29 November 2024

Electricity Authority
PO Box 10041
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Submitted via email to OperationsConsult@ea.govt.nz

Consultation Paper – Scarcity pricing

1. Thank you for the opportunity to submit on the consultation paper 'Update to scarcity pricing settings.'[1] This submission is not confidential and can be publicly disclosed.

2. Orion owns and operates the electricity distribution infrastructure in Central Canterbury, including Ōtautahi Christchurch city and Selwyn District. Our network is both rural and urban and extends over 8,000 square kilometres from the Waimakariri River in the north to the Rakaia River in the south; from the Canterbury coast to Arthur's Pass. We deliver electricity to more than 228,000 homes and businesses and are New Zealand's third largest Electricity Distribution Business (EDB).

3. Orion largely supports the changes proposed to scarcity pricing in the consultation paper. Our specific responses to the questions posed by the Authority are set out in Appendix A.

4. However, Orion is deeply concerned by paragraph 3.54 of the consultation paper, which states:

   3.54. While controllable load is a useful tool for managing periods of tight supply, we want to see consumers directly rewarded for their demand response efforts. ***To achieve this, we want to see controllable load shift from distributors to retailers*** *so that retailers can price this demand response in the market* ***to support the management of potential scarcity situations****.*

5. This statement represents a significant and concerning policy shift by the Authority, and appears to clash with the position outlined in the recent Code Review Programme #6 consultation, which states "*load…lost to the distributor during a grid emergency…could put the power system at risk*."[2][3] We strongly object to both the substance of this new position and the manner in which it has been introduced - as an incidental statement within an otherwise unrelated consultation.

6. We urgently request clarification from the Authority on whether this represents an explicit policy objective regarding the future of Orion's ability to control load on our network. If fully transferring controllable load from EDBs to retailers is the confirmed outcome that the Authority desires, it is critical that the Authority fully consider the impacts of this decision, and Orion's ability to effectively respond to a grid emergency (in a scarcity situation requiring emergency load shedding) in the future without curtailing customer load by tripping feeders. We consider that a formal consultation process would be beneficial to support this transition, to fully examine the risks, benefits, and unintended consequences that may materialise.

[1] https://www.ea.govt.nz/documents/5966/Consultation_paper_-_Update_to_scarcity_pricing_settings.pdf
[2] https://www.ea.govt.nz/documents/5479/Code_review_programme_6_consultation_paper.pdf
[3] While a scarcity pricing situation is not explicitly defined as a grid emergency, grid emergencies occur when the balance between electricity supply and demand is disrupted, posing a risk to system stability and reliability.

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7. We strongly support the development of a competitive market of third-party owners and operators of demand flexibility on our network. However, that must not, and should not, preclude our ability to continue to operate controllable load for our network management purposes and to assist the System Operator with security of supply and in response to both grid and network emergencies.

8. By working in extensive collaboration with other EDBs, Traders and the ENA, we are actively supporting the development of a Load Management Protocol that ensures that both EDBs and Traders are able to operate controllable load in parallel, while still ensuring an effective and robust emergency response during scarcity events and other grid and network emergencies. This partnership has the potential to create value-stacking opportunities so that consumers can receive maximum value for the flexibility potential in their devices, while maintaining crucial security of supply. However, this potential can only be realised through careful coordination between EDBs and retailers, not through the wholesale transfer of control from one party to another.

9. We have previously invited the Authority to better understand our approach to load management, and we again extend this invitation. We believe there would be significant value in demonstrating our current load management capabilities and, importantly, our ongoing trials with retailers to develop more sophisticated control mechanisms.

10. We have outlined our significant concerns to the Authority's statement in paragraph 3.54 below.

Operational concerns

11. Of particular concern are the end-consumer impacts that will materialise if control of load is fully transferred from EDBs to retailers in scarcity events. Unlike EDBs, retailers do not have obligations under Part 8 of the Code regarding their response during grid emergencies (including tight electricity supply). In the emergency described by the Authority (paragraph 4.4), if EDBs lose controllable load capability, but were instructed to reduce load by the System Operator, we would be forced to resort to feeder-level disconnections rather than managed load reductions, which is a significantly more disruptive outcome for all consumers.

12. As we outlined in our response to Code Review Programme #6, in response to the Transpower Customer Advice Notice (CAN) in May 2024, Orion was able to reduce network load by 52MW (nearly 10% of total network load at that time). The ability for EDBs to respond rapidly and effectively to such situations could be severely compromised under uncoordinated, retailer-only, load control.[4]

13. A recent event further highlights our concerns. On 21 November 2024, an electrical storm affected the Islington - Waipara - Culverden - Kikiwa circuits, requiring Upper South Island and Orion load management due to a drop in the Voltage Stability Limit. In such situations, uncoordinated management and restoration of load by all retailers operating on our network could have significantly impacted network and grid stability. This demonstrates why enabling shared control is of a paramount concern for Orion, as the load management protocol will assist with preventing load restoration by others when an EDB has reduced load at the direction of the System Operator.

