Point. Advisory

Review of the Energy Efficiency Improvement Scheme

Executive summary

Prepared for:

ACT Environment Planning Sustainable Development Directorate

27 June 2018

DISCLAIMER

This report has been prepared for the ACT government as outlined in the Proposal and scope of works. The services provided in connection with this engagement comprise an advisory engagement, which is not subject to Australian Auditing Standards or Australian Standards on Review or Assurance Engagements, and consequently no opinions or conclusions intended to convey assurance have been expressed.

Point Advisory acts in a professional manner and exercises all reasonable skill and care in the provision of its professional services. The reports are commissioned by and prepared for the exclusive use of the ACT government. They are subject to and issued in accordance with the agreement between the ACT government and Point Advisory. Point Advisory is not responsible for any liability and accepts no responsibility whatsoever arising from the misapplication or misinterpretation by third parties of the contents of its reports.

Except where expressly stated, Point Advisory does not attempt to verify the accuracy, validity or comprehensiveness of any information supplied to Point Advisory for its reports. We have indicated within this report the sources of the information provided. We are under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

The findings in this report have been formed on the above basis.

VERSION CONTROL

Version	Date	Author	Project Director
V1	16/04/18	C. Murphy / C. Brulliard	C. Knaggs
V2	18/05/18	C. Murphy / C. Brulliard	C. Knaggs
V3	29/05/18	C. Murphy / C. Brulliard	C. Knaggs
V4	27/6/2018	C. Murphy / C. Brulliard	C. Knaggs

Part 1 – Executive Summary

CONTENTS

EXECUTIVE SUMMARY

The Energy Efficiency Improvement Scheme (EEIS) was established under the Energy Efficiency (Cost of Living) Improvement Act 2012 and began on 1 January 2013 and is currently legislated until December 2020.

A post-implementation review of the Energy Efficiency Improvement Scheme (EEIS) was commissioned in late 2017 to assess whether it remains appropriate, and how effective and efficient it has been in tackling the original policy problems and scheme objectives. The review also looks ahead to whether the scheme should be extended post 2020 and if so, what potential improvements could be made.

This review process indicates that the Energy Efficiency Improvement Scheme (EEIS) should continue beyond 2020, with amendments to best support the ACT Government's priorities, including the next Climate Change Strategy.

This review provides a set of recommendations for updating the scheme, including short term opportunities (up to 2020) and longer term possible improvements (post 2020).

The following sections provide:

1 the key recommendations for updating the scheme in the short and long term,
2 key findings regarding the impacts of the EEIS,
3 a synthesis of the integrated analysis that sets the grounds for the future scheme design, and
4 the key points that must be addressed if extending the scheme post 2020

1. RECOMMENDATIONS

The recommendations provided below include fundamental changes to the legislative framing of the scheme and to the core metric and approaches to increase the effectiveness of the activities undertaken and the management of the scheme. All opportunities proposed should be considered in the context of other government policy development work being undertaken.

Short Term Opportunities

- Introduce new EEIS eligible activities, such as insulation, business heating and cooling and demand response considering, in particular, those activities that benefit low income households.
- Remove gas to gas activities from the scheme.
- Make participation in the scheme more accessible to Tier 2 retailers by improving administrative arrangements, such as harmonising with interstate schemes.
- Continue allocating as yet unspent ESCs to create the greatest possible impact, especially for low income households.

Post 2020 and longer term possible improvements

- Change the current greenhouse gas (GHG) emissions reduction metric to an energy savings metric in light of the ACT's 100% renewable electricity target by 2020. A GHG emissions sub-target and GHG multipliers for EEIS activities could be considered to ensure the EEIS continues to contribute to ACT's GHG reduction targets.
- Simplify / focus the scheme on a single objective to reduce the tensions that inevitably arise when a scheme, such as the EEIS, has multiple legislated objectives. In most cases, the trade-off facing the government is whether to maintain (or increase) the energy saving targets or focus on emission reductions or energy bill savings. This is a value judgment about the scheme's primary policy objective that needs to be investigated further by the ACT Government. To

achieve this, a decision needs to be made on the scheme's priority objective, through modelling some of the following options:

a. Business as usual
b. Targeted bill savings
c. Lowest cost of energy efficiency improvements
d. Highest greenhouse gas emission reductions
e. Balancing multiple objectives: emission reductions, energy and bill savings
f. Discontinue the EEIS

Different scheme design elements would need to be used to deliver the above objectives, including:

a. The **scheme metric**, which could be changed to an energy metric, with possible sub-targets for greenhouse gas emissions or increased proportion of participating households and businesses,
b. **Obligated parties** coverage, with the possible inclusion of gas retailers as obligated parties
c. **Eligible beneficiaries** coverage, with the question of inclusion of NGERS reporters, sharing the benefits by restricting premises from receiving more than one major energy efficiency item or partitioning the market between big and small energy users.
d. **Sub-targets or multipliers** to manage specific impacts:

- Sub-targets for rental, greenhouse gas emissions or small businesses, in additional to priority households
- Possibility to mandate some high priority activities
- Using multipliers to incentivise some higher priority activities

