



26 July 2023

Electricity Authority

By email to: forecasting@ea.govt.nz

Tēnā koe

Response to Issues and options paper: Review of forecasting provisions for intermittent generators in the spot market

Thank you for the opportunity to respond to the review of forecasting provisions for intermittent generators.

Contact Energy supports the work to improve the forecasting of intermittent generation. As an owner of both slow and fast start thermal assets, incorrect forecasts can make unit commitment decisions much more uncertain. We also see risks of gaming the system under the current settings.

We currently have no intermittent generation assets, but are actively exploring several options. We have entered into a partnership agreement with Lightsource bp to develop solar capacity, starting with a 150MW station at Kōwhai Park in Christchurch. We have also recently been granted approval to use the fast-track consenting process for a 300MW wind farm in Southland.

Because of our mix of current and future assets we are well placed to assess the impact of the Authority's proposals. On balance, we consider that an improvement to intermittent forecasting would be a significant net benefit to the sector, and end-users.

Option 3 – centralised forecasting with an option for self-forecasting – would deliver the best outcome. This will provide greater forecasting accuracy and consistency, while also providing flexibility if the centralised forecasts prove to be less accurate than desired. We also consider that a decentralised approach – option 1 – has merit and should be further considered.

Please contact me at brett.woods@contactenergy.co.nz if you wish to discuss further.

Ngā Mihi

A handwritten signature in blue ink, appearing to read "Brett Woods".

Brett Woods

Head of Regulatory and Government Relations

Contact Energy.



Attachment 1: Response to consultation questions

Consultation question	Contact Energy response
<p>1. Do you agree with the Authority’s problem definition? If not, why not?</p>	<p>Yes we agree with the Authority’s problem definition.</p>
<p>2. Do you agree that a new forecasting arrangement should apply to all grid-connected intermittent generators that are required to submit offers?</p>	<p>Yes.</p>
<p>3. Note this question is referring specifically to generators who have thermal assets: For all trading periods between 1 November 2019 and 31 October 2022, how often do you think you made the incorrect decision whether to start or stop your thermal unit(s)? Please provide reasons why this occurred.</p>	<p>We have not had the capacity to undertake a formal analysis, but anecdotally this happens a lot, roughly 6-10 times a month, particularly for our Stratford peaking plants.</p> <p>This causes a range of problems.</p> <ul style="list-style-type: none"> • If the Stratford peakers are close to the marginal plant we will commit them based on the short schedule price, then if wind runs a bit stronger, we end up running one or both turbines at below their SRMC • Alternatively we can offer the plant at LRMC, but if wind underperforms, the plant are not available at SRMC, so more expensive generation is deployed. • Constantly stopping and starting also causes significant wear, even for peaking plants. Running them this way can increase LRMC. As a result we often price the peaking plants up in times of highest volatility to ensure they are not deployed in a way they are not designed for.
<p>4. What else, if anything, should be considered when assessing the relative advantages and disadvantages of the four forecasting arrangements the Authority has identified?</p>	<p>The disadvantages of decentralised forecasting have been overplayed.</p> <p>Building an intermittent generation station is not a small undertaking. Parties that undertake these developments will have significant capability, and we do not believe that standards will create a meaningful barrier to entry. We also consider that if standards and incentives are well developed there is no</p>

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	reason to expect that new entrants would not be able to meet these requirements and provide accurate forecasts.
<p>5. What other types of forecasting arrangements, if any, should be considered to improve the issue of inaccurate and unreliable forecasts?</p>	We are not aware of any other approaches.
<p>6. Do you agree with the proposed evaluation criteria? If not, what is your view and why? Are there other criteria that the Authority should consider?</p>	<p>We broadly agree. However the criterion ‘straightforward to implement’ may be double counting other criteria such as ‘enhances competition’ ‘timely’ and ‘value for money’.</p> <p>This could be replaced by ‘implementation risk’. As below, we consider implementation risk to be the greatest challenge with option 1. It is very hard to get standards and incentives accurate, and may not result in the desired outcomes on the first try. It is likely they will require ongoing adjustments.</p>
<p>7. Do you agree with the Authority’s assessment of each forecasting arrangement above? If not, why not?</p>	<p>We broadly agree with the conclusions reached, but make the following comments:</p> <ul style="list-style-type: none"> • For the status quo: <ul style="list-style-type: none"> ○ Status quo has ‘low’ ‘efficiency’. There is significant risk of under-forecasting intermittent generation, resulting in too much generation being deployed. This is particularly difficult for slower start thermal assets, creating unit commitment challenges. • For option 1: <ul style="list-style-type: none"> ○ We’d like a bit more discussion on why the Authority considers option 1 to have only medium ‘effectiveness’, ‘efficiency’ and ‘reliability’. Well implemented standards and incentives are likely to be as strong in these characteristics as centralised forecasting (and may be higher due to the competition of ideas between different forecasters). ○ Option 1 should score ‘high’ for ‘value for money’. The cost benefit trade-off is likely stronger than under the status quo.

