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Electricity Authority

Submitted via email: operationsconsult@ea.govt.nz

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Dear Consultation Team

RE: Emergency Reserve Scheme - Code amendment proposal

Thank you for the opportunity to provide feedback to the Electricity Authority (Authority) on the *Emergency Reserve Scheme – Code amendment proposal* consultation paper.

Enel X works with commercial and industrial energy users to develop demand-side flexibility and offer it into wholesale capacity, energy and ancillary services markets worldwide, as well as to network businesses. Enel X has been offering customer load into the Instantaneous Reserve (IR) market in New Zealand since 2009. Enel X also work with commercial and industrial energy users to aggregate responses for out-of-market emergency support mechanisms such as the Reliability and Emergency Reserve Trader (RERT) mechanism in the Australian National Electricity Market (NEM).

Enel X is deeply committed to promoting a vibrant market for demand response (DR) and have invested considerable resources in building a portfolio of capabilities to support reliability and security in energy markets globally.

Getting the right risks in the right hands

Enel X endorses the Authority's proposal to implement an Emergency Reserve Scheme (ERS) to protect New Zealanders from uneconomic load shedding during periods of peak electricity demand.

Supply adequacy risks from deteriorating reliability of aging fossil fuelled generation leading to low residual generation events is not a risk unique to New Zealand. Across various jurisdictions, Enel X are working with System Operators to deliver dependable and visible flexible demand responses to support higher levels of renewable energy generation resources while providing the operational flexibility needed for System Operators to maintain power system security, reliability and resilience.

Allocating high impact but low frequency ('tail risk') events to flexible demand-side resources with small capital outlay places 'the right risks in the right hands '. These 'Tail risks' are often not well managed in spot market mechanisms largely due to the 'missing money phenomenon' where there is insufficient time at sufficiently high prices to cover all costs.

Benefits of an Emergency Reserve Scheme

System Operators in other jurisdictions are benefiting from 'learning by doing' by including demand-side responses in emergency mechanisms focused on avoiding involuntary load shedding.

Emergency reserve schemes in other countries have supported System Operators developing better tools for identifying, assessing and efficiently managing emerging risks from retiring aging fossil fuelled generation. Enel X believe the ERS proposal can bring similar benefits to the New Zealand market.

Exposure to weather driven grid emergencies has increased with climate change. Extreme weather events can often impact specific transmission elements but have widespread consequences. Flexible demand resources are typically geographically diverse providing system operators broader options to activate resources in locations most beneficial to managing transmission network power flows in an emergency.

Progressing at pace

Enel X supports the Authority's ambition to deliver risk management tools to the System Operator to manage emerging reliability of supply risks in winter 2026. In our experience, delivering an emergency demand response programme in the proposed timeline is plausible, but will require both the Authority, System Operator and aggregators/loads to progress significant elements in parallel with strong early commitment.

To maintain this forward momentum, aggregators and loads will need to place great faith that a Minimum Viable Product (MVP) solution will be sufficiently adaptable to various resources and offset participation costs. Loads considering participation in the ERS are faced with significant uncertainty due to the nascent nature of the ERS. Potential participants have little basis on which to build commercial expectations.

Transitional measures to maintain momentum

Enel X is concerned that the Authority's guidance and code amendment proposal may be inadequate to attract a purposeful response to an MVP implementation for winter 2026. In our view, to activate sufficient investment from aggregators and large industrial loads transitional arrangements will be require to:

- support early commitment and provide adequate time for due diligence activities
- target resources with established commercial and technical capabilities

Transitional option – early/annual procurement

Enel X anticipate that 'new' ERS resources will need greater than four weeks to undertake internal due diligence and business decision processes.

We see benefits in the first 2-years of ERS replacing the proposed 4-week procurement window ahead of an identified shortfall with an annual tender process with predefined ERS availability windows. Enel X anticipate this would simplify the AS procurement plan development process, reduce the workload on the System Operator, and stimulate early competitive responses from ERS providers by increasing the likelihood that early ERS providers can recover the costs of participation.

Once the System Operator and flexible demand-side resources have developed sufficient experience to respond quickly, and better forecasting/reporting tools are in place then procuring emergency reserves up to four weeks ahead of an identified shortfall is more likely to strike a balance that favours a competitive shorter-term response. In a more experienced market (such as the NEM) potential aggregators and participants have a basis for forming a view on the System Operator's future needs and preparing accordingly.

Transitional option – targeting resources with established commercial and technical demand response capabilities

Enel X can rapidly redeploy flexible demand resources with recent operational and commercial experience in mechanisms such as Instantaneous Reserves. Establishing an additional pool of flexible demand resources is desirable, however building business cases based on the proposed ERS framework will initially be challenging due to a poorly understood value proposition.

Maintaining and expanding flexible demand resource base in New Zealand is challenging. The value proposition for flexible demand participating in Instantaneous Reserves is rapidly eroding as Battery Energy Storage Systems (BESS) can value stack and provide contingency responses at lower costs by leveraging investments in market and operational activities across multiple markets.

As additional BESS are commissioned the existing flexible demand resources will face growing pressure from the 'missing money phenomenon' where there is insufficient time at sufficiently high market prices to cover all costs, furthermore the variability of returns means businesses become less

able to make the budgetary commitments to support the operational capability to participate in market.

Flexible demand currently participating in IR is at risk of exiting the market and based on the proposed 12-month 'out of market' additionality provision, may exit the market completely rather than waiting 12-months for an opportunity to participate in ERS.

