AUSTRALIAN ENERGY COUNCIL

Mr. Craig Walker
Smart Appliances Regulation Impact Statement Project Team
Energy and Technical Regulation
Department of Energy and Mining
Government of South Australia

Submitted by email to: **smartappliances2019@sa.gov.au**

23 September 2019

Dear Mr Walker

E3 Consultation Paper: 'Smart' Demand Response Capabilities for Selected Appliances, August 2019

The Australian Energy Council welcomes the opportunity to make a submission to the Public Consultation Paper Smart Demand Response capabilities for selected appliances.

The Australian Energy Council (AEC) is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

The development of technical standards to facilitate the growth of demand-side participation is supported by the AEC. The AEC considers that the proposal to mandate compliance with AS/NZS 4755 Part 3 or AS 4755.2 in their current form is premature, and in our view, substantial work remains to be done to develop Australia's technical standards framework.

The AEC consider that technical standards should adhere to the following guiding principles in order to realise the full value of demand-side energy solutions. They must:

- Align with internationally accepted standards;
- Be technology neutral; and
- Empower consumers.

We have used these guiding principles to assess the proposal and supporting analysis contained in the Consultation Paper.

The proposal to mandate demand response capability

The Consultation Paper proposes mandating that all air conditioners, electric storage hot water heaters, pool pump controllers and electric vehicle chargers that are supplied or offered for supply be required to comply with the full range of demand response modes in either the relevant part of AS/NZS 4755 Part 3 or AS 4755.2 as detailed in Table 2 (replicated below):

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Table 2. Proposed mandatory Demand Response Modes in AS/NZS 4755

Product	Demand Response Modes (DRMs)						
	AS/NZS 4755 part (alternatives)	Safety Disc-connect	Minimum load/off	Reduce load	Switch on / store energy	Discharge energy if capable	Do not discharge energy
Air conditioners	3.1 (a); 2(b)	NA	DRM 1	DRM 2,3	NA	NA	NA
Pool pump controllers	3.2 (a); 2(b)	NA	DRM 1	DRM 2	DRM 4	NA	NA
Electric water heaters	3.3 (a); 2(b)	NA	DRM 1	DRM 2,3	DRM 4	NA	NA
Electric vehicle chargers	3.4 (c)	DRM0 (e)	DRM 1	DRM 2,3	DRM 4	DRM 8 (d)	DRM 5 (e)

(a) Published part. (b) Draft of AS4755.2 is at public comment stage, so DRM numbers indicative only. (c) Unpublished draft – would need to be brought to publication or the contents incorporated in a GEMS determination or similar. (d) AS/NZS 4755 framework includes DRMs 6 and 7 to constrain the rate of discharge, but these would not be mandatory. (e) Mandatory safety modes for products capable of discharge to grid.

AS/NZS 4755 remains the only DR framework for electrical products in Australia. It currently includes the requirement to provide a physical interface on AS/NZS 4755.3-compliant electrical products, so that products can receive operational instructions from an external 4755.1-compliant Demand Response Enabling Device (DRED). We are concerned that given the technological advancements seen across the international market, including wireless and cloud-based demand response mechanisms, the DRED interface requirement restricts product innovation and market interfacing solutions in Australia imposes an unnecessary additional cost on consumers wanting to engage in DR.

There is a substantial risk that in mandating 4755, the Australian market for demand responsive electrical products and services would fragment with various retailers, network businesses, aggregators and product manufacturers adopting divergent systems (including restrictive proprietary systems). Moreover, some product manufacturers may choose to stay out of the Australian market altogether due to these restrictive requirements.

In 2017, the AEC brought forward the proposal to create AS4755.2 with the intent to create an enhanced DR standards framework that would increase flexibility, reduce cost and improve customers' experience in the delivery of demand response services. Importantly, AS4755.2 was not intended to be a specified communications protocol. Rather, the framework would permit the use of any protocol (international or national, public domain or proprietary) which can be demonstrated to meet, but not limited to, the minimum specified functional requirements of the demand response system. This approach would reduce costs to manufacturers and customers and increase customer choice in relation to products and/or services.

In reviewing the draft standard AS4755.2 that was subject to industry consultation in August, it is apparent that substantial work remains to create a fit-for-purpose technical standards framework. Having regard to our guiding principles elaborated above, we observe the following:

- The standard does not currently align with the international accepted standard for demand response, IEC 62746-10-1:2018 Systems interface between customer energy management system and the power management system - Part 10-1: Open automated demand response. The absence of minimum requirements for two-way communications and restrictive provisions governing feedback pathways risk creating technical requirements for the Australian market that are not compatible with international products and services. A large portion of distributed energy products and services are supplied into the Australian market by international manufacturers and suppliers. It is therefore critical that Australia's technical standards align with internationally accepted standards to ensure customers have access to an open and competitive market for products and services.

- The standard is not technology agnostic or future-proofed for future technological developments. While the standard would enable some DR to be used without a DRED device, it misses some technologies already in market and does not create a framework for future technologies to comply unless the standard is updated at a later point in time. The application of the standard is limited to electrical products of a class covered by the appendix.
- The standard does not appropriately account for customer choice in the provisions governing customer override. Customer should have the ability to override a DRM (regardless of the technology application) however the customer's action to override should also be communicated back to the remote agent to provide visibility.

We also note the commentary in the Consultation Paper that AS/NZS 4755 does not currently contemplate EV chargers and that it will be necessary to re-commence drafting of the standard or add a new appendix, if the same compliance options are available for EV chargers.

Given that the EV charging sector is its early stages of development both in Australia and internationally, we would caution against mandating a standardised approach that risks stifling innovation and consumer choice. Developing an appropriate standard will require careful consideration of a range complex matters, including but not limited to:

- Ascertaining the minimum technical requirements for EV charge points necessary to facilitate the management of electricity network capacity and energy availability;
- Developing data sharing arrangements and diagnostics to guard against whole-of-system risks;
- Determining the minimum level of 'smart' performance required to protect consumers in the event of loss of communications or if the charge point operator ceases to support the charge point; and
- Facilitating transactional traceability for consumers.

We would therefore recommend that the COAG Energy Council consider establishing a Technical Working Group comprised on industry representatives to determine an appropriate timeframe to develop a technical standards framework and execute that program through appropriate industry consultation. This work could be led through the recently established EV Grid Integration Working Group that is being facilitated by the Australian Energy Market Operator and ARENA with participation from relevant industry associations.

Further information

Any questions about our submission should be addressed to David Markham by email to david.markham@energycouncil.com.au or by telephone on (03) 9205 3107.

Yours sincerely,

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