Submission by

to the

Electricity Authority

on the consultation

Rewarding Industrial Demand Flexibility

3 July 2025

Rewarding Industrial Demand Flexibility

– SUBMISSION BY BUSINESSNZ ENERGY COUNCIL—

Introduction

1. BusinessNZ Energy Council (BEC)[1] is pleased to have the opportunity to provide feedback on the Electricity Authorities (EAs) consultation titled 'Rewarding Industrial Demand Flexibility'.

2. BEC represents a diverse array of leading energy-sector businesses, government bodies, and research organisations dedicated to creating a sustainable, equitable, and secure energy future.

3. As a brand of BusinessNZ, New Zealand's largest business advocacy organisation, we represent the World Energy Council in New Zealand, aiming to shape better outcomes for our wider energy system both locally and globally.

4. With this work the EA aims to open the discussion around its vision and roadmap for rewarding industrial demand flexibility and outlines the growing need and assumptions around demand response in New Zealand.

5. BEC supports the EA in this process as effective demand response has the potential to be an affordable way to increase system resilience and flexibility.

6. BEC agrees that the EA should be focusing on explicit intra-day flexibility with this work as it is likely to limit the potential for decreases in economic output.

Key Recommendations for the EA and the Government

- BEC recommends the EA move forward with its focus on intra-day flexibility rather than seasonal flexibility as a way to address peak demand growth.

- Continue to explore a reward system for demand flexibility but within this context remain aware of the risks associated with a rewards system.

- BEC recommends reassessing some core assumptions around the future ability of certain industries to provide demand flexibility, namely data centers and dairy processing.

- Clarification around how a reward system would be managed and who would end up paying for it is needed.

- BEC recommends that moving forward it should be considered that these rewards are paid for by the market and should flow through into the real time prices.

[1] More about BEC in APPENDIX One

General discussion

7. Within the MBIE work 'Electricity Demand and Generation Scenarios: Results summary' their reference scenario shows peak demand for electricity is expected to grow by 59% from the 2023 peak demand of 6.7 GW to 10.7 GW by 2050. Across the range of scenarios growth shows peak demand ranging from 9.1 GW to 12.5 GW.

8. In the face of this reality affordability pressures on wholesale consumers will continue to climb and so solutions are needed. Increased generation is one way to assist with this, but it is costly and as most new generation is intermittent in nature it may struggle to meet peak winter, evening demands.

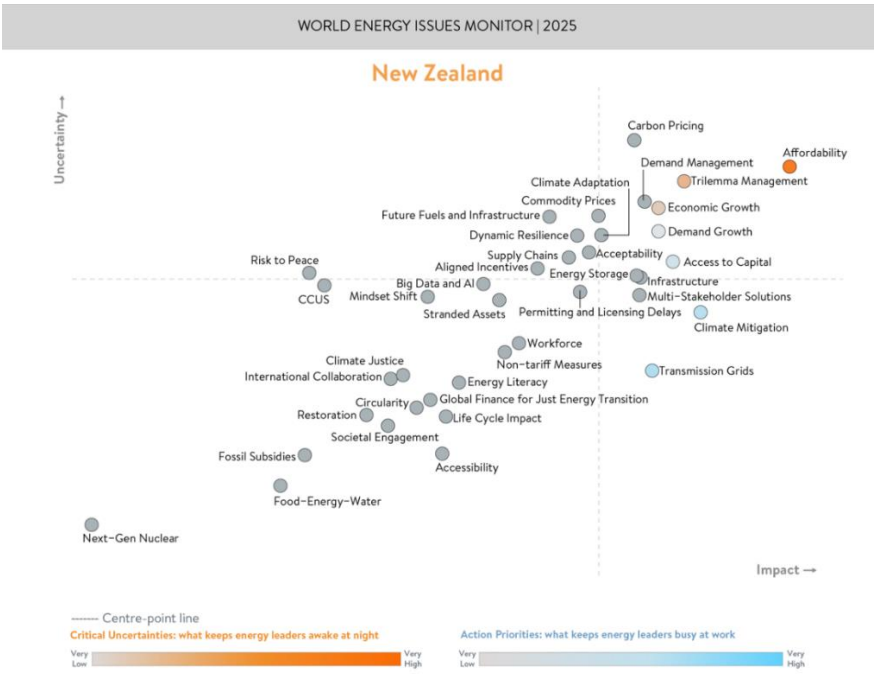
9. Additionally, new generation needs to be supplemented with upgrades to transmission and distribution infrastructure. This represents an additional cost that due to the transmission pricing mechanism is partially covered by consumers that are already facing affordability issues.

