

Competitive bidding set to transform wind power market

Wind OEMs to see shrinkage in margins; risk for developers set to increase, says CRISIL study

CRISIL Insight

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India's first reverse e-auction for wind power closed with a rock-bottom winning bid of Rs 3.46 per unit – compared to Rs 4.16-6.02 / unit feed-in-tariffs (FiT) for wind power across states – confirming the buoyancy in the alternative energy market.

Bids for the 1 GW Solar Energy Corporation of India (SECI) wind power tender were oversubscribed 2.7 times, with ~70% of capacities applied for prospective sites in Tamil Nadu. The winning bid tariff was ~17% below the FiT in Tamil Nadu, which is the lowest tariff offered across states. Encouragingly, even ~1.2 GW of unsuccessful bids were 6-16.5% lower than the feed-in tariff (without the accelerated depreciation or AD) offered.

Successful bids in the last month's 1050 MW allocations by SECI:

Sr. no.	Company	Tariffs (Rs/unit)	Bid quantity (MW)
1	Mytrah Energy (India) Pvt Ltd	3.46	250
2	Green Infra Wind Energy Ltd	3.46	249.9
3	INOX wind Infrastructure Services Ltd	3.46	250
4	Ostro Kutch Wind Private Ltd	3.46	250
5	Adani Green Energy (MP) Ltd	3.46	50
	Total capacity		1,050

Source: SECI; CRISIL Research

But do these bids make for sustainable projects? Or are companies throwing caution to the wind as they undercut competitors in an effort to capture a larger share of India's promising renewable energy market? CRISIL Research assessed both the economics of the winning bids, and its impact on the wind industry and existing models.

Key Takeaways:

- Aggressive bidding was an outcome of lower counterparty and evacuation risks. Further, competition aggravated as the sector was plagued with slowdown in PPA signing and payment delays by states.
- Equity IRR of 16% contingent on achieving PLFs of 35% over the life of the asset and low financing cost of 9%
- Lower wind tariffs (below the state's average power purchase cost) and lower non-solar renewable purchase obligation compliance would improve the off take of competitively bid wind power.
- FiTs to peter out; contracts for under-construction wind projects likely to be renegotiated
- With advent of competitive bidding, original equipment manufacturers (OEM) and developers would have to settle for lower returns.
- As FiTs and other incentives such as generation-based incentives and 80 IA wane away, the market will consolidate towards independent power producers (IPPs).

Let us examine each of these in greater detail.

Lower counterparty and evacuation risks led to the aggressive bidding

CRISIL Research believes the bidding was aggressive on account of a better counterparty (PTC India Ltd - ICRA A1+) compared with state discoms, evacuation of power by the central transmission utility, and availability of better wind technology that produces high plant load factors (PLFs). The bidding was also aggressive as the sector was plagued with the slowdown in PPA signing (by state discoms) leading to developers and OEMs having limited opportunity. Further, with the consistent payment delays by discoms and their concerns on buying expensive wind power has also led to aggressive bidding by wind energy developers.

As the counterparty, PTC India Ltd ensures the following advantages for players:

1. It is **stronger compared with financially stressed discoms**, which delay payments to developers
2. It can **mitigate the risk of delayed payment** from discoms owing to its larger and varied client base, including discoms and other bulk consumers such as the Railways, Delhi Metro Rail Corporation, Airports Authority of India, Steel Authority of India Ltd and Rashtriya Ispat Nigam Ltd, among others, coupled with **letters of credit and default escrow agreements between PTC and the buyers**.
3. Its **position as a buyer or seller reverses** owing to seasonal variation in demand and supply of states, thus hedging its position. Under these bids, PTC India would also provide the letter of credit (term of 12 months) in the name of the developer, which can be revoked if the payment is delayed.
4. In the recent 1 GW wind power reverse auction, the PTC, in its power supply agreement with buyer discoms, **included payment for deemed generation**. Hence, discoms would have to pay for the deemed electricity made available by the PTC as per declared availability but not scheduled by the discoms.

