

CONSULTATION PAPER ON PROPOSED RETAILER ENERGY PRODUCTIVITY SCHEME (REPS) REGULATORY FRAMEWORK AND ACTIVITIES

June 2020

Glossary

ACRONYM	DEFINITION
AEMC	Australian Energy Market Commission
DEM	Department for Energy and Mining
EPT	Energy productivity target
ESCOSA	Essential Services Commission of South Australia
GJ	gigajoules
HEPT	Household energy productivity target
PGEPT	Priority group energy productivity target
PIAM&V	Project Impact Assessment with Measurement and Verification
REES	Retailer Energy Efficiency Scheme
REPS	Retailer Energy Productivity Scheme
SME	Small and Medium-Sized Enterprise

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About the consultation

It is proposed that the Retailer Energy Productivity Scheme (REPS) will replace the current Retailer Energy Efficiency Scheme (REES) from 1 January 2021.

This Consultation Paper invites stakeholder feedback on proposals for key elements of the REPS. Additional consultation is planned for later in 2020 on detailed activity and method specifications.

The Department for Energy and Mining (DEM) will host a stakeholder Q&A webinar during the consultation period. To register your interest, please email DEM.REES@sa.gov.au.

Written submissions on matters raised in this paper are invited via email by CoB, Friday 17 July 2020 to DEM.REES@sa.gov.au.

All submissions will be uploaded on to the government's webpage www.sa.gov.au/energy/rees.

DEM is an agency for the purposes of Freedom of Information laws. While DEM will not publish your submission on our website if you do not want this, we may be required by law to release your submission to a third party. Should such a request be made, you will be contacted prior to any decision to release the material.

1. Background

The Retailer Energy Efficiency Scheme (REES) is scheduled to conclude on 31 December 2020.

The South Australian REES Review Report, which was tabled in Parliament on 5 February 2020, recommends that South Australia should continue to have a scheme from 2021.

The Review noted that South Australia's load profile and supply mix has changed with the high uptake of distributed energy resources and large-scale renewable energy.

The Review found that significant customer and system benefits can be achieved through optimisation of energy use. It was therefore recommended a new scheme objective be defined as to 'improve energy productivity for households, businesses and the broader energy system, with a focus on low-income households. This will reduce energy costs and greenhouse gas emissions, also potentially improving human health'.

DEM is working on a regulatory and administrative framework to commence the Retailer Energy Productivity Scheme (REPS) from 1 January 2021.

This Consultation paper seeks to progress key elements associated with the REPS going forward.

2. Introduction

It is proposed that regulations will be drafted under the *Electricity Act 1996* and the *Gas Act 1997* to give effect to the REPS.

It is proposed that the REPS will support energy demand management and demand response activities, as well as energy efficiency activities in homes and businesses.

It is proposed that key features of the REPS will include:

- REPS obligations will apply to any regulated entity authorised to sell electricity or gas by retail in South Australia
- To avoid undue burdens on new entrants and small retailers, a minimum threshold for obligation will operate to exclude small retailers from the obligation
- Obligated retailers will be required to meet targets by offering incentives to households and businesses to implement energy productivity activities
- Obligated retailers will be able to implement activities which are either from a 'pre-approved list' (with each activity either deemed to contribute to a certain amount towards the target) or to implement activities using a method based on empirical measurement and verification
- Each activity and method will have a minimum specification for implementation
- Obligated retailers will have flexibility to design their own incentive programs and may offer incentives to any customer, not just their own customer base
- The REPS will comprise two consecutive five-year stages, commencing 1 January 2021, with any continuation beyond that date subject to future Cabinet approval
- Obligated retailers will be subject to annual reporting and auditing requirements
- Compliance will be assessed annually by ESCOSA
- Obligated retailers will be subject to a civil penalties' regime for target shortfalls.

ESCOSA will report annually and at the end of each stage as to the administration of the REPS and progress toward targets.

The Minister will maintain currency of the pre-approved activities list.

As part of work on developing the REPS framework, DEM has engaged Energy Efficient Strategies, with Common Capital and Beletich Associates (the consultants) to propose a suite of activities and methods that could apply in the REPS from 1 January 2021.

Initial findings from the consultants' work has informed elements of this Consultation paper. The consultants' work is continuing and will inform future consultations on detailed specifications and credits.

Key questions that DEM is seeking feedback on are highlighted at the end of each section.

3. REPS obligation

It is proposed the REPS will require obligated retailers to deliver energy productivity activities to earn REPS credits to meet REPS targets.

The energy productivity activities to be delivered will be those activities or measures determined by the Minister to be an energy productivity activity.

4. Administration

It is proposed that ESCOSA will be provided such functions and powers as are necessary or expedient to give effect to the REPS including:

- administering the REPS
- ensuring that retailers comply with the relevant requirements of the REPS
- reporting to the Minister at the end of each year as to the administration of the REPS and the progress of retailers in achieving the targets
- publicly reporting on the REPS annually.

5. Obligation thresholds

It is proposed that the REPS:

- will apply to a regulated entity authorised to sell electricity or gas if on 30 June of the preceding year they met at least one of the obligation thresholds
- will require the Minister to set, by notice in the Gazette, the relevant thresholds for a five-year period at the time of setting annual energy productivity targets.

For the first five-year period, it is proposed that the REPS obligation will apply to a retailer if either:

- its residential customer numbers exceed 5,000 residential electricity customers or 5,000 residential gas customers
- its electricity purchases, in the preceding financial year, exceed 20,000 MWh or more of electricity for on-selling to South Australian customers
- its gas purchases, in the preceding financial year, exceed 133,000 GJ or more of gas for on-selling to South Australian customers.

The proposed electricity and gas purchase thresholds amounts are based on the estimated amount of energy used by around 5,000 average South Australian households (AEMC 2019 Retail Competition Review, median market offers).

It is proposed that the Minister will have the power to exclude certain designated purchases by notice in the Gazette from the calculation of the obligation threshold, and from the apportioned targets for each retailer.

