



10 November 2025

Energy Efficiency & Conservation Authority
Level 8, 44 The Terrace
Wellington

By email: STAR@eeca.govt.nz

Bluecurrent
Level 2
111 Carlton Gore Road
Newmarket
Auckland 1023

Submission on Unlocking the Potential of Demand Flexibility – A Residential Product Perspective

Introduction

1. Bluecurrent welcomes the Energy Efficiency & Conservation Authority's (EECA) green paper on *Unlocking the potential of demand flexibility – A residential product perspective* (the Green Paper), dated October 2025.
2. As a provider of smart metering and data services, Bluecurrent has a critical role to play in enabling demand flexibility in the electricity system. Unlocking the full potential of smart meter data helps address the electricity sector's challenges of today, and importantly, provides the digital foundation to build a more intelligent and resilient energy system for tomorrow. This is the digital infrastructure that will seamlessly integrate the electric vehicles in our driveways, the solar panels on our roofs, and the smart appliances in our homes.¹
3. We encourage and support efficient and timely investment in demand flexibility, including for the residential sector. We already have solutions to help manage costly power use peaks that can be deployed at scale – now. The adoption of tools like dynamic load control and smart meter data, including high-frequency data, will help ensure an electricity system for New Zealanders that is smarter, more responsive, affordable, and contributes to long-term emissions reduction.
4. We are happy to actively participate in working group(s) on demand flexibility that EECA will create to progress the objectives of the Green Paper.

Partnerships that enable demand flexibility

5. Bluecurrent has partnered with forward-looking energy retailers to unleash a wave of innovation by using smart meter data to flexibly manage energy demand and reduce peak load – which benefits residential consumers.
 - a. **Mercury** is scaling up its smart hot water control programme using Bluecurrent's Dynamic Load Control to shift hot water heating away from peak times, saving customers money and easing pressure on the grid. See <https://bluecurrent.co.nz/news/mercury-signs-up-for-dynamic-load-control-service>.
 - b. **Meridian** has launched its Smart Hot Water programme, offering residential customers a \$120/year power bill discount to participate. It's a win-win: cheaper power for households and fewer emissions from fossil-fuelled generation. See <https://bluecurrent.co.nz/news/meridian-and-bluecurrent-partnership-for-a-lower-carbon-future>.
 - c. **Genesis** is running a trial with 10,000 residential customers to see whether altering the time of their hot water heating will reduce their power bills and relieve strain on the national grid at peak times.

¹ <https://bluecurrent.co.nz/news/smart-meters-making-a-big-difference-to-new-zealands-energy-system>

See <https://www.genesisenergy.co.nz/about/news/genesis-trials-hot-water-control-in-new-demand-flexibility-service>.

- d. **Contact** has launched its Hot Water Sorter which sees power to customers' hot water cylinder turned off for a short period at certain times of the day without impacting the household's hot water needs. This is potentially good for customers' bills and reduces reliance on non-renewable energy generation. See <https://contact.co.nz/support/guides/hot-water-sorter>.
6. Bluecurrent will keep forging partnerships that would facilitate demand flexibility, including for residential consumers.

Responses to the consultation questions

Key end-use products and approach to commercial and industrial

Q1. The main use cases for demand flexibility presented in this paper are: managing peak demand (generation and line capacity) constraints, optimising renewable energy use, and optimising home energy use.

- Do you think these are the main cases?
- What other use cases are there?

7. Bluecurrent broadly agrees that the use cases for demand flexibility identified in the Green Paper are the main ones, at this stage of market development.
8. As technology and the flexibility services market mature, end-use products and services could increasingly focus on other aspects such as enhancing consumer choice, convenience, and mobility. Greater visibility by residential consumers of their electricity consumption, enabled by smart meter data, allows them to make better decisions. These decisions could include when to use or generate electricity (using consumer energy resources – CER), when to inject electricity into the network, and whether investing in demand flexibility enabled products or switching to another service provider would benefit them.

Q2. In the residential sector, the following products have been identified as key end-use products for demand flexibility: EV chargers, heat pumps, electric hot water systems which use a storage tank, fridges/freezer, clothes washers, dishwashers, clothes dryers, inverters for solar and battery systems, and HEMS.

- Do you think these are the key demand flexible end-use products in the residential sector?
- If not, what are the key products and why?

9. We broadly agree that the above products (identified on pages 12 – 14 of the Green Paper) are the key end-use products for demand flexibility in the residential sector, at this stage of market development.

Q3. Do you think a standardised end-use product/application-based approach is relevant for the commercial sector, or is a bespoke/customised approach needed?

10. In our view, it would be practical to focus product standardisation initially on the residential sector (the 'low-hanging fruit'), given commercial users/customers are likely to require more customised products and a bespoke approach. A standardised approach could be considered for the commercial sector later, if still deemed necessary.

Q4. What do you think the key end-use products/applications are in the commercial sector?

11. Commercial product users/customers are best placed to respond to Q4, noting their requirements are likely to be more bespoke and customised compared with those of the wider residential consumer base. We can surmise that products that have application for commercial heating/boiling and cooling/chilling, pumping for irrigation, and to some extent, production could be explored for flexibility (without significantly disrupting business operations).

