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Consultation
Demand Response Capabilities for Selected Appliances Consultation
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Subject: Demand Response Capabilities for Selected Appliances

Thank you for the opportunity to provide input into the Demand Response Capabilities for Selected Appliances consultation.

Rheem is the largest local manufacturer of water heaters, and the largest supplier of domestic water heaters (both imported and locally manufactured) in Australia. We are also the largest supplier of water heaters to the Australian commercial market. With this background we have a significant interest in the outcome of your investigations.

From the outset we should make it clear that Rheem is well aware of the benefits that can arise from demand response control of water heaters. As water heating is a major component of domestic energy consumption, we understand that the ability to control water heater operation could provide networks with a lever to manage grid instability issues ranging from an oversupply of renewable energy through to an avoidance of peak demand scenarios. The 2018 launch of our smart PowerStore water heater was based on the knowledge that demand response opportunities were likely to emerge over the next decade.

However our main responsibility is to our customers, and as such we believe that consumer amenity and safety are as important, if not more important, than the need to manage the grid. Unfortunately the proposed mechanism for DR enabled water heaters, the mandating of AS/NZS 4755, puts both consumer amenity and safety at risk. The standard also fails to address the requirement for two way communication between the appliance and the DRSP, limiting the ability for DRSPs to sell DR into the NEM. As the entire initiative hinges on the use of AS/NZS 4755, Rheem is unable to support this recommendation.

Our response is in two parts. The points contained in this covering letter address our overarching response to the initiative. The second part of our response (see Appendix 1) are shorter answers to the questions posed in the consultation paper, and should be read in conjunction with the comments and details contained in this covering letter.

The Initiative Will Not Address its Objective of Creating A DRSP Market

The purported reason for the introduction of this initiative is to resolve a market failure, namely the lack of the emergence of a Demand Response Service Provider (DRSP) market to take advantage of emerging wholesale & FCAS energy market opportunities.

The logic states that by mandating AS/NZS 4755, a fleet of demand response appliances would be made available in the market, which would in turn underpin the entry of DRSPs looking to monetise the FCAS market.

AS/NZS 4755 specifies only one way communication between the appliance and the DRSP. Unfortunately, the AEMC rules will require a DRSP to "prove" to the grid operator that an appliance has actually responded to a DR signal, if they wish to monetise their activity. This in turn requires the appliance to collect and send this data to a DRSP either directly or via a device supplied by the DRSP. Rheem's experience is that this capability must be built into the appliance via monitors, sensors, data retention and outputs, and cannot otherwise be gathered by a DRED or other method of "activation". This adds a substantial cost to the appliance, far beyond the cost of 4755 compliance.

In summary, it is Rheem's contention that, as AS/NZS 4755 specifies only one way communication between the appliance and the DRSP, it fails to deliver a mechanism that would facilitate the creation of a DRSP market, the primary objective of the initiative.

AS/NZS 4755 Is An Inappropriate Standard For Water Heaters

In considering alternative solutions to this issue, the consultation points out that no water heater manufacturer has adopted AS/NZS 4755 voluntarily, and posits this as the justification for mandating the standard. This is a misread of the situation.

AS/NZS 4755 has not been voluntarily adopted by water heater suppliers due to two weaknesses:

Product Cost

There are substantial products costs in addition to the cost of incorporating the DR communications hardware as follows:

Legionella control: Both AS/NZS 4755.3.3:2014 and the proposed AS 4755.2 recognise that a water heater may need to override a DR command for no electric heating of water (DRM 1) and operate for the purposes of inhibiting the growth of Legionella bacteria. The additional cost of including a control capability that overrides a DRM 1 command only for the purposes of legionella control will vary depending on the type of water heater (electric resistive, heat pump or solar) but is substantial. We do not believe that this cost has been included in the consultation's financial calculations.

DRM2, DRM3 and DRM4 operation: To enable safe and reliable operation in these modes would require substantial product control system and/or heating hardware modifications at considerable cost, which will vary depending on the type of water heater (electric resistive, heat pump or solar). We do not believe that these costs have been included in the consultation's financial calculations.

Warranty

AS/NZS 4755 requires the water heater to perform at what is termed DRM 4 level. This is in place to allow the water heater to be overheated (beyond its normal thermostat setting) when market operators are attempting to disperse excess grid energy.

