# MAJOR ELECTRICITY USERS' GROUP

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Dr Justin Wood
Adviser wholesale markets
Electricity Authority
By email to submissions@ea.govt.nz

Dear Justin

**Consultation paper – real-time pricing proposal**

1. This is a submission by the Major Electricity Users' Group (MEUG) on the Electricity Authority (EA) consultation paper "Real-time pricing (RTP) proposal" and associated appendices and spreadsheets published 1 September 2017[1].

2. MEUG members have been consulted in the preparation of this submission. This submission is not confidential. Some members may make separate submissions.

3. Progressing RTP to a point where decisions can be made for implementation has been a top priority project for MEUG for many years. RTP has always been our preferred long-term development path for the wholesale market. We welcome the EA deciding to step away from further work on a mandatory ex ante market.[2]

4. This consultation has provided the detail the industry has needed to test alternative aspects of the design and proposed code amendments. It's fair to say we approached this consultation with the view that the "the-devil-is-the-details." We have benefited from extensive and intensive discussions with EA, System Operator and advisors to the EA (Concept Consulting) staff to address our questions. In this submission, we suggest further details in addition to those discussed in the consultation paper we think need to be considered as design is finalised and implementation can commence.

5. In summary MEUG supports continuing to work on finalising implementation details to introduce RTP. We agree there is likely to be a material positive economic benefit.

6. Responses to questions in the consultation paper follow:

[1] Consultation paper URL http://www.ea.govt.nz/dmsdocument/22389 at http://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/spot-market-settlement-on-real-time-pricing/consultations/
[2] Refer EA decision paper, Making price forecasts more accurate, 15 August 2017, http://www.ea.govt.nz/dmsdocument/22436.

| Question | MEUG response |
|---|---|
| 1. Do you agree with the broad principle of using dispatch prices to determine final prices? If not, please explain your reasoning. | Agree with the broad principle. |
| 2. Do you agree with using the time-weighted average of dispatch prices to calculate prices for a trading period? If not, please explain your reasoning. | Agree using time-weighted average of the six 5-minute dispatch prices (where updated every 5 minutes[3]) to calculate the final price in a trading period (TP) because that is the most pragmatic approach.<br><br>We think volume weighted is a better approach but accept practical limitations. Even better would be TPs of and final prices every 5 minutes; that also has practical limitations at this stage. |
| 3. Do you agree with disestablishing the pricing manager and allocating residual functions to other parties? If not, please explain your reasoning. | MEUG has no concerns with making this change. |
| 4. Do you agree with the general approach of using default scarcity values to handle generation shortages? If not, please explain your reasoning. | The general approach is agreed.<br><br>The proposed scarcity price blocks in table 1 (p19) seem reasonable today. We don't have confidence that will be reasonable in 4 years-time when RTP goes live.<br><br>The reason why scarcity values today may be obsolete in the near-term is rapid growth in deployment of batteries. Transpower expect:[4]<br><br>• "Some specific commercial or industrial end-consumer battery applications are economic now. The case for these would be further strengthened if Time-of-Use lines charging, combined with full open access to all market energy services, were available.<br><br>• Distribution-connected or community-scale batteries are expected to be economic from 2020.<br><br>• Grid-connected batteries are not presently economic and we consider these are unlikely to be so before 2022." |

[3] MEUG notes the RTD price will only be updated during the TP if a change is needed, so theoretically the SPD solution for the first 5 minutes could remain for the whole TP.
[4] Transpower, Battery storage in New Zealand, Discussion Document, published 7 September 2017, selected summary points from p2, refer URL https://www.transpower.co.nz/sites/default/files/publications/resources/Battery%20Storage%20in%20New%20Zealand.pdf at https://www.transpower.co.nz/about-us/transmission-tomorrow/battery-storage-new-zealand

| Question | MEUG response |
|---|---|
| | Discovery of efficient spot prices when batteries are more widely deployed, including in periods when the market is stressed may lead to quite different values and band widths for appropriate default scarcity price steps.<br>MEUG suggest the Code require a review and update of the default scarcity values:<br>• Just ahead of RTP going live; and<br>• Within 3-years of RTP commencing.<br>Codifying the latter overcomes the risk that other work the EA has in the future or lobbying from parties comfortable with the initial set of scarcity values may crowd out resources being used or delay a review. |
| 5. Do you agree with using default scarcity bids before generation or dispatchable demand offered at a higher price in the dispatch schedule? If not, please explain your reasoning. | Agreed. |
| 6. Do you agree the system operator does not need to make changes to the existing process it uses to notify distributors of emergency load shedding? | Agreed. |
| 7. What is your view on the preferred treatment of disconnected nodes? Please explain your reasoning. | No view. |
| 8. Do you agree that it is not desirable to apply a cumulative price limit under RTP? If not, please explain your reasoning | Agree with paragraph 3.46 "Overall, we think it is preferable to not incorporate a cumulative limit in RTP, but instead to rely on existing provisions in the Code relating to rolling outages" |
| 9. Do you agree the current principle of partially relaxing reserve procurement before invoking emergency load shedding should continue under RTP? If not, please explain your reasoning | Agreed. |

