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Rebecca Knights

Director, Energy Policy and Programs

Department for Energy and Mining

South Australian Government

Submitted by email: **DEM.REES@sa.gov.au**

12 October 2020

Dear Rebecca,

Consultation Paper on proposed Retailer Energy Productivity Scheme (REPS) activities, credits and targets

AGL Energy (AGL) welcomes the opportunity to make a submission in response to the Consultation Paper on proposed Retailer Energy Productivity Scheme (REPS) activities, credits and targets (Consultation Paper). We have outlined our comments on the Consultation Paper in Appendix A and outlined our responses to the Consultation Paper's questions in Appendix B.

AGL is one of Australia's largest integrated energy companies and the largest ASX listed owner, operator and developer of renewable generation and is committed to meeting the needs of its energy customers. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources.

As stated in our previous submission, AGL supports the principle of developing an energy productivity scheme to optimise energy usage of South Australian (SA) energy users. However, AGL considers that the new aims of the proposed REPS represent a significant 'pivot' for the industry (retailers, installers, product suppliers, and customers), and that the 1 January 2021 commencement date does not allow sufficient time for the industry to upskill, create new business models, and source suitable products to meet the new objectives. This may result in higher than necessary costs for customers and challenges with meeting the objectives of the scheme.

This is particularly so given that key parts of the proposed details of the REPS is still being finalised, including:

- The targets for individual retailers, which may not be confirmed until late in 2020; and
- The methodologies for generating credits from energy management activities.

Once the details of the REPS are confirmed it is likely to take several months for industry to develop systems and processes and manufacturers to design, produce and ship technologies that meet the specifications set out by the Department of Energy and Mining (DEM) and ESCOSA. Given that these

details are unlikely to be public until late 2020, industry is unlikely to be in a position to commence many REPS activities (particularly residential activities) until mid-2021 at the earliest.

To achieve the proposed aims of REPS and ensure a smooth transition with minimal impact to the energy efficiency industry, AGL therefore makes the following recommendations:

1. **Transition incrementally into substantive new demand response and time of use methodologies during 2021** and in close consultation with representatives from retailers, energy efficiency providers, ESCOSA, community groups, and businesses. This recommendation is discussed further below.
2. **Leave the values of all existing Residential Energy Efficiency Scheme (REES) activities as they are for 2021, and transition to REPS methodology in 2022**. This approach:
    - allows time for new energy productivity methodologies to be developed, tested in market and changed as required to make them cost-effective and suitable for achieving the aims of the REPS; and
    - gives certainty to retailers for carry over GJ, which in turn, keeps installers and other REES contractors in business.
3. **Increase the carryover from REES to REPS from the proposed 20% to 30%**. This would help keep installers and contractors employed until REPS starts and would enable retailers to meet their targets for 2021 whilst allowing for the development of new methodologies, which would start to be implemented in the latter half of 2021.
4. **Include smart meters as a REPS activity**. Most of the new activities proposed require a smart meter to be installed at the property, however less than 20 percent of residential customers in SA have interval meters. As not all homes will be suitable for PV and/or batteries (particularly rentals), installing digital meters in these properties would open the REPS activities to a much wider customer base.
5. **Reinstate residential downlights into the REPS and have the same value as the Home Energy Efficiency Retrofits (HEER) method.** We also highly recommend that that the existing residential REES lighting technical specifications and values are retained for at least six months of the REPS scheme, but ideally for the first 12 months.

With respect to our first recommendation above, AGL strongly encourages the DEM to develop and implement an urgent transition plan for REES to REPS, that allows for at least a six-month (but ideally 12 month) transition timeframe and includes clarification that:

- Retailers can carry over activities from 2020 to count towards their 2021 REPS target – the volume of credits should be up to 30 per cent of retailers 2020 REES targets;
- REPS credits generated for activities undertaken in 2020 will be calculated under the 2020 REES methodologies; and
- Retailers will be able to use 2020 REES methodologies to generate credits for activities under REPS until at least 1 July 2021, and ideally until 1 January 2022.

Should you have any questions in relation to this submission, please contact Leilani Kuhn (Manager Policy & Strategy) on 03 8633 6934 or myself on 03 8633 6207.