Overheating is likely to have a number of impacts on the water heater. Firstly, the cost of developing workarounds to the standard thermostat will add cost.

More importantly, overheating will impact the life of the enamel lining of electric water heaters. The enamel, and the quality thereof, is one of the key determinants of water heater product life. Current enamels are formulated to deliver an expected life based on known maximum temperatures and predicted heating cycles over the life of the product. Consistent overheating (DRM4) will dissolve the enamel more quickly and reduce the life of the product.

As no data logging of DRM type events is built into current water heaters, nor required in the standard, there will be no proof for either manufacturers or consumers as to whether a tank failure was caused by excessive DRM4 activity. This will lead to increased warranty costs, and/or unhappy consumers.

Rheem is unclear as to whether this additional cost of warranty (or logging) has been included in the consultation's financial calculations.

There is an Asymmetry Between Those Paying and Those Benefitting

The majority of the cost associated with the initiative will be borne by manufacturers and consumers, whereas a majority of the benefit will accrue to Distribution Network Service Providers.

Manufacturers in the Australian Water Heater market tend to be price takers. A competitive market dominated by overcapacity, a strong concentrated merchant channel and the lurking threat of low priced imports have ensured that water heater price increases have not kept pace with production costs for many years. The result is that any increases in costs that arise from this initiative are unlikely to be passed on in full in manufacturer prices, resulting in lower profitability for suppliers at best.

Any increase that manufacturers do receive will be magnified many-fold through market intermediaries in the form of plumbing merchants and plumbers recovering their margin percentage. The result will be higher dollar prices to consumers.

Against these higher costs for consumers and manufacturers, the initiative measures the benefits that accrue from a functioning demand response market. Unfortunately these benefits do not accrue to those bearing the cost.

Figure 7 in the Consultation paper indicates that the expected uptake of demand response services as they relate to water heaters is expected to be between 15% and 35% by 2035. Setting aside the lower uptake rates as the market builds up to 2035, it would appear that two thirds of consumers are likely to receive no direct benefit from the additional cost they will have been forced to bear. This cross-subsidy of the remaining one third of households would appear to be inequitable.

Secondly, the majority of the benefits of the initiative would appear to flow to DNSPs and generators, as the increase in demand response activity is expected to allow a deferment (or avoidance) of network capital expenditure. Rheem's record of the Sydney Consultation (26 August) is that George Wilkenfeld put the percentage of the initiative's benefit flowing to the DNSPs at 60%. He also suggested this benefit would be made available to consumers indirectly through lower prices, however the operation of the Australian energy market over the last decade would suggest that this is an unlikely outcome.

Given the asymmetry between the bearers of costs and the entities who would benefit from the initiative, Rheem believes that the initiative would result in inequitable outcomes for most Australians.

The Large Electric Water Heater Market is Already Subject to Demand Response

Before FCAS and DR, the demand for electricity was partly controlled by the use of off peak tariffs. Initially introduced to absorb large amounts of "excess" energy produced overnight by non-modulating generators, these tariffs have evolved over the decades to the extent where they are widely used and understood by most consumers.

The market for large electric water heaters was underpinned by the creation of these "Off Peak" tariffs, and as a result, a significant proportion of large (250L-400L) electric water heaters are today connected to off peak tariffs on installation. Rheem notes that Dux claim that approximately 97% of 250L-400L electric water heaters are connected to off peak tariffs. Whilst this is likely the case in most jurisdictions, this will not be the case in jurisdictions where these tariffs are not available.

As large water heaters account for about 50% of electric water heater sales, it is Rheem's contention that a large proportion of electric water heaters are already subject to some level of demand response control. We therefore propose that the mandating of AS/NZS 4755 is not necessary for large water heaters, and that the benefits of doing so are overestimated in the consultation.

Mandating Demand Response Capability for Small Water Heaters Is Not Justified

Small electric water heaters are installed in homes where space and fuel sources are limited, so they tend to be the only water heating option for consumers in these circumstances. The highest volume line of small water heaters is the 50L size, and Rheem's experience is that these mainly service small one and two bedroom apartments.

