

Shortened gate closure and revised bid and offer provisions

Consultation Paper

Submissions close: 19 August 2015 5:00pm

26 June 2015

Executive summary

What is the problem?

The Electricity Authority (Authority) has identified four key problems that are addressed in this paper:

- (a) Gate closure restrictions limit the flexibility of resources (especially generation and instantaneous reserves) to respond to changing circumstances in the two hours leading up to real time.¹ Changing circumstances could include, for example, demand increasing faster than expected, or wind generation output falling. Some participants are physically able to take efficient actions in response, but gate closure provisions discourage or prevent them from doing so.

Gate closure helps the system operator to manage security and helps to prevent “strategic re-offering” (revising offers close to real time in an attempt to influence price without allowing other participants an opportunity to respond).

- (b) Gate closure and grid emergency provisions for non-dispatch bids are ineffective and hinder accurate bidding. (Most purchaser bids are non-dispatch bids, except where a dispatch-capable load station (DCLS) elects to be dispatched).
- (c) Drafting of the bid and offer revision provisions of the Electricity Industry Participation Code 2010 (Code) could be clearer and more robust to avoid incurring unnecessary monitoring, reporting, compliance and administration costs.
- (d) The Code requirements for persistence-based forecasts from intermittent (wind) generators in the final two hours before real time need to be more robust to support the accuracy of forecast schedules.

What Code amendment is the Authority proposing?

The Authority proposes to amend the Code to:

- (a) Change gate closure provisions: these provisions currently limit the circumstances in which participants can revise their offers, bids, reserve offers, and grid information in the last two hours before the trading period.

The gate closure provisions would be amended to:

¹ The term “gate closure” currently is not used in the Code. However, it is a term used by the industry to describe the period after which participants are not permitted to change their bids, offers or reserve offers unless they have a specific reason which is allowed for by the Code. For grid connected generators, purchasers and instantaneous reserve providers this period is two hours before the start of the trading period, and for embedded generators and instantaneous reserve providers it is 30 minutes.

- (i) reduce the gate closure period to one hour for participants for whom it is currently two hours
 - (ii) remove gate closure for non-dispatch bids, and remove the limitations on revising non-dispatch bids in a grid emergency.
- (b) Change the requirements for intermittent (wind) generators by:
- (i) requiring persistence-based offers (special offers required from intermittent generators in the two hours before the trading period) to include information about the generator's intentions for plant availability
 - (ii) requiring a persistence-based offer at least once in every trading period during the final two hours before real time.
- (c) Change various clauses about revising offers, bids, reserve offers, and grid information to make the Authority's expectations clear, to ensure the provisions are robust, and to remove the obligation for the grid owner to report any late updates of grid information.

The purpose of this consultation paper is to consult on the proposed Code amendment in accordance with the Electricity Industry Act 2010 (Act).

Objectives and strategic direction

The proposed Code amendment would promote the efficiency and reliability limbs of the Authority's statutory objective. Efficiency would be promoted by improving the flexibility of generation and instantaneous reserve resources to respond to changing circumstances, while maintaining system security and the limitations on strategic re-offering. Reliability would be promoted by making persistence-based intermittent generation forecasts more robust, and by removing gate closure for non-dispatch bids to allow improved forecasts.

The proposed Code amendment would not detract from the competition limb of the Authority's statutory objective.

By supporting the accuracy of forecast schedules, this proposal contributes to the Authority's increased focus on advancing work to improve the efficiency of price signals.

Implementation

If the proposed Code amendment is approved, it is expected to come into force in mid to late 2016.

What costs and benefits does the Authority consider would result from the proposed Code amendment?

The total cost of implementing the proposed Code amendment is estimated at a present value of \$1.354 million, excluding GST. These costs are broken down as follows:

Party incurring costs	Gate closure costs (\$m)	Cost for other aspects (\$m)	Total (\$m)
System operator	1.100	0.124	1.224
WITS provider	0.040	0.040	0.080
Participants	0.000	0.000	0.000
Electricity Authority	0.030	0.020	0.050
Total	1.170	0.184	1.354

The Authority considers the introduction of one hour gate closure is likely to result in an increase in productive efficiency that significantly exceeds the estimated cost. Productive efficiency improvements from the proposed Code amendment as a whole should flow through to consumers as a reduction in energy costs (relative to what those costs would otherwise have been). Therefore, the proposed Code amendment is expected to be to the long-term benefit of all consumers.

The benefits of one hour gate closure have not been quantified, but the Authority has a high level of confidence that the benefits will exceed the costs. The benefits of the other elements of the proposed Code amendment have been estimated conservatively at \$300,000, which exceeds their cost.

In order to confirm this point, the Authority seeks comments from generators on how one hour gate closure would affect their cost of production.

What other actions does the Authority propose to take?

The Authority also proposes to increase its monitoring of offer revisions made in the last two hours before real time. The Authority would focus on changes that have a substantial effect on the market price.

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1. What you need to know to make a submission

1.1 What this consultation paper is about

1.1.1 The Electricity Authority (Authority) has identified four key problems that are addressed in this paper. They are:

- (a) Gate closure restrictions limit the flexibility of resources (especially generation and instantaneous reserves) to respond to changing circumstances in the two hours leading up to real time. Changing circumstances could include, for example, demand increasing faster than expected, or wind generation output falling. Some participants are physically able to take efficient actions in response, but gate closure provisions discourage or prevent them from doing so.

Gate closure helps the system operator to manage security and helps to prevent "strategic re-offering" (revising offers close to real time in an attempt to influence price without allowing other participants an opportunity to respond). However, it appears possible to reduce gate closure restrictions without significant detrimental effects on those matters.

- (b) Gate closure and grid emergency provisions for non-dispatch bids are ineffective and hinder accurate forecasting. (Most purchaser bids are non-dispatch bids, except where a dispatch-capable load station (DCLS) elects to be dispatched).
- (c) The requirements for intermittent (wind) generators to submit persistence-based offers in the last two hours before real time need to be made more robust to support the accuracy of forecast schedules.
- (d) Drafting of re-offer provisions could be clearer and more robust to avoid incurring unnecessary monitoring, reporting, compliance and administration costs.

1.1.2 The Authority proposes to amend the Code to:

- (a) Change gate closure provisions: these provisions currently limit the circumstances in which participants can revise their offers, bids, reserve offers and grid availability information in the last two hours before the trading period. The gate closure provisions would be amended to:
 - (i) reduce the gate closure period to one hour for participants for whom it is currently two hours
 - (ii) remove gate closure for non-dispatch bids, and remove the limitations on revising non-dispatch bids in a grid emergency

- (b) change requirements for intermittent (wind) generators by:
 - (i) requiring persistence-based offers (special offers required from intermittent generators in the two hours before the trading period) to include information about the generator's intentions for plant availability
 - (ii) requiring a persistence-based offer at least once in every trading period during the last two hours before real time
- (c) change various clauses about revising offers, bids, reserve offers, and grid availability information to make the Authority's expectations clear, to ensure the provisions are robust, and to remove the obligation for the grid owner to report any late update of grid information.

1.1.3 The Authority also proposes that, when gate closure is reduced to one hour, the Authority would increase its monitoring of offer revisions made between one and two hours before real time.

1.1.4 The purpose of this consultation paper is to consult with participants and persons that the Authority thinks are representative of the interests of those likely to be affected by the proposed Code amendments.

1.1.5 Section 39(1)(c) of the Electricity Industry Act 2010 (Act) requires the Authority to consult on any proposed amendment to the Code and corresponding regulatory statement. Section 39(2) provides that the regulatory statement must include a statement of the objectives of the proposed amendment, an evaluation of the costs and benefits of the proposed amendment, and an evaluation of alternative means of achieving the objectives of the proposed amendment.

1.1.6 The regulatory statement for the Authority proposal is set out in section 4 of this paper.

1.1.7 The proposed Code amendments are attached as Appendix A.

1.1.8 The Authority invites you to make a submission on the regulatory statements and the proposed Code amendments.

1.2 How to make a submission

1.2.1 Your submission is likely to be made available to the general public on the Authority's website. If necessary, please indicate any documents attached in support of your submission and any information that is provided to the Authority on a confidential basis. However, you should be aware that all information provided to the Authority is subject to the Official Information Act 1982.

1.2.2 The Authority's preference is to receive submissions in electronic format (Microsoft Word) in the format shown in Appendix B. Submissions in

electronic form should be emailed to submissions@ea.govt.nz with 'Consultation Paper – Shortened gate closure and revised bid and offer provisions' in the subject line.

- 1.2.3 Do not send hard copies of submissions to the Authority unless it is not possible to do so electronically. If you cannot or do not wish to send your submission electronically, you should post one hard copy of the submission to either of the addresses provided below or you can fax it to 04 460 8879. You can call 04 460 8860 if you have any questions.

Postal address

Submissions
Electricity Authority
PO Box 10041
Wellington 6143

Physical address

Submissions
Electricity Authority
Level 7, ASB Bank Tower
2 Hunter Street
Wellington

1.3 **Deadline for receiving a submission**

- 1.3.1 Submissions should be received by **5 pm on Wednesday, 19 August 2015**. Please note that late submissions are unlikely to be considered.
- 1.3.2 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions Administrator if you do not receive electronic acknowledgement of your submission within two business days.

2. Current scheduling provisions

2.1 This section describes current scheduling provisions

- 2.1.1 This section describes the current Code provisions covering gate closure and the obligations of participants with respect to revising offers, bids, reserve offers, and grid information.
- 2.1.2 The full scheduling provisions are set out in Part 13 of the Code. The summarised description of the provisions in this section highlights only the key features of the provisions.
- 2.1.3 The material is set out as follows:

Overview of bid and offer revision provisions

- (a) Overall structure of bid and offer revision provisions (section 2.2)

Gate closure and other provisions that limit strategic re-offering

- (b) Some participants are subject to two hour gate closure (section 2.3)
- (c) Gate closure and offer provisions limit strategic re-offering (section 2.4)
- (d) Bid and offer revision provisions prioritise security (section 2.5)
- (e) Obligations to immediately revise: there are differences between offer, bid, and reserve offer provisions (section 2.6)

Intermittent generators

- (f) Intermittent generators must submit persistence offers in the last two hours before the beginning of a trading period (section 2.7)

Purchaser bids

- (g) Gate closure applies to purchaser bids (section 2.8)
- (h) Purchaser bids are restricted in a grid emergency (section 2.9)

Other matters

- (i) Grid owner must report late updates of grid information (section 2.10)
- (j) Bids and offers can be cancelled (section 2.11)
- (k) No provisions for permanent cancellation of offers, bids and reserve offers (section 2.12).

- 2.1.4 The problem definition is set out in the following section (section 3).

2.2 Overall structure of bid and offer revision provisions

- 2.2.1 The current Code requires generators, purchasers, and ancillary service agents (ASAs) to submit offers, bids, and reserve offers at least 36 hours ahead of the relevant trading period. Offers consist of up to five bands with additional generation being offered at progressively higher prices. Bids consist of up to ten bands with additional purchases being bid at progressively lower prices. Generators and purchasers can revise their offers and bids over time as the relevant trading period gets closer.
- 2.2.2 The system operator prepares new schedules at least every two hours during that 36 hour period using the latest available offers and bids, and more frequently in the last 4 hours before real time. The schedules provide an indication of forecast demand, the output expected from each generator, the expected usage by each dispatch-capable load station (DCLS), the expected instantaneous reserve provided by each reserve provider, and likely market prices.
- 2.2.3 Generators can revise their offers based on feedback from the schedules. This iterative process allows generators to optimise generation and to determine which plants will run. The process is intended to support generators to make efficient commitment decisions (which may be made several hours before real time), support security, and enable generators as a whole to meet demand at least cost.
- 2.2.4 Purchasers also use these schedules to make commitment decisions and real time electricity use decisions.
- 2.2.5 The key Code provisions relating to offer revisions are as follows (each description has been simplified to illustrate the provision's key features):
- (a) Clause 13.2: A participant must not disclose to any person any information under Part 13 that, at the time the information was disclosed, was misleading or deceptive or likely to mislead or deceive.
 - (b) Clause 13.5A and 5B: A generator must ensure that its offer conduct is consistent with a high standard of trading conduct. A “safe harbour” provision provides that, for a generator that is not pivotal, the standard will be met if the generator makes offers for all of its capacity that is able to operate and revises offers as soon as it can.²

² The safe harbour provision describes a set of behaviours that is a subset within a wider set of behaviours that achieve the high standard. So if behaviour is within the safe harbour, it will be deemed to be of a high standard. If behaviour is outside the safe harbour, it may or may not be deemed to be of a high standard.

A generator is pivotal (according to the definition in Part 1 of the Code) where “the total demand in a trading period at any 1 or more nodes would not have been met if the generator had not submitted offers for all or any of its generating plant”.

- (c) Clause 13.9: An offer must not exceed the generator's reasonable estimate of the quantity of electricity capable of being supplied.
- (d) Clause 13.17: A generator may revise its offer at any time, although some restrictions apply after the “gate closure” point (two hours before the beginning of the relevant trading period).
- (e) Clause 13.18(1) and (1A): At any time before the trading period (and despite clause 13.19) a generator must immediately revise its offer quantities if it expects its ability to generate the offered/scheduled quantity to change substantially (by more than the lesser of 10 MW and 10 % of that quantity, but with a minimum of 5 MW).
- (f) Clause 13.18(2): After gate closure a generator cannot revise any price in its offer for that trading period.
- (g) Clause 13.19(1): After gate closure a generator can revise offer quantities in its offer for that trading period, but only if the change is necessitated by a bona fide physical reason (eg, a plant breakdown, personnel or plant safety, or to comply with a resource consent where that situation was not reasonably predictable).

2.2.6 While there are some special provisions relating to embedded generators, intermittent (wind) generators (refer to section 2.7), and co-generators, most of these offer revision provisions apply to all offered generators.

2.2.7 Purchaser bids are also an important component of scheduling. They provide an indication of demand conditions in the relevant trading period. The key provisions relating to revisions of nominated bids³ are shown in the table below as a comparison with the offer provisions.

If the generator is pivotal, there is an additional requirement to be within the safe harbour: either the generator's offers must not materially increase price (compared with an immediately preceding trading period), or its offers must be generally consistent with offers it has made when it has not been pivotal, or it must not benefit financially from an increase in price.

³ Bids can be classified into two groups: nominated bids and difference bids. A nominated bid is the information provided to the system operator to indicate a purchaser's estimate of the electricity it will purchase at a non-conforming GXP or for a dispatch-capable load station. A 'difference bid' is provided to the system operator by a purchaser at a conforming GXP to signal a possible increase or decrease in load. Difference bids are rare in practice. Table 1 focuses on nominated bids because these form the most useful comparison with offer provisions.

Table 1: Comparison of current offer revision provisions and nominated bid revision provisions

	Offer provisions	Nominated bid provisions
(a)	Clause 13.2: A participant must not disclose information that is likely to mislead or deceive.	Same clause applies.
(b)	Clause 13.5A and 13.5B: Offer conduct must be consistent with a high standard of trading conduct (with safe harbour provision).	No equivalent provision The conduct provisions do not apply to purchasers.
(c)	Clause 13.6: An offer must not exceed the generator's reasonable estimate of the quantity of electricity capable of being supplied.	Some differences Clauses 13.7 and 13.7AA: A bid must represent a reasonable estimate of load that will be purchased at the specified prices.
(d)	Clause 13.17: A generator may revise its offer at any time, although some restrictions apply after gate closure.	Clause 13.19A(1) and (2): Similar to offer provision.
(e)	Clause 13.18(1) and (1A): A generator must immediately revise its offer quantities if its ability to generate the offered/scheduled quantity is expected to change substantially (by more than the lesser of 10 MW or 10 % of that quantity, but with a minimum of 5 MW).	Some differences Clause 13.19A(3)(b) and 13.19A(4): A purchaser must immediately revise its bid quantities if it expects, or ought reasonably to expect, that the quantity of electricity likely to be purchased at the indicated bid prices will substantially differ from the bid quantity. For nominated non-dispatch bids, ⁴ the qualifying size of change is the lesser of 20 MW or 20 % of the bid quantity, but with a minimum of 5 MW. For nominated dispatch bids, figures of 10 MW and 10 % are used.
(f)	Clause 13.18(2): After gate closure a generator can't revise any price in its offer for that trading period.	Clause 13.19A(2)(a): Similar to offer provision.
(g)	Clause 13.19(1): After gate closure a generator can revise offer quantities, but only if that is necessitated by a "bona fide physical reason".	Clause 13.19A(3)(a): Similar to offer provision.

⁴ Nominated bids can be classified into two groups: nominated non-dispatch bids and nominated dispatch bids. The latter are much less common. Nominated dispatch bids can be submitted only by an approved DCLS.

- 2.2.8 Broadly similar Code provisions are in place for ASAs that provide instantaneous reserve offers.
- 2.2.9 In addition, the grid owner must provide information about grid availability to the system operator in the scheduling timeframe.

2.3 Some participants are subject to two hour gate closure

- 2.3.1 Grid-connected generators (excluding intermittent generators) are subject to two hour gate closure. Under normal circumstances, these generators may not revise or cancel their offers within two hours of the beginning of the trading period to which the offer applies.
- 2.3.2 Embedded generators (excluding intermittent generators) that offer their output into the spot market are subject to 30 minute gate closure.
- 2.3.3 Because gate closure provisions restrict the circumstances in which offers can be revised, generators that do not offer their output into the spot market (eg, small embedded generators) are not affected by gate closure provisions.
- 2.3.4 Intermittent generators cannot change their offer price after a two hour gate closure, but are otherwise not subject to gate closure.
- 2.3.5 ASAs are subject to gate closure. The gate closure is two hours for interruptible loads and grid-connected generators that provide instantaneous reserve, and 30 minutes for embedded generators that provide instantaneous reserve.
- 2.3.6 These gate closure provisions are subject to exceptions. Participants can change their offer quantities (but not prices) after gate closure if:
- (a) there is a bona fide physical reason for doing so
 - (b) there is a grid emergency, or
 - (c) a bona fide physical reason (such as an unplanned outage) ends earlier than expected.
- 2.3.7 Purchaser bids are subject to a similar two hour gate closure (refer to section 2.8).
- 2.3.8 Transpower, as the grid owner, is also subject to a gate closure provision. It may not submit certain information about the network to the system operator within two hours of real time. Again, there are various exceptions to this provision.

