28 August 2025

Electricity Authority
PO Box 10041
Wellington 6143

Submitted via email to taskforce@ea.govt.nz

Consultation Paper – Establishing an Emergency Reserve Scheme

Introduction

1. Orion welcomes the opportunity to submit on the Electricity Authority's (Authority) consultation paper 'Establishing an Emergency Reserve Scheme'.[1]
2. No part of this submission is confidential.
3. 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 230,000 homes and businesses and are New Zealand's third largest Electricity Distribution Business (EDB).
4. Orion's Control Period Demand (CPD) pricing represents one of New Zealand's strongest Commercial and Industrial (C&I) consumer demand flexibility incentive programmes. CPD does not require a contract between Orion and the C&I consumer to participate, and it is the consumers' choice as to whether they respond to any (or every) control period. Through this mechanism, we provide clear and actionable price signals that incentivise C&I customers to reduce their network charges by shifting load away from peak periods. At current prices, our Major Connection Category C&I customers will save about $134 in annual charges for every 1kW of average reduction during this winter's control periods.[2]
5. Orion participates in the Upper South Island (USI) Load Management Group, alongside Alpine Energy, Buller Electricity, EA Networks, MainPower, Marlborough Lines, Network Tasman, and Westpower. This group collectively shifts an aggregated 140MW of flexible hot water demand from network and transmission peaks via ripple. This delivers substantial benefits to member Electricity Distribution Businesses (EDBs), Transpower (as Grid Owner), the System Operator (SO), the wider energy system (including retailers) and, ultimately, consumers through reduced infrastructure costs.[3]

[1] Establishing an Emergency Reserves Scheme
[2] Refer to Delivery pricing for major customer connections – Summary for further details on CPD.
[3] Benefits include: delaying investment and reduced transmission charges for EDBs; reduced or delayed transmission investment needs; supporting grid voltage stability and improving the SO's management of transmission outages, and the wider energy system through lower wholesale prices for retailers.

General Comments

6. Orion is concerned about the short-term focus of the consultation and questions the need for activation ahead of winter 2026. A longer timeframe would allow the Authority to gain a more nuanced understanding of the fundamental issues, reducing the risk of implementing a 'band-aid' solution that will not endure. In the case of this consultation, we understand that the Authority is attempting to solve two issues with the ERS:

    i. **System Efficiency:** Demand does not respond well to wholesale market signals

    ii. **System Security:** More support for the SO in emergencies

    We believe that the ERS may support system security but will not help (or may even hinder) system efficiency. We encourage the Authority to address demand-side participation issues through targeted, problem-specific solutions rather than bundling this issue with the ERS. While Orion believes that market-activated demand flexibility will be a better long-term solution than the ERS, we acknowledge that a balance must be struck between quick implementation and more enduring long-term solutions. Therefore, if ERS is needed to support system security in winter 2026, Orion submits that the ERS scheme should be implemented with a fixed lifetime to ensure system efficiency issues are addressed.

7. Orion recommends that the Authority reprioritise focus on market-activated demand flexibility before further considering the ERS. Additional action is required by the Authority to understand why the latent potential of demand flexibility is not responding to extreme spot prices in the current market. Based on our CPD signal, we believe there is significant demand flexibility available that is not currently encouraged to respond to the wholesale market:

    i. Orion's major customer Control Period Demand (CPD) charge, with incentives set at $134,000 per MW of average peak reduction per year (equivalent to ~$1/kWh), results in 20 MW of demand response on our network.

    ii. Since 2020, there have been 72 trading periods with prices above $1/kWh at the OTA2201 node; however, the same customers who respond to CPD on our network are not incentivised to respond at the equivalent wholesale value, even though these customers have flexible demand that is available. This represents the market's inefficiency in encouraging demand-side participation. Orion is addressing this issue by launching the C&I flexibility project, which involves collaborating with retailers to promote our CPD signal and provide customers with value for responding to retailer-specific incentives.

    iii. Orion and Octopus Energy have partnered in the Resi-Flex Saving Sessions trial to provide rewards to Orion's residential customers for reducing load at peak times. On average, Orion customers have reduced their load by 50% during peak events. Orion understands that Electric Kiwi offers a similar incentive to customers. Orion questions why other retailers, even those with significant controllable loads, have not provided a similar benefit to their customers for demand response to extreme market prices.

    iv. Orion submits that a standardised mechanism for Fixed Priced Variable Volume (FPVV) customers to respond to extreme wholesale prices would likely support demand side participation in the market more than the ERS.

