70 GW of renewable energy projects during the event. The State Bank of India (SBI) has committed about \$12,000 million for the generation of 15 GW of clean energy over the next five years. Along with SBI, other banks also stated that there was potential for interest rates for the clean energy sector to come down considerably.

Apart from financing, the government needs to cut transaction taxes, pass the land acquisition bill, remove unnecessary environmental regulations and institute carbon taxes. The forces of the free market will do the rest of the work.

What are the key issues and concerns faced by manufacturers and what steps need to be taken to resolve these?

Vivek Bhardwaj

All domestic and foreign manufacturers are struggling to maintain the quality of their products while expanding. To achieve this, we have taken various in-line production monitoring initiatives – for instance, the installation of vision systems and infrared cameras in production lines. As an inte-

grated manufacturer, we have better control over the quality of our products.

Ashish Khanna

Self-sustenance in manufacturing and, consequently, delivering consistent quality can really impact the achievement of the 100 GW target. As advocates of sustainable solar transformation and manufacturing solar panels and cells for more than 27 years, we have been upholding high standards of quality in manufacturing. Once installed, the solar modules are to be used for the long term, as long as 25 years in most cases. However, the recent proliferation of substandard modules from other countries at a lower cost has hit the domestic manufacturing segment and will create a negative perception of the industry as a whole. Lower quality modules have higher degradation and a shorter shelf life and hence will result in low power production, which will ultimately increase the total cost of ownership and have a long-term impact on the sustainability of the industry. We need to make consumers aware of the superior products being made in the country as it is a long-term investment and is more beneficial to buyers.

Domestic manufacturers' prospects are also hit by a lack of financing at lower rates since most commercial banks impose very high interest rates on companies that are in distress. This has a long-term impact on those companies' plans and solar budgets. The other challenge is a lack of awareness about solar adoption, the advantages of which are tremendous in households and commercial establishments. It is a one-time investment that provides clean power for decades with little maintenance. However, there is a need to address consumers' concerns about the durability, efficiency and viability aspects of solar, and the role of the government and industry bodies is critical.

Sivarajan Ramachandran

One of the main concerns of the industry is inadequate communication with universi-

ties. The need of the hour is the culmination of industry-ready and skilled manpower that understands the problems faced by the industry. But the curriculum currently followed in the universities is far removed from reality. Su-Kam has collaborated with Manav Rachna University to train their students in the field of solar technology. We ensure that they get the feel of how exactly the power backup industry operates, the problems faced by us and practical ways in which these issues can be resolved.

Tulsi Tanti

The government's ambitious plans of 175 GW from renewables by 2022 can be achieved easily if some of the key issues faced by the private sector are addressed. These are as follows:

Policy

- The lack of availability of the grid and land infrastructure at the state level is a concern. The state governments need to invest in this area well in advance, based on the availability of resources.
- Policy predictability and execution are required. For instance, accelerated depreciation (AD) of 80 per cent should be continued at least till 2022.
- There should be a greater focus on wind-solar hybrid solutions, as they are utility friendly and will facilitate optimisation of infrastructure.
- Single-window clearance is required.

Finance

- We recommend that financial institutions and banks should finance renewable energy projects with a long amortisation schedule (20 years) and a debt-equity ratio of 80:20, in line with international practices.
- There should be a push to strengthen the small and medium enterprises sector by encouraging them to invest in renewable energy projects for captive use. In addition, an interest rebate of 5 per cent on their investment will help in freeing their energy costs and making them more competitive.
- Another facet to improve the current scenario would be to introduce goods

and services tax (GST) for renewable energy projects at zero rates. This will lead to a reduction in the cost of energy and the affordability of these projects to utilities and consumers.

- Renewable energy projects need large-scale funding. So banks and financial institutions should earmark at least 20 per cent finance for these projects for a longer period of 20-25 years. This will ensure a lower cost of energy to benefit the end-consumer.

Kailash Lal Tarachandani

We are lagging behind in the technology race for the development of solar cells. The complexity of the subsidy structure and the involvement of too many agencies like the MNRE, the Indian Renewable Energy Development Agency, state nodal agencies, state electricity boards and state electricity regulatory commissions makes the development of solar PV projects difficult. The overall structure needs to be simplified to encourage the industry.

