Panasonic New Zealand Submission

EECA Green Paper – Unlocking the potential of demand flexibility – a residential product perspective

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Purpose

Panasonic New Zealand welcomes EECA's initiative to explore how residential end-use products can unlock demand flexibility.

The aims outlined in the Purpose section align directly with the ARIES (Advanced Residential IoT Energy Service) platform and ICON edge controller - technologies developed and deployed in New Zealand to enable secure, two-way energy coordination between homes and the electricity system.

Lower household energy costs

ARIES and ICON already provide automated load scheduling and optimisation across inverters, batteries, heat pumps, and hot-water cylinders.
Through direct control of Panasonic air-conditioning systems and compatible water-heating circuits, ICON can pre-heat or pre-cool before price peaks and shift heating to low-cost, high-renewable periods - directly reducing household bills.

System-level benefits

Aggregated ARIES data enables coordinated control of thousands of ICON devices nationwide, reducing coincident peaks and deferring network reinforcement.
This directly supports EECA's stated goal of lowering system costs through smarter utilisation of existing generation and line capacity.

Decarbonisation and renewable optimisation

ARIES and ICON will support IEEE 2030.5 (Smart Energy Profile 2.0) in 2026 for secure, two-way DER communication. By aligning controllable loads and distributed storage with renewable-generation periods, the platform facilitates efficient use of local solar and wind resources while maintaining consumer comfort.
(Panasonic NZ does not implement or endorse OpenADR; IEEE 2030.5 is currently our chosen and supported protocol for future flexibility compliance.)

Consumer empowerment and control

Consistent with EECA's focus on voluntary participation, ARIES provides consumers with full transparency and override capability.
Users can manage hot-water and device schedules, and choose whether to participate in flexibility events - all via local or cloud interfaces hosted entirely in New Zealand.

Support for coordinated government action

Panasonic NZ agrees that EECA's work must complement MBIE, the Electricity Authority, and Commerce Commission programmes.
ARIES is designed to integrate with emerging flexibility markets or distribution-level control schemes using open, standards-based APIs and IEEE 2030.5 data models.

Summary position

The objectives of the Purpose section are technically achievable today using the ARIES + ICON ecosystem, which provides NZ-hosted, IEEE 2030.5-ready, consumer-centric demand flexibility across key residential loads. EECA can accelerate deployment by recognising and partnering with proven local implementations rather than developing parallel frameworks.

2. Responses to Appendix 1 Consultation Questions

Q1. Main use cases
We agree with EECA's three use cases: managing peak-demand constraints, optimising renewable-energy use, and optimising home-energy operation.
A fourth practical use case is resilience and outage management, where flexible loads can temporarily reduce demand or operate islanded during local grid events.

Q2. Key residential products
We agree broadly with EECA's list. Priority products for demand flexibility are: heat pumps (space conditioning), electric hot-water cylinders, solar/battery inverters, EV chargers, and HEMS. Panasonic NZ's ICON controllers already manage these categories through a common interface.

Q3. Commercial-sector approach
A semi-standardised approach is viable for small/light commercial installations (e.g. shared-load HVAC or EV charging), but larger facilities may require bespoke integration. ARIES supports both models via scalable APIs and Modbus bridges.

Q4. Key commercial products
Heat-pumps for space conditioning, refrigeration plants, and commercial EV chargers are the most relevant. All are supported by the ARIES control stack.

Q5. Industrial-sector approach
Industrial flexibility requires site-specific design, but common protocol alignment across DER gateways would still yield benefit. Panasonic NZ advocates for a hybrid model: standard communications, custom control logic.

Q6. Key industrial products
Large heat-pumps, process water-heating systems, and on-site storage (thermal or battery) are prime candidates. SunVolt control hardware is already deployed in mixed-use environments where these assets coexist.

Q7. Barriers to uptake
Fragmented communication standards, limited consumer understanding, cybersecurity concerns, and unclear market access are key barriers.
ARIES will mitigate these through ISO 27001-certified NZ Azure hosting, secure transport protocols, IEEE 2030.5 integration and transparent consumer controls.

Q8. Main product-level components
We agree that communication protocol, product response, and operational information are fundamental. For Panasonic NZ, communication with ARIES is via standardised API, soon IEEE 2030.5; product response is managed locally by ICON; and operational telemetry is securely streamed to ARIES.

Q9. Need for minimum standardisation
Yes. A minimum standard based on IEEE 2030.5 and AS/NZS 4777.2 compliance will ensure interoperability and market readiness while preserving manufacturer innovation. Manufacturers should be allowed to maintain proprietary communications control and security from their cloud to the devices, to ensure rigorous cybersecurity protocols.

Q10. Voluntary approved list
We support EECA developing an approved-product list, provided it recognises platforms already implementing IEEE 2030.5 and local hosting requirements. ARIES + ICON would seek inclusion.

Q11. Working-group participation
Panasonic NZ will participate in working groups for heat-pumps, hot-water systems, solar/battery inverters, and HEMS/local controllers.

Q12. Supply of compliant products
Yes. Panasonic NZ already manufactures and supplies end-use products and controllers capable shortly of meeting voluntary IEEE 2030.5-based specifications.

Summary statement

Panasonic New Zealand supports EECA's vision for residential demand flexibility and recommends that the national framework centre on IEEE 2030.5 interoperability, local data sovereignty, and consumer-controlled participation. Our ARIES platform and ICON edge device ecosystem already demonstrate that these principles can be delivered at scale in New Zealand homes - including integrated management of heat pumps, hot-water cylinders, battery systems, and EV chargers - achieving measurable reductions in household cost, carbon intensity, and network stress.