These scenarios are examined in the Cost Benefit Analysis part of the review. In addition, the following points warrant consideration in the long term:

- Roll-out deep retrofits tailored to individual household needs with the aim of increasing the absolute reduction in household bills.
- As part of the energy bill saving scenario mentioned above, there could be a focus on alleviation of fuel poverty and how to better address the needs of priority households to ensure they benefit from the scheme. This could include more resources, more referrals, better coordination with Actsmart, delivering activities such as draught proofing, heating, hot water and more tailored activities with a holistic approach to low income households. For example, subsidising co-contributions for activities in low-income households.
- Metered approach rather than deemed savings could be applied, which would increase the innovation potential for activities. This is the model that California chose to implement. It does however rely on detailed energy use data provided by smart meters.
- Auction systems: to better control the activities that are delivered, it would be possible for the ACT government to trial a reverse auction-based approach to delivering energy efficiency improvements that increases innovation and competition, on the model of what was implemented in the US (Independent System Operator of New England, PJM Interconnection) and in Portugal, Germany, Switzerland. This does not have to apply to the whole market and could be initially focused on low income households to ensure that they receive a tailored package of activities.

The ACT Government should undertake detailed economic modelling to identify which policy objective scenario should be built into the future scheme design.

2. KEY FINDINGS

The original EEIS design was based on careful consideration of the policy and commercial environment at the time and modelling of the cost-effectiveness of possible scheme arrangements, to identify the best possible scheme design for the ACT. The scheme has four key objectives, defined in the *Energy Efficiency (Cost of Living) Improvement Act 2012*:

- Encourage the efficient use of energy
- Reduce greenhouse gas (GHG) emissions associated with stationary energy use
- Reduce household and business energy use and costs

- Increase opportunities for priority households to reduce energy use and costs

The scheme was set up prior to the ACT committing to a 100% RET for electricity. The core metric for the scheme is GHG emissions, which means that energy efficiency activities are defined and selected based on their GHG abatement potential. The EEIS is therefore technically a scheme supporting the ACT's carbon reduction goal and also aims to achieve the other objectives listed above.

The evaluation shows that the EEIS fulfilled that role and complemented various ACT policies against a backdrop of climate change policy stagnation at the national level.

Effectiveness and efficiency of the EEIS

At a high level, the scheme was found to be effective in reaching a large proportion of ACT households and businesses over its years of operation through mass implementation of small energy efficiency measures. The program has been efficiently delivered, with an overall low administration budget and overall positive benefit cost-ratio. The cost of the scheme was in line with predictions and other international schemes.

The Benefit Cost ratio (lifetime bills savings / cost of the scheme to date) calculated from 2013 to 2017 was close to 4, as illustrated in **Figure 1** and **Table 1**.

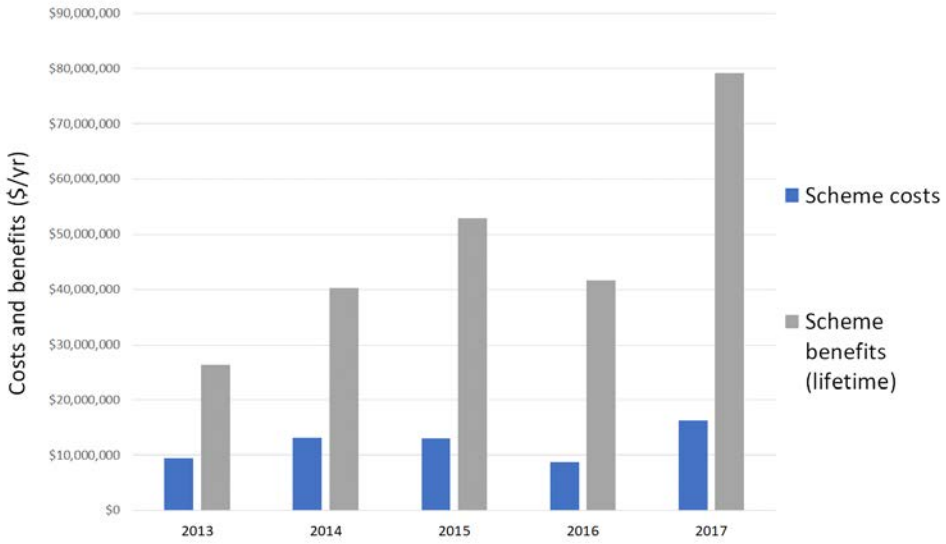

Figure 1. Lifetime energy bill savings versus costs of scheme

Table1. Benefit-cost ratio of scheme

Unit	Description	2013	2014	2015	2016	2017	Total
$	Total pass-through costs and co-contributions	$9,473,129	$13,153,897	$13,102,967	$8,779,768	$16,270,430	**$60,780,191**
$	Total lifetime energy bill savings to EEIS participants	$26,346,572	$40,215,407	$52,897,960	$41,701,425	$79,099,045	**$240,260,409**
Ratio	Benefit-cost ratio	2.78	3.06	4.04	4.75	4.86	**3.95**

A majority of beneficiaries report bill savings and, overall, there is a high level of stakeholder satisfaction from the implementation of activities. However, some consumers have not yet received benefits even though they are bearing the cost of the program. This includes those who face barriers to accessing the scheme such as low-income households and people in rental properties.

