Broadening the Definitions of Generating Unit and Intermittent Generating Station

Decision

February 2020

Market Design

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1 Decision

1.1 We have decided to amend Parts 1 and 13 of the Electricity Industry Participation Code 2010 (Code) so that:

(a) the definition of **generating unit** in Part 1 refers to equipment rather than to a machine

(b) the definition of **intermittent generating station** in Part 1 refers to generating stations powered by variable resources that are not stored

(c) the definitions of **bona fide physical reason** and **synchronised** in Part 1 are consistent with the amendment to the definition of **intermittent generating station**

(d) clause 13.18A(3), in relation to forecasting of the intermittent generator's generation, is consistent with the amendment to **intermittent generating station**.

2 Background to definition changes

2.1 On 24 September 2019, we published a consultation paper titled, *Code Review Programme Number 4 – September 2019*.[1] We consulted on a proposal to amend the Code definitions of **generating unit** and **intermittent generating station**.

2.2 These definitions were inhibiting some new generating technologies from participating in the electricity spot market and ancillary service markets regulated by the Code. The objective of the proposal was to address this issue by:

(a) broadening the definition of **generating unit** so that it adequately describes types of generating plant that use a source of energy other than mechanical force to produce electricity, such as solar farms

(b) broadening the definition of **intermittent generating station** so that it includes generating stations powered by variable resources that are not stored, other than just wind

(c) making three minor consequential changes to the Code to accommodate the changes to the definitions of **generating unit** and **intermittent generating station**.

2.3 This paper sets out the Authority's decision to amend the Code and gives reasons for that decision.

3 Why the Authority made this decision

The Code amendment promotes competition and reliability

3.1 After considering all submissions on the Code amendment proposal, we believe the final Code amendment will deliver long-term benefits to consumers by:

(a) promoting competition in the supply side of the electricity industry

(b) promoting reliability in the electricity industry, through greater diversity of supply amongst generating stations

(c) making it easier for participants to understand and comply with their obligations.

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1 https://www.ea.govt.nz/development/work-programme/operational-efficiencies/code-review-programme/consultations/#c18205

3.2 The Code amendment will come into force on 20 March 2020.

The benefits of the proposal are greater than the costs

3.3 We have assessed the economic benefits and costs of the Code amendment and expect it will deliver a net economic benefit.

3.4 The main benefit of the Code amendment is that it promotes competition in the supply side of the electricity industry by enabling a wider range of generators to participate in the electricity spot market and ancillary service markets. The entry, or threat of entry, of new generators in these markets would be expected to place downward pressure on wholesale electricity prices. Under a workably competitive retail market, this downward pressure would be to the benefit of consumers. Given the value of electricity settled in the spot market each year, even a small downward pressure on wholesale electricity prices would translate into a material benefit for consumers.

3.5 We do not expect the Code amendment to place additional costs on industry participants.

The Code amendment is consistent with regulatory requirements

3.6 The Code amendment is consistent with the requirements of section 32(1) of the Electricity Industry Act 2010.

3.7 The Code amendment is also consistent with the Authority's Code amendment principles. It is lawful and promotes competition in and reliable operation of the electricity industry. Our qualitative assessment of the Code amendment's costs and benefits confirms it has the long-term benefit for consumers.

4 The Authority considered 6 submissions before making this decision

We received submissions on our September 2019 consultation paper from the 6 parties listed in Table 1.

Table 1: List of submitters

Submitter	Category
Genesis Energy Limited	Generator/retailer
Mercury New Zealand Limited	Generator/retailer
Orion New Zealand Limited	Distributor
Transpower New Zealand Limited	Grid owner
Trustpower Limited	Generator/retailer
Vector Limited	Distributor

4.2 Submissions are available on our website at: https://www.ea.govt.nz/development/work-programme/operational-efficiencies/code-review-programme/consultations/

5 Reasons for our decision

We have decided to implement the proposal with no change to its policy intent, but with revised Code drafting

5.1 Although we have not changed the proposal, we have revised the proposed Code drafting that we consulted on to refine and simplify the definition of "intermittent generating station". Some forms of intermittent generation such as run-of-river hydro, wind and tidal can be considered controllable to some degree. Accordingly, we have removed the reference to "not controlled' from the definition to avoid unintentionally excluding these forms of intermittent generation.

We have decided against making a change suggested by a submitter

Submitter's views

5.2 While no submitters were opposed to the proposal, Transpower and Trustpower suggested drafting changes considered to improve the wording of the proposed definition changes.

5.3 Mercury noted that further amendments should be progressed to permit owners of battery energy storage systems to offer injection capacity as a form of instantaneous reserve.

Our decision

5.4 We consider the drafting changes suggested by Transpower and Trustpower would not improve or simplify the proposed definitions. Some of the suggested changes would overlap meaning with other defined terms such as "generating station" and make the definitions circular by referencing terms being defined as part of the definitions.

5.5 We agree with Mercury's suggestion that further amendments should be progressed to permit owners of battery energy storage systems to offer injection capacity as a form of instantaneous reserve. We are currently addressing this separately under the Authority's *Participation of New Generating Technology in the Wholesale Market* project and not as part of the Code Review Programme.

Appendix A Code amendment

Part 1

1.1 Interpretation

(1) …

bona fide physical reason includes,—

…

(ba) in relation to an **intermittent generator**, a situation in which—

(i) ~~wind~~ variable resource conditions prevent the **intermittent generator** from generating at the level expected; or

…

generating unit means ~~a machine that generates **electricity**~~ all equipment functioning together as a single entity to produce **electricity**

…

intermittent generating station means a ~~**wind**~~ **generating station** that relies on a variable resource that is not stored

…

synchronised means the condition whereby a synchronous ~~machine~~ **generating unit** is **electrically connected** to a **network** and the electrical angular velocity of the ~~machine~~ **generating unit** corresponds with the **network** frequency and **synchronise, de-synchronise**, **synchronising, synchronism** and **synchronisation** have corresponding meanings. Asynchronous **intermittent generating stations** must be treated as being **synchronised** for the purposes of subpart 2 of Part 8

…

Part 13 Trading arrangements

13.18A Intermittent generators to submit revised forecast of generation potential every trading period in last 2 hours

…

(3) For the purposes of this clause, a resource persistence model means a method for producing a forecast of the **intermittent generator's** generation for a **trading period**, in **MW**, that is derived from the expected availability and capability of **generating plant** forming all or part of the relevant **intermittent generating station**, on the assumption that the ~~wind (or other~~ variable resource~~)~~ conditions at the time at which the forecast is prepared will persist throughout the **trading period** to which the forecast relates.

…