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	<ul style="list-style-type: none"> ○ Option 1 should score 'high' for 'future proofed'. A decentralised system will allow innovation to suit the market, so long as the standards are not too rigid (in which case option 3 should also be marked down). ○ Should be scored as 'high' for 'exacerbators pays'. Under this approach the wind forecaster pays for its own forecasts, and there may be disincentive payments if they make errors. ○ It should score either 'medium' or 'low' for 'straightforward to implement' (or implementation risks, as above) getting the right standards and incentives will be challenging. We consider this to be the biggest risk of this option. ● For option 2: <ul style="list-style-type: none"> ○ We consider all of 'effectiveness', 'efficiency' and 'reliability' should be medium for option 2 due to the risk of the centralised forecast being inaccurate and creating a system-wide bias. Centralised models have limited tools to incentivise the best outcomes as they lack the 'competition for ideas' in decentralised models. ○ We agree that option 2 is medium for 'enhances competition'. This option may limit future market entry that is based on innovation that requires a more flexible forecasting approach. ○ We consider 'value for money' should be set as 'medium' given the risks covered above. ○ We consider this option should be 'low' for 'future proofed'. There is a significant risk that a centralised forecasting approach could get stuck in the past, and there may be significant inertia and sunk costs to making changes. ● For option 3: <ul style="list-style-type: none"> ○ We are unsure why 'efficiency' is set to 'medium', we consider that this should be set as 'high'. ● We agree with the assessment of option 4.

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	<p>The comments above would change the scoring as below:</p> <ul style="list-style-type: none"> • Status quo – 15 (down 1) • Option 1 – 24 (up 4) • Option 2 – 19 (down 5) • Option 3 – 26 (up 1)
<p>8. The Authority has not weighted the criteria based on importance. Are there particular criteria that you consider to be more important than the others?</p>	<p>We consider that 'effectiveness' 'efficiency' and 'reliability' should be weighted higher as these are the main goals of this project.</p> <p>It may also be appropriate to weight 'implementation risk' higher too to recognise that even where the option has the potential to score high elsewhere, if there is a risk that this will not be the outcome, then some down-weighting is appropriate.</p> <p>This change would retain option 3 as the best, and create a bigger gap from the other options.</p>
<p>9. Are there additional criteria that the Authority should be considering?</p>	<p>As above, we consider 'implementation risk' should also be considered.</p>
<p>10. How frequently do you think intermittent generation forecasts should be updated, and how often do you think intermittent generators should be required to revise their offers to reflect updated forecasts?</p>	<p>We support updates every 30 minutes.</p>
<p>11. Do you think the Authority should implement accuracy standards? If not, please explain why.</p>	<p>Yes, we consider that accuracy standards should be implemented. These are important to the functioning of our option 3 (our preference) and option 1 (second preference).</p>
<p>12. If the Authority was to implement accuracy standards: a. do you think outcome process standards would be more effective?</p>	<p>a. We consider that both process and outcome standards are important.</p>