For the five-year stage of the REPS, no designated purchases are proposed for exclusions. Unlike the previous REES, it is proposed that the REPS will not include a specific focus on smaller businesses, which was the rationale under REES to permit netting out of large loads.

Consultation questions

Are these proposed thresholds appropriate for the REPS?

Are there alternative approaches to setting thresholds that should be considered for the REPS?

Are there designated purchases which should be excluded for determining obligation thresholds? Why?

6. REPS targets

It is proposed that the REPS will require the Minister by notice in the Gazette to set annual energy productivity targets.

The targets will be expressed as the annual amount of REPS credits that must be achieved by retailers through the carrying out of energy productivity activities. It is proposed that the format for all targets should be normalised gigajoules (GJs).

The Minister will gazette annual energy productivity targets relating to each of the following five-year periods:

- 2021, 2022, 2023, 2024, 2025
- 2026, 2027, 2028, 2029, 2030

All obligated retailers will be subject to an energy productivity target (EPT) requiring the obligated retailers to achieve a given quantity of REPS credits (normalised GJs) by implementing energy productivity activities.

The REPS will provide for the Minister to set sub-targets, which are designated proportions of the EPT which must be met in a specified manner. For example, a sub-target may relate to a customer class or a type of energy productivity activity.

Whilst sub-targets will be set for the five-year periods, a sub-target may be increased, decreased, introduced or abolished. Changes made to sub-targets will commence on the 1 January of the next calendar year. Obligated retailers must receive notice 4 months before any changes to sub-targets commence.

From the commencement of the scheme, it is proposed that for obligated retailers whose residential customer numbers exceed the residential customer numbers threshold, the following sub-targets will apply:

- A household energy productivity target (HEPT) requiring the obligated retailers to achieve a given quantity of REPS credits (normalised GJs) by implementing energy productivity activities in respect of households.
- A priority group energy productivity target (PGEPT) requiring the obligated retailers to achieve a given quantity of REPS credits (normalised GJs), or a given quantity of specified productivity activities in respect of priority group households.

The priority group is proposed to include a household in which a person resides who:

- holds a Commonwealth Government pensioner concession card
- holds a TPI Gold Repatriation Health Card
- holds a War Widows Gold Repatriation Health Card
- holds a Gold Repatriation Health Card (EDA)
- holds a Health Care Card (including a Low-Income Health Care Card)
- receives the South Australian government energy bill concession
- is part of an energy retailer's hardship program
- is participating in an energy retailer's payment plan
- is referred by a financial counsellor
- has a residential tenancy agreement with the landlord of the premises.

Whilst a regional or remote target is not proposed from the commencement of the REPS, the Minister may set a regional or remote target if activities delivered in regional or remote areas comprise less than 15 per cent of the EPT in a given year.

A regional or remote household or business is considered to be a household or business within the postcodes currently used to define regional and remote areas under the REES specification for energy audits.

Consultation questions

Are the proposed means of setting targets appropriate?

Are there alternative approaches to target setting that should be considered?

Are the sub-targets appropriate or should others be considered?

Is inclusion of rental properties as a priority group the best way to incentivise delivery of activities to this group or should a separate sub-target be considered?

7. Apportioning targets

It is proposed that the REPS will require ESCOSA to apportion the targets, according a formula to be set by the Minister by notice in the Gazette.

The following formulae are proposed for the first five-year stage of the REPS:

- An obligated retailer's energy productivity target (EPT) will be calculated as:

$$\frac{\text{Total REPS target (normalised GJ) x this retailer's energy purchases}}{\text{The sum of all energy purchases by all obligated energy retailers}}$$

- An obligated retailer's household energy productivity target (HEPT) will be calculated as:

$$\frac{\text{Total HEPT target (normalised GJ) x this retailer's number of residential customers}}{\text{The sum of the number of residential customers for all retailers that will be set an HEPT}}$$

- An obligated retailer's priority group target (PGEPT) will be calculated as:

$$\frac{\text{Total priority group target (normalised GJ) x this retailer's number of residential customers}}{\text{The sum of the number of residential customers for all retailers that will be set a PGEPT}}$$

It is proposed that the REPS will require that each year ESCOSA notifies each obligated retailer of any annual targets that apply to the retailer for that year.

During a compliance year, retailer's targets will be adjusted if customers are transferred during a year from one retailer to another as a result of the sale, transmission or assignment of the whole or part of the business or undertaking of the first retailer.

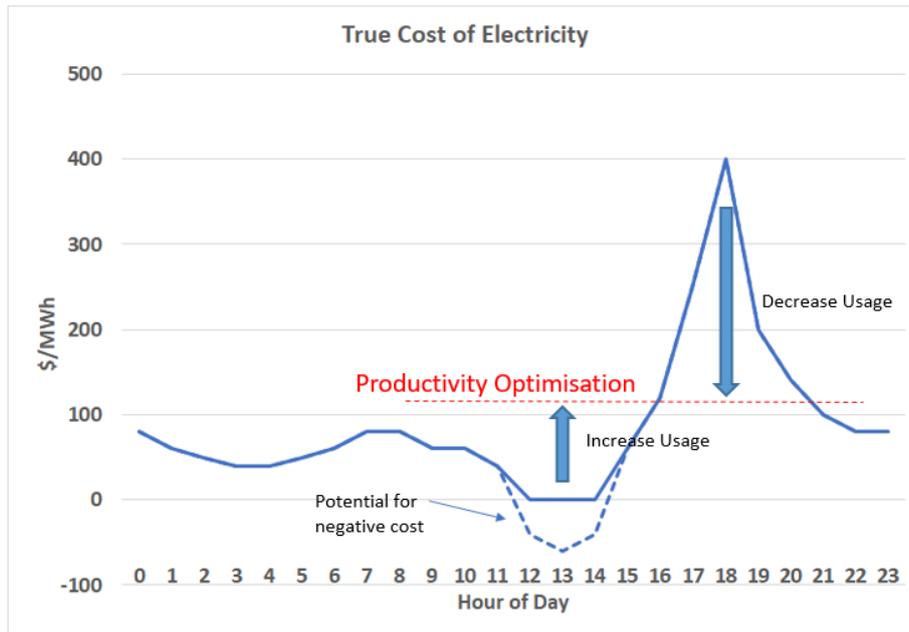
8. Calculating REPS credits

It is proposed that the REPS will focus not only on saving energy, although that will remain an important means for gaining credits, but rather on improving the productivity (or economic output) of that energy use.