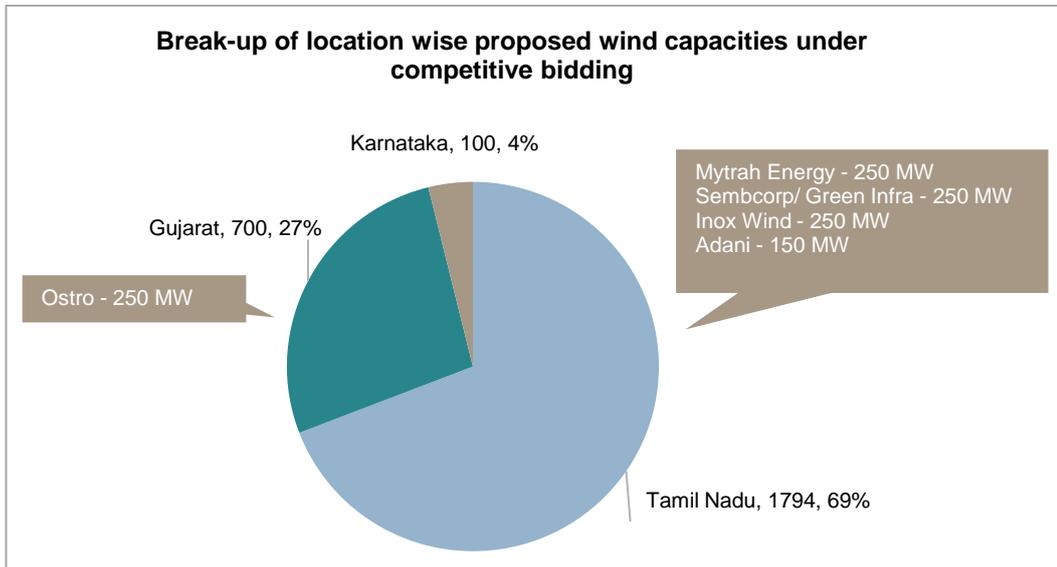
Further, under this scheme, wind power developers are required to evacuate power through the high voltage (220 kV and above) interstate transmission substation system (ISTS) of the central transmission utility (CTU), reducing transmission constraints. Some 10 GW spare capacity is available in Tamil Nadu and ~6.5 GW in Gujarat (Source: Appendix of RFS). Hence, companies with land parcels closer to the CTU are privileged.

Interconnection at the ISTS adds the following benefits by:

- Allowing PTC India to identify and sell wind power to multiple buyers (under the power supply agreement) at the state periphery. In fact, PTC India has already tied up to sell the competitively bid wind power with discoms of non-windy states such as Uttar Pradesh (~500 MW), Jharkhand (200 MW), Delhi (100 MW), Odisha (50 MW), and Assam (50 MW) having low non-solar RPO compliance.
- Making it financially more attractive to buyers as ISTS charges for transmitting renewable power have been waived under the National Tariff Policy, 2016

PLFs of 35% over the life of the asset and low financing cost of 9%, key to healthy IRRs

In order to earn a healthy equity IRR, players are factoring in high PLFs, to be achieved by setting higher hub height wind turbines and setting up projects in high wind density sites of Tamil Nadu and Gujarat. Annual PLFs, not less than 35% are required along with low cost of borrowing of 9% and lower to achieve reasonable equity IRRs at such low bid tariffs. Although the proposed capacities will be commissioned in high wind-density sites (~300 w/m and above) in Tamil Nadu and Gujarat, given the seasonality and cyclicity of wind power, sustaining high PLFs over the life of the asset could be challenging. Thus, micro-siting and in-depth analysis of generation scenarios would be critical.

