



MAJOR ELECTRICITY USERS' GROUP

1st March 2016

Dr John Rampton
General Manager Market Design
Electricity Authority
By email to submissions@ea.govt.nz

Dear John

Consultation Paper – Dispatchable demand during tight market conditions

1. This is a submission by the Major Electricity Users' Group (MEUG) on the Electricity Authority (EA) consultation paper¹ "Dispatchable demand during tight market conditions" 15th January 2016.
2. MEUG members have been consulted in the preparation of this submission. This submission is not confidential. Some members may make separate submissions.
3. The Code was amended² in 2013 to introduce a modified dispatchable demand (DD) regime. The decision to proceed with a modified DD rather than a full DD, that would have mirrored generator dispatch, has resulted in unintended implementation problems.
4. Last year a Code amendment³ was made for a problem with late bid revisions. The current consultation paper is intended to address a problem when infeasible prices are triggered for "almost always must run" load with very high value bid tranche(s). The consultation paper describes the current problem as being an issue of "DD during tight market conditions". Had a full DD regime been implemented these problems probably would have not materialised and or solutions to mitigate the problems easier to design and implement. The decision to proceed with a modified DD rather than full DD has been the fundamental problem leading to the amendment last year and the current amendment proposal.
5. MEUG accepts we do have to deal with the here and now of problems with the modified DD regime because the option of changing to a full DD regime would take too long even if a policy decision to proceed had been taken. A pragmatic interim solution to how the modified DD regime works to manage unintended consequences of prices during tight market conditions is acceptable provided the amendment:

¹ Paper including appendices at <http://www.ea.govt.nz/development/work-programme/wholesale/operational-enhancements-to-dispatchable-demand/consultations/#c15753>

² Electricity Industry Participation (Modified Dispatchable Demand) Code Amendment 2013, 9th December 2013, <http://www.ea.govt.nz/dmsdocument/16331> that came into effect on 15th May 2014.

³ Electricity Industry Participation Code Amendment (Dispatchable Demand: Late Bid Revisions) 2015, 27th October 2015, <http://www.ea.govt.nz/dmsdocument/20041>

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- a) Does not jeopardise evolving to a full DD regime in the longer term;
- b) Does not result in Norske Skog Tasman (NST), the only current participant in the modified DD regime, to exit the existing regime; and
- c) Does not present a barrier to possible other near term participants entering the existing regime.

The following paragraphs discuss each of the above in turn.

6. MEUG has no reason to believe the amendment will undermine the option of the EA at a later date reconsidering changing to a full DD regime. We discuss this further in the concluding paragraphs of this submission.
7. After discussion with NST MEUG believes the proposal will not undermine their current operating practices.
8. A potential participant in the modified DD regime has indicated the \$15,000/MWh cap on offers may be a barrier to their involvement. MEUG suggest the Authority therefore reconsider the value of the cap. A pragmatic solution may be to make the cap at the upper range of estimated Value of Expected Unserved Energy (VEUE) and value of lost load (VoLL). We elaborate on that suggestion in answer to question 5 below.
9. Responses to questions in the consultation paper follow:

Question	MEUG response
<p>1. Do you agree with the Authority's description of the problems with the existing arrangements?</p>	<p>Agree with the problem set out in paragraph 2.3.1 (a) of the consultation paper:</p> <p style="padding-left: 40px;">"Inefficient dispatch: Inefficient dispatch can occur for high value dispatch bid bands. In particular that high value load can be dispatched off when it would have been possible to achieve greater overall sector benefits by: dispatching the load on, waiting to see if late voluntary response occurs and, if it does not, either directing mandatory load curtailment or implementing reduced reserves."</p> <p>The underlying reason why inefficient dispatch occurs is because dispatch is from the NRS not the RTD schedule, ie the problem is with the decision to adopt the modified DD rather than full DD regime.</p> <p>The problems of market prices above genuine scarcity levels (paragraph 2.3.1 (b)) and constrained off payments as described in paragraph 2.3.1 (c) are outcomes resulting from the above problem of inefficient dispatch. The text in brackets in paragraph 2.3.1 (c) concedes this point:</p> <p style="padding-left: 40px;">"This can be viewed as a symptom of the first problem".</p>
<p>2. Do you agree the problems are of a sufficient magnitude to justify the Authority taking steps to resolve them?</p>	<p>There are potential inefficient dispatch outcomes and associated with that material wealth transfers but in the view of MEUG the risk is low. The risk is low for two reasons.</p> <p>First the only current DD participant NST have acted very responsibly as soon as problems with the modified DD became evident. We have no reason to believe NST will</p>

