

19 August 2015

Submissions
Electricity Authority
PO Box 10041
WELLINGTON

via email: submissions@ea.govt.nz

Dear Authority

Shortened gate closure and revised bid and offer provisions

Thank you for the opportunity to comment on the shortened gate closure and revised bid and offer provisions. Contact supports the Electricity Authority shortening the gate closure period and welcomes the subsequent improvement in efficiency that this will bring. Because of the improvement in efficiency, this change should be implemented as soon as possible.

We have previously discussed with the Electricity Authority the benefit to consumers of a generator being able to reduce price during a grid emergency. By way of background the Code was written during the period of the New Zealand Electricity Market (NZEM) to stop generators taking commercial advantage of a grid emergency and increase prices. However, the unintended consequence of this was that the Code stopped price changes for existing offered quantities during a grid emergency. We have suggested a minor wording change Code amendment in question 17 that will rectify this situation.

To further improve the efficiency of the market, we request that the Electricity Authority allocates resources to investigate the accuracy of the load forecast that the System Operator uses. Anecdotally we have seen the forecast becoming less accurate and, therefore less efficient, with no market reporting by the Electricity Authority on the accuracy of this forecast to quantify how fit for purpose it is. The Electricity Authority can already do this under the Code¹ and we ask that this is monitored and reported on the Electricity Authority website.

The Electricity Authority introduced a new term in this consultation: strategic offering. While we note the concern, we consider that changing the gate closure to one hour will not materially increase the risk of strategic offering and that the code of conduct provisions will be a lever for the Electricity Authority to use if this risk did ever surface.

¹ 13.7B Authority may request system operator to report on accuracy of forecasts of non-dispatch-capable load at conforming GXPs

If you would like to discuss our response to this consultation or require further clarification, please do not hesitate to contact me.

Yours sincerely

A handwritten signature in black ink, appearing to read 'James Collinson-Smith', written in a cursive style.

James Collinson-Smith
Manager, Market Services

Appendix A

Response to questions

Question	Comment
Q1. Do you have any comments on the existing provisions in Chapter 2 of this paper?	The Authority's trading conduct clauses are a strong disincentive for participants to engage in inefficient offering behaviour ² . We think that this also covers the impact discussed in table 2 section (f) – if the gate closure is further reduced.
Q2. Do you have any comments on the problem definition relating to gate closure?	<p>Contact agrees that market circumstances can change significantly in the two hours leading up to real time and that shortening the gate closure period will enhance the ability of participants to respond more efficiently to these changing conditions.</p> <p>As noted by the Electricity Authority, one of the drivers for this variability is load. As the majority of the forecast load used in each schedule comprises the System Operator load forecast, Contact believes that more effort is required by the Electricity Authority in allocating resources to improve the accuracy of this forecast, as this would have a greater impact on schedule accuracy and improving market efficiency.</p>
Q3. Do you have any comments on the problem definition relating to the way gate closure and grid emergency provisions apply to bids?	Participants that are required to submit non-dispatch demand bids are currently not obligated to ensure that their actual demand meets their submitted bids. This is not impacted upon by the current gate closure and grid emergency Code requirements.
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?	Contact agrees that the intermittent generation offer requirements need to be made more robust to ensure that persistence offers are adjusted to include planned plant outages.
Q5. Do you have any comments on the problem definition relating to the drafting issues with re-offer provisions?	Contact agrees that there are inconsistencies in the current Code and the redrafting and clarification would be beneficial.

² The Authority refers to it as 'strategic re-offering'.