Achieving the scheme objectives

The following topics are structured according to the scheme objectives listed above and summarise the empirical results from the review and stakeholder feedback collected during the consultation process. The aim of this retrospective summary is to illustrate what the scheme has achieved so far and how it is addressing identified market barriers to energy efficiency.

Encouraging the efficient use of energy

Since its inception in 2013, the EEIS has been encouraging the efficient use of energy through a suite of energy efficiency activities delivered to a significant number of households and businesses across the Territory. The mass rollout of cost-effective technology has been a key strength of the program, a significant percentage of which would not have happened without the EEIS, according to feedback from participants.

- Since scheme inception in 2013, just over 70,000, or 45% of all households in the ACT, have received energy saving activities through the EEIS.
- The total number of businesses who have participated in the scheme is just below 1,700, or 15% of total employing businesses in the ACT.
- Over 1.2 million energy saving items have been installed since 2013.
- Since its inception in 2013, approximately 15,000 rental households participated in the EEIS.

Figure 2 below demonstrates that this equates to approximately 22.5% of the total 70,000 participating households.

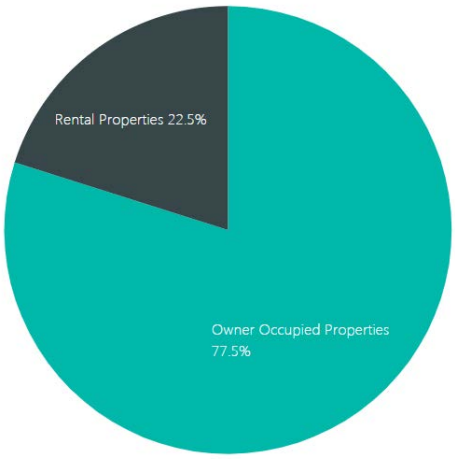

Figure 2. Percentage of households by occupancy status

Split incentives were identified by stakeholders as one of the remaining market barriers to energy efficiency, especially for low income households in rental accommodation. The EEIS does not specifically target split incentives, but split incentives apply for activities where a co-contribution from the landlord would be required. The majority of early activities delivered in the EEIS (lighting upgrades, door seals and standby power controllers) did not require co-contributions. More recent activities (heating upgrades) require co-contribution and approval of landlords, and it appears that these low-income rental properties are not receiving upgrades at the same level as owner occupied households. For example, less than 4% of the total households that received heating activities were rolled out in low-income rental properties, which may need it most. This barrier has been overcome for public housing renters by working with ACT Housing as the landlord, although this does not solve the barrier facing private renters.

Overall, stakeholders expressed support for the scheme and suggested that it was tackling barriers to the uptake of energy efficiency.

- 61% of participants would not have undertaken energy savings activities without the EEIS.
- 45% of households in the ACT have participated in the EEIS which indicates the scheme has been successful in overcoming barriers to energy efficiency in many instances.

Electricity retailers' participation

The Energy Efficiency (Cost of Living) Improvement Act 2017 sets a Territory-wide energy savings target and obligates ACT electricity retailers to meet an individual Retailer Energy Savings Obligation by undertaking activities in households or small-to-medium enterprises. Smaller Tier 2 retailers can achieve their obligation by paying an 'Energy Savings Contribution' (ESC).

The ACT's only Tier 1 retailer has consistently met both the Energy Savings Target (EST) and Priority Household Target (PHT), in accordance with the *Energy Efficiency Improvement (Cost of Living) Act*.

An issue of concern was raised by stakeholders regarding an uneven playing field with barriers to Tier 2 retailer participation. Tier 2 retailers elected to pay the Energy Savings Contributions (ESC) instead of organising the delivery of activities due to cost and compliance barriers. There was one instance where a Tier 2 retailer trialled providing commercial lighting upgrades, but this has now ceased. ESCs collected are then used to fund activities that align with the objectives of the *Energy Efficiency (Cost of Living) Improvement Act 2012*, such as the Actsmart Home Energy Advice program, Actsmart Low Income Home Energy Efficiency Program, Actsmart Business Energy and Water Program and the Solar for low income program, and to fund the administration and compliance costs of the scheme. A portion of the ESCs collected are still in the process of being allocated.

Reducing greenhouse gas emissions associated with stationary energy

The scheme delivered lifetime emission reductions of 390kt CO2e, which is lower than anticipated because of the impact of the 100% Renewable Electricity Target (RET) by 2020. As many EEIS activities lead to a reduction in electricity use, and the electricity emission factor has been dropping in line with the ACT Government's 100% RET, greenhouse gas emission reductions have been lower than initially modelled (for the same level of energy savings). To support the businesses cases that underpin EEIS delivery, abatement values applying to EEIS activities were not reduced in line with the 100% RET. **Figure 3** shows EEIS contribution to cumulative greenhouse gas savings.

