

Department for Energy and Mining - Response to feedback from 17 March 2021 Consultation Sessions and subsequent queries on Proposed Demand Response Capabilities for Selected Appliances in South Australia and Proposed Amendments to Local Energy Performance Requirements for Water Heaters

POOL PUMP CONTROLLERS		
Key Issue	Detail	DEM Response
Communication requirements in 4755	Concerns regarding potential unnecessary costs to build in capability for communications technologies that may never be used (3G,4G).	The intention of using 4755 is to provide a minimum communications capability for these appliances to receive and respond to DR operating instructions. It does not prescribe or prohibit 3G,4G or any other technology. Feedback is invited on any alternative mechanism to specify a communications framework that is low cost, covers all homes and enables customer switching between aggregator offers.
Compliance through use of add-on technologies	Uncertainty over whether an appliance will comply if it has minimum DR capability that allows for new 'add-on' technologies.	The proposal is to restrict compliance to 4755.2 rather than allow compliance through the 'DRED-based' part 4755.3.2. There will be no restriction on demand response service providers or product suppliers adding additional functionality if they wish.
DR aggregators should determine communications requirements	Concerns that the DR market is very uncertain, and it should be left to future DR service providers to determine what pathways are used to transmit signals to control these appliances.	The intention of using 4755 is to set a minimum communications capability that can be used by different DR aggregators, possibly offering different communications pathways, to provide for customer choice. Feedback is invited on any alternative mechanism to provide a communications framework that is low cost, covers all homes and enables customer switching between aggregator offers.
Whole of house control is preferred, rather than individual appliances	Any DR requirements should focus on control of the whole house through use of home energy management systems (HEMS) rather than specific appliances	The current proposal is focused on establishing minimum DR technical requirements for individual appliances to receive and respond to DR operating commands. Remote agents may orchestrate multiple appliances in their offering to customers. There is currently no HEMS standard within the 4755 framework, but

		<p>HEMS suppliers could use the 4755 capabilities to link appliances to the HEMS.</p>
<p>Lack of alignment to the national process</p>	<p>Concern that if there are multiple DRSPs, using different communications technology this will cause confusion.</p>	<p>The intention of specifying 4755 is to achieve some degree of common DR capability across this appliance in SA. The proposed use of 4755.2 rather than 4755.3.2, and the requirements for DRM1,2 and 4 from 2024 assumes there will be adequate lead time for industry to meet that requirement. Further feedback on this issue is invited from stakeholders.</p>

EV CHARGERS		
Key Issue	Detail	DEM Response
Net benefits of the measure	Concern that, based on the modelling provided, the net cost benefit and the level of potential flexible energy load achieved from of accelerating the national timeframe for SA does not seem to warrant a local requirement for this appliance.	While accelerating against the national timeframe is largely cost neutral, a local requirement will avoid any risks of slippage in the national process. Also, benefits are sensitive to uptake rate of EVs and DR aggregation.
Alternate standards	Several stakeholders recognised the potential benefits of DR capability requirements but noted a preference for Open Charge Point Protocol (OCPP) as many models meet this already.	Proposed requirement includes compliance pathway for an equivalent standard if OTR determines there is an equivalent to 4755. Feedback is invited on potential equivalence of OCPP and other standards to 4755 in terms of DRMs, consumer churn options, firmness of response to operating instructions etc.
Alternate standards	Static set point in 4755 approach will not provide as much flexibility to DRSPs to monetise load management in the two-sided market as potential other international standards approaches.	Intention of the proposal is to provide a technical platform to facilitate the two-sided market as well as potential offerings from DNSPs. Feedback is invited on alternative mechanisms to 4755 to achieving that objective.
Bi-directional requirement	Concern that mandating DRMs5-8 will mean bi-directional chargers are mandatory and will increase the cost of chargers	DRMs 5-8 will be required only for chargers that are capable of discharge to grid. So, there will be no requirement for chargers to be capable of discharge to grid.
Risk of incentivising direct connection to power outlet	Concern that the requirement will increase the cost of chargers and risk incentivising bypassing charger and connecting direct to wall socket	Feedback is sought on whether the proposal will increase use of slower charging options direct to the wall socket, noting the incremental cost of DR capability in comparison to the overall cost of an EV and charger, and noting the expectation that remote agents will offer financial incentives for DR activation.
Lack of 4755 compliant models	Concern at the lack of complying models and fact that relevant parts of 4755 are yet to drafted or released.	Feedback sought on potential for adoption of the part of 4755.2 covering stationary battery controllers (which is based on 4755.3.5) and/or alternative international standard.
Level 2 and Mode 3 charging	Stakeholders raised questions over the different typical charging times and controllability for DC and AC chargers, and the different benefits each could offer to reducing	Most of the benefits modelled for EV chargers were derived from reducing peak.

	maximum summer peak and increasing minimum operational demand.	
API	Concern that the API in 4755 needs to be clearly specified to enable aggregation of multiple appliances cost effectively.	Use of 4755 is intended to achieve an agreed, open API platform.
Development of standards	Noting that 4755 does not as yet have a part specifically for EV chargers	Noted – options are to develop such a part, adopt an equivalent international standard, or both.