Gate closure helps to manage security

- 2.3.9 Gate closure provides the system operator with notice of the estimated amount of capacity, as offered by generators, that will be available for dispatch. This enables the system operator to carry out an informed security assessment. If there is not enough capacity, the system operator should have sufficient time to declare a grid emergency and call for generators to provide more capacity.
- 2.3.10 Gate closure also gives the system operator sufficient time to assess potential transmission constraints, and to take action to manage a constraint if necessary.
- 2.3.11 However, the Authority notes that some commentators and stakeholders have questioned whether gate closure is necessary to manage security. This issue is discussed below from paragraph 4.6.19.
- 2.3.12 Gate closure also has the effect of limiting participants' ability to engage in strategic re-offering. This is discussed further in the next section.

2.4 Gate closure and offer provisions limit strategic re-offering

Lack of financial commitment to pre-final bids leaves open possibility of strategic re-offering

- 2.4.1 Generators have a strong incentive to ensure their final offers (those in place immediately before the beginning of the relevant trading period) are achievable and consistent with their commercial objectives. However, there is less incentive to ensure the same for offers made some time before the beginning of the trading period (in this paper called "pre-final offers").
- 2.4.2 This raises the possibility of "strategic re-offering" by generators. Strategic re-offering refers to the situation where a generator changes its offer quite close to the beginning of the relevant trading period in an attempt to influence final prices, while limiting the opportunity for other market participants to respond. For example, if a generator withdraws generation (by reducing offered quantities or moving existing quantities to a higher price band) just before real time, this could result in higher final prices. Indications of any increased prices would appear in the forecast schedules only very shortly before real time, or perhaps only in the ex-post 5 minute prices. Consequently, it would be hard for other generators or electricity users to respond to the new indication of market conditions.
- 2.4.3 If pre-final offers contain inaccurate information, generators may make poor commitment decisions in reliance on the resulting schedules. If pre-final offers often contain inaccurate information, generators will stop using

the resulting schedules to help them make their commitment decisions. This lack of quality information could result in sub-optimal commitment decisions (by both electricity users and generators), sub-optimal dispatch, and sub-optimal management of security.

Code provisions limit strategic re-offering

2.4.4 Several Code provisions have the effect of encouraging generators to provide accurate information in pre-final offers. Some provisions limit the ability of generators to engage in strategic re-offering. Those provisions are summarised in the following table, along with comments on their impact on strategic re-offering.

Table 2: Offer provisions that limit strategic re-offering and the impact of those provisions

	Offer provisions	Impact
(a)	Clause 13.2: A participant must not disclose information that is likely to mislead or deceive.	<p>This clause may have some impact on limiting strategic re-offering, but it was not directed primarily at the offering or scheduling processes.</p> <p>Clause 13.2 was amended on 1 October 2013 as a result of the Authority’s wholesale market information project.⁵ That project included discussion about strategic information beyond the trading-period-specific information that feeds into schedules: eg, information such as fuel availability, snow pack, and the timeframe for commissioning a new generation plant.</p> <p>The effectiveness of this provision in applying to pre-final offers (and strategic re-offering) has not been tested.</p>

⁵ Refer to <http://www.ea.govt.nz/development/work-programme/wholesale/wholesale-market-information/>.

	Offer provisions	Impact
(b)	Clause 13.5A and 13.5B: Offer conduct must be consistent with a high standard of trading conduct (with safe harbour provision).	<p>These clauses have an impact on limiting strategic re-offering, although they are primarily directed towards the different but related issue of the conduct of pivotal suppliers. The provisions came into force on 17 July 2014 following the Authority’s “Improving the efficiency of prices in pivotal supplier situations” project.⁶</p> <p>Pivotal suppliers may attempt to exercise their market power through strategic re-offering (clause 13.5A applies when a generator submits <i>or revises</i> an offer), and strategic re-offering is likely to be most effective if accompanied by a pivotal market position. However, the two issues are not exactly the same.</p> <p>The effectiveness of these provisions in applying to pre-final offers (and strategic re-offering) has not been tested.</p>
(c)	Clause 13.9: Offer must not exceed reasonable estimate of capability.	This provision limits the scale of any strategic re-offering by making sure that a generator never offers more than what it is capable of delivering. However, it does not prevent strategic re-offering within that boundary.
(d)	Clause 13.18(1) and (1A): Immediately revise offer if capability changes substantially.	This provision requires a generator to revise its offer immediately if the generator no longer expects to be able to deliver the offered or scheduled quantity by a substantial margin. Again, this does not prevent strategic re-offering within that boundary.

⁶ Refer to <http://www.ea.govt.nz/development/work-programme/wholesale/efficiency-of-prices-in-pivotal-supplier-situations/>.

	Offer provisions	Impact
(e)	<p>Clause 13.18(2): After gate closure a generator may not revise the price in its offer.</p>	<p>Participants have different interpretations of the meaning of the phrase “may not revise the price in its offer”. The effect of clause 13.18(2) on limiting strategic re-offering depends on how this phrase is interpreted.</p> <p>One interpretation is that a generator cannot change any one of the five prices in the five offer bands. In this interpretation, the provision would limit strategic re-offering by preventing a generator from (for example) changing the highest existing offer band price to an even higher number. However, under this interpretation the clause alone would not prevent a generator from shuffling existing quantities between offer bands (although other clauses may limit that behaviour). Since the prices in a generator’s offer bands often cover a wide range (even though some price bands may have zero quantities), this interpretation means the effect of this subclause on limiting strategic re-offering may be modest.</p> <p>An alternative interpretation is that the phrase would prevent any revision to the offer that had the effect of associating a particular level of plant output with a different offer price. In that case, moving a quantity from one price band to another would not be allowed because it would “revise the price in [the generator’s] offer” (that is, change the offer price assessed at some given level of plant quantity). If the revision reduced the total offered quantity, it would have to be removed from the highest priced bands first. Under this interpretation, the clause would have a substantial impact on preventing strategic re-offering because the generator could not “move its offer curve”.</p>
(f)	<p>Clause 13.19(1): After gate closure quantities can be revised only for limited reasons.</p>	<p>The gate closure provisions limit a generator’s ability to engage in strategic re-offering by effectively requiring the strategic re-offering to be completed before gate closure (two hours ahead of the trading period). Strategic re-offering would be easiest where the generator is confident of the effect its re-offering will have on price. However, two hours ahead there is still a significant amount of uncertainty in the schedules (eg, demand uncertainty, wind generation, unoffered generation, and embedded generation). This makes a generator less certain about the effect it could be having on price.</p>

- 2.4.5 Gate closure clearly plays an important role in limiting strategic re-offering. However, it should be seen as one part of an overall regime within the Code to limit that behaviour.

2.5 Revision provisions prioritise security

Offer revisions are allowed after gate closure if ability to generate changes substantially

- 2.5.1 Clause 13.18 provides the following requirements for quantity revisions (simplified to focus on the key points):

13.18 When revised offers must be submitted

- (1) Before the beginning of the trading period to which an offer applies, and despite... clause 13.19, a generator... must immediately submit revised offer quantities... if—
- (b) in relation to the [scheduled quantity] ..., the ability of a generator's generating plant to generate the [scheduled quantity] ... is expected by that generator to change by more than [an amount determined by a given formula]; or
 - (c) the ability of a generator to generate the total quantity offered... is expected by that generator to change by more than [an amount determined by a given formula].
- (1A) Despite subclause (1), a generator is not required to submit a revised offer quantity if the expected change in the quantity is less than 5 MW.

- 2.5.2 Clause 13.18 applies both before and after gate closure.

- 2.5.3 Clause 13.19(1) is the "gate closure provision" which provides as follows (simplified to focus on the key points):

13.19 Offer quantity changes may be made within 2 hours before trading period

- (1) ... a generator may—
- (a) ... revise an offer... within 2 hours... before the relevant trading period only if—
 - (i) a bona fide physical reason necessitates the... revision; or
 - (ii) the system operator [declares a grid emergency]; or
 - (iii) the generator is an intermittent generator...; and
 - (b) submit a... revised offer... within 2 hours... before the relevant trading period if [a bona fide physical reason finishes unexpectedly early and within 24 hours of beginning].

- 2.5.4 Since clause 13.18(1) applies "despite clause 13.19", it is interpreted as providing another exception to gate closure (reasons why a party can

make changes after gate closure), even though it is not specifically listed as an exception in clause 13.19(1).

- 2.5.5 There is considerable overlap between the role of clause 13.18(1) after gate closure and the role of the bona fide physical reason exception in clause 13.19(1). However, they have the following important differences:
- (a) Clause 13.18(1) has a size limit, so it does not give authority for a generator to make small offer revisions after gate closure, even if the generator cannot generate the offered quantity. In contrast, there is no minimum size for a bona fide physical reason in clause 13.19(1).
 - (b) The definition of bona fide physical reason (in part 1 of the Code) uses the concept of a change that is “reasonably unforeseeable”. This means that an event that was reasonably foreseeable to a generator will not be accepted as a bona fide physical reason. Consequently, a revision to account for that change would not be allowed under clause 13.19(1). However, clause 13.18(1) provides that a revision must be made if there is a significant change in circumstances, regardless of whether that change was foreseeable.
- 2.5.6 Clause 13.18(1) applies “despite clause 13.19” is to prioritise security over other factors. If, after gate closure, a generator cannot deliver on its offer (by a significant amount), it is important for the generator to revise its offer so the system operator can manage security. However, it is also important (perhaps as a matter of secondary importance) for a generator to make reasonable efforts to avoid having to make revisions after gate closure. If a generator falls short of a reasonable standard, it is appropriate for this to constitute a Code breach that results in either a penalty or an agreed settlement with the Authority relating to the generator’s future behaviour.
- 2.5.7 An example to illustrate the point: A generator makes a mistake in its offer and submits a total of 41 MW for a trading period rather than 14 MW. The generator notices its mistake after gate closure. The generator cannot generate 41 MW in that trading period. It revises its total offer quantity to 14 MW. Has the generator breached the Code? Clause 13.19(1) prevents the generator from making the change after gate closure unless necessitated by a bona fide physical reason. It appears unlikely that the generator has a bona fide physical reason for the change: there is no unexpected plant breakdown or changes in circumstances that were reasonably unforeseeable. However, the change is required by clause 13.18(1) because the MW difference is greater than 10 MW. Consequently, the Authority’s view is that there is no breach of clause 13.19(1).
- 2.5.8 Arguably, there may have been a breach of clause 13.18(1) shortly after the generator made the mistaken offer. At that point, the generator had an obligation under clause 13.18(1) to “immediately revise” the offer if the generator’s ability to generate the offered quantity is expected by the

generator to change substantially. It is not clear how this provision would apply if the generator's offer quantity was based on a mistake. Ideally the generator would be in breach of some provision, which would enable the Authority to reach an agreed settlement with the generator requiring it to (for example) double check its offers in future.

Bid revision provisions follow a similar pattern

- 2.5.9 Clause 13.19A(1), (2), and (3)(a) provides that a purchaser may not revise its bid after gate closure except where that is necessitated by a bona fide physical reason.
- 2.5.10 Clause 13.19A(3)(b) provides that "despite subclause (2)" (that is, despite the general gate closure restriction), a purchaser must immediately revise its bid quantities if it expects, or ought reasonably to expect, that the quantity of electricity likely to be purchased at the indicated bid prices will substantially differ from the bid quantity (eg, by more than 20 % of the bid quantity).
- 2.5.11 Clause 13.19A(3)(b) effectively provides an additional exception to the general rule in clause 13.19A(2) that revisions cannot be made after gate closure.

Reserve offer revision provisions follow a similar pattern

- 2.5.12 Clause 13.47(1) provides that despite clause 13.46 an ASA may revise its reserve offer after the two hour gate closure only if a bona fide physical reason necessitates it.
- 2.5.13 Clause 13.46(3) provides that despite clause 13.47 an ASA must immediately revise its reserve offer quantities if:
- (a) the existing reserve offer quantities no longer represent a reasonable estimate of instantaneous reserve availability, or
 - (b) the scheduled instantaneous reserve quantities are not likely to be achieved.
- 2.5.14 Both clauses are expressed as applying despite the other clause. However, when clause 13.47(1) says "despite [clause] 13.46", it appears to be intended primarily as a reference to clause 13.46(1) which provides that an ASA may revise its reserve offer up to two hours before the beginning of the trading period.
- 2.5.15 Consequently, clause 13.46(3) would probably be understood to provide an additional exception to the general rule in clause 13.47(1) that revisions cannot be made after gate closure.

2.6 Obligation to immediately revise – differences between offer, bid, and reserve offer provisions

- 2.6.1 This section compares and comments on the provisions that require participants to make immediate revisions in certain cases. The provisions apply during the whole schedule period up to the beginning of the trading period (that is, including the gate closure period). The provisions are:
- (a) **Offers:** Clause 13.18 provides that a generator must immediately revise its offer quantities if its ability to generate the offered/scheduled quantity is expected by that generator to change substantially (eg, by more than 10 MW or 10 % of that quantity).
 - (b) **Bids:** Clause 13.19A(3)(b) provides that a purchaser must immediately revise its bid quantities if it expects, or ought reasonably to expect, that the quantity of electricity likely to be purchased at the indicated bid prices will substantially differ from the bid quantity (eg, by more than 20 MW or 20 % of the bid quantity).
 - (c) **Reserve offers:** Clause 13.46(3) provides that an ASA must immediately revise its reserve offer quantities if the existing reserve offer quantities no longer represent a reasonable estimate of instantaneous reserve availability, or if the scheduled instantaneous reserve quantities are not likely to be achieved.
- 2.6.2 There are at least four key areas where these provisions differ from one another. These are set out in the following paragraphs.
- 2.6.3 **Ability versus forecast:** The offer provision focuses on a change in the “ability” of a generator to generate a particular quantity, while the bid provision focuses on the quantity of electricity “likely to be purchased”. The word “ability” reflects the fact that generators are usually controllable and can assess their ability to generate a particular quantity. In contrast, purchasers often have no real control over their purchases but can forecast whether a particular quantity is likely to be purchased. The reserve offer provision is more in line with the offer provision.
- 2.6.4 **The quantities that are covered:** The offer provision focuses on two quantities: the scheduled quantity from the latest non-response schedule, and the total offered quantity. The bid provision refers to a quantity “at the indicated bid prices” which could include up to 10 quantities (since a bid has up to 10 price bands). The reserve offer provision seems more in line with the offer provision on this point.
- 2.6.5 **Subjective versus objective:** The offer provision refers to something “expected by [the] generator”. The bid provision refers to something that the purchaser “expects, or ought reasonably to expect”. The former can be described as a “subjective” approach while the latter includes an “objective” approach (as well as a subjective approach). The reserve offer provision appears to prescribe an objective approach.

2.6.6 The objective approach requires a participant to exercise reasonable effort, skill, and continual vigilance in signalling its forecast/intentions. Otherwise, if circumstances change, the participant risks being held in breach of the requirement to immediately revise those indications. The subjective approach requires openness and honesty. If the participant forms a particular expectation, it must reveal it.

2.6.7 **Size of change:** The offer provision is triggered by changes above 10 MW or 10% (but greater than 5 MW). The bid provision (at least for nominated non-dispatch bids) is triggered by changes above 20 MW or 20% (but greater than 5 MW). The reserve offer provision is triggered without reference to a size criteria.

2.7 Intermittent generators must submit persistence offers in the last two hours

2.7.1 Clause 13.17(3) provides that each intermittent generator must revise offer quantity during the two hours immediately before the trading period to comply with clause 13.9(b) (which says an offer must not exceed the generator's reasonable estimate of the quantity of electricity capable of being supplied). Each revised offer must be based on a persistence model using actual output from the intermittent generating station at the time the revised offer is submitted, unless otherwise agreed with the Authority. The reason for this provision is that the Authority considers persistence-based forecasts will be more accurate than forecasts based on other methodologies (eg, based on wind speed forecasts by weather forecasting services).

2.8 Gate closure applies to purchaser bids

2.8.1 Purchasers can submit three different kinds of bids:

- (a) **Nominated bids:** These are classified in two categories:
 - (i) **Nominated dispatch bids:** These can be submitted for approved DCLSs that can receive and follow dispatch instructions.
 - (ii) **Nominated non-dispatch bids:** These are submitted at non-conforming grid exit points (GXPs) (or potentially by a DCLS at a conforming GXP when it does not want to be subject to dispatch). At present almost all bids are in this category.
- (b) **Difference bids:** These are submitted at conforming GXPs on an optional basis.

- 2.8.2 Purchasers can revise **nominated bid** quantities (and sometimes dispatch status,⁷ but not prices) before gate closure period if:
- (a) a bona fide physical reason necessitates the revision (clause 13.19A(3)(a)),⁸ or
 - (b) the quantity of electricity they are likely to purchase changes materially (clause 13.19A(3)(b)). The threshold for whether a change is material is lower for nominated dispatch bids than for nominated non-dispatch bids.
- 2.8.3 **Nominated dispatch bids** are subject to dispatch and are used as an input into all schedules including final pricing.
- 2.8.4 **Nominated non-dispatch bids** are not dispatched. Electricity users have no obligation in real time to act in accordance with nominated non-dispatch bids submitted by their purchaser. In real time, electricity users use as much or as little electricity as they require.⁹ Nominated non-dispatch bids are not used in the final pricing schedule. Rather, the final pricing schedule uses metered demand.
- 2.8.5 **Difference bids** are also subject to gate closure provisions. Any difference bids must be submitted prior to the final two hours (clause 13.7AB(2)). A purchaser may not revise a difference bid within the final two hours before the beginning of the trading period unless it has a bona fide physical reason necessitating the revision (clause 13.19A(3)(a)).

