

Renewable Energy World India 2012

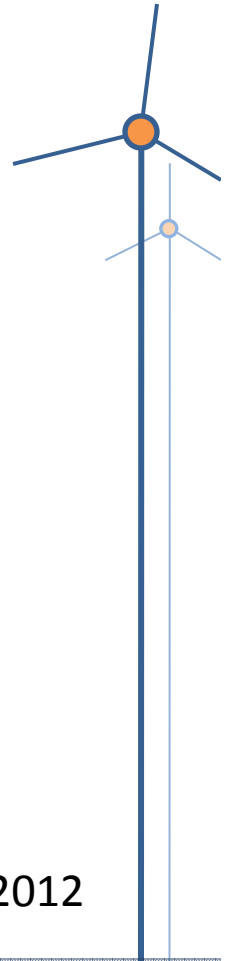
MYTHS OF WIND POWER IN INDIA

Presented By:

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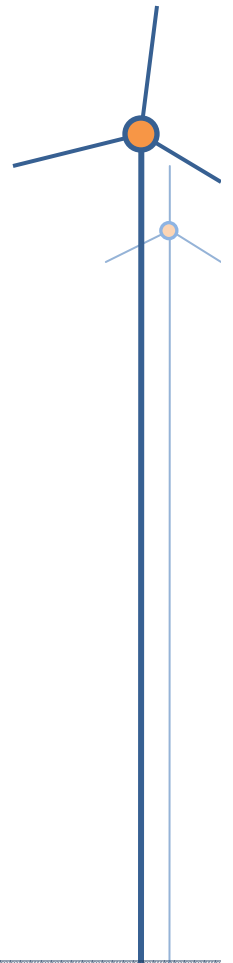
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Date: April 20, 2012



TOPICS

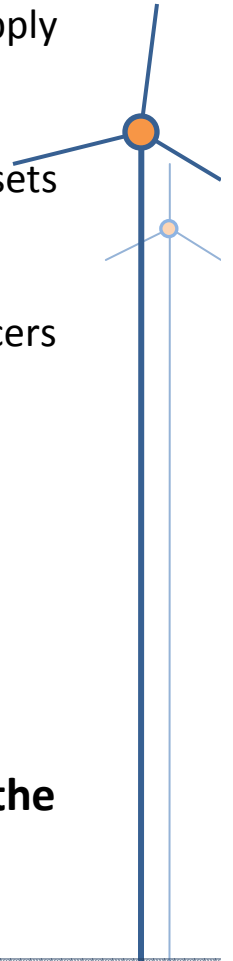
- Supply Demand Scenario
- Status of the participants in the value chain
- Disintermediation of the Current Turnkey Model
- Chinese entry and its implications
- Summary



Myth 1: Wind power growth is limited by investments and supply of wind turbines

- Indian Manufacturers operating at less than 50% of capacity, hence market is not supply constraint
- The demand is strong since India has one of the lowest cost levels of installed wind assets in the world.
- With the favorable 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.

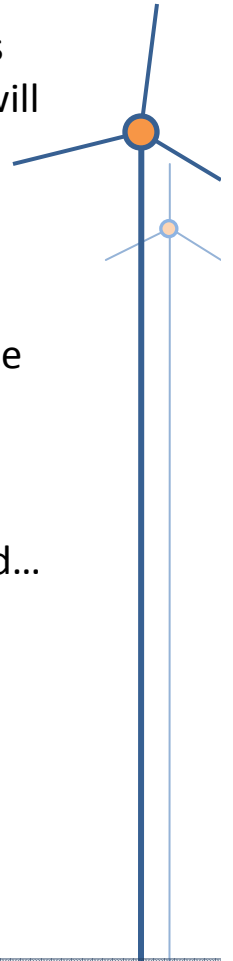
Fact: The market is not capital or supply constrained but rather confined by the level of infrastructure needed to support growth



Myth 2: Turbine manufacturers are reaping profits

- 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
- Customers are concentrating on a metric of cost per unit of energy generated.
- Wind turbine a technology driven product has been reduced to commodity due to price competitiveness