Credits awarded under REPS will focus on activities that reduce energy costs, not just energy consumption. It is not just the quantum of energy used to deliver a service but also the *time of that use* that is a determinant of its true cost, particularly in terms of wholesale electricity prices.

Unlike the REES, it is proposed that credits awarded under REPS will no longer be of uniform value throughout the year. At times of network maximum demand, REPS credits will flow from reductions in energy use. At times of network minimum demand, increases in energy use will yield REPS credits. This concept of 'productivity optimisation' is illustrated in simplified terms in Figure 1 below (noting that for the other fuels captured under the scheme, gas and firewood, time of use has minimal relevance in terms of productivity).

FIGURE 1: PRODUCTIVITY OPTIMISATION



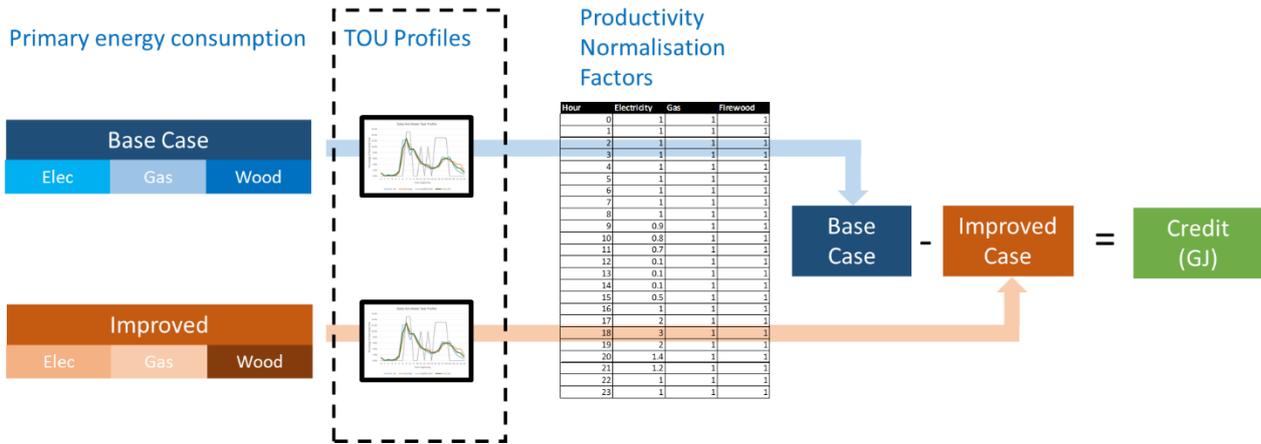
To allow for REPS credits to contribute to a REPS obligation they need to be expressed in a common format. It is proposed that the format for all REPS targets should be in the form of 'normalised gigajoules' (GJs). This is similar to the current REES, but under REPS the basis for normalisation will change.

Credits under the current REES are calculated based on a comparison of normalised energy use after a REES activity (improved case) compared to normalised energy use without that activity applied (base case). The difference in normalised energy use (base case less improved case) represents the normalised credit available for that activity. Under the REPS, the calculus is identical, except that the normalisation process will now focus on the cost of energy and (in the case of electricity) also account for time of use.

The time profile of energy use of both the base and improved cases will now be applied to normalisation factors that assign differing values according to that time of use (see Figure 2). In this way, an activity that simply shifts time of use of energy can gain significant credit, which would not have occurred under the REES.

The actual mechanics of the normalisation process under the REPS is described in more detail in the following section.

FIGURE 2: PROPOSED CREDIT CALCULATION UNDER A REPS



In summary, under the REPS, credits can be achieved through one or a combination of the following:

- Demand saving - saving energy especially at times of high demand
- Demand reduction – curtailment (part of full) at times of high demand
- Demand shifting away - shifting energy use away from times of high demand
- Demand shifting towards - shifting demand to times of low demand
- Onsite supply shifting - shifting the use of on-site supply away from times of low demand (e.g. through using storage batteries)
- Fuel switching - using energy sources with improved productivity outcomes.

9. Normalisation Factors

It is proposed that the REPS will consider fuel type in calculating normalised REPS credits. Each fuel type will be assigned a different normalisation factor to recognise the relative purchase cost of each fuel type.

The provisional relative values assigned to the various fuel types are as detailed in Table 1 (all values are set relative to the value of grid electricity which is nominally set at one).

TABLE 1: PROPOSED REPS NORMALISATION FACTORS (RELATIVE - AVERAGE YEARLY)

Fuel type	Relative value (averaged across one year)
Electricity – Grid Supplied ¹	1
Electricity – On Site Supplied ²	0.25
Gas	0.4
Firewood	0.1

Note 1: In the case of grid electricity the normalisation value noted is a yearly average only and will vary up or down according to the time of use as outlined in the previous section.

Note 2: For on-site delivered electricity (e.g. from PVs) the true cost (i.e. the basis for setting the normalisation factor) of using that electricity as part of a REPS activity is assumed to be equal to the foregone revenue that would have been earned if the power from the PVs had not been diverted to on-site uses and instead exported

to the grid. In South Australia, exported PV power is valued at about ¼ of imported grid power. This means that if an increased proportion of on-site PV generation can be utilised on site rather than being exported (e.g. through the use of storage batteries to deliver power at times other than at times of low demand) then a REPS credit can be awarded on the basis of the difference in relative value between grid supply and on site supply.