Question	MEUG response
	<p>change that practice.</p> <p>Second the risk of new participants in the modified DD regime taking advantage of the problems with inefficient DD dispatch for very high valued bid tranches during tight market conditions may not be high either. A new DD participant will have made an investment to enter the DD regime and will not wish to risk being found to have invested to game the regime because that would inevitably lead to Code amendments to close any loophole and potentially strand that party's investment to participate.</p> <p>While the risk of inefficient dispatch outcomes and material wealth transfers may be low, there is still a probability albeit small that an event may occur that has high cost consequences. Accordingly a solution is needed provided the cost of the solution does not exceed the benefits. That question is considered in response to question 4 below</p>
<p>3. Do you agree with the objectives of the proposed amendment? If not, why not?</p>	<p>MEUG agrees with the first objective set out in paragraph 3.1.1 (a):</p> <p>“To promote efficient dispatch of high value dispatch bid bands, recognising that there are near real time alternatives to dispatching off this load.”</p> <p>It follows that a solution to the objective will therefore allow a DD participant to efficiently price some “almost always must run” load (paragraph 3.1.1(b))” and excessive wealth transfers (the issue inferred by paragraph 3.1.1 (c)) will be mitigated.</p>
<p>4. Do you agree the benefits of the proposed amendment outweigh its costs? If not, why not?</p>	<p>The expected implementation costs of the proposal of \$30,000 appear reasonable.</p> <p>The expected benefits, Present Value (PV) of \$1.51m, are probably overstated because:</p> <ul style="list-style-type: none"> • Use of a 6% discount rate is lower than that usually used; and • An eight year time frame is probably too long if, as MEUG suggest at the conclusion of this submission, RTP will be implemented within the next eight years and that could include a change to a full DD regime. <p>The calculation of an average efficiency improvement is based on 200 scenarios to cover a range of assumptions on the value of DD load dispatched or not, value of mandatory load curtailed and fixed assumptions (without any supporting evidence as to why these values have been chosen) for</p> <ul style="list-style-type: none"> • The probability any late voluntary response is available (50%); and • Fixed cost of any voluntary response (\$5,000/MWh).

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	<p>It is not easy to replicate the estimate of average efficiency improvement although conceptually we agree this is a valid approach.</p> <p>MEUG suggests that if the EA use such an approach in future cost-benefit-analysis that the alternative and simpler approach of using expected and combined maximum and minimum values are <u>also</u> presented as that can be intuitively easier and quicker to arrive at the reasonableness and sensitivity to key variables.</p> <p>The above comments are on the detail. Stepping back and taking an overall view MEUG does not expect there to be any scenarios where, in terms of static efficiency, the PV of the benefits of the proposal compared to the status quo are less than the costs.</p>
<p>5. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.</p>	<p>MEUG agrees that the proposal is preferable to alternatives B to E.</p> <p>MEUG believes alternative A or similar should be considered. Alternative A has a bid cap of \$20,000/MWh compared to \$15,000/MWh for the proposal.</p> <p>The basis of the \$15,000/MWh is set out in paragraphs 3.2.3 to 3.2.6. Paragraph 3.2.3 states:</p> <p style="padding-left: 40px;">“The exact value used as the bid “cap” (\$15,000/MWh in the proposal) may not be particularly important in practice. In practice, a DCLS (Dispatch Capable Load Station) bid band is likely to be valued either much higher or much lower than that figure.”</p> <p>The remaining paragraphs of that section consider the code prescribed Value of Expected Unserved Energy (VEUE = \$20,000/MWh) and the EA survey of Value of Lost Load (VoLL = \$17,335/MWh based on residential load). Though not explicitly stated it appears that the choice of \$15,000 is because it is just below the values of VEUE and VoLL. The assumed intuition being that if prices spike it's better in the national interest to have late voluntary response that will have an opportunity cost on average around VEUE and VoLL. Hence capping DD bids at \$15,000/MWh will minimise the risk of either dispatching a DCLS load when late voluntary response also occurs or not dispatching a DCLS load and coincidentally there is no late voluntary response.</p> <p>MEUG suggests a higher value than \$15,000 should be used as the bid cap for two reasons:</p> <ul style="list-style-type: none"> • The dispatcher knows for sure what the bid cap will be from a DCLS load but knows neither the value of any late voluntary response nor the probability that will be voluntarily exercised as a demand reduction. MEUG suggests there is greater value in having certainty of a DCLS load including a price that was close to VEUE and VoLL. Given the range of values for VEUE and

