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

Dear John

Real-time Pricing

We appreciate the opportunity to submit to the Authority's consultation on Real-time Pricing (RTP), published 7 August 2017. We submit in our capacity as grid owner and system operator and note the extensive input of the system operator in the development of the preferred option, prices in real time based on dispatch ('option B').

We consider industry submissions to date demonstrate a good level of support for the real-time pricing concept.[1] Although we are not a participant in the spot market, we expect settlement on dispatch prices in real-time will improve participant confidence in responding to wholesale market spot prices and promote the Authority's statutory objective.

As stated in the report by the system operator, "the level of change is the greatest change to the market tools since their original deployment."[2] We note that the option chosen is the highest cost with a long implementation time; there will be an opportunity cost associated with the selected option over other less complex approaches. Transpower will be responsible for developing and implementing any approved change into market systems which will place heavy reliance on and demand for our specialist resources. While we will continue to support our normal operations, we may have limited ability to respond to any other proposals for material system change that might arise in parallel.

We acknowledge that this consultation is not seeking views on whether to pursue 'option B' or an alternative option. However, we consider that the Authority should satisfy itself that the right balance has been struck between cost, complexity and benefits.

Support continued transparency for policy and design choices

Given the scope of the project, engaging a third-party to facilitate a risk-management workshop between Transpower and the Authority was beneficial to the development of design and process.[2] The workshop assessed project complexity, reviewed how complexity should be managed, and created alignment between the Authority and Transpower on project challenges. The workshop also helped develop a shared understanding of the likely timeline for implementation, including adopting a phased approach to de-risk project delivery. Making the project's *risk and assumptions register*

[1] Authority's decision paper *Real-time pricing options* August 2016 "*Thirteen of the fifteen submissions supported further work specifically on option B in preference to the other identified options*." [paragraph 13]
[2] System operator report TAS060 Chapter 7

available with the consultation paper has provided welcome transparency and clarity for many of the design decisions.

We encourage continuing dialogue with industry to enable the implementation phase of the real-time pricing design. We suggest a working group could be created to support the selection of robust design choices that are practicable and minimise the risk of costly and disruptive re-work. Equally, the group would help communicate with wider stakeholders so that they are engaged, informed and well-prepared for when the system goes live.

Discretion of system operator

The Code provides the system operator discretion to alter, or deviate from, the dispatch schedule to meet the dispatch objective (clause 13.57). Under real-time pricing, the dispatch schedule will be used to calculate settlement prices so any constraints imposed or altered by discretion would be included in the determination of settlement prices. As identified in the consultation paper, we expect no changes to current processes for real-time system operation.

If the model produces prices that show scarcity values (indicating a supply shortage creating a supply / demand imbalance) then the system operator can initiate demand management processes. The input to instigating demand management process for scarcity values in the dispatch is the same as for grid emergencies i.e. the physical state of the power system (frequency and voltage). The system operator will continue to account for any discrepancy between modelled and actual supply and demand imbalance. If demand management is instructed, then default scarcity pricing bids would be used in price formation.

As the implementation process unfolds the system operator can make available relevant operational processes to stakeholders for clarity on how discretion is applied. In addition, the system operator's policy statement[3] describes the dispatch policy and the means the system operator uses in real-time to meet the dispatch objective. We encourage participants to engage in the regular reviews of the policy statement to best inform the development of the dispatch policy under real-time pricing.

Please contact me in about any points made in this submission,

Yours sincerely

Catherine Jones
Regulatory Affairs and Pricing Manager

[3] For example, the recent consultation on the policy statement for 2017 is available here

Appendix – response to questions

Question	Response
Q1 Do you agree with the broad principle of using dispatch prices to determine final prices? If not, please explain your reasoning.	Yes. Settlement on dispatch prices in real-time should improve participant confidence in accurately responding to wholesale market spot prices. More accurate consumption decisions should result in improved allocative efficiency and promote the Authority's statutory objective.
Q2. 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.	Yes. The time-weighted approach to price-formation is • consistent with the approach to reconciliation and clearing of volume, and • lowest cost with least change to implement.
Q3. Do you agree with disestablishing the pricing manager and allocating residual functions to other parties? If not, please explain your reasoning.	Yes. The removal of the ex-post pricing process could mean the residual functions are too costly for dedicated resource. We agree the clearing manager could manage the revised interim prices process. To ensure no loss of market information that supports competition and risk management, we support all existing data-sets that were produced by the pricing manager to continue to be produced.
Q4. Do you agree with the general approach of using default scarcity values to handle generation shortages? If not, please explain your reasoning.	We agree that assigning a default value to all load is necessary to enable the SPD (scheduling, pricing, dispatch) model to solve in real-time. We have not considered the appropriateness of the scarcity values and load proportions. When dispatch pricing is in operation, the values may need to be reviewed.
Q5. 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.	We defer to the responses of participants directly affected by the design choice.
Q6. 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?	Yes. We agree the introduction of RTP would not require a change to the existing processes.