2.9 Purchaser rebids restricted in a grid emergency

- 2.9.1 In a grid emergency a purchaser:
- (a) may decrease its nominated bid quantities (clause 13.100(b))
 - (b) may not increase the aggregate bid quantity (in all its nominated bids) unless it has a bona fide physical reason that necessitates the increase (clause 13.99).
- 2.9.2 A purchaser may increase a nominated bid's quantities if equivalent decreased quantities are also made at other GXPs (clause 13.100(b)).

⁷ By "dispatch status" we mean whether the bid is a nominated dispatch bid or a nominated non-dispatch bid.

⁸ Or it aids in the management of a grid emergency (Clauses 13.99, 13.99A, and 13.100)

⁹ One caveat is that clause 13.96 provides that a purchaser cannot, without first telephoning the system operator, increase or decrease its load in response to real time prices by more than 50 MW in any 15 minute period in the North Island, or 30 MW in any 15 minute period in the South Island.

2.10 Grid owner must report late updates of grid information to system operator

- 2.10.1 Clauses 13.29 to 13.36 require the grid owner to submit certain information to the system operator about grid availability in each trading period. This grid information has some analogies with bids and offers. The grid owner provides the information to the system operator well in advance of the trading period, but the grid owner must immediately submit revised information (including during gate closure) if the information changes substantially. Clause 13.34(1) provides that, during gate closure, the grid owner may update the information only if a bona fide physical reason necessitates the change (or if there is a grid emergency or if an outage finishes unexpectedly early).
- 2.10.2 Clause 13.34(3) requires the grid owner to report each revision of grid information that it submitted to the system operator after gate closure to the Authority in writing. The report must be made the next business day, and must contain an explanation of the reasons for the revision.
- 2.10.3 Clause 13.34(4) requires the Authority to consider each report and assess whether the revision was made for an appropriate reason, as set out in clause 13.34(1).

2.11 Bids and offers can be cancelled

- 2.11.1 Wherever the Code allows a bid or offer to be revised, it usually also allows the bid or offer to be cancelled. The Code treats a cancellation as something distinct from a revision. However, the provisions relating to cancellations and revisions are usually identical.
- 2.11.2 The Code sometimes also provides for a new offer to be made in circumstances where that appears to be different from revising the offer.
- 2.11.3 Clause 13.19(1)(a) provides an example of the Code treating the cancellation of an offer or the submission of a new offer as distinct from a revision. The clause provides that “a generator may... cancel or revise an offer or submit a new offer to the system operator within 2 hours... before the relevant trading period only if...”.

2.12 No provisions for permanent cancellation of offers, bids, and reserve offers

- 2.12.1 The Code allows for offers, bids, and reserve offers to be cancelled for a particular trading period. The Code does not prescribe a process to permanently cancel an offer, bid, or reserve offer in a situation where, for example, a generation plant is decommissioned.

Q1. Do you have any comments on the existing provisions in Chapter 2 of this paper?

3. Problem definition

3.1 Introduction

3.1.1 This section describes the problems the Authority has identified with the following current Code provisions:

Gate closure and grid emergency problems

- (a) Gate closure restrictions limit flexibility (section 3.2)
- (b) Gate closure is ineffective for non-dispatch bids and hinders accurate forecasting (section 3.3)
- (c) Grid emergency provisions that restrict non-dispatch bid revisions are ineffective (section 3.4)

Other problems

- (d) Requirements on intermittent generators to submit persistence-based forecasts in the last two hours need to be made more robust (section 3.5)
- (e) Drafting of re-offer provisions could be more robust (section 3.6)
- (f) Grid owner reporting of late updates of grid information is onerous (section 3.7)
- (g) Cancelling a bid or offer is not substantially different from revising it (section 3.8).

3.2 Gate closure restrictions limit flexibility of generators and ASAs to respond

Gate closure can reduce flexibility to respond but there is a trade-off

3.2.1 Gate closure can limit the flexibility of generators and ASAs to take efficient actions in response to changing circumstances. If gate closure is longer or more strict than necessary, there may be an inefficiency associated with the lower levels of flexibility.

3.2.2 The design of gate closure provisions and timing reflects a trade-off between:

- (a) capturing the benefits of flexibility, by allowing offer revisions to reflect underlying supply conditions in response to changing circumstances
- (b) increasing costs of managing security and increasing the cost of strategic re-offering.

- 3.2.3 It is important to recognise that gate closure is part of a wider regime of provisions that limit strategic re-offering. If the other provisions change, that could affect the optimal gate closure.
- 3.2.4 The Australian Energy Market Commission (AEMC) has been reviewing the structure of the re-offer provisions in Australia's national electricity market (NEM)¹⁰ since early 2014. This work is discussed in Appendix G. The AEMC's recently published draft rule change determination provides some useful insight into the role of gate closure as part of a system of provisions that limits strategic re-offering.
- 3.2.5 The Authority received feedback on reducing gate closure through its recent spot market review discussion paper, *Options to improve retail competition – Findings of the spot market review* (12 February 2015). This feedback is set out in Appendix F. The discussion paper covered a wide range of market design issues, including views on investigating shorter gate closure. Support for shorter gate closure (or at least for investigating it) was a clear theme emerging from the submissions. However, given the breadth of the discussion paper and the fact that it only discussed gate closure briefly, the Authority does not interpret this as a comprehensive industry view.
- 3.2.6 The remaining material in this section 3.2 explains how gate closure can reduce generators' and ASAs' flexibility to take efficient actions in response to changing circumstances.

Circumstances can change in the two hours leading up to real time

- 3.2.7 In the lead up to a trading period, new information about the power system conditions that will prevail during the trading period can become available to participants.
- 3.2.8 For example:
- (a) electricity consumption can increase or decline at a faster or slower rate than expected
 - (b) intermittent generation and/or industrial co-generation output can change
 - (c) forecasts of the above quantities can change
 - (d) embedded generation offers can change
 - (e) unplanned generation and/or transmission outages can occur
 - (f) planned generation and/or transmission outages can be cancelled, postponed, extended, or finish earlier than expected.

¹⁰ The NEM covers most of Queensland, New South Wales, Victoria, South Australia and Tasmania.

3.2.9 Such changes:

- (a) can affect the expected supply/demand balance, resulting in a widespread change in forecast prices and quantities
- (b) can also change the likelihood of a particular transmission constraint binding, and affect forecast prices and quantities in a local area.

Some participants are physically able to take efficient actions in response

3.2.10 Some participants are able to physically respond to information that becomes available after the two hour gate closure.

3.2.11 Possible physical responses include:

- (a) managing water within a river chain (eg, increasing or decreasing the amount of water directed through a particular channel)
- (b) increasing or decreasing the output of a thermal generating unit that is currently running
- (c) starting a generator that is not currently running, but is nevertheless able to operate (for instance, bringing a generating unit back from outage early)
- (d) reversing a decision to start up a slow-start thermal generating unit
- (e) increasing or reducing electricity consumption
- (f) switching between generating energy and providing instantaneous reserves.

3.2.12 These responses by participants are efficient, to the extent that they result in an overall reduction in the costs of running the power system.

Gate closure provisions can prevent participants from taking efficient actions

3.2.13 Current Code arrangements go some way towards allowing participants to take the actions listed in paragraph 3.2.11 after the two hour gate closure, particularly:

- (a) generators, instantaneous reserve providers, and dispatchable load purchasers can be dispatched up and down under their existing offers
- (b) participants can reallocate generation and instantaneous reserve within a block dispatch group
- (c) participants can change their bid and offer quantities when there is a bona fide physical reason for doing so
- (d) participants can change their bid and offer quantities when there is a grid emergency

- (e) generators can bring plant back early from a forced outage that lasted less than 24 hours¹¹
- (f) participants can change embedded generation offers and reserve offers up until 30 minutes before real time
- (g) consumers have considerable freedom under the Code to change their consumption in the lead-up to, and during, real time.

3.2.14 These arrangements provide participants considerable flexibility to respond to changing circumstances after the two hour gate closure. However, there are still circumstances in which gate closure provisions can prevent participants from taking efficient actions. For instance, consider the following scenarios:

- (a) A hydro generator decides how much water to release from storage. It later discovers that prices are likely to be higher than previously expected. The hydro generator would like to release more water from storage immediately, but this would involve changing its offers. Because of the gate closure provision, the change in offers (and hence the release of water) must be delayed for two hours. Other capacity, which may have a higher marginal cost, operates instead.
- (b) A planned generation outage finishes earlier than expected. Unless the returning plant is part of a block dispatch group,¹² its operator may not bring it back into service until two hours have elapsed. Other capacity, which may have a higher marginal cost, operates instead.
- (c) A generator offers a thermal power station at a price that considerably exceeds that thermal power station's fuel cost. It does this because offering the thermal power station *at* its fuel cost might result in it being the marginal generator, resulting in repeated stops and starts, which would increase maintenance costs. Offering the thermal power station *below* its fuel cost might result in it running at an operating cost. After gate closure, it becomes evident that the marginal price of electricity is likely to be higher than expected, and in excess of the thermal power station's fuel cost. The generator would like to reduce the thermal power station's offer price (perhaps to zero) to ensure that it runs. However, the gate closure provision prevents the generator from doing so. Other capacity, which may have a higher marginal cost, operates instead.
- (d) A grid emergency occurs. A generator increases its offer quantity to support system security. When the grid emergency ends, the generator would like to withdraw or re-price some of the additional offer quantity. However, the gate closure provision prevents it doing

¹¹ Under clause 13.19(1)(b) of the Code

¹² Even if it *is* part of a block dispatch group, it cannot be brought back without reducing output elsewhere in the block so that the total MW of the block stays the same. Therefore, there may still be a net economic cost.

so for two hours. As a result, the additional capacity may operate at an operating cost, or start and stop more often than desired, during the two hour period.

- (e) A generator is in the process of warming up a slow-start thermal generating unit to operate. The generator reconsiders this decision on the basis of lower than expected price forecasts for the day. The generator would like to withdraw its offers for the unit, but is prevented from doing so by the gate closure provision. As a result, the unit may run and incur unwanted start-up costs.
- (f) An ASA provides interruptible load as instantaneous reserve. The quantity of instantaneous reserve offered depends on the ASA's forecast of underlying demand. After gate closure the ASA revises its forecast of the underlying demand: demand will be higher than the ASA previously thought, meaning that the ASA can deliver more instantaneous reserve. Gate closure may prevent the ASA from offering the additional instantaneous reserve. As a result, instantaneous reserve with a higher marginal cost may be dispatched instead.

Q2. Do you have any comments on the problem definition relating to gate closure?

3.3 Gate closure is ineffective for non-dispatch bids and hinders accurate forecasting

3.3.1 Section 3.2 describes how gate closure restrictions limit flexibility and may be able to be reduced without risking security or the management of strategic re-offering. That problem applies to gate closure provisions for dispatched orders such as offers, reserve offers, and dispatch bids. However, a different problem emerges for non-dispatch bids (that is, nominated non-dispatch bids and difference bids).

3.3.2 Gate closure for non-dispatch bids is ineffective at achieving the purpose to which it is directed, and may in fact work against that purpose. The purpose of gate closure (discussed in section 2.3) is:

- (a) to help the system operator manage security by “locking down” participants’ intentions about the resources they will make available to meet demand
- (b) to prevent strategic bid/offer revisions, or at least to reduce the potential for successful strategic revisions.

3.3.3 However, locking down non-dispatch bids does not help to manage security. Those bids are not subject to dispatch. The electricity users that

underlie the bid use, in real time, more or less electricity as they see fit.¹³ While purchasers should submit bids that are a reasonable estimate of demand (or demand changes), this requirement does not operate in the reverse direction to require actual usage to be reasonably close to the bid. If bids are “locked down” during gate closure, this will not affect the amount of electricity actually used. When the system operator is managing security it will want to forecast electricity usage as accurately as possible. Locking down the bids will not help to achieve an accurate forecast. In fact, it will hinder accurate forecasting making security harder to manage.

3.3.4 Further, gate closure for nominated non-dispatch bids will not help to reduce the potential for strategic rebidding. The reasons for this are:

- (a) A last-minute bid revision will not (of itself) affect the final price, because the final pricing schedule does not use non-dispatch bids as an input (it uses metered demand instead). Strategic rebidding could only be effective if it is aimed at manipulating other participants’ offers, commitment decisions, and actions, and thus achieving some desired effect on final price.
- (b) A participant could try to affect other participants’ offers, commitment decisions, and actions by submitting deliberately misleading nominated non-dispatch bids.¹⁴ Those misleading bids would mean that the pre-dispatch schedules would no longer support efficient scheduling and dispatch.¹⁵ While this behaviour is not desirable, and the Authority would not condone it, gate closure will have no influence on whether such purchaser behaviour occurs or not. Gate closure would not prevent the behaviour because there is no financial consequence to the purchaser if it leaves the misleading bids in place until they become final. There would be no financial pressure on the purchaser to “correct” the bid before the beginning of the relevant trading period.

3.3.5 Gate closure for non-dispatch bids interferes with purchasers providing the best possible demand forecast information as real time approaches. Consequently, it interferes with efficient scheduling and may increase the costs of meeting demand. It may also reduce system reliability if it prevents critical information about demand being incorporated into security planning.

¹³ As noted in footnote 9, clause 13.96 provides that a purchaser cannot, without first telephoning the system operator, increase or decrease its load in response to real time prices by more than 50 MW in any 15 minute period in the North Island, or 30 MW in any 15 minute period in the South Island.

¹⁴ We assume for the moment that this is not prevented by the general provision against misleading disclosures and the provision requiring a high standard of trading conduct.

¹⁵ Other participants could be misled by the schedules resulting in inefficient commitment decisions, or participants could stop using the schedules to assist with commitment decisions.

- 3.3.6 The same problem does not arise for dispatch bids, which have a much closer analogy with offers, because they are dispatched.

3.4 Grid emergency provisions that restrict non-dispatch bid revisions are ineffective

- 3.4.1 Grid emergency provisions in clauses 13.99 and 13.100 provide (in broad terms) that nominated bid¹⁶ quantities cannot be increased in a grid emergency. The Authority considers that these provisions are an ineffective means of achieving their intended purpose.
- 3.4.2 The purpose of those grid emergency provisions is to encourage the reduction of demand in the relevant trading periods and to discourage (or prevent) it from increasing.
- 3.4.3 The provisions would be effective if there was an obligation on electricity users or purchasers (or whoever has practical control over the demand) to act in accordance with the final bid. However, as we noted above, there is no such provision. The final bid has no influence on what non-dispatched electricity users actually use. It is true that a bid must represent a reasonable estimate of usage, but this is an obligation affecting forecasting (bidding) and not an obligation or restriction affecting actual demand.
- 3.4.4 Disallowing upward bid revisions will not prevent or discourage demand from increasing, so it will not achieve the purpose to which it is directed. In fact it may hinder the management of security, because given that demand is expected to increase, it would be better for the system operator to know.
- 3.4.5 Grid emergency limitations on revisions of non-dispatch bids interferes with purchasers providing the best possible demand forecast information to the system operator during a grid emergency. Consequently, the grid emergency limitations interfere with efficient scheduling and may increase the costs of meeting demand. It may also reduce system reliability if it prevents critical information about demand being incorporated into security planning.
- 3.4.6 While the provisions restricting upward bid revisions are ineffective, the system operator has an effective means to manage demand. The system operator can request or require actual demand reductions taking effect at some given time. If it does so, purchasers submitting nominated non-dispatch bids could (if the request or requirement relates to a future trading period) reflect their new intentions through a downwards bid revision.

¹⁶ This essentially means nominated *non-dispatch* bids, because clause 13.99A provides that, in a grid emergency, all nominated *dispatch* bids must be revised to be nominated *non-dispatch* bids.

Q3. Do you have any comments on the problem definition relating to the way gate closure and grid emergency provisions apply to bids?

3.5 Requirements on intermittent generators to submit persistence-based forecasts in the last two hours need to be more robust

3.5.1 The Authority has identified two problems with the Code provisions relating to persistence-based forecasts for intermittent (ie, wind) generation:

- (a) Clause 13.17(3)(a) of the Code requires intermittent generators to make only one offer revision ("based on a persistence model") in the last two hours before the beginning of the relevant trading period. This is required despite the fact that intermittent generation may vary considerably over that timeframe.

The Authority notes that, in practice, intermittent generators typically submit persistence-based revisions at least once every 30 minutes. Consequently, the problem is not manifesting to the extent it could. However, the Authority considers the Code needs to be tightened in this respect. Clearer drafting of these provisions would avoid unnecessary monitoring, reporting, compliance, and administration costs for the Authority and participants.

- (b) The Code does not further describe what the words in clause 13.17(3)(a) "based on a persistence model" mean. The Authority is concerned that a generator may choose to submit persistence offers in the final two hours that are not adjusted to take account of the generator's intention to shut down or start up large groups of turbines.

Such unadjusted persistence offers could make it more difficult for the system operator to manage security, and could reduce the quality of forecast price signals in the last two hours.

3.5.2 In addition, the Authority is aware that some wind farms have occasionally withdrawn their generation without providing any notice to the market through offers. These withdrawals have caused concern for the system operator who has alleged at least one breach of the Code. The Authority has a pending project on its work programme to review the offer and dispatch provisions for wind generators. The project will consider (among other things) the possibility of allowing wind offers at prices other than \$0.01/MWh or \$0.00/MWh (the currently allowable prices for wind offers). The Authority intends to raise the priority of that project.

Q4. Do you have any comments on the problem definition relating to requirements on intermittent generators to submit persistence-based forecasts in the last two hours?

3.6 Drafting of re-offer provisions could be more robust

3.6.1 Table 3 describes several problems with the wording of various re-offer provisions. Clearer drafting would avoid unnecessary monitoring, reporting, compliance, and administration costs for the Authority and participants.

