

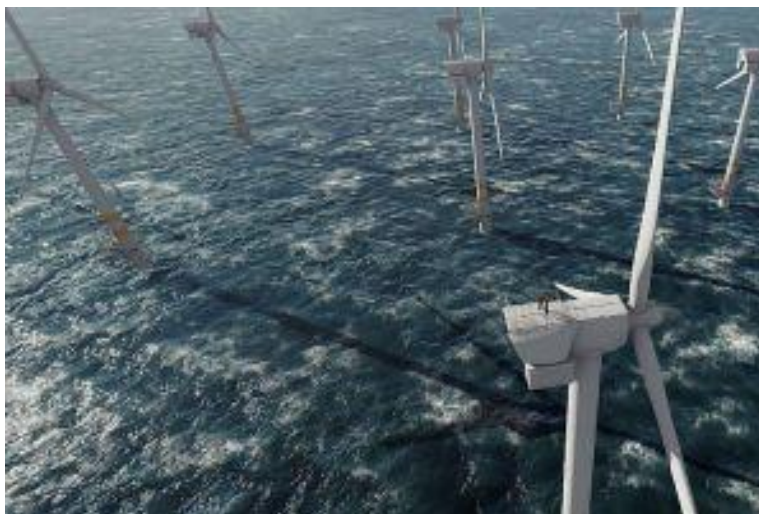
Offshore wind can disrupt NZ market – developer

Eamon Rood - Fri, 25 Mar 2022

Offshore wind farms can provide a substantial chunk of new capacity needed to reach 100 per cent renewable electricity within a decade, according to a potential developer.

Wind Quarry Zealandia argues that land-based wind and solar distributed across the country won't deliver new capacity fast enough to meet 2030 targets.

It also argues that building offshore is less disruptive to natural landscapes and communities, and therefore wouldn't generate the controversy and hostility that often confront onshore wind and solar projects.



The newcomer aims to build the country's first offshore wind farm in Taranaki.

In a submission on the Market Development Advisory Group's recent Price Discovery Under 100% Renewable Electricity Supply issues discussion paper, Wind Quarry says such projects offer generation at a size and scale that aren't achievable on land.

Overseas, offshore farms range from 500 MW to 2.5 GW in capacity. Wind Quarry also believes New Zealand offshore wind can offer capacity factors of 50 per cent, compared to about 40 per cent for the best land sites.

"Currently, New Zealand hosts over 580 onshore wind turbines to generate about 1045 MW," it says.

"This same amount of capacity and about 20 per cent more energy would be accomplished by about 70 offshore wind turbines."

The company acknowledges that onshore wind and solar can be developed more cheaply. But says it expects offshore generation costs will be well below average actual electricity prices for the past five years, and it says the scale of offshore wind can transform the market and bring down overall electricity prices.

"Development of single-point gigawatt-scale offshore wind generation is fundamentally disruptive to the status quo which encourages multiple smaller-scale sources of new renewable generation principally from onshore wind and solar," the company says.

Such projects offer the potential to go beyond 100 per cent renewable generation, offering enough surplus electricity to produce green fuels such as hydrogen, ammonia and methanol for export and for decarbonising transport and industry in New Zealand.

But it says regulations and electricity market structures must change to enable projects of this size.

"The current electricity market encourages incremental development of new generation," Wind Quarry says.

"This discourages the development of large-scale single point generation sources such as offshore wind which are necessary for supplying the scale of electricity needed for Power to X production.

"We suggest the Electricity Authority should acknowledge offshore wind as a distinct form of renewable generation."

Change market structure

Wind Quarry says the structure of the electricity market won't encourage new generation to be built fast enough to reach 100 per cent renewables by the end of the decade.

It says the current structure incentivises dominant generator-retailers to add capacity in increments of 200-300 megawatts at a time to protect their price position.

Those new generation builds tend to be relatively modest in scale (most under 200 MW) providing incremental increases in total generation capacity. Larger builds would oversupply the market and reduce prices.

This approach gives gentailers an excellent return on investment for them. But electricity prices remain high, which discourages investment in the various opportunities for using renewable electricity to decarbonise the economy.

Wind Quarry acknowledges that the increasing cost of carbon units is gradually encouraging investments in decarbonisation, but argues such investments could occur much faster if New Zealand had cheaper, more plentiful electricity.

It notes that one lever influenced by Government – the emissions trading scheme – is encouraging decarbonisation while the electricity market structure is holding it back.

Transmission

Wind Quarry also says New Zealand needs to reconsider its transmission investment model.

“Transpower is using a model to plan new generation sources that always chooses the cheapest generation source, and this precludes transmission planning from considering the benefits of offshore wind since it is not currently cheaper than onshore wind and solar.

“This model must be changed if offshore wind is going to play a role in helping New Zealand make its goals for decarbonisation, industrial growth, and reasonable prices to consumers. Otherwise, the grid will be upgraded in such a way that increased transmission is not built in advance of large offshore power generation projects.”

Transpower's renewable energy zone concept could offer a way forward here.

The grid owner says REZs can facilitate the provision of transmission, distribution and generation infrastructure at the edges of the grid to tap regional energy resources.

Transpower is now collaborating with Northpower and Top Energy on a Northland REZ pilot in parallel with a wider [national consultation on REZs](#).

But a Taranaki REZ could lie ahead.

Venture Taranaki chief executive Justine Gilliland says Taranaki's 90 GW of offshore wind potential makes it a strong contender for a REZ.

“The concept of REZs offers a potentially important piece in the pathway to this future, for Taranaki and New Zealand,” she says.

Transpower says REZs are customer driven and are only built where there is clear demand from generation or load developers.

“This will help to ensure that a REZ is developed in line with the market, decreases the risk of investing significantly in infrastructure that may be underutilized or local consumers having to cover the incremental cost of network investment,” it says.

There would have to be some concrete proposals for offshore wind to get a Taranaki REZ off the ground.

Wind Quarry also says Transpower should consider re-engineering the interisland HVDC link to enable more southward flow.

This is because large North Island offshore wind projects – in tandem with onshore wind and solar – would offer increasing opportunity to curtail South Island hydro generation and use southern lakes as a national battery.

“This will allow storage in the South Island reservoirs to increase and be available when wind and solar are not generating at capacity.”

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