Yours sincerely,

Elizabeth Molyneux

GM Policy & Markets Regulation, AGL Energy

APPENDIX A

AGL's comments on issues raised in the Consultation Paper

Comparison to other energy efficiency scheme

AGL queries the methodology used by the Common Capital evaluation report and its findings, which found that the REES was relatively cost efficient when compared to schemes of comparable size and sectoral coverage. From AGL's assessment, the cost to fulfil the REES targets on a per customer bases has been higher than that association with the Victorian and NSW energy efficiency targets.

Residential lighting

AGL strongly recommends that residential downlights are eligible under the REPS at the same value as the NSW Home Energy Efficiency Retrofit (HEER) methodology. We also strongly recommend that that the existing residential REES lighting technical specifications and values are retained for at least six months of the REPS scheme, though the first 12 months would be most ideal.

AGL's reasons for its position on residential lighting include:

- We do not agree with the assertion that the majority of SA households have 100% LED globes (downlights in particular) nor that blown globes are 100% replaced with LEDs. We consider this to be particularly true for Priority Group households, who anecdotally do nor replace the majority of blown globes or if they do, they replace them with the cheapest option available.
- Devaluation contradicts the aims of the REPS. Residential lighting is used during peak demand times and it is one of the drivers of peak demand so any reduction in energy use delivers specifically to this aim.
- Since 2015 residential lighting has traditionally comprised 60-79% of Priority Group GJ. This is a significant portion to cut from an activity without a transition plan, noting that the combined residential retrofit percentage of the PG target will be around 87% in 2020.
- The additional 20 lights per home and the ability to revisit if there are less than 40 globes replaced has had a significant positive impact on the ability to deliver to Priority Group households.
- Due to the late notice of the proposed value change for residential lighting, our contractors (and their suppliers) have all been caught with significant lighting stocks. This could translate into higher GJ prices in 2021 as they seek to recover their losses.
- The light efficacy levels specified for residential lighting (a bulb, flood lights) are aspirational and not yet available in Australia. This will mean that their price will be higher and the quantity available for adequate supply will be restricted, especially in the first year of production.
- It will take at least a year for the new products specified in the REPS consultation document to be designed, manufactured, and accredited.

Other residential products

The delineation between 'connected to gas' and not connected to gas' is another calculation left over from REES environmental calculations. Under REPS, the main action is to replace inefficient water heaters and put them on a demand tariff, regardless of whether a property is connected to gas or not.

AGL also recommends that WH1 is recalculated, replacing REES calculations with energy productivity calculations, and removing the difference in GJ awarded if the property is connected to gas or not.

In addition, AGL recommends that HEER E10 is added to REPS, as including external blinds, especially to west and north-facing windows and doors, can make a significant impact on the heat ingress into the home during the hotter months.

A deeper retrofit sub-target for Priority Group households

It is proposed that the REPS Priority Group target will include a requirement that retailers meet a minimum of 50% of the Priority Group energy productivity target (normalised GJ) by delivery created from deeper retrofits.

AGL welcomes the addition of activities which can create deeper retrofits for SA households, and particularly for the Priority Group customers. However, we are uncertain about the efficacy of mandating 50% of Priority Group activities as deep dive activities due to the:

- Large difference between cost and GJ value for some of the activities;
- Restriction that this puts on sourcing Priority Group households; and
- Ability to reach householders who want/need these retrofits.

These activities are in line with HEER in NSW and the ACT government's Energy Efficiency Improvement Scheme (EEIS), but the values proposed to be awarded to these activities by REPS are below those of the other schemes. The GJ values assigned to them, on top of the $33 required per product (for non- Priority Group households), makes the REPS delivery of these products not much less than the market sales price.

If the DEM wishes to prioritise a significant uptake of these activities, particularly for Priority Group customers, the GJ value needs to reflect the energy productivity gain and the priority on increasing the installation of these items to offset energy use, particularly at peak times. This is also pertinent to building sealing activities (noting that a small increase has been proposed) and particularly to HVAC replacements.

In addition, AGL does not consider it sensible to mandate that an activity must adhere to a 2007 demand response standard (AS/NZS 4755) that is in the process of being updated to be fit for purpose for today's more advanced equipment. We recommend that the regulations are worded in such a way that the most current and relevant standards are mandated.

On the subject of affordability, AGL also notes that there is a plethora of information that illustrates that most Priority Group customers, and certainly the more vulnerable households within this cohort, cannot afford to pay for any energy efficiency upgrades as they simply do not have the money to do this, even if they know that they will reduce their ongoing energy bills.