Table 3: Problems with drafting of re-offer provisions

	Re-offer provisions	Problems
(a)	Clause 13.9: An offer must not exceed the generator's reasonable estimate of the quantity of electricity capable of being supplied.	<p>An offer contains a number of different bands, each specifying a quantity and a price. The phrase “quantity of electricity capable of being supplied” appears to be referring to a single quantity. This suggests that clause 13.9 intended to mean that “the <i>total offered quantity</i> must not exceed [etc]”. However, without that clarification, it might be possible to interpret the clause to apply to the quantity in each offer band, which is the case for the equivalent bid provisions in clauses 13.7 and 13.7AA. The clause could be drafted more clearly on this point.</p> <p>Some parties have suggested the phrase “quantity of electricity capable of being supplied” could be interpreted as referring to the nameplate capacity of a plant. The Authority may need to clarify that it refers to capability given the constraints operating on the plant in a particular trading period such as fuel availability, plant availability and resource consent constraints. Again, clearer drafting would avoid unnecessary monitoring, reporting, compliance, and administration costs for the Authority and participants.</p>
(b)	Clause 13.17: A generator may revise its offer at any time, although some restrictions apply after gate closure.	Clause 13.17 doesn't acknowledge clearly that there are other pieces of information contained in an offer apart from prices and quantities: namely ramp rates, maximum output, and installed capacity.

	Re-offer provisions	Problems
(c)	<p>Clause 13.18(1) and (1A): A generator must immediately revise its offer quantities if its ability to generate the offered/scheduled quantity is expected to change substantially (eg, by more than 10 percent of that quantity).</p>	<p>Since subclauses 13.18(1) is made “despite clause 13.19” [<i>clause 13.19 is the “gate closure provision” preventing revisions after gate closure except for certain listed reasons</i>], it is interpreted as providing another exception to gate closure restrictions, even though it is not specifically listed as an exception in clause 13.19. This can mean that some poor offering behaviours are not captured as breaches of the Code. This can lead to an inefficiently low effort or level of care being used to prepare offers. This could lead to inefficient scheduling and failure to achieve least-cost dispatch.</p> <p>The language in clause 13.18(1) contemplates the generator’s ability changing, which could mean increasing as well as decreasing. However, it is not clear if a generator could make an offer revision after gate closure on the grounds that it can now produce more generation (its ability to generate the total offered quantity has increased by 11 MW). Presumably the generator could still generate the lower quantity. If the provision was intended to cover only decreases, this intention could be made clearer.</p> <p>The determination of what qualifies as “large” is perhaps unnecessarily complex. In effect, it is the minimum of 10 MW, and the maximum of 5 MW and 10 % of the offered/scheduled quantity. Clearer drafting is expected to simplify monitoring and trading, which will reduce costs for the Authority and participants.</p>
(d)	<p>Clause 13.19(1): After gate closure a generator can revise offer quantities, but only if that is necessitated by a “bona fide physical reason”.</p>	<p>The gate closure restrictions are specific with respect to offer prices and quantities, but do not mention the other variables in an offer (eg, ramp rates and maximum output).</p> <p>When an exception to gate closure applies (including a revision made under clause 13.18(1)), there is no restriction on the extent to which the original offer can be revised. It could be revised to a much greater extent than necessary to resolve the issue. This could potentially open the door for inefficient strategic re-bidding, resulting in inefficient scheduling and failure to achieve least-cost dispatch.</p>

Q5. Do you have any comments on the problem definition relating to the drafting issues with re-offer provisions?

3.7 Grid owner reporting of late updates of grid information is onerous

- 3.7.1 Under the Code, the grid owner is required to submit certain information about the grid, and any subsequent revisions to that information, to the system operator.
- 3.7.2 Clause 13.34(3) provides that if the grid owner submits revised information about the grid to the system operator during gate closure, it must also report each revision to the Authority in writing. This report must contain an explanation of the reasons for each revision. The grid owner produces around 500 of these reports each month. Most of these reports relate to routine changes being made to the start or end times of asset outages.
- 3.7.3 When the Authority has received the reports, it then:
- (a) manually transfers the reports into a database, which takes Authority staff approximately one day per month
 - (b) assesses them prior to each Compliance Committee meeting, which takes Authority staff approximately half a day per month.
- 3.7.4 The Authority is required by the Code to consider and assess every report (clause 13.34(4)).
- 3.7.5 The reporting requirement for late updates imposes an administrative burden on the grid owner that is out of proportion with the corresponding risk being managed. Monitoring, reporting, compliance, and administration costs are unnecessarily high for both the grid owner and the Authority.
- 3.7.6 The grid owner does not have the same kind of commercial incentive as a generator has to engage in “strategic rebidding” to influence market prices. Consequently, there may be less need for the Authority to carefully examine all late grid availability updates.

Q6. Do you have any comments on the problem definition relating to grid owner reporting of late updates?

3.8 Provisions for cancelling offers and bids are no longer useful

- 3.8.1 The Code provides that a generator may “revise” or “cancel” its offer. In the wholesale information and trading system (WITS), a generator can revise its offer to contain a zero aggregate quantity, but there is no different process for making a cancellation. In WITS, a revision to zero and a cancellation are the same thing. Consequently, the distinction in the Code between a revision and a cancellation is unnecessarily complicated and does not reflect operational practice.

- 3.8.2 When the Code allows a generator to cancel an offer, it always refers to an offer for a particular trading period. The Code does not envisage the permanent cancellation of offers due, for example, to the decommissioning of the generation plant. The Code requires five business days' notice before an offer is made for a plant for the first time, but there is no similar provision for permanently cancelling an offer.
- 3.8.3 The same problems apply to the Code provisions for bids and reserve offers.
- 3.8.4 Clearer drafting of these provisions would avoid unnecessary monitoring, reporting, compliance, and administration costs for the Authority and participants.

Q7. Do you have any comments on the problem definition relating to the cancellation of bids?

4. Regulatory statement

4.1 The Authority's proposed Code amendment

4.1.1 The proposed Code amendment would:

Gate closure and grid emergencies

- (a) reduce the gate closure period to one hour for participants currently subject to a two hour gate closure period, including:
 - (i) grid-connected generators, other than intermittent generators¹⁷
 - (ii) ASAs, other than embedded generators
 - (iii) purchasers submitting dispatch bids
 - (iv) the grid owner,but excluding purchasers submitting non-dispatch bids (see below)
- (b) remove gate closure restrictions on revising non-dispatch bids
- (c) remove the grid emergency provisions that prevent a purchaser from revising its nominated non-dispatch bid upwards in a grid emergency to better reflect expected purchases

Intermittent generators

- (d) require persistence-based offers to take account of information about the generator's intentions for turbine availability
- (e) require a persistence-based offer to be submitted at least once every trading period

Revision provisions for offers, bids, reserve offers, and grid information

- (f) remove the obligation for the grid owner to provide a report to the Authority on any revised grid information submitted after gate closure
- (g) require offer quantities to not exceed "the quantity of electricity that the generator expects to be able to generate". For comparison, the existing provision requires that offers do not exceed "the generator's reasonable estimate of the quantity of electricity capable of being supplied"
- (h) revise the provisions that specify the maximum quantity an offer can contain, and when an offer must be revised, to make it clear that a generator must exercise reasonable care in preparing its offers (eg, if a generator made a mistake in submitting an offer which it later had to revise, the generator may be found in breach for not taking reasonable care)

¹⁷ Intermittent generators remain largely unaffected by gate closure provisions because they have an obligation to submit persistence-based offers during the last two hours before the trading period.

- (i) reduce and simplify the minimum quantity change that requires an offer to be immediately revised
- (j) require that any change in the offer made after gate closure must change quantities only to the extent necessary to ensure that the offered MW can be delivered and not further
- (k) provide a process for participants to permanently cease providing bids, offers, or reserve offers at a particular location (eg, if a generation plant is being decommissioned)
- (l) remove references to the cancellation of offers, bids, and reserve offers
- (m) define “gate closure period” in part 1 of the Code to simplify the drafting of various provisions in Part 13 of the Code.

4.1.2 The proposed Code amendments are attached as Appendix A.

4.1.3 The Authority also proposes, when gate closure is reduced to one hour, that the monitoring of offer revisions made between one and two hours before real time is increased.

Q8. Do you consider that the proposed Code amendments would carry a risk of unintended consequences? If so, what are they?

4.2 Implementing the proposed Code amendment

4.2.1 The joint Authority/system operator development programme indicates that the deployment of the market system changes required to implement the proposed Code amendments, if approved, would probably occur in mid to late 2016.¹⁸

4.3 The objectives of the proposed Code amendment

4.3.1 The objectives of the proposed Code amendment are to:

- (a) reduce regulatory barriers that hinder participants from taking efficient actions to react to changing circumstances in the lead-up to real time
- (b) improve, or at least maintain, the limitations on strategic re-offering
- (c) improve, or at least maintain, existing level of reliability of supply
- (d) improve, or at least maintain, the accuracy of forecast schedules
- (e) avoid unnecessary monitoring, reporting, compliance, and administration costs.

¹⁸ See <http://www.ea.govt.nz/dmsdocument/13901>

- 4.3.2 The proposed Code amendment would promote the:
- (a) efficiency limb of the Authority's statutory objective by improving the flexibility of generators, dispatchable load purchasers, and instantaneous reserve providers to respond to changing circumstances, while maintaining system security
 - (b) reliability limb by making persistence-based intermittent generation forecasts more robust, and by removing gate closure for non-dispatch bids to allow improved forecasts.
- 4.3.3 The proposed Code amendment would not detract from the competition limb of the Authority's statutory objective.

The proposed Code amendment furthers the Authority's strategic directions for market development

- 4.3.4 In August 2013, the Authority published its strategic directions for market development.¹⁹ The strategic directions form part of the Authority's strategic framework and have been incorporated in the Authority's 2014–2018 statement of intent.
- 4.3.5 The strategic directions reflect the Authority's view of the key challenges and characteristics likely to influence the electricity sector in the next 10 years. The Authority's focus or strategic directions for market development are to develop a workably competitive electricity market by:
- (a) reducing barriers to entry, expansion, and exit of parties in electricity markets
 - (b) facilitating consumer participation
 - (c) providing efficient price signals
 - (d) promoting flexibility and resilience into the market and market systems.
- 4.3.6 The proposed Code amendment furthers directions (c) and (d) above by:
- (a) increasing generator flexibility, which will allow that flexibility to be incorporated into prices making those prices better reflect underlying supply and demand conditions
 - (b) strengthening intermittent generators' persistence-based forecasts. This will improve scheduling, which will result in more efficient price forecasts, more efficient final prices, and a more robust and resilient market.

¹⁹ Refer to <http://www.ea.govt.nz/about-us/corporate-projects/2013-2016-planning-and-reporting/development/strategic-directions-for-market-development/>.

4.4 The proposed Code amendment is expected to meet the objectives

The proposed Code amendment will reduce barriers to efficient reactions to changing circumstances in the lead-up to real time

- 4.4.1 The proposed Code amendment would allow grid-connected generators (other than wind generators) to revise their offers between one and two hours before real time. Currently, generators cannot do this unless there is a bona fide physical reason for doing so, or a grid emergency.
- 4.4.2 For some generators, increased flexibility to revise their offers on this time frame would result in an increased ability to react to changing circumstances.

The proposed Code amendment will maintain or improve the limitations on strategic re-offering

- 4.4.3 There is a risk that shortening the gate closure period could increase the prevalence of strategic re-bidding which could increase the aggregate cost of meeting demand (an inefficiency). Strategic re-offering has been a significant concern in the AEMC, where there is no specific gate closure period. In New Zealand, participants could potentially reduce offer quantities (either reduce total offered quantities or shift quantities from low-price to high-price bands) between one and two hours before real time, leaving little time for other participants to respond (especially with the kind of flexibility that can only arise from their own offer revisions).
- 4.4.4 However, the Authority does not expect that generators would reduce offer quantities at a late stage without good cause. A participant that caused a shortage by such behaviour would expect to be scrutinised by the Authority, and may be in breach of the trading conduct provisions.
- 4.4.5 Strategic re-offering is most likely to profit a generator when the generator can be confident about the effect it will have on price, and if it is net pivotal. The Authority notes that with one hour gate closure period, some uncertainty about factors such as demand, wind generation, unoffered generation, and embedded generation will continue. The differences in inputs and processes between the final pricing schedule and pre-dispatch schedules will also make it difficult to be certain about price effects.
- 4.4.6 Consequently, the Authority considers that the shift from two hour to one hour gate closure should not have a significant impact on increasing strategic re-offering.
- 4.4.7 The proposed changes to offer provisions such as clause 13.9(b) (see the proposed clause 13.9A) and clause 13.18(1) may in fact have a modest limiting effect on strategic re-offering.

The proposed Code amendment will improve reliability of supply

- 4.4.8 The system operator has advised (Appendix D) that, given system and process changes, a reduction of the gate closure period to one hour would not compromise its ability to:
- (a) manage the system
 - (b) meet its principal performance obligations (PPOs).
- 4.4.9 There is a risk that shortening the gate closure period could adversely affect reliability of supply by allowing the late withdrawal of capacity. However, for the same reasons expressed above (paragraph 4.4.4), the Authority does not expect any detrimental increase in this behaviour.
- 4.4.10 The other components of the proposed Code amendment (apart from the reduction in gate closure) may improve reliability of supply by:
- (a) making intermittent generator persistence-based forecasts more robust and improving forecasting
 - (b) removing gate closure for non-dispatch bids. This would remove a barrier to the accurate signalling (though late signalling) of expected demand, improving the quality of information available to the system operator when it is managing security.

The proposed Code amendment will improve the accuracy of forecast schedules

- 4.4.11 The accuracy of forecast schedules will be improved by three components of the proposed Code amendment:
- (a) the move to one hour gate closure
 - (b) the elimination of gate closure for non-dispatch bids
 - (c) the changes to intermittent generator requirements for persistence-based offers.

One hour gate closure will improve the accuracy of forecast schedules

- 4.4.12 The forecast schedules published by the system operator are the weekly dispatch schedule, price-responsive schedule (PRS), non-responsive schedule (NRS), and real-time pricing schedule. Reducing the gate closure period would not affect the process of producing these schedules.
- 4.4.13 There is a risk that shortening the gate closure period could adversely affect the accuracy of the two-hours-out PRS and NRS. By allowing participants to change their offers after the NRS and PRS are prepared, generators could change offer quantities (including by switching quantities between bands) between one and two hours before real time, resulting in

spikes or dips in the market price that had not been predicted in earlier forecast schedules.

- 4.4.14 On the other hand, shortening the gate closure period could also improve the accuracy of forecast schedules. If price forecasts increased between one and two hours before real time, generators could bring on more capacity to avoid a price spike, or withdraw capacity to avoid a dip. Generator-retailers with a net short/long position would have a strong incentive to avoid spikes/dips. The resulting market price would be more similar to the two-hours-out forecast than it would have been under current gate closure provisions.
- 4.4.15 On balance, the Authority expects the proposed Code amendment will maintain or increase the accuracy of forecast schedules, because the trading conduct provisions discourage generators from seeking to drive prices up through strategic re-offering.
- 4.4.16 The proposed Code amendment includes increased monitoring of offer revisions close to real time. If this monitoring revealed that the accuracy of forecast schedules was compromised by one hour gate closure, the Authority would consider taking further action. Possible options available to the Authority would include:
- (a) assessing whether the observed behaviour was in breach of the trading conduct provision
 - (b) reversing the gate closure amendment and returning to a two-hour gate closure period.

The elimination of gate closure for non-dispatch bids will improve the accuracy of forecast schedules

- 4.4.17 The elimination of gate closure restrictions on the revision of non-dispatch bids will allow purchasers to update their forecasts as they obtain new and better information, even if that information is received after gate closure. This may improve the accuracy of forecast schedules published after gate closure.

Changes to intermittent generator requirements for persistence-based offers will improve the accuracy of forecast schedules

- 4.4.18 The requirement for an intermittent generator to make persistence-based forecasts at least once every trading period (within the last two hours before the trading period) will ensure that a recent persistence-based forecast inputs into forecast schedules. Without this requirement it might be possible for an intermittent generator to comply with the persistence-based offer requirement by submitting a single persistence-based offer two hours before the trading period. Consequently, this element of the proposed Code amendment is expected to maintain or enhance the accuracy of forecast schedules.

- 4.4.19 The requirement for persistence-based forecasts to take expected changes in the availability of generating units into account will also result in more accurate information being used as an input into forecast schedules. This will improve the accuracy of those schedules.

The proposed Code amendment will avoid unnecessary monitoring, reporting, compliance, and administration costs

- 4.4.20 The proposed Code amendment will reduce unnecessary monitoring, reporting, compliance, and administration costs in the following areas:
- (a) Purchasers submitting revisions to non-dispatch bids after gate closure will no longer have an obligation to report their reasons.
 - (b) Grid owners updating grid information after gate closure will no longer have an obligation to report their reasons.
 - (c) Several re-offer provisions (eg, clauses 13.9, 13.18(1), and 13.19(1)) are being clarified and made more robust. This should avoid some unnecessary uncertainty over whether a breach has occurred, and make it easier for the Authority to enforce the provisions.

4.5 Evaluation of costs and benefits

Costs of the proposed Code amendment are estimated at \$1.354 million

- 4.5.1 The costs of the proposed Code amendment are estimated at a present value of \$1.354 million, excluding GST: \$1.170 million relates to the implementation of one hour gate closure, and \$0.184 million relates to other aspects of the proposed Code amendment.
- 4.5.2 These cost figures are derived from cost estimates provided by the system operator and by the wholesale information and trading system (WITS) provider (NZX).
- 4.5.3 The system operator has estimated it would incur a cost of \$1.224 million (excluding GST) to implement the proposed Code amendment. This can be treated as a present value, as the costs would be incurred in the near future. Of this amount, \$1.1 million relates to the system operator implementing one hour gate closure. The changes required to the system operator's processes and systems to implement one hour gate closure, and the rationale for the cost estimate, are set out in Appendix C and Appendix D. The remainder of \$0.124 million relates to market systems changes required for the system operator to implement other aspects of the proposed Code amendment.