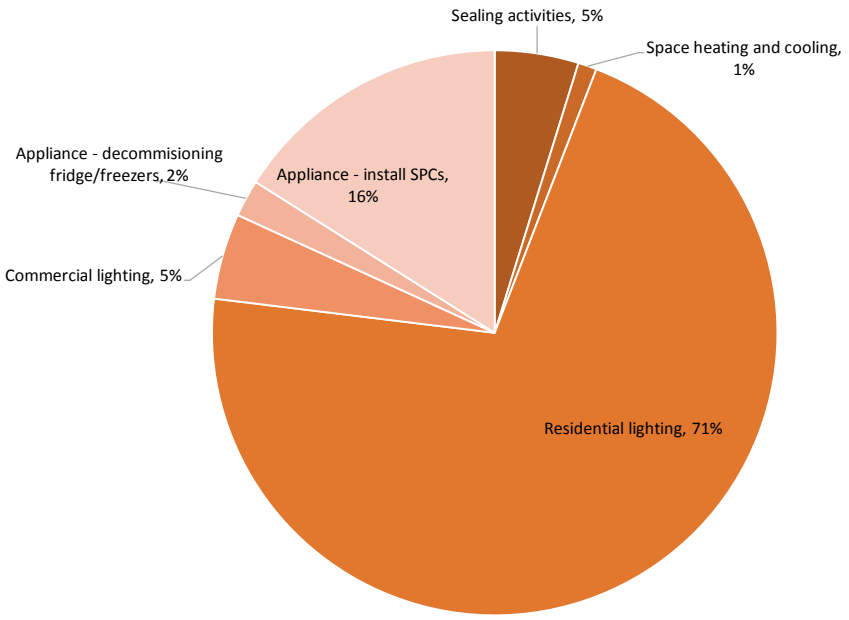

Figure 3. EEIS activity contribution to cumulative GHG emissions (2013 to end 2017)

Table 2 shows how the EEIS has contributed to reduce stationary energy consumption in the ACT. In terms of cumulative energy savings, the EEIS has been delivering an increasing trend in energy savings from 0.4% of total ACT stationary energy use in 2013, to nearly 2.9% in 2017.

Table 2. EEIS cumulative energy impact on ACT's stationary energy consumption

	2013	2014	2015	2016	2017
Total gas and electricity energy consumption in ACT – GJ*	17,672,481	17,408,740	17,409,010	17,571,935	17,633,022
EEIS modelled cumulative energy savings – GJ **	73,647	185,163	350,432	392,861	505,877
% of total ACT energy use	0.42%	1.06%	2.01%	2.24%	2.87%

* See Table 23 and Table 24 (Part 4 – Empirical Analysis) for the source of this data

** Assumes that all upgrades are still in place in line with modelling parameters

Additionally, EEIS activities such as draught proofing and the replacement of heaters with efficient reverse cycle air-conditioners have positive climate change adaptation and health impacts.

It is interesting to note that, in general, stakeholders were more focused on energy efficiency and energy affordability than the greenhouse gas reductions associated with the scheme.

Reducing household and business energy use and costs

Overall, stakeholders were aware that the EEIS had delivered beneficial outcomes and reported that the scheme has improved their awareness of energy costs and potential savings.

- 63% of participants agreed or strongly agreed that the products installed are helping to reduce energy consumptions and bills.

Energy savings across the residential and commercial sectors

From scheme inception to end of 2017, the EEIS delivered an estimated 4.5 million GJ in lifetime energy savings. It is interesting to note that for 2017, the level of energy savings was higher than what was anticipated in the scheme extension modelling, due to new activities being delivered to commercial and residential customers and despite the fact that fewer households participated. **Figure 4** shows the lifetime energy savings per year split by activity type.

