ACT Government
Environment, Planning and Sustainable Development

Energy Efficiency Improvement Scheme

Regulatory Impact Statement

Prepared in accordance with Chapter 5 of the *Legislation Act 2001*

Introducing Commercial Lighting Activity and other updates to disallowable instruments:

Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Code of Practice 2016 (No 2) **DI2016-302**

Energy Efficiency (Cost of Living) Improvement (Record Keeping and Reporting) Code of Practice 2016 (No 2) **DI2016-303**

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Shane Rattenbury MLA
Minister for Climate Change and Sustainability

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Background

The *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Energy Efficiency Act) was passed by the Legislative Assembly on 3 May 2012. The Act establishes the Energy Efficiency Improvement Scheme (EEIS), which is a retailer obligation energy efficiency scheme. EEIS was initially legislated to run until 31 December 2015. On 4 August 2015, the Legislative Assembly passed the *Energy Efficiency (Cost of Living) Improvement Amendment Act 2015* which amended the Act to continue the EEIS to 31 December 2020.

Key elements of the EEIS extension were to support the ACT Government's climate change strategy Action Plan 2 (AP2) which identified reducing energy use in existing homes as one of the most cost-effective ways for the Act to achieve its emissions reduction targets and reduce the impact of rising electricity and gas prices over the long-term. Since the scheme extension, the *Climate Change and Greenhouse Gas Reduction Act 2010* (the CCGGR Act) has been updated with new targets of 100 per cent renewable electricity by 2020 and zero net greenhouse gas emissions by 2050. The Parliamentary Agreement for the 9th Legislative Assembly for the ACT (Parliamentary Agreement) contains a commitment to "continue all necessary policy and contractual steps to achieve 100% renewable electricity by 2020". EEIS is a key mechanism for delivering on the ACT renewable energy and emission reduction targets.

This Regulatory Impact Statement (this RIS) analyses the financial and non-financial impacts on society from updates to the following two disallowable instruments:

- *Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Code of Practice 2016 (No 2); and*
- *Energy Efficiency (Cost of Living) Improvement (Record Keeping and Reporting) Code of Practice 2016 (No 2)*.

This RIS is prepared in accordance with Part 5.2 of the *Legislation Act 2001* for establishing codes of practice under Section 25 of the Energy Efficiency Act. Section 25 establishes a range of purposes for codes of practice and these updates to disallowable instruments are consistent with those purposes.

Consultation

Extensive consultation has been undertaken towards the proposed disallowable instrument updates. Stakeholder forums held in 2014, 2015 and 2016 all supported the general approach of the EEIS including the statutory retailer energy savings obligation scheme and its supporting subordinate legislation. In particular, there has been strong support for the proposal to introduce a range of new activities for space heating and cooling and water heating activities. These provide greater accuracy in calculating abatement and also achieve significant gas savings. Taken in context with the ACT 100 per cent renewable electricity

target (100% RET) by 2020, this means that they offer very high abatement compared with other EEIS activities.

There has been focused consultation on elements of the disallowable instrument updates that are most likely to affect stakeholders and especially the codes of practice to support the new space heating and cooling activities and water heating activities and some updates to abatement for residential lighting and appliances. This focused consultation has been undertaken with internal (ACT government) stakeholders including the Actsmart program teams, Access Canberra and others within the Environment, Planning and Sustainable Development Directorate. External stakeholders involved in focused consultation include the Tier 1 retailer (ActewAGL Retail), other National Electricity Retail Law retailers operating within the ACT, service providers and policy developers for the Victorian Energy Efficiency Target (VEET), New South Wales Energy Saving Scheme (NSW ESS) and South Australian Retailer Energy Efficiency Scheme (REES).

The consultation undertaken on the proposed disallowable instrument updates has confirmed that the amendments in these codes of practice will ensure that EEIS continues to achieve its targets safely.

Complementarity

The EEIS complements many broader ACT government policy objectives including the ACT Strategic Priority of enhancing liveability and social inclusion, by helping households and businesses to reduce emissions and energy costs.

The EEIS strongly complements other targets, policies and programs aiming to achieve greenhouse gas emissions reductions, especially those established in the CCGGR Act as updated in April 2016. The CCGGR Act targets are listed here, together with a description of how EEIS assists in their achievement:

- 40% reduction of 1990 emission levels by 2020 and zero net greenhouse gas emissions by 2050 – EEIS activity abatement values are based on emission savings, not just energy savings. Because of this, EEIS provides clear and material incentives for undertaking activities that minimise emissions.
- Peaking per capita emissions by 2013 – ACT per capita emissions continue to be lower than 2013 levels, but rose in 2014-2015 compared with the previous year[1]. Ongoing work is needed to retain low per capita emissions and EEIS reduces these by requiring energy retailers to continually reduce the emissions of energy end users.
- 100% renewable electricity by 2020 target – while renewable electricity is doing the heavy lifting to meet the 100% renewable electricity target, EEIS also has a role. The less energy used in the ACT, the less investment is needed to secure renewable

[1] See http://www.environment.act.gov.au/cc/acts-greenhouse-gas-emissions

supplies. In addition, savings from EEIS are helping to offset the costs of the renewable electricity target.

EEIS also complements other interstate energy efficiency obligation schemes. This complementarity was formalised in April 2016 with the notification of the *Energy Efficiency (Cost of Living) Improvement (Interstate Energy Efficiency Schemes) Approval 2016 (No 1)* which formally approves equivalent schemes in Victoria, New South Wales and South Australia to further reduce costs for households and businesses and to improve consistency across states and territories. The proposed updates to disallowable instruments maintain interjurisdictional consistency and harmonisation by carrying updates and established elements from other schemes into the EEIS where relevant. For instance, updates to the residential lighting abatement bring the EEIS in line with VEET and appliance activities have been updated in line with REES and other schemes.

The disallowable instruments also complement the *Energy Efficiency (Cost of Living Improvement) Eligible Activities Determination 2016 (No 2)* (the Notifiable Instrument). This is being amended at the same time as the proposed disallowable instruments with new abatement values and activity definitions that match the changes described here.

Outline of changes from previous instruments

This Regulatory Impact Statement explains three types of changes made to two disallowable instruments. The two instruments are the *Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Code of Practice 2016* and *Energy Efficiency (Cost of Living) Improvement (Record Keeping and Reporting) Code of Practice 2016*. The key changes include:

- bringing in new activities for space heating and cooling and water heating which provide strong abatement;
- removing two activities that supported the installation of new gas appliances and thereby better aligning with goals for net carbon neutrality by 2050;
- reducing abatement for residential lighting and appliances in line with equivalent schemes in other jurisdictions;
- improving some record keeping and reporting requirements to remove ambiguity and strengthen the audit and compliance framework without adding materially to compliance costs; and
- clarifying some licensing requirements so that it is clear when electrical, plumbing and gas fitting licences are required for EEIS activities.

Overview of modelling

Detailed modelling was undertaken by Energetics Pty Ltd (Energetics) to determine the impact of continuing the EEIS to 2020. This modelling builds on previous work undertaken by Energetics to establish the original scheme and extend the EEIS to the non-residential sector. Further detail is provided in the Regulatory Impact Statement that supported EEIS setting key scheme parameters to 2020[2] (the Scheme Extension RIS).