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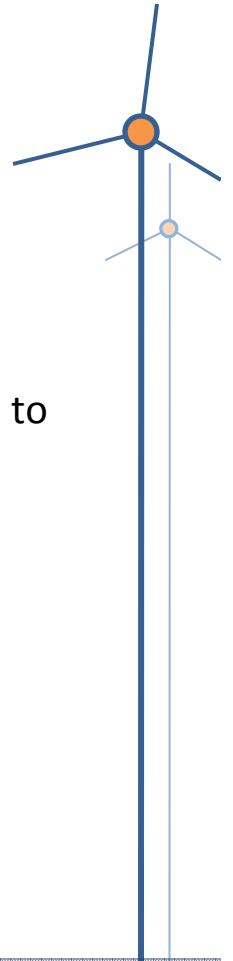


Myth 2: Turbine manufacturers are reaping profits

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- 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
- The complexity of land acquisition and the power evacuation related permissions add to the woes of the manufacturers

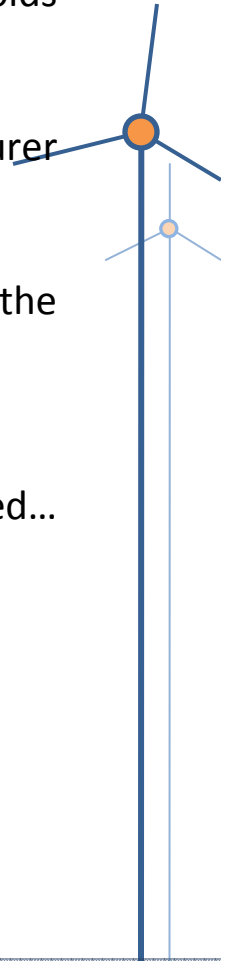
Fact : Profits are under severe pressure and the manufacturers are incurring liabilities by over-committing



Myth 3: The market is growing rapidly and can accommodate additional players

- With a projected growth rate in the short term of 20%, the attraction the country holds for new wind manufacturing entrants is justified.
- With seventeen manufacturers in the country, the addressable market per manufacturer is less than 200 MW.
- 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.

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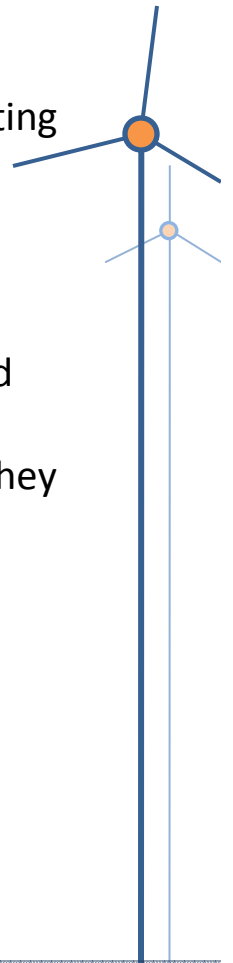


Myth 3: The market is growing rapidly and can accommodate additional players

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- If this assertion 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 a slew of distressed assets.
- The investors currently focused on getting the lowest cost per unit of energy produced
- Therefore they would need to seriously consider the likely longevity of the company they are entering in to agreements with.

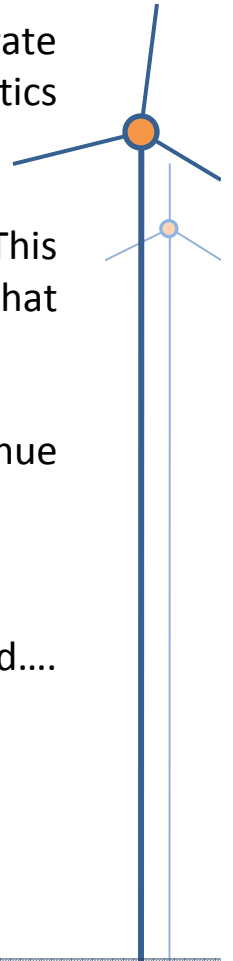
Fact : Yes in terms of services, no in terms of equipment vendors



Myth 4: Turbine manufacturers from China will not be able to establish themselves in India

- Manufacturers in China having large scale volume production plan to actively penetrate the Indian market. The costs are expected to be at 10% discount after adding the logistics and duty costs.
- The current turnkey delivery model is seen as a huge deterrent for foreign players. This means it may seem that Chinese advantage on cost is not a major threat in a market that has no dearth of supply of equipment.
- However, this is based on an incorrect assumption that the turnkey model will continue to be the dominant mode of project delivery in India.