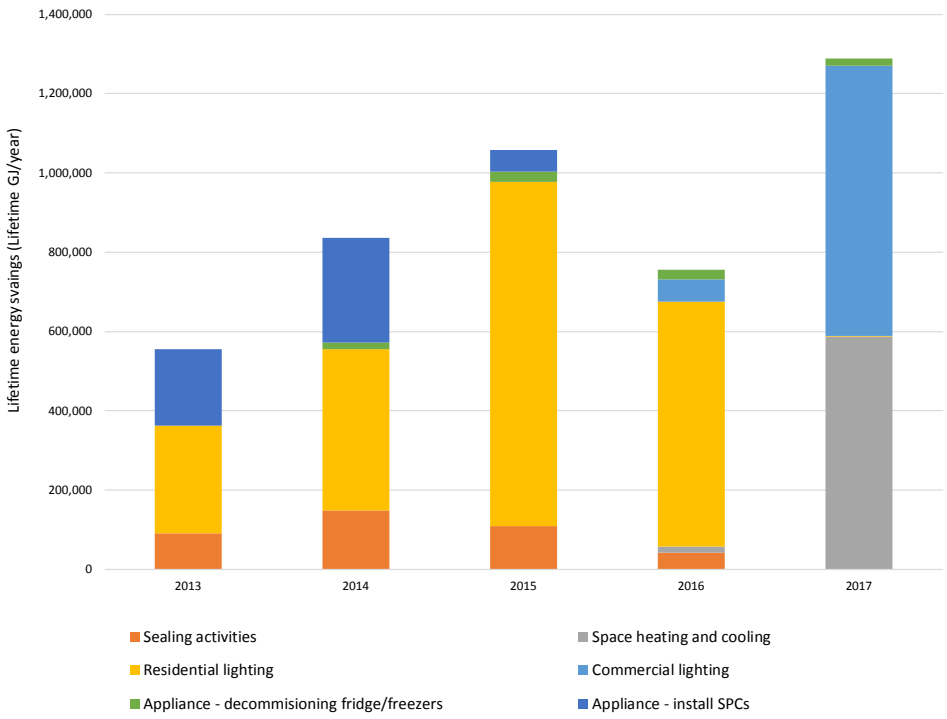

Figure 4. Lifetime energy savings per year

Residential sector bill savings

Since scheme inception, total lifetime bill savings for the residential sector are estimated at $180M. **Figure 5** and **Table 3** illustrate residential lifetime bill savings per year by activity.

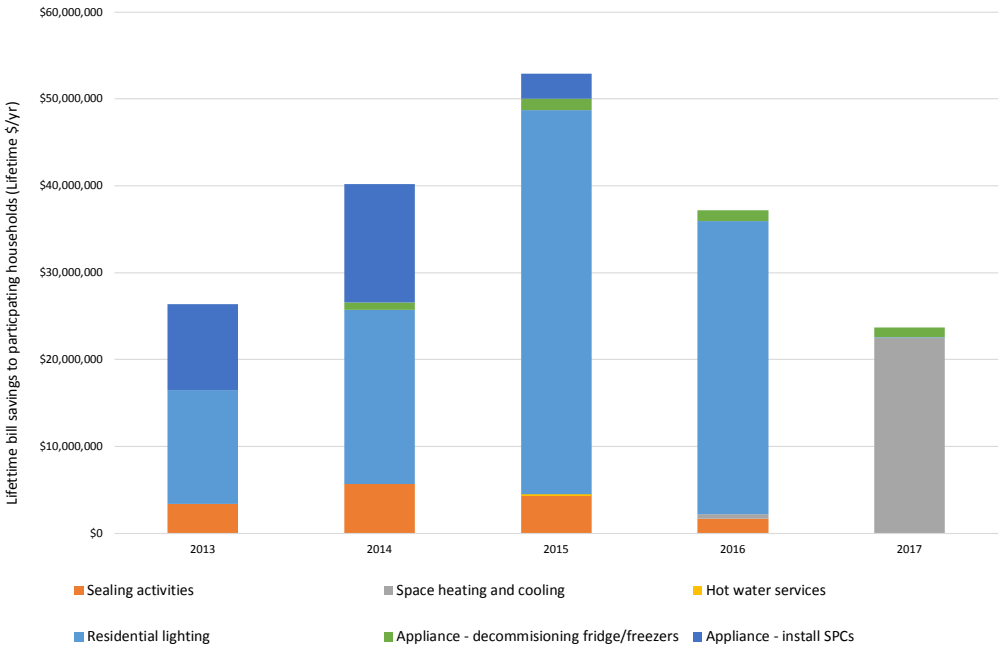

Figure 5. Residential lifetime bill savings per year

Table 3. Lifetime bill savings to households by activity type

Lifetime bill savings to households	2013	2014	2015	2016	2017	Total
Sealing activities	$3,396,140	$5,657,921	$4,281,216	$1,672,092	$0	$15,007,369
Space heating and cooling	$0	$0	$0	$575,692	$22,507,028	$23,082,720
Hot water services	$0	$0	$205,859	$0	$0	$205,859
Residential lighting	$13,073,718	$20,055,153	$44,215,846	$33,658,691	$100,274	$111,103,681
Decommissioning fridge/freezers	$0	$863,678	$1,303,533	$1,286,687	$1,063,031	$4,516,930
Appliance - install SPCs	$9,876,714	$13,638,655	$2,891,506	$0	$0	$26,406,875
Total	**$26,346,572**	**$40,215,407**	**$52,897,960**	**$37,193,162**	**$23,670,333**	**$180,323,434**

Average weekly savings across the scheme from 2013 to 2017 are $4.80 per participating household per week, and the trend is that these weekly household savings are increasing as the scheme matures, with savings of $5.65 per participating household in 2017. Across all households in Canberra, average cumulative weekly savings in 2017 were $2.60 per household.

Figure 6 presents the estimated bill savings to participating households in the ACT delivered since 2013 overlaid over a typical ACT household energy bill (the split between different appliances/equipment seen in the energy bill was based on *ABS Household Energy Consumption Survey data*).

This analysis shows that the EEIS could save a typical participating household between 9% and 12% of their annual household bill between 2013 and 2017.