Small water heaters are usually connected to continuous tariffs, to ensure they heat immediately after use, thus allowing a second or third person to access hot water over a relatively short time period. For example, the average shower (7 minutes, 40 degree hot water, 9L minute shower head), consumes more than 60% of a 50L tank's hot water, and it should take less than 30 minutes to reheat the tank to capacity.

As a result, the demand for electricity arising from these appliances tends to be concentrated for very short parts of the day, with users reliant on almost instant reheating to allow multiple users to use the device.

The above situation creates three difficulties with the mandating of AS/NZS 4755 for small water heaters.

Firstly, the likelihood of a DR event occurring during this narrow window is minor, thus undermining the benefits outlined in the consultation paper.

Secondly, and more importantly, if a DR event was to occur whilst the water heater was under heavy demand, the impact on the users would be severe. A loss of user amenity in this situation would likely to lead to consumer satisfaction issues for the water heater supplier, the energy supplier and the DRSP.

Finally, the impact of the cost of including DRM capability on small water heaters would be disproportionate to the benefit derived. Rheem's preliminary investigations suggest that the cost of 4755 compliance would be the same regardless of the size of the water heater, so the cost and price impact on small water heaters would be approximately twice that of large water heaters.

As discussed in the paper, a previous 2013 review of the case for extending demand response to smaller water heaters was not proven. Rheem believes that the questions arising around the financial justification of the proposal, coupled with its potential impact on user amenity, justifies the continuation of the original decision to exclude small water heaters from any demand response initiative.

Incorrect Market Data Has Been Used in the Cost/Benefit Justification

The consultation paper estimates the size of the electric water heater market (2018 annual sales) at 535,000 units. Whilst there is no publically available source for water heater sales data, Rheem undertakes ongoing market reviews with key customers regarding sales and total market size. It is on the basis of this information that Rheem's estimate is that the consultation is overstating the market for electric water heaters by at least 150,000 units.

Given that the financial justification for the initiative is based on a water heater population that is overstated by nearly 50%, Rheem contends that the basis for the cost benefit analysis is flawed and, at a minimum, a replacement cost benefit analysis and consultation is required.

Additional Concerns re the Cost Benefit Analysis

We are unsure as to whether the introduction of demand response capabilities could create a financial disincentive for homeowners. For example, could a DRM4 event force the water heater to accept additional energy at a time when grid energy was expensive?

Would all off peak water heaters need to be changed to a time of use tariff to enable their participation in demand response events? What is the financial impact on general running costs as a result of this change, and has it been factored into the cost benefit analysis?

Additionally, raising the water's temperature in response to a DRM4 signal is likely to result in the water heater's temperature and pressure relief (T&PR) valves being triggered more frequently. Has the cost of the "lost energy" (in the form of dumped hot water) been factored into the cost benefit analysis?

Appropriateness of GEMS as a Mechanism for Managing Demand Response

The 2013 consultation on demand response raised issues as to whether the GEMS Act (2012) could be used to mandate demand response requirements. Rheem is unsure whether this issue was ever resolved.

We do note, however, that the Independent Review of the GEMS Act published this month recommends "That the Commonwealth Government update the GEMS Act to allow for mandatory response capability"[1]. This would suggest that the GEMS Act does not currently allow for the mandating of demand response capability.

[1] Recommendation 38, Page 6, Independent Review of Greenhouse And Energy Minimum Standards (GEMS) Act 2012, Final Report June 2019

Rheem is aware that the Australian Water Heater Forum (AWHF) and our peak body, the Australian Industry Group, have also responded to your questions. Rheem supports the positions outlined in their responses.

As stated previously in this response, Rheem supports the concept of water heaters being used to help address grid stability issues, and in fact has recently launched a PowerStore product under the Solahart brand that has this capability.

We do, however, object to the mandating of a standard that only delivers half the solution, whilst adding costs for manufacturers and consumers, and where the only guaranteed benefit is derived by energy market operators.

Rheem believes that a more holistic solution to this problem is available, and would be happy to discuss this, on a commercial in confidence basis, if the GEMS Regulator is willing to do so.

If you have any queries regarding this response or our market, please don't hesitate to contact me.