Based on the above, AGL recommends that:

- Either activities which can be DRED enabled are delayed until the revised AS4755 is released, or the wording of the legislation/regulation is drafted to allow for standard revisions[1];
- That similar values as the HEER and/or EEIS are adopted for the following activities: HC2A - Install an Efficient New Reverse Cycle Air Conditioner (Non-Ducted), HC2B - Install an Efficient New Reverse Cycle Air Conditioner (Ducted); and

[1] This recommendation also applies to our response to the proposed EV1 activity

- A multiplier is added to HVAC activities noted above, to make them no cost for Priority Group Customers.[2]

Size of sub-targets

Priority Group percentages

AGL notes that, as a vagrancy of the REES calculation for proportioning annual Priority Group targets, AGL's collective Priority Group target percentages have ranged from 16%-24% for 2015-2020. In 2020 the AGL Gas Priority Group target was 44% of the overall target.

Therefore, AGL recommends that the formula used to calculate Priority Group targets is changed to correctly reflect the annual Priority Group percentage for each retailer (i.e. 22% is the Priority Group target for the 2020 annual overall target, not 44%).

We also recommend that the combined Priority Group and proposed Household Energy Productivity Targets (see below) combined are no more than 30%; this reflects the annual percentages between household and commercial activities which have been reflected in REES actual achievements since 2016.

Regional targets

AGL observes that, whilst the majority of activities are undertaken in close proximity to metropolitan Adelaide in the early years of an activity, market forces dictate that activities continually branch out to regional areas where there are still opportunities. For instance, the heat map for AGL's year to date 2020 activities includes Cooper Pedy and the Eyre Peninsula.

If a target is put in place that requires activities to be undertaken in regional areas in the early years of an activity and without a multiplier, then the cost to serve will be significant. This will be reflected in the GJ price charged to retailers, which will likely be passed onto SA energy customers.

Therefore, AGL recommends that no formal or informal target is legislated for regional areas, as these areas will be serviced as the activities and markets mature and the cost to service decreases.

Proposed Household and Priority Group Targets

AGL has no fundamental issue with the proposed new Household Energy Productivity Target or continuing the Priority Group Target. However, retailers need cost-effective activities to be able to achieve these targets, especially considering that residential retrofits (package of LED lighting and low flow showerhead replacements and installation of standby power controllers) will most likely be undertaken in the Priority Group of non-Priority Group households under REPS due to the 58.5% decrease in SPC values and the average decrease in residential lighting of 53%. This will not be offset by a percentage increase in 9/l sec low flow showerheads or draughtproofing activities.

Ceiling insulation and hot water replacement will be suitable for some homes, but will not be enough to fill both Priority Group and the proposed Household targets unless GJ values for heating and cooling devices are revised upwards (as noted above) and residential lighting REES values are maintained, at least for 2021.

Rental Properties

[2] We appreciate that a multiplier can skew the GJ saved, so suggest the same methodology is applied to this activity as is to commercial lighting, where one column in the Registry upload form has the REES GJ up to 900 GJ and the next column has the total GJ installed at the site.

In AGL's opinion, the recommendation that only properties with a rental of $500 or less are eligible for Priority Group is unworkable for the following reasons:

- The impacts on the customer experience when installers seek to manage the conversation around their weekly rent; and
- Burden of proving the customer's weekly rent.

As such, AGL submits that the $500/week rental limit should be removed. AGL offers the following as possible alternatives:

- Segregate rental PG homes by postcode;
- Make this group only for public housing; or
- Reclassify the Priority Group for renters.

Alignment to schemes in other states

AGL agrees with the value in aligning with other states energy efficiency schemes, as evidenced in the alignment to the NSW HEER and ACT EEIS schemes for activities and values.

However, there are times when states have different priorities and market maturity and steps need to be undertaken to protect the integrity of a scheme for its constituents.

AGL has advised the DEM in numerous consultations and correspondences over the last two years about risks in devaluing SA commercial lighting in line with NSW, through adopting the lower values of the NSW ESS calculator for commercial lighting. This has already led to a 40% devaluation of SA commercial lighting GJ value since commercial lighting started to be seriously installed in 2016.

This is now going to happen again in 2022, with the reasons for NSW decreasing the certificate value of commercial lighting activities are as follows:

- NSW started ESS commercial lighting in 2009, so some sectors are getting saturated; and
- NSW now want to incentivise certain building types which they believe have been neglected (these do not reflect the building stock predominant in SA).