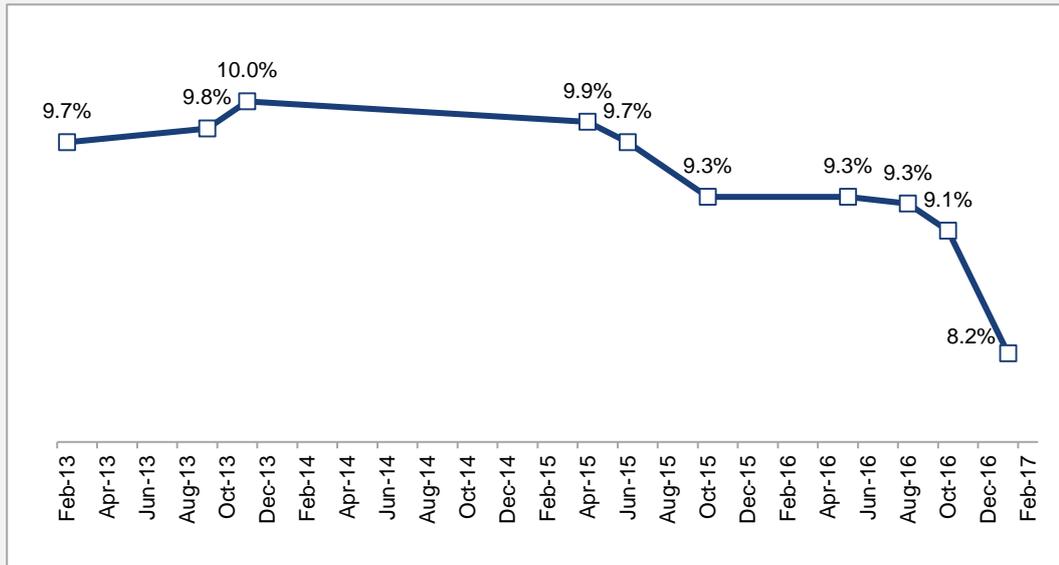


Source: Bid documents; CRISIL Research

We believe that until players have access to low cost of funding (of say, 9 and lower) with long tenors of 15-18 years, the equity IRRs would remain subdued. While interest costs are falling, financial closure at attractive rates would be a key monitorable. Moreover, if developers are able to achieve high PLFs of 35% and above over the life of the asset, there would be an upside to equity IRR.

Reduction in marginal cost of funds-based lending rate (MCLR), coupled with opening up of other financing avenues, players can reduce their cost of capital. Newer financing modes such as green and masala bonds bestow advantages of lower interest rate and wide range of maturity issuances of three, five, and seven years. Further, the yields of these bonds are 300-400 basis points lower than the interest rates charged by domestic banks. Such issuances are helpful in for raising large-sized funds since they provide greater access to a large global investor base

Decline in the State Bank of India’s MCLR by 115 bps over May’16-Jan’17 is indicative of a decline in borrowing cost

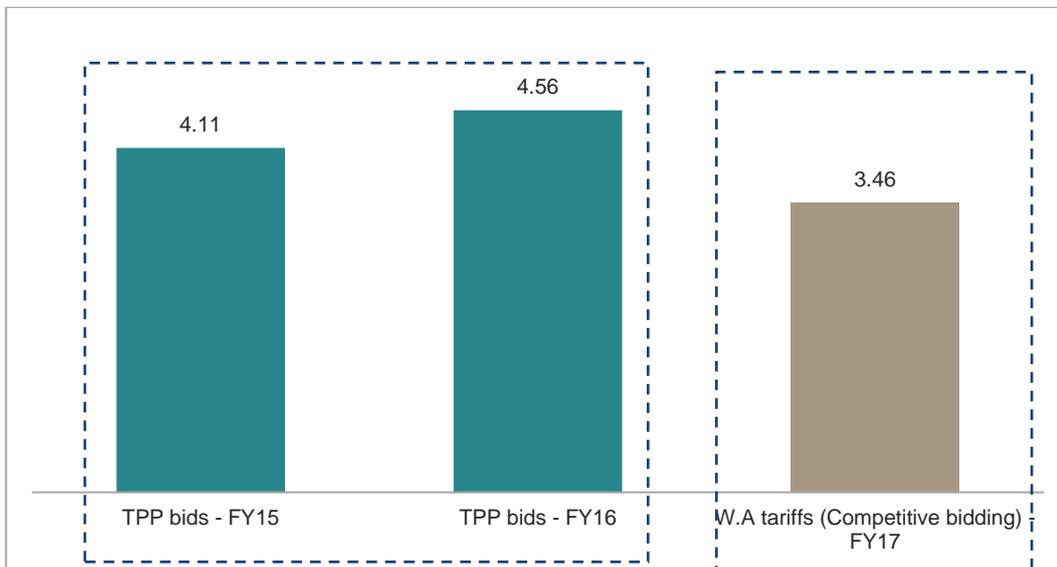


Source : SBI BLR and MCLR; CRISIL research

Declining costs to result in increased wind power offtake

With the onset of reverse auctions, the competitiveness of wind power versus other fuel sources has increased. The bid prices for the recent reverse auction, for one, are ~24% lower than the weighted average tariffs of coal-based plants, discovered under Case I bidding in the recent past. For instance, under the design, build, finance, own, and operate (DBFOO) model in fiscal 2016, Telangana discoms signed an agreement for 570 MW capacity with Thermal Powertech Corporation India Ltd, for buying power at Rs 4.15 per unit, which is ~17% costlier than the recent wind tariffs.

