

Department for Energy and Mining - Response to feedback from Consultation on Local Demand Response Requirements for Selected Appliances and Proposed Amendments to Local Energy Requirements for Water Heaters

General		
Key Issues	Detail	DEM Response
National harmonisation	Stakeholders recommend harmonising with the national timeframe and alignment of SA requirements with the national requirements.	DEM has made amendments to commencement timings and compliance pathways. The revised proposal is more closely aligned to the agreed national requirements.
Product development time	Significant development time required to develop compliant products.	DEM has made some amendments to commencement timings and compliance pathways.
AS4755.2 delays	4755.2 will not be published in time for development of complying models, causing a high risk of supply shortage. Recommend adopt international standard if 4755.2 delayed.	DEM understands that 4755.2 will be released during 2021.
Lead times	Lead time of four years from date of regulation or 4755.2 publication is necessary.	Additional compliance options have been provided for air conditioners to ensure product availability.
Communications protocols	<p>Proposed aligning the framework with the IEEE 2030.5 communication protocol that will play an increasingly critical role in how inverters but also DR capability is controlled and remotely activated.</p> <p>Development of a nationally harmonised technical communication protocol is a higher priority than DR requirements</p>	<p>DEM understands alignment with IEEE2030.5 will form part of 4755.2.</p> <p>DR requirements and a national communications protocol are not incompatible. It is understood that 4755.2 would support a range of communication protocols, so a stock of 4755 compliant products will be valuable irrespective of whether a single nationally harmonised technical communication protocol is developed.</p>
Batteries	The increasing penetration of battery systems will optimise energy time shifting by residential customers for their own comfort and reduce the need for appliance DR standards.	DEM's view is that third-party demand aggregation offerings can incorporate DR-capable batteries and DR -capable appliances. Also, many residential customers will not take up batteries and the proposal will facilitate their participation in DR markets.

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4755.2 compliance requirement	The requirement that devices respond wirelessly should be reconsidered.	Wireless communications are a requirement under 4755.2. The proposal has been revised to allow for additional compliance options including via DRED-based solutions.
Online products	Consumers are likely to by-pass the requirements and purchase cheaper non-compliant products online.	For those proposed DR-capable appliances that generally require installation by licensed electricians, such as air conditioners and electric vehicle chargers, an alternative local implementation mechanism will be adopted. Implementation will be via a technical installation standard under the <i>Electricity (General) Regulations 2012 (SA)</i> rather than via a sales restriction under the <i>Energy Products (Safety and Efficiency) Act 2000</i> , as was proposed in the consultation paper. This mechanism will address the issue raised.
Activation rates and costs	Costs to consumers of both product and activation will be more than the estimate in the report. The activation rates forecast and the benefits arising in the proposal are overstated.	Cost benefits and product withdrawal risk have been evaluated and included in the supporting analysis as part of the consultation paper.
National harmonisation benefits	Separate, early local requirements will not deliver sufficient benefits to justify the costs involved State-specific rules add compliance work and costs to consumers.	Revised proposal aligns more closely with the national timeframe.
Discount rates and interest rates	Savings benefits should be reduced to the current interest rate of around two percent.	The analysis uses the discount rates prescribed by OBPR in 2019 for COAG RISs. DR program costs and benefits accrue at similar rates over time, so cost/benefit ratios are relatively insensitive to the discount rate.
Valuing network costs and benefit	Concerns raised that an invalid method to value demand reductions by assuming all DR avoids network augmentation. Savings from an accelerated DR mandate commencement are predicated on assumed growth on peak demand, whereas	It is projected there will be local network constraints even if state-wide demand growth moderates, and aggregators will naturally offer consumers greater incentives to activate products within those areas.

