

# Price discovery under 100% renewable electricity supply

NZ Wind Energy Association Submission

March 2022



Submissions  
Electricity Authority

By email: MDAG@ea.govt.nz

## Introduction

1. The New Zealand Wind Energy Association (NZWEA) appreciates the opportunity to provide a submission on the Price discovery under 100% renewable electricity supply issues discussion paper.
2. The Association recognises the importance of the project and commends the Market Development Advisory Group (MDAG) for initiating work to understand how price discovery would work and develop recommendations on what changes should be made to the wholesale electricity market assuming a 100% renewable electricity system.

## Executive Summary

3. NZWEA recognises the considerable work the MDAG has put into developing the issues discussion paper and mostly supports the conclusions and issues identified.
4. The areas where the Association has a different view relate to the assertion that wind energy can be developed rapidly and has low technical entry barriers (questions 1 and 2). Feasibility assessments and in particular consenting requirements have generally resulted in lengthy timeframes for wind farm developments.
5. While the Association agrees that New Zealand may not experience the spot price volatility of other countries we do note that this depends on the mix of renewables built and levels of battery storage available (question 1 and 2).
6. The Association in particular recognises the importance and value of demand side flexibility (question 9) and the development of the wholesale contracts market (question 10) and notes the complexity of an orderly transition (question 11).

## Response to Specific Questions

1. Do you agree with the broad conclusions that emerge from the simulations in relation to spot price levels and volatility, in particular:
  - a. significantly more spot price volatility is likely with a 100%RE system, especially shorter-term weather-driven volatility?
  - b. New Zealand's sizeable hydro generation base is likely to moderate the growth in volatility to some extent, making extreme oscillations between zero and shortage spot prices relatively unlikely?

Yes, but with a couple of caveats. Refer response to question 2

2. If you disagree, what is your view and the reasoning for it?

Para 3.6

While the Association agrees wind energy is scalable we do not consider new generation can be developed rapidly given current RMA consenting requirements. In addition wind monitoring to assess commercial viability can take an extended period. The proposed Resource Management System Reform has the potential to make wind development more challenging.

While the Association supports the resource management reform objectives we consider that there is a real risk if environmental limits are inappropriately set and absolute in their application they may prevent the development of renewable electricity generation and in particular wind energy.

NZWEA does not support the comment that wind generation has low technical entry barriers. We also note that turbine supply, with a global focus on decarbonisation, presents real challenges as does the availability of a suitably skilled workforce capable of enabling multiple wind farms to be built concurrently.

Para 3.15

The Association agrees that New Zealand may not experience the spot price volatility of other countries but notes that this depends on the mix of renewables built and levels of battery storage given solar generation generally correlates with low demand periods.

3. Do you agree that in a 100%RE system there will be many diverse and disaggregated resources to coordinate, and that a wholesale market will be the preferred mechanism to coordinate plans and actions among all the resource owners? If you disagree, what is your view and the reasoning for it?

Yes.

4. Real-time coordination

Do you agree that these are the key issues in relation to real-time coordination? If you disagree, what is your view and the reasoning for it?

Yes.

5. Ancillary services

Do you agree that these are the key issues in relation to ancillary services with 100%RE? If you disagree, what is your view and the reasoning for it?

Yes.

6. Spot price signals

Do you agree that these are the key issues in relation to price signalling with 100%RE as summarised in paragraph 3.42 above? If you disagree, what is your view and the

reasoning for it?
Yes.

7. Do you agree that the preconditions in paragraph 3.38 would need to be in place for an energy-only market design to be effective? If you disagree what is your view and the reasoning for it?

Yes.
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8. Do you agree that we should take forward to the next stage of the process (options identification and analysis) the measures referred to in paragraph 3.43 above? If you disagree, what is your view and the reasoning for it?

Yes.
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9. Demand side flexibility  
Do you agree that these are the key issues in relation to demand-side flexibility with 100%RE? If you disagree, what is your view and the reasoning for it?

Yes. Improved demand side flexibility is key to efficiently managing renewables variability and ensuring DER investment is optimised.
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10. Contracts market  
Do you agree that these are the key issues in relation to contracts markets with 100%RE? If you disagree, what is your view and the reasoning for it?

Yes. The Association considers that significant hedge market development is required. In previous submissions the Association has called for:

- The term of the hedge market to be extended from 3 years to a minimum of 5 years to provide a higher level of contract cover for merchant generators given that new generation assets are a 20+ year investment.
- The development of new products noting that wholesale market product innovation is behind that of other markets. For example, the Australian wholesale market offers a quarterly base load cap on future products. An electricity price cap product was identified as a priority by the EA in December 2015 however for a number of reasons has not been able to be delivered. While a cap product has a limited direct benefit to a wind farm owner it may enable a retailer to be more prepared to contract with a wind farm owner recognising the variable nature of production and having the ability to manage the absolute level of risk as defined by the cap.

11. Transition \*issues  
Do you agree that these are the key issues in relation to transition to 100%RE? If you disagree, what is your view and the reasoning for it?

Yes. The Association considers the seasonal nature of hydro generation with dry year
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risk combined with the size of existing thermal plants and the variability of new renewables does create a key transition challenge. In addition there is uncertainty over the outcome of the Government's NZ Battery Project.

**12.** Are there any other 'lumpy' issues that warrant specific consideration in the transition to 100%RE?

Yes, the resource management system reform will play a crucial role as to whether renewables can be developed.

**13.** Competition

Do you agree that we should analyse how competition in the wholesale market is likely to be affected by a shift to 100%RE, in particular, in competition for seasonal flexibility services? If you disagree, what is your view and the reasoning for it?

Yes.

**14.** What other key areas of opportunity or challenge (if any) will arise in the wholesale electricity market with 100%RE that are likely to have a significant impact in relation to achieving the statutory objective of the Authority, which is to "promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers"?

None, that that the Association has identified.

### **About the NZ Wind Energy Association (NZWEA)**

- The NZWEA is an industry association that promotes the development of wind as a reliable, sustainable, clean and commercially viable energy source
- We aim to fairly represent wind energy to the public, Government and energy sector
- Our members are involved in the wind energy sector and include electricity generators, wind farm developers, lines companies, turbine manufacturers, consulting organisations and other providers of services to the wind sector
- By being a member of NZWEA you are assisting the development of wind energy in New Zealand and helping to reduce our greenhouse gas emissions to meet climate change targets.

### **The Association's strategy focuses on three key areas:**

- Leveraging NZ's emission reduction imperative to enable the energy transition to renewables, particularly wind energy.
- Optimising wind energy's position and ensure the regulatory environment supports wind farm development.
- Expanding the opportunity for wind energy development to enable community and industrial projects including wind's integration with other technologies.

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