As noted in the previous section, the value of electricity consumption under REPS will also reflect its time of use. When network demand is high, electricity used at those times will be valued highly (high normalisation factor).

When network demand is low, energy used at those times is to be valued lowly (low normalisation factor).

Electricity normalisation factors for five time of use categories will be calculated, these will be largely based on price trends for wholesale electricity network costs and include the following time of use categories:

- Off Peak
- Low Demand
- High Demand
- Maximum Demand
- Other (all other times)

Off Peak occurs at times when controlled loads are applied (typically over-night 11pm to 7am) when there is a modest excess of available supply. At these times the value of the energy is low and the normalisation factor will also be low.

Low Demand occurs at times when there is known to be a significant excess of supply to the grid. At these times the value of the energy is extremely low and the normalisation factor will also be extremely low. Low demand typically occurs on public holidays and weekends – March to May and October to early January – 10:00am to 3 pm.

High Demand occurs at times when there is known to be a high demand on the grid. At these times the value of the energy is high and the normalisation factor will also be high. High demand typically occurs on Working Weekdays – early January through to mid-March - 3pm to 9pm.

Maximum Demand occurs at times when there is extreme demand on the grid and there is a possibility of shortages/blackouts if demand management is not used to curtail usage. At these times the value of the energy is extremely high and the normalisation factor will also be extremely high. Maximum demand is assumed to occur on a handful of days of extreme heat in the summer.

Other all other times apart from those listed above.

Applying electricity normalisation factors based on these time of use categories will strongly incentivise REPS activities that lower electricity consumption during higher demand periods and shift consumption to lower demand periods.

Table 2 below details proposed normalisation factors derived from the analysis of two main factors in South Australia:

- Wholesale price trends
- Network price trends

In this table the average normalisation factor across all time of use categories over the course of an entire year is set at one, but for specified times of use during the year this will vary by a factor of up to nearly 30 (see right hand column of table).

TABLE 2: PROPOSED NORMALISATION FACTORS – ELECTRICITY BY TIME OF USE

Time of use category	Wholesale factor	Network factor	Normalisation
Maximum demand	22	6.6	28.5
High demand	0.5	6.6	7.1
Off peak	0.4	0.2	0.6
Low demand	0.4	0.1	0.5
Other	0.5	0.5	1

The following simplified worked examples demonstrate how these normalisation factors ('Norm.>') operate and the differences between activity credit calculations under the current REES and that proposed for the REPS. In the following examples the common electricity normalisation factor under the REES scheme is set to 1. Under the REPS scheme the normalisation factor for electricity is as per Table 2 above (i.e. varies by time of use).

In each of the examples below there is an emphasis on either reducing demand at times of high cost or increasing demand at times of low cost. As such, the credits derived from the REPS calculation method are significantly greater than from REES.

Activity: Shift hot water heating from overnight to periods of low demand											
Base Case Energy = 10 GJ, Improved case = 10 GJ											
In the REPS calculation 50% of usage is assumed to be shifted to times of low demand											
REES Calculation											
Demand	Base Case				minus	Improved Case				equals	Credits
	Energy		Norm.	Total		Energy		Norm.	Total		
All types	10	x	1	=	10						0
REPS Calculation											
Demand	Base Case				minus	Improved Case				equals	Credits
	Energy		Norm.	Total		Energy		Norm.	Total		
O'Peak	10	x	0.6	=	6						3
Low						5	x	0.5	=	2.5	-2.5
Total	10					10				5.5	0.5

Activity: Use Demand Management to Reduce AC consumption at times of Maximum Demand											
Base Case Energy (at times of MD) = 0.1 GJ, Improved case = 0.07 GJ											
In both calculations it is assumed that the demand management process curtails 30% of MD											
REES Calculation											
Demand	Base Case				minus	Improved Case				equals	Credits
	Energy		Norm.	Total		Energy		Norm.	Total		
All types	0.1	x	1	=	0.1						0.03
REPS Calculation											
Demand	Base Case				minus	Improved Case				equals	Credits
	Energy		Norm.	Total		Energy		Norm.	Total		
Max	0.1	x	28.5		2.85						0.85
Low											0
Total	0.1				2.85					2	0.85

Consultation questions

Are the proposed REPS normalisation factors appropriate?

Does the low demand normalisation factor provide enough incentive to move energy consumption away from other periods (including off-peak) to the low demand period?

Are there other alternative factors that should be considered?

10. REPS credit transfers and carryovers

It is proposed that the REPS:

- will permit a transfer of REPS credits from one retailer to another retailer
- will permit a retailer to enter into an arrangement with another person (including another retailer) for that person to undertake energy productivity activities on its behalf
- will require that, despite any arrangement entered into by a retailer, a retailer remains liable for any offence or penalty arising from a failure to meet its REPS targets.

It is proposed that the REPS will allow that, if a retailer accrues a REPS credit in a year and does not transfer the credit to another retailer, the retailer will be able to use the credit toward meeting a target in any subsequent year.

It is also proposed that REPS will implement the REES Review Report recommendation regarding restricting 2021 credit carryovers from the 2020 REES to 20 per cent of the REPS 2021 target.

It is proposed that this credit carryover restriction will apply in 2021 only and that carried-over credits will be converted to reflect the credit values applying from 2021. It is also proposed that any carried over amounts from 2020 will contribute to the retailers' EPT for 2021, but not to any other 2021 targets.

11. REPS credit program

It is proposed that the REPS include an option for the Minister to develop and implement a program to deliver specific energy productivity activities to a targeted customer class.

To exercise this option, at least 4 months prior to the commencement of a compliance year, the Minister could notify obligated retailers of the proposed program, including the proposed activities, customer class and associated REPS credits.

Retailers would have the ability to bid for REPS credits associated with the program and use these credits for the purpose of meeting their REPS targets. Successful bids would be settled before the commencement of the compliance year, with funds from successful bidders to be received no later than 31 January of the compliance year.