Yours Sincerely

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APPENDIX 1 - Responses to Questions (To be read in conjunction with covering letter)

1. Do you support the proposal to mandate compliance with AS/NZS 4755 for the nominated priority appliances?

No for Electric Water Heaters

2. a. Is there any viable alternative options for meeting the objectives of the proposal, apart from the BAU case or mandating compliance with AS/NZS 4755?

A redrafting of AS/NZS 4755 to address the issues outlined in our submission - 2 way communication, consumer amenity and DRM4 overheating.

b. Do you agree that including demand response capabilities on energy efficiency labelling and voluntary compliance with AS/NZS 4755 is not a viable alternative option?

The department has already acknowledged that labelling is inappropriate for water heating due to the industry's channels to market. Voluntary compliance will not occur due to operational and amenity flaws in the standard, as outlined in our submission.

3. Do you support: a. permitting compliance with either AS/NZS 4755.3 or (DR) AS 4755.2?

Neither part of the standard is suitable for water heaters

b. requiring compliance with all Demand Response Modes (DRMs)?

All DRM's will incur significant product costs in addition to the DR communications hardware. We do not believe that these costs have been included in the consultation's financial calculations. DRM4 is problematic due to product longevity issues.

4. Do you agree with the scope of the proposal: a. air conditioners: up to 19 kW cooling capacity;70 b. pool pump-unit controllers; c. electric storage water heaters (excluding solar-electric and heat pump water heaters);71 and d. charge/discharge controllers for electric vehicles (SAE Level 2 or IEC Mode 3). e. If not, what products (or capacity limits) would you propose be included or excluded, and why?

All water heaters should be excluded from the initiative due to operational and amenity flaws in the standard, as outlined in our submission.

5. a. 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? Is so, please provide this information and specify which particular "smart" devices? (Please be specific with regard to the capabilities you envisage for such devices or systems, and whether you would expect them to conform to any particular standards).

In 2018 Rheem launched a "smart electric water heater" capable of receiving commands, interfacing with co-located PV generation, monitoring its charge state and reporting back to an energy management provider. It is DR ready. We have also partnered with a nascent DRSP that is providing Home Energy Management solutions to PowerStore owners. AS/NZS 4234 is currently being revised with a working group of CS028 developing a standard for this type of system.

b. Would adoption of proprietary "smart home" systems undermine the benefits of peak demand reduction into the future?

No. Operators of proprietary systems will still need to interface with the energy market to be able to participate in wholesale and FCAS markets. The market should be free to choose "winners and losers" in this sector.

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?

Apart from Rheem's own product, Rheem is aware of both Bosch and Stiebel products that have this capability. Rheem is not aware of a commercial demand response program for water heaters, however a number of trials in both Queensland and South Australia are under development.

d. Is there a risk that a mandatory AS/NZS 4755 standard may become obsolete as new technologies/innovative products achieve the same objectives without using AS/NZS 4755?

Rheem believes that AS/NZS 4755 is already obsolete. Rheem's PowerStore product, with superior features to those required in 4755. 4755 only provides one way communication between a device and a DRSP, and consequently is only of use for energy market operators wishing to balance load, not for DRSPs looking to monetise demand response and other services.

6. What is your estimate of how much complying with the requirement will increase the price of each product? If a product complies with DRM 1, are there any additional costs incurred for a product to comply with the other DRM modes?

The industry's estimate for water heater compliance is above the $80 outlined in the paper. Product design changes, retooling, new parts, enamel reformulation and trials, and the addition of a PCB to control legionella and to data log will add considerable costs to the water heater.

7. Are the data and assumptions used in the cost-benefit estimates reasonable? Do you have information or data that can improve these estimates?

As indicated in the body of the response, water heater sales estimates are incorrect by at least 50%. At a minimum a recalculation of the benefits and a revised consultation should be developed before proceeding further.

8. Do you think the estimates of activation rates and costs are reasonable? Do you have information or data that can improve these estimates?

It is Rheem's belief, based on our experience with the PowerStore product, that the activation rates are understated, Our experience suggests that connectivity issues vary significantly from household to household, and a variety of technologies (WiFi, 3G, Cables) and tradespeople are required to overcome these issues.

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

These will vary significantly depending on levels of uptake. Administrative costs will be high initially as fixed costs (software, billing, personnel) are amortised across a small base. This will restrict take up and could limit the success of the initiative.

