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Who Pays To Keep India's Offshore Wind Ambitions Afloat?

Azman Usmani

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Save

Seven years. Two targets. And still, no project in sight.

That's the story of India's offshore wind ambitions. It has been over half a decade since the country announced a policy for setting up large electricity-producing wind turbines in the open sea. Not even one has taken off.

The country planned 5 gigawatts of offshore capacity by 2022, and 30 GW by 2030. The first planned project of 1 GW capacity off the coast of Gujarat had attracted interest from 35 developers in 2018. But the tender has not been floated, yet.

"Matters on offshore have been very slow," said Tulsi Tanti, chairman of the Indian Wind Turbine Manufacturers Association, and the Suzlon Group.

"Such projects are not viable unless backed by a viability gap funding," he said, referring to support offered to make up for losses. "Several players were interested but due to uncertainty of tariff things have been pending."

The snail's pace of progress belies the country's massive potential for harnessing offshore wind power. According to the central government's own estimates, the 7,600-kilometre-long coastline can generate 140 GW of power by 2050. That's more than half of the country's 201 GW peak power demand.

There are obvious advantages an offshore wind system over conventional power sources. It has significantly better plant load factors of 50-55% compared to 30-35% for onshore wind and solar. No requirement of land acquisition, usually a long-drawn process, makes setting up plants smoother.

Offshore wind is also a compelling addition to the energy mix, especially given the ambition to phase out coal. It can take care of energy requirements in the evening, when wind speeds are higher, power demand is at its peak and solar energy is intermittent. Replacing 1 GW of coal requires at least 3 GW of solar power. The ratios

are much better with offshore wind, meaning fewer installation can draw more power.

Tata Power Renewables recently signed a memorandum of understanding with Germany's RWE Renewables to explore offshore wind power. India's Minister of Power RK Singh also promised the government will invite bids for up to 2GW of projects soon and has been inviting European nations to invest.

Still, the problem of high capital costs persists. Offshore wind turbines can cost up to three times more than the onshore equipment, according to a March 2021 report by the Lok Sabha's 17th Standing Committee on Energy. Technical complexity of installation and maintenance push costs higher.

Developers are left asking just one question: who pays for that?

"The challenge is that higher capex requirement results into a higher tariff," said Ashish Khanna, president of Tata Power Renewables told BQ Prime. "When you're looking at a tariff of about Rs 2-3 per unit for solar and onshore wind, and you look at the tariffs in offshore, which can be multiples of that, then why will you invest the money?"



You need a trigger. Guys like us need to smell it, that there's a business opportunity there.

Ashish Khanna, President, Tata Power Renewables

JMK Research estimates that power tariffs from offshore wind in India will be between Rs 7-9 a unit, nearly the thrice of what conventional renewable sources offer.

To bring costs down, India will need to scale up operations massively, said Shirish Garud, director of renewable energy technologies at The Energy and Resources Institute. "But to get to that level of scale without any prior experience is very hard."

Tata Power said it is the exact reason why they are collaborating with RWE. "We have never worked in this field. No one has in this country," Khanna said. "There are countries who've adopted offshore way before us. Let's learn from them."



Kashish Shah, energy analyst at the Institute for Energy Economics and Financial Analysis, explains that globally there has been a massive deflation in offshore wind power prices. On average, he said, the price was around \$207 per megawatt hour in 2010. Now it has fallen by three- fourths to around \$42 per MWh.

"In the Indian context that is roughly Rs 3.5 per unit," Shah said. "But that has come down in Europe over the years because they've built capacity and expertise. In India, that is completely absent."



We will have to begin with a price premium. Either the consumer pays more, or the government subsidises it.

Kashish Shah, Energy Analyst, IEEFA

And there lies the missing piece of the puzzle—viability gap funding.

"Viability funding on capex and perhaps also on tariff to begin with is extremely important," Tanti said. "My first and foremost expectation from the central government is to enable VGF on capex, resulting in project internal return rate of 14% with a determined tariff."

India provides financial support to public-private infrastructure projects through the viability gap funding scheme. It has not been sanctioned yet for the first planned offshore wind project in Gujarat.

At a wind energy conference in April, Minister of New and Renewable Energy official Prabir Kumar Das said the VGF sanction of up to Rs 15,000 crore is pending with the Ministry of Finance. If it comes this year, then the bidding for the Gujarat tender can go ahead.

BQ Prime awaits responses to queries on the status of VGF emailed to the renewable ministry's Joint Secretary Dinesh Dayanand Jagdale, who handles all administrative and financial matters for onshore and offshore wind energy.

There are other ways of saving on costs, according to Ajay Devaraj, secretary of the India Wind Power Association. "One way is to develop floating energy islands with other complementary things like solar or desalination units on it. That help can bring overall costs down."

That's something the Tamil Nadu government is planning to set up with the help of the Denmark government in the Gulf of Mannar. Another is to start

manufacturing the larger, 60-tonne-plus offshore wind turbines locally, Devaraj said.

That's not easy. "Unless the manufacturers see a long-term offtake for offshore wind, and they see a viable business there, they may not like to invest in manufacturing," Khanna said. "Although if tenders start flowing, I am very confident that we will have Made-In-India turbines."

Shah agreed. "We need assemblies and capacities near the port. It is a long-term strategy to create an entire value chain. I don't see that happening at least in the medium term."

India has set a target of installing 30 GW of offshore wind by 2030. It missed its earlier target of 5GW by 2022.

Shah said while the targets are not realistic, they should not be seen as set in stone. But instead as way to give visibility, intention and scope to the industry.

"I've always said about India's targets," Shah said. "They aim for the moon, so that they at least end up on the treetop."

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