| Question | MEUG response |
|---|---|
| 10. Do you agree with the proposed removal of the high spring washer pricing provisions in the Code? If not, please explain your reasoning. | Agreed.[5] |
| 11. Do you agree with the proposed changes for demand inputs? If not, please explain your reasoning. | Agreed. |
| 12. Do you agree that ION meter data should be the primary data source for demand inputs? If not, please explain your reasoning. | Agreed because the benefits of improved data quality from ION meters is likely to exceed the incremental cost to implement of between $120,000 and $180,000 (if not already implemented before RTP goes live in 4-years). |
| 13. What is your view on the best approach to incorporate dispatchable demand within an RTP framework? Please explain your reasoning. | MEUG agrees with the proposal set out in paragraph 3.76 and 3.77 of the proposal paper to dispatch DD from the dispatch schedule rather than the alternative proposal to continue dispatch from the NRS subject to the Electronic Dispatch Facility (EDF) project being implemented to allow demand side participation without the need for a GENCO.<br><br>MEUG suggests further work should be undertaken on the probability and magnitude of possible yo-yo dispatch for DD using in part lessons learned from NST experience as the sole DD participant to date and in part from scenarios of possible future DD participants. Then the solutions as discussed in paragraph 3.75 of the proposal paper such as including ramp rates and minimum cycle times for DD bids can be considered. |
| 14. Do you agree with the proposed features for a dispatch-lite product? If not, please explain your reasoning. | MEUG has approached this question by considering the benefits and costs to a non-conforming load deciding, in a RTP regime, whether to adopt DD-classic, dispatch-lite or neither. A summary of our analysis to date is in appendix A. There are no dollar values for listed benefits and costs and in any case, those may be purchaser specific. Nevertheless, we think it is worth continuing to explore if a dispatch-lite product can be developed in the next steps of implementing a final design for RTP. |
| 15. Do you agree with the proposal to allow revisions to offers and bids within trading periods in some circumstances? If not, please explain your reasoning. | Agreed and likely improvements in intra trading period forecasting and dispatch will exceed incremental cost to implement of between $25,000 to $50,000. |

[5] The Q&A on High spring washer pricing situations published 13 September was a useful supplement to the consultation paper on this topic.

| Question | MEUG response |
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| 16. Do you agree with using the last bid or offer received in a trading period when calculating constrained on and off payments? If not, please explain your reasoning. | Agreed. |
| 17. Do you agree we should retain a process for addressing material pricing errors? If not, please explain your reasoning. | Agreed. |
| 18. Which approach do you prefer for managing pricing errors: a manual claim or automated checking? Please explain your reasoning (this could include suggestions for an automated filter). | No view. |
| 19. If we retain a manual claim process for pricing errors under RTP, who should perform that role: – the system operator? – the Authority? – the pricing manager, as their only function? – some other party? Please explain<br>your reasoning, including regarding any possible conflict of interest. | No view. |
| 20. Do you agree with the proposed treatment of spot prices during market system outages? If not, please explain your reasoning. | Agreed as there does not seem to be any other practical alternative. |
| 21. Do you agree with the proposed changes to forecast schedules to align them with dispatch schedules? If not, please explain your reasoning. | Agreed. |
| 22. Do you agree with the proposed use of dispatch schedules to apportion loss and constraint excess for financial transmission rights each month (if that is required)? If not, please explain your reasoning. | Agreed. |