Question	Comment
Q6. Do you have any comments on the problem definition relating to grid owner reporting of late updates?	<p>Given the potential market impact of late notice changes to grid configuration, Transpower as grid owner should be encouraged to provide as much notice as possible of the intention to return an asset to service earlier or later than expected.</p> <p>Reducing the gate closure to one hour improves the ability of generators to re-offer to make use of the capacity that becomes available with an early grid asset return.</p>
Q8. Do you have any comments on the problem definition relating to the cancellation of bids?	No.
Q8. Do you consider that the proposed Code amendments would carry a risk of unintended consequences? If so, what are they?	No.
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.	<p>Yes.</p> <p>Qualitatively there would be a significant saving for consumers in terms of the wholesale cost of electricity in the case of the early return of the HVDC link from an outage – if South Island generators were able to fully utilise the returned capacity from an hour post return to service – rather than having to wait two hours.</p> <p>As incorrect load forecasts drive incorrect forward schedules, a reduction in gate closure enables generators to reduce costs and improve market efficiencies. This is because it allows thermal peaking plant that has been offered as per the forecast schedules to act on new information and save fuel costs (due to the reduced gate closure) by removing a base load offer when prices drop below the SRMC.</p> <p>For example saving \approx\$80/MWh fuel cost where prices forecast $>$ \$100/MWh reduce to \$10/MWh, would save a generator $\\$80 - \\$10 = \\$70$/MWh, on 100MW this would be a saving of \$7000 per hour.</p>
Q10. Do you have any other comments on the costs and benefits of the proposed Code amendment?	<p>Contact's costs in this case will be exceeded by the private benefits – as will the flow-on benefits to electricity consumers.</p> <p>Arguably, shorter gate closure will not yield more accurate schedules but may lead to more efficient solutions, as a lower risk factor needs to be included in market offer pricing.</p>

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Question	Comment
Q11. Do you agree that the proposed Code amendment will better meet the objectives than the status quo? If not, why not?	The proposal will allow more efficient generation offering closer to real time as demand and intermittent generation forecasts conflate towards actual values resulting in lower costs for consumers.
Q12. Do you prefer the proposed Code amendment or Option B which would use a subjective structure for revising offers? Please explain.	<p>The proposed Code amendment is preferable to option B.</p> <p>A generator/retailer's desire to generate a quantity at a given price would be dependent upon the expected energy that they would be required to purchase to cover their demand obligations. As the System Operator load forecast can vary significantly, even up to real time, the energy/price relationship in a generation offer can legitimately vary significantly up to and past gate closure.</p> <p>Obligating stability in this correlation with option B through to gate closure may lead to more conservative offering practices and possibly higher consumer costs.</p>
Q13. Do you prefer the proposed Code amendment or Option C which would use the structure for revising offers proposed by AEMC? Please explain.	The proposed Code amendment is preferable to option C. The AEMC proposal is a substantial change and would merit a complete consultation to be able to pragmatically use it as a counterfactual option.
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>Given the current technical difficulties noted with a 30-minute or shorter gate closure by the System Operator and the likely complexities associated with a two-hour gate closure with exceptions, the proposed Code amendment is preferable to option D.</p> <p>However, we encourage the Electricity Authority to plan a review of reducing the gate closure to 30 minutes in the Electricity Authority work plan so that this is not lost.</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.	Yes, the proposed Code amendment is preferable to the status quo and other options due to the ability for increased operational efficiency in the market.

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Question	Comment
<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>Yes.</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>	<p>A simple change to clause 13.98 would allow participants to reduce price during a grid emergency thus managing the cost to consumers of unexpected, short-term supply interruptions and providing better short-term stability and certainty in the forward looking schedules.</p> <p>We suggest the following additional change:</p> <p>d) Despite clause 13.18(2), a generator may submit a new price band or bands for new offers or revised offers in respect of the increased quantity made under paragraph (c), <u>and may decrease</u>, but may not revise increase, the price band or bands in respect of the quantity of electricity offered before the notice of the grid emergency; and</p> <p>See appendix B for details on benefits.</p>

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Appendix B (Q17) Further detail: Benefits of being able to reduce price bands during a grid emergency

High market pricing, when signalled well in advance, is a valuable indicator of supply scarcity situations. With sufficient notice, purchasers can react accordingly to manage their exposure.

A high price brought about by an unforeseeable event in real time does not provide a valuable market signal and the resultant volatility can reduce participant confidence in market outcomes.

By allowing the reduction of the price bands of existing offered quantities during a grid emergency, participants will be better able to manage the financial impact of short-term, unexpected supply shortages while reducing purchaser risk.