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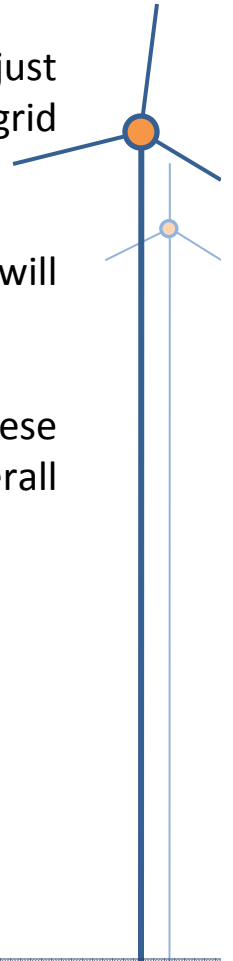


Myth 4: Turbine manufacturers from China will not be able to establish themselves in India

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- Smarter investors and long term independent power producers (IPPs) will go beyond just simply deploying capital. They take on a more active role such as securing land and grid connectivity, a mechanism that is prevalent and well established in other countries.
- 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. Chinese entrants present a veritable alternative and a catalyst to bringing the cost of the overall project down and breaking the turnkey model.

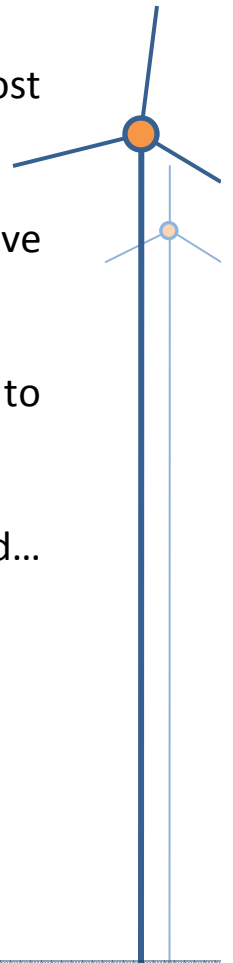
Fact : It is a not a question of if but when will Chinese enter the market



Myth 5: Chinese turbines cannot compete on quality

- 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.
- Most of the European leaders in terms of gearboxes, generators, and blades have established manufacturing facilities in China
- So the quality argument may need to be relinquished in favour of addressing the need to increase competitiveness in terms of scale.

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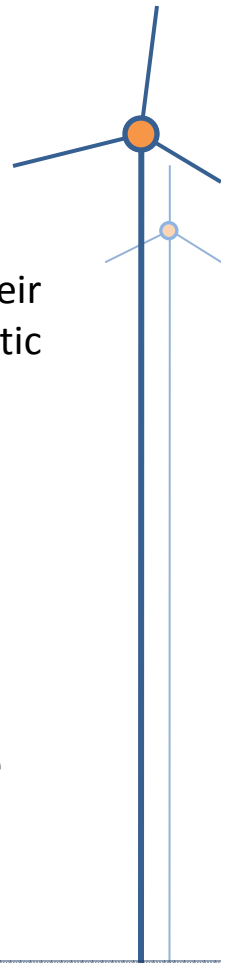


Myth 5: Chinese turbines cannot compete on quality

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- 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 there exists the presence of a monopolistic vendor who can inflate prices or curtail supply.

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



Myth 6: Sales price per MW may increase given the higher equipment efficiencies

- Logically, Wind turbine manufacturers should be able to command a higher price due to higher generation because of technological advances. However, worldwide, the price per unit of energy generated has fallen.
- Major industry growth leading to increased scale has brought down manufacturing costs.
- Manufacturers 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 favorable tariff structure and tax breaks.
- With the removal of depreciation benefits, the demand is expected to be condensed.

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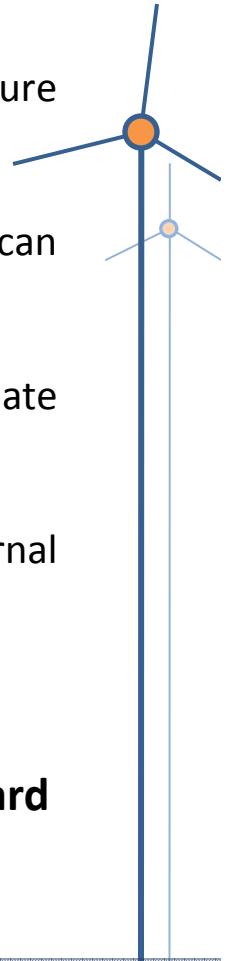


Myth 6: Sales price per MW may increase given the higher equipment efficiencies

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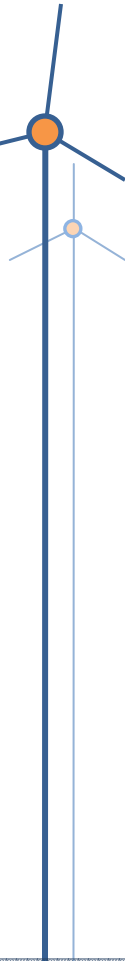
- The component provider is not insulated and will be forced to work actively to ensure cost reductions via standardization.
- This will necessitate close collaboration with the designer so that existing platforms can be leveraged to reduce costs
- Failing a dedicated Endeavour toward standardization, 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.