- 4.5.4 The cost to the WITS provider (currently NZX) of implementing the changes to WITS to implement gate closure is \$40,000, as set out in Appendix E. The WITS provider costs for implementing the other aspects of the proposed Code amendment are also estimated at \$40,000.
- 4.5.5 Neither the system operator nor NZX would expect to incur ongoing costs as a result of implementing the proposed Code amendment.
- 4.5.6 Based on discussions with two major generator-retailers, the Authority does not expect that market participants would incur significant costs in the transition to one hour gate closure. The Authority also expects that participants will not incur significant costs when other aspects of the proposed Code amendment, including the proposed changes to the intermittent generation persistence-based forecasting provisions, are implemented.
- 4.5.7 The Authority believes it will incur approximately \$0.05 million (excluding GST) in staff costs associated with implementing the proposed Code amendment. These costs would include finalising the proposed Code amendments, arranging gazettal, and managing and monitoring service provider implementation. The figure of \$0.05 million could be divided between the components of the proposed Code amendment as follows: \$0.03 million to implement one hour gate closure, and \$0.02 million to implement the other aspects of the proposed Code amendment.
- 4.5.8 The total costs associated with the proposed Code amendment are shown Table 4 below.

Table 4: Estimated costs of implementing the proposed Code amendment (\$ million, present value, excluding GST)

Party incurring costs	Gate closure costs	Cost for other aspects	Total
System operator	1.100	0.124	1.224
WITS provider	0.040	0.040	0.080
Participants	0.000	0.000	0.000
Electricity Authority	0.030	0.020	0.050
Total	1.170	0.184	1.354

Benefits of the proposed reduction in gate closure are expected to be larger than the costs

- 4.5.9 Section 3.2 identifies various situations in which two hour gate closure can prevent generators from taking efficient actions. Moving to one hour gate closure would improve productive efficiency. The Authority expects this will be the most significant benefit from the proposed Code amendment.
- 4.5.10 For the proposed Code amendment to return a net economic benefit, it would be sufficient for each of the four biggest generators²⁰ to achieve a productive efficiency gain of just \$30,000 per year. The combined gross economic benefit would be 4 x \$30,000 = \$120,000 per year. In present terms, this equates to approximately \$1.25 million (using an 8% real discount rate over 20 years), which exceeds the estimated cost of \$1.224 million.
- 4.5.11 Based on discussions with two of these generators, the Authority considers it is highly likely that each of the four would derive at least this level of productive efficiency gain.
- 4.5.12 The list below shows some examples of the ways in which a one hour gate closure period could enable a generator to achieve a productive efficiency gain of \$30,000 per year. See Section 3.2 for more explanation of how these benefits could come about.
 - (a) A hydro generator could respond to price signals by releasing additional water from storage, enabling it to provide additional capacity at peak time. If the generator was able to displace 90 MW of oil-fired generation, at a short-run marginal cost (SRMC) of \$400/MWh, with hydro generation (water value = \$70/MWh) for one

²⁰ Genesis Energy, Mighty River Power, Meridian Energy, and Contact Energy

hour, once per year, the economic benefit would be \$30,000 per year.

- (b) A geothermal generator could bring its plant back an hour earlier from a planned outage that finished earlier than expected. If the generator was able to displace 75 MW of CCGT generation (SRMC = \$70/MWh) with geothermal generation (SRMC near nil) for one hour, six times a year, then the economic benefit would be \$30,000 per year.
- (c) A generator could run generation upstream of a constraint in place of more expensive generation downstream of the constraint, while still preventing the constraint from binding. If the generator was able to displace 150 MW of CCGT generation (SRMC = \$70/MWh) with hydro generation (water value = \$30/MWh in wet conditions) for one hour, five times per year, the economic benefit would be \$30,000 per year.
- (d) A generator could offer a peaking thermal station to run on-merit, which it might not have done under two-hour gate closure. If the generator was able to displace 150 MW of price-responsive demand (SRMC = \$600/MWh) with oil-fired generation (SRMC = \$400/MWh) for one hour, once per year, the economic benefit would be \$30,000 per year.

Benefits of other parts of the proposed Code amendment are expected to be larger than the costs

4.5.13 The proposed Code amendment will also have other benefits that the Authority has conservatively estimated at a present value of \$300,000 excluding GST. The estimated benefits are broken down as follows:

- (a) Reduced monitoring and administration costs for the Authority, and reduced reporting costs for the grid owner, arising from the removal of the obligation to report on late revisions to grid availability information.

The Authority would expect to save around \$5000 per annum in staff time from not having to monitor and evaluate grid owner reports relating to late revisions to grid information. The grid owner could be expected to save a broadly similar amount. This equates to a present value of \$100,000 excluding GST (in round figures, using an 8% real discount rate and a 20 year flow of benefits).

- (b) There will be some improvement in forecasting from removing gate closure for non-dispatch bids, requiring intermittent generators to make persistence-based forecasts at least once every trading period (within the last two hours before the trading period), and requiring that persistence-based forecasts take into account expected changes in the availability of generating units. The benefits would arise

primarily from more efficient scheduling and lower cost dispatch of generation.

These benefits are not expected to be large, so the Authority has not devoted substantial resources to estimating their value. A value of around \$5000 excluding GST per year is considered to be a reasonable, conservative estimate. In round figures this would result in a present value of \$50,000 excluding GST (again with an 8% real discount rate and benefit flows measured over 20 years).

- (c) Several re-offer provisions (eg, clauses 13.9, 13.18(1), and 13.19(1)) are being clarified and made more robust by the proposed Code amendment. This should avoid some unnecessary uncertainty over whether a breach has occurred, and make it easier for the Authority to enforce the provisions.

The benefits are estimated as reduced administrative costs (across all participants and the Authority) of \$5000 per year. Again this results in a present value of around \$50,000 excluding GST.

- (d) Reduced compliance costs, as participants would no longer need to submit bona fide reports for bid and offer changes between one and two hours before real time. Further, the Authority would no longer need to evaluate these bona fide reports or consider taking compliance action.

These benefits are estimated to be the same as the benefits for removing the requirement on the grid owner to report on late revisions to grid information. This benefit has a present value of \$100,000 excluding GST.

- 4.5.14 The proposed Code amendment will also provide benefits due to improved reliability from more robust intermittent generator persistence-based forecasts, and removing gate closure for non-dispatch bids. However, these benefits have not been quantified.
- 4.5.15 The Authority's estimate of the present value of the benefits from the proposed Code amendment, excluding the part of the proposed Code amendment relating to one hour gate closure, is at least \$300,000 excluding GST. This compares with estimated costs of \$184,000 excluding GST. The Authority, therefore, expects that this part of the proposed Code amendment will return a net economic benefit.
- 4.5.16 The Authority seeks stakeholders' views on this cost benefit analysis. In particular, the Authority would welcome comments from generators and dispatchable load purchasers on how a move to one hour gate closure would affect their cost of production.

Q9. If you are a generator or a dispatchable load purchaser, can you quantify the extent to which one-hour gate closure would allow you to reduce your cost of production? Please provide supporting evidence.

Q10. Do you have any other comments on the costs and benefits of the proposed Code amendment?

4.6 The Authority has identified alternative options for addressing the objectives, but considers the proposed Code amendment is preferable

4.6.1 The proposed Code amendment contains several elements, and the Authority has identified alternative options for many parts of the proposed Code amendment. The following is an outline of the alternative options:

- (a) the status quo
- (b) use a subjective structure for revising offers
- (c) use the structure for revising offers proposed by AEMC
- (d) reduce gate closure restrictions in an alternative way:
 - (i) retain two hour gate closure, but with more exceptions
 - (ii) move to half-hour gate closure
 - (iii) remove gate closure.

4.6.2 The paragraphs below explain why the Authority considers the proposed Code amendment is preferable to each of these alternative options.

Option A: the status quo

4.6.3 The Authority considers that the status quo (ie, no change) will not meet the objectives of the proposed Code amendment because:

- (a) the benefits to participants of a reduced gate closure would not be realised
- (b) the industry would not receive the benefits of reduced compliance costs or clearer bid and offer revision provisions.

Q11. Do you agree that the proposed Code amendment will better meet the objectives than the status quo? If not, why not?

Option B: use a subjective structure for revising offers

4.6.4 The proposed clause 13.9A establishes a requirement relating to the quantity of electricity specified in an offer. As an alternative to the

proposed clause 13.9A, the Authority could adopt an approach similar to that currently used for nominated bids (embodied in the existing clause 13.7AA). Those clauses are:

The proposed clause 9A

The total MW specified in each offer... must... not exceed the total MW that the generator expects to be able to generate...”

The existing clause 13.7AA

The purchaser...must... submit... a nominated... bid that represents a reasonable estimate of the total... load that the purchaser will purchase ... at the prices specified in the nominated... bid...

4.6.5 The advantages of an alternative approach based on 13.7AA could be:

- (a) The obligation is more specific. While the proposed clause 9A effectively requires the offered quantity to be less than or equal to some number (“must not exceed”), clause 13.7AA effectively requires the bid quantity to be equal to something (“must represent”). The proposed clause 9A would not by itself prevent strategic re-offering where a generator offers less than it intends to generate, and at the last minute (shortly before gate closure) increases the offer quantity.
- (b) The obligation covers the whole position of the offered supply curve rather than just the total offered quantity. Clause 13.7AA does this using the phrase “at the prices specified in the [offer]”. There is a big difference for the purpose of efficient scheduling between an offer with most of its quantity in a 1 cent price band compared with a similar offer with most of its quantity in a \$10,000 price band. An approach based on clause 13.7AA would require the offer to contain a quantity in the 1 cent band that is a reasonable estimate of what the generator was willing and able to generate if the price was 1 cent.

4.6.6 The disadvantage of an approach based on clause 13.7AA is that it may be difficult to enforce. It relies essentially on assessing the subjective intention of a generator. Using the examples above to illustrate the point, if a generator offers less than it really intends and at the last minute increases its offer quantity, how would the Authority prove that the original offer was not (a reasonable estimate of) what the generator was willing and able to generate? The generator could argue it had a genuine intention to honour the original offer, but simply changed its mind. Similarly, if the strategic re-offering is performed by shuffling quantities between price bands (the example in paragraph 4.6.5(b)), it would be difficult to prove the original offer did not represent (a reasonable estimate of) what the generator was willing and able to generate at the various offer prices.

- 4.6.7 Australia's NEM currently has a similar provision focused on "good faith" and "genuine intention". The Australian Energy Regulator was unsuccessful in enforcing it in the one case that has been considered by the courts.²¹

Implications for other provisions

- 4.6.8 Whatever language is used for the obligation relating to offer quantity (in the proposed clause 13.9A or its equivalent), that language could also be replicated at other locations in the Code. For example, it could be replicated in clause 13.18 which establishes an obligation to make an immediate offer revision if the existing offer no longer meets some criteria.
- 4.6.9 The language used in clause 13.9A (or its equivalent) should be considered as part of a wider system of provisions that attempt to restrict inefficient strategic re-offering (refer to the discussion beginning at paragraph 2.4.4). We noted in paragraph 4.6.5 that the alternative approach based in the existing 13.7AA had the advantages that it was more specific and that it covered the whole position of the offered supply curve. However, this should not be taken to suggest that the proposed Code amendment neglects those factors. Under the proposed approach, the existing obligations not to disclose misleading information (clause 13.2), and to maintain a high standard of trading conduct (clauses 13.5A and 13.5B), may achieve outcomes similar to those envisaged by the language in clause 13.7AA.
- 4.6.10 On balance, the Authority's current view is to prefer the proposed approach. Given the Australian experience, the Authority sees substantial risk in using a subjective approach for offers.

Q12. Do you prefer the proposed Code amendment or Option B which would use a subjective structure for revising offers? Please explain.

Option C: use the structure for revising offers proposed by AEMC

- 4.6.11 Another alternative approach could be to follow the structure for offer revision provisions proposed by the AEMC for the NEM in its draft rule proposal dated 16 April 2015.
- 4.6.12 Appendix G provides a summary of this draft proposal, which may undergo changes following consultation.
- 4.6.13 Although this approach appears to have merit, it would still be a substantial change from New Zealand's status quo. The Authority

²¹ Australian Energy Regulator v Stanwell Corporation Limited [2011] FCA 991

considers that it is better to observe it in operation for a period before the Authority considers a similar approach for New Zealand.

Q13. Do you prefer the proposed Code amendment or Option C which would use the structure for revising offers proposed by AEMC? Please explain.

Option D: reduce gate closure restrictions in an alternative way

Retain two-hour gate closure but with more exceptions

- 4.6.14 One option is to retain two-hour gate closure, but to extend the list of situations in which participants can change their bids or offers within two hours of real time. For instance, the Code could allow generators to change their offers close to real time:
- (a) in order to allow for more storage releases on a river chain
 - (b) in response to a transmission outage lasting shorter or longer than expected
 - (c) when returning early from a planned outage
 - (d) in order to avoid excessive starts and stops of thermal generation.
- 4.6.15 The Authority considers that this option would be less preferable than the proposed Code amendment. Service providers would still incur the same costs, as all the system and process changes in Appendix C to Appendix E would be required. However, the benefits would likely be less, as the list of exceptions would inevitably be incomplete.
- 4.6.16 Further, this option could create ambiguity, and would increase the complexity of an already over-complicated part of the Code.

Move to half-hour gate closure or remove gate closure

- 4.6.17 The system operator's view is that the Code's gate closure provisions are required for it to manage the system and meet its PPOs.
- 4.6.18 Appendix D sets out the system operator's view that:
- (a) at this point, the system operator is not confident that it can reduce the gate closure period to 30 minutes without compromising its ability to manage the system and meet its PPOs
 - (b) it might be possible to reduce the gate closure period to 30 minutes at some future time, but various improvements to market systems and processes would be required.
- 4.6.19 The Authority notes the comments by Greg Thorpe in his report prepared for the Authority titled "*Comparison of NZEM and Australian NEM*"

(February 2015) which was an appendix to the Authority's recent spot market review discussion paper:²²

“Gate closure has two effects on market operation. The first is commercial in that participant bids are locked in from the time of gate closure and thus reduces the potential for opportunistic rebidding but at the expense of preventing efficient adjustments from plants able to respond.²³ The second relates to an argument that short or zero gate closure is a threat to system security given the need for the system operator to be aware of prices and merit order a number of hours ahead of dispatch. The NEM experience for over 15 years demonstrates that providing there is a robust and automated security constrained dispatch process that includes relevant ancillary services and a strong incentive (or obligation) to ensure sufficient capacity is presented to the dispatch process, then zero gate closure is not a threat to system security.” (Refer page 24, section 7.5.2, final paragraph.)

- 4.6.20 The Authority also notes the following points made in submissions on the spot market review:
- (a) Meridian referred to Mr Thorpe's second point (zero gate closure is not a threat to system security) with apparent approval
 - (b) Mighty River Power suggested a gate closure of less than 15 minutes should be attainable.
- 4.6.21 The Authority notes the differences in opinion on whether a zero gate closure (or even a very short gate closure) could be consistent with managing the system and achieving the system operator's PPOs. The Authority also notes that a zero or very short gate closure may create significant risks associated with strategic re-offering (consistent with Mr Thorpe's first point above). This would depend on the effectiveness of other Code provisions limiting the ability to engage profitably in that behaviour.
- 4.6.22 The Authority prefers the proposed Code amendment over the alternative of moving to a half hour gate closure or removing gate closure, because there is uncertainty about the consistency of that approach with:
- (a) the system operator managing the system and meeting the PPOs
 - (b) preventing excessive and damaging strategic re-offering behaviour.

²² Published as Appendix B to the Authority's discussion paper titled "Options to improve retail competition - Findings of the spot market review" (12 February 2015) published at <http://www.ea.govt.nz/development/work-programme/wholesale/exploring-refinements-to-the-spot-market/>.

²³ The NEM uses the terms "bid" and "rebidding" which are the equivalent to "offer" and "re-offer" in the NZ market.

- 4.6.23 The Authority notes that, consistent with the Code amendment principles, it may be valuable to reconsider this alternative after a period of operation under a one hour gate closure.

Q14. Do you prefer the proposed Code amendment or Option D which would reduce gate closure restrictions in an alternative way such as providing more exceptions, moving to half-hour gate closure, or removing gate closure completely? Please explain.

4.7 Assessment under section 32(1) of the Act

- 4.7.1 Section 32(1) of the Electricity Industry Act 2010 (Act) provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:

- (a) competition in the electricity industry
- (b) the reliable supply of electricity to consumers
- (c) the efficient operation of the electricity industry
- (d) the performance by the Authority of its functions
- (e) any other matters specifically referred to in the Act as a matter for inclusion in the Code.

- 4.7.2 Table 5 sets out an assessment of the proposed Code amendment against the requirements of section 32(1) of the Act.

Table 5: How the proposed Code amendment complies with section 32(1) of the Act

Requirement	Comment
<p>The proposed Code amendment is consistent with the Authority’s objective under section 15 of the Act, which is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.</p>	<p>The proposed Code amendment will promote efficiency by:</p> <ul style="list-style-type: none"> • reducing regulatory barriers that hinder participants from taking efficient actions to react to changing circumstances in the lead-up to real time • maintaining or improving the accuracy of forecast schedules, and the limitations on strategic re-offering • avoiding unnecessary monitoring, reporting, compliance and administration costs <p>The proposed Code amendment will promote reliability by:</p> <ul style="list-style-type: none"> • making intermittent generator persistence-based forecasts more robust • removing gate closure for non-dispatch bids to allow improved forecasts (even if they are late in the scheduling process).
<p>The proposed Code amendment is necessary or desirable to promote any or all of the following:</p>	
<p>(a) competition in the electricity industry</p>	<p>The proposed Code amendment will not have a material effect on competition.</p>
<p>(b) the reliable supply of electricity to consumers</p>	<p>The proposed Code amendment is expected to promote reliability by making intermittent generator persistence-based forecasts more robust, and by removing gate closure for non-dispatch bids to allow improved forecasts (even if they are late in the scheduling process).</p>
<p>(c) the efficient operation of the electricity industry</p>	<p>The proposed Code amendment will promote efficiency by:</p> <ul style="list-style-type: none"> • reducing regulatory barriers that hinder participants from taking efficient actions to react to changing circumstances in the lead-up to real time • maintaining or improving the accuracy of forecast schedules, and the limitations on strategic re-offering • avoiding unnecessary monitoring, reporting, compliance and administration costs.