Example one

At 09:57 on 5 December 2013, Ōtāhuhu tripped for a loss of 351 megawatts (MW) of supply. Following the restoration of load and reserves, a grid emergency was declared at 11:10 for a national shortfall of both energy and reserves. Final pricing for the 11:30 trading period and the immediately preceding and following periods are as follows.

	5/12/2013 11:00	5/12/2013 11:30	5/12/2013 12:00	5/12/2013 12:30
OTA2201 final price	\$204.83	\$1210.23	\$244.03	\$204.82
HAY2201 FR final price	\$0	\$900	\$191	\$1.91
HAY2201 SR final price	\$0	\$104.3	\$5.44	\$5.44
HAY2201 final price	\$177.57	\$1063.15	\$216.48	\$180.55
BEN2201 final price	\$163.35	\$977.97	\$199.14	\$166.09
BEN2201 FR final price	\$0.03	\$0.03	\$0.03	\$0.03
BEN2201 SR final price	\$0.03	\$3	\$0.03	\$0.03

SR = sustained reserve and FR = fast reserve

Had participants been able to reduce the price of their offers within gate closure, following the issuing of the Grid Emergency Notice, it is possible that the final prices for the 11:30 trading period could have settled at the same level as the immediately preceding period, saving up to \$1,000 per megawatt hour (MWh). Using the final pricing data for 5 December and assuming that a best case scenario of 11:30 final prices reaching the levels of 12:00, a potential net benefit to purchasers of \$2,370,340 could have been realised. An average of the Haywards and Ōtāhuhu final price has been used to calculate the North Island net benefit.

	MW requirement	11:30 final price	12:00 final price	Net benefit
NI energy price	3,379	\$1,136.69	\$230.26	\$1,531,421.93
SI energy price	1,873	\$977.97	\$199.14	\$729,374.30
NI fast reserve	203	\$900.00	\$1.91	\$91,156.14
NI sustained reserve	372	\$104.30	\$5.44	\$18,387.96
Total				\$2,370,340.32

NI = North Island and SI = South Island

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Example two

At 19:12 on 20 June 2013, HVDC Pole 3 tripped for a loss of 298 MW of energy. Following the restoration of load, a grid emergency was declared at 20:09 for a North Island shortfall in energy and reserves. Final pricing for the periods were as follows.

	20/06/2013 20:00	20/06/2013 20:30	20/06/2013 21:00	20/06/2013 21:30
OTA2201 final price	\$99.30	\$1,260.68	\$438.60	\$137.65
HAY2201 final price	\$103.79	\$1,004.42	\$442.54	\$144.64
BEN2201 final price	\$0.04	\$0.04	\$5.10	\$0.04
HAY2201 FR final price	\$0.00	\$0.00	\$36.59	\$20.00
HAY2201 SR final price	\$0.00	\$0.00	\$305.00	\$57.63
BEN2201 FR final price	\$0.03	\$0.03	\$0.03	\$0.03
BEN2201 SR final price	\$0.03	\$0.03	\$0.05	\$0.03

Given the relatively high nature of the 21:00 trading period prices, it is likely that, had participants been able to reduce offer prices within gate closure, the 20:30 prices may have settled out nearer to the 21:30 trading period prices. If this had been the case, there would have been a potential net benefit to purchasers of \$1,942,987 using the same assumptions as per the 5 December event. It should be noted, however, that North Island prices reached over \$6,000 per MWh and Litchfield reached in excess of \$8,000. This gives an overall average North Island price of \$1,300, thus increasing the potential net benefit further.

	MW requirement	20:30 final price	21:30 final price	Net benefit
NI energy price	3950	\$1,132.55	\$141.15	\$1,958,024.88
SI energy price	2029	\$0.04	\$0.04	\$0.00
NI fast reserve	297	\$0.00	\$20.00	-\$2,970.00
NI sustained reserve	419	\$0.03	\$57.63	-\$12,067.20
Total				\$1,942,987.68

The total potential purchaser net benefit for these two examples comes to \$4,313,328.

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