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	AEMO data shows existing network capacity is sufficient until 2031.	
Level of costs and benefits	Costs to consumers of both product and activation will be significantly more than has been estimated in the report underpinning the initiative. Activation rates forecast in the proposal are considerably overstated and that, as a result, the benefits arising from the proposal are also overstated.	The costs and benefits in the supporting documents to the consultation paper have been modelled independently.
Other SA smarter home requirements	Uncertain how this proposal relates to other SA government work such as requirement to appoint relevant agents.	There is no direct relationship to the relevant agent requirement. New appliances will be mandated to have DR-capability however it will be up to customers as to whether they choose to activate this feature.
AS 4755 risks	The risk of having the solutions anchored to only AS4755, locking out other standards and could restrict the amount of DR that is able to be activated.	The absence of a prescribed open, non-proprietary technical standard for DR has limited the ability of customers to opt in or out of DR offerings between service providers without additional cost and installation of extra equipment at their premises. A 'non-prescriptive' approach has not driven broad uptake of DR to date. Prescriptive open, non-proprietary technical DR standards can facilitate competition in DR offers as they prevent customers being locked into particular service arrangements.
Product withdrawal risk	Does not agree with the consultation paper that there is a low risk of supplier withdrawal.	The preferred options have been modified further to increase compliance options and ensure product availability and customer choice.
Stranded products	Market may outpace standards and legislation resulting in OEMs required to adhere to outdated standards. Proposal should also permit compliance via 4755.1 to prevent customers being left with stranded assets.	The proposed requirements have been amended to permit additional compliance pathways for air conditioners, including DRED options.
Trials and incentives preferred	SA government should consider incentives or trials if it considers the national process on DR is not developing quickly enough.	DR aggregation has been included in the Retailer Energy Productivity Scheme (REPS), and SA government has funded the Demand Management Trials Program.
Outcomes-based approach	Proposes an outcomes-based approach that enables some flexibility in the means in which the response modes are achieved.	The proposal is to establish an agreed, common, open standard for DR capability as a basis for the market to build DR offerings to customers. The intention is to enable customers to 'churn' between DR offerings

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		simply and without unnecessary cost to maximise opportunities for customers to be rewarded for their DR.
Managing remote agents	Concerns about processes for managing multiple remote agents, and accreditation of remote agents. Market needs to be established for DR.	The proposal is for a product-based standard. A barrier to the DR market establishing is the lack of technology which is DR capable.
Risks of a prescriptive approach	Need to ensure that the requirements are not too prescriptive and therefore locking out other opportunities to grow the DR capability in SA.	The absence of a prescribed open, non-proprietary technical standard for DR has limited the ability of customers to opt in or out of DR offerings between service providers without completely replacing one or all of their DR systems.
Uptake and activation rates	There is uncertainty around the uptake rates of DR capabilities and whether the resources to provide the capability is merited.	Modelling of costs and benefits have been sensitivity tested for various activation rates. Penetration of products that meet a common, open standard for DR capability will be essential to ensure uptake of DR programs.
DR markets	Consumer participation is best encouraged through implementing appropriate market structures not through technical obligations.	DEM's view is both are required.
GEMS schedule uncertainty	Industry apprehension regarding timing of implementation of the Energy Ministers 2019 commitment because the Commonwealth is yet to advise a timetable to amend the <i>GEMS Act 2012</i> to enable DR capability regulation.	Noted.

EV Chargers

Key Issues	Detail	DEM Response
International Standards	Industry advocated for use of international standards in preference to AS/NZS 4755, noting that there may be suitable international alternatives that would meet the objectives of the policy to introduce an open non-proprietary DR capability standard.	DEM will undertake further research to determine whether there is an international alternative standard that provides equivalent DR capability functionality to AS/NZS 4755. Following completion of that research DEM will prepare a revised proposal for the government's consideration by late 2021.

Pool Pump Controllers

Key Issues	Detail	DEM Response
Limited benefits and compliance challenges	There was limited specific feedback on this product. The level of potential benefits in the modelling was queried. Compliance challenges were raised regarding interstate purchases or internet purchases.	DEM notes the compliance challenges raised during consultation regarding interstate purchases or internet purchases. These may present significant obstacles to a local sales restriction via the <i>Energy Products (Safety and Efficiency) Act 2000</i> . As many controllers do not require installation by an electrician it is not feasible to implement the requirement via an installation technical standard under the <i>Electricity (General) Regulations 2012</i> (SA), as would be possible for air conditioners and EV chargers. DEM does not propose to proceed with local DR regulation for this product but will continue to work with the GEMS program to progress the nationally agreed DR requirements.