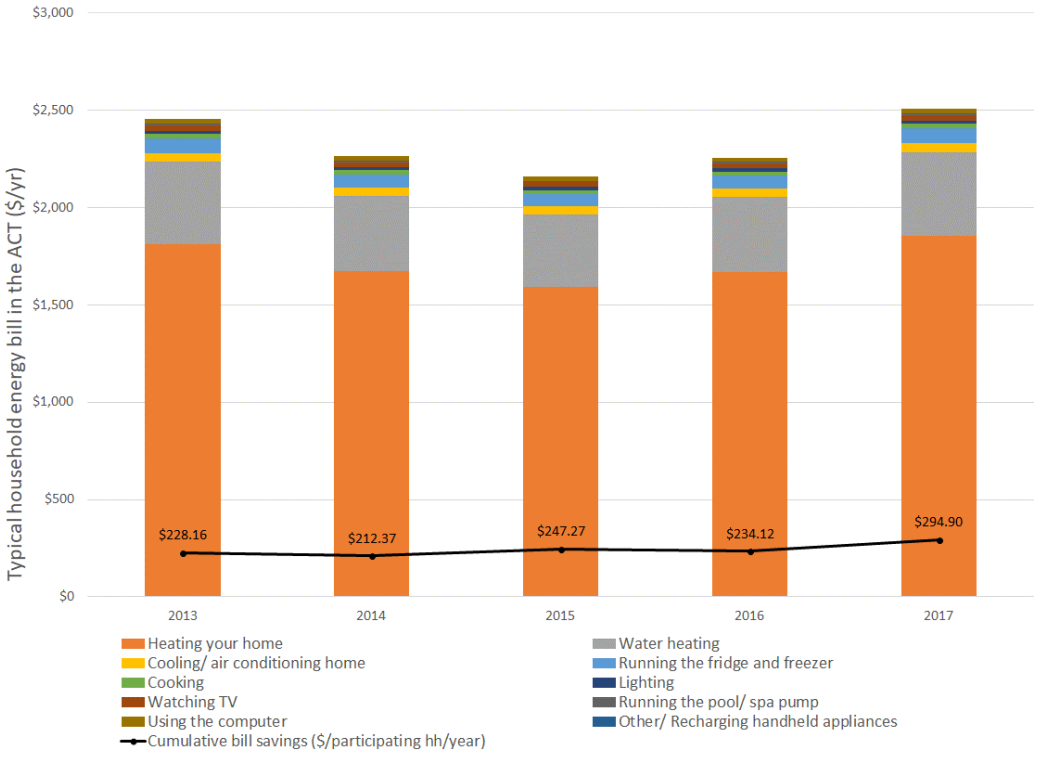

Figure 6. EEIS contribution to household bill savings

Over time, the activities delivered have changed and new activities such as heating and hot water do not have the same broad reach as the initial activities and therefore bring large benefits to a smaller number of households.

Figure 7 shows how the annual incremental energy and bill savings for participating households were impacted by the types of measures rolled out in 2017 which changed significantly from previous years. There is a risk that a gap will appear between beneficiaries and non-beneficiaries as a smaller number of participants in the scheme will benefit significantly while the majority of non-participants bear the costs.

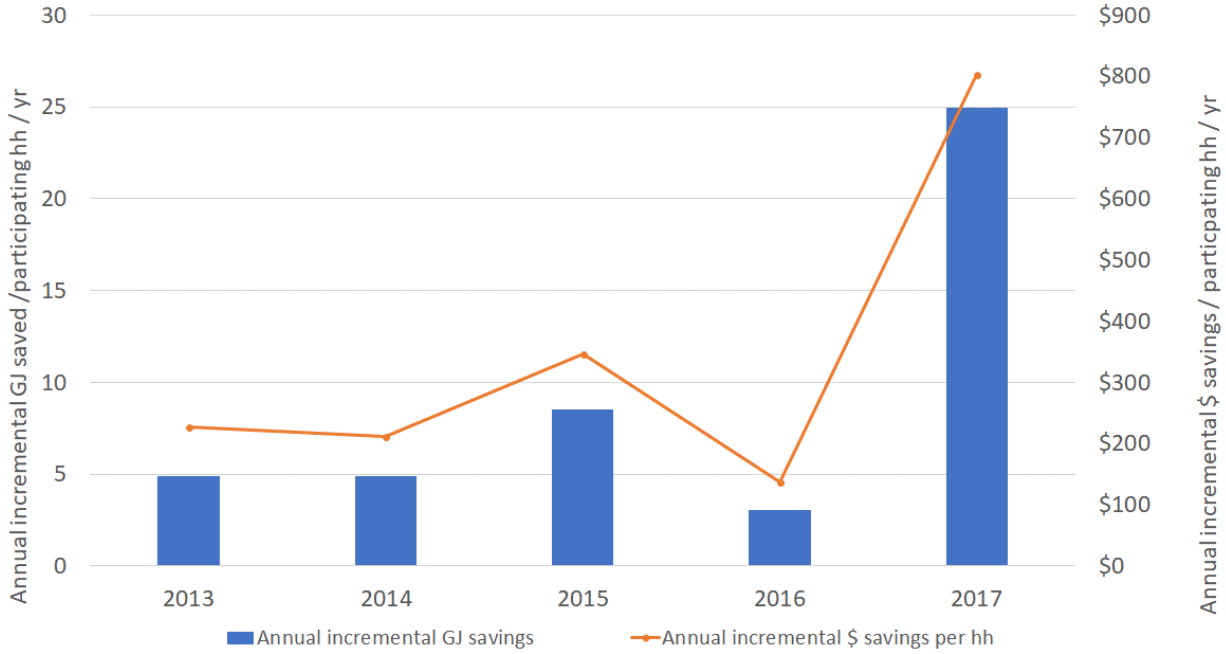

Figure 7. Annual incremental energy and bill savings for participating households in the ACT

Commercial sector bill savings

The lifetime bill savings to the commercial sector are expected to total just under $60M – of which commercial lighting upgrades are the only contributor.