Under the proposed REPS values, a 20% productivity multiplier has been added to commercial lighting. If REPS continues to maintain the ESS calculator methodology, the net result in July 2022 will be a 30% decrease in commercial lighting value – which we do not believe truly reflects the value of the commercial lighting upgrades that have been undertaken already in South Australia. If REPS follows the ESS calculator then SA lighting will generate 30% less GJ than it currently does (taking the proposed 20% REPS multiplier into account).

Therefore, AGL proposes that ESCOSA acquires a static copy of the ESS calculator before commercial lighting values decrease, and that this be used to calculate commercial lighting GJ values in South Australia for the next five years (REPS tranche 1).

APPENDIX B

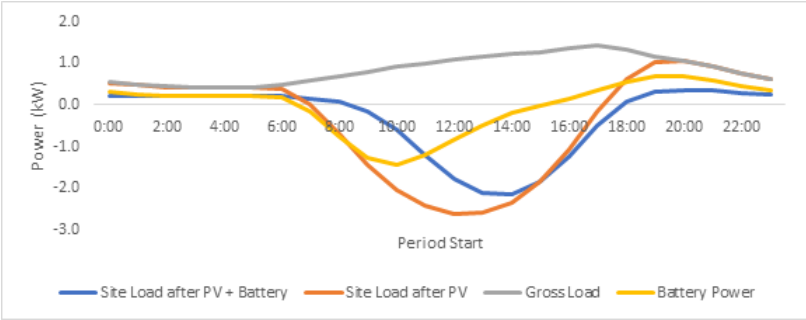
AGL's responses to the Consultation Paper questions

No	Question	AGL's response
TARGETS		
1	Do you think the REPS targets for 2021-2025 should be set at similar levels to the REES 2018-2020 (3.3 million GJs per year), or increased? Explain your response.	The 2021-2025 REPS target should be the same or lower than REES 2018 - 2020, particularly for the first year of new program. This will allow retailers and contractors to develop strategies for the new scheme and to hopefully meet their targets, particularly given that further details of REPS are unlikely to be released until December 2020 and the start date is 1 January 2021. By the time new and revised REPS activities are documented in regulation and added into an ESCOSA Registry, it will be most likely be at least July 2020 before we can confidently undertake these REPS activities.
2	Recognising the REPS will introduce changes from REES, should the five yearly targets be 'ramped', with lower targets in early years?	Yes, but not to level of the proposed/modelled 50-100% increase. Based on the details to date and the values given to activities, the proposed/modelled 50-100% increase would be extremely difficult to achieve as well as costly for SA customers. AGL also has concerns with the modelling and considers that the normalised REPS credits are too high for both energy savings at peak time and for load shifting. We also note that the assumption around REES costs per year are an order of magnitude out and are based on 2013 data, when targets were much lower and there were no commercial sector activities.
3	Noting the REPS is funded by all retail electricity and gas consumers, what are an appropriate costs per year to the average South Australian household electricity bill?	We note that contrary to the claim in the consultation paper, REES currently costs much more than $10 million per year and are more than $12-14/year per customer claimed.[3] Using the 2020 REES annual targets as an example, assuming an average price of $100 per audit, $10 per PG GJ and $9 per non-PG GJ, the overall cost of the 2020 REES targets could be in the vicinity of $22 million. This does not include all the associated retailer costs, such as salaries, marketing, administration, etc.
4	Given the proposed REPS specifications and values, what are appropriate minimum proportions of the Energy Productivity Target that should be delivered through the Household Energy Productivity Targets and the Priority Group Household Targets?	AGL does not support the introduction of sub-targets, particularly given that as presently drafted, as only ceiling insulation and hot water replacement are currently viable to be undertaken to reach Priority Group and Household Energy Productivity Targets. For householders to reduce their heating & cooling loads, they will need to be incentivised in such a way that it reduces more than $50 off an expensive reverse cycle heat pump system, which can retail for more than $2500+ as drafted in the proposed specifications. We therefore recommend that this activity is revised upwards by 100%.

[3] Cost of REES, page 8 REPS Consultation activities, credits, and targets. This is based on the 2013 Pitt & Sherry analysis of REES before major target increases.