Additional modelling has also been undertaken to estimate marginal costs and benefits of the space heating and cooling and water heating activities. This work extends that in the Scheme Extension RIS since the new space heating and cooling and water heating activities have been developed since that modelling was undertaken and therefore it does not incorporate the additional scheme benefits from the new activities. The marginal costs and benefits analysis confirms that several of the new space heating and cooling activities are among the most cost effective activities in EEIS.

Other modelling that supports these updates has been completed by operators of equivalent schemes in other jurisdictions. For instance, the updates to residential lighting abatement values are in line with the VEET baseline updates which were carefully modelled in Victoria and commenced in April 2016. Updates to appliance abatement values are in line with the most recent updates completed for equivalent activities in other schemes, so high efficiency television abatement is being made consistent with REES while standby power controller abatement are brought in line with VEET. Each proposed update has been subjected to independent evaluation by consultants Common Capital, Energy Efficient Strategies and Beletich Associates who have confirmed that the proposed EEIS updates are a necessary improvement on current instruments.

The authorising law

The authorising law is the *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Act). The Act was passed by the Legislative Assembly on 3 May 2012. The Act establishes the Energy Efficiency Improvement Scheme (EEIS), which is a retailer obligation energy efficiency scheme. The EEIS was initially legislated to run until 31 December 2015. On 4 August 2015, the Legislative Assembly passed the *Energy Efficiency (Cost of Living) Improvement Amendment Act 2015* which amended the Act to continue the EEIS to 31 December 2020.

The objectives of this Act are to:

a) encourage the efficient use of energy; and
b) reduce greenhouse gas emissions associated with stationary energy use in the Territory; and

[2] http://www.environment.act.gov.au/__data/assets/pdf_file/0006/735990/Attachment-C-Regulatory-Impact-Satement-EEIS-Parameters-to-2020-FINAL.pdf

c) reduce household and business energy use and costs; and
d) increase opportunities for priority households to reduce energy use and costs.

The Act establishes a Territory-wide Energy Savings Target (EST) which correlates to mandatory energy savings obligations for individual electricity retailers based on their electricity sales in the ACT. The specific level of the EST, and other EEIS targets, are set by disallowable instruments for each compliance period, defined as a calendar year. The current EST is set by the *Energy Efficiency (Cost of Living) Improvement (Energy Savings Target) Determination 2015 (No 1)* (DI2015-268).

Retailer obligations

The individual retailer obligation is represented in tonnes of CO_2-e, calculated using the following formula:

Obligation (tonnes CO_2-e) = Energy Savings Target (%) x Emissions Multiplier x Retailer Sales (MWh)

The Emissions Multiplier has been set by the *Energy Efficiency (Cost of Living) Improvement (Emissions Multiplier) Determination 2015 (No 1)* at 0.4 for each compliance period 2016 to 2020. This is equal to the modelled average grid intensity of carbon dioxide equivalent (CO_2-e) for the period. The Energy Savings Target has been set by the *Energy Efficiency (Cost of Living) Improvement (Energy Savings Target) Determination 2015 (No 1)* at 8.6 per cent of total electricity sales for each compliance period 2016 to 2020. Energetics modelling presented in the scheme extension RIS suggests that this target optimises the net present value for the scheme by delivering the maximum community benefit, limiting pass-through costs, achieving value for money and limiting risks.

The Retailer Sales component of the retailer obligation has two implications for retailers. It determines whether they are a Tier 1 or Tier 2 retailer and therefore whether they are obliged to deliver abatement through approved activities. It also determines the amount of their obligation. Retailers are defined as being either Tier 1 or Tier 2 as follows:

Tier 1 Retailer:

- Electricity sales of 500,000MWh or greater to customers in the ACT in a compliance year; and
- Greater than 5, 000 customers in the ACT.

Tier 2 Retailer:

- All other retailers.

In order to meet their energy savings obligation, Tier 1 retailers must undertake eligible energy saving activities approved under the Act. Tier 1 retailers are also obliged to achieve a proportion of their energy savings obligation in low-income households, as determined by

the Minister by Disallowable Instrument. The Minister determined the Priority Household Target to be 20 per cent of the energy savings obligation for both the 2016 and 2017 compliance years by *Energy Efficiency (Cost of Living) Improvement (Priority Household Target) Determination 2015 (No 1)* and *Energy Efficiency (Cost of Living) Improvement (Priority Household Target) Determination 2016*. This is calculated under section 15 of the Act and the target will continue to be reviewed annually.

Tier 2 retailers may choose to undertake eligible energy saving activities or they may pay a contribution fee set at the expected average cost of abatement for a Tier 1 retailer. The contribution is set by the Minister by disallowable instrument, based on the estimated average cost of compliance for a Tier 1 retailer. This provides a simplified obligation for smaller retailers who may not have the customer base or resources in the ACT to fully participate in the Scheme and who may be discouraged from participating in the ACT market if required to undertake activities. This equalises the cost of participation for all retailers and, in turn, mitigates potential adverse effects of the Scheme on competition in our retail electricity market. The Minister determined the Energy Savings Contribution at $116 per tonne of carbon dioxide equivalent greenhouse gas emissions energy savings obligation as calculated under section 13 of the Act for each compliance period from 1 January 2016 to 31 December 2020 by the *Energy Efficiency (Cost of Living) Improvement (Energy Savings Contribution) Determination 2015 (No 1)*.

In order to ensure reasonable incentives exist for Tier 1 suppliers to undertake abatement activities, the penalty for not achieving the abatement target is set slightly higher than the expected maximum price a retailer will pay per tonne of abatement. The Minister determined the shortfall penalties for noncompliance to be $300 per tonne of carbon dioxide equivalent greenhouse gas emissions energy savings for each compliance period from 1 January 2016 to 31 December 2020 by the *Energy Efficiency (Cost of Living) Improvement (Penalties for Noncompliance) Determination 2015 (No 1)*.

Eligible activities and activity abatement values

Section 10 of the Act allows the Minister to approve a Notifiable Instrument to determine eligible activities which retailers may undertake to meet their obligation under the EEIS. This Notifiable Instrument is the *Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Determination 2016 (No 2)* (the eligible activities determination). The eligible activities determination also establishes the Activity Abatement Values (AAVs) that apply for each eligible activity and which are used to award abatement to retailers in order to meet their energy savings obligation. An update to the eligible activities determination has been tabled together with the two disallowable instruments covered by this Regulatory Impact Statement.

The EEIS has been developed to align closely with other energy efficiency schemes in Australia. While the EEIS is a non-certificate market based scheme, due to the small size of

the ACT economy, the activity and eligible product requirements align with those of other jurisdictions where possible. This simplifies retailer participation, with many retailers in the ACT also operating in other jurisdictions.

The updates to the eligible activities determination together with these disallowable instruments aim to enhance harmonisation with other approved interstate energy efficiency obligation schemes and maximise the accuracy of abatement awarded under the EEIS. The activity of installing standby power controllers, for instance, has been made consistent with current Victorian standards for the same activity. Harmonisation is also achieved by delaying the introduction of new activities like insulation and updating a range of building envelope sealing activities which have recently been reviewed by the Victorian Energy Efficiency Target (VEET) scheme. Delaying changes to these activities will minimise the number of updates required to achieve accurate and harmonised abatement values and this will maximise retailer capacity to plan for EEIS activity implementation across business cycles.