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

No. Most large water heater owners currently participate in demand response via off peak tariffs. Small water heater users are unlikely to participate as their devices only operate when they are needed, and users are unlikely to sacrifice this level of amenity for a financial incentive. Rheem's PowerStore product sales have been restricted as it competes with large off peak products that are relatively inexpensive to operate and which are popular with consumers.

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

No. Large water heaters are mostly already connected to off peak tariffs. Small water heaters need to operate when they are needed, so it is unlikely that owners of small water heaters will risk their amenity unless a significant financial benefit was offered.

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?

Rheem's experience is that developing robust connectivity for communications is one of the main stumbling blocks for smart devices in Australia. Our highly variable use of building materials, the exterior locatiuon of our devices and the lack of a common communications protocol render the use of a single technology impossible. Each site needs to be evaluated to identify the best solution to guarantee robust communications between the device and the DRSP/HEMS provider.

12. What implications (positive or negative) would the proposals have for your industry, in terms of activity, profitability and employment?

Electric water heaters form the backbone of local manufacturing (70%+) and any impact on either uptake or demand for these products would have serious consequences for our local manufacturers., and hand further market share to competing imported technologies.

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

The approach of Energy Queensland (IPDRS Pilot) goes some way to developing a true home energy management strategy, working with nascent DRSPs and HEMS providers, and including true smart appliances (rather than dumb instruction takers) as part of the program.

14. Do you think the proposal would reduce competition among product suppliers, reduce consumer choice or lead to an increase in product prices (beyond what is expected to occur)?

In the short term it is likely that low cost solutions to the regulation would emerge (from importers), however shortcomings in delivery, safety, consumer amenity and product longevity would drive increased costs as these were addressed by manufacturers. Any significant shrinking of the market for EWHs as a result of this initiative could impact manufacturer viability.

Consumer resistance to the technology and a corresponding lack of take up of DR offers would make DRSP's marginal. This would likely be exacerbated because a 4755 compliant appliance would not be capable of delivering the information required for the DRSPs to monetise their offer. With DRSPs finding themselves unsustainable, our concern is that AEMO/DNSPs would mandate control of these devices during periods of grid instability, with no net benefit to consumers.

15. If the measure is implemented, what is the earliest feasible date by which products could comply? How much lead time should there be after publication of the final requirements?

A minimum of 2 years from black letter law (ie a written determination) would be required for local manufacturers.

All manufacturers will need capital from their parent companies to undertake product development to meet the requirements of not only 4755, but to address the issues that 4755 will cause. No capital will be allocated to the task until black letter law is published.

16. Do you consider that there are any major technical or functional issues related to the proposal? If so, how should these be addressed?

Yes – see our written response for details on the following

- The Initiative Will Not Address its Objective of Creating a DRSP Market
- AS/NZS 4755 is An Inappropriate Standard For Water Heaters
- There is an Asymmetry Between Those Paying and Those Benefitting
- The Large Electric Water Heater Market is Already Providing Demand Response
- Mandating Demand Response Capability for Small Water Heaters Is Not Justified

- Incorrect Market Data Has Been Used in Cost/Benefit Justification

17. How should the changes in demand or energy during DR events involving AS/NZS 4755-compliant products be measured? What would should be the notional "baselines?" Is the estimation of baselines more or less reliable than for other DR approaches?

Two way communication between the devices and the DRSP is the only certain method for understanding baseline performance and response to DRED commands.

18. How will the proposal impact on electricity prices and energy network costs and investment requirements?

Deferred expenditure on grid stabilisation capability will benefit DNSPs.

19. Do you think that the effectiveness of the proposal depends on the implementation of more cost-reflective pricing, e.g. time-of-use (TOU) tariffs?

Time of Use tariffs can only be introduced once consumers are confident that they will not be disadvantaged by the change. The development of a DRSP market could go a long way to address this issue, however mandating AS/NZS 4755 is not the appropriate mechanism to assist this market developing. See above for the shortcomings of AS/NZS 4755 in enabling DRSPs to monetise FCAS.

20. In regard to the regional aspects of the proposal do you consider that it would provide significantly more benefits in certain regions? If so which ones? Will any regions be largely unaffected? If so which ones? What causes these differences in impacts between regions?