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	<p>VoLL are likely to be reasonably wide around the mid-point ranges above, then use of a bid cap at the upper range of VEUE and VoLL would be feasible.</p> <ul style="list-style-type: none"> There may be possible participants in the existing DD regime where a \$15,000/MWh cap for tranches that are not “almost always must run” would inhibit participation but a cap slightly higher would make an attractive commercial proposition. The benefit of choosing a value for the bid cap that will not deter possible new entrants into the existing modified DD regime is important because it signals an intention by the EA to actively continue DD as one of many demand side response opportunities for end consumers. A longer term investment in DD along with other options for consumers to utilise demand response capability has the potential for improved innovation and competition at the margin that the status quo. Therefore in terms of the proposal being consulted on MEUG suggests there are greater dynamic efficiency benefits likely by having greater probably of continuing to have some new entrants into the DD regime with a higher bid cap than that proposed.
6. Do you agree the Authority’s proposed amendment complies with section 32(1) of the Act?	Agree provided the proposal is amended for a higher bid cap as discussed in response to question 5 above.
7. Do you have any comments on the drafting of the proposed amendment?	The value of \$15,000/MWh in clause 13.13(1) (c) (i) is amended for a higher bid cap as discussed in response to question 5 above.

10. The current EA project⁴ “Exploring refinements to the spot market” includes an investigation into adopting real-time-pricing (RTP). There are different designs to consider for RTP; though all will have final prices derived from and published from schedules closer to real time than how final prices are currently set. The original full DD regime would have dispatched demand using an existing schedule closer to real time as noted in the executive summary of the consultation paper:

“When the DD regime was developed, the Authority’s original design would have allowed the system operator to dispatch participating load in real time, using the same real time dispatch schedule (RTD) as for generators and the same dispatch process.”

11. MEUG expects New Zealand will adopt RTP. Implementation of RTP will not be trivial. However the benefits will be much larger because knowing final prices closer to real time is becoming both more realistic and necessary. RTP is becoming more realistic for New Zealand because of the improved speed of communicating real time data and the speed of software to optimise the system. Overseas experience has shown RTP is possible without

⁴ This project arose from the prior project titled Spot Market Review. The current work on Spot Market Refinements, project #1.4 in the 2015/16 EA work programme, can be found at <http://www.ea.govt.nz/development/work-programme/wholesale/exploring-refinements-to-the-spot-market/>

degrading real time security. RTP is also becoming necessary if New Zealand is to be productive and efficient in terms of facilitating demand side and supply side innovation given more elasticity in demand with a range of demand response and small scale distributed generation (eg PV) and storage (eg batteries) enabled by Advanced Metering Infrastructure and service-based distribution pricing. Changes to SPD to implement RTP will also be an opportunity to make changes to the SPD (scheduling, dispatch and pricing) optimisation software to provide for a full DD regime as originally proposed.

12. There may be some interim steps that could be taken towards a full DD ahead of final decisions on RTP. Those possible interim steps could be uncovered through a post implementation review of the original 2013 modified DD decision and implementation.

Yours sincerely

A handwritten signature in black ink, appearing to read 'R. Matthes', with a long horizontal stroke extending to the right.

Ralph Matthes
Executive Director