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▶ Myths of Wind Power  
in India ◀



# ▶ Myths of Wind Power in India ◀

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Much has been written about the importance of renewable energy and in particular about wind energy and its role in contributing to the power requirement of India. There is a general euphoria amongst everyone associated with this industry and with good reason. Corporates with surplus profits find wind assets a credible alternative with their low risk, double digit returns and the upside of tax benefits. For some it is easier to raise financing for such diversification than for capital expenditure in their core business. For others, it acts as a hedge against the cyclical nature of their own profits. With the Renewable Purchase Obligation policy urging power distribution companies to purchase an increasing percentage of the power they distribute from renewable sources, the tailwind has never been stronger.

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In India, the model is predominantly one where the wind turbine equipment manufacturer offers a turnkey solution, meaning that it is responsible for the land, grid connectivity, supply of the wind turbine equipment, erection of the turbines, facilitation of the power purchase agreement, and maintenance for the life of the turbine. The role of the buyer or the investor, in contrast, is limited only to that of a provider of capital.

Therefore, a sustainable scenario from the point of view of such equipment manufacturers is necessary for the industry to be able to reinforce its momentum. However, in reality there are cracks that are appearing on this otherwise seemingly robust industry. This report debunks a number of the myths propagated about the Indian wind sector.

# 1

Myth: Wind power growth is limited by investments and supply of wind turbines

Reality: The market is not capital or supply constrained but rather confined by the level of infrastructure needed to support growth

Manufacturers in India are producing turbines at less than, 50% of their manufacturing capacity, according to some estimates. The demand is strong since India has one of the lowest cost levels of installed wind assets in the world. With the favourable incentive policies in place, the utilities, independent power producers (IPPs), and other investors are in a position to provide the necessary capital. The primary hindrance is grid connectivity and land acquisition.

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The situation is a bit similar to that of a car manufacturer with the capacity to serve market demand. Now, imagine that the manufacturer is also responsible for road infrastructure, land permits, bridges, securing the necessary approvals and then maintaining all of the above for the life of the vehicle. It is ironic that if you were to ask a wind turbine manufacturer for its core differentiator or its most important competitive advantage, you may be surprised by the answer. This is because it may have nothing to do with the technology, capacity or quality but everything to do with its access to a land bank where these wind turbines can be installed and the power can be evacuated.

# 2

Myth: Turbine manufacturers are reaping profits

Reality: Profits are under severe pressure and the manufacturers are incurring liabilities by over-committing

Manufacturing capacity exceeds the projected market size not only in India, but globally. In their eagerness to secure orders, Indian manufacturers, including the multinationals that have set up operations here, are making concessions and commitments that they will struggle to deliver upon. Examples include providing extended warranties and generation guarantees, signing up for aggressive delivery schedules and lowering the cost of maintenance contracts.

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The buyers are able to conduct reverse auctions basing their evaluation metric on the capital cost per unit of energy generated. Hence, the complex job of manufacturing a sophisticated piece of capital equipment designed to run for more than twenty years has been reduced to a commodity. In addition, the manufacturer has limited control on the costs of critical components such as gearbox, blades, generator and bearings that are specific to each wind turbine.

Due to strict certification standards, the manufacturers do not have a choice but to purchase from an oligopolistic section of vendors who are able to protect themselves against commoditization and maintain margins upwards of 15%. The situation is exacerbated when you add in the complexity of land acquisition and the power evacuation related permissions.

Moving forward, it seems that companies with a product range that can service multiple segments of the market, operate in a variety of wind conditions and spread the risk of the supply chain as opposed to those offering a single product strategy are the ones that will have the ability to withstand the long gestation cycle, competitively differentiate themselves and pursue a wider range of sales opportunities.

# 3

Myth: The market is growing rapidly and can accommodate additional players

Reality: Yes in terms of services, no in terms of equipment vendors

In terms of global installed capacity of wind energy, India ranks in the top five countries. The market size for 2011-12 is estimated optimistically to be close to 3 GW for 2011-12 or at Rs. 6 Crores/MW, Rs. 18,000 Crores (\$4 billion). With a projected growth rate in the short term of 20%, the attraction the country holds for new wind manufacturing entrants is justified.

From the point of view of the existing seventeen manufacturers in the country, including the multinationals, the addressable market per manufacturer is less than 200 MW. It is the author's assertion that unless an equipment manufacturer can scale up to delivering 500 MW annually, the economics are not viable for those wanting to be long term players.

If this assertion of the minimum required size to sustain involvement is correct, it logically follows that more than half of the existing manufacturers will fail to reach this threshold. This will inevitably lead to consolidation and the jettison of a slew of distressed assets. If this happens, then investors may be left with wind farms that are orphaned in terms of maintenance. The investors currently focused on getting the lowest cost per unit of energy produced would therefore need to seriously consider the likely longevity of the company they are entering in to agreements with.

# 4

Myth: Turbine manufacturers from China will not be able to establish themselves in India

Reality: It is not a question of if but when

Manufacturers in China that have established large scale volume production and plan to actively penetrate the Indian market. Their costs are likely to be 30%-40% lower than domestic manufacturers and they will still come in at a 20% discount after adding the logistics and duty costs.