| Question | MEUG response |
|---|---|
| 23. Do you agree with the proposed approach for transitioning to RTP? If not please explain your reasoning. | Agree with implementation of phase 3 of the electronic dispatch facility (EDF) prior to RTP going-live, implementing RTP using a staged approach and publishing new RTP prices on a pilot basis.<br><br>In addition, MEUG suggests RTP will be enhanced by other complementary work by the EA on:<br><br>a) Work programme A8 Enabling dispatchable demand at conforming nodes.[6] The benefits of RTP will be achieved quicker if there is at the outset a pool of purchasers already in the existing DD regime or are ready to take advantage of the options to be able to actively manage demand side response. Work programme A8 is one means of increasing that pool of purchasers ahead of RTP starting.<br><br>b) Investigating how WITS data could be made more actionable ahead of RTP being implemented.[7] The purpose of this tactic is identical to work programme A8 above, i.e. to increase the pool of purchasers that can actively manage demand side response ahead of RTP starting and therefore realise the benefits of RTP quickly.<br><br>*c)* Improving the accuracy of demand forecasting for non-conforming nodes. The EA has work planned (Project C6) to improve the accuracy of spot price forecasts with an initial focus on conforming loads.[8] MEUG suggests that project be expanded to consider how to improve spot pricing forecasts for non-conforming load for non-dispatch-capable load (ie not in DD market).<br><br>Some non-conforming nodes are:<br><br>~ Small relative to conforming nodes;<br><br>~ Situated where grid constraints are rare; and.<br><br>~ Most demand uncertainty is due to unplanned trips and therefore usually no or minimal system risk (risk is asymmetric). |

[6] A8 is a priority 3 project in Programme A: Evolving technologies and business models. A8 is described as "A project to enable aggregators to aggregate load over several conforming GXPs and several retailers. This involves an expansion of the dispatchable demand (DD) regime" and the reason for doing the work "We are seeking to enable more efficient use of dispatchable demand by allowing third parties to contract with loads at conforming GXPs. This will improve competition and reliability." Refer http://www.ea.govt.nz/dmsdocument/22305

[7] For example, there might be scope for an improved Application Programming Interface (API).

[8] Project C6, Improving accuracy of spot price forecasts, a priority 2 project in Programme C: Pricing and cost allocation. Project C6 is described as to "Improve the accuracy of prices in the spot market forecast schedules available up to 36 hours in advance of real-time" and the reason for doing the work "We want to reduce barriers to retail competition and demand response arising from current spot market arrangements. Improving the accuracy of spot price forecasts is expected to encourage more efficient demand-response and generation scheduling, and benefit those parties looking to employ new technology and business models." Refer http://www.ea.govt.nz/dmsdocument/22305

| Question | MEUG response |
|---|---|
| | In these cases. the current requirements for non-dispatch-capable load at non-conforming nodes to make nominated non-dispatch bids and revise those if expected volumes exceed pre-set ranges in cl. 13.19B impose material compliance costs with possibly no net benefit to NZ Inc. This is often abbreviated as the "DSBF" requirements.[9]<br><br>This compliance burden has undermined the confidence of some purchasers at non-conforming nodes to consider spending effort and resources to more actively participate in demand side response using DD – why spend more money when they are already spending money on DSBF compliance with no obvious benefit to them or the market?<br><br>MEUG suggests using external near-term demand forecasting techniques for small and rarely critical non-conforming nodes may be more accurate and cost effective than the current DSBF approach; hence expanding EA Project C6 to include both conforming and non-conforming nodes should be considered.<br><br>d) Providing prospective dispatchable demand (DD) participants information on the pros and cons of DD as a way of realising any potential DD earlier rather than wait until RTP implemented. MEUG members benefited from the EA monitoring team work alleviating concerns that under the current DD regime suppliers could and would shadow DD bids.<br><br>Part of the benefit of being a DD participant is having spot price certainty by way of constrained on and off payments. MEUG believes potential DD participants would benefit from understanding the frequency and value of constrained on and off payments to NST over the last few years; excluding the initial period before the code was amended to overcome initial design problems with those payments.<br><br>A review of the performance of the existing DD regime would also assist in considering possible future yo-yo dispatch risk as discussed in response to Q13 above. |

[9] Cl. 13.19B also has DSBF requirements for a dispatchable load purchaser making a nominated dispatch bid (ie a DD bid). MEUG has no concerns with that limb of the DSBF requirements.

| Question | MEUG response |
|---|---|
| 24. Do you agree with the objective of the proposed Code amendment? If not, please explain your reasoning. | Agreed. |
| 25. Do you agree with the cost benefit assessment? In particular: – what (if any) other sources of benefit should be included in the assessment? – what is your view on key assumptions, such as the level of improved demand response enabled by RTP? – what (if any) other sources of costs should be included in the assessment? Please explain your reasoning. | MEUG agrees with the conclusion in paragraph 4.22, "In light of the overall analysis, we think there are strong grounds to expect RTP to provide positive net benefits." |
| 26. Do you agree with our assessment of alternative RTP designs? If not, why not? | Agreed. Nothing has changed since the EA consulted on this in April last year.[10] |

7. In conclusion MEUG supports continuing to work on finalising implementation details to introduce RTP. We agree there is likely to be a material positive economic benefit.