ELECTRIC WATER HEATERS		
Key Issue	Detail	DEM Response
Solar sponge tariff	Query whether the cost modelling assumes use of the solar sponge tariff.	Yes, the EES report includes data that incorporates solar sponge, although the main figure shown with costs versus hot water demand is based on historical tariffs.
Annual running costs	Query whether the modelled annual running costs of the 27 scenarios was for the whole year or only winter	Annual costs are provided based on a seasonal profile specified in AS/NZS4234 (which defines hot water use in terms of winter load).
Data sources	Query on the data sources of the heater technology break down per state	Various sources were used, detailed in EES report chapter 8. They include data from SAPN, ABS, Census, BIS Oxford Economics and gas connection data for SA.
DR capability costs	Query on whether capital costs to manufacturers is assumed in the modelling to be passed on to consumers without recovery of overheads and margins	Cost assumptions in GWA modelling are incremental prices charged to consumers, including manufacturer and on costs. Any cost benefits in the EES and GWA modelling should not be compared to a 'no regulation' scenario, but rather to the Energy Ministers' agreed timeframe for introducing DRM1 requirements for all electric water heaters.
Activation rates	Query on what other measures will drive uptake to ensure assumed activation rates in the modelling are achieved	Solar sponge tariff will drive economic incentives to shift water heater loads. SA government DM trials and retailer obligation scheme (REPS) are also in place to drive uptake of DR for water heaters.
Role of DNSP	If there is a 1 July 2021 start, the only possible compliance path would be via 4755.3.3. Will SAPN consider use of DREDs to control water heaters.	Feedback is invited on whether compliance should be restricted to 4755.2 only and the earliest feasible implementation date.
Data accuracy	Query of accuracy of product type breakdown in the EES report	A wide range of data was used, and these were carefully reconciled to obtain best estimates. Feedback on any alternative, comparative data sources is invited.
Smart meter control	Is a heater that is controlled by the contactor in a smart meter compliant with 4755?	4755 is a standard for the appliance and the testing is done at the appliance level. De-energising the heater by opening the contactor on a smart meter would not be compliant. Using the smart meter as part of a communication pathway could be feasible.

NCC 2022	Will the DR capability requirement be included in changes to the NCC Vol 3 2022?	Any changes will be reflected in the NCC 2022, but there may also be a technical requirement issued prior to NCC 2022.
International standard	CTA 2045 may provide an alternative to 4755.	Feedback about equivalence to 4755 invited via submission.
DR controller	Query whether a 'DR controller' connected to the heater would be compliant	4755 applies to the appliance. If the DR controller is part of the appliance (as defined in 4755) the combination could be compliant.
DRM1 and DRM4	The same benefit could be achieved by only requiring DRM1. This would avoid added cost of DRM4.	DRM1 is primarily intended for short duration load shedding. DRM4 is more suited to load increase during solar sponge, or optimising energy use through load shifting and arbitrage at other times when there are low wholesale prices.
Timing	1 July timing is overly ambitious given lack of complaint models and global supply chains.	Noted, however in most circumstances electric storage resistive heaters are currently not permitted in SA. Feedback is invited via submission on any current models that would meet requirement.
GEMS timing	Query on consequences if GEMS timeframe slips	SA will monitor progress on implementation of the Energy Ministers' commitment. Impacts on market choice for SA consumers resulting from local regulation has been estimated in the GWA report.

AIR CONDITIONERS		
Key Issue	Detail	DEM Response
4755.2 timing	Query on release date for 4755.2	Latest estimate is mid-year. Technical work complete, release for public comment is in the hands of Standards Australia.
Interstate sales	Does a local sales restriction only cover sales in SA	The applicability of the requirements to traders located outside SA but selling into SA would need to be considered on a transaction by transaction basis.
Slides	Will the presentation be available?	It has been loaded onto the DEM website. https://www.energymining.sa.gov.au/
DR markets and aggregators	Who will be controlling the devices and how will they be monetising that control	The proposal is not prescribing how the load control will be monetised, or what parties can offer aggregation incentives.
Fixed versus dynamic reference values	Concerns that a dynamic reference value approach in the standards cannot be delivered.	The latest version of 4755.2 has reverted to a fixed reference value approach.
Maintaining DRED option	Will SA consider maintaining the DRED option longer term in addition to 4755.2 compliance pathway?	Current proposal is to require 4755.2 only. Feedback is invited on current models that meet that standard. Aggregators or manufacturers can add additional functionality if they wish
Post-dating the requirement commencement to release of 4755.2	Would SA consider setting the requirement to commence two years following release of 4755.2?	Other alternatives for accelerating implementation could include replicating provisions of the draft standard as a technical requirement, to ensure the proposed timeframe is met.