EECA Demand Flexibility Green Paper

Tēnā koutou

Thank you for the opportunity to comment on the EECA green paper – Demand Flexibility

Please see the response from Daikin New Zealand.

Daikin New Zealand

As one of New Zealand's most trusted names in heat pumps and air conditioning, Daikin can be found in homes, businesses and community projects across New Zealand and around the world. Daikin has been in New Zealand for almost 20 years, with the Head Office located in Mount Wellington, Auckland and branches in Wellington and Christchurch.

During this time, we have continued to expand the business, and we remain extremely innovative. Heat Pumps and Air conditioning remain Daikin NZ's sole focus, and we continue to be a world leader in this field.

Daikin's leading environmental technologies of heat pumps, inverters and refrigerants provide solutions in the crucial shift towards carbon neutrality, through supporting building electrification and energy decarbonisation. We are constantly developing and improving our products to be part of the climate solution, with a focus on energy efficiency and consumer benefits/end-user comfort and care.

We believe our responsibility in the market exceeds that of solely being a product supplier; our mission value is to support the whole supply chain in a just transition. Utilising our experience in technology and the suite of solutions we have available, we are driven to engage with and support the whole industry and our communities, through collaboration, education and Kaitiakitanga.

Submission Questions and Comments

Q1. The main use cases for demand flexibility presented in this paper are: managing peak demand constraints, optimising renewable energy use, and optimising home energy use. Do you think these are the main use cases? What other use cases are there?
We agree these are the main use cases. From a heat pump perspective, demand flexibility can also enable **thermal storage shifting** (pre-heating/cooling or hot-water pre-charging during low-demand periods), reducing system peaks and providing **ancillary grid services**. Another important use case is **supporting network resilience** — flexible demand can help maintain comfort and service continuity during constrained network or weather-related events.

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, etc. Do you think these are the key products? If not, what are the key products and why?
We agree with EECA's list. Heat pumps (space and water) are **core enablers** of residential demand flexibility because they can store energy thermally. Integration with smart controls, HEMS, and time-of-use pricing will maximise benefits. We also see potential in **whole-home**

system coordination, where heat pumps interact with EVs and PV storage through a single interface.

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?
A **hybrid approach** is best. Some baseline standards (communications, response logic, safety, and data protocols) should be consistent across technologies, but commercial HVAC systems often require **custom integration** with Building Management Systems (BMS). Flexibility needs will vary by building type, occupancy, and control strategy.

Q4. What do you think the key end-use products/applications are in the commercial sector?
Key commercial products: variable refrigerant volume (VRV/VRF) systems, chillers/heat pumps, air-handling units, and rooftop packaged units. These systems can shift or modulate load in response to grid or tariff signals without impacting comfort. Integration with **BMS and cloud control platforms** is critical for scalability.

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?
Industrial facilities are highly variable, so a **customised approach** is more suitable. However, a **standardised communication layer** (e.g. open APIs or interoperable protocols) would still be beneficial to ensure compatibility with aggregators and energy platforms.

Q6. What do you think the key end-use products/applications are in the industrial sector?
Industrial heat pumps, process heating/cooling, data centres, compressed air systems, and onsite thermal storage systems. There is growing potential for large industrial heat pumps to participate in demand flexibility by shifting heat generation to off-peak or high-renewable periods.

Q7. What are the barriers to the uptake of demand flexible technology?
Key barriers: (1) Lack of **clear standards and interoperability** between devices and aggregators; (2) Limited **consumer awareness** of solutions and benefits; (3) **Upfront cost** and uncertainty around return on investment; (4) **Complexity of control integration** for installers; and (5) **Lack of incentive structures** or pricing signals that reward flexibility.

Q8. The paper describes the three main end-use product components as communication protocol, product response, and operational information. Do you agree? What other components or considerations are important?
We agree with these components. Additional considerations include **cybersecurity**, **data privacy**, and **fail-safe operation** (ensuring comfort and safety if communication is lost). **Open standards** (e.g. Matter, Modbus, BACnet) will accelerate interoperability.

Q9. Do you think that 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?

Yes — establishing **minimum voluntary standards** would help manufacturers design compatible systems, reduce integration complexity, and ensure consumer confidence. Standards should allow flexibility for innovation and evolving technologies.

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?
Yes. A voluntary approved list would provide clarity for consumers, retailers, and installers. It could also encourage manufacturers to integrate demand-flexibility features early in product development and create a visible market for "flex-ready" appliances.

Q11. Would you participate in working groups on the key end-use products to develop voluntary demand flexibility requirements? If so, what product-based working groups would you like to be part of?
Yes. Daikin NZ would be interested in contributing to working groups on **heat pumps (space and water heating)**, **HVAC controls/BMS integration**, and **residential HEMS connectivity**. We would share manufacturer and installer perspectives on technical feasibility, cost implications, and consumer usability.

Q12. If you are an end-use product supplier, would you manufacture/import/supply end-use products that meet the voluntary specification?
Yes — Daikin NZ would support and supply products that meet voluntary demand flexibility specifications, provided they align with **global standards** and ensure **consumer protection**. We are keen to collaborate with EECA and other industry partners to bring demand-flexible solutions to the NZ market. But, strong frameworks, clear standards, and/or financial levels are required to send clear signals for product development opportunities.

Ngā mihi,

Contributions from

Ryan Philp, Head of Sustainability