The updates to the eligible activities determination also adjust baselines which were previously based on Victorian climatic conditions and building stock so that they better reflect the conditions in the ACT. As with other approved interstate schemes, the EEIS activity abatement values will continue to be updated when baseline assumptions require it. For instance, if Australia's Minimum Energy Performance Standards make current activities redundant, then the presence of those activities in the Scheme and/or their abatement values will be reviewed.

It is worth noting that the baseline updates retain the same assumptions for grid intensities that were used in modelling the scheme outcomes in 2015. Further, the Administrator has made a policy decision to retain these original modelled grid intensity values based on the 90% RET for the life of the scheme, despite the ACT 100 per cent renewable electricity target which was announced in May 2016 (ACT 100% RET). The ACT 100% RET affects the EEIS results since activities that save electricity deliver less abatement the more the grid is decarbonised.

The option of retaining modelled grid intensities for the calculation of AAVs in the eligible activities determination maximises EEIS potential to achieve the net present value benefits to the ACT economy that were modelled for the scheme extension. This is because the broad scheme metrics such as the Energy Savings Target, Emissions Multiplier and Retailer Energy Savings Obligation will continue to work as intended. Retaining modelled grid intensities also delivers business certainty and administrative efficiency by avoiding the need to update AAVs whenever new models are presented for the ACT grid intensity, which will occur regularly as the ACT approaches its new 100% RET. Despite the retention of the grid intensities that were modelled on the basis of an ACT 90% RET, EEIS results can still be reported using empirical grid intensity data. Thus the benefits of retaining the originally modelled grid intensities can be achieved without a loss of reporting accuracy.

Codes of practice

The updates to disallowable instruments that are the subject of this RIS are made under Section 25 of the Act, which provides for the Administrator to approve codes of practice (approved codes of practice) by a disallowable instrument. These codes of practice may relate to the following:

a) consumer protection obligations;
b) quality, health, safety and environmental requirements applying to eligible activities;
c) the eligibility of approved abatement providers;
d) the acquisition of approved abatement factors;
e) record keeping requirements;
f) reporting requirements; and
g) carrying out an audit of information given to the administrator under section 19 (Information to be given to administrator), including the following:
    i) purpose of the audit;
    ii) qualifications of auditors;
    iii) appointment of auditors;
    iv) removal of auditors;
    v) obligations of auditors; and
    vi) reporting requirements for auditors.

Policy objectives of the disallowable instruments and the reasons for them

Key policy objectives of the disallowable instruments are shown in table 1 below.

Table 1 Key policy objectives and reasons for the proposed changes

Key policy objective	Reasons for the proposed change
Bringing in new activities for space heating and cooling and the water heating to better align with the ACT 100% RET and emissions reduction targets.	The ACT 100% RET means that activities like lighting upgrades that save electricity only don't deliver strong emissions reductions because the projected future ACT grid intensity of carbon dioxide equivalent emissions (CO_2-e) is so low. In contrast, modelling shows that activities like space heating and cooling and water heating deliver considerable emissions reductions because reducing gas will always avoid emissions. The disallowable instruments introduce new space heating and cooling and water heating activities to provide additional options more accurate abatement for activities that save gas and therefore align well with the ACT 100% RET and emissions reduction targets.
Removing two activities that supported the installation of new gas appliances to better align with the ACT 100% RET and emissions reduction targets.	The Scheme Extension RIS identified ducted gas heater upgrades as a significant opportunity for delivering abatement and this modelling has been confirmed with ActewAGL on the verge of delivering this activity. There are no plans to remove this activity until at least 2019. However the Scheme Extension RIS did not identify efficient gas room heating or efficient gas hot water upgrades as significant opportunities. Consultation with retailers has confirmed that none have plans to deliver these gas activities. This suggests that there are no material costs from removing these gas activities from the EEIS. Meanwhile removing them from the scheme better aligns EEIS with broader policy objectives of 100% RET and zero net emissions by 2050.
Aligning lighting activities with other schemes	VEET reduced its residential lighting abatement baselines in April 2016 because detailed research had confirmed that the wide availability, and low cost of light emitting diode (LED) technology, combined with the Minimum Energy Performance Standards (MEPS) which no longer allow for the sale of incandescent lamps have led to a general national improvement in lighting efficiency. Reducing the abatement for

	residential lighting upgrades brings EEIS back in line with the VEET abatement factors.
Aligning appliance activities with other schemes	VEET and REES have recently reviewed their residential appliance abatement baselines, so updating the abatement and star ratings for residential appliances brings EEIS back in line with the national abatement factors.
Improving some record keeping and reporting requirements to strengthen the audit and compliance framework without adding materially to compliance costs	Some of the record keeping and reporting information has been improved by removing ambiguity and simplifying statements which have caused confusion, such as the financial reporting information. Instances of attempted fraud are an emergent feature of the energy efficiency obligation schemes across Australia. An attempted fraud in EEIS during 2016 was averted due to a strong audit and compliance framework in place by ActewAGL. Fraud attempts in other schemes have also been averted by sound audit and compliance frameworks. A key element is the use of geotagged and time-stamped digital photographs of activities claimed as being complete. New requirements for retailers to take and retain such photographic evidence has been included for relevant EEIS activities.
Clarifying some licensing requirements so that it is clear when electrical, plumbing and gas fitting licences are required for EEIS activities	EEIS seeks to minimise compliance costs where this is consistent with risk minimisation. The current instruments sometimes require electrical, plumbing or gasfitting licences when other relevant legislation does not and this introduces unnecessary costs into the scheme. These updates have removed instances where EEIS either required a licence unnecessarily or has provided clarity where the licence requirements were unclear.

Achieving the policy objectives

The following list explains how the policy objectives are being achieved through the disallowable instruments:

- bringing in new activities for space heating and cooling and water heating to better align with the ACT 100% RET and emissions reduction targets is being achieved by introducing new activities in the Notifiable Instrument together with relevant codes of practice in the Disallowable Instruments.
- removing two activities that supported the installation of new gas appliances to better align with the ACT 100% RET and emissions reduction targets is being

achieved by removing two current activities from the Notifiable Instrument together and updating the relevant codes of practice in the Disallowable Instruments so that all three instruments are aligned.

- aligning residential lighting and appliance activities with other schemes is being achieved by amending the abatement values in the Notifiable Instrument consistent with VEET.

- improving some record keeping and reporting requirements to strengthen the audit and compliance framework without adding materially to compliance costs is being achieved by requiring retailers to take and retain timestamped and geocoded photographs of equipment that is both installed and removed from premises. This also provides a cost effective approach to demonstrating the removal of old equipment when its original compliance plates have been removed or become illegible over time. Flexibility is provided so that old, inefficient equipment that cannot be removed may be decommissioned in place and the photographic evidence used to demonstrate these actions.

- clarifying some licensing requirements so that it is clear when electrical, plumbing and gas fitting licences are required for EEIS activities, consistent with relevant legislation governing electrical, plumbing and gasfitting work in the ACT.