Consultation questions

Is the flexibility to conduct such a program appropriate?

Are any improvements to the proposed process necessary?

12. Determining and maintaining activities and methods

It is proposed that the REPS will:

- allow that the Minister may, by notice in the Gazette, on the Minister's own initiative or by application, determine one or more activities or measures that may be undertaken by retailers to be eligible activities
- require that an application for inclusion in the REPS must be in a manner and form determined by the Minister.

It is proposed that the REPS will require that an activity determination must set out relevant information, including:

- a description of the activity or measure that constitutes the energy productivity activity
- the minimum specification in accordance with which the activity or measure that constitutes the energy productivity activity must be performed
- the amount of REPS credits taken to be achieved, or the method of calculating such an amount, if the energy productivity activity is undertaken
- any other matter the Minister thinks fit.

It is proposed that the REPS will allow the Minister, by notice in the Gazette, to vary or revoke an activity determination.

It is proposed that the Minister will have the function of maintaining, reviewing and amending the list of calculation methods, eligible activities and specifications for the purposes of the REPS.

It is proposed that the REPS will require:

- that a list of pre-approved activities and methods will be published by the Minister in the gazette
- that the Minister may add or amend calculation methods, eligible activities, and specifications at any time
- that the Minister must undertake a review of all calculation methods, credits, activities and specifications annually
- that any review will be undertaken according to a protocol to be published by the Minister.

The government will publish a Ministerial Protocol to guide the selection of productivity activities under the REPS. The proposed Ministerial Protocol is at Appendix 1.

Under the REPS the Minister will have the function of maintaining, reviewing and amending the list of calculation methods, eligible activities and specifications for the purposes of the REPS. The

Minister may add or amend calculation methods, eligible activities, and specifications at any time, provided these are consistent with the principles in the protocol.

The Minister will undertake a review of all calculation methods, activities and specifications once every 2 years.

Consultation questions

Is the proposed Ministerial Protocol appropriate for the purpose in guiding the selection of energy saving activities and calculation methods for the REES?

13. Costing and delivery of activities

Obligated retailers will be required to annually submit costs and offer information to ESCOSA for at least 80 per cent of the eligible activities. Where a third party is required to deliver an activity, the costs must reflect the best available offer received by the retailer from an activity provider. Best available offer may take into account matters including cost, technical matters, service delivery and quality.

Generally, the REPS will provide obligated retailers with flexibility around which eligible activities they deliver to meet their targets. The Minister will, however, have the ability to specify a percentage of a retailer's EPT or sub-target that must be met through the delivery of a specific eligible activity or group of eligible activities (an activity target). Activity targets will commence on the 1 January of the next calendar year. Obligated retailers must receive notice 4 months before an activity target commences.

Consultation questions

Is annually the appropriate timeframe for cost and offer reporting?

Are any other obligations necessary to incentivise competitive cost and activity delivery?

Is there a case for any activity targets from the commencement of the REPS?

14. Eligible activities and methods

A broad range of activities could be considered for the scheme, but technical and resource constraints limit the number of activities for which specific methods can be developed at the

scheme's commencement. It is proposed that priority be given to activities that are most likely to drive the greatest productivity gains and to be taken up at scale, where it is technically feasible to do so.

It is further proposed that activity-neutral methods be developed to open the scheme to as broad a range of activities as possible, by allowing proponents to measure and demonstrate benefits according to prescribed methodologies.

A suite of activities and methods has been identified by the department's consultants for stakeholder feedback on which should be prioritised for inclusion into the REPS from 2021.

Stakeholder feedback is sought on which activities are most feasible to be implemented at scale and which activity-specific and activity-neutral methods should be given priority.

Detailed draft specifications will then be developed for the initial priority activities and methods will then be drafted, followed by further consultation later in 2020.

The range of potential activities can be divided into three categories:

- Proposed REPS activities – modified from pre-existing REES activities
- Proposed REPS activities – modified from interstate schemes' activities
- Proposed REPS activities – developed specifically for REPS.

Appendices 2,3 and 4 provide summary assessments of potential eligible activities and methods under these categories.

Proposed REPS activities – modified from pre-existing REES activities

A review was undertaken of the current activities with a particular focus on how they fit with the REPS objectives and their likely uptake under the new scheme.

Whilst all the existing REES activities have established monitoring and crediting methods, this is currently structured around measuring lifetime energy savings. To capture the benefits of an activity in terms of energy productivity, the energy savings will need to be disaggregated to the times in which the savings occurred and normalised accordingly.

It is proposed that all existing REES activities will be converted into eligible REPS activities, with the following exceptions that were found to have low uptake and little prospect for improvement under the revised credit accounting proposed for REPS. REES activities that are not proposed for initial inclusion in REPS are:

- BS10 – Floor Insulation
- HC1 – Gas heater
- HC3A New Ductwork
- HC3B – New Ductwork System
- L4 – Replace a Linear Fluorescent
- BS1B – Top up ceiling insulation
- BS1C – Wall insulation
- BS3A – Replace a window
- APP1F – High Efficiency TV
- IHD1 – In home display

While the above activities will not have specifications with deemed credits in REPS, these activities could still potentially be delivered in REPS as part of a methods approach, such as the 'aggregated metered baseline method'.