8. While the activation of the ERS is proposed to cost less than VoLL. Procuring and setting up the ERS could be a large cost, resulting in the ERS costing more than VoLL. If implemented, the Authority should ensure that the total ERS cost does not exceed VoLL.

9. Orion recommends that the Authority release its expected bill impact for consumers from the ERS. Historical data can be used to provide the number of events that would have been called and whether the ERS would have provided sufficient support to avoid uneconomic load shedding. The ERS will cause consumers to pay more for electricity; therefore, the Authority needs to ensure that the scheme offers good value for consumers.
10. Orion strongly disagrees with the rationale that only demand-side flexibility should be eligible to provide the ERS. The Authority states that the ERS is designed to prevent uneconomic load shedding. In an emergency, all load reduction or generation should be used to provide support. In an emergency, every MW counts – regardless of the technology used to drop load or increase generation. Orion submits that a significant amount of generation capacity is not part of the market, as it is reserved for emergency and outage mitigation purposes. Examples are provided in Q4 Appendix A. Excluding this generation from participating will artificially increase the cost of the ERS and increase costs to consumers. Orion requests that the Authority clearly define "On-site generation" to help resolve this issue.

11. The addback mechanism should only apply where the procured energy through ERS costs more than the scarcity price. Overseas examples of emergency response schemes referenced in this consultation acquired energy at prices significantly below the scarcity price. Where energy is procured for less than the scarcity price, it should not be added back to the nodal load schedules. In this scenario, there is no scarcity because the load was willing to respond for less than the scarcity price, and instead, this represents the inefficiency of the market in encouraging demand-side response to extreme spot prices. Orion submits that the same approach should be used in the case of EDBs' discretionary controllable loads, where scarcity pricing is used as a trigger to dispatch an EDB's controllable load. When EDB's controllable load is used, it is added back into the nodal load schedule, implying that the cost of load reduction is greater than the scarcity price, even though EDB's load control is generally extremely low-cost. Again, this response does not represent scarcity; rather, it is a solution to the fact that the market is not effective at incentivising demand-side participation. Adding the EDB controllable load back to the nodal forecast, therefore, misrepresents scarcity and does not provide consumers with the cost avoidance that should result from their load response. In short, if the load is willing to respond for a price lower than the scarcity price, the situation shouldn't be treated as scarcity, and the 'add-back' mechanism should not be used.

12. Orion is concerned that progressing the ERS scheme will come at the expense of unlocking market-activated demand response. As acknowledged by the Authority, many customers are not responding to spot prices for various reasons. We understand that the Authority views the ERS as a mechanism to foster demand-side flexibility in the market. However, Orion does not believe the ERS would be particularly effective at enabling further demand participation. Orion recommends that the authority focus on market-activated demand flexibility before implementing the ERS.
13. Our specific responses to the questions posed by the Task Force are set out in Appendix A.

Concluding remarks

14. Orion thanks the Authority for the opportunity to submit on this consultation. Below is a summary of our key points:

    i. **If there is a strong need for support in extreme events, the ERS is a good temporary solution:** If there is a demonstrable need for emergency support in peak times over the next few years, Orion supports the ERS implementation. Orion understands that a balance must be struck between what can be implemented quickly and prioritising more enduring long-term solutions. Orion submits that the ERS scheme should be implemented with a fixed lifetime to ensure targeted system efficiency solutions are developed in the future.