Consultation

There has been extensive consultation on these updates to disallowable instruments. This includes the following:

- ten written submissions were received to a stakeholder consultation forum held in 2014. Respondents expressed support for expanding the number and range of activities, particularly to include commercial lighting. Details of this feedback are on pages 30-37 of the 2015 Regulatory Impact Assessment *Energy Efficiency Improvement Scheme: Setting Key Parameters to 2020*[3] (the Scheme Extension RIS);
- the *Scheme Extension RIS* also presented modelling results which included commercial lighting, commercial refrigeration, expansions to space and water heating and other activities included here. The sooner these activities are brought in, the more accurate will be the modelled results for savings to be gained from the EEIS;

[3] http://www.environment.act.gov.au/__data/assets/pdf_file/0006/735990/Attachment-C-Regulatory-Impact-Satement-EEIS-Parameters-to-2020-FINAL.pdf

- a Stakeholder Forum held in September 2015 attracted 57 registrations. The *EEIS Stakeholder Forum Report on Results*[4] shows each of the new and updated activities included here to be high priorities for stakeholders (page 9);
- the *EEIS Stakeholder Consultation on 2016 Activities Update*[5] was emailed to all energy efficiency scheme stakeholders in Victoria, New South Wales and the ACT. The ACT Stakeholder list includes 200 names and a similar or greater number are likely on the lists from the other states. They include energy retailers, abatement providers, government agencies, industry peak bodies and non-government organisations including both environment and social services groups;
- the *EEIS Stakeholder Consultation on 2016 Activities Update* report was provided in hard copy to 68 participants at the 2016 EEIS Stakeholder Forum. The report was also the focus of discussion at the 2016 forum. It included details on all of the activities proposed in the disallowable instrument and invited feedback;
- government agencies attending the EEIS 2016 Stakeholder Forum included the:
    - Australian Department of the Environment;
    - Australian Department of Industry, Innovation and Science;
    - AusIndustry Business Services;
    - ACT Environment and Planning Directorate;
    - ACT Education and Training Directorate;
    - ACT Justice and Community Safety Directorate; and
    - ACT Office of the Commissioner for Sustainability and the Environment;
- forum notes, including results of workshop discussions, have been recorded from the 68 participants at the 2016 EEIS Stakeholder Forum. Seventeen written responses were also received on the specific proposals. These responses have been considered in developing the disallowable instruments.

Figure 1 below summarises stakeholder responses to the proposed new space heating and cooling activities. Figure 2 shows the key messages for EEIS provided in feedback to the 2016 stakeholder forum. This feedback confirms stakeholder support for the proposed activity updates provided in the disallowable instruments and also identifies some concerns which led to a high number of stakeholders indicating possible support ("maybe" in Figure 1). Table 2 below indicates how the disallowable instrument has been written to address the concerns raised by stakeholders.

[4] http://www.environment.act.gov.au/__data/assets/pdf_file/0004/798232/EEIS-Report-on-EEIS-Stakeholder-Forum,-3-September-2015.pdf
[5] http://www.environment.act.gov.au/__data/assets/pdf_file/0008/857789/ACT-EEIS-Stakeholder-Consultation-on-2016-activities-update-report-2.pdf

Figure 1 Stakeholder feedback on the proposed new space heating and cooling activities

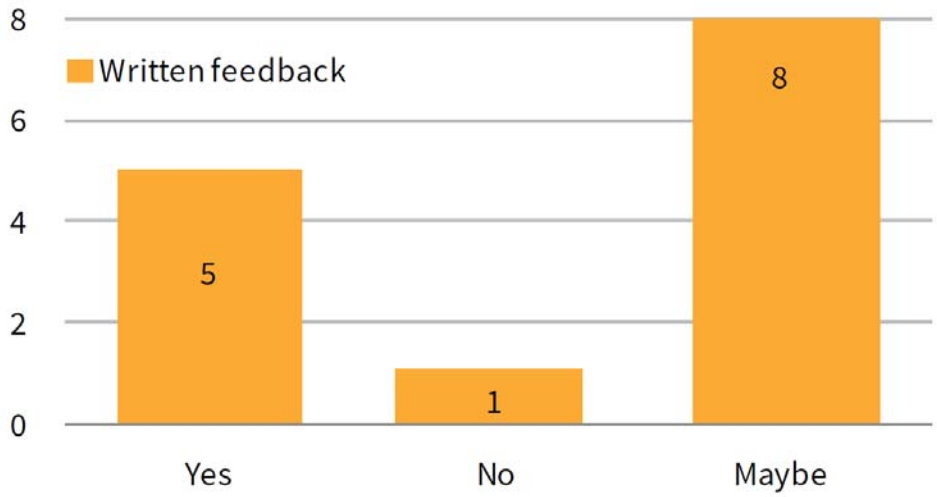


Figure 2 Stakeholder comments on the new space heating and cooling activities

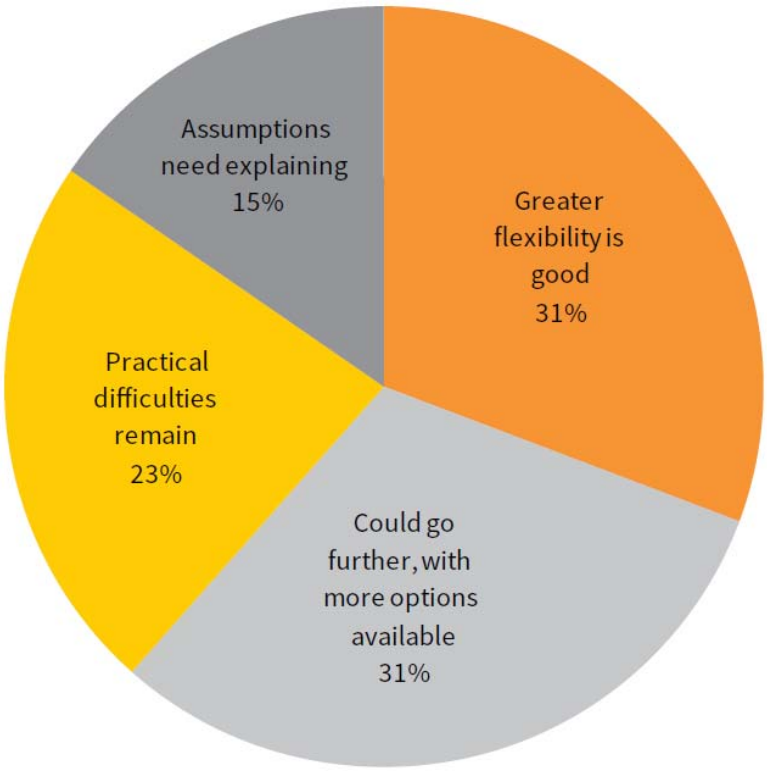


Table 2 Comments and responses on space heating and cooling activities

Comment	Detail	How this was addressed
Greater flexibility is	We support the proposed changes to heating and cooling as it now allows for greater activity flexibility in market	Bringing in the method.

