

12 November 2024

Consultation – review of forecasting provisions for intermittent generators
Electricity Authority forecasting team
Via email: forecasting@ea.govt.nz

Tēnā koe,

Improved forecasting of intermittent output – an interim step towards future industry architecture

Powerco is one of Aotearoa’s largest gas and electricity distributors, supplying around 360,000 (electricity) and 114,000 (gas) urban and rural homes and businesses in the North Island. These energy networks provide essential services to around 1 million kiwis and will be core to Aotearoa achieving a net-zero economy in 2050.

We **support the primary intent of these proposals to improve forecasting of intermittent output**. In an energy system with increasingly intermittent generation, there is a critical interaction between the system operator (SO), distributors (EDBs), future distribution system operators (DSO) and distributed generation (DG). We see these Code proposals as an interim step towards the future state of industry architecture. As the future industry architecture evolves, we encourage **continued Electricity Authority monitoring, and support for SO/distributor coordination and for efficient transition to DSO**.

Our submission focuses on consultation questions 4 – complying with section 32(1) of the Act and question 5 – achieving accurate generation forecasts.

Distributors and DSOs have a key role in managing the network

- While in the current market it is an SO role to market dispatch larger DG, in the future this will also be a role for the DSO to ensure effective network management as there is a shift from a small number of larger DG to many small scale DG.
- Supporting DSO forecasting (rather than SO/DSO overlap in roles) would enable the efficient operation of the system. For example, our ADMS is evolving and will in time include an intermittent DG forecasting function.
- Distributors need access to DG market offers to enable forecasting the real time net GXP import/export. This will become more important as load and flex become more volatile, and the DSO will have better visibility than the SO of the network dynamics.

Factors influencing DG market offers will change

- Distribution network constraints are relevant for DG market offers. Initially this may be static envelopes of limits, but in the future it’s likely to be more dynamic operating envelopes with forecasts ahead of time reflecting market conditions.

- The offer/bid mechanisms could produce large swings in dispatched volumes where, over time, there are competing DG vying for export capacity at a GXP node. A robust capacity allocation mechanism will be needed to allocate contested capacity.
- Localised forecasting should be more accurate, eg based on local weather sensors. However, our work on dynamic ratings has found a lack of localised sensors for smaller intermittent generation sites, and current approaches to adjusting national data is not providing sufficient accuracy for these sites.

In testing these Code proposals, and establishing future Code review plans in response to evolving system architecture (including more/different intermittent output and a DSO role), we encourage the Authority to robustly assess if the amendments and implementation proposals best achieve the Government's expectations¹ that the electricity system is:

- a) An efficient wholesale electricity market with many different wholesale buyers and sellers of electricity, managing their own risks, responding to competitive pressures and accurate price signals, continually looking for ways to serve their current and potential customers more effectively than their competitors;*
- b) Efficient transmission and distribution networks; and*
- c) Effectively competitive markets for electricity retail services.*

This submission does not contain any confidential information and may be published in full. If you have any questions regarding this submission, please contact Irene Clarke (Irene.Clarke@powerco.co.nz).

Nāku noa, nā,



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¹ Government Policy Statement (GPS) on Electricity, October 2024, para 3. Other parts of the GPS are also relevant, for example para 24 about a decentralised risk management approach.