Increase opportunities for priority households to reduce energy use and costs.

The scheme has increased opportunities for priority low income households to participate in energy reductions (and associated cost savings). The Tier 1 retailer's Priority Household Target (PHT) is an effective way to ensure that a proportion of the activities and hence benefits flows on to low income households. Actsmart programs have also played a role in dealing with more complex needs (a separate evaluation is under way).

In total the EEIS has delivered over 800,000 GJ of lifetime energy savings in over 17,900 priority households, or 22% of total scheme residential lifetime energy savings.

There is, however, an ongoing concern that some low income households might still be excluded from the scheme, while still bearing associated cost, especially as activities become "deeper", deliver a large amount of abatement, but require co-contributions and are concentrated on fewer beneficiaries. Therefore, some financial barriers remain, where co-contributions are required from low income households.

Analysis of co-contributions paid by households showed that priority households were offered a larger rebate ($3,000 vs $2,000) than non-priority households. This should help to address the barrier of lack of capital available to priority householders. However, this may not be enough to fully remove this barrier.

As it currently stands, the PHT has resulted in the delivery of energy saving activities in nearly half of all priority households, however the majority of these households (>85%) were targeted in the first three years of the scheme, when the activities delivered did not provide deep energy savings. Therefore, the PHT may not constitute a strong safeguard that a significant number of priority households will benefit from the most impactful EEIS activities.

Overall, stakeholders were supportive of the need to focus on improving energy efficiency in low income households.

3. FUTURE SCHEME DESIGN

A Cost-Benefit Analysis was undertaken to identify the comparative benefits and costs associated with alternative scheme design options for the EEIS. These were expressed as a set of scenarios, each targeting a primary policy objective.

The scenarios were developed based on the information gathered and synthesised from the empirical results, suggestions from stakeholders, ideas from the literature study and SWOT analysis. The set of scenarios presented rely on a package of scheme design elements. These individual elements can be deployed towards potential scenarios to design the future EEIS according to the scheme's primary objective.

In addition to the empirical results of the review, other inputs considered in this integrated analysis are summarised below.

ACT Policy environment of the EEIS

The EEIS is part of achieving net zero emissions targets in the ACT's stationery energy and buildings sector. Putting the EEIS in the context of other government policies and programs provides a view of the multiple touchpoints and complementary objectives between the EEIS and climate change, energy and planning policies.

The key points this high-level review has revealed are:

- The EEIS can cost effectively contribute to achieving ACT Government's interim greenhouse gas reduction targets (Energetics, 2018).
- The EEIS can help to reduce the growth in the ACT's future electricity demand, lowering the amount of renewable electricity required to be purchased to achieve the RET, with the result of limiting the cost impost transferred to electricity customers.
- The reduction in the cost of living to participating households is an important outcome for the ACT under the AP2 Climate Change Strategy. Whether this remains a core objective of the EEIS or changed to a co-benefit, will be one of the questions that the ACT Government must answer following the finalisation of this review.
- With an appropriate design, the EEIS could also help to reduce peak electricity demand and build demand response capability.

There is also a strong complementarity between the ACT's future planning and building policy, in particular in relation to:

- energy cost aspects of housing affordability,
- improving energy efficiency in rental properties,
- the provision of gas to new residential divisions, and
- the objective of raising the energy performance of new buildings and whether the EEIS should play a role or whether its reach should be confined to existing buildings.

Stakeholder feedback

Some feedback from the stakeholder consultation process should also be considered when looking at the scheme design post 2020:

- Overall, stakeholders felt that the scheme should continue, with amendments to support the ACT Climate Change Policy, as long as cost-effective energy efficiency opportunities can be found.
- There is a need for a program supporting AP2 and keeping electricity use in the ACT from escalating (with the result of increasing cost of achieving the 100% RET).
- Energy prices are high (providing an incentive for energy users to take an interest in energy efficiency) but market barriers to energy efficiency remain, especially for low income households in rental accommodation.
- The scheme should include complementary policies – particularly for low income households that face higher energy costs but are not beneficiaries of the scheme.
- On balance, an energy metric may better serve the ACT in focussing on energy management in the context of the RET.

- Whether or not gas upgrades should still be incentivised in light of the 100 per cent renewable electricity targets should be carefully weighted.
- In general, stakeholders were more focused on energy efficiency and energy affordability than the greenhouse gas reductions associated with the scheme.