As a transitional measure, Enel X recommend the Authority reconsider the proposed 12-month out of market provision for flexible demand resources participating in Instantaneous Reserves. The deteriorating IR value proposition risks these resources exiting the market if the status quo is maintained.

In Enel X's opinion, a transitional arrangement that provides an opportunity for the 'right market risks to be addressed with the right resources' by providing a limited transition period from IR to ERS has merit. As the growing pool of BESS resources will serve a growing proportion of the instantaneous contingency risk any artificial barrier preventing the market redistributing risks erodes allocative efficiency and ultimately raises costs for consumers.

Furthermore, acknowledging in a final decision that to implement a MVP solution the System Operator may need to initially utilised narrower resource eligibility criteria could reduce development timeframes.

Further consultation responses

Enel X have attached the Authority's proforma submissions questionnaire with additional responses to this letter. This letter and its attachments form our submission.

We would be happy to discuss any of our responses further with the Authority. If you have any questions or would like to discuss this submission further, please do not hesitate to contact me.

Kind Regards,

Alister Alford
Senior Manager, Market Development and Regulatory Affairs, Australia & New Zealand
[redacted]

Appendix: Electricity Authority submission template

Submitter	Enel X New Zealand Limited

Questions	**Comments**
Q1. Do you support the Authority's proposal to amend the Code to establish an emergency reserve scheme?	Enel X endorse the Authority's initiative to establish an Emergency Reserve Scheme (ERS). It is critical that the Authority establish a code mechanism that addresses emerging reliability risks from the changing generation mix. Allocating high impact but low frequency ('tail risk') risk events to flexible demand-side resources with lower capital outlay places 'the right risks in the right hand's '. 'Tail risks' are often not well managed in spot market mechanisms, largely due to the 'missing money phenomenon' where there is insufficient time at sufficiently high prices to cover all costs. Within the Oceania region, Enel X is a market participant in the New Zealand electricity market, Australian's east cost National Electricity Market (NEM), and Western Australia's Wholesale Energy Market (WEM). We activate in market flexible demand resources providing essential system services and energy market responses. Our conversations with market and system operators are increasingly shaped by system operators seeking access to dependable, visible and dispatchable options to manage power system security and reliability during a rapid transition to renewable & energy storage technologies replacing aging fossil fuelled generation assets. In other jurisdictions Enel X notes that increasingly, risks to power system reliability are emerging during extended generation maintenance and transmission augmentation activities which do not typically align with seasonal peak demand periods. There is merit in ensuring that the proposed ERS mechanism provides the System Operator flexibility to utilise ERS when risks emerge regardless of 'seasonal' considerations.
Q2. Do you have any comments on the drafting of the proposed amendments?	Comments on the existing amendments: Our cover letter to this submission provides feedback on establishing transitional measures that support rapid deployment of a Minimum Viable Product at pace. Our suggested amendments include: 12-month 'Out-of-market' requirement

Questions	Comments
	The 12-month 'out of market' provision (Code definitions **emergency reserve** (b)(i)(A)) – as currently drafted will likely hamper the initial uptake by large industrial users such as those provide **Instantaneous Reserves**. Given the diminishing value proposition for flexible demand resource providing Instantaneous Reserve, Enel X recommend a time limited transitional measure where Code definitions **emergency reserve** (b)(i)(A) is amended to 'in the **wholesale market** other than **black start** or instantaneous reserve' for a limited period. Additionally, restrictions on resources transitioning from ERS to Instantaneous Reserves could give the market more confidence that providers are not 'cherry picking' and distorting the orderly allocation of risks to market participants.
Q3. Do you consider any further Code amendments are required to establish the emergency reserve scheme as outlined in section **Error! Reference source not found.**?	Enel X have not identified additional code amendments in addition to those suggested in our response to Question 2 above. If the Authority accepted the transitional measures proposed in our cover letter, then the Ancillary Services Procurement Plan would need to reflect those transitional measures.
Q4. Do you see any unintended consequences in making the proposed amendments?	Given the deteriorating value proposition for flexible demand resources providing Instantaneous Reserves, retaining the 12-month out of market provision for Instantaneous Reserve resources risks those resources permanently ceasing commercial activities to support the power system. Such a failure to efficiently allocate risks would be reflected in higher costs or reduced reliability for end users.
Q5. Do you agree with the objective of the proposed amendment? If not, why not?	Enel X broadly agree with the objectives of the proposed amendment. We note the objectives specifically include "when demand is high and inadequate supply is available". Simplifying to "when inadequate supply is available" may more appropriately reflect emerging risks that occur during extended outages of generation plant outside of seasonal 'high demand' periods. Enel X strongly support the secondary objective "to help build consumer capability to provide demand flexibility", however the proposed ERS mechanism is only a small step toward establishing a vibrant market for flexible demand response in the New Zealand grid.

Questions	Comments
Q6. Do you agree the benefits of the proposed amendment outweigh its costs? Please provide evidence to support your view.	Enel X note that CBA findings supporting ERS is broadly consistent with analysis that supports similar emergency reserve mechanisms in the Australian National Electricity Market and the Western Australian Wholesale Energy Market.
Q7. Do you agree the amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's objectives in section 15 of the Act.	Enel X agree that an ERS mechanism specifically addressing infrequent events is preferrable to 'interventional investment' in establishing otherwise uneconomic generation, particularly given the current supply shortages in 'firming' generation plant such as open-cycle gas turbines.
Q8. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act? If not, why not?	Enel X agrees with the Authority's conclusion that the proposed code amendment complies with the principles in section 32(1) of the Act.