Wind tariffs vis-à-vis coal-based power

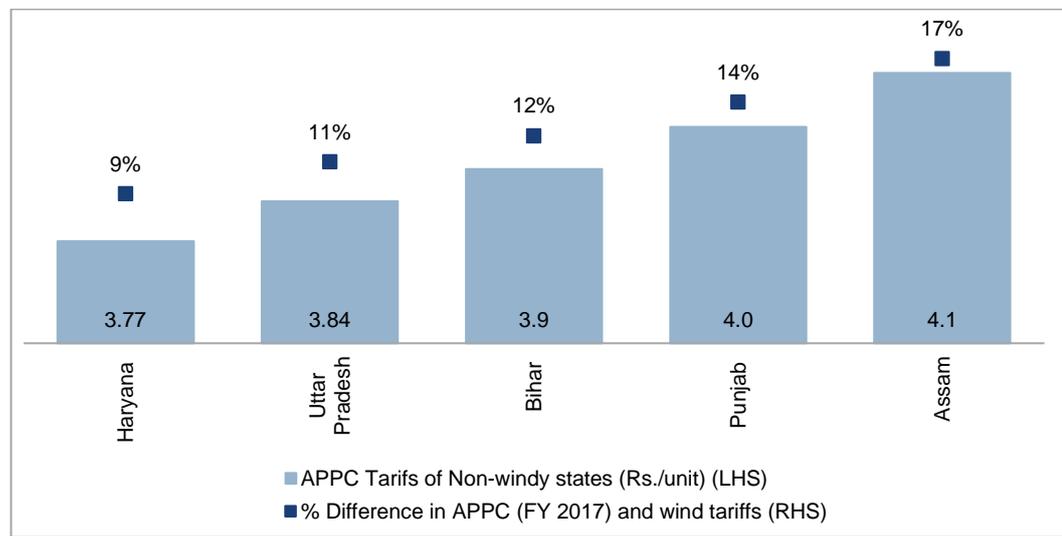


Note: TPP - Thermal power plant; W.A - Weighted average levellised tariffs; SECI - Solar Energy Corporation of India

Source: Industry; CRISIL Research

The discovered tariff of Rs 3.46 per unit under competitive bidding is lower than the average power purchase cost or APPC (Rs 3.84-4.39 per unit in fiscal 2017) of most of the large non-windy states such as Uttar Pradesh, Bihar, Punjab, and Haryana. Especially in states with large wind potential, the competitively bid tariffs are significantly lower than the cost of power purchase from conventional sources of energy. This is expected to result in higher demand for purchase of cheaper power among discoms.

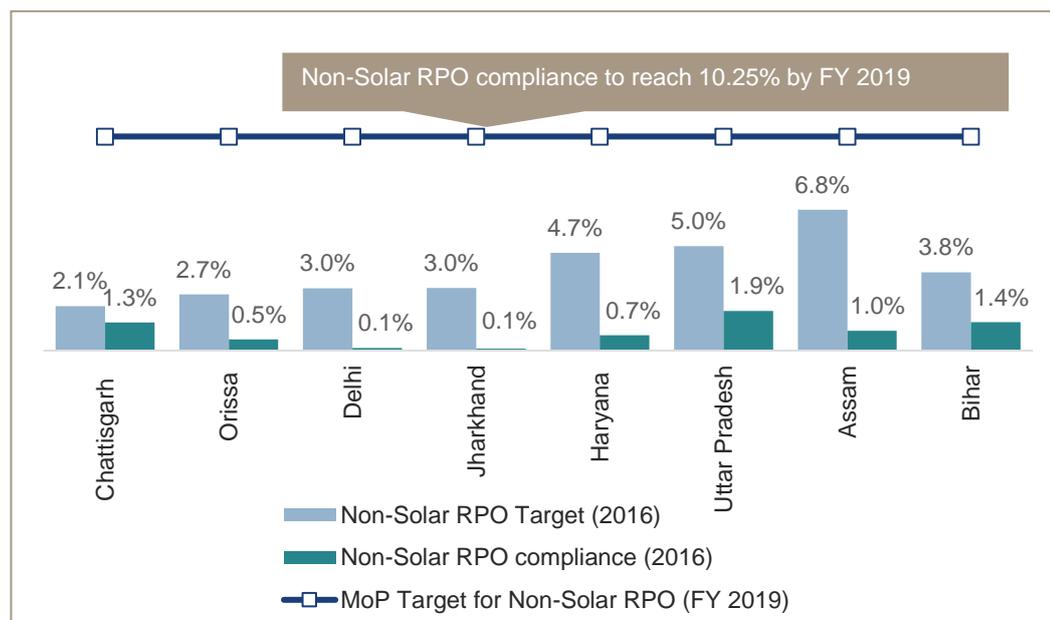
Wind bid tariffs are ~9-17% cheaper than the APPC of most non-windy states



Source: Tariff orders for various states; CRISIL Research

Going forward, there is likely to be pressure on state discoms to improve RPO compliance to support demand for wind energy. In fact, under its revised guidelines on the RPO obligations (released in June 2016), the government has proposed a sharp ramp up in total non-solar-based RPOs to 10.25% by 2018-19, which will drive the demand for cheaper wind power. In fact large states like Andhra Pradesh, Madhya Pradesh, Odisha and Rajasthan have already issued draft regulations for increasing Non-solar RPO targets in line with MoP's guidelines.