Proposed REPS activities – modified from interstate schemes’ activities

Based on an assessment of likelihood of uptake, feasibility of development, and alignment with REPS objectives, four methods adapted from other schemes are proposed for inclusion in REPS. These are:

- Residential space heating and cooling upgrade method – using a deemed factor calculator to estimate REPS credits, from existing and replacement equipment. The method will be technology-neutral and fuel-neutral and will be adapted from the ACT Energy Efficiency Improvement Scheme (EEIS) heating and cooling matrix method.
- Multi-purpose commercial and industrial measurement and verification method to measure demand saving, shifting and response at a project or site level. This will be adapted from NSW PIAM&V method.
- Multi-purpose low cost commercial measurement and verification method for the simple measurement of demand saving, shifting and response at a commercial building level. This will be adapted from NSW NABERS method or similar.
- Multi-purpose residential and small business aggregated measurement and verification method to recognise measured small energy productivity gains across thousands of sites at a program/portfolio level. This method will cover equipment and/or behavior-based programs (e.g. information or tariff). Potentially adapted from NSW aggregated metered baseline method but enhanced to simplify use (e.g. using market or retailer average customer energy consumption baselines). The method will apply to the residential or SME sector.

Proposed REPS activities – developed specifically for REPS

Some of the most promising energy productivity improvement activities involve demand shifting or demand response and are not covered by existing schemes. Five potential methods are proposed for stakeholder feedback on which should be prioritised for immediate development and introduction in REPS, and which are best suited to a deemed or measurement and verification method. These are:

- Install a new battery with either on site charge/discharge management to an existing PV installation (residential or commercial)
- Install demand shifting timer/PV shifter/ripple control etc. on an electric storage water heater (convert peak or off-peak to middle of the day in shoulder seasons or shift excess solar output during the day into an electric storage water heater) (residential or commercial).
- Connect a new or pre-existing solar PV -battery system to a remote management system, such as a Virtual Power Plant (residential or commercial)
- Connect demand-response enabled equipment (such as air conditioner, pool pump, water heater or electric vehicle charger) to remote demand response system (residential or commercial).
- A residential or small businesses customer elects to connect to a SAPN time of use or prosumer tariff under a retail market offer.

Consultation questions

Which of these activities and methods do you think will be implemented through the REPS, and which will not? Please provide reasons.

Is there a strong case for retaining any of the current REES activities that are currently not planned for inclusion in REPS? If so, please provide detail reasons.

Which of the proposed new REPS activities are best suited to a deemed REPS credit, and which should be developed as a measurement and verification method? What basis would be used to calculate deemed benefits?

Are there any other load shifting/demand response activities that have sufficient data to develop deemed REPS credit methods? What basis would be used to calculate deemed benefits?

15. Compliance and reporting

It is proposed that the REPS will:

- require ESCOSA to develop and publish a REPS compliance code for use by retailers in meeting their obligations
- require an obligated retailer to regularly submit to ESCOSA a compliance plan for the purposes of delivery of its targets according to the REPS compliance code
- require an obligated retailer to regularly report to ESCOSA on its compliance with the REPS compliance code and with its targets.

It is proposed that an annual report will be published by ESCOSA to provide transparency of activities being delivered (type and quantum), average price of activities and parties delivering activities including relative market share.

16. Shortfall penalties

It is proposed that the REPS will offer some flexibility in the annual compliance requirements, including permitting retailers to under-achieve on a target by up to 10% without penalty, provided the shortfall is carried over and delivered the following year.

A retailer that under-achieves on their target up to 10% will have their target for the next year adjusted by ESCOSA to account for such shortfalls.

Carry over of over-compliance will also be permitted, as discussed above.

The REPS will include a shortfall penalty (per normalised GJ) on obligated retailers if they fail to achieve a target or a sub-target or an activity target under the REPS.

It is proposed that the REPS will permit ESCOSA the discretion to levy penalties on energy retailers that significantly under-achieve on their targets. It is proposed that the penalties will include:

- base penalty of \$10,000 for failing to meet each category of target

- the amount of each shortfall (expressed in normalised GJs) multiplied by \$21.45.

Consultation questions

Are these penalties adequate to ensure compliance? Why?

Appendix 1: Proposed protocol for maintaining calculation methods, eligible activities and specifications

In reviewing the REPS calculation methods, activities and specifications, the Minister will have regard to the following principles:

Consider any activities that provide energy productivity benefits through:

- reduced household or business end-use energy consumption
- reduced household or business end-use energy costs for the same household or business outcome.

Maximise the number of activities that provide broader energy market benefits in South Australia, such as:

- reduced wholesale electricity prices
- reduced electricity network costs
- improved energy system security benefits.

Ensure that there are sufficient activities to provide a focus on low-income households, and facilitate increased delivery to remote and regional areas.

Maximise the number of activities that obligated Retailers can implement to foster competition, innovation and market efficiency.

Calculation methods can include activity-specific deemed normalised energy credits or formulas, or activity-independent specific measurement approaches.

Calculation methods using deemed normalised energy credits or formulas are appropriate for an activity where there is:

- low or known variability of the activity and its resulting energy productivity benefits
- robust, independent, empirical data on baseline and post implementation activities, energy consumption, and other energy productivity benefits.

Calculation methods can deem future normalised energy credits:

- once the initial productivity benefits of an activity have been verified, and
- if there is robust, independent, empirical data on the likely persistence of productivity benefits.

If the above principles cannot be met, calculation methods will be based on empirical measurement and verification of actual delivered productivity benefits.

Measurement and verification-based calculation methods may be developed so as to apply at the level of implementation of an activity at an individual site or based on aggregate measurement across multiple sites.

Specifications for calculation methods will include, but are not be limited to:

- the specific activity or categories of activity for which the method can be used
- the detailed calculation steps to be undertaken, and specifications about how activities are to be conducted and calculations made, including, but not limited to, product and installation requirements, and records kept for audit.

Activities and calculation methods should be capable of being defined in ways such that they can be objectively audited simply and cost effectively.

Activities and calculation methods should align with other schemes as far as possible, where this is consistent with scheme principles.

Activities must be capable of uptake by households and/or businesses within South Australia.

Activity specifications should provide a means for ensuring quality assurance and participant satisfaction, typically through product or installation standards and guidelines.

Activities should leverage existing, state, national or international standards and accreditation frameworks wherever possible.