Q5. Do you think a standardised end-use product/application-based approach is relevant for the industrial sector, or is a bespoke/customised approach needed?

12. In line with our response to Q3, it would be practical to focus end-use product standardisation initially from a residential sector perspective. A standardised approach could be considered for the industrial sector later, if still deemed necessary.

Q6. What do you think the key end-use products/applications are in the industrial sector?

13. Industrial product users/customers are best placed to respond to Q6, given their requirements are likely to be more bespoke and customised compared with those of the wider residential consumer base.

Q7. What are the barriers to the uptake of demand flexible technology?

14. FlexForum, of which Bluecurrent is a member, has published an insights paper earlier this year which recommends actions to fill the holes in the flexibility value stack that will “let people and their flexibility do more”.² Of particular note are the recommendations on how a digitalised electricity system can maximise the value of flexibility, including the capabilities that need to be developed so that ‘cash signals’ can be created and sent to motivate a dependable flexible response to unpredictable conditions. This would incentivise people to easily and routinely say yes to more flexible customer propositions, e.g. value maximising retail products and prices. This enhances consumer choice and affordability and contributes to electricity system flexibility. We suggest that EECA explore these FlexForum recommendations in the further development of the Green Paper.
15. In addition to currently weak (or lack of) cash signals, other barriers could take the form of:
- Economic and financial barriers:** High initial costs, uncertain return on investment, lack of motivation to invest in end-use products due to ‘split incentives’ (where one party invests while another benefits);
 - Technical barriers:** Interoperability issues – one of the issues the Green Paper is trying to address – or lack of digital infrastructure;
 - Regulatory and market barriers:** Inconsistent or unclear rules that create complexity for potential end-use product providers and users, onerous requirements that can discourage market participation, lack of transparent valuation methodologies that measure the value of demand flexibility; and
 - Behavioural and social barriers:** Limited residential consumer awareness of the benefits of demand flexibility, privacy and security concerns, or resistance to change / bias for the familiar.

End-use product level components for demand flexible capability

Q8. The paper describes the three main end-use product components for demand flexible capability as: communication protocol, product response, and operational information.

- Do you agree that these are the main components for demand flexible end-use products?
- What other components or considerations are important for end-use products?

16. Bluecurrent generally agrees with the main end-use product components for demand flexibility identified in the Green Paper.
17. An important dimension of end-use products for demand flexibility is their capability to enhance consumer experience and consumer mobility. This could include how easy it is to use the product and

² <https://flexforum.nz/filling-holes-in-the-value-stack-will-let-people-and-their-flexibility-do-more/>, pages 14 - 15

how it can enable consumers to make better decisions, e.g. choosing the market offering or service provider that offers benefits (or greater benefits).

Q9. Do you think to support the development and uptake of demand flexibility there is a need to create a minimum level of standardisation at an end-use product level (covering communication protocol, product response, and operational information)?

18. Bluecurrent supports the adoption of widely agreed industry standards and protocols that would facilitate uptake of demand flexibility products and services and ensure a minimum level of service to all end-use product users and consumers.
19. While greater standardisation should be encouraged, it should not prevent parties from exploring alternative and innovative means of unlocking and optimising demand flexibility for residential consumers. We therefore support EECA's proposal for the creation of an approved list of residential demand flexible end-use products on a voluntary basis. A voluntary regime would embed flexibility by preventing technology/vendor lock-in and lock-out. This promotes the introduction of new and innovative end-use products that could better optimise demand flexibility for residential consumers, and consumers more generally who benefit from greater flexibility in the electricity system.

Development of demand flexible end-use products

Q10. Would you support EECA creating a voluntary approved list of residential demand flexible end-use products, similar to the EV Smart Charger Approved List?

20. As indicated in our response to Q9, we would support EECA creating an approved list of residential demand flexible end-use products on a voluntary basis. We suggest that such a list be updated on a regular basis, say at least every six months, given the rapid evolution of the technology and market for these products.

Q11. Would you participate in working groups on the key end-use products to develop voluntary demand flexibility requirements (covering communication protocol, product response, and operational information)?

- If so, what product based working groups would you like to be part of?

21. Bluecurrent would be happy to actively contribute to any working group(s) that EECA would establish to develop demand flexibility requirements for key end-use products. We would be particularly interested in working groups that will consider data, communications and IT standards for demand flexibility.

Q12. If you are an end-use product supplier, would you manufacture/import/supply end-use products that meet the voluntary specification?

22. End-use product manufacturers and suppliers are best placed to respond to Question 12.
23. We support end-use suppliers meeting the voluntary specification, which will not prevent them and other parties from developing other new and innovative products that enable demand flexibility that benefits residential consumers.

Concluding comments

24. We look forward to contributing to the further development of EECA's Green Paper that would promote the accelerated adoption of demand side flexibility products and services in the residential sector – and the wider electricity sector.
25. Please contact Luz Rose (Senior Regulatory and Policy Partner) at luz.rose@bluecurrent.co.nz if you wish to discuss any aspects of our submission.

26. Our submission does not contain confidential information, and we are happy for EECA to publish it in its entirety.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Matt Bostwick', with a long horizontal flourish extending to the right.

Matt Bostwick
Chief Customer Officer NZ