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Electricity Authority

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## Rewarding industrial demand flexibility

We welcome the opportunity to submit on the Electricity Authority's (Authority's) consultation *Rewarding industrial demand flexibility*, published 28 May 2025. We have responded to this consultation as Transpower and have highlighted responses specific to our separate roles as the Grid Owner and the System Operator.

We support the Authority's proposed outcome as it will support security of supply to the grid during peak usage times and reduce the risk that the System Operator needs to instruct load management at times of very high demand. Transpower has in recent years signalled this risk over the winter months and, increasingly, in shoulder seasons when asset owners take outages to complete required maintenance. We are however wary of this type of product leading to reduced production over the long-term if the industrial response is not genuine flexibility to time-shift production to other intra-day periods.

As the Authority's consultation notes, the amount of industrial load that could for economic reasons flex to meet intra-day peaks is modest (170MW). However even a small amount has the potential to deliver longer term consumer benefits if the response can be delivered as and when it is call for, at the right price, and in a consistent way.

We note that Tiwai, NZ Steel, and Synlait have put in place bilateral contracting arrangements for energy and peak demand response. In addition, other retailers are offering flex services in the market to larger industrials. We have included more detail of these in the responses to the questions. Therefore, the Authority should review whether all the barriers it has identified are still present.

We also note, as the Authority does, the tension between demand response reducing wholesale spot price and the need for investment signals to the supply-side. Table 1 in the Authority's consultation paper states an outcome sought is "*Demand response is activated to ensure we limit the amount of unserved energy to economic levels.*" While not stated we presume this relates to the [Security Standard Assumptions Document \(SSAD\)](#) which says 22 hours of energy or reserve shortfall p.a. arising from capacity shortage is efficient. We look forward to the Authority consulting on updating the SSAD.

The Authority identifies it does not currently have visibility of bilateral demand flexibility arrangements. The Authority should also consider how this information will be shared with the System Operator who is in the same situation - and needs it to inform its real-time coordination of the market in tight capacity situations. Ideally, this information should be signalled to the System Operator via participants' market bids.

### **The Emergency Reserve Scheme (ERS) (priority action 1)**

As System Operator we recommend fixing the problem with a right-sized solution. This should recognise that trade-offs may need to be made to get it implemented by Winter 2026. We note:

- There have been several development since the Chief Executive (CE) Forum proposed a Winter Peak Product (WPP), and the Authority consulted on a broadly similar scheme in 2023. The controllable load initiative introduced under urgency was then made permanent.
- The ERS must be operationally manageable for the System Operator real-time staff. A clear operational hierarchy is required regardless of how infrequently the scheme is expected to be used; it will only ever be deployed in high-stress situations in the control room.
- The ERS design should use existing market system structures such as dispatchable demand. The timeframes do not afford the luxury of delivery and training for a new tool.
- Incremental improvements reflecting real world experiences of a 'minimum viable product' approach is appropriate.
- There will be additional costs on the SO to implement and manage the ERS, and these will need to be funded.
- The ERS should:
  - balance any reduction from the wholesale market's price signals with the longer-term consumer benefits around security
  - only allow participation from new sources – additionality is key
  - not disproportional reward participants such that new flexible demand sources forego other demand flexibility options to participate in the ERS
  - it should be an interim time bound tool ahead of new firm / flexible capacity coming to market

### **The Authority could provide more information on affected parties upfront**

We also note, the Authority's paper is broad in coverage and the breadth of that content was not clear unless readers went cover-to-cover. For example, the Authority was not clear in the executive summary that it was proposing changes that would have implication for distribution businesses. The volume of consultation within industry presently means participants often triage effort on an impact to business basis from a skim read of the title and executive summary of a paper. There is a risk the Authority may not receive submissions

from every participant with views on the topics covered in the paper because it was not apparent they would be covered in the paper.

We welcome further discussion on the development of industrial demand flexibility to support electricity generation and winter demand where this could assist in managing the energy system for the benefit of the country.