<p>(d) the performance by the Authority of its functions</p>	<p>The proposed Code amendment will make it easier for the Authority to carry out the following functions under section 16 of the Act:</p> <ul style="list-style-type: none"> • monitor compliance with the Code • investigate and enforce compliance with the Code. <p>The proposed Code amendment will achieve this by clarifying the drafting of various re-offer provisions in the Code, and by making those provisions more robust and enforceable.</p>
<p>(e) any other matter specifically referred to in this Act as a matter for inclusion in the Code.</p>	<p>The proposed Code amendment will not materially affect any other matter specifically referred to in the Act for inclusion in the Code.</p>

4.8 Assessment under the Code amendment principles

4.8.1 Table 6 describes the Authority’s consideration of the Code amendment principles in the preparation of the proposed Code amendment.

Table 6: Regard for Code amendment principles

Principle	Comment
1. Lawful	The proposed Code amendment is lawful, and is consistent with the statutory objective and with the empowering provisions of the Act.
2. Provides clearly identified efficiency gains or addresses market or regulatory failure	The proposed Code amendment will provide clearly identified efficiency gains, as set out in section 4.4.
3. Net benefits are quantified	The proposed Code amendment will provide a net economic benefit, but this benefit has not been fully quantified (section 4.5). The Authority seeks feedback from stakeholders to help it quantify the net economic benefit.
<p><i>Because principles 1 and 2 are satisfied, and the analysis concludes that the proposed Code amendment is the best option (section 4.6), there is no need to apply principles 4-9.</i></p>	

- Q15. Do you consider that the proposed Code amendment in Section 4 is preferable to the status quo and other options? If not, please explain your preferred option(s) in terms consistent with the Authority's statutory objective.**
- Q16. Do you consider that the proposed Code amendment in Section 4 complies with section 32(1) of the Act, and with the Code amendment principles, and should therefore proceed?**
- Q17. Do you have any comments on the drafting of the proposed Code amendment in Section 4, which is included in Appendix A?**

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASA	Ancillary Service Agent (a provider of instantaneous reserve)
Authority	Electricity Authority
CCGT	Combined cycle gas turbine
Code	Electricity Industry Participation Code 2010
DCLS	Dispatch-capable load station
Gate closure	Restrictions on revising offers, bids or reserve offers bids shortly before real time
GXP	Grid exit Point
Intermittent generator	A wind generator
MW	Mega-watt
NEM	Australia's national electricity market
Nominated bid	A nominated bid is the information provided to the system operator to indicate a purchaser's estimate of the electricity it will purchase at a non-conforming GXP or for a dispatch-capable load station
NRS	Non-responsive schedule – a spot market forecast schedule, see also PRS
Re-offer	The revision of an offer
PPOs	The system operator's principal performance obligations
PRS	Price-responsive schedule – a spot market forecast schedule, see also NRS
Spot market	Wholesale electricity spot market

SRMC	Short-run marginal cost
Stanwell case	The Australian Federal Court case <i>Australian Energy Regulator v Stanwell Corporation Limited</i> [2011] FCA 991
Strategic re-offering	The situation where a generator changes its offers quite close to the beginning of the relevant trading period in an attempt to influence final prices while limiting the opportunity for other market participants to respond
TASC	Technical Advisory Services Contract

Appendix A Proposed Code amendments

Changes to Part 1

bid,—

- (a) means—
 - (i) a **nominated bid**;
 - (ii) a **difference bid**; and
- (b) includes a **bid** revised in accordance with clause 13.19A or 13.19B; but
- (c) ~~excludes a **bid** cancelled in accordance with clause 13.19A~~

difference bid means a ~~**bid**~~ the information that a **purchaser** ~~submits~~ provides to the **system operator** under clause 13.7AA to indicate a reasonable estimate of an increase or decrease in the **purchaser's** usual **non-dispatch-capable load** purchased at a **conforming GXP**

gate closure period, in relation to a **trading period** for which a **generator** or **ancillary service agent** has submitted an **offer** or **reserve offer**, or for which a **dispatchable load purchaser** has submitted a **nominated dispatch bid**, means—

- (a) the **trading period** immediately preceding the **trading period** to which the **offer** or **reserve offer** relates, for—
 - (i) an **embedded generator**;
 - (ii) an **intermittent generator**;
 - (iii) an **ancillary service agent** that is also an **embedded generator**; and
- (b) the 2 **trading periods** immediately preceding the **trading period** to which the **offer**, **reserve offer** or **nominated dispatch bid** relates, for—
 - (i) any other **generator**;
 - (ii) any other **ancillary service agent**;
 - (iii) a **dispatchable load purchaser**

nominated bid—

- (a) *[Revoked]*
- (b) *[Revoked]*
- (c) *[Revoked]*
- (d) means a ~~**bid**~~ the information that a **purchaser** ~~submits~~ provides to the **system operator** under clause 13.7 to indicate a reasonable estimate of the quantity of—
 - (i) **electricity** that the **purchaser** will purchase for a **dispatch-capable load station** at a **GXP**; or
 - (ii) **non-dispatch-capable load** that the **purchaser** will purchase at a **non-conforming GXP**; and
- (e) includes a deemed **nominated bid** under clause 13.8A

offer means the information that a **generator** provides submitted to the **system operator** by a ~~**generator**~~ under ~~in accordance with clause 13.6(1) to (3) and includes any revised **offer** that a **generator** provides made under in accordance with clauses 13.17 to 13.19, but~~ ~~excludes any **offer** cancelled in accordance with clause 13.17~~

reserve offer means the information an **ancillary service agent** ~~provides~~ submits to the **system operator** under clauses 13.37 to 13.54 specifying the ~~quantity of~~ **instantaneous reserve** the **ancillary service agent** is willing and able to provide, ~~—~~

~~(a) —including a **reserve offer** that is revised under in accordance with clauses 13.46 or and 13.47; but~~

~~(b) —excluding a **reserve offer** that is cancelled in accordance with clauses 13.46 and 13.47~~

Changes to Part 13

...

13.5A Conduct in relation to generators' offers and ancillary service agents' reserve offers

- (1) Each **generator** and **ancillary service agent** must ensure that its conduct in relation to **offers** and **reserve offers** is consistent with a high standard of trading conduct.
- (2) Subclause (1) applies when—
 - (a) a **generator** submits, ~~or revises, or cancels~~ an **offer**; or
 - (b) an **ancillary service agent** submits, ~~or revises, or cancels~~ a **reserve offer**.

13.5B Safe harbours for clause 13.5A

- (1) A **generator** complies with clause 13.5A if—
 - (a) the **generator** makes **offers** in respect of all of its generating capacity that is able to operate in a **trading period**; and
 - (b) when the **generator** decides to submit, ~~or revise, or cancel~~ an **offer**, it does so as soon as it can; and

...

- (3) An **ancillary service agent** complies with clause 13.5A if—
 - (a) the **ancillary service agent** makes **reserve offers** in respect of all of its capacity to provide **instantaneous reserve** that is able to operate in a **trading period**; and
 - (b) when the **ancillary service agent** decides to submit, ~~or revise, or cancel~~ a **reserve offer**, it does so as soon as it can; and

...

13.6 Generators

- (1) Each **generator** with a **point of connection** to the **grid**, and each **embedded generator** required by the **system operator** to provide an **offer** under clause 8.25(5), must—
 - (a) submit to the **system operator** an **offer** for each **trading period** in the **schedule period**, under which the **generator** is prepared to sell **electricity** to the **clearing manager**; and
 - (b) ensure that the **system operator** receives an **offer** at least 71 **trading periods** before the beginning of the **trading period** to which the **offer** relates.
- (2) Despite subclause (1), a **generator** must give at least 5 **business days**' notice in writing to the **system operator** and the **pricing manager** before the **generator** makes an **offer** for the 1st time in respect of **generating plant**.
- (3) The notice must state—
 - (a) to which **grid injection point** the **generating plant** is **connected**; and
 - (b) whether the **generating plant** is an **intermittent generating station**.
- (4) A **generator** must comply with any request from the **system operator** for information concerning **generating plant** that is the subject of a notice under subclause (2) if the **system operator** requires the information for the purposes of scheduling and **dispatch** in accordance with this Code.

- (5) Despite subclause (1), if a **generator** intends to permanently cease to provide **offers** to the **system operator** in respect of **generating plant**, the **generator** must give at least **5 business days**' notice in writing to the **system operator**, the **pricing manager**, and the **clearing manager**.

13.6 Generators

- (1) ~~Each **generator** (other than an **embedded generator** submitting an **offer** in accordance with subclause (2) or an **intermittent generator** submitting an **offer** in accordance with subclause (3)) must—~~
- ~~(a) submit to the **system operator** an **offer**—~~
 - ~~(i) for each **trading period** in the **schedule period**; and~~
 - ~~(ii) under which the **generator** is prepared to sell **electricity** to the **clearing manager**; and~~
 - ~~(b) ensure that the **system operator** receives an **offer** at least 71 **trading periods** before the beginning of the **trading period** to which the **offer** applies.~~
- (2) ~~Despite subclause (1), each **embedded generator** required by the **system operator** to provide an **offer** in accordance with clause 8.25(5) (other than an **embedded generator** who is also an **intermittent generator** submitting an **offer** in accordance with subclause (3)), must—~~
- ~~(a) submit to the **system operator** an **offer**—~~
 - ~~(i) for each **trading period** of the **schedule period**; and~~
 - ~~(ii) under which the **generator** is intending to generate **electricity**; and~~
 - ~~(b) ensure that the **system operator** receives the **offer** at least 71 **trading periods** before the beginning of the **trading period** to which the **offer** applies.~~
- (3) ~~Despite subclauses (1) and (2), each **intermittent generator** with a **point of connection** to the **grid**, and each **intermittent generator** with a **point of connection** to a **local network**, required by the **system operator** to provide an **offer** under clause 8.25(5), must—~~
- ~~(a) submit to the **system operator** an **offer**—~~
 - ~~(i) for each **trading period** of the **schedule period**; and~~
 - ~~(ii) which is based on the **intermittent generator's** forecast of the **electricity** that it expects to be able to generate; and~~
 - ~~(b) ensure that the **system operator** receives the **offer** at least 71 **trading periods** before the beginning of the **trading period** to which the **offer** applies.~~
- (4) ~~Despite subclauses (1) to (3), a **generator** must give not less than **5 business days**' notice in writing to the **system operator** and the **pricing manager** before the **generator** makes an **offer** for the 1st time in respect of a **generating plant**. The notice must include advice as to which **grid injection point** the **generating plant** is **connected** to and whether the **generating plant** is an **intermittent generating station**. The **generator** must comply with any request the **system operator** may make for information concerning the **generating plant** that the **system operator** may reasonably require for the purposes of scheduling and **dispatch** in accordance with this Code.~~

...

13.7AC Submitting bid for first time

- (1) Despite anything in this Code, a **purchaser** must give at least 5 **business days**' notice in writing to the **system operator** and the **clearing manager** before the **purchaser** submits a **bid** for the first time.
- (2) The **system operator** may request from a **purchaser** information—
 - (a) about the **purchaser**; and
 - (b) that the **system operator** requires for the purposes of scheduling and **dispatch** in accordance with this Code.
- (3) A **purchaser** must comply with a request made under subclause (2).
- (4) Despite anything in this Code, if a **purchaser** intends to permanently cease to provide **bids** to the **system operator**, the **purchaser** must give at least 5 **business days**' notice in writing to the **system operator**, the **pricing manager**, and the **clearing manager**.

...

13.8 Deemed offers

...

- (2) A **generator** is deemed to have submitted, for that **trading period**, an **offer** that is the same as the **offer** the **generator** made for the corresponding **trading period** on the current **trading day**, and clause 13.9A~~(b)~~ applies accordingly.
- (3) A deemed **offer** under subclause (2) applies until the **generator** ~~cancels or~~ revises the **offer** in accordance with clauses 13.17 to 13.19.

13.8A Deemed nominated bids

...

- (3) A deemed **nominated bid** under subclause (2) applies until the **purchaser** ~~cancels or~~ revises the **nominated bid** in accordance with clause 13.19A.

...

13.8B Deemed reserve offers

...

- (3) A deemed **reserve offer** under subclause (2) applies until the **ancillary service agent** ~~cancels or~~ revises the **reserve offer** in accordance with clauses 13.46 to 13.49.

13.9 Information that offers must contain

Each **offer** submitted by a **generator** must—

- (a) other than for **intermittent generators** and **co-generators**, contain all information required by Form 1 in Schedule 13.1; and
- ~~(b) in relation to the **generating plant** that is the subject of the **offer**, not exceed, for each **trading period**, the **generator's** reasonable estimate of the quantity of **electricity** capable of being supplied at that **grid injection point** by the relevant **generating plant** for the relevant **trading period**; and~~
- (c) if the **offer** is submitted by an **intermittent generator** for an **intermittent generating station**,—
 - (i) contain the information required by Form 2 in Schedule 13.1; and
 - (ii) have a maximum of 1 price band for each **trading period**; and

- (iii) specify a price of either \$0.00 (subject to clause 13.116) or \$0.01 for the price band; and
- (d) if the **offer** is submitted by a **co-generator** for an **industrial co-generating station**,—
 - (i) contain the information required by Form 3 in Schedule 13.1; and
 - (ii) have a maximum of 2 price bands for each **trading period**; and
 - (iii) specify a price of either \$0.00 (in accordance with clause 13.116) or \$0.01 for the price band.

13.9A Offer not to exceed capability

The total **MW** specified in each **offer** submitted by a **generator** must, in relation to the **generating plant** that is the subject of the **offer**, not exceed the total **MW** that the **generator** expects to be able to generate at the relevant **grid injection point** for the relevant **trading period**.

...

13.17 Offers may be revised

- (1) Subject to subclauses (2) to (4), a **generator** may revise an **offer** at any time before the beginning of the **trading period** to which the **offer** relates by submitting a new **offer** to the **system operator**.
- (2) A **generator** must not revise any of its **offer** prices during a **gate closure period**.
- (3) A **generator** must not revise the **MW** specified in any price band in an **offer** during a **gate closure period**, unless clause 13.18(1), 13.18A, or 13.19 applies.
- (4) A **generator** must not revise any of the following **offer** parameters during a **gate closure period**, unless clause 13.19 applies:
 - (a) ramp rates;
 - (b) maximum output (including overload);
 - (c) installed capacity.

13.17 Offers may be revised or cancelled

- ~~(1) Subject to clauses 13.19 and 13.97 to 13.101, each **generator** (other than an **embedded generator** submitting an **offer** in accordance with subclause (2) or an **intermittent generator** submitting an **offer** in accordance with subclause (3)) may—~~
 - ~~(a) revise any of its **offer** prices or **offer** quantities, as the case may be, for any **trading period** by submitting a new **offer** to the **system operator**. A revised **offer** may be made up to 2 hours before the beginning of the **trading period** in respect of which the **offer** was made; or~~
 - ~~(b) cancel any of its **offers** by notice in writing to the **system operator**. Any such cancellation of an **offer** may be made up to 2 hours before the beginning of the **trading period** in respect of which the **offer** was made.~~
- ~~(2) Despite subclause (1), and subject to clauses 13.19 and 13.97 to 13.101, an **embedded generator** required to submit an **offer** in accordance with clause 8.25(5) (other than an **embedded generator** who is also an **intermittent generator** submitting an **offer** in accordance with subclause (3)) must use reasonable endeavours to submit any revised **offers** at least 2 hours before the beginning of the **trading period** in respect of which the **offer** is made, but may—~~

- ~~(a) revise any of its offer quantities for any trading period by submitting a new offer to the system operator. Any revised offer may be made up to 30 minutes before the beginning of the trading period in respect of which the offer was made; or~~
- ~~(b) cancel any of its offers by notice in writing to the system operator. Any such cancellation of an offer may be made up to 30 minutes before the beginning of the trading period in respect of which the offer was made.~~
- ~~(3) Despite subclauses (1) and (2), and subject to clauses 13.19 and 13.97 to 13.101, each intermittent generator must submit any revision to the offer price at least 2 hours before the beginning of the trading period in respect of which the offer was made. In addition, the intermittent generator—~~
 - ~~(a) must revise the quantity of each offer made under this subclause during the 2 hours immediately before the trading period in respect of which the offer is made, in order to comply with clause 13.9(b). Each revised offer must be based on a persistence model using actual output from the intermittent generating station at the time the revised offer is submitted, unless otherwise agreed with the Authority; and~~
 - ~~(b) may cancel any offer by notice in writing to the system operator. Any such cancellation may be made up to 30 minutes before the beginning of the trading period in respect of which the offer was made.~~

13.18 When revised offer to be submitted

- (1) A generator must immediately submit a revised offer to the system operator if the total MW specified in an offer exceeds by more than 5 MW the total MW that the generator expects to be able to generate at the relevant grid injection point for the relevant trading period.
- (2) A generator that submits a revised offer under subclause (1) during a gate closure period must ensure that—
 - (a) the revised offer only differs from the original offer to the extent necessary to ensure that the MW specified in the revised offer is the MW that the generator expects to be able to generate at the relevant grid injection point for the relevant trading period; and
 - (b) the revised offer complies with the following:
 - (i) the reduction in MW specified in the revised offer must be first deducted from the MW offered in the highest price band;
 - (ii) if the reduction in MW exceeds the MW in the highest price band, the remainder must be deducted from the price bands below the highest, in descending order as the MW in each price band is reduced to zero, until all of the reduction is reflected in the revised offer.
- (3) Subclause (1) does not apply—
 - (a) in relation to an intermittent generator, during the 2 hours immediately preceding the trading period to which an offer relates; or
 - (b) in every other case, after the beginning of the trading period to which an offer relates.