Specifications should require that:

- activities are undertaken by suitably qualified professionals
- appropriate levels of training are required for service providers
- products comply with relevant safety standards
- installations are in accordance with relevant installation standards, guidelines and/or manufacturer's instructions
- activities are designed and implemented in a way that minimises risks to service providers and participants.

Activity specifications should offer options to utilise good practice such as recycling and compliance with best practice installation guidelines.

Calculation of normalised energy credits from an activity should be evidence based and applicable to South Australia.

Calculation methods should provide a credible means of calculating normalised energy credits that balances compliance costs with accuracy of calculations.

Normalised energy credits should be additional to base case and the calculation method is designed in a way that minimises the scope for free riders through the use of appropriate baseline assumptions.

Calculation methods should provide greater rewards for products and services that deliver higher levels of performance (for example, scalability of deemed normalised energy credits to reward products and services with higher performance to maximise potential benefits).

Calculation methods using deemed productivity credits should:

- be informed by credible research and a defensible methodology
- adjust normalised energy credits to account for South Australia's climate zone/s, typical housing stock and energy use practices
- adjust normalised energy credits to account for: the extent to which the benefits will be taken as improved thermal comfort; likelihood of performance changes over time; changing business as usual scenarios; free riders; persistence; or planned future regulation.

Appendix 2: Assessment Summary of Pre-existing REES Activities

Activity	Objective				Uptake Potential			Activity Potential		Comments
	Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity (cost effectiveness)	Theoretical Uptake	Uptake to date	Ease of Activity Development	Retain?	
BS1A Ceiling Insulation	V,High	Medium	Nil	High	V,High	Medium	>1 M m2	Medium	Yes	Future uptake limited by number of available dwellings without ceiling insulation (<10%)
BS1B Top-up Ceiling Insul.	Medium	Medium	Nil	High	Medium	Medium	220 m2	Medium	Marginal	A significant number of dwellings are under-insulated, so there is potential for this activity but uptake has been poor
BS1C Wall insulation	High	Medium	Nil	Medium	Medium	Medium	Nil	Medium	Marginal	The activity has potential for significant savings but needs the buy in of specialised contractors
BS1D Floor Insulation	Low	Nil	Nil	Low	Low	Low	Nil	Medium	No	
BS2 Building Sealing	Medium	V. Low	Nil	V,High	Medium	High	11,199	Low	Yes	Moderate uptake to date but still significant potential. A new whole of house sealing activity may be a better option
BS3A Replace a Window	Medium	Medium	Nil	Medium	Medium	Low	Nil	Medium	See Comment	High cost of the activity means that it is only really viable when the opportunity cost is low i.e. when windows are being replaced anyway.
BS3B Retrofit a Window	Medium	Medium	Nil	High	Medium	Medium	Nil	Medium	See Comment	Poor uptake but may be justified due to heating cost and health benefits afforded particularly to priority households
HC1 Gas Heater	Medium	Nil	Nil	Medium	Medium	Low	Nil	Medium	No	The activity provides no high or low demand benefits. Heat pump options now more cost effective.
HC2A New RC AC (non Duct)	High	High	Nil	High	High	High	Nil	Medium	Yes	
HC2B New RC AC (Duct)	V,High	High	Nil	Medium	High	Low	Nil	Medium	Yes	Central heat pump heating/cooling accounts for only about 10% of installations.
HC3A Efficient New Ducts	Low	Low	Nil	Low	Low	Medium	56	Medium	No	Relatively high cost and low credit suggests low uptake potential

Activity	Objective				Uptake Potential			Activity Potential		Comments
	Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity (cost effectiveness)	Theoretical Uptake	Uptake to date	Ease of Activity Development	Retain?	
HC3B New Ducts - Systems	Medium	Low	Nil	Low	Low	Medium	1	Medium	No	Relatively high cost and low credit suggests low uptake potential. Also methodology is complex
WH1 Replace Water Heater	High	Low	Nil	High	High	High	11,367	Medium	Yes	New REPS metrics likely to alter credits, particularly where fuel switching is involved.
WH2 Replace Showerhead	High	V. Low	Nil	V,High	V,High	V,High	230K	Medium	Yes	HE option (<7.5litres/min.) have dominated over the past 6 years (80% of installations) - Recommend discontinue <9.5 litre option
L1 LED GLS	Medium	Low	Nil	V,High	V,High	V,High	1.9M	High	Yes	
L2 LED Downlight	Medium	Low	Nil	V,High	V,High	V,High	313K	High	Yes	Consider retaining option 2B only Note: Activity L2C has a relatively high degree of development difficulty
L3 Replace QH Floodlight	Medium	Low	Nil	V,High	V,High	V,High	3729	High	Yes	
L4 Replace Lin fluorescent	Medium	Low	Nil	V,High	Medium	Low	Nil	High	No	No uptake to date with limited scope for uptake in the future.
CL1 Com. Lighting Upgrade	Medium	Low	Nil	Nil	V,High	V,High	181K	High	Yes	
SPC1 Standby Cont. AV	Medium	Low	Nil	Medium	High	Medium	348K	High	Yes	
SPC2 Standby Cont. IT	Medium	Low	Nil	Medium	High	Medium	62K	High	Yes	
APP 1A HE Refrigerator	High	Low	Nil	Medium	High	Medium	Nil	High	Yes	
APP 1B HE Freezer	High	Low	Nil	Medium	High	Medium	Nil	High	Yes	
APP 1D HE Clothes Dryer	High	Low	Nil	Medium	High	Medium	Nil	High	Yes	
APP 1F HE TV	Low	Low	Nil	Medium	Low	Medium	Nil	High	Marginal	Low incentive
APP2 Remove Refrigerator	High	Low	Nil	High	High	Medium	Nil	High	Yes	
APP3 HE Pool Pump	Medium	Medium	Nil	V. Low	Medium	Medium	Nil	High	Yes	Constrained by number of households with a pool (approximately 10%)
RDC 1 HE RDC	High	Medium	Nil	Nil	High	Medium	Nil	High	Yes	

