16 September 2019

EnergyAustralia Pty Ltd
ABN 99 086 014 968
Level 33
385 Bourke Street
Melbourne Victoria 3000

Phone +61 3 8628 1000
Facsimile +61 3 8628 1050

enq@energyaustralia.com.au
energyaustralia.com.au

Mr Craig Walker
Smart Appliances Regulation Impact Statement (RIS) Project Team
Energy and Technical Regulation
Department for Energy and Mining
Lodged by email: smartappliances2019@sa.gov.au

Dear Mr Walker

PUBLIC: 'Smart' Demand Response Capabilities for Selected Appliances

EnergyAustralia welcomes the opportunity to make this submission to E3 on its Consultation Paper: 'Smart' Demand Response Capabilities for Selected Appliances.

EnergyAustralia is one of Australia's largest energy companies with around 2.6 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We also own, operate and contract an energy generation portfolio across Australia, including coal, gas, battery storage, demand response, wind and solar assets, with control of over 4,500MW of generation in the National Electricity Market (NEM).

EnergyAustralia has a growing demand response portfolio. EnergyAustralia's Demand Response (DR) program supported by the joint ARENA and AEMO DR Initiative, began in December 2017 and involves the deployment of 18 MW of DR in NSW, increasing to 20 MW in years two and three. [1] The program also involves 20 MW of DR in Vic/SA in year one, increasing to 30 MW in years two and three.[2] The program includes mass market customers and a portfolio of C&I contracts.

EnergyAustralia strongly supports the growth in competitive DR products. DR has potential to increase the efficiency of energy delivery within the NEM and drive lower costs for all customers. We note that competitive demand response products are developing in market, and there is now a variety of demand and price response products available to customers. These can assist customers with behavioural, automated and controlled responses to price and are offered by retailers, non-retailer third parties, and distributors.

We consider that automated DR plays an essential role for increasing the take up of DR by residential and SME customers. Behavioural response products/services might have less take up in residential and SME customer segments as it relies on customer participation. In this regard, the current proposal to mandate DR capability in selected appliances would facilitate the development of automated DR and DR generally.

[1] https://arena.gov.au/projects/energyaustralia-demand-response-program/
[2] https://arena.gov.au/projects/energyaustralia-demand-response-program/

Our submission below broadly discusses issues and answers selected questions from the consultation paper. If you have any questions relating to this submission, please contact Selena Liu (Selena.liu@energyaustralia.com.au or 03 8628 1548).

Sarah Ogilvie
Industry Regulation Leader

1. Coordinated approach

EnergyAustralia notes that the current proposal's scope is limited to mandating Australian Standards under the *Greenhouse and Energy Minimum Standards Act 2012* and matters not related to the technical specifications of appliances are out of scope.

While not relevant to this consultation, we ask that the Department flag with COAG the need to consider other matters such as consumer protections around the use of this mandated DR via the National Energy Customer Framework or other regulation, where this has not been planned for other consultations. For instance, the AEMC's wholesale DR mechanism consultation will likely cover consumer protection obligations for small customers which would apply to the new Demand Response Service Provider participant role, but not other providers.

Another consumer issue to consider is the protection of data which is collected by DR appliances, including data security issues in data transmission and storage, and ultimately data disclosure and access by parties.

Separately, we suggest that the current proposal be communicated to the Australian Energy Market Operator, ARENA, network service providers, and other organisations which are running trials or initiatives to which DR is relevant.

2. Option 3

EnergyAustralia supports Option 3 as it would materially facilitate the development of the automated demand response market, compared to Options 1 and 2 (BAU and voluntary adoption of DR appliances).

EnergyAustralia's experience with retail DR is that proprietary DR capability leads to market fragmentation. This fragmentation means not being able to aggregate DR programs across appliances which leads to issues in obtaining scale. Option 3's standardisation of DR capabilities in selected appliances could facilitate developing market solutions that will resolve this fragmentation issue.

3. Australian standard

We agree that Australian Standards 4755.2 and 3 appear to be the most appropriate standards. However we note that there might be some asset stranding risk under 4755.3 where a customer leaves the aggregator and the new aggregator needs to install a new Demand Response Enabling Device (DRED) and the original DRED is not repurposed. The costs of recollecting the DREDs may exceed the cost of the DRED particularly as costs of the DRED are relatively low. [CIC [redacted] CIC]. This particular asset stranding issue is likely to contribute to the broader problem of e-waste which is already a material issue in Australia.

