



To upscale large scale deployment of wind installations, apart from focusing on supply side measures, the National Wind Mission should also lay emphasis on demand side intervention measures



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To begin with, what has been Idam Infrastructure's contribution so far in the wind sector? What are the various services & solutions provided by Idam Infrastructure for the Wind industry?

Idam Infrastructure Advisory Pvt. Ltd, a part of Idam Group is a company formed by professionals with vast experience in the field of energy, infrastructure development, sustainable development, clean energy solutions deployment, efficient use of energy and climate change mitigation initiatives. Over the past eight years since its inception in 2007, our team has gathered multitude of experience of assisting Central & State Governments, Electricity Regulatory Commissions, Renewable Energy Associations, Project Developers, Financial Institutions, Equipment suppliers & EPC Contractors, State Nodal Agencies, Multilateral Agencies and Development Financial Institutions, in a number of assignments ranging from project development, bid advisory, transaction advisory, regulatory assistance, due diligence and policy formulation.

Our founding directors, Balawant Joshi and Ajit Pandit have been extensively involved in the formulation and implementation of landmark National Policies relating to renewable energy such as Renewable Energy Tariff Regulations for Central Electricity Regulatory Commission (CERC), RPO guidelines, REC Framework for MNRE/FOR, National Solar Mission Guidelines for Phase I and II, Grid Integration framework of Variable RE Generation, Regulations for Off-Grid Renewable Energy, Institutionalizing DSM in Utility Sector, Conceptual framework for Perform-Achieve-Trade (PAT) for Bureau of Energy Efficiency.

As regards growth of Wind sector, we have been associated and have contributed in evolution of regulatory regime and conducive policy framework, since issuance of first feed-in tariff Order in the country way back in 2003. Recently, we undertook study for Indo-German Energy Forum (IGEF) with the support of MNRE for development Repowering framework and Guidelines for wind sector. We are also supporting Wind Industry Associations (IWTMA and InWEA) for development of standard framework for Forecasting & Scheduling regime at state & national level.

Financing small scale projects is still an issue in the wind sector. According to you, what can be done to resolve these difficulties?

With Government's thrust and initiatives to support renewable energy capacity addition, the availability of funds is not an issue for financing renewable energy projects but the cost of funds and availability of long term sources of debt financing, particularly for small scale and distributed RE projects, is crucial for accelerating the growth of this RE sector.

The emergence of concept of Green bonds and Infrastructure bonds has opened up new avenues for sourcing long term debt funds at cheaper cost to fund RE projects. The development financial institutions such as IREDA, PFC, PFC Green Energy Limited, PTC India Financial Services, IDFC etc. should be encouraged to issue green bonds with tax benefits under Section 10 (23G) specifically for the purpose of lending to RE projects. The coupon rate should be set so as to maintain a balance between the investors' expectations of returns and the requirement of low-cost financing for the RE project. A share of proceeds of Green Bonds should be reserved for utilisation towards extending loans for small scale RE projects.

Further, a partial risk guarantee fund should be set up for RE projects out of the corpus from National Clean Energy Fund (NCEF). The fund should provide commercial banks with partial coverage of risks associated with loans given to small scale RE projects. The overall objective should be to generate confidence among investors and lending institutions by introducing mechanisms to mitigate risk associated with financing small scale RE projects.

The national tariff policy is about to be amended. Will this bring about a major change in the investments into the sector?

The proposed amendment to the National Tariff Policy (NTP) is a welcome move. The draft amendments to NTP envision to ramp up the targets for solar RPOs from the existing 3% to 8% by 2022. This is expected to increase investments in the solar space, but again it requires a great deal of proactive support from the SERCs and the state government.

A key impediment for RPO mechanism as effective tool to drive growth of RE sector is lack of adequate RPO Compliance monitoring framework and limited enforcement measures taken up by SERCs in the matter. A stricter RPO compliance monitoring regime covering all obligated entities including captive users and open access consumers and equally stringent enforcement mechanism is the need of the hour, if the objectives framed under NTP are to be accomplished. This will bolster the faith in Renewable Energy Certificate (REC) mechanism which is languishing at the moment and would facilitate attract investments in RE sector.

Exemption from the applicability of Inter-state transmission charges for renewable energy transactions; was novel way to encourage investment in inter-state RE transactions, particularly, inter-state solar transactions during nascent stage of development. However, the transmission costs are required to be socialised and burden would ultimately fall upon the state beneficiaries in the long run. It is important to recognise that RE generators, particularly wind & solar, would have lower capacity utility factors of transmission grid, hence, the transmission charges for such RE transactions should be commensurate with their utilisation in energy terms and be denominated in Rs/MWh rather than completely waived off for useful life.

Which other recent regulatory and policy developments in the recent times will ease or increase the pains of the wind industry?

The regulators and the Government have taken the holistic view of the renewable energy sector and have promulgated significant regulatory changes lately to promote variable RE generation. These regulations are an outcome of extensive consultation with the industry at large. To name a few, the amendments to the IEGC (Indian Electricity Grid Code) Regulation, 2010, Deviation Settlement Mechanism Regulations, Ancillary Services Regulations and the Forecasting and Scheduling methodologies of Wind and solar power plants will definitely ease the pains of the industry while carrying out inter-state RE transactions.

However, the same should also be implemented at the state level taking into consideration the state specific diversities in energy accounting, load-generation balancing practices, extent of grid penetration of variable RE resources and capacity building & institutional strengthening requirements of the state entities. The Wind Industry associations namely, InWEA and IWTMA are acutely aware about the grievances of the wind generators at the state level and have initiated a study and engaged Idam Infra to develop standard framework for F&S regime at state level. MNRE has constituted Expert Advisory Group to support this initiative. The Group will be working in close consultation with the SLDCs and SERCs to further facilitate Intra-state and inter-state variable RE transactions.

Robust Forecasting and Scheduling mechanism at the state level, uniform & simple methodologies of handling imbalances, standardised metering and connectivity practices, emergence of ancillary service operations to ensure secured grid operations and institutional set up at Pooling Substations hold the key to facilitate the development of the Wind industry.

Grid integration for renewables has been getting a lot of attention recently. Let's talk about some recent developments in this field.

The level of grid penetration of renewable energy (in terms of energy generated) in India is presently around 6.5 percent. However, even at this low level of RE penetration, a few states are finding it difficult to absorb and manage the feed-in of RE and the associated variability in the grid. For example, it is not uncommon to "back down" wind generating plants in states like Tamil Nadu during the monsoons (windy season), for want of sufficient evacuation capacity.

With proposed capacity addition plans of > 140 GW over the coming few years, the penetration level is expected to increase to around 18% by 2022 in energy terms. To absorb this increase in RE capacity, there is a need for significant increases in grid infrastructure and deployment of the appropriate balancing mechanisms required, if this energy is to be used properly.

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In order to facilitate large-scale grid integration of RE sources, there are three different dimensions to Grid Integration, namely, planning, construction and operations, for grid integration of variable RE generation into Electric Power system.

As highlighted earlier, the promulgations of the amendments to the IEGC

(Indian Electricity Grid Code) Regulation 2010, Deviation Settlement Mechanism Regulations, Ancillary Services Regulations and the Forecasting and Scheduling methodologies of Wind and solar power plants paved the way for grid integration of variable renewable generation. Similarly varied technological solutions such as Wind Solar Hybrid, pumped hydro storage solutions are being developed to promote grid integration. Energy storage applications and technologies hold key to grid integration of renewable. The development of Green Energy Corridor-I at an investment of Rs 43,000 Crore was initially planned for 33GW of RE, however the having aimed at 175GW of RE by 2022 the incumbent government is in the process of finalising the Green Energy Corridor-II, the project being spearheaded by PGCIL.

Let's talk about some of your clients and projects from wind sector you have been dealing with lately?

As mentioned earlier, we have been associated with various regulatory commissions at state and central level in providing consulting support for formulation of policies & regulatory influencing growth of wind energy. We have recently supported Bangladesh Energy Regulatory Commission for development of Feed-in Tariff framework for RE in Bangladesh. Recently, we are working with wind industry associations namely, Indian Wind Turbines Manufacturer's Association (IWTMA) and Indian Wind Energy Association (InWEA) for Development of Forecasting and Scheduling Mechanism of Wind Energy at National and state level. We have supported Indo-German Energy Forum with support

from MNRE for developing Re-powering framework and Guidelines. Besides, we are also supporting policy formulation, capacity building and institutional strengthening initiative for State Nodal Agencies in four states, namely, Karnataka, Madhya Pradesh Haryana and Rajasthan, as part of USAID's Partnership to Advance Clean Energy Deployment (PACE-D) Technical Assistance program.

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How do you compare the growth opportunities in the solar and wind markets?

With Government's resolve to support renewable energy deployment and its ambitious plans to accomplish 175 GW by 2022,



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both solar energy and Wind power markets present great growth opportunities. With advancement in technologies and falling international prices, both the RE technologies, viz. Solar PV and Wind power, have already achieved grid parity for utility scale RE projects. The recently concluded reverse bidding of solar in AP saw the tariffs quoted as low as Rs 4.63/unit for 500 MW solar power project, which is unprecedented.

However, the future growth of RE sector would depend upon how quickly such RE projects are implemented on the ground and ability to demonstrate that such price ranges are sustainable irrespective of the geography, offtaker, market model and land/power evacuation arrangements. As the implementation challenges for distributed / rooftop solar projects are addressed through emergence of net-metering framework across states, the growth of solar sector is likely to be driven by distributed rooftop solar as well as utility scale solar projects, whereas in case of wind energy projects, it would be driven by Utility scale wind farm project.

The concept of RE Hybrids (Wind-Solar) would certainly find favour amongst various stakeholders such as STUs/SLDCs and RE developers, for its inherent advantages of optimal utilisation of land and Power Evacuation infrastructure. Thus, Brownfield hybrid RE (wind-solar) and Greenfield hybrid RE projects are likely to drive growth of both wind and solar market in future. However,

inter-connection, metering, commercial arrangements of offtake & applicable tariff and other technical aspects will have to be addressed through suitable framework.

To end with, an advisory firm always leaves the industry with an advice. What is your advice to the wind industry for the coming year?

In order to upscale large scale deployment of wind installations, apart from focusing on supply side measures, the National Wind Mission should also lay emphasis on demand side intervention measures. In this context, comprehensive action plan addressing following key priorities should be evolved through extensive consultation and through consensus building amongst key stakeholders, namely,

- (a) encourage state participation in planning & development of wind resource based transmission evacuation infrastructure,
- (b) develop institutional capacity for management of wind intermittency and bringing clarity in scheduling framework and
- (c) develop adequate institutional capacity for RPO compliance monitoring and reporting framework and to ensure timely enforcement of RPO targets.



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