Non-solar RPO compliance of select non-windy states



Note: MoP- Ministry of Power; the compliance does not include the REC bought from exchanges

Source: Discoms regulations; CRISIL Research

FiTs to taper off; contracts for under-construction wind projects likely to be renegotiated

With the discovered prices for wind energy falling as low as Rs 3.46/unit, large states such as Karnataka, Rajasthan, Gujarat and Andhra Pradesh (contributing to 47% of the total wind energy fed to the grid) have declared their reservations on continuing with the FIT regime. The relevant stakeholder from the states’ electricity sector have conveyed almost all wind-based energy would be procured through the competitive bidding route in one to two years. Rajasthan has already commenced planning for bidding and is expected to soon come out with a 500 MW wind tender in fiscal 2018.

Many states have also advocated competitive bidding for under-construction projects. Rajasthan is expected to conduct reverse bidding for the existing 100 MW of projects, which are at various stages of commissioning. Same is the case with Gujarat and Andhra Pradesh, which are planning to conduct reverse bidding for ~500 MW of under-construction wind energy projects. As a result, projects which have already signed the equipment’s purchase order at higher tariffs (factoring in returns based on feed-in-tariffs) are likely to renegotiate their contracts with the equipment suppliers. Further, the players may also negotiate with the OEMs for best wind locations (for achieving higher PLFs) or cheaper turbines, to optimise their returns at low tariffs and ensure success in competitive biddings.

Competitive bidding to reduce OEM margins

As major wind states shift to competitive bidding, developers and manufacturers will be squeezed of high returns and high margins, respectively, resulting in the risk profile of projects increasing. Developers are likely to bargain hard with manufacturers to win large capacities under the competitive bidding and simultaneously reduce their expectation of returns and quote lower tariffs. Under the feed-in-tariff mechanisms the OEMs had the opportunity for charging premium to consumers for wind resource assessment, liaising work, land & evacuation and all requisite clearances, etc. However, with developer’s returns under pressure owing to competitive headwinds, the OEMs margins are also likely to be pressurised.

Wind tariffs under competitive bidding contingent on counter party's credit profile

We believe that the competitively bid prices would be contingent on the credit profile of the power offtaker. Hence, prices are expected to be lower for allocations under the central schemes, and vary from state to state based on their payment history and credit profile as being witnessed in the case of solar power bids. Bid prices are expected to remain higher for states with poor payment history and weak credit profile such as Tamil Nadu and Rajasthan, and low for states such as Gujarat and Andhra Pradesh, for sites with similar wind densities.

Wind energy market to consolidate towards IPPs

As the wind energy ecosystem transitions from the FIT to the bidding regime, it would result in the customer base for OEMs shrinking. While they earlier received orders from companies in unrelated businesses seeking tax breaks, smaller players would now find it difficult to participate under competitive bids. This is mainly owing to the large block size (~50 MW minimum block) on offer and higher capex involved.

Further, the government has halved the accelerated depreciation (40% from project commissioning post March 2017) benefit. This, coupled with competitive bidding, would reduce the prospects of higher returns for accelerated depreciation based players, which would then shift their investment focus to other avenues.

Shift in operational wind power execution model expected for OEMs

We believe there will be a shift in the operational wind power execution model. OEMs, which have dominated the execution of wind power projects, were able to charge a premium for bundled services such as finding a suitable wind farm site, arranging for licences, undertaking liaising work, ensuring grid connectivity, constructing, and even maintaining the plant. With more large IPPs participating over the past 3-4 years, the business model could gradually witness a shift. Add to this the advent of competitive bidding, and developers will likely undertake more project-related activities in-house over a period to cut costs.

Another trend likely to emerge is the potential forward-integration of OEMs, given that they are favourably placed as they possess attractive wind sites and manufacturing capability. This is evident from the recent competitive bidding attracting large equipment suppliers such as Inox, Gamesa, and Regen Powetech, which have themselves bid for the capacities. Inox, of course, emerged as the successful bidder.

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