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



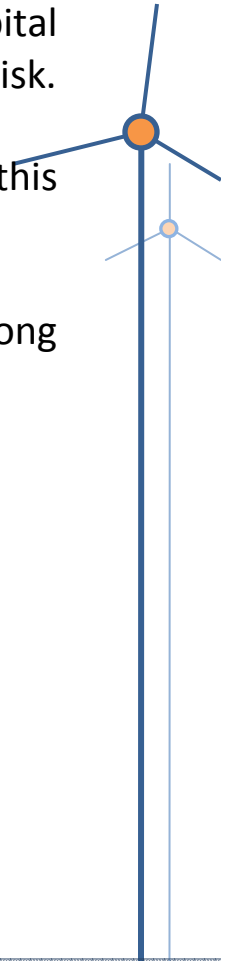
IMPLICATIONS FOR THE VALUE CHAIN - MANUFACTURERS

- It is imperative for them to focus on increasing scale to reduce costs.
- 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.
- They need to prepare themselves for a possible shift away from the turnkey model.
- They need to actively drive their supply chain towards standardization and protect themselves from any bottleneck in the supply monopoly components or raw materials.



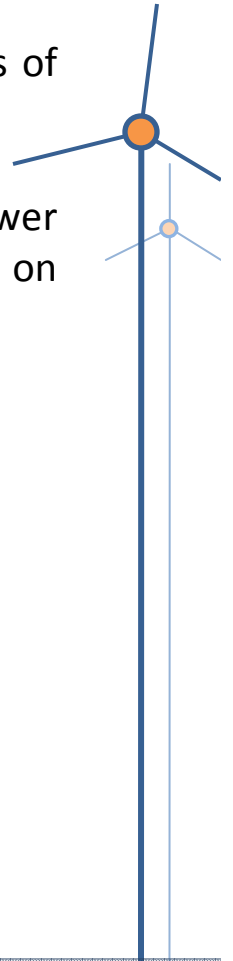
IMPLICATIONS FOR THE VALUE CHAIN – IPP/INVESTORS

- 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.



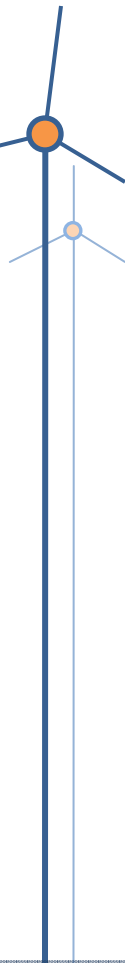
IMPLICATIONS FOR THE VALUE CHAIN – COMPONENT MANUFACTURER

- In order to protect their margins, they will need to focus on scale and the benefits of volume production that come from standardized 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.



IMPLICATIONS FOR THE VALUE CHAIN – EPC

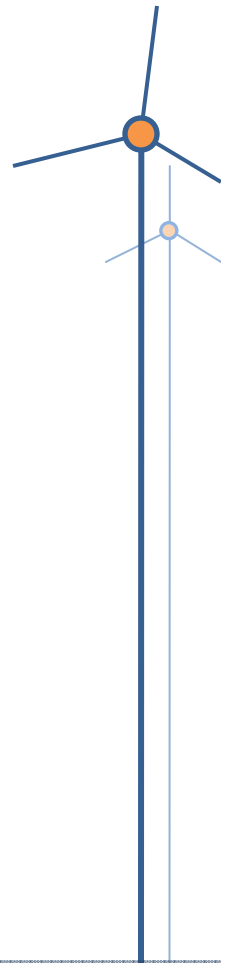
- There is an opportunity for a handful of companies to establish themselves as the dominant EPCs that can also provide their services across a range of wind turbine models.
- These EPCs can reduce dependence on the current turnkey model and provide investors with increased flexibility.
- The logical 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



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.



THANK YOU

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