

15 November 2024

Submissions
Electricity Authority
P O Box 10041
Wellington

Via email: forecasting@ea.govt.nz

Dear team,

Re: Consultation Paper— [Review of forecasting provisions for intermittent generators – proposed Code amendments](#)

NewPower Energy Services Ltd (NESL) appreciates the opportunity to make this submission on the Electricity Authority's (Authority) consultation on generation power forecasting for intermittent generators in New Zealand's power system.

NewPower Energy Services Limited (NewPower) the holding company for Infratec NZ Limited (Infratec) and NewPower Energy Limited (NEL), are subsidiaries of WEL Networks Limited, New Zealand's sixth largest distributor. Infratec, an Engineering, Procurement and Construction (EPC) company, is delivering low-carbon utility-scale solar and battery solutions at a time of unprecedented growth in New Zealand. Infratec developed and commissioned Rotohiko, NZ's first utility scale 35 MWh battery energy storage system (BESS) facility at Huntly, connected to WEL Networks' distribution assets. By way of context for this submission, NEL is the owner, operator and trader of WEL Networks generation assets including the Rotohiko BESS, which operates within both Network and Grid compliance modes, and so can offer a range of network, transmission and energy market services within NZEM's wholesale market dispatch compliance rules. This BESS is already contracted to the System Operator as an ancillary service agent for instantaneous reserves.

Infratec has also constructed and commissioned approximately 66 MW of utility-scale solar farms connected to distribution networks in New Zealand for clients, with an additional 60MW currently under construction. They also commissioned NEL's 4MW Naumai solar farm in Northland in Q3 2024.

Infratec is currently building a 33 MWp solar farm for NEL in the Waikato. This solar farm will have to offer generation to the market; hence this consultation is especially relevant to the NESL group. NESL would like to be across the technical decision-making process for this centralised forecasting system solution to allow for smoother development of our solar offering system.

Key points in our submission

In summary:

1. NewPower is supportive of the decision for a hybrid intermittent generator forecasting solution.
2. NewPower questions the value of requiring intermittent generators to submit offers six days in advance (and to update these offers every 30 minutes if the forecast changes. There are issues with forecasting accuracy out this far and it will increase the complexity of generators offering systems. The System Operator will be able to receive these six days ahead forecasts from the central forecaster and be able to analyse generation levels that way. NewPower believes that the status quo of offering 72 trading periods in advance should apply to intermittent generators, to keep the requirements the same for all generators.
3. NewPower recommends the Authority ensure that the data transfer solution between the central forecaster and generators isn't cost prohibitive but is also secure from a cyber security perspective. A technical working group could be used to establish the most cost-efficient data transfer solution, given this proposal impacts existing as well as new intermittent generators.
4. NewPower advises the Authority to use this opportunity to define how a hybrid intermittent generator (co-located BESS with solar or wind) would offer to the market. It will not be long until there is hybrid intermittent generation plant in New Zealand.
5. NewPower is concerned about the proposed three-month transition period, in NewPower's view this is not long enough. Intermittent generators will need clarity on the central forecasting provider requirements before software development can even start on the generators offering system. NewPower recommends that the Authority extends the transition period to at least 6 months.
6. NewPower suggests that a technical working group is established to develop information requirements and technology choice for communication with the central forecasting service provider.
7. NewPower is concerned with the volume of important consultations that have been released recently. In NewPower's view the volume and timeframes of consultations makes it difficult for participants to thoroughly review and provide good quality submissions to the Authority.

NewPower welcomes discussion with the Authority on any points in our submission that the Authority would like further clarification or information for.