Water Heaters

Key Issue	Detail	DEM Response
Deeming smart meter control compliant	Proposes an outcomes-based approach that enables some flexibility in the means in which the response modes are achieved. E.g. certain solutions should be deemed to be compliant even if they do not meet the proposed appliance registration framework on the basis that they achieve the outcome of delivering more demand response capable load such as hot water wired through a smart meter or immediate utilisation of newly installed hot water.	This measure will target new appliances and will not prevent control of existing heaters through smart meters. Control of a DR compliant heater can also be provided via a smart meter. Load control through smart meters is not a product-standard approach and is already an available option. The intention is to introduce a DR product standard to permit customers to participate in the DR market and opt in and out of DR offerings easily, without being locked into particular service arrangements.
Product withdrawals	If the proposal proceeds, South Australians would be unable to replace their electric water heater from 1 July 2021, and would be forced to make alternative, less desirable arrangements that will be more costly for households and which may result in higher GHG emissions.	Under the modified proposal customers who are currently able to install electric heaters will be able to continue to do so. Customers who currently cannot install electric heaters will be able to do under an exemptions approach from 1 January 2022, providing the heater is DR capable.

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Implementation of DR optimisation	There should be more clarity about how the increased DR capacity will be activated and managed within the network. Needs to be conversation with industry about what is realistic and achievable, and the reforms that would lead to the greatest activation of the DR capability.	DEM will remain engaged with industry stakeholders in the development of the frameworks for demand side response markets.
Availability of products	Timings for the availability of compliant products outlined for both 2021 and 2023 are unachievable.	Modified proposal permits DR capable electric heaters from 1 January 2022, under an exemptions approach.
Water heaters less than 125 litres	Electric water heaters less than 125 litres in size should be excluded from any demand response requirements, due to their limited contribution to demand response and the high proportional cost of compliance.	Smaller heaters are more likely to be on during system peaks and best suited to DR aggregator offerings during peak periods.
Sufficient time for development	Sufficient time (three years) from the publication of 4755.2 should be provided before mandating it as a requirement, to allow product development to occur.	Modified proposal retains the current compliance options and adds additional compliance options for DR capable heaters
International demand response appliance standard	DEM should investigate international demand response appliance standards that may potentially offer a lower cost of compliance than AS/NZS 4755.	For water heaters, DEM is not aware of any equivalent alternative standard for DR capability.
Solar sponge tariff	Solar sponge tariff is a win/win scenario. Much of the benefit can be realised without a DRED device, simply by the energy retailer enabling the appropriate interval meter settings.	Solar sponge via the meter can provide tariff cost savings for customers, but the proposed 4755 also provides flexibility to be able to respond dynamically to periods of high and low demand on the network and high and low wholesale electricity prices.
Industry not building to 4755.3.3	Industry has not commenced design and testing of electric water heaters to 4755.3.3 as it is considered a flawed standard with significant shortcomings.	Modified proposal retains the current compliance options and adds additional compliance options for AS 4755.2 DR-capable heaters, from 1 January 2022, under an exemptions approach.

Air Conditioners		
Key Issue	Detail	DEM Response
Responsibility for network security	HVAC designers should not be required to carry the burden for structural problems in the network and that responsibility should lie with the electricity network owner.	The proposed requirement will provide direct benefits to participants in DR programs and public benefits to all consumers that outweigh any potential additional product costs. The benefit cost ratio of the preferred option is 2.6. Ultimately structural problems create costs that are borne by all customers. The proposed measure reduces those costs compared with business-as-usual.
4755.2 content	The consultation paper has breached a Standards Australia obligation against disclosing the content of a draft standard. It has noted that for ACs, 4755.2 DRM2 will be 50 per cent of reference power rated capacity, as per the superseded 4755.3.1:2012.	The air conditioner industry has previously made submissions concerning its preference for a fixed reference value.
Outcomes based approach	For air conditioners, a preferred approach would be to regulate 'a requirement' and allow preferred solutions to be provided by the market and notes this was the approach SA government took in setting requirements for 'smarter homes'.	Product capability is essential for the emergence of the DR market. 4755 provides an agreed, common, open standard for DR capability.
Unintended outcomes	Introducing DR requirements early in SA will restrict choice and may even restrict more energy efficient models – running contrary to the goals of the initiative.	Options assessed as presenting high or moderate risks of reduced model choice to consumers were not preferred. The preferred option in the consultation paper was assessed as presenting a low risk of reduced model choice while increasing choice to consumers to participate in DR programs. The preferred option has been modified further to increase compliance options for a period and ensure product availability and customer choice.
Product withdrawal risks	Risk raised of shortage for air conditioners, loss of business to split system operators, loss of employment, stalled construction of apartment developments.	Options assessed as presenting high or moderate risks of reduced model choice to consumers were not preferred for that reason. The preferred option, Option 3, is assessed as presenting a low risk. The preferred option has been modified further to increase compliance options and ensure product availability and customer choice.