Activity	Objective				Uptake Potential			Activity Potential		Comments
	Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity (cost effectiveness)	Theoretical Uptake	Uptake to date	Ease of Activity Development	Retain?	
IHD1	V. Low	Medium	Medium	High	Medium	Low	Nil	Medium	See Comment	Whilst this activity has potential it may be best folded into a new activity that rewards a broad range of demand management initiatives

Appendix 3: Assessment summary of selected activities from other schemes

Activity	Outcome	Method	Objective				Uptake/Activity Potential		
			Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity	Likely Uptake	Ease of Activity Development
Upgrade refrigeration and ventilation fans	Demand savings from commercial and industrial equipment	Deemed normalised energy savings, based on ERF Refrigeration and ventilation fans methods modified to account for end-use time profile.	Medium	Medium	Nil	Nil	High	Low	Medium
Install a motor to power a pump	Demand savings from commercial and industrial equipment	Deemed normalised energy savings, based on EES Rule Schedule F modified to account for end-use time profile.	Low	Medium	Nil	Nil	High	Low	Medium
Install a motor	Demand savings from commercial and industrial equipment	Deemed normalised energy savings, based on EES Rule Schedule F modified to account for end-use time profile.	Low	Medium	Nil	Nil	High	Low	Medium
Undertake energy efficiency improvements (equipment and/or behavior) in a commercial building	Demand savings from commercial building	Calculated energy savings, based on NABERS Metered Baseline method as described in Section 8.8 of the ESS Rule. This will need to be modified to account for (a) normalising of electricity and gas usage and (b) application of deemed	High	Medium	Medium	Nil	High	Low	Medium

Activity	Outcome	Method	Objective				Uptake/Activity Potential		
			Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity	Likely Uptake	Ease of Activity Development
		time of use profile for common classes of commercial buildings and provision for approval of bespoke time of use profiles.							
Install power factor correction equipment	Demand savings from improved power factor of electricity supply to a commercial or industrial site	Deemed normalised energy savings based on section 9.6 of the ESS Rule modified to account for time of use profile of the downstream load.	Low	Medium	Nil	Nil	Low	Low	Medium
Undertake energy efficiency improvements, load shifting and/or demand response activities at a commercial or industrial site	Demand savings, shift and/or response from a commercial or industrial site	Calculated energy savings and/or demand reduction based on the PIAM&V method as described in section 7A of the ESS rule. This will need to be modified to account for (a) normalising of electricity and gas usage and (b) normalising for time of use profile	V,High	High	Medium	Nil	High	Medium	Medium
Replace inefficient, high peak demand space heating and/or cooling with high efficiency DRED enabled reverse-cycle space heating	Improving energy productivity through peak demand electricity savings	Deemed normalised energy savings taking into account of fuel types and time of use profile of electricity, based on EEIS Home heating and cooling matrix + requirements for DRED connection	High	Medium	Low	High	Medium	High	Medium

Appendix 4: Assessment summary of promising new activities

Activity	Outcome	Method	Objective				Uptake/Activity Potential		
			Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity	Likely Uptake	Ease of Activity Development
Connect demand-response enabled equipment (such as air conditioner, pool pump, water heater or electric vehicle charger) to remote demand response system	Demand response from equipment being used less during peak demand periods / more during minimum demand periods	Deemed normalised energy savings determined from analysis of the performance of the remote management system (across a representative sample of end-users) in re-shaping end-user demand profiles.	Nil	High	Low	Medium	Medium	Medium	Medium
Participation of a commercial or industrial site in a demand-response program operated by a demand-response aggregator/service provider	Demand response from commercial and industrial equipment being used less during peak demand periods	Monitoring and verification of actual demand response	Nil	High	High	Nil	Medium	Low	Medium
End-users sign-up to a retail time of use tariff that provides price signals to (a) reduce electricity use during peak demand periods and (b) use energy during the middle of the day in shoulder seasons.	Demand shifts in response to ToU price signals	Deemed normalised energy savings determined from analysis of the retailers time of use tariff (across a representative sample of end-users) in re-shaping end-	Low	High	High	High	Medium	Medium	Medium

Activity	Outcome	Method	Objective				Uptake/Activity Potential		
			Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity	Likely Uptake	Ease of Activity Development
		user demand profiles.							
Enabling equipment is installed to cause equipment (such as storage water heaters) currently on overnight controlled load to operate during the middle of the day in shoulder seasons	Demand shifts from existing controlled load equipment operating during the middle of the day in shoulder seasons	Deemed normalised energy savings determined from analysis of the performance of the retailers time of use tariff (across a representative sample of end-users) in re-shaping end-user demand profiles.	Nil	Nil	High	High	Medium	Medium	Medium
Connect a new or pre-existing solar-battery system to a remote management system, such as a Virtual Power Plant OR Install a new battery (with either remote or on-site charge/discharge management) to an existing PV installation	Supply shifts from solar-battery systems to (a) reduce end-user demand during peak demand periods and/or (b) reduce on-site generation export during minimum demand	Deemed normalised energy savings determined from analysis of the performance of the system with either remote or on-site management provision (across a representative sample of end-users) in re-shaping end-user demand profiles.	Nil	High	High	Medium	High	Medium	Medium

Activity	Outcome	Method	Objective				Uptake/Activity Potential		
			Saves Energy	Addresses High or Max. Demand Issues	Addresses Minimum Demand Issues	Suitable for Priority Households	Relative Return from Activity	Likely Uptake	Ease of Activity Development
End-users sign-up to a retail time of use feed-in tariff that rewards export and peak demand periods and discourages export during middle of the day in shoulder seasons	Supply shifting to (a) increase on-site generation export during peak demand periods and/or (b) reduce export during minimum demand	Deemed normalised energy savings determined from analysis of the performance of the retailer's time of use tariff (across a representative sample of end-users) in re-shaping end-user export profiles.	Nil	High	High	Low	Medium	Low	Medium