good	application.	
Could go further, with more options available	• The ductwork activity should be expanded to electrical system ductwork, not just gas. • We are concerned to see that a system is not eligible if it has a minimum size less than 10 kW for a fixed system. What about in the case of a small house where the householder wants to install, for example, an efficient 8 kW central or multi-split reverse cycle system? Will they instead need to select a system with a rated capacity of 10 kW? If installers favour the larger capacity units over the smaller units, they may contribute to the residence in question achieving lower energy efficiency than would be achieved with an optimally-sized unit.	Ductwork method has been expanded to electrical systems. Electrical alternatives are available to the gas system that includes the 10kW restriction.
Assumptions need explaining	• The rebound effect is potentially very important for space conditioning. Pay careful attention to assumed usage behaviour. Analysis pre- and post- activity is needed. • Regarding the negative abatement assigned to RC A/C units to account for cooling energy — around 10% for most units — has any projection of usage of residential space cooling in the ACT been undertaken? Would expect increased usage in future compared to past as more and more people are becoming accustomed to conditioning their living space in summer as well as in winter. Also due to the increased likelihood of extreme heat periods/heatwaves. I understand that the factors being used are based on systems registered over the past five years, but would expect market penetration of R/C systems in the ACT will continue to grow and there will be a corresponding increase in the use of space cooling in the summer months relative to heating in the winter months.	Research underpinning the updates suggests that the assumptions are sufficiently conservative. However these points are worthy of further analysis over time.
Practical difficulties remain	• Please consider simplifying the installation of 'plug and play' electric dampers so that a 24 volt system does not require installation by an electrician. Wiring work on the equipment that operates at a voltage of not greater than 90 V is not considering electrical wiring work. This information is further supported in ACT Planning and Land Authority's Electrical Note 8 – Certificate of Electrical Safety (CES), available at: http://www.planning.act.gov.au/__data/assets/pdf_file/0007/28933/2012_-_Electrical_Note_08.pdf	This has been investigated and simplified in the proposed updates.

Retailers have indicated interest in delivering commercial lighting, gas ducted heaters, ductwork, electric space heat pumps and hot water heat pumps. No retailers have indicated an interest in delivering gas room heaters or gas hot water systems.

Figure 3 below summarises stakeholder responses to the proposed new water heating activities. Figure 4 shows the key messages for EEIS provided in feedback to the 2016 stakeholder forum. This feedback confirms stakeholder support for the proposed activity updates provided in the disallowable instruments and also identifies some concerns which led to a high number of stakeholders indicating possible support ("maybe" in Figure 3). Table 3 below indicates how the disallowable instrument has been written to address the concerns raised by stakeholders.

Figure 3 Stakeholder feedback on the proposed water heating activities

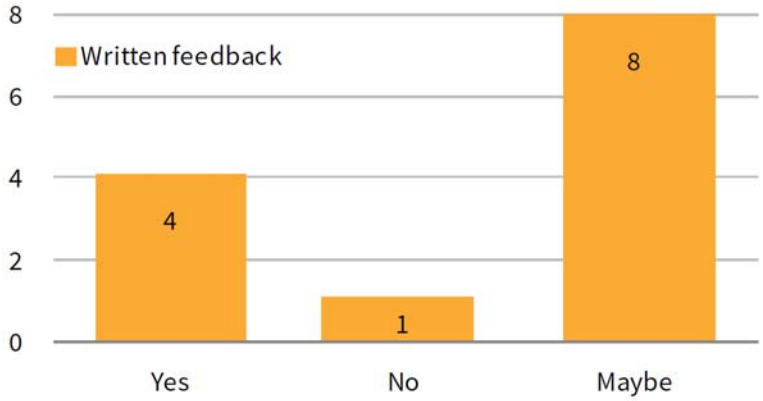


Figure 4 Stakeholder comments on the new water heating activities

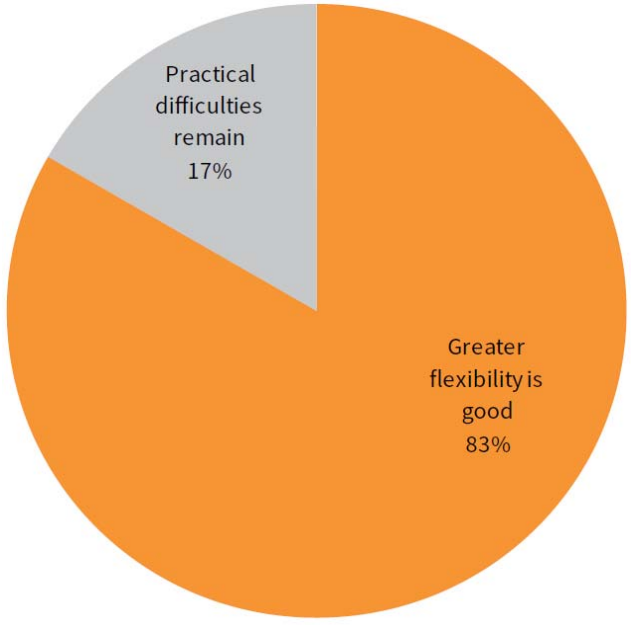


Table 3 Comments and responses on water heating activities

Comment	Detail	How this was addressed
Greater flexibility is good	• Clear benefit. • The matrix approach is excellent. This gives more accurate results and is similar to the NSW Energy Savings Scheme (ESS) commercial lighting method.	Bringing in the method.
Practical difficulties remain	• One concern I have which I believe was not explicitly considered under the ESS (not clear on whether it is considered under the Victorian Energy Efficiency Target Scheme [VEET] or South Australian Retailer Energy Efficiency Scheme [REES]) is the issue of the operating characteristics of the water heating unit supplying hot water to the showerhead. I am aware of several examples where an ultra low flow showerhead or even a low flow showerhead has been installed, then this unit was found by the resident to result in the hot water supply cutting out and only cold water coming though. This is due to minimum flow limitations of some instantaneous hot water systems. If the system cannot accommodate a very low flow (say, 6 L/min) as it was not designed for this, then the fitting of the low flow showerhead will cause the heating element to cut out to avoid overheating. The only way around this for the householder would be to increase the flow to the unit (e.g. turn on bathroom hot water tap and let water run down the drain while they have a shower) or otherwise fit a higher flow showerhead, reversing the energy savings achieved. Given this concern, I would suggest that one possibility would be to require that in the case of instantaneous hot water systems, the unit must have a minimum flow requirement of (say) 4 L/min or similar, so that it can continue to heat water even if the only hot water end use at a particular point in time is a 6 L/minute showerhead.	This has been addressed in the instruments which require compatibility and testing.

Internal and external consultation based on the detail of the updated disallowable instrument has been undertaken with several parties. These include:

- Actsmart programs staff have reviewed and provided feedback to ensure consistency and integration with the Sustainable Home Advice Program, and compatibility of messaging surrounding Actsmart and EEIS activities;
- Access Canberra inspectorate staff have reviewed the licensing, installation and other technical requirements and confirmed consistency with related legislation and appropriate safety levels;

- All electricity retailers affected by the EEIS received the full set of proposed instruments and were invited to provide feedback;
- A meeting with ActewAGL confirmed that the changes are understood, appropriate and provide for continued potential to meet EEIS targets and timeframes; and
- The update package was shared with all abatement providers and other stakeholders who provided feedback relevant to the updates during the stakeholder forums. Several email exchanges were completed to explain the updates and their timing and potential impacts and opportunities. No new issues were raised during these exchanges which confirmed that the updates are in line with expectations based on earlier consultation.