13.18A Intermittent generators to provide revised offers

- (1) During the 2 hours immediately preceding the trading period to which an offer relates, each intermittent generator must submit revised offers in respect of MW offered to the system operator at a frequency of at least 1 revised offer per trading period.**
- (2) A revised offer submitted under subclause (1) must be based on a persistence model, unless otherwise agreed with the Authority.**
- (3) For the purposes of this clause, a persistence model means a method for producing a forecast MW that takes into account only the following factors:**
 - (a) actual output from the relevant intermittent generating station at the time the revised offer is submitted; and**
 - (b) any expected changes in availability and capability of generating units forming part of the relevant intermittent generating station.**

13.18 When revised offers must be submitted

- ~~(1) Before the beginning of the trading period to which an offer applies, and despite subclause (2) and clause 13.19, a generator (other than an intermittent generator submitting an offer under clause 13.17(3)) must immediately submit revised offer quantities to the system operator if—~~
 - ~~(a) [Revoked]~~
 - ~~(b) in relation to the quantities specified in the last non-response schedule published by the system operator, the ability of a generator's generating plant to generate the quantity scheduled for a trading period at a grid injection point is expected by that generator to change by more than 10 MW or 10% of the quantity scheduled (whichever is smaller); or~~
 - ~~(c) the ability of a generator to generate the total quantity offered for a trading period at a grid injection point is expected by that generator to change by more than 10 MW or 10% of the total quantity offered by that generator (whichever is smaller).~~
- ~~(1A) Despite subclause (1), a generator is not required to submit a revised offer quantity if the expected change in the quantity is less than 5 MW.~~
- ~~(2) A generator may not revise the price in its offer later than 2 hours before the relevant trading period in which that price has been offered.~~

13.19 When revised offer may be submitted during gate closure period

- (1) A generator may submit a revised offer to the system operator during a gate closure period if—**
 - (a) the revision is necessary due to a bona fide physical reason; or**
 - (b) the system operator issues a formal notice under clause 5 of Technical Code B of Schedule 8.3; or**
 - (c) a bona fide physical reason that made a revision necessary under paragraph (a) ceases to exist sooner than was expected at the time it arose, and—**
 - (i) the 1st trading period after the original bona fide physical reason ceases to exist is within 24 hours after the circumstances that constituted the original bona fide physical reason arose; and**

- (ii) the total change in MW specified in the offer in a trading period that is revised as a result of the bona fide physical reason ceasing to exist is the same or less than the total change in MW specified in the offer that was made for the same trading period as a result of the original bona fide physical reason.

(2) A generator that submits a revised offer under subclause (1)(c) must do so as soon as possible after the relevant bona fide physical reason ceases to exist.

13.19 Offer quantity changes may be made within 2 hours before trading period

~~(1) Despite clauses 13.17, 13.18(2), and 13.97 to 13.101, a generator may—~~

~~(a) cancel or revise an offer or submit a new offer to the system operator within 2 hours, or in the case of an embedded generator within 30 minutes, before the relevant trading period only if—~~

~~(i) a bona fide physical reason necessitates the cancellation or revision; or~~

~~(ii) the system operator issues a formal notice under clause 5 of Technical Code B of Schedule 8.3; or~~

~~(iii) the generator is an intermittent generator submitting revised offers under clause 13.17; and~~

~~(b) submit a new or revised offer to the system operator within 2 hours, or in the case of an embedded generator within 30 minutes, before the relevant trading period if—~~

~~(i) a bona fide physical reason that necessitates a cancellation or revision under paragraph (a)(i) ceases to exist sooner than was expected at the time it arose; and~~

~~(ii) the 1st trading period after the original bona fide physical reason ceases to exist is within 24 hours of the original bona fide physical reason occurring; and~~

~~(iii) the total change in quantity in the offer in a trading period that is revised as a result of the bona fide physical reason ceasing to exist is the same or less than the total change in quantity in the offer that was made for the same trading period as a result of the original bona fide physical reason.~~

~~(2) Whether or not the cancellation, revision, or new offer was in accordance with this clause must be determined in accordance with clause 13.21(2).~~

13.19A Bids may be revised or cancelled

(1) Each purchaser may, at any time before the beginning of a trading period in respect of which a bid is made,—

(a) revise any of its bid prices or the MW specified in any price band in a bid quantities for any trading period by submitting a new bid to the system operator; or

(aa) revise a nominated bid—

(i) from being a nominated dispatch bid to being a nominated non-dispatch bid; or

(ii) from being a nominated non-dispatch bid to being a nominated dispatch bid; or

(b) cancel any of its bids by notice in writing to the system operator.

- (1A) Despite subclause (1), a **dispatchable load purchaser** must not do any of the following during a **gate closure period**:
- (a) revise the price of a **nominated dispatch bid**:
 - (b) revise the **MW** specified in any price band in a **nominated dispatch bid**, unless subclause (1B) or clause 13.19B applies:
 - (c) revise a **nominated non-dispatch bid** to being a **nominated dispatch bid**.
- (1B) A **dispatchable load purchaser** may revise the **MW** specified in any price band in a **nominated dispatch bid** during a **gate closure period** if—
- (a) the revision is necessary due to a **bona fide physical reason**; or
 - (b) the **system operator** issues a **formal notice** under clause 5 of **Technical Code B** of Schedule 8.3; or
 - (c) a **bona fide physical reason** that made a revision necessary under paragraph (a) ceases to exist sooner than was expected at the time it arose; and
 - (i) the 1st **trading period** after the original **bona fide physical reason** ceases to exist is within 24 hours after the circumstances that constituted the original **bona fide physical reason** arose; and
 - (ii) the total change in **MW** specified in the **nominated dispatch bid** in a **trading period** that is revised as a result of the **bona fide physical reason** ceasing to exist is the same or less than the total change in **MW** specified in the **nominated dispatch bid** that was made for the same **trading period** as a result of the original **bona fide physical reason**.
- ~~(2) Despite subclause (1), a **purchaser** must not do any of the following within the 2 hours before the beginning of the **trading period** in respect of which a **bid** is made:~~
- ~~(a) revise the **bid** price:~~
 - ~~(b) revise the **bid** quantity:~~
 - ~~(ba) revise a **nominated bid**—~~
 - ~~(i) from being a **nominated dispatch bid** to being a **nominated non-dispatch bid**; or~~
 - ~~(ii) from being a **nominated non-dispatch bid** to being a **nominated dispatch bid**:~~
 - ~~(c) cancel the **bid**.~~
- ~~(3) Despite subclause (2),—~~
- ~~(a) a **purchaser** may do any of the following within the 2 hours before the beginning of the **trading period** in respect of which a **bid** is made, if the **purchaser** has a **bona fide physical reason** necessitating the **purchaser** to do so:~~
 - ~~(ia) revise a **nominated bid**—~~
 - ~~(A) from being a **nominated dispatch bid** to being a **nominated non-dispatch bid**; or~~
 - ~~(B) from being a **nominated non-dispatch bid** to being a **nominated dispatch bid**:~~
 - ~~(i) revise its **bid** quantities:~~
 - ~~(ii) cancel the **bid**:~~
 - ~~(b) before the beginning of the **trading period** to which a **nominated bid** applies, the **purchaser** that submitted the **nominated bid** must immediately submit a revised **nominated bid** quantity to the **system operator** if the **purchaser**~~

- expects, or ought reasonably to expect, that the quantity of **electricity** likely to be purchased by the **purchaser** at the prices indicated in the **nominated bid** will,—
- (i) ~~if the **nominated bid** is a **nominated non-dispatch bid**, differ from the quantity in the **nominated bid** by more than the lesser of—~~
 - ~~(A) 20MW; and~~
 - ~~(B) 20% of the **nominated bid** quantity; or~~
 - (ii) ~~if the **nominated bid** is a **nominated dispatch bid**, differ from the quantity in the **nominated bid** by more than the lesser of—~~
 - ~~(A) 10MW; and~~
 - ~~(B) 10% of the **nominated bid** quantity; or~~
 - (c) ~~if the **system operator** declares a **grid emergency**, a **purchaser** must comply with clauses 13.99 to 13.100.~~
- (4) ~~Despite subclause (3)(b), a **purchaser** is not required to submit a revised **nominated bid** quantity, if the expected change in the quantity is less than 5 MW.~~
- (4A) If the **system operator** declares a **grid emergency**, a **dispatchable load purchaser** must comply with clause 13.99A.
- (5) ~~Whether or not the cancellation or revision was in accordance with this clause must be determined in accordance with clause 13.21(2).~~

13.19B Bids must be revised

- (1) Before the beginning of the **trading period** to which a **nominated bid** relates, the **purchaser** that submitted the **nominated bid** must immediately submit a revised **nominated bid** in respect of **MW** to the **system operator** if the **purchaser** expects, or ought reasonably to expect, that the **MW** likely to be purchased by the **purchaser** at the prices indicated in the **nominated bid** will,—
- (a) if the **nominated bid** is a **nominated non-dispatch bid**, differ from the **MW** specified in the **nominated bid** by more than the lesser of—
 - (i) 20 MW; and
 - (ii) 20% of the **nominated bid** MW; or
 - (b) if the **nominated bid** is a **nominated dispatch bid**, differ from the **MW** specified in the **nominated bid** by more than the lesser of—
 - (i) 10 MW; and
 - (ii) 10% of the **nominated bid** MW.
- (2) Despite subclause (1), a **purchaser** is not required to submit a revised **nominated bid** in respect of **MW**, if the expected change in **MW** is less than 5 MW.

13.20 System operator notified of revised or cancelled nominated bids or offers in certain circumstances

- (1) ~~Subclause (2) This clause applies if to each a **purchaser** at a **GXP** or a **generator** that submits a revised **nominated bid** or **offer**, or cancels a **nominated bid** or **offer**, within during the 15 minutes before the relevant immediately preceding the **trading period** to which the revised **nominated bid** or **offer** relates.~~
- (2) ~~If this subclause applies, before submitting a **A purchaser** or **generator** that submits a revised **nominated bid** or **offer** of the type described in subclause (1) revision or cancellation, a **purchaser** or **generator** (other than an **intermittent generator** submitting a revised **offer** under clause 13.17), must immediately notify the **system**~~

operator of the revision or cancellation by telephone or electronic means (if the electronic means have been agreed between the **system operator** and the **purchaser** or **generator** before the **purchaser** or **generator** notified the revision or cancellation).

(3) Subclause (2) does not apply to an **intermittent generator** submitting a revised **offer** under clause 13.18A.

13.21 Authority notified of revised or cancelled nominated dispatch bid or offer inside during the 2 hour periodgate closure period

(1) A **dispatchable load purchaser** or **generator** (other than an ~~**intermittent generator**~~ submitting a revised ~~**offer**~~ under clause 13.17) who cancels a ~~**bid**~~ or ~~**offer**~~ or that submits a revised **nominated dispatch bid** or a revised **offer** to the **system operator** during a **gate closure period**, within 2 hours before the relevant ~~**trading period**~~, or in the case of an ~~**embedded generator**~~ within 30 minutes before the relevant ~~**trading period**~~, must report each cancellation or revision to the **Authority** in writing together with an explanation of the reasons for the ~~cancellation or revision~~.

(1A) The **dispatchable load purchaser** or **generator** must report the cancellation or revision to the **Authority** no later than by 1700 hours on the 1st **business day** following the **trading day** on which the cancellation or revision was made.

(1B) Subclauses (1) and (1A) do not apply to an **intermittent generator** submitting a revised **offer** under clause 13.18A.

(2) ~~The **Authority** must consider every report made to it under subclause (1) and determine whether the cancellation or revised **bid** or **offer** made by the **purchaser** or **generator** complied with clause 13.19A (in the case of **bids**) or clause 13.19 (in the case of **offers**) and, if not, any action the **Authority** should take in relation to the non-compliance.~~

...

13.25 Exception for small generation

(1) Despite clause 13.6(1) ~~to (3)~~, a **generator** is not required to submit an **offer** for a **generating station** that is 10 MW or smaller and any **electricity** sold to the **clearing manager** from the **generating station** is regarded as **unoffered generation** for the purpose of this Code.

...

13.27 System operator to retain bids and offers

The **system operator** must retain, in a form that it considers appropriate, all **bids** and **offers** for **electricity** submitted by **participants** under this subpart, including all revised **bids** and **offers** and all cancelled ~~**bids** and **offers**~~.

...

13.33 Grid owners must submit revised information to system operator

Up to 21 hours before the beginning of the relevant **trading period**, but subject to any timetable agreed with the **system operator** under clause 3(1) of **Technical Code A** of Schedule 8.3, each **grid owner** must immediately submit revised information to the **system operator** if there has been or is likely to be—

...

13.34 Changes may be made within 21 hours before trading period

- (1) A **grid owner** may update the information submitted under clause 13.33 later than 21 hours before the relevant **trading period** only if—
- ...
- (2) If a **grid owner** has sent revised information to the **system operator** under subclause (1) later than 15 minutes before the relevant **trading period**, the **grid owner** must also immediately notify the **system operator** of the revised information by telephone or by such other mechanism as may be agreed from time to time in writing between **grid owners** and the **system operator**.
- ~~(3) A **grid owner** who submits revised information to the **system operator** later than 2 hours before the relevant **trading period** must report each revision to the **Authority** in writing together with an explanation of the reasons for the revision. The **grid owner** must report each revision to the **Authority** by 1700 hours on the 1st **business day** following the **trading day** on which the revision was made.~~
- ~~(4) The **Authority** must consider every report made to it under subclause (3) and assess whether the revision made by the **grid owner** complied with subclause (1) and if not, any action the **Authority** should take in relation to the non-compliance.~~
- ...

13.44 How quantity is to be specified in reserve offers

For each price band, a **reserve offer** must specify the quantity of **instantaneous reserve** offered to respond as **fast instantaneous reserves** or **sustained instantaneous reserves** as a proportion of **electricity** output or consumption up to a specified maximum quantity or as a quantity available to be interrupted, and must be expressed in **MW** to not more than 3 decimal places. The minimum quantity that may be offered in a price band for a **trading period** is ~~0.001~~0.000 **MW**.

13.45 Reserve offers revised if energy offers revised

~~Subject to clause 13.46(1) and (2) An **ancillary service agent** who~~that has made a **reserve offer** must revise ~~or cancel~~ the **reserve offer** if it has, in accordance with clauses 13.6 to 13.27, revised ~~or cancelled~~ the **offer** made in respect of the equivalent item of **generating plant**.

13.46 Reserve offers may be revised ~~or cancelled~~

- ~~(1) An **ancillary service agent** (other than an **ancillary service agent** who is an **embedded generator**) may—~~
- ~~(a) revise its **reserve offer** prices or its **reserve offer** quantities, as the case may be, for any **trading period** by submitting a new **reserve offer** to the **system operator**. A revised **reserve offer** may be made up to 2 hours before the beginning of the **trading period** in respect of which the **reserve offer** is made; or~~
- ~~(b) cancel a **reserve offer** by notifying the **system operator**. Any such cancellation may be made up to 2 hours before the beginning of the **trading period** in respect of which the **reserve offer** was made.~~

- (1) Subject to subclauses (1A) and (1B), an ancillary service agent may revise a reserve offer at any time before the beginning of the trading period in respect of which the reserve offer is made by submitting a new reserve offer to the system operator.
- (1A) An ancillary service agent may not revise its reserve offer prices during a gate closure period.
- (1B) An ancillary service agent may not revise the MW specified in any price band in a reserve offer during a gate closure period unless subclause (3) or clause 13.47 applies.
- ~~(2) Despite subclause (1), and subject to clauses 13.47 and 13.97 to 13.101, an ancillary service agent who revises a reserve offer associated with an embedded generating station must use reasonable endeavours to submit the revised reserve offer at least 2 hours before the beginning of the trading period in respect of which the reserve offer is made, and may—~~
- ~~(a) revise any of its reserve offer quantities for any trading period by submitting a new reserve offer to the system operator. A revised reserve offer may be made up to 30 minutes before the beginning of the trading period in respect of which the reserve offer was made; or~~
- ~~(b) cancel any of its reserve offers by notice in writing to the system operator. A cancellation of a reserve offer may be made up to 30 minutes before the beginning of the trading period in respect of which the reserve offer was made.~~
- (2) An ancillary service agent that revises a reserve offer for an embedded generating station must use reasonable endeavours to submit the reserve offer at least 1 hour before the beginning of the trading period in respect of which the reserve offer is made.
- (3) Before the beginning of the trading period to which the reserve offer applies, and ~~despite subclause (4) and clauses 13.47 and 13.97 to 13.101,~~ an ancillary service agent must immediately submit a revised reserve offer in respect of MW offered quantities to the system operator if—
- (a) the MW quantities specified in any price band in the reserve offer no longer represents a reasonable estimate of the quantity of instantaneous reserve available from the ancillary service agent at the grid injection point, grid exit point or interruptible load group GXP; or
- (b) the relevant MW quantities specified in the non-response schedule most recently published by the system operator are not likely to be achieved by the ancillary service agent at the relevant grid injection point, grid exit point or interruptible load group GXP.
- ~~(4) An ancillary service agent may not revise the price for its reserve offer later than 2 hours before the beginning of the trading period in which that price has been offered.~~

13.47 Quantity MW changes may be made within 2 hours before trading period during gate closure period

- (1) ~~Despite clauses 13.46 and 13.97 to 13.101, a~~An ancillary service agent may—
- ~~(a) cancel or revise a reserve offer during a gate closure period or submit a new reserve offer to the system operator later than 2 hours, or in the case of a reserve offer associated with an embedded generating station later than 30~~

minutes, before the ~~trading period~~ in respect of which the ~~reserve offer~~ is made only if—

- (ia) the revision is necessary due to a bona fide physical reason necessitates the cancellation or revision; or
 - (iib) the **system operator** issues a **formal notice** under clause 5 of **Technical Code B** of Schedule 8.3; or
- (b) ~~submit a reserve offer or revise a reserve offer to the system operator later than 2 hours, or in the case of a reserve offer associated with an embedded generating station later than 30 minutes, before the trading period in respect of which the reserve offer is made if—~~
- (ic) a **bona fide physical reason** that made a revision necessary necessitates a cancellation or revision under paragraph (a)(i) ceases to exist sooner than was expected at the time it arose; and
 - (ii) the 1st **trading period** after the original **bona fide physical reason** ceases to exist is within 24 hours of after the circumstances that constituted the original bona fide physical reason occurring arose; and
 - (iii) the total change in **MW specified in quantity** for the **reserve offer** in a **trading period** that is revised as a result of the **bona fide physical reason** ceasing to exist is the same or less than the total change in **MW specified in quantity** for the **reserve offer** that was made for the same **trading period** as a result of the original **bona fide physical reason**.