    ii. **The Authority should focus on market-activated demand response:** We understand the rationale for investigating an ERS to enhance security of supply but are concerned the Authority are using the ERS as a 'band aid' for the market's inefficiency at incentivising demand response. We encourage the Authority to reprioritise market-activated demand response, as we believe this will deliver better outcomes for consumers and also support the system in times of scarcity.

    iii. **Demand-side flexibility alone is too narrow:** We disagree with limiting ERS eligibility to demand-side flexibility. Off-market generation should be included to avoid unnecessary cost increases and improve system resilience.

    iv. **Market signals are ineffective at driving demand response:** Despite high spot prices, we observe that customers who respond to our CPD pricing do not react similarly to wholesale market signals, indicating a disconnect between market incentives and consumer behaviour. The ERS will do little to fix this issue.

    v. **Cost control is critical:** If the ERS is implemented, the costs must remain below the Value of Lost Load (VoLL), and we also recommend publishing expected and real bill impacts to assess ERS effectiveness.

    vi. **'Add-back' mechanism should reflect true scarcity**: Load should only be added back to nodal schedules when the cost of the procured response exceeds the scarcity price (or the price the load responds at). Otherwise, it misrepresents scarcity and inflates consumer costs. This principle should also be applied to EDB's controllable load that is required to dispatch at scarcity prices.

    vii. **Focus on demand side participation first**: Due to the significant issues raised in this document, Orion believes the design of the scheme needs to be reconsidered. We are concerned that the Authority has prioritised this workstream over a focus on enabling more demand-side participation in the market.

15. We encourage the Authority to coordinate with relevant workstreams, including the FNF Load Management Protocol project, to ensure coherent, system-level outcomes.

16. Further work is required to understand why the market is ineffective at encouraging demand-side participation.

17. 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,

Mitchell Davis
Flexibility and Markets Development Lead

Appendix A

Submitting organisation	**Orion New Zealand Limited ("Orion")**
Contact person	**Mitchell Davis**

Questions	Comments
Q1. Do you agree with our rationale for establishing an ERS? Why/why not?	Orion understands the rationale for investigating the potential of an ERS based on system security. However, more work is required to understand the actual need for an ERS, especially for winter 2026. The ERS will increase the electricity cost to consumers and may reduce system efficiency; therefore, it should only be implemented if there is a strong and demonstrable need to do so. Orion submits that further consideration of an ERS should be focused wholly on security of supply, and that the ERS should not be considered a solution to address the market's ineffectiveness at enabling demand-side participation.
Q2. Are there other factors or risks you consider relevant to our decision to implement an ERS?	Orion is concerned that the Authority is looking to implement a short-term 'band-aid' solution that does not solve the root causes of the issue the Authority is trying to address. However, if a demonstrable need for more emergency support for Winter 2026 is seen, Orion, in principle, agrees that an ERS could be worth further investigation. Orion is concerned that the ERS may have distortionary impacts on the market. The additionality requirements, as currently written, are not clear on how price-sensitive load would be excluded from the ERS. If ERS pre-activation occurs, loads that might otherwise turn off during high spot prices may remain on. This issue is especially relevant for current FPVV customers who do not respond to the market's current signals. Therefore, we believe the authority should first focus on unlocking market-activated demand response before implementing the ERS.
Q3. Do you agree with our proposal that only demand-side flexibility, including by industrials and aggregations of smaller consumers, should be eligible to provide ERS?	Orion strongly disagrees with the rationale that only demand-side flexibility should be eligible to provide the ERS. The Authority states that the ERS is designed to prevent uneconomic load shedding. In an emergency, all load reduction or generation should be used to provide support. In an emergency, every MW counts, regardless of the technology used to drop load or increase generation. Orion submits that a significant amount of generation capacity is not part of the market, as it is reserved for emergencies and outage mitigation. Excluding this generation from participating will artificially increase the cost of the ERS scheme, increase costs to consumers, and provide no benefits in doing so. The Authority justifies not including generation and or batteries in the scheme because they should be participating in the spot market already. If the market were effective at encouraging