One confidential submission indicated that a company had anticipated delivering the high efficiency television activity in the ACT, but would be less likely to do so as a result of the determination. The reduced abatement is required because it accurately reflects the emission reductions associated with the activity taking account of the ACT 100% RET and the increasing market saturation of highly efficient televisions. The respondent was provided with copies of the REES abatement calculations to demonstrate the harmonisation across schemes being achieved by the Determination, and provided with an explanation of the multiplier used to convert the REES abatement measured in gigajoules to the EEIS factor measured in tonnes of carbon dioxide equivalent emissions.

Consistency of the disallowable instrument with the authorising law

The disallowable instruments are consistent with the objects of the Act to encourage the efficient use of energy, reduce greenhouse gas emissions associated with stationary energy use in the Territory and reduce household and business energy use and costs.

Section 25 of the Act explicitly provides for the administrator to approve codes of practice for a range of purposes including the following:

a) consumer protection obligations;

b) quality, health, safety and environmental requirements applying to eligible activities;

c) the eligibility of approved abatement providers;

d) the acquisition of approved abatement factors;

e) record keeping requirements;

f) reporting requirements; and

g) carrying out an audit of information given to the administrator under section 19 (Information to be given to administrator), including the following:

   i) purpose of the audit;

   ii) qualifications of auditors;

   iii) appointment of auditors;

   iv) removal of auditors;

   v) obligations of auditors; and

vi) reporting requirements for auditors.

The disallowable instrument is not inconsistent with the policy objectives of another Territory law

The proposed law is not inconsistent with the policy objectives of another Territory law.

Reasonable alternatives to the disallowable instrument

The codes of practice that are updated by these disallowable instruments are consistent with the purposes stated in section 25 and no reasonable alternatives are provided for in the Act for achieving the purposes ascribed to codes of practice.

A possible alternative would be to refer to codes of practice that apply to other schemes, instead of developing stand-alone ACT codes. This option is constrained because of different statutory requirements associated with EEIS activity delivery in the ACT compared with other jurisdictions. For instance, some activities that can be completed by an experienced tradesperson in other jurisdictions require a licensed operator in the ACT. The record keeping requirements in ACT also differ from other schemes because ESS and VEET use abatement certificate registries, but no such registry exists for the EEIS. In addition, elements of the space heating and cooling and water heating activities are unique to EEIS and so there are no interstate alternatives to refer to.

In summary, the updates to disallowable instruments are explicitly provided for in the authorising law and no reasonable alternatives exist.

Assessment of benefits and costs of the disallowable instruments

The codes of practice will have an economic benefit as a result of maximising the benefits of the EEIS and inclusion of new activities. Modelling suggests that that new space heating and cooling activities will be among the most cost effective in the scheme.

The projected benefits from the EEIS extension include average lifetime bill savings for the ACT residential sector estimated at $106 million in present value terms. Benefits to ACT businesses are estimated at $192 million in present value terms. Taking account of all costs to retailers, government and all stakeholders, the expected overall result in net present value to the ACT economy is $38.9 million.

Timely adoption of new activities, especially heating activities which save gas are important to maximise the economic EEIS benefits to the ACT economy.

Summary of household costs and benefits

Modelling at the current target level demonstrates net-savings for households on average – noting that, as not all households will participate, actual household savings for participating

households are expected to be higher – as has been observed in the first three years of the EEIS. It is important to note that while costs associated with the Scheme will end with the end of the Scheme, savings will continue to accrue for the lifetime of the implemented measures. Aggregate lifetime bill savings for the Residential sector are estimated at $106 Million in present value terms.

ES 1: Summary of household costs and benefits

Average household price increase	Average bill Cost 2016 - 2020 ($/week)	Average residential bill savings in 2020 ($/Week)
2.32%	$0.62	$3.19

In addition, due to the design of the Scheme, which requires that a proportion of total Tier 1 retailer energy savings be achieved in priority households, a defined proportion of the benefits will continue to accrue in these households – in proportion with the Priority Household Target.

Figure 6 below is a marginal cost of abatement curve that was prepared by Energetics to investigate the costs and benefits introducing the new space heating and cooling and water heating activities, as well as the potential impacts of removing some existing gas activities. In the graph, any activity that delivers savings below the Energy Savings Contribution setting of $116 may be cost effective under the scheme. Those below the zero line are particularly cost effective, as they may be cost effective even without the additional market incentives provided for in EEIS. The activities that meet this cost effectiveness criteria are shown within the box in the list below the graph. Many of the new space heating and cooling and water heating activities are in the most cost effective set. The new gas room heater activity which has been removed sits just outside of the set of most cost effective activities.