Wherever networks are constrained DR can alleviate grid issues. This is particularly the case at the "end" of the grid where electron flow in and out of a suburb or population centre can change suddenly due to demand and/or PV renewables generation.

21. (To electricity network service providers, electricity retail companies and DR aggregators specifically). a. Is it your company's intention to offer tariff or other incentives for customers to have demand response capabilities on the appliances in question activated and to participate in demand response programs? Are there any specific barriers (or lack of incentives) that would prevent your company from offering and promoting such programs? b. Would you offer tariff or other incentives to customers to participate in demand response programs using "smart home" device functionality? (if so, please specify the type of functionality/ies). Are there any specific barriers (or lack of incentives) that would prevent your company from offering and promoting such programs? c. In your opinion, what proportion of householders with appliances with the above type of "smart home" device functionality/ies will participate in demand response programs? Do you have survey or other evidence to support your view? d. What would be the total MW of appliance demand response capability (or number of participating appliances) required to defer the need for network investment to manage peak demand in your area/s of operation?

No comment

22. In your opinion, what proportion of householders with AS/NZS 4755-compliant appliances will have the demand response capabilities activated and will participate in demand response programs? Do you have survey or other evidence to support your view?

The fundamental flaws inherent in AS/NZS 4755 will preclude householders participating in demand response programs that utilise the 4755 "features".

23. (To consumer and welfare organisations). In your opinion, what measures should be taken to ensure that consumers are adequately informed of the potential costs, as well as the benefits, of entering contracts that enable the demand response capabilities on their appliances to be activated?

No comment

24. (To electricity market regulators). Do you consider that the regulatory arrangements provide utilities and potential DR aggregators with sufficient incentive to offer (or commission) small-consumer demand response as a means of reducing investment in supply-side infrastructure?

No comment

25. How do existing electricity market rules which enable and encourage DNSPs and TNSPs to invest in demand response programs impact on, or interact with the proposal?

No comment

26. a. How would changes to electricity market rules (the Retailer Reliability Obligation and the wholesale market demand response mechanism draft determination announced by the AEMC) impact on or interact with the proposal? b. Would a new class of DR aggregators make use of AS/NZS 4755 DR platform? If so, why. If not, why not? c. Would the potential AEMC wholesale demand response mechanism be material to the benefits of mandating AS/NZS 4755 for the four selected appliances? Why or why not? d. Would the benefits of deferring investment in network capacity from the wholesale demand response mechanism changes announced by AEMC also reduce the network investment benefits attributable to mandating AS/NZS 4755?

AS/NZS 4755 specifies only one way communication between the appliance and the DRSP. Conversely, the AEMC rules will require a DRSP to "prove" to the grid operator that an appliance has actually responded to a DR signal, if they wish to monetise their activity. This in turn requires the appliance to collect and send this data to a DRSP either directly or via a device supplied by the DRSP. Rheem's experience is that this capability must be built into the appliance via monitors, sensors, data retention and outputs, and cannot otherwise be gathered by a DRED or other method of "activation". This adds a substantial cost to the appliance, far beyond the cost of 4755 compliance.

It is Rheem's contention that, as AS/NZS 4755 specifies only one way communication between the appliance and the DRSP, it fails to deliver a mechanism that would facilitate the creation of a DRSP market, the primary objective of the initiative.

27. Could an option for Government to require utilities or independent DR service providers to offer incentives, or have the Government fund these incentives, achieve the same benefits as the mandatory standard but at a lower overall cost to the community?

There is no "silver bullet" to resolve this issue.

The first step for water heaters and other appliances is the development of a standard that requires two way communication between devices and a DRSP.

Secondly, the standard will need to address safety and consumer amenity issues.

Finally the Government or Utilities will need to sponsor the uptake of DR/HEMS services to build community trust in the service. This funding should come from DNSPs as they are the major beneficiaries of a functioning DR market.

28. (To manufacturers and distributors of the products in the scope of this proposal). What percentage of the products you sold in Australia and in New Zealand in the last year: a. Meet the minimum requirements of the relevant part of AS/NZS 4755; b. Meet additional requirements (e.g. additional DRMs); and c. Comply with other published DR standards (please state which)?

Rheem prefers to keep this information confidential for commercial reasons, however we can state that the Solahart PowerStore only accounts for a small percentage of overall sales.