Our responses to the questions in the consultation document, are in Appendix A.

Please contact us if you have any questions.

Yours sincerely

**Joel Cook**

**Head of Strategy and Regulation**

## Appendix A: Rewarding industrial demand flexibility, Questions and responses

<b>Submitter</b>	<b>Transpower</b>
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Questions	Grid Owner Comments	System Operator Comments
<p>Q1. Do you agree with our approach of focusing on industrial demand flexibility as an early initiative to enable demand flexibility more broadly?</p> <p>Why/Why not?</p> <p>Do you have any information to indicate that demand response from other consumer types may be more readily accessed?</p>	<p>Yes, if the response is sufficient to provide adequate support to the market when its needed.</p> <p>We would also recommend that the Authority includes large commercial operations as a consumer type. The Authority can review the work which FlexForum has undertaken to develop a plan for households, businesses and communities. (<a href="#">FlexForum-Flexibility-Plan-2.0-1.pdf</a>) focusing on other consumer types.</p>	<p>Yes, initially focussing on a few large participants will make it easier to initiate and operationalise should the ERS go ahead.</p> <p>It is also likely to be easier to prove additionality and to assess performance for industrial loads than it is for aggregated demand-side resources.</p> <p>Additionally, we note there are potentially complications between the controllable load obligations (clause 5A, Sch. 8.3, Tech Code B) and the load management protocol within the default distributor agreement (clause 5, Sch. 12A.4, App. A) which might arise if broader demand-side participation is allowed in the ERS. The operational circumstances when controllable load and the ERS would be used require absolute clarity of available quantities and who is in control of what load.</p>

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		This is more readily achieved, initially, via industrial load.
<p>Q2. Do you agree with our estimates of the potential industrial demand flexibility capacity available in New Zealand currently and into the future?</p> <p>Why/why not?</p> <p>Do you have any evidence to support a materially different estimate?</p>	No comment.	<p>We do not have any information contrary to the Authority's analysis.</p> <p>We do note the Authority's own analysis suggests the removal of the RCPD transmission charge resulted in 150MW of additional peak load.</p>
<p>Q3. Do you agree with our focus on intra-day demand flexibility for this initiative?</p> <p>Why/why not?</p> <p>What other approach would you suggest?</p>	<p>Yes, the peak which only occurs for a short period of time needs to be the focus of demand flexibility. By shaving these intra-day peaks may defer longer term investment, resulting in improved consumer welfare.</p> <p>For large industrials to respond accordingly, they need to plan in advance of the peak demand (shifting production, adjusting schedules, clearing production lines and rescheduling work times). This requires future</p>	Yes, nothing to add to GO response.

Questions	Grid Owner Comments	System Operator Comments
	forecasts for industrials to respond, like scheduling and dispatch.	
Q4. Are there any other ways that currently enable industrial demand flexibility in New Zealand?	<p>Yes, some retailers are providing solutions to their customers. See <a href="#">Demand Flexibility - Simply Energy NZ</a>. These products may address demand flexibility.</p> <p>EDB's such as Powerco have established flexibility services to support Non-network Transmission/Non Traditional Solutions (NTS). See <a href="https://www.powerco.co.nz/our-partners/flex-solutions">https://www.powerco.co.nz/our-partners/flex-solutions</a> See <a href="https://www.powerco.co.nz/our-partners/flex-solutions">https://www.powerco.co.nz/our-partners/flex-solutions</a>. While these flexibility services are intended to defer or avoid network investment, if the network peak coincides with the wholesale market peak this will shave the wholesale market peak. Coincidental peaks could also mean a lower cost NTS service as the flexibility provider can also earn revenue via the wholesale market.</p>	Several industrial sites participate in the instantaneous reserve market. Providing interruptible load as part of an aggregated offering by a 3 <sup>rd</sup> party.