Figure 5 Marginal cost of abatement curve for EEIS activities

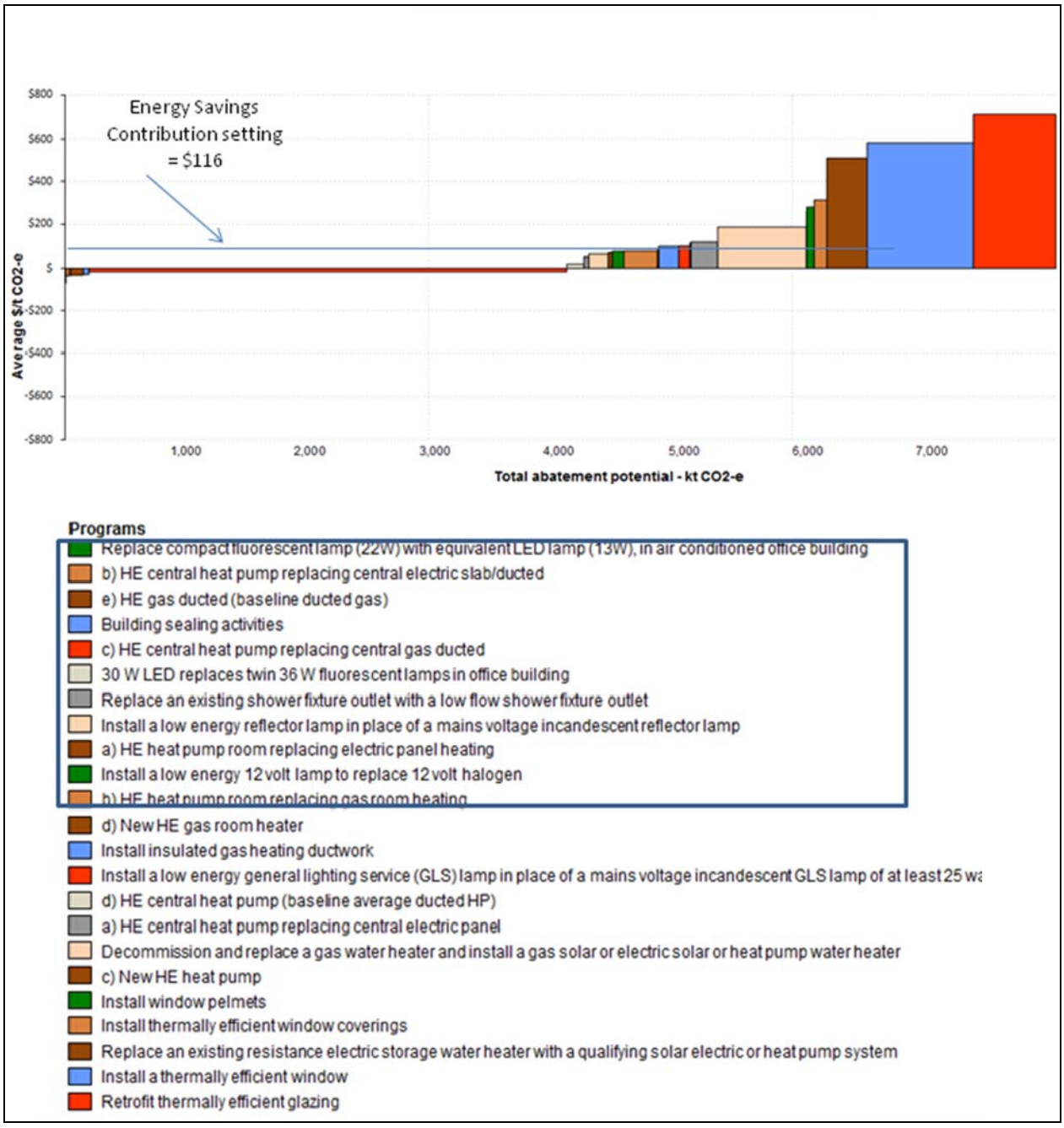
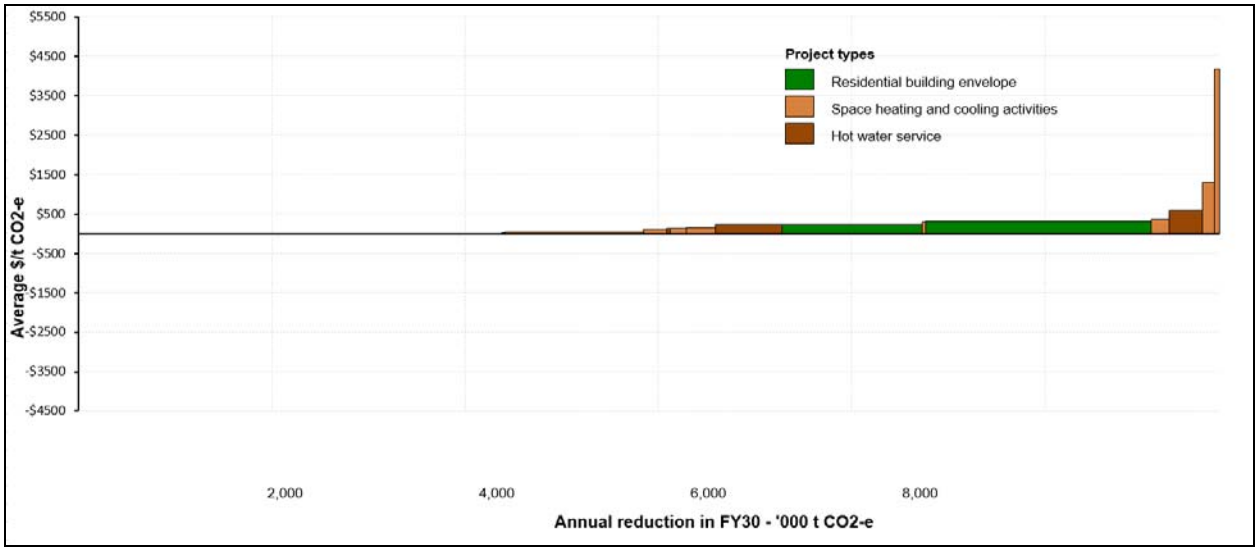


Figure 7 below focuses the marginal cost of abatement analysis specifically on the space heating and cooling and water heating activities. These results again confirm that these activities are providing new and cost effective options into EEIS.

It is important to note that several of the new space heating and cooling and water heating activities will apply to both existing and new residential premises. This is possible because the baselines used to apply abatement have been set at the average efficiency of systems currently being installed in Canberra, so the installation of more efficient systems delivers genuinely additional benefits. This application of activities to new dwellings could provide

significant opportunities as the installation of high efficiency appliances into new large developments can deliver significant economies of scale, and high quality new residences.

Figure 6 Marginal cost of abatement curve for EEIS space and water heating activities



Summary of business costs and benefits

Estimated average costs to the non-residential sector from EEIS are more difficult to determine than household costs and benefits due to the significant differences in energy use between different businesses. The impacts for various business electricity spends are outlined below. Total bill savings accruing in this sector over the lifetime of measures implemented under the EEIS are estimated at $192 million in present value terms.

ES 2: Range of business pass-through costs

	Annual business electricity spend of $1,000	Annual business electricity spend of $10,000	Annual business electricity spend of $100,000	Annual business electricity spend of $1,000,000
Annual Costs	$15	$151	$1,514	$15,143

Table 6 below shows the attractiveness of the proposed new space heating and cooling activities to obligated retailers. Measures are attractive to obligated retailers if they offer greenhouse gas reductions (abatement) at a low cost and can be implemented in a large number of premises. The most attractive options are most likely to be delivered to households. Table 6 also shows gas room heaters and gas hot water systems are not as cost effective as electric heat pump technology. This economic modelling is for general guidance only and ultimately it is up to retailers to determine their own approach to meeting EEIS obligations. This analysis does give a sense of the cost effectiveness of options available under EEIS.

Understanding the indicative costs of energy savings measures

The popular energy saving measures in the period from 2012 to 2015 provided enough abatement so that retailers were able to meet their obligations under the EEIS in a cost effective manner without having to charge their customers for the energy saving measures. This may no longer be the case and some form of co-contribution from customers may be required

Many factors will affect whether a customer will accept the energy saving measure in exchange for co-payment. These factors include:

- the anticipated annual energy savings compared to the size of the co-payment: Customers will want their money to be returned quickly; and
- the magnitude of the co-payment: The larger the co-payment, the more concerned the customer will be with the value of the energy saving measure.

The indicative costs of the measures to obligated retailers that are displayed below were derived by assuming that in all cases customers will want their co-payment to be no more than double their expected energy savings (i.e. the payback period is less than two years).

In the infographic below, each measure is highlighted by a coloured disk with the colour of each disk reflecting its cost to the retailer. The legend for the colours in the infographic is described in the next table. The colour associated with each measure is related to the energy savings contribution of $116 per tonne of carbon dioxide equivalent, as determined by the Minister on 15 September 2015.

Table 4 Meaning of the disk colour in the EEIS activities infographic

Disk colour	Meaning
Green	A green disk means that the cost to the retailer is likely to be less than 25% of the energy savings contribution per tonne of abatement delivered by the measure. The cost can be below zero meaning that less than two years of bill savings are needed to fund the measure
Orange	An orange disk means that the cost to the retailer for each tonne of abatement delivered by the measure is likely to be greater than 25% of the energy savings contribution but less than the energy savings contribution
Red	A red disk means that the cost to the retailer for each tonne of abatement delivered by the measure is likely to exceed the energy savings contribution

Understanding the indicative scale of energy saving measures

Retailers have an obligation to deliver a certain volume of abatement in proportion to their electricity sales in the ACT. Energy saving measures that offer a large quantity of potential abatement at relatively low cost are likely to be attractive to retailers. Many factors affect the size of the opportunity. Some important ones include:

- the number of premises where the measure is applicable. For instance, all premises in the ACT have windows and so energy savings measures that modify a window are likely to have a large opportunity size;
- the number of premises where the measure has not already been implemented and where it can be implemented will also affect the opportunity size. Installing good curtains on windows in heated spaces is a good energy saving measure and means it is only applicable in premises that don't already have curtains;
- the owner of the premises is willing to implement the measure.