SWOT Analysis

A Strength Weaknesses Opportunity Threat analysis (SWOT) was undertaken to critically assess the success factors and limitations of the scheme as it currently stands. A range of options for modifying the design or parameters of the scheme, in the short or longer term (post-2020) was also explored. Aiming to enhance existing strengths and mitigate weaknesses, some of these opportunities can be taken up before 2020, but most of them will require fundamental decisions to be made in relation to the focus and design of the EEIS, in the context of the ACT policy suite. The main recommendations from this analysis included:

- Select future EEIS metric to ensure strong alignment between the EEIS and the broader Territorial strategy, as well as the National Energy Productivity strategy.
- Resolve identified tensions arising from having multiple objectives, the ACT government could make a decision to use the EEIS primarily for one policy objective.
- Address distributional impacts, including barriers to access EEIS activities faced by priority households, in particular renters and generally speaking encourage activities in favour of priority households.
- Explore opportunities to enhance the scheme in the longer term by:
    - Encouraging the delivery of packages of activities to maximise the benefits delivered to participating households (recognising that there may be a trade-off with the breadth of delivery)
    - Evolving the scheme to level the playing field between retailers by pursuing harmonisation with other schemes. For instance, approved abatement providers could deliver activities in the ACT, but obtain Energy Savings Certificates through the NSW Energy Savings Scheme registry. Alternatively, the EEIS could be evolved into a certificate-based scheme with an auction system
    - Implement a metered approach rather than specific activities with deemed savings, taking advantage of the analytics possibilities offered by the rolling out of smart metering.

Cost-benefit Analysis of Scenarios

As a result of the integrated analysis (review of the ACT policy environment, stakeholder consultation and feedback and the SWOT), the following scenarios were reviewed as part of a cost-benefit analysis:

Business as usual

Scheme design elements	Implications
• Scheme metric remains set on greenhouse gas emissions • ACT grid electricity emission factor is considered to be zero post 2020 • PHT formulation is retained • Scheme continues to exclude NGERS reporters. • Only electricity retailers are obligated parties	• Scheme automatically becomes a gas saving scheme • Electricity use increase would lead to increased costs for the ACT government in sourcing additional volume of renewable electricity (and increase regressive impact for electricity customers). • Challenges in explaining the logic of a scheme that obliges electricity retailers to deliver gas savings, but no efficient electrical activities. • Likely smaller pool of beneficiaries and potential equity issues between beneficiaries and energy users • Scheme incentives diverge significantly from energy bill savings.

Primary objective: Targeted bill savings

Scheme design elements	Implications
• Scheme metric is set on energy savings. • The PHT is retained. • A rental target is introduced. • A small business target is introduced. • A not-for-profit organisation target is introduced. • Energy Savings Contributions fund non-EEIS priority household energy saving programs Premises are restricted from receiving more than one major energy efficiency item. • A sub-target is applied to increase proportion of participating households and businesses.	• The main likely implication is that higher ambition for priority energy users will require a lowering of the target to be acceptable to retailers. • Greater ability to address energy poverty; focus assistance on those who need it most • Supports the 100% RET by limiting electricity demand increase • Activities more likely to be in line with needs of priority households • Emission savings not guaranteed as there is a focus on energy savings • Likely higher savings for households but possibly lower savings overall • It is likely that activities for priority / non-priority households will need to be different and managed separately. • Sub-targets likely to reduce overall cost effectiveness • Actsmart's field of action may be reduced or may need to be redefined. • There would still be a need to consider whether ACT housing stock of dwellings should be eligible: to demonstrate leadership, this should arguably be funded from the public purse.

Primary objective: Lowest cost of energy efficiency improvements

Scheme design elements	Implications
• Scheme metric is set on energy savings. • The Tier 1 threshold is lowered so that other large retailers are also obliged to deliver savings. • No sub-targets, including PHT removal. • Scheme is expanded to NGERS reporters. • Energy Savings Contribution fund non-EEIS priority household energy saving programs	• Lowest cost of abatement results in lowest pass-through costs, unless the target is increased • Supports the 100% RET by limiting electricity demand increase • Large companies benefit • Major equity issue, as – every electricity user is paying for upgrades that benefit participants that may not face financial barriers; risk of "free-ridership" increases – Limited activities delivered to priority households – Reduced savings to small and medium businesses are also likely. • Given the importance of the energy poverty topic and legitimate concerns from most stakeholders, the poverty alleviation goal would need to be covered adequately through separate programs. • Tier 2 retailers becoming Tier 1 due to threshold changes are likely to strongly object the change

Primary objective: Highest greenhouse gas emission reductions

Scheme design elements	Implications
• Gas retailers become obligated parties under the scheme Either: • Scheme metric is set on greenhouse gas emissions, or • A sub-target is introduced for greenhouse gas emissions. Either: • High priority activities are mandated, or • Multipliers are applied to high priority activities. The PHT remains unchanged	• Supports net zero emissions strategy • Greater ability to spread the cost over gas and electricity customers, however the overall scheme costs may be higher as a result of achieving greater emissions reductions • Electricity use increase would lead to increase costs for the ACT government in sourcing additional volume of renewable electricity (and increase regressive impact for electricity customers), unless other means are used to limit such increase. • There is likely to be a tension between the government's objectives and the retailers' willingness to accept high priority activities that may only be resolved in a reduction of the target. • Multipliers would need to be carefully considered, and the added complexity balanced with the expected benefits