10. Industrial demand flexibility provides one opportunity to address these growing peak demands without the associated grid upgrade costs and has the potential to be extremely cost effective.

11. Currently the most common methods of industrial demand flexibility are either firms choosing to lower production in the face of increases to market price or stipulations within contracts for large consumers to sell their power back to the grid in peak times.

12. Effective industrial demand flexibility means that the productivity/output of firms is not negatively impacted. These types of demand flexibility **should be encouraged** in regard to uptake.

13. Additionally, it is important to decrease uncertainty around demand management. In the 2025 issues monitor results from the World Energy Council demand management was seen as the fourth most uncertain issue for New Zealand energy leaders. The EAs work on a road map for industrial demand flexibility will hopefully decrease uncertainty around demand management which is important to ensure consistent investment and long-term decision making.



14. BEC therefore supports the work that the EA is doing in proposing their vision and road map for investigating the potential of rewarding industrial demand flexibility.

15. BEC agrees with the EA that this work should not be focused on seasonal demand response but rather explicit intra-day demand response. Intra-day demand response is expected to have less of an impact of economic output due to the ability for short-term shifts in production. Although it is particularly seasonal storage that has been the problem NZ has been facing for the last few years.

16. BEC acknowledges that to create effective demand flexibility some sort of payment/reward system may be necessary. As the EA discusses demand response without the presence of a reward system there is a 'first mover' problem. This occurs as the first firm to reduce production allows all other firms to continue production at lower cost which means that the savings made by firm 1 in halting or reducing production due to high costs are disproportionate to the gains made by other firms. Moving into a type 2 (explicit) demand response system would help solve this.

17. Regardless there are **risks associated with introducing a rewards system** that need to be considered. This includes the potential to disincentivise alternative flexibility solutions like battery storage, distort market competition, and increase transition costs for consumers. If rewards disproportionately target industrial demand response without allowing all flexibility resources to compete on equal terms, it represents a situation where the Authority is picking winners.

18. Battery storage provides critical grid-balancing services but requires significant capital investment. A narrowly focused industrial reward system could reduce the economic viability of batteries by redirecting revenue streams toward industrial load reduction, slowing deployment of these assets despite their long-term value for grid resilience.

19. Side payments not integrated into real-time pricing may create "out-of-market" costs that are ultimately passed to consumers. If rewards overcompensate industrial participants or ignore cheaper flexibility options, overall transition costs could rise unnecessarily.

20. Favouring industrial demand response risks violating technology neutral principles emphasised in the GPS.[2] This could crowd out other high-value flexibility sources reducing efficiency and innovation.

21. Poorly designed rewards might replicate existing market failures by incentivising only large industrials with simple curtailment options, while smaller or more complex operations (24/7 operators) remain excluded, limiting overall flexibility gains.

22. While still early in the consultation process for the full road map there **are several factors and assumptions that BEC would like clarified**.

23. A core assumption within this consultation document is that as the volume and energy usage of data centres in New Zealand increases the ability for these data centres to provide demand response will increase.

24. BEC disagrees with this assumption as data centres tend to need to run 24/7 with little flexibility for shifts in output. While data centres could be capable of adjusting their consumption in response to grid conditions many data centre operations revolve around maximising uptime and performance, and energy issues are secondary to maintaining strong guarantees about those primary measures. Without further regulatory changes these issues will persist.[3]

25. Additionally, the expansion of data centres in New Zealand will be and is driven by some of the world's largest technology companies. These firms with their substantial financial revenue streams are often able to withstand higher electricity prices than traditional large energy users. As a result, they are less likely to adjust their operations in response to demand response requests.