If Australian Standard 4755.3 is mandated, there is a case for greater standardisation in standardising communication protocols between the end device and the remote agent, potentially via the DRED standards (4755.1). This standardisation could have other benefits in facilitating the development of common communication platforms and user applications that can operate across appliances, leading to operational efficiencies for aggregators and better customer experience.

In the US, smart home devices have had higher customer take up due to common communication protocols used by HVAC manufacturers. The relevant US standard is IEEE 2030.5-2018.

4. Product scope

We support the application of the proposed mandatory Australian Standards to the appliances identified in the Consultation Paper (certain air conditioners, pool pump controllers, electric vehicle chargers and electric water heaters). In addition, we note the below specific comments:

- Water heaters: solar electric water heaters are similar to electric water heaters in terms of functionality when not solar PV powered. The benefits of DR to solar electric heaters would be the same.
- Air conditioners: The 19kW threshold reflects the maximum capacity of residential/domestic use but would also likely capture some SME business users. EnergyAustralia considers this is appropriate.
- Battery and solar PV inverters: We understand that DR capability is already mandated for inverters under AS/NZ 4777.2. We agree with this continuing as a mandatory requirement.

In time, we would support potentially extending making DR capability mandatory in other appliances such as devices which can control electricity at circuit-level in real time.

Specific questions

5a. Do you have information that demonstrates the ability of so-called "smart home" devices and systems to achieve automated demand response for the appliances within the scope of this proposal?

c. How many products currently on the market have the ability to connect to demand response programs? If so, which or what type of programs?

We understand that smart home devices such as Google Home and Amazon Alexa could potentially be used to turn appliances on and off. However, their ability to do so depends on what is connected behind the meter at the appliance or circuit level and their level of integration for example with Google's voice assistant via the Myservice API, or Siri and Alexa's voice command assistants. In addition, these platforms have integrated with an array of third party Home Automation providers. A few examples include companies like Belkin, Aeotec, Philips Hue and many others. Some of these devices include features that enable them to participate in DR programs however their ability to do so depends on their form factor, communications protocol, software capability (open sourced or proprietary) and targeted audience.

Appliances that are currently being marketed with DR capability include Watt Watchers [CiC [redacted] Cic], Sensibo for air-conditioners and several others.

9. Do you think the estimates of annual participant costs are reasonable? Do you have information or data that can improve these estimates?

We recommend that the ongoing cost of communications from the appliance to the remote agent should be considered when assessing annual participant costs. For instance, [**CIC** [redacted] **CIC**].

10 Is lack of demand response capable products a barrier to the introduction of demand response programs for small consumers?

Do you think that mandating demand response capability for these products will lead to their activation and to consumer enrolment in DR programs?

Yes, lack of standardised demand response capable products is a barrier to demand response programs. However, there will be other costs/practical issues which may limit customer take up. For instance, activation would be made easier if a customer could install their own DRED so that attendance at a customer premises is not required. However regulatory requirements e.g. electrical requirements may prevent customers from doing this.

11. It is assumed that the cost of communications platforms to support demand response and direct load control services will be low (e.g. through the use of existing electricity supply infrastructure such as ripple controls or smart meters, or general infrastructure such as WiFi or 3G/4G/5G). Do you agree? If not, can you provide estimates of the platform set-up costs?

The cost of communication platforms to support demand response and direct control services can vary depending on the communications protocol, scale and level of data packages sent and frequency of data transmission. Scale is particularly important for low cost communication platforms.

[CiC [redacted] CiC]

Separately, we also note other issues around communication of data which might be relevant for other Australian Standard consultations. In EnergyAustralia's experience WiFi can be an unreliable communication mode and other communication modes should be available on the DRED or appliance as an alternative.

13. What can appliance suppliers, installers and energy utilities do to facilitate customer enrolment in direct load control or demand response programs?

EnergyAustralia incentivises customer enrolment in DR programs via financial payments to the customer. These price points are developed via our human centred design and partly funded by ARENA. We consider that customer centric design for DR programs and applications is essential to encourage customer take up.

Appliance suppliers can also assist in customer take up by advertising and communicating the DR capability of their appliances much like they do for energy efficiency products. Most of our research shows that financial incentives are important to customer take up at first, and then as the market matures customers become aware of the potential cost saving benefits and consider the benefits worth paying for.

This consumer behaviour would likely apply to how DR is received in market. Appliance manufacturers can encourage take up as the market matures by promoting that DR appliances are both efficient and can potentially provide cost savings. Manufacturers can play a role in promoting this messaging to customers. They can also assist in providing messaging that addresses any concerns around safety and DR.