		demand-side participation, the same logic could apply to load. However, the logic cannot be applied to load because the market is ineffective at incentivising demand-side participation. Demand is willing to respond at significantly lower prices than scarcity. E.g. Orion Major customer control period charges, Transpower May 2024 call for load reduction, Octopus's Saving sessions and Electric Kiwi's Peaky Bank. Orion questions why only a small number of market participants provide incentives to their customers in response to extreme prices. We encourage the authority to consider how the system can better utilise the resources we currently have. For example, currently, EDB's controllable load is utilised by the SO when the scarcity price is reached. Orion submits that EDBs' load control is very low-cost and could be utilised well before scarcity pricing is reached. The scarcity price is used as a dispatch mechanism due to its convenience. However, the scarcity price dispatch mechanism poorly represents the nature of the controlling party, the cost of the controllable load (EDB controllable load is very cheap), and is inefficient (leaving a readily available, cheap controllable load to be used as a last resort). Further to this point, the current 'Add-back' mechanism for EDBs controllable load misrepresents scarcity and does not provide customers with any cost reduction for the load they have provided to the system. The example above highlights the need for the authority to prioritise system efficiency, ensuring that current resources are provided with the right signals and allow effective response to system needs.
Q4.	Are you aware of any off-market generation or batteries that may not be activated in an emergency if they are not included in an ERS? Please provide details of the type and scale of these resources.	Yes, there is significant off-market generation that would not currently be activated in a grid emergency. Specifically, hospitals, supermarkets, important community and civil defence facilities often have off-market generators. On Orion's network, there is around 40MW of generation capacity within our major customer category, which consists of less than 500 ICPs. There is likely more generation capacity outside of this customer category on our network. Orion's network accounts for 10% of New Zealand's electricity consumers; therefore, it can be approximated that around 400MW of out-of-market generation is available throughout New Zealand. It is unclear what the Authority means by "On-site generation". If "On-site generation" refers to any additional generation behind the meter, then most off-market generation would be eligible to participate in the ERS.
Q5.	Do you agree with our proposed design elements for procurement of ERS by the System Operator,	Orion submits that there are multiple methods this scheme could be procured and largely agrees with the procurement processes outlined here.

including the procurement process, timing and trigger?	
Q6. Do you consider that procurement up to 4 weeks in advance of an identified need, coupled with a pre-approved panel of providers, will be effective and provide adequate time for potential providers and the System Operator?	Orion agrees this will likely be enough time, considering the pre-approved panel of providers. However, this will depend on the technical requirements imposed by the SO. The SO will also need to consider how to baseline load in this scheme. Baselines are used to compare the electricity load expected to be used with the actual load used during demand response activities. Different baselining methodologies have varying accuracy levels. Some baselining methodologies can be "gamed" by participants who may artificially increase demand at certain times to increase payments from a demand reduction initiative. Different baselining methodologies should be used depending on the type of consumer and source of demand flexibility. The complexity of producing an accurate baseline for a variety of differing participants cannot be understated and needs to be fully considered when investigating the ERS.
Q7. Do you agree with our proposed pre-activation and activation processes for use of ERS?	No comment
Q8. Do you agree that the System Operator should be required to update relevant planning processes to take account of forecast uncertainty? If so, how do you consider this should be done?	No comment
Q9. Do you agree with our proposed compensation and price settings for the ERS, including proposed measures to ensure overall unit costs do not exceed VoLL?	The compensation and pricing settings for the ERS should ensure that the overall cost of the ERS does not exceed VoLL.
Q10. Do you consider that the System Operator should also be required to ensure that overall costs during an ERS activation are less than VoLL? If so, how do you consider this could be	Orion strongly recommends that the Authority ensure the overall costs for ERS are less than VoLL. If the overall costs of ERS exceed those of VoLL, the scheme is not economically viable.