~~(2) Whether or not the cancellation, revision or new submission was in accordance with this clause (including, if applicable, whether it was necessitated by a bona fide physical reason) must be determined in accordance with clause 13.50(2).~~

13.48 System operator notified of revised reserve offers in certain circumstances

(1) This clause applies to each ancillary service agent that submits a revised reserve offer during the 15 minutes immediately preceding the trading period to which the revised reserve offer relates.

(2) ~~If a cancellation, revision or new submission of a reserve offer is sent to the system operator under clause 13.47 and the cancellation, revision or new submission is submitted later than 15 minutes before the relevant trading period, before sending that cancellation, revision or new submission t~~The ancillary service agent must immediately notify the system operator of the cancellation, revision or new submission by telephone or electronic means (if electronic means have been agreed between the system operator and the ancillary service agent before the ancillary service agent notifying the system operator of the cancellation, revision or new submission).

13.49 Authority notified of revised reserve offer inside 2-hour period during gate closure period

(1) ~~An ancillary service agent that who cancels a reserve offer or submits a new or revised reserve offer to the system operator during a gate closure period later than 2 hours, or in the case of a reserve offer associated with an embedded generating station 30 minutes, before the trading period in respect of which the reserve offer is~~

~~made~~ must report each ~~cancellation, revision or new submission~~ to the **Authority** in writing together with an explanation of the reasons for the ~~cancellation, revision or new submission~~.

- (2) ~~The **ancillary service agent** must report a cancellation, revision or new submission to the **Authority** no later than~~ by 1700 hours on the 1st **business day** following the **trading day** on which the ~~cancellation, revision or new submission~~ was made.

13.50 System operator to advise Authority of ~~cancellation or~~ revision of reserve offers

- (1) The **system operator** must advise the **Authority** of any ~~cancellation or~~ revision of the availability of reserves that are provided under **ancillary services** contracts not covered by clauses 13.37 to 13.54.

(1A) ~~The **system operator** must advise the **Authority** of a cancellation or revision~~ no later than by 1700 hours on the 1st **business day** following the **trading day** on which the ~~cancellation or~~ revision was made.

- (2) ~~The **Authority** must consider every report made to it under clause 13.49 or subclause (1) and assess whether the cancellation, revision or new submission made by the **ancillary service agent** complied with clause 13.47 and if not, any action the **Authority** should take in relation to the non-compliance.~~

...

13.54 System operator to retain reserve offers

The **system operator** must retain, in a form that it considers appropriate, all **reserve offers** submitted by all **ancillary service agents** in accordance with this subpart, including all revised **reserve offers** and all cancelled **reserve offers**.

...

13.82 Dispatch instructions to be complied with

...

- (2) Each **participant** to which this clause applies must comply with a **dispatch instruction** properly issued by the **system operator** under clause 13.72 unless,—

...

- (d) the **participant** is an **intermittent generator** that has complied with clause 13.17 and clause 13.18A, and the **system operator** has not advised that there is—

- (i) a **grid emergency**; or
- (ii) a system constraint that directly affects the **intermittent generator**; or

...

13.97 Grid emergency situations

- (1) The **system operator** may, at any time, declare a **grid emergency** in accordance with **Technical Code B** of Schedule 8.3.

- (2) Despite clauses 13.6 to 13.27 and clauses 13.37 to 13.54, if the **system operator** has declared a **grid emergency**,—

- (a) a **generator**, other than an **intermittent generator**, may not reduce the aggregate quantity of **electricity MW** specified in all any of the **offers** made by the **generator** for the **trading periods** and **grid injection points** affected by the **grid emergency**, unless the **generator** has a **bona fide physical reason** that necessitates the reduction ~~makes the reduction necessary~~; and

- (b) an **ancillary service agent** may not reduce the ~~aggregate quantity of~~ **instantaneous reserve** specified in all any of the **reserve offers** made by the **ancillary service agent** for the **trading periods** and **points of connection** with the **grid** affected by the **grid emergency**, unless the **ancillary service agent** has a **bona fide physical reason** that ~~necessitates the reduction~~ makes the reduction necessary; and
- (c) the **system operator** must accept any reduction made under paragraphs (a) or (b).

13.98 Generators and ancillary service agents may change other parameters

Despite clause 13.97(2), during a **grid emergency**,—

- (a) a **generator** may reduce the MW specified in any price band quantities of **electricity** offered in respect of certain **generating plant**, if equivalent increased MW is quantities are, in substitution, offered for other items of **generating plant** owned or operated by that **generator** at **grid injection points** in the electrical or geographical region affected as notified by the **system operator** under clause 5(1) of **Technical Code** of in Schedule 8.3; and
- (b) an **ancillary service agent** may reduce the quantities of **instantaneous reserves** offered, if equivalent increased instantaneous reserves quantities are, in substitution, offered by that **ancillary service agent** at **points of connection** with the **grid** in the electrical or geographical region affected as notified by the **system operator** under clause 5(1) of **Technical Code B** of Schedule 8.3; and
- (c) despite clauses 13.6 to 13.27, a **generator** may—
 - (i) submit revised **offers** in respect of **generating plant** already subject to an **offer** before the **grid emergency**, so that the total MW quantity offered by the **generator** from the **generating plant** for that **trading period** is increased; and
 - (ii) submit new **offers** in respect of a **generating plant** not subject to an **offer** before the **grid emergency**; and
- (d) despite clause 13.48~~17~~(2), a **generator** may submit a new price band or bands for new **offers** or revised **offers** in respect of the increased MW quantity made under paragraph (c), but may not revise the price band or bands in respect of the MW quantity of electricity offered before the notice of the **grid emergency**; and
- (e) despite clauses 13.37 to 13.54, an **ancillary service agent** may—
 - (i) submit revised **reserve offers** in respect of any **instantaneous reserve** already subject to a **reserve offer** before the **grid emergency** so that the total quantity of **instantaneous reserve** offered by the **ancillary service agent** for that **trading period** is increased; and
 - (ii) submit new **reserve offers** in respect of any **instantaneous reserve** not subject to a **reserve offer** before the **grid emergency**; and
- (f) despite clause 13.46(41A), an **ancillary service agent** may submit a new price band or bands for new **reserve offers** or revised **reserve offers** in respect of the increased instantaneous reserve quantity made under paragraph (e), but may not revise the type of **instantaneous reserve** or the price band or bands in respect of the quantity of **instantaneous reserve** offered before the notice of the **grid emergency**.

13.99 Effect of grid emergency on total quantities bid

Despite clauses 13.6 to 13.27, if the **system operator** has declared a **grid emergency**—

- (a) a **purchaser** may not increase the aggregate quantity of **electricity** specified in all of the **nominated bids** made by the **purchaser** for the **trading periods** and **GXPs** affected by the **grid emergency** unless the **purchaser** has a **bona fide physical reason** that necessitates the increase; and
- (b) the **system operator** must accept any revision made under paragraph (a).

...

13.100 Purchasers may change other parameters

Despite clause 13.99, during a **grid emergency**, a **purchaser** may—

- (a) increase a **nominated bid's** quantities, or submit **nominated bids** at **GXPs** that were not subject to **nominated bids** before the **grid emergency**, if equivalent decreased quantities are, in substitution, bid for **GXPs** in the affected electrical or geographical region, as specified in the **formal notice** issued by the **system operator**, which were the subject of **nominated bids** made by the **purchaser**; and
- (b) decrease a **nominated bid's** quantities.

13.101 Reporting requirements in respect of grid emergencies

- (1) If the **system operator** declares a **grid emergency**,—
 - (a) the **system operator** must, within 12 hours of the conclusion of the **grid emergency**, provide a written report to the **Authority** setting out the basis on which the decision to declare the **grid emergency** was made. The **Authority** must **publish** this report through the **information system**; and
 - (b) a **generator** ~~who that~~ reduced the **MW** specified ~~any price band~~ aggregate quantity of **electricity** specified in any offers, and an **ancillary service agent** ~~who that~~ reduced the **instantaneous reserve** specified in any reserve offers, made by that person in respect of the **point of connection** with the **grid** and **trading periods** affected by the **grid emergency** must report the reduction to the **Authority** in writing together with details of the **bona fide physical reason** for the reduction claimed by the **generator** or **ancillary service agent**. A reduction must be reported to the **Authority** by 1700 hours on the ~~1st~~^{first} **business day** after the **trading day** on which the reduction was made; ~~and~~
 - (c) a **purchaser** who increased the aggregate quantity of **electricity** specified in **nominated bids** made by the **purchaser** in respect of the **non-conforming GXPs** and **trading periods** affected by the **grid emergency** must report the increase to the **Authority** in writing together with details of the **bona fide physical reason** for the increase claimed by the **purchaser** under clause 13.99(a). An increase must be reported to the **Authority** by 1700 hours on the first **business day** after the **trading day** on which the increase was made.
- (2) The **Authority** must consider each report made to it under subclause (1)(b) and (1)(c) and assess whether the reduced **offer** made by the **generator**, the reduced **reserve offer** made by the **ancillary service agent**, or the increased **bid** made by the

~~purchaser, as the case may be, was necessitated by a bona fide physical reason,~~
~~and whether the purchaser, generator or ancillary service agent complied with~~
~~clauses 13.97(2) or 13.99 as the case may be, and if not, any action the Authority~~
~~should take in relation to the non-compliance.~~

...

Appendix B Format for submissions

Question	Comment
Q1.Do you have any comments on the existing provisions in Chapter 2 of this paper?	
Q2.Do you have any comments on the problem definition relating to gate closure?	
Q3.Do you have any comments on the problem definition relating to the way gate closure and grid emergency provisions apply to bids?	
Q4.Do you have any comments on the problem definition relating to requirements on intermittent generators to submit persistence-based forecasts in the last two hours?	
Q5.Do you have any comments on the problem definition relating to the drafting issues with re-offer provisions?	
Q6.Do you have any comments on the problem definition relating to grid owner reporting of late updates?	
Q7.Do you have any comments on the problem definition relating to the cancellation of bids?	
Q8.Do you consider that the proposed Code amendments would carry a risk of unintended consequences? If so, what are they?	
Q9.If you are a generator or a dispatchable load purchaser, can you quantify the extent to which one-hour gate closure would allow you to reduce your cost of production? Please provide supporting evidence.	
Q10.Do you have any other comments on the costs and benefits of the proposed Code amendment?	
Q11.Do you agree that the proposed Code amendment will better meet the objectives than the status quo? If not, why not?	
Q12.Do you prefer the proposed Code amendment or Option B which would use a subjective structure for revising offers? Please explain.	
Q13.Do you prefer the proposed Code amendment or Option C which would use the structure for revising offers proposed by AEMC? Please explain.	

<p>Q14. Do you prefer the proposed Code amendment or Option D which would reduce gate closure restrictions in an alternative way such as providing more exceptions, moving to half-hour gate closure, or removing gate closure completely? Please explain.</p>	
<p>Q15. Do you consider that the proposed Code amendment in Section 4 is preferable to the status quo and other options? If not, please explain your preferred option(s) in terms consistent with the Authority's statutory objective.</p>	
<p>Q16. Do you consider that the proposed Code amendment in Section 4 complies with section 32(1) of the Act, and with the Code amendment principles, and should therefore proceed?</p>	
<p>Q17. Do you have any comments on the drafting of the proposed Code amendment in Section 4, which is included in Appendix A?</p>	

Suggested format for providing drafting comments on the proposed Code amendments in Appendix A

Clause reference	Submitter's comment	Submitter's alternative drafting

Appendix C **TASC 24 – One Hour Gate Closure Testing**

Appendix D **TASC 42 – Reduced Gate Closure**

Appendix E **NZX report: WITS Gate Closure Timing Change – High Level Estimate**

Appendix F **Feedback on gate closure from spot market review discussion paper**

- F.1 The Authority recently published a discussion paper titled *Options to improve retail competition – Findings of the spot market review* (12 February 2015).²⁴ The paper discussed, among other things, the possibility of an “hours-ahead market”. An hours-ahead market would financially commit participants to “ahead offers”, which could affect the strategic role of the two hour gate closure. The paper suggested that an hours-ahead market could be linked to adopting a shorter gate closure period.
- F.2 Question 4 of the discussion paper asked: “Do you agree that the Authority should explore introducing an hours-ahead market (and shorter gate closure) in 2015/16? Please explain your reasoning.”
- F.3 Submitters were divided on whether it would be useful to investigate an hours-ahead market, but on the issue of gate closure two themes emerged clearly from the submissions:
- (a) Gate closure should be reduced (Meridian, Mighty River Power, Norske Skog, and Nova) or at least investigated (NZX and Pioneer Generation).
- Meridian suggested that a gate closure period is not necessary from a system security perspective. Mighty River Power suggested a shorter gate closure time under 15 minutes should be prioritised. Norske Skog suggested that there was no justification for a two hour gate closure. Nova suggested a shorter gate closure has become increasingly important. NZX and Pioneer Generation supported investigating a shorter gate closure.
- (b) The possibility of reducing gate closure should be considered separately from an hours-ahead market (emh-Trade, Meridian, MRP, and Smartwin Energy Trading).
- F.4 No party opposed reduced gate closure, although:
- (a) EnerNOC submitted that, while shorter gate closure could improve efficiency, it could also introduce opportunities for strategic re-offering, as experienced in the Australian national electricity market (NEM)
- (b) Transpower suggested a balance was required between reliability and ensuring efficiency and competition.
- F.5 There was no comment on the merits of reduced gate closure from the other submitters (Contact, emh-Trade, Flick, Genesis, Neil Walbran Consulting, Smartwin Energy Trading, and TrustPower).

²⁴ Refer to <http://www.ea.govt.nz/development/work-programme/wholesale/exploring-refinements-to-the-spot-market/>.

- F.6 As the discussion paper did not contain a detailed analysis of gate closure, these submissions should not be considered as comprehensive comment on gate closure.

Appendix G Australian proposal to revise re-offer provisions

- G.1 The Australian Energy Market Commission (AEMC) has been reviewing the structure of the re-offer provisions in Australia's national electricity market (NEM)²⁵ since early 2014.²⁶ It is useful to consider this work closely because the NEM is quite similar to New Zealand's market in many respects. Like New Zealand's market, it is an energy only market with an iterative pre-dispatch scheduling process that involves no financial commitment to offers until the offers are finalised near real time. It provides a useful point of comparison which helps to understand the Electricity Industry Participation Code 2010 provisions.
- G.2 Australia's National Electricity Rules currently require a generator to make all offers (and re-offers) in good faith. At the time of making an offer, a generator must have a genuine intention to honour that offer if the material conditions and circumstances upon which the offer is based remain unchanged.
- G.3 Note that the Australian rule focuses on the time at which the offer was made. If a generator submits an offer and later forms a different intention, the current Australian rules do not appear to prohibit the generator from deliberately delaying the revision until close to dispatch, to limit the opportunity for potential responses from other participants.
- G.4 The Australian Energy Regulator (AER) is responsible for ensuring participants comply with the good faith provisions. The provisions were tested in the case *Australian Energy Regulator v Stanwell Corporation Limited* [2011] FCA 991. In that case a trader at Stanwell made a revised offer which did not lead to an increase in the forecast price as the trader had expected or hoped. Consequently, the trader revised its offer again close to real time to achieve that aim. The AER argued that the first revision was not made in good faith, and that the second revision demonstrated this lack of good faith because there had been no change in "material conditions and circumstances" between the two revisions. The Court held that the first offer revision was made in good faith and that there had been a change in "material conditions and circumstances" between the two bids: namely, a change in the trader's subjective expectations about what level of revision would achieve the desired price impact.
- G.5 On 17 December 2013, the South Australian Minister for Mineral Resources and Energy submitted a rule change request to AEMC proposing to change the good faith provisions. The proposal was to put the onus on generators to be able to demonstrate good faith. Revisions would not be allowed unless they were made as soon as possible in response to a significant and quantifiable change in forecast price or

²⁵ The NEM covers most of Queensland, New South Wales, Victoria, South Australia and Tasmania.

²⁶ Project documents are available at <http://www.aemc.gov.au/Rule-Changes/Bidding-in-Good-Faith>.

demand (or other data published by Australian Energy Market Operator) or other material circumstances. The intention was that there would need to be an objectively observable, quantifiable reason for a revision. The change in subjective expectations in the *Stanwell* case would not qualify.

G.6 On 10 April 2014, the AEMC published a consultation paper seeking feedback on the Minister's proposal.

G.7 On 18 December 2014, the AEMC published an options paper to facilitate an extra stage of consultation, given the importance of the issues to stakeholders.

G.8 On 16 April 2015, the AEMC published for consultation a revised draft rule. The AEMC's new proposal is as follows:

- (a) Participants must not make offers (or revisions) that are false, misleading, or likely to mislead.

This is considered to be a more objective approach than the current "good faith" provision, and is expected to assist with the practical application of the rules. The idea of putting the onus on generators to be able to demonstrate good faith has been dropped.

- (b) Without limiting that provision, an offer would be misleading if, at the time of making it, the participant does not have a genuine intention to honour the offer (and does not have a reasonable basis to represent that it will honour it) if the material conditions and circumstances remain unchanged until dispatch.

- (c) If a participant changes its intentions for dispatch, the participant must revise its offer as soon as reasonably practicable after it becomes aware of the relevant change in the material conditions and circumstances.

This is a new requirement that recasts generator offers as a continuing representation of their willingness to provide supply at the various offered prices.

- (d) Whether a participant has a reasonable basis to represent that it will honour its offer may be inferred from its offering behaviour with respect to all of its units and its previous patterns of behaviour.

- (e) Reference can be made at this point to a new high level principle: maximum level of market transparency in the interests of achieving a very high degree of market efficiency, including by providing accurate, reliable, and timely forecast information to participants, to allow for responses that reflect underlying conditions of supply and demand.

- (f) There are no specific limitations on the material conditions and circumstances that may give rise to a revision. The earlier proposal to require a significant, objective and quantifiable change in relevant circumstances has been dropped.

- (g) For each offer revision made after 15 minutes before the trading interval, the participant must provide a report to the AER setting out in detail the reasons for making the revision at that time. (The proposal does not of itself restrict what those reasons can be).