No	Question	AGL's response
GENERAL CONSULTATION QUESTIONS FOR ALL ACTIVITIES		
5	Is the activity an appropriate activity to deliver through the REPS? Is it consistent with the proposed protocol for maintaining calculation methods, eligible activities and specifications (Appendix 1)?	With respect to customers connecting to a SAPN prosumer tariff, we note that AGL has modelled the Prosumer tariffs which showed that the average customer on a Prosumer tariff will be about $300 worse off than staying on their current tariff or changing to TOU. For customers that must change to TOU taffifs, we note that there will be a moderately-sized cohort of customers that will be unable to shift their load and thus will incur increased electricity bills. This includes households at work, families and many SME enterprises which cannot stop work or reduce load at 3PM each weekday in the peak energy demand period (November-March). AGL's further position on the suitability or otherwise of proposed REPS activities is detailed elsewhere in this submission.
6	Does the proposed specification allow for the activity to be delivered in an efficient and effective way?	AGL's position on the suitability or otherwise of proposed REPS activities is detailed elsewhere in this submission.
7	Are there any energy productivity activities that would be suitable for use in the REPS that are not proposed?	Energy thermostats which can control the whole house (e.g. NEST). In-home displays for customers where the energy retailer does not have an app which covers this activity.
8	Based on the proposed specification, do you consider the activity will be delivered through the REPS?	Based on AGL's understanding of what is proposed, at present it appears that the proposed methodologies will only incentivise water heating, ceiling insulation and commercial lighting upgrades, with the latter only applying until 30 June 2022 (when the ESS value of commercial lights will drop 50%).
9	Are the normalised productivity credits a fair reflection of the Productivity benefits that can be achieved from the activity?	Not in all cases, as detailed in other areas of this submission.
10	Are there any health and safety concerns with the delivery of the activity that are not adequately addressed by the specification?	No, based on our initial assessment.
SPECIFIC QUESTIONS FOR NEW ACTIVITIES		
11	Activities VPP1, APP4, HC2C, EV1, and WH4 require use of approved DR aggregators or approved VPPs. The specifications provide some criteria that the Minster should consider in approving these. What other criteria should be considered when designing the	AGL recommended in its June REPS consultation submission that smart meter installation could be included as a GJ-rewarded activity. There may be merit in incentivising customers to request a digital meter so they can take advantage of other proposed REPS activities. **Ministerial approval** It is AGL's view that the REES system of retailer responsibility for compliance and quality has worked well, as evidenced by the ESCOSA periodic audits. AGL submits that if the Minister or a panel is made responsible for an

No	Question	AGL's response
	structure, approval and quality assurance processes for aggregators and VPPs?	Activity, then some of the retailer responsibility will be revoked, which may have a negative impact on REPS. **DRED standard** The current direction of certain reforms may have unintended consequences regarding innovation and customer engagement. Specifically, mandating the requirements for demand response enabled devices in AS/NZS 4755 (a legacy voluntary standard), with expanded functionality, may prevent new technologies and solutions from entering the market that would facilitate greater uptake with additional benefits for customers. AGL is opposed to the AS/NZS 4755 being used to generate REPS activities because it is an outdated standard and has many problems with its implementation (e.g. upgrading existing systems with DRED capability) and regarding customer participation through two-ways comms, which could lead to poor customer outcomes (e.g. overriding the dialling down of air-conditioning during a heatwave). Given how much has changed in the last few years and that the standard would be mandatory, we consider it may be more appropriate to develop a new standard. This could be developed in a similar approach to that taken for electric vehicles (EV), to achieve interoperability and support innovation – the "open point charging protocol" provides standard communications and a framework that can be adapted over time. Given the above, AGL submits that the AS/NZS 4755 should not be included as an activity in year 1 of REPS as it has the potential to have significant negative customer impacts that may outweigh any demand shifting benefits. We also suggest that the SA Government do more analysis to ensure consumer comfort and out of pocket expenses are not adversely impacted. **Electric Vehicles** EV technology is moving very fast. Given this, it is AGL's opinion that it would be very difficult to mandate technical regulations that are appropriate now and for the next 5 years. As such, AGL considers that this activity may be more appropriate for the second 5-year tranche of REPS. Under the proposed specification, EV chargers would need to be DRED-enabled. However, AGL notes that there are currently no chargers that have this facility. Therefore, demand response would be through the open point charge protocol (through the car itself not the charger). It must also be acknowledged that Australia is not a world leader in the rollout of EVs. There are two international standards currently being developed by a global consortium of public and private electric vehicle leaders, being the Open Charge Point Protocol (OCPP) and the Open Smart Charging Protocol (OSCP). The OCPP is the industry-supported de facto standard for communication between a Charging Station and a Charging Station Management System (CSMS) and is designed to accommodate any type of charging technique. OCPP is an open standard with no cost or licensing barriers for adoption.