[4] https://www.oriongroup.co.nz/assets/Our-story/Submissions/EA/Orion-submission-Programme-6-October-2024.pdf

14. Uncoordinated control of hot water by third parties on our network also creates several other significant operational risks and challenges that the Authority should consider:

    a. When retailers respond to spot price changes, their actions can conflict with our load management system. For example, during high-price, high-load periods, retailer load reduction may trigger our system to restore other consumers' hot water to maintain adequate service levels (ensuring sufficiently hot water for consumers) – inadvertently increasing load exactly when the system is stressed, and leading to higher costs for consumers.
    b. Conversely, when spot prices drop, uncoordinated restoration can create severe network stability issues. Internal analysis shows that simultaneous restoration of all hot water load could create peaks of up to 480MW. Given our current network limit of 625MW, uncoordinated hot water restoration could potentially create a new peak of 1,105MW – well in excess of our network limit.
    c. The lack of visibility into how load is being managed by other parties results can also result in inaccurate controllable load forecasts. This uncertainty would require Orion to underbid load management offers in the wholesale information and trading system (WITS) during grid emergencies, which could result in unnecessary expensive generation dispatch by the System Operator.
    d. Finally, it may also cause Orion to exceed load limits that are set by Transpower during planned grid maintenance activities due to unforecast and unexpected load restoration. Furthermore, this uncontrolled restoration removes all natural diversity in load patterns and could cause massive demand ramp rates if not properly managed.

Security of Supply

15. The Authority has indicated that security of supply for winter 2025 is a critical priority, with scarcity pricing being just one of several initiatives aimed at supporting this objective (paragraph 4.36). Our ability to provide immediate, coordinated load reduction is an essential tool for the System Operator in maintaining security of supply - particularly during the transitional period while other market mechanisms mature. A premature shift to retailer-controlled load would fragment this coordinated response capability across multiple commercial entities, potentially introducing delays and challenges during critical grid events when immediate action is required.

16. Any reduction in EDB load control capabilities would significantly impact the system's overall resilience during this critical period. While retailer-based demand response may develop over time, the immediate loss of proven EDB load control capabilities would create unnecessary risk during a period when the Authority has identified security of supply as a key concern.

Technology limitations

17. The Authority's proposal appears to overlook significant technological limitations. Only approximately 25%[5] of all residential ICPs on Orion's network have smart meters that are currently capable of supporting retailer-facilitated load control. In our conversations with retailers, we understand that this is growing by approximately 5-10% per year.

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[5] Note: Orion has one of the highest smart meter penetration rates in New Zealand. This varies widely across other EDBs.

18. It is premature to signal a wholesale shift of controllable load from distributors to retailers without acknowledging the extensive time required to achieve wider smart meter deployment across all EDBs. We would expect that developing a clear pathway to enable this transition is the necessary first step, along with fully understanding and appreciating the depth of changes that will be required to enable this change.

Customer incentivisation and participation

19. The Authority's apparent assumption that consumers are not currently rewarded for demand response on Orion's network is incorrect. Through our extensive ripple control system, which includes 43 injection plants across 26 urban and 17 rural substations, we already deliver significant and quantifiable benefits to consumers.

20. As we outlined in our response to Code Review Programme #6, our investment in our ripple control system enables us to reduce network peak demand by approximately 20% via both Peak and Fixed Time Control. The deferral of network investment equates to a significant benefit to Orion's consumers of over $19.5m each year.[6]

21. As a result of this network investment deferral, retailers on our network see a savings on their network line charges of around $167 for each customer on fixed time control, and $43 for each customer on peak time control. The visibility and accessibility of these savings for residential consumers depends on the tariffs offered by retailers. Our load management delivers additional system-wide benefits by removing over 50MW from network peaks daily through fixed time control, and over 100MW during winter peaks through combined peak time and fixed time control. This reduces the amount of generation that must be dispatched during peak periods.

22. Orion's load management is also highly efficient, achieving $19.5m in annual savings through approximately 100 hours of managing the largest peaks. Internal analysis has identified that for retailers to achieve comparable value, they would need to control for approximately 1,190 hours, assuming all smart meters could control hot water (currently only 25% can) and that they could control hot water cylinders dynamically with perfect spot price forecasting and no ramp rate limits imposed by the System Operator.

23. Orion's ripple load control system ensures equitable access to benefits across all consumers, regardless of their retailer. Moving to retailer-only control could create inequities where only consumers with new, compatible, smart meters can participate. In addition, benefits may vary significantly between retailers and result in sub-optimal outcomes for consumers. Furthermore, by removing our ability to control and mitigate network peaks, network charges would increase for all consumers – further disadvantaging consumers who are either unable or unwilling to participate in a retailer scheme.