8. Implementation details for further consideration fall into three categories. First, those the EA sought views on in the proposal paper. Second, new details arising in this consultation round. Third, complementary work that will enhance or make benefits of RTP realised earlier. Appendix B of this submission lists key implementation details affecting customers in a RTP regime participating directly in the wholesale market for each of those categories. The list cross-references where those topics are discussed in this submission or other sources.

9. We look forward to the EA considering this submission.

Yours sincerely

Ralph Matthes
Executive Director

[10] Refer http://www.ea.govt.nz/dmsdocument/20599

**Appendix A: Initial assessment of DD-classic and D-lite to assist in further consideration of designing a D-lite option**

| Benefits and costs to customers participating in wholesale market | DD-classic | D-lite | Neither DD-classic of D-lite | |
|---|---|---|---|---|
| | | | Non-conforming node | Conforming node |
| **Benefits** | | | | |
| ~ Spot price certainty | Firm.<br>Receive constrained on and off payments.[11] | At Purchasers option (whether comply with bid). Do not receive constrained on and off payments. | Less certain.<br>Even with good demand side response capability will never get as firm price certainty as DD-classic of D-lite. | |
| ~ Avoid load shedding if default scarcity prices apply[12] | Yes, if bid > default scarcity price. | Same as DD-classic. | Unlike DD-classic and D-lite, cannot avoid this risk when default scarcity prices reached. | |
| **Costs** | | | | |
| ~ DCLS approval | There Is an investment cost. | Same as DD-classic.[13] | No cost. | |
| ~ Revenue metering | Required. | Non-revenue metering OK. | Not applicable. | |
| ~ SCADA | Can be required in some cases. | Same as DD-classic, | Not applicable. | |
| ~ Make bids | There is an operating cost.<br>Must comply DSBF revision requirements for DD. | Same as DD-classic, | There is an operating cost.<br>DSBF revision requirements slightly less onerous than DD-classic and D-lite. | Not required. |
| ~ Comply with bids | Yes.<br>Costs associated with non-compliance. | At Purchasers option. Limits on how frequently option can only be exercised. Operating and monitoring costs in deciding when to exercise option. | Not applicable. | |
| ~ Using demand side response if not DD-classic or D-lite. | Not applicable. | Not applicable. | At purchasers option. costs of monitoring the market and deciding when to use demand side response. This can be complicated given less certainty of outcomes compared to DD-classic & D-lite. | |

[11] Constrained on and off payments received for the applicable TP. Customer may be required to rebid and hence not benefit from constrained on and off payments in subsequent TP.
[12] Frequency of default scarcity prices applying is likely to be small and hence the probability weighted benefit is likely to be modest.
[13] Contact Energy asked if for certification as a DCLS for D-lite could be made less onerous that DD-classic. EA have responded this could be considered.

**Appendix B: Key implementation details affecting customers in a RTP regime participating directly in the wholesale market**

| Topic | Notes |
|---|---|
| **RTP design – in EA paper** | |
| ~ Mitigating yo-yo risks for DD. | Refer response to Q.13 in this submission. |
| ~ Designing a D-lite product. | Refer response to Q.14 in this submission. |
| **RTP design – new topics** | |
| ~ Need to review default scarcity values | Refer response to Q.4 in this submission. |
| ~ Approval to be a DCLS | EA may consult further on whether current certification and audit requirements for full DD need also apply for "dispatch-lite".[14] |
| **RTP draft Code amendments[15]** | |
| ~ cl.13.1 | Is this clause relating to rebidding by DCLS within gate closure still needed? EA to reconsider during detailed design phase. |
| ~ cl. 13.19A(3A) | A MW change made 1 TP before dispatch TP results in bid becoming a nominated non-dispatch bid. EA to consider revoking. |
| ~ cl. 13.20 | MW change 15" before TP requires DCLS purchaser that has made a nominated dispatch-bid, or a non-dispatch-capable load at a non-conforming load, to directly contact SO. EA to consider MEUG suggestions to automate. |
| ~ cl. 13.19(A)(3B) | Current prohibition to switch between non-dispatch and dispatch 2 TP before dispatch TP. EA to reconsider for GEN events. |
| **Complimentary to RTP[16]** | |
| ~ Enabling DD at conforming nodes | Refer response a) to Q.23 in this submission. |
| ~ Make WITS data more actionable | Refer response b) to Q.23 in this submission. |
| ~ Non-conforming node D forecasting | Refer response c) to Q.23 in this submission. |
| ~ Existing DD pros and cons analysis | Refer response d) to Q.23 in this submission. |

[14] EA response to Contact Energy.
[15] All these possible changes to the proposed code amendments were noted in the EA response to the MEUG draft memo of 4 September 2017.
[16] Not considered in this submission but mentioned in the EA FAQ's is the possibility of DD bids being subject to the trading conduct provisions.