No	Question	AGL's response
		These protocols call up ISO15118-1 and IEC62559-2:2015. AGL considers that it would be best to either adopt these international protocols or wait until the new EVSE standard is finalised under 4755.3.4. Part 3.6 (Operational instructions and connections for grid-connected charge/discharge controllers for electric vehicles). **Demand Response** AGL is represented on the SAPN Distributed Energy Resources Integration Working Group (DERIWG), so work closely with SAPN. Our comments on the standard referenced are in answers above. AGL would like to flag that, if the aggregator is not the household's retailer, then there could be negative outcomes (such as power being shut off to a heating/cooling load where there is a vulnerable customer) with potentially disastrous health outcomes. The reason for this statement concerns the rigour to which retailers are held around positive customer outcomes, compared to an aggregator, which will not have the same conditions imposed. **VPPs** Inverter standard AS/NZS 4777 is a very accurate standard, and either it or the battery can control the flow of electricity to and from the grid. It does not necessarily need a VPP in place to be able to do this. AGL has many learnings from its participation in both the ARENA-NSW government behavioural VPP (now concluded) and the SA government-AEMO VPP trials. The chart below shows the average power flows of VPP customer batteries in AGL's SA-VPP through summer 2019/2020. It is clear that the gross/underlying site load (grey) is drastically reduced after considering the site solar and battery (blue). The difference between the blue and orange line also shows how much the addition of a battery reduces solar exports during the day. It is worth noting that there were only limited VPP dispatches during this time and these curves are largely the result of the normal operating modes/algorithms of the batteries.  AGL notes therefore that batteries alone provide load shifting and that inclusion in a VPP is likely only to tie the operation of the battery to market signals rather than actual load shifting based on demand. We therefore consider that in this case, the purchase of a battery should trigger a REPS activity as the use of the battery inherently helps load shifting as demonstrated above.

No	Question	AGL's response
		Additionally, there are already a range of regulations that govern how VPPs should operate. While AGL supports robust consumer protections for VPP programs, we do not support an additional layer of regulation on VPPs in the form of an 'approved aggregator' program that is likely to stifle innovation and consumer outcomes with limited benefit. In AGL's view, the New Energy Tech Consumer Code[4] should really serve this purpose. As the SA government's battery rebate has just been reduced to a maximum of $3,000 for a system installation which costs, on average, $12,000 - $14,000 per installation, AGL recommends significantly increasing the productivity factor for this Activity in order to incentivise take-up. AGL also does not consider it viable to discharge a customer's battery 100% in the non-peak times. The rationale is that customers pay for a battery system so that they can be assured of electricity if the grid shuts down in their area. If there is no charge in the battery when this happens, there is no point a customer paying for an expensive battery, except to avoid peak tariffs.
WH3 –Switching Electric (Heat Pump or Resistance) Storage Water Heater to Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge) WH3 (Residential or Small Business Only)		
12	For how long can consumers be assumed to be likely to stay on a controlled load tariff once they have switched and why?	Customers will stay on a controlled load tariff as long as they consider it to be in their best interest and will change tariffs or churn retailers when it does not.
13	Should this activity be limited to solely residential households or should it also be available to SMEs and commercial enterprises and why?	Residential customers only.
TOU1 – Switch Household Electricity Plan from Single Rate Tariff to Time of Use (TOU) Tariff (Residential Only)		
14	For how long can consumers be assumed to be likely to stay on a ToU tariff once they have switched and why?	Customers will stay on a TOU tariff if they consider that it is in their best interests, otherwise they will either request to switch products or churn to another retailer.
15	Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?	Should be available for SME customers as well as residential customers.
16	What cross price elasticity of demand should we assume for electricity for SA residential customers and why?	No comment at this time.