Question	Response
Q7. What is your view on the preferred treatment of disconnected nodes? Please explain your reasoning.	We are comfortable with the proposal by the system operator to use a proxy price, although we defer to the responses of participants directly affected by the design choice. A further idea is to investigate the viability of building the grid model for the dispatch schedule from the SCADA indications for grid assets. As with the proposal for proxy price, existing grid owner offer policy would not change. We consider there is a wider market design question of whether **for dispatch**, prices at all the market nodes are needed. As we submitted previously[4], "there may be value in considering other market design issues that drive price risk for purchasers; for example, whether it is necessary for all nodes on the grid to be pricing nodes."
Q8. Do you agree that it is not desirable to apply a cumulative price limit under RTP? If not, please explain your reasoning.	Unsure. While we agree with the design objective that prices must be formed in real-time to be actionable, we consider the design would not be working properly if the remedy relies on recourse to rolling outages. The removal of the cumulative price limit could increase pressure on the system operator to deploy rolling outages when capacity is constrained, rather than using existing grid emergency process. An alternative option could be to apply scarcity pricing for both capacity (grid emergencies) and energy (security of supply) shortfalls. A generic cumulative price limit could mitigate participant exposure to sustained periods of scarcity prices and reduce the complexity of investment decisions.

[4] Transpower submission *Aligning forecast and final prices* 23 August 2013, to Wholesale advisory group.

Question	Response
Q9. 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.	Yes, we agree with the principle of partially relaxing reserve procurement before invoking emergency load shedding. The inability to maintain normal reserve cover should trigger a Constraint Violation Price (CVP) in the dispatch schedule. We anticipate that the CVP will reflect the expected cost of an AUFLS event caused by a shortfall in reserves, and that it will be lower than the lowest scarcity pricing value. This CVP may need review as we develop RTP, and equally could evolve over time once RTP is operating.
Q10. Do you agree with the proposed removal of the high spring washer pricing provisions in the Code? If not, please explain your reasoning	Yes. The removal is a necessary consequence of moving to dispatch pricing.
Q11. Do you agree with the proposed changes for demand inputs? If not, please explain your reasoning.	Yes. We expect the specification of demand input to the dispatch schedule to be a significant work stream for the implementation phase of the project. As the owner of both the SCADA system and IONS meters which now play the key role for price formation, we consider the Code will need to provide a clear definition for the demand input and description for the process.
Q12. Do you agree that ION meter data should be the primary data source for demand inputs? If not, please explain your reasoning	Yes. The objective for price certainty under RTP requires confidence in the robustness of the forecast demand used in price formation. As the owner of both the SCADA system and IONS meters which now play the key role for price formation, we consider the Code will need to provide a clear definition for the demand input and description for the process.
Q13. What is your view on the best approach to incorporate dispatchable demand within an RTP framework? Please explain your reasoning.	We defer to the responses of participants directly affected by the design choice.

Question	Response
Q14. Do you agree with the proposed features for a dispatch-lite product? If not, please explain your reasoning.	The system operator's TAS060 report raised a concern for security (refer section 3.5.2) because of the potential for divergence of load bid and actual consumption. Further work with the Authority will be needed to understand any impact on, and possible mitigations for, system security.
Q15. 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.	Yes. The design element is an improvement on the current manual process for system co-ordinators, and should reduce risk of any errors.
Q16. 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	We defer to the responses of participants directly affected by the design choice.
Q17. Do you agree we should retain a process for addressing material pricing errors? If not, please explain your reasoning.	Yes. Transpower as the system operator is well placed to assume responsibility for the role.
Q18. 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)	The approach chosen may depend on understanding the likelihood of price error claims and assessing which approach is most cost-effective.
Q19. 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 your reasoning, including regarding any possible conflict of interest.	Transpower as the system operator is well placed to assume the responsibility for investigating pricing error claims.
Q20. Do you agree with the proposed treatment of spot prices during market system outages? If not, please explain your reasoning.	Yes, we agree with the design as proposed (to use the last dispatch price, and to use the price responsive schedule (PRS) if the outage extends past the trading period).

Question	Response
Q21 Do you agree with the proposed changes to forecast schedules to align them with dispatch schedules? If not, please explain your reasoning.	Yes, we agree with the proposal for the forecast schedules to treat energy and reserve shortfalls the same as dispatch schedules. We also agree not to pursue (now) increasing the frequency of the forecast schedule to align with dispatch, and note the forecast uses only a single grid configuration for each trading period.
Q22. 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	We assume the use of dispatch prices should not affect the current process for apportioning loss and constraint excess to financial transmission rights, but seek clarification on the process from the Authority.
Q23. Do you agree with the proposed approach for transitioning to RTP? If not please explain your reasoning.	Yes, we support the Authority working with the system operator to develop a detailed implementation plan (after the Authority Board has approved the RTP design).
Q24. Do you agree with the objective of the proposed Code amendment? If not, please explain your reasoning.	Yes, to make spot prices more actionable and resource efficient.
Q25. 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.	We consider the CBA is likely to understate the costs of introducing RTP. For example, the cost analysis should recognise participant adaption costs, as raised in TAS 60 [page 22] "Such a wide-reaching and complex change brings inherent risks. To implement RTP would also require many external parties (e.g. service providers and market participants) processes and systems to be modified." For the grid owner, for example, the time and costs of any reconfiguration of the IONS meters would need to be included.

Question	Response
Q26. Do you agree with our assessment of alternative RTP designs? If not, why not?	In our previous submission on the options presented for Real Time Pricing, we wrote " the quantified CBA as a tool for assessing between options would need to articulate the trade-offs or features such as certainty, accuracy and the potential for gaming, as well as costs". No new information was presented in this consultation paper to understand how the trade-offs were made. We note that the option chosen is the highest cost with a long implementation time; there will be an opportunity cost associated with the selected option over other less complex approaches. We consider that the Authority should satisfy itself that the right balance has been struck between cost, complexity and benefits.