26. BEC agrees that the electrification of process heat will increase demand response potential, but only for industrials that do not produce 24/7. Those that produce 24/7 may be able to shift some production but are likely to face reductions in output. Even if it the rewards for demand flexibility cover these demand losses existing supply contracts may mean that firms are unable to drop production.

27. Dairy processing is also identified as an industry that this consultation has identified as having strong potential for demand response. BEC agrees with this however there is several factors to consider. Once processing has started it is very difficult for firms to slow down or halt production. Additionally, the peak demand for dairy processing tends to be at different times to system peaks meaning that even if they could offer demand flexibility it is likely they are already consuming at a different time.

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[2] Statement of Government Policy to the Electricity Authority under section 17 of the Electricity Industry Act 2010. Simeon Brown. October 2024.

[3] Adam Wierman, Zhenhua Liu, Iris Liu, Hamed Mohsenian-Rad. Opportunities and Challenges for Data Centre Demand Response. dcdrsurvey.pdf

28. There is scope for dairy processing to participate within a demand response programme, the industry has some of the largest cool stores in the country and a growing EV tanker fleet. But it will likely be less impactful than indicated within this consultation due to differences in time of year for peak usage.

29. Moving forward clarification around how any reward payments would be processed and who would end up paying for it needs to be discussed. Currently BEC is of the opinion that any reward system should be paid for by the market and flow through into real time prices.

30. Regarding the guiding principles that the EA has proposed BEC broadly supports them. Particularly principles 1, 2, and 3 which we see as being crucial for maintaining an efficient and effective demand response programme. Principle 5 should hopefully bring more clarity and consistency within the broader work programme.

31. Transpower in their 2025 security of supply assessment points out the NZ-WEM falls below its security standard by 2026.[4] Additionally, as this consultation points out Transpower's outlook for the 2025 winter period indicates that peak capacity risks, especially during cold snaps, will persist until there is sufficient investment in flexible resources such as batteries, demand response, and peaking generation.

32. Based on this BEC believes that the timeframe for the short to medium term actions of the roadmap should be brought forward. New Zealand's energy system is **under threat now** and industrial users are facing mounting pressure. The three to four years that some actions will take may be too long to have a meaningful impact on current issues.

[4] Security of Supply Assessment 2025. Transpower. 30.6.2025. https://static.transpower.co.nz/public/bulk-upload/documents/2025%20SOSA%20-%20Final%20Report.pdf?VersionId=tOo4Y8.kp2mloi9EOkUEDxkLDLv7Dxjt

APPENDIX ONE – BACKGROUND INFORMATION ON THE BUSINESSNZ ENERGY COUNCIL

The BusinessNZ Energy Council (BEC) is a group of leading energy-sector business, government and research organisations taking a leading role in creating a sustainable, equitable and secure energy future.

BEC is a brand of BusinessNZ and represents the World Energy Council in New Zealand. Together with its members, BEC is shaping the energy agenda for New Zealand and globally.

BusinessNZ is New Zealand's largest business advocacy body, representing:

- Regional business groups: EMA, Business Central, Canterbury Employers' Chamber of Commerce, and Business South
- Major Companies Group of New Zealand's largest businesses
- Gold Group of medium sized businesses
- Affiliated Industries Group of national industry associations
- ExportNZ representing New Zealand exporting enterprises
- ManufacturingNZ representing New Zealand manufacturing enterprises
- Sustainable Business Council of enterprises leading sustainable business practice
- BusinessNZ Energy Council of enterprises leading sustainable energy production and use
- Buy NZ Made representing producers, retailers, consumers of NZ-made goods

BusinessNZ is able to tap into the views of over 76,000 employers and businesses, ranging from the smallest to the largest and reflecting the make-up of the New Zealand economy.

In addition to advocacy and services for enterprise, BusinessNZ contributes to Government, tripartite working parties and international bodies including the International Labour Organisation (ILO), the International Organisation of Employers (IOE) and the Business and Industry Advisory Council (BIAC) to the Organisation for Economic Cooperation and Development (OECD).