[4] https://www.accc.gov.au/public-registers/authorisations-and-notifications-registers/authorisations-register/new-energy-tech-consumer-code

No	Question	AGL's response
17	Should a household that benefits from this activity be restricted from claiming credits under other tariff related activities, such as, the VPP, WH4 & WH4 to avoid double counting?	No. AGL considers that all changes made by customers should be rewarded, especially within REPS tranche 1.
18	Should the size of the incentive be relative to the annual electricity demand of the household? Or should average South Australian demand values be used.	AGL considers that *average* South Australian demand values would be best for residential customers, as individual demand values can be very difficult to use and could potentially be a breach of privacy. However, we recommend individual *SME customer demand usage,* based on their previous 12 months of operation provided that the operations have not changed substantially. The reason for this is that there can be a big difference between SME sites depending on their type of operation.
19	The modest credits for this activity assume productivity factors based on customer responses to price elasticity alone. Could higher credits be justified if the activity was conditional on a customer also signing up to an approved behavioural demand response program? If so, what approach should be taken to estimating the likely demand savings from such a program and why? What issues should be taken into consideration by the Minister in approving such a program?	AGL would like to share some insights from AGL's experience in the ARENA-NSW behavioural Demand Response program for your consideration. AGL has been trialling a behavioural demand response program in NSW with a limited group of our customers who have volunteered to participate. While there have been some positive results, and positive consumer feedback, there are inherent limitations of the program that must be considered. Below we provide further information on these limitations. **Standard impacting consumers** It is imperative that the standard chosen for demand response devices matches the forward trajectory of data and communication in the Australian market. The DRED standard, AS/NZS 4755, is not conducive to a positive consumer experience and will not assist in establishing firm data on how the capacity translates into dispatch. Some issues we identified in relation to air-conditioners through our trial include: • Bespoke, complex, and high cost installations for existing air conditioners. • Inconsistent response of different makes and models of air conditioners to the control commands. • No local override capability if the customer wants to opt out of an event after it has started. • The lack of a feedback mechanism from the air conditioner to confirm that it has successfully executed the command. • No factoring of room temperature into the control methodology; the algorithm only aims to cut power consumption, which it will do irrespective of consumer comfort. Another important factor is how AS/NZS 4755 will impact consumer choice and comfort levels, as there is no local override capability. While our findings suggest that the trial group generally did not have any concerns with how their air conditioner was being managed, it will be important to understand this on a much broader range of consumers and identifying how those who

No	Question	AGL's response
		were dissatisfied can have their experience improved. For example, could a vulnerable or at-risk individual have their air conditioner controlled during a heat wave and have negative impacts on their health? How can this consumer opt out if communication is only one way? This is an important consideration as a behavioural Demand Response program might assign a value to the available capacity which may not materialise in practice. Further, a consumer may make a purchase choice on a product with DRED enablement due to the value of the subsidy and not fully understand the consequences on their comfort or health until after installation.
VPP1 – Connect a New or Existing Battery to an Approved Virtual Power Plant (Residential or Small Business Only)		
20	Would it be feasible to require Approved VPPs that wish to obtain the credits to ensure all household load is shifted to battery power during peak times on a daily basis (up to maximum battery capacity)? If not, what assumptions are commercially and technically feasible as minimum assumptions for deemed demand peak demand reductions?	AGL does not consider this proposal reasonable. How much load the battery shifts is a function of its normal operating cycle. A VPP can add no further value here, so there is no need to 'approve' VPPs. It could be argued that 'approved' VPPs could provide network services, but SAPN currently does not procure network services from VPP operators at all, so there would be no approved VPPs. As stated above, we consider that battery purchase should be a REPS activity rather than connection to VPP, as batteries, without connection to a VPP, provide demand shifting capability. An average value for this demand shifting capability could be based on battery size. A better way, in AGL's view, would be to deem demand reductions on the basis of the average demand offset which would be a function of the size of the customer solar system and battery. AGL does have the data to work this out DEM would like to speak to us further about it.
21	For how long can consumers be assumed to be likely to stay connected to an Approved VPP once they have signed up and why?	From AGL's experience, this depends on: • Level of churn • If the homeowner sells the home • If the home becomes a rental • How long they are happy with their savings from the activity
22	Should we restrict this activity to households or installations that have photovoltaic (PV) installations?	No. AGL anticipates that residential solar installations without batteries will decrease and that the market will dictate demand. SMEs with batteries/solar batteries – especially offices which do not have high peak loads, could move to their battery system at peak times.
23	What are the restrictions under which VPPs should be required to operate in order to ensure the best results for affordability, stability and sustainability of the South Australian electricity network?	As outlined above.
24	Should this activity be limited to solely residential households or	AGL considers that this activity should be expanded to include SMEs and suitable commercial operations. As the graph above in question 11 shows,

