Technology to Drive the Future of Wind Industry

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Renewable energy (RE) has become pivotal to the movement against the risks of climate change. India's commitment at COP21 to reduce 33-35% carbon emissions by 2030 and increase share of renewables to 40% of the energy mix by 2030, will truly expand the country's RE portfolio. The government target of 175 GW by 2022 including 60 GW wind energy, is closer to becoming a reality propelled by technology and conducive policy environment for renewables.

As per Global Wind Energy Outlook, by 2030 wind power could reach 2,110 GW, and supply up to 20% of global electricity, creating 2.4 million new jobs and reducing CO_2 emissions by more than 3.3 billion tonnes per year, and attract annual investment of over $200 billion.

With ~28.5 GW, India attained 4th position in global wind power installed capacity. We now have ~31.5 GW to achieve by 2022 i.e. ~5000 MW annually and I am confident, the wind sector can deliver the 60 GW target. Last year in FY16, India recorded its highest wind energy installation with 3415 MW. Wind and solar energy capacity combined exceeded hydro capacity and now these are second only to coal-based capacities. This year, the industry will set a new record will most likely grow by over 30% to ~4300 MW.

The government's thrust on renewables was supported by policy actions in 2016 such as; approval on the repowering policy, the draft wind-solar hybrid and revised RPO trajectory. Further, policy impetus included, 1 GW under Inter-State Transmission Scheme (ISTS) across various states and investments in Green Energy Corridor project. The government's commitment to improve grid infrastructure also reflected in the proposed additional depreciation for the plant and machinery acquired, installed for transmission activity. Renewables have received a shot in the arm with the recent wind auction and will witness a growth in volumes in the country. Currently wind projects are limited to 7-8 wind rich states in the country where capacity addition continues. Tariff based bidding is a game changer in the industry, coupled with indirect support from the Government like Central Transmission Utility (CTU) network connectivity will open new markets and lead to expansion of wind energy across the country.

Way forward

Renewable energy costs are steadily reducing and will soon reach grid parity. Additionally, India's increased energy requirement, the government's vision of energy security and commitment to reducing carbon emission, translates into enhanced renewable energy demand.

Proactive policy recommendations should be ensured so that momentum is maintained:

- Banks and financial Institutions should earmark at least 20% finance for RE projects and provide finance for longer period of 20-25 years.
- SMEs should be supported by 5% interest rebate for harnessing RE for captive requirement.
- Improve availability of grid and land infrastructure at State level.
- GST for RE pegged at zero rate, since electricity is not subsumed under the proposed GST framework.
- Provide manufacturing with support to facilitate innovative financing, increase capabilities, facilitate job creation and meet the 'Make in India' initiative. Wind manufacturing capacities are created in India, while Solar is imported from China. Incentives for local manufacturing and job creation in the sector should be considered.
- Implement the EXIM practices of China and USA that gives a line of credit of $1 billion and $2 billion respectively, in case of exports by local companies. In India, EXIM offering is limited to $200 million per year. RBI should remove the 10% limit imposed to one company or infuse $5 billion fresh equity to EXIM.

Technology to Lead the Way

Innovation and technology will continue to be the catalyst for the growth of the wind industry. The wind-solar hybrid, digitization of services, smart-grids, innovation in tower and blade technologies such as Suzlon's 120m hybrid tower, Suzlon S111 wind turbines are aimed towards making unviable wind sites available, ensuring better yield and increasing the capacity utilization factor. At Suzlon our R&D efforts have resulted in increasing our energy production and have brought down the levelised cost of energy (LCoE) by 50 percent in the last five years. As a result, sites that remained previously unviable have become viable, overcoming the limitations of scarcity of windy sites.

R&D efforts in the wind sector is also focused on developing longer, light-weight blades made of carbon and other reinforced composites. By increasing wind catchment area, these blades can reduce weight and improve economies of scale, making energy harnessing more efficient. The R&D progress will enable India to become the global hub for RE technology in manufacturing.

Wind energy is slated to be one of the key drivers of the energy sector and will aid renewable energy to go a long way in addressing the climate change issue.

We need to harness the 300 GW wind energy potential in India and seize this opportunity NOW to ensure sustainable, affordable and reliable energy for all.