With the imminent implementation of GST in 2017, wind energy equipment manufacturers may face a negative impact of 15 per cent on imported equipment. Domestic solar manufacturers will get a level playing field with overseas manufacturers once GST is in place. Currently, a domestic manufacturer pays a countervailing duty of 12 per cent on raw material and cannot claim tax credits as solar modules are exempt from excise duties. Further, a value added tax (VAT) of about 5 per cent is levied on domestic manufacturing in most states. VAT is not applicable on imported modules for direct imports. In such a scenario, GST implementation will ensure tax parity between domestic and overseas manufacturers.

From a manufacturer's point of view, what kind of an investment environment is expected over the medium to long term?

Vivek Bhardwaj

During the next two years, the focus is likely to remain on the utility segment and thereafter the market may shift towards

the commercial and industrial segments. Initially, significant investment would be required from overseas to meet the debt, equity requirements of the industry and banks too will have to meet some of the market's debt appetite.

Ashish Khanna

The 100 GW by 2022 target is extremely ambitious, considering the world's installed solar power capacity in 2014 stood at 181 GW. The World Bank has already approved a loan that will support the Government of India's grid-connected rooftop solar programme by financing the installation of solar modules on rooftops. If leveraged in the right manner, this could provide a huge growth impetus to the solar manufacturing segment. How effectively will the government steer the support for manufacturing in the solar segment post the World Trade Organization's ruling against the domestic content requirement (DCR) would be very important for the manufacturing segment.

Sivarajan Ramachandran

Rooftop solar development is picking up pace in India due to the government's focus on solar energy. Along with introducing policies, the government and the industry should help create awareness and educate citizens about the ease of installation and execution of these projects. A more knowledge-oriented approach is needed, with greater clarity regarding the subsidies offered by the government. Old meters can be replaced by new ones and the concept of bidirectional net metering should be encouraged and implemented. For example, Haryana recently rolled out a scheme for rooftop solar installations. Personally, I think it's a great step towards cleaner energy. However, the execution of this policy will be a challenging task.

Tulsi Tanti

The growing consciousness about climate change will drive the need for renewable energy. It is essential that the government creates new financing products and investment vehicles that will provide the much-needed low-cost funding with a

long tenor of 25 years for this sector. Moreover, current fiscal policy measures such as feed-in tariffs and GBIs for wind should be continued till 2022 in order to provide the much-needed visibility to investors. Practices similar to those of Make in Brazil are required to be implemented to ensure the success of the Make in India initiative. Initiatives adopted by Brazil are 60 per cent domestic content requirement (DCR) and awarding of the FINAME code to allow borrowings at a lower cost. These can be applied in India and a subsidy of 5 per cent offered to project owners fulfilling the 60 per cent DCR.

Kailash Lal Tarachandani

The renewable energy industry would need \$120 billion in capital investment and \$40 billion in equity to achieve the ambitious target, according to information released by the MNRE. This total amount of \$160 billion would be needed over the next seven years (until 2022), at an average of \$231 billion per year. With the expected withdrawal of the GBI and accelerated depreciation (AD) benefits from the wind energy, the segment is expected to witness a slowdown or rather, a stabilisation period. During this period, the segment would try to stand on its own and the competition will be intense. Wind power is expected to attract an investment of around \$13 billion by 2020 and reach an installed capacity of 46 GW.

The solar manufacturing sector needs to be much more competitive to stand up against international, especially Chinese, manufacturers. One of the key drivers for the expansion of the manufacturing industry would be the DCR mechanism. On June 22, a fairly sizeable portion of that goal was met when Japan's SoftBank, along with telecommunication major Bharti Enterprises and Taiwan's electronic goods manufacturer Foxconn announced plans to invest \$20 billion for setting up 20 GW of solar power in the country. Other firms including Adani Power, Reliance Power and SunEdison, have also committed investments worth more than \$5 billion for setting up solar power plants in India. ■