In the infographic in Table 5, each measure is highlighted by a disk and the size of the disk reflects the potential size of the opportunity to generate abatement for the measure. The size of the opportunity is the product of the number of potential instances to implement the measure and the volume of abatement due to each instance of the measure. The basis for the size is described in Table 2. The bands are all linked to the national abatement target of 504 thousand tonnes of carbon dioxide equivalent.

Table 5 Meaning of the disk size in energy savings for EEIS activities infographic

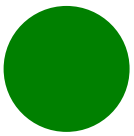
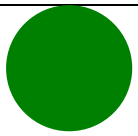
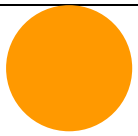
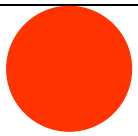
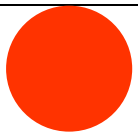
Disk size	Meaning
Large 	A large disk means that if all potential instances of the measure were implemented then it would generate sufficient abatement to meet at least half the Scheme's target
Medium 	A medium disk means that if all potential instances of the measure were implemented then it would generate sufficient abatement to meet at least 10% of the Scheme's target, but not enough to meet half of the target
Small 	A small disk means that even if all potential instances of the measure were implemented, it not would generate sufficient abatement to meet 10% of the Scheme's target

Table 6 Size of energy savings for EEIS activities infographic

EEIS measure	Description	Cost/size
Schedule 2: Space heating and cooling activities		
Ducted heaters		
a) HE central heat pump replacing central electric panel	Heat pumps such as reverse cycle air conditioners are much more efficient at heating internal spaces than electric resistance heaters. This measure involves the replacement of centrally controlled resistance panel heaters with a ducted heat pump heater. The measure is less likely to be cost effective because of the need to install ducting as well as the heat pump	
b) HE central heat pump replacing central electric slab/ducted	Heat pumps such as reverse cycle air conditioners are much more efficient at heating internal spaces than electric resistance heaters. This measure is the replacement of a central ducted resistance heater or a resistance slab heater with a ducted heat pump heater. (i.e. replacing a slab heater is less likely to be cost effective because of the need to install ducting)	
c) HE central heat pump replacing central gas ducted	Because the ACT electricity will be 90% renewable by 2020, replacing a gas heater with an efficient heat pump heater will significantly reduce greenhouse gas emissions. This measure is the replacement of a ducted gas heater with a heat pump heater. Because the ducting already exists the cost is low, and because a large number of houses in the ACT have ducted gas heating, the opportunity is very large	
d) HE central heat pump (baseline average ducted HP)	This measure involves the installation of a high efficiency central heat pump rather than a less efficient heat pump heater. A measure like this makes most sense when a householder or business owner must replace the heater and so the cost of the measure is the difference between the cost of the high efficiency heater and the cost of an equivalent less efficient heater	
Room heaters		
a) HE heat pump room replacing electric panel heating	This measure involves the installation of a heat pump heater like a reverse cycle air conditioner instead of an electric resistance panel heater for a single room. Room fixed electric resistance heating systems must be hard wired so the replacement of a simple electric radiator is not acceptable.	
b) HE heat pump room replacing gas room heating	This measure is the installation of a heat pump heater like a reverse cycle air conditioner instead of a room gas heater for a single room. Substitution of gas heaters by electric heat pumps makes sense in the ACT due to the low emissions factor of the ACT's electricity.	
c) New HE heat pump	This measure involves the installation of a high efficiency central heat pump such as a split system reverse cycle air conditioner rather than a less efficient heat pump heater for a single room. A measure like this makes most sense when a householder or	

	business owner must replace the heater and so the cost of the measure is the difference between the cost of the high efficiency heater and the cost of an equivalent less efficient heater.	
Install insulated gas heating ductwork	This measure requires the decommissioning all existing gas heating ductwork that is connected to an operable ducted gas heater and does not achieve a minimum insulating R-value of 1.5 and replacing it with new ductwork that achieves an insulating R-value of 1.5 or higher.	
Schedule 3: Hot water service activities		
Replace an existing resistance electric storage water heater with a qualifying solar electric or heat pump system	This measure involves the replacement of an electric resistance hot water heater with a more efficient solar hot water heater with an electric booster or an electric heat pump hot water heater. Solar hot water heaters are preferred and heat pumps can be used in cases where there is shading or no north facing roof. The heat pump hot water heaters must also be suitable for cold climates.	
Decommission and replace a gas water heater and install a gas solar or electric solar or heat pump water heater	This measure involves the replacement of a gas hot water heater with a more efficient solar hot water heater that has an electric booster or a gas booster or an electric heat pump hot water heater. Solar hot water heaters are preferred and heat pumps can be used in cases where there is shading or no north facing roof. The heat pump hot water heaters must also be suitable for cold climates.	
Replace an existing shower fixture outlet with a low flow shower fixture outlet	Replacing a shower fixture outlet with a large flow rate (> 9 l/min) with a similar fitting with a lower flow rate is a simple energy saving measure.	

Human Rights

The determination does not affect any human right set out in the *Human Rights Act 2004*.

Assessment of the consistency of the proposed law with Scrutiny of Bills Committee principles

The Committee's terms of reference require it to consider whether (among other things):

(a) any instrument of a legislative nature made under an Act which is subject to disallowance and/or disapproval by the Assembly (including a regulation, rule or by-law):

i) is in accord with the general objects of the Act under which it is made;

ii) unduly trespasses on rights previously established by law;

iii) makes rights, liberties and/or obligations unduly dependent upon non reviewable decisions; or

iv) contains matter which in the opinion of the Committee should properly be dealt with in an Act of the Legislative Assembly.

(a) Disallowable instruments are in accord with the general objects of the Act under which it is made

The instruments are in accord with the objects of the *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Act). The relevant disallowable instruments support the achievement of the objects of the Act, namely:

(a) encourage the efficient use of energy;

(b) reduce greenhouse gas emissions associated with stationary energy use in the Territory;

(c) reduce household and business energy use and costs; and

(d) increase opportunities for priority households to reduce energy use and costs.

(b) The disallowable instruments do not unduly trespasses on rights previously established by law

The instruments do not unduly trespass on rights previously established by law. The instruments determine codes of practice for implementing the Energy Efficiency Improvement Scheme.

(c) The disallowable instruments do not make rights, liberties and/or obligations unduly dependent upon non-reviewable decisions

The instruments do not make rights, liberties and/or obligations unduly dependent upon non-reviewable decisions. The new codes of practice simply include updates to take account of changes since the last codes of practice were made. Decisions which may be impacted by the codes of practice, such as determining retailer energy savings result, are reviewable, see Schedule 1 of the Act.

(d) Contains matter which in the opinion of the Committee should properly be dealt with in an Act of the Legislative Assembly

The matter contained in the codes of practice is appropriate to be dealt with in subordinate legislation and is in accordance with the Act.

Conclusion

This Regulatory Impact Statement complies with the requirements for a disallowable instrument as set out in Part 5.2 of the Legislation Act. An explanatory statement for each of the disallowable instruments has been prepared for tabling.