No	Question	AGL's response
	should it be expanded to include SMEs and commercial enterprises and why?	battery or battery plus solar can contributes significantly to changing load profile for SMEs – though it will depend on their energy consumption profile and size of system as to how effective this would be.
APP4 – Connect a New or Existing Pool Pump to an Approved DR Aggregator (Residential Only)		
25	For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?	No comments at this stage
26	For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?	In AGL's view, this depends on: • The level of churn • If the homeowner sells the home • If the home becomes a rental • If the customer finds the time of usage acceptable
HC2C – Connect Existing HVAC to an Approved DR Aggregator (Residential Only)		
27	For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?	BOM data shows that South Australia is experiencing above average heat days, and these are lasting for more days in a row[5]. AGL considers that if a row of very hot days occurred (say three or more), it would be unreasonable to expect a customer's air-conditioning to be reduced on the later days as this could result in the customer having to pay a high peak rate (which is not a good outcome for vulnerable customers) and could lead to unintended negative health consequences. Based on AGL's experience, the following needs to be taken into consideration: • The extreme weather conditions for a year. • Consideration about how often air-conditioning is switched off in a week of hot days. • Most customers would not like their load 100% switched off, unless it was for a small period (e.g. 1 hour), then went on again, then off again etc. • In the QLD situation, customers shared information on Whirlpool on how to get around the remote disconnection, as it was too prescriptive.
28	For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?	In AGL's view, this depends on: • Level of churn • If the homeowner sells the home • If the home becomes a rental • If the customer finds the time of usage acceptable

[5] http://www.bom.gov.au/climate/current/statements/scs68.pdf

No	Question	AGL's response
29	Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?	AGL considers that this activity should be available to SMEs and commercial enterprises as well, as many will have HVAC loads that can be shifted to pre-cool and heat the building.
EV1 – Connecting an Existing EV Charger to an Approved DR Aggregator (Residential or Small Business Only)		
30	For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?	AGL submits that DR management is a somewhat blunt and unsophisticated tool to be used for EV charging. It is AGL's view that there are other tools available which can be activated faster. As previously stated, AGL also considers that AS/NZS 4755 to be very outdated and inappropriate for use as many devices are already more sophisticated that it allows for. Given that cars are transport mechanisms and must be available for unexpected and emergency use, it could be problematic and potentially dangerous to discharge 100%. As such, customers will always need the ability to over-ride vehicle controls – even if they have to pay more during peak times. There is a trial of EV charging in SA, Vic, NSW and QLD ; given the immaturity of the EV industry in Australia and the dearth of real operating data to date, AGL believes that it is better to wait until the results from this trail has been completed
31	For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?	AGL considers that DR Aggregators are an unsuitable mechanism for this activity. AGL submits that retailers are a more appropriate mechanism as they know their customers better.
32	Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?	Yes. It makes sense for commercial facilities to have demand chargers, which can be discharged at peak times and recharged under the solar sponge tariff.
33	Should we consider the possibility of using electric vehicles (EVs) dispatching electricity to the grid during critical peak times?	As far as AGL is aware, EVs are currently unable to do this as it is yet to be approved in Australia. We believe that this will be available from 2025 onwards. At the moment, there is significant work which needs to be done to ready the protocols and standards before this technological development goes to market. This includes behavioural specifications as well as technical protocols.
34	Should we assume that DR would only be activated during critical peak days? Or should we assume that DR would be used much more regularly?	AGL assumes, given the Smarter Homes legislation, that air conditioning loads could be reduced during times other than peak days, in order to make sure that the grid remains stable. For instance, if an interconnector goes down or there is a low wind day.

No	Question	AGL's response
WH4 – Connecting a New or Existing Electric Heat Pump Water Heater to an Approved DR Aggregator (Residential Only)		
35	For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch off load, and why?	AGL is not sure that a DR Aggregator would want to switch off load to a water heater. Efficient units use very little energy, and switching these off this for a period of time could cause the temperature to drop and legionellae to potentially develop. However, it is suggested that rather than go to DR1, the aggregator would be better placed to go to DR 2 or 3, depending on the grid situation.
36	For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why	In AGL's view, this will depend on: • Level of churn • If the homeowner sells the home • If the home becomes a rental • If the customer finds the time of usage acceptable
37	Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?	AGL considers that turning down the energy usage could be an option for some SME operations which either have a large, under-utilised water heater or do not need hot water at peak times – taking legionella concerns into consideration.