Questions	Grid Owner Comments	System Operator Comments
<p>Q5. Do you agree with our description of the barriers affecting the provision of industrial demand flexibility?</p> <p>Why/why not?</p> <p>Are any other barriers relevant to the provision of demand.</p>	<p>No comment in addition to those set out for the SO.</p>	<p>Not entirely, however, what matters most is the perception of barriers stated by potential participants.</p> <p>In our experience the two largest barriers to participation are the low volume exposure to spot price purchasers have, and the absence of a paid product outside of interruptible load.</p> <p>There is a natural tension between potential sellers of a service who want it to be 'easy' and the buyers who require the service to be delivered as specified.</p>
<p>Q6. Do you agree that existing incentives and contracts for demand flexibility are resulting in inefficiently low levels of demand flexibility?</p>	<p>The Authority would need to be able to establish an efficient level of demand flexibility for providing payments over and above the wholesale price to avoid any inefficient decisions.</p> <p>This may mean that if the wholesale price is insufficient to get an efficient outcome that the market is not working as intended and that there are barriers to Industrial Demand Response.</p>	<p>Most large industrial loads are supplied by large vertically integrated retailers who are less likely to have exposure to spot prices themselves. Which means except in extreme circumstances the retailer for the industrial load is not incentivised to enter in to demand response initiatives with their customer for additional emergency response.</p> <p>This question could be reframed to ask whether there is sufficient competition in</p>

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		<p>retailing to discover the efficient level of incentives and contracts for demand flexibility?</p> <p>We are aware several retailers have demand response initiatives in their supply contracts to industrial consumers, we expect these would have been triggered before an ERS would be.</p>
Q7. Are you aware of any additional barriers to enabling more industrial demand flexibility?	No.	No.
Q8. Do you agree with our vision for industrial demand flexibility? Why/why not?	Yes, so long as it leads to actual industrial flex rather than demand destruction i.e., industrials are able to move their production around rather than cancelling it..	<p>Yes, we agree with the goal of efficient use of industrial demand flexibility.</p> <p>We do note the test of efficiency is correctly underpinned by long-term benefit to consumers which will itself be underpinned by assumptions such as value of lost load. Ultimately, consumers will fund all initiatives and payments in this space but the voice of the consumer is not present in the discussions.</p>



Questions	Grid Owner Comments	System Operator Comments
Q9. Do you believe that this vision is applicable to other forms of demand flexibility, or to flexibility more generally?	<p>Flexibility trials such as demand response (DR) have provided useful research but not significantly allowed for deferral of investment. See <a href="#">EECA's flexibility scan</a> in relation to current and active trials.</p> <p>Flexibility products come in many different forms. In our experience, it requires tailored solutions to suit the need and type of flexibility services that are being targeted.</p>	<p>Yes, the goal of efficient use of demand flexibility for the long-term benefit of consumers will always 'hold true' as a principle.</p> <p>As above the issue is determining this in a practical sense which includes the consumer voice. Determining what will result in lower cost increases to consumers will be a difficult exercise.</p> <p>The absence of visible demand flexibility is not in itself an issue. There could be multiple unseen efficient uses of demand flexibility or uses of more efficient alternatives to demand flexibility.</p>
<p>Q10. Do you agree with our view that demand flexibility providers should be able to receive payment for providing flexibility services that exceed avoided energy costs, provided the demand response is efficient (as defined)?</p> <p>Why/why not?</p>	<p>Payments should reflect the market prices at the time the demand response is used in the wholesale market, coupled with a value of deferred investment in distribution networks.</p>	<p>Yes, noting that (as above) determining what the avoided costs in the wholesale market are as they pertain to customers who aren't exposed directly to that market will be a challenging exercise.</p>