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Standards	External devices should be allowed to enable equipment to meet the requirement easily and cost effectively. 4755.3.1 should be permitted, in addition to 4755.2, to maximise the opportunities for DR uptake.	Compliance is now proposed via an equivalent of 4755.3.1:2012 from 1 July 2022 (for a limited period of three years) in addition to 4755.3.1:2014 or 4755.2 (when published).
Standards	Recommends compliance via 4755.3.1:2014 and AS/NZS 4755.3.1:2012	Compliance is now proposed via an equivalent of 4755.3.1:2012 from 1 July 2022 (for a limited period of three years) in addition to 4755.3.1:2014 or 4755.2 (when published).
Standards	The expiry of 4755.3.1:2012 should be withdrawn due to uncertainty of the definition of 'normal operation' in the 2014 version.	Compliance is now proposed via an equivalent of 4755.3.1:2012 from 1 July 2022 (for a limited period of three years) in addition to 4755.3.1:2014 or 4755.2 (when published).
Certification process	Uncertainty around the certification processes and costs that will be required to meet 4755.2.	DEM will seek to streamline the certification as efficiently as possible.
Small ACs	Units under four kW should be excluded as costs greatly outweigh benefits.	Compliance is now proposed via an equivalent of 4755.3.1:2012 from 1 July 2022 (for a limited period of three years) in addition to 4755.3.1:2014 or 4755.2 (when published). Systems <4kW can provide demand response benefits, particularly when controlled via 4755.2. These units comprise a significant share of the market.
Incentives for air conditioners	Incentives should drive uptake of DR capable air conditioners.	SA Retailer Energy Productivity Scheme (REPS) includes AC DR aggregation as an eligible activity.
Exclude variable refrigerant flow system	Variable refrigerant flow (VRF) or variable refrigerant volume air conditioners should be excluded from the scope of the requirements.	DEM has no evidence to indicate these models cannot meet the proposed standards.
Resellers and transfer of ownership	Seeks clarification on the definition of 'supply' and notes manufacturers cannot be responsible for resellers and products in shops after sale of products and transfer of ownership.	Under the <i>Energy Products (Safety and Efficiency) Act 2000</i> the restriction is on traders who sell products. The requirements do not apply to sale of second-hand goods.
Clarification of procedures and requirements	Seeks clarification of procedures and requirements for SA-specific registration and certification.	DEM will communicate on processes for registration. As far as possible processes will seek to streamline and leverage existing product approvals.
Mandatory mobile technologies	Seeks clarification on whether mobile technologies such as 3G/4G/5G are mandatory.	The standard does not require or prohibit any specific communications technology.

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Air conditioners embraced 4755 interfaces and low uptake	Many air conditioner manufacturers initially embraced 4755 by incorporating interfaces onboard into the product but with low uptake, many have moved to a DR interface accessory module for compliance with 4755.3.1:2012.	Compliance is now proposed via an equivalent of 4755.3.1:2012 from 1 July 2022 (for a limited period of three years) in addition to 4755.3.1:2014 or 4755.2 (when published).
4755.2 compliant air conditioners	Development of 4755.2 compliant air conditioners will only commence when the requirements are “black-letter” law.	Providing regulatory certainty to manufacturers is the intention of the proposal.
Air conditioners savings are overstated	A CSIRO 2014 study found that for air conditioners, use of rated capacity will result in only a small reduction in demand. Therefore the claimed consultation paper savings are overstated.	Savings independently modelled.
Commencement	Recommends compliance mandated commence for products <i>registered</i> from 1/7/23 rather than <i>supplied</i> from that date.	The <i>Energy Products (Safety and Efficiency) Act 2000</i> provides for requirements that certain products cannot be sold unless they meet a particular technical standard. It does not include the five-year grandfathering permitted under GEMS.