practically achieved in the available time?	
Q11. Do you agree with our proposal to 'add back' activated ERS into nodal load schedules to maintain scarcity pricing?	Orion partially agrees with the logic of the 'add back' activated ERS to the nodal load schedules to maintain scarcity prices. Adding load back into the nodal load schedules should only occur when the cost of the procured energy from ERS is greater than the scarcity price. This would then represent real scarcity, where the load is only willing to respond for a payment of more than the scarcity price (this would also represent true additionality). However, if the ERS procures load for less than the cost of scarcity (as is the case for the overseas examples in this consultation), the load should not be added to the nodal load schedules. Load should not be added in this scenario because scarcity was not present, as the ERS load was willing to respond for less than the scarcity price. Instead, this scenario represents the market inefficiency in encouraging demand-side participation. The above approach should also be used for controllable loads from EDBs that are used at scarcity prices. Currently, the load used at scarcity from EDBs is added back to the nodal load schedule. Adding back the controllable load to the nodal schedule implies that the cost of that load control was the same or more than the scarcity price. However, EDBs' load control is often extremely cheap. EDBs' controllable load is only used at scarcity prices because it serves as a useful mechanism, requiring EDBs to control load on the consumers' behalf to avoid emergencies. Adding back the controllable load to the nodal schedule then signals a scarcity scenario when there was no scarcity. Instead, this again represents the inefficiency of market incentives for demand-side participation and reaffirms that the authority should be prioritising market-based demand-side participation before utilising resources to stand up the ERS.
Q12. Do you agree with our proposed settings for cost allocation and settlement of ERS costs? Do you consider an alternative cost recovery approach would be preferable and if so why?	Orion largely agrees with the allocation methodology.
Q13. Do you agree with our proposed settings to manage non-performance by ERS providers?	Orion agrees with the proposed settings
Q14. Do you agree with our proposed information and publication settings to enable the effective operation and	Orion agrees with the proposed information.

monitoring of the ERS? Is there additional information you consider should be made available to potential providers, the Authority, other industry participants or the public?	
Q15. Are there other scheme design elements that the Authority should consider?	no comment
Q16. Do you agree with our high-level evaluation of the proposed ERS against our guiding principles?	Orion disagrees with the evaluation against the Authority's guiding principles. Comments against the evaluation are provided for each section below. **Enable diversity of parties competing to bring solutions:** Excluding generation and batteries because they should respond to spot market signals is inconsistent. The same logic should be applied to both load and generation, as both are exposed to spot market signals. The shortcomings of the market in incentivising demand-side participation should be irrelevant when considering the ERS, as its focus should be on delivering the cheapest emergency support to the system operator as possible. Orion encourages the Authority to work with retailers to understand how market-based demand response opportunities for FPVV customers could be unlocked. **Ensure the secure and reliable supply of electricity:** Agree with this assessment **Enable efficient operation and minimise costs for consumers in the long run:** The Authority has not adequately explored the need for this scheme to justify that this principle has been met. The ERS will increase costs to consumers, so a thorough evaluation is required. **Minimise cost, complexity and effort of participation:** Orion disagrees that this principle has been met as the ERS will likely distort current market signals and increase costs to customers. **Maximise strategic alignment with Task Force and Authority work programme:** no comment
Q17. Is there any additional information the Authority should consider in evaluating a proposed ERS design?	The ERS interactions with the ENA common Load Management Protocol and load that responds to EDB-specific pricing should be considered further by the Authority.
Q18. Do you think there are any elements of the proposed scheme design which require more time for implementation and should be delayed	Due to the significant issues raised in this document, Orion believes the design of the scheme needs to be reconsidered. We are concerned that the Authority has prioritised this workstream over enabling more demand side participation in the market.

beyond Winter 2026? If so, please identify the relevant elements and indicate when you consider they could be implemented.	
Q19. Do you agree with the Authority's proposal to set VoLL at $35,305 per MWh for the purposes of the ERS, and proposal to review VoLL and security standards more broadly?	No comment.
Q20. Are you likely to be interested in participating in an ERS, such as the scheme outlined in this paper?	No comment.
Q21. Are there any other implementation considerations or related issues the Authority should consider in relation to an ERS?	No comment.
Q22. Are there other matters that the Authority should consider in relation to an ERS?	No comment.