Questions	Grid Owner Comments	System Operator Comments
Q11. Do you believe that a different level of payment would be appropriate?  Why/why not?	No comment	No comment.
Q12. Do you agree with our proposed guiding principles? Why/why not? Are other specific considerations which you believe should be included in the evaluation framework?	Minimise cost, complexity and effort of participation should extend to the benefit of all stakeholders. While there needs to be an incentive for flexibility providers, it also needs to extend to end consumers by ensuring that all users of electricity do not pay extra to support flexibility services i.e. there is an efficiency gain.	Yes.  We note the principle "Ensure the secure and reliable supply of electricity" is described using "Demand response is activated to ensure we limit the amount of unserved energy to economic levels." as an outcome sought. No explanation of what this means is provided. We assume it relates to the <a href="#">Security Standard Assumptions Document (SSAD)</a> which says 22 hours of energy or reserve shortfall p.a. arising from capacity shortage is efficient. We note the SSAD has not been updated since 2012 and several Authority decisions and initiatives since then, especially post-2021, appear to deviate from this analysis.
Q13. Do you agree with our view that there is currently insufficient potential industrial demand flexibility...?	Yes.	Yes.

Questions	Grid Owner Comments	System Operator Comments
<p>Q14. Do you consider there are other cost-effective measures that can be implemented urgently to enable industrial demand flexibility to support reliability and efficient in the wholesale market?</p>	<p>We support the ERS to address the short-term need for demand response and further commencement of the Standard Demand Response Product (SDRP). However, in the development of the SDRP further work should be undertaken to investigate what pricing benefits demand response would provide (e.g. in indicative price modelling) to ensure that it will incentivise those sufficiently who want to offer demand response into the market.</p>	<p>We recommend the Authority ensures there is consistency and coherence across all decisions relating to managing capacity peaks and there underpinning policies. As it stands several policies appear to be out-of-date with more recent decisions. Until such time as all of these are aligned it is difficult to assess what constitutes cost-effective and efficient demand side initiatives.</p> <p>The signalled replacement for Multiple Frequency Keeping, which will presumably enable demand side participation, may be a new avenue for industrial demand flexibility to be rewarded.</p>
<p>Q15. Do you agree with our proposal to establish an ERS?</p> <p>Why/why not?</p>	<p>Yes.</p>	<p>Yes, subject to the scheme being: operationally manageable for the System Operator real-time staff.</p> <p>Having a clear operational hierarchy with other demand-side and emergency protocols.</p> <p>For these reasons, the System Operator strongly recommends any ERS design uses</p>

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		<p>existing market system structures such as dispatchable demand. The timeframes ahead of Winter 2026 do not afford the luxury of delivery and training for a new tool.</p> <p>An ERS must be the cheapest option and a stop gap.</p>
Q16. For demand flexibility providers – do you consider it likely that you could make demand flexibility capacity available for an ERS in time for Winter 2026?	N/A.	N/A.
Q17. Do you agree with our proposal to investigate a standardised demand flexibility product? Why/why not?	Yes, with additional requirements to assess its viability and potential uptake before proceeding with the next steps.	No comment.
Q18. Do you support our other proposed roadmap actions? Why/why not?	The Authority should carefully consider whether the proposed actions will deliver meaningful net benefits. More consideration needs to be given to the cost of making changes to better determine net benefits and highest value changes for the long-term benefit of consumers.	Action 6 will require careful consideration of the impacts on retail rates of having a 3 <sup>rd</sup> party alter consumption patterns. Retail rates are set based on expected consumption and likely fit within a portfolio assessment balancing supply and demand (either physically or financially). It is not a given

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	<p>Action 3 appears to replicate a requirement for lines companies to advise the Commerce Commission of non-network solutions they have enacted.</p> <p>Action 7. If the Authority is to review connection arrangements it should review the Benchmark Agreement.</p>	<p>these won't change in a manner detrimental to the consumer.</p> <p>Action 9 must ensure the overseas experiences are considered in the New Zealand context.</p> <p>Action 11 is slated for 2029. Several parties are attempting to deliver the objectives of this action now.</p>
Q19. Do you believe there are other actions that we should consider in the roadmap? If so, please outline the actions and rationale.	No comment.	No comment.
Q20. Do you support the proposed sequence and timing of actions in our proposed roadmap? Why/why not?	See responses above	As noted above some actions seem unnecessary and others too late.
Q21. Is there anything else relevant to this issue that the Authority should consider?	No.	No comment.