Yours Sincerely,



Darren O'Neill
Product Development Manager
NewPower Energy Services Ltd

Appendix 1: NewPower's response to the consultation questions

Questions	Comments
<p>Q1. Do you agree that the proposed Code amendments are necessary to give effect to the Authority's policy decisions? If not, please explain why.</p>	<p>NewPower agrees that the code amendments are necessary and believes that it should give the desired outcomes.</p>
<p>Q2. Do you agree that intermittent generators will be required to submit their first offer six days before the beginning of the trading period to which the offer relates? What impacts, if any, would this change have on you?</p>	<p>No, NewPower doesn't agree that intermittent generators should offer six days ahead. NewPower believes it should be 72 trading periods ahead as per the status quo with other generation. If the six days ahead requirement is implemented, NewPower believes that offering six days in advance should apply to all generators.</p> <p>NewPower would question the value of intermittent generation having offers six days in advance, as the Authority pointed out there is difficulties forecasting even in the shorter term for intermittent generation. So, the mentioned benefit of managing system security a week ahead is questionable due to the forecasting accuracy becoming less the further out the forecast is. Also, if other generators only offer 72 trading periods in advance, then the price forecasting for the period from 72 trading periods to six days will be inaccurate.</p> <p>Offering up to six days in advance adds extra complexity to generators offering systems. Rather than submitting 72 separate offers as per the status quo the intermittent generator would have to submit 288 separate offers each trading period. This extra number of offers will increase the complexity of the offering system and increase the time / computing power needed to execute the offering system. This is a cost on intermittent generation that is not being imposed on 'firm' generation. The solution is not technology agnostic and slants a competitive market in favour of firm generation.</p> <p>The major impact that this change will have on NewPower is the cost and effort to integrate the central forecasting into NewPower's generation offering system. If the six days ahead requirement is implemented there will be additional costs to modify our offering system. Also, there will be additional complexity with sanity checking when to change over from the central forecast to the back-up forecast, for example checking if central forecast values make sense etc.</p>

	<p>At this stage it is too difficult for NewPower to estimate the associated cost with integrating the central forecasting system into our generation offering system. NewPower would need more clarity of the requirements and central forecasting technology before estimating any costs.</p> <p>NewPower recommends that if the System Operator wants to look at generation 6 days out then the System Operator can receive the full 6 day forecast from the centralised forecaster and conduct its analysis of the generation levels that way (rather than these offers going through the market).</p>
<p>Q3. Do you agree with the revised decision that all industry participants (ie, not only generators) should be required to contribute to the costs of the centralised forecast rather than generators only?</p>	<p>NewPower agrees with the revised cost contribution decision - all market participants will benefit from more accurate forecasting, from both a security and price signal aspect.</p>
<p>Q4. Do you agree the Authority's proposed Code amendments complies with section 32(1) of the Act?</p>	<p>No comment. This is not for NewPower to assess.</p>
<p>Q5. What inputs would intermittent generators need to provide to the centralised forecaster to produce accurate generation forecasts? Would there be issues with intermittent generators providing this information?</p>	<p>The implementation of data transfer needs to be not cost prohibitive (i.e. utilising secure APIs etc). A technical working group could be used to establish the most cost-efficient data transfer solution, given this proposal impacts existing as well as new intermittent generators.</p> <p>The implementation of the system needs to be secure from a cyber security perspective as many generators will be connecting their systems to an external 3rd party.</p> <p>The Authority must have a confidentiality clause in the contract with the central forecaster that protects the data given to the central forecaster by generators.</p> <p>NewPower envisions the following inputs from generators would be required:</p> <ul style="list-style-type: none"> • Initial solar farm information for the solar farm model to be set up in the central forecasters system • Local Irradiance / wind measurements if available • Local temperature measurements if available • Current maximum power limit for the generating unit(s) (considering all curtailment and outages) <p>NewPower suggests that a technical working group is established to develop information requirements and technology choice for communication with the central forecasting service provider. The risk of not involving stakeholders in the decision process, is that the solution is not cost effective or fit for purpose.</p>

Q6. Do you have any comments on the drafting of the proposed Code amendments?

Yes, NewPower believes that the drafting needs to consider how forecasting and offering of hybrid solar/wind and battery sites works. Does the generator just modify the central forecast to account for what they think the BESS will do?

It will not be long until there is a co-located BESS on a solar or wind generation site. The Authority should use this opportunity to address this.