Investment and regulatory uncertainty

[6] https://www.oriongroup.co.nz/assets/Our-story/Submissions/EA/Orion-submission-Programme-6-October-2024.pdf

24. The Authority has committed to "*ensure the Electricity Industry Participation Code 2010 is responsive and provide[s] regulatory certainty to attract and support the infrastructure of investment that will be needed - in generation, transmission and distribution*."[7] Furthermore, the Authority acknowledges that "*if demand can be better managed locally* [implying the continued involvement of distributors managing local demand], *then fewer network upgrades and less new generation may be needed to meet periods of peak electricity demand*."[8] This recognition of distributors' future role in demand management directly contradicts the proposed shift of controllable load to retailers.

25. Our current ripple control system represents substantial historical investment that delivers demonstrable consumer benefits. If this capability is diminished or lost, we will need to accelerate capital investment in network capacity upgrades, ultimately leading to higher costs for consumers. The suggestion that this capability should shift entirely to retailers appears to conflict with these stated policy objectives around infrastructure investment and demand management.

26. The Authority's acknowledgment that it is "*making increasingly difficult trade-offs about where to focus resources*"[9] makes it even more critical that existing, proven infrastructure investments that support security of supply and reduce consumer bills are not undermined by policy changes that could impact security of supply and increase costs for consumers.

Conclusion

27. Thank you for the opportunity to provide feedback on this consultation. We welcome the opportunity for further dialogue with the Authority to demonstrate our load management capabilities and discuss how we can work together to achieve the best outcomes for consumers while maintaining security of supply.

28. If you have any questions or queries on aspects of this submission which you would like to discuss, please contact us on 03 363 9898.

Yours sincerely,

Connor Reich

Regulatory Lead – Electricity Authority

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[7] https://www.ea.govt.nz/documents/6012/Levy-funded_appropriations_202526_-_consultation_paper.pdf, paragraph 2.24.
[8] Ibid, paragraph 2.30.
[9] Ibid, paragraph 2.48.

Appendix A

Submitter	Orion New Zealand Limited ("Orion")

Questions	Comments
Q1. Do you support the proposal to raise energy scarcity prices? Please explain your answer.	While Orion understands the Authority's rationale for raising energy scarcity prices, we have several fundamental concerns: 1. The consultation presents an inherent contradiction in its consumer protection objectives. While the Authority states it wants to "better reflect consumer expectations that power cuts should not occur while there is generation capacity available for dispatch" (paragraph 5.2), this approach prioritises dispatching extremely high-priced generation over controlled load reduction. While most consumers are not directly exposed to spot prices, these extremely high-priced generation costs are ultimately passed through to consumers via their retailers' pricing. 2. As demonstrated in the 10 May 2024 event (scenario 1, p.16), simply raising price levels does not address the underlying issue where generators can strategically set offer prices just below scarcity thresholds. The Authority's response to such behaviour appears to be limited to post-event monitoring with unclear consequences, which does not provide sufficient market certainty or prevent gaming behaviour.
Q2. Do you support the proposal to set energy scarcity prices at values consistent with 2018 VoLL ($17,000/MWh, $25,000/MWh and $40,000/MWh)? Please explain your answer.	While the proposed values may better reflect VoLL, we are concerned that the focus on price levels misses more fundamental issues. The consultation acknowledges that the 10 May 2024 price spike was "likely experimentation with offer strategies" (paragraph 5.15) but does not propose mechanisms to prevent similar behaviour at the new, higher price levels. We recommend the Authority consider additional Code provisions to prevent strategic pricing just below scarcity thresholds. Our concern is with the broader system design rather than specific price points. The consultation document notes the system operator's need to apply discretion in multiple scenarios, which creates market uncertainty. We believe clear rules would be preferable to relying on discretionary intervention.

Q3. Do you support the proposal to reduce the number of reserve scarcity prices from three tranches to one tranche? Please explain your answer.	No comment.
Q4. Do you support the proposal to set reserve scarcity prices at $4,000/MWh for FIR and $3,500/MWh for SIR? Please explain your answer.	No comment.
Q5. Do you support the proposal to raise the price of controllable load to $16,000/MWh? Please explain your answer.	No comment.
Q6. Do you have any comments on the drafting of the proposed amendment?	See our response to Q1 and Q2.
Q7. 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 main objective in section 15 of the Electricity Industry Act 2010.	No comment.
Q8. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?	The analysis focuses too narrowly on price levels while failing to address more fundamental market design issues. The Regulatory Statement should consider: • The costs and risks associated with reduced load control certainty. • The market efficiency impacts of continued reliance on system operator discretion.

	• The potential for gaming behaviour at new price levels and the resultant increased costs for consumers.