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<ul style="list-style-type: none"> b. should there be a single standard or multiple standards across different timeframes? c. should the standard(s) be focused on ensuring actual generation is within 30 MW of the amount that was forecast, or should the MW compliance threshold be higher or lower? d. should the accuracy standards be based on the percentage of installed capacity rather than a certain amount of MW? 	<p>Process standards must be high-level to ensure they do not become a barrier to future innovations and market evolution.</p> <p>Outcome standards are important for providing the measurement for incentives and penalties, which we discuss further below.</p> <ul style="list-style-type: none"> b. We support different accuracy standards at different times prior to the trading period as discussed by the Authority. c. We propose that standards should focus on ensuring actual generation is within 15MW. This is the typical Hz keeping band dispatched and the Hz keeper will pick up the difference and be paid accordingly. A different accuracy standard may require a new reserve product. d. As above, we support a 15MW accuracy standard.
<p>13. Following the 9 August 2021 grid emergency, reports from two investigations recommended that the Authority amend the Code to disallow persistence forecasting and require wind generations make more accurate offers to the system operator about supply. Do you agree that the Authority should amend the Code to disallow persistence forecasting?</p>	<p>We support this change.</p>
<p>14. Do you think the Authority should implement accuracy incentives and/or penalties for non-compliance? If not, please explain why.</p>	<p>We support accuracy requirements incentives and penalties under both a centralised and decentralised model. We recognise that there is inherent unpredictability in wind forecasting, so it may be appropriate to set symmetrical standards, where a forecaster meeting a target accuracy is revenue neutral.</p>
<p>15. If the Authority was to implement a decentralised forecasting arrangement, do you have any suggestions for what type of incentives could be applied?</p>	<p>We consider that the quality incentive regime implemented by the Commerce Commission for electricity distribution businesses may be an appropriate model. This sets an incentive rate for outcomes within certain bounds (caps and collars). It also limits the size of incentives and</p>

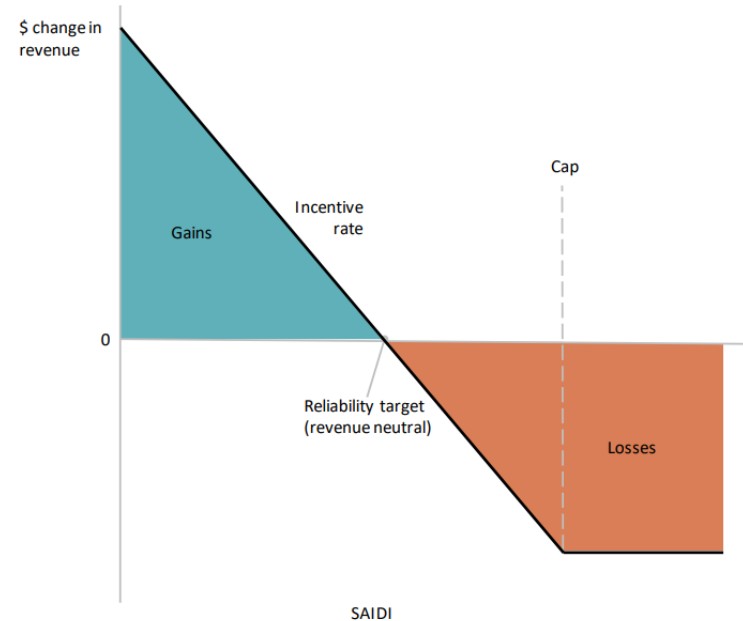
Consultation question

Contact Energy response

disincentives so as it is not overly onerous, but still provides an incentive for improved outcomes.

This is then complemented by more formal enforcement action if outcomes fall outside of an acceptable range.

The Commission describes this model in the figure below:



For wind forecasting an accuracy target could be set at +/- 15MW of actual generation, with rewards available up to a fully accurate forecast. The disincentive rate may be capped at +/- a certain MW, with more formal enforcement for persistent bias.

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<p>16. If the Authority was to implement a centralised forecasting arrangement:</p> <ul style="list-style-type: none"> a. do you have any suggestions for what type of incentives could be applied? b. should penalties for not meeting the standard(s) be prescribed? c. should penalties be higher for over generating than under generating (or vice versa)? 	<p>We consider:</p> <ul style="list-style-type: none"> a. The incentive mechanism we describe above for decentralised forecasts could be equally applied to central forecasts. b. Yes we agree with setting penalties for not meeting the standards. c. Penalties for under forecasting and over-forecasting should be symmetrical. We note the concern from the Authority that some parties may bias towards under-forecasting, but we consider that tilting the rewards/penalties is unlikely to change this, and may just result in lower returns for forecasters.
<p>17. Do you have a view on who should have responsibility for submitting forecasts and who should pay for forecasting?</p>	<p>We consider that the owners of the generation capacity should continue to have responsibility for submitting forecasts, even if this work is carried out by a central forecaster.</p>
<p>18. Do you have a view on what types of information should be published and what platform it should be published on?</p>	<p>All wind generation should be published and all imbedded generation should be published if an individual generator is 1MW or above.</p>