The current turnkey delivery model that necessitates the bureaucratic management process of approval, permits, land acquisition and grid connectivity that differs in terminology, language and implementation by state is seen as a huge deterrent for foreign players. This means it may seem that Chinese superiority on cost is not a major threat in a market that has no dearth of supply of equipment.

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However, this is based on an incorrect assumption that the turnkey model will continue to be the dominant mode of project delivery in India. Smarter investors and long term independent power producers (IPPs) will go beyond just

simply deploying capital. They will explore where they can add value by taking on a more active role such as securing land and grid connectivity, a mechanism that is prevalent and well established in other countries. Further, the market is mature to the point that a couple of EPC companies will emerge that will be agnostic to the turbine manufacturer.

This disintermediation of the value chain will then create a plug-and-play model. After the first couple of plug-and-pray experiments, this model will allow the investor to put together a combination of the best turbine technology at the lowest cost along with a proven EPC contractor combined with the value added in terms of identified land and grid connectivity to extract the greatest value. In this environment, Chinese entrants present a veritable alternative and a catalyst to bringing the cost of the overall project down and breaking the turnkey model.

# 5

Myth: Chinese turbines cannot compete on quality and the pricing is manipulated

Reality: Chinese components are already part of Indian turbines. It is the scale that matters

There is a notion that there are quality related risks associated with Chinese wind turbine equipment. In reality, domestic manufacturers are today directly or indirectly importing their most critical components from China. In fact, most of the European leaders in terms of gearboxes, generators, and blades have established manufacturing facilities there, so the quality argument may need to be relinquished in favour of addressing the need to increase competitiveness in terms of scale.

A lot has been discussed about the unfair advantage that China provides its manufacturers in terms of financing. Moving forward, that no longer seems to be the case. Furthermore, the wages there are rising. The currency will appreciate. Never the less, what will be sustained is the massive scale at which Chinese players are operating. It is imperative for the manufacturers in India to face up to this reality.

As a word of caution, it would be prudent for Indian manufacturers to examine their supply chain thoroughly to ascertain whether anywhere in the extended chain there exists the presence of a monopolistic vendor who can inflate prices or curtail supply.

# 6

Myth: Sales price may increase given the higher equipment efficiencies

Reality: The capital cost per unit of energy generated has been on a downward trend which will continue

Wind turbines catering to lower wind regimes now produce at a higher capacity factor, which means they generate more energy due to technological advances and increased blade lengths. Due to this, logic dictates that the manufacturer should be able to charge a correspondingly higher price. However, worldwide, the price per unit of energy generated has fallen. Major industry growth leading to increased scale has brought down manufacturing costs. a trend that is likely to continue given the current supply glut.

Another reason why manufacturers may feel that current prices in India can be sustained or increased may be because of the returns the investors are targeting, which are in turn the product of a favourable tariff structure. Such a structure, which normally lags behind technical advancement, can be expected to eventually catch up and readjust from its current preferential level. Lastly, those who are interested in depreciation benefits may cause an upswing in demand this year. Given the sales price, that means there is a strong possibility of these benefits being excluded from the Direct Tax Code next year.

In the entire value chain in its current incarnation, encompassing the component provider, the turnkey turbine manufacturer, the IPP and the distribution utility company, the component provider is not insulated and will be forced to work actively to ensure cost reductions via standardisation.

This will necessitate close collaboration with the designer so that existing platforms can be leveraged to reduce costs as opposed to building custom lines of manufacturing for multiple designs. Failing a dedicated endeavour toward standardization, low energy costs may stimulate vertical integration projects on part of manufacturers. These tend to be unproductive investments since the sales are restricted by internal captive requirements and the possibility of increasing the scale is essentially limited.

# Conclusion

There are various shifts that will cause the individual participants in the value chain to re-examine their models, evaluate the implications and adapt accordingly

Wind Turbine Manufacturers:

It is imperative for them to focus on increasing scale to reduce costs. Secondly, the emphasis will need to be on providing technologically advanced quality products and spreading their risks across a range of products as opposed to a single product strategy. Thirdly, they need to prepare themselves for a possible shift away from the turnkey model. Lastly, they need to actively drive their supply chain towards standardisation and protect themselves from any bottleneck in the supply monopoly components or raw materials.

Long Term IPPs/Investors:

They need to consider developing core competencies beyond being just providing capital if they are to improve their returns and, more importantly, mitigate their exposure to risk. Given the possible expiration of India's tax benefit, there will be a surge in demand this year. However, decision makers will have to place a higher weight of importance on the long term sustainability of the vendors they partner with.

Component Manufacturers:

In order to protect their margins, they will need to focus on scale and the benefits of volume production that come from standardised offerings. They will have to evaluate the pros and cons of manufacturing at a higher scale at fewer locations versus the strategy of building destination-specific production plants to save on logistics costs.

EPCs:

There is an opportunity for a handful of companies to establish themselves as the dominant EPCs (engineering, procurement and construction contractors) that can also provide their services across a range of wind turbine models. These EPCs can reduce dependence on the current turnkey model and provide investors with increased flexibility. The logical extension of this is the emergence of Operation and Maintenance service providers so that the buyer is not tied to the manufacturer for the life of the turbine

In summary, wind energy serves a compelling need and has progressed much further down the road than any other form of renewable energy in terms of achieving grid parity in India. However, we are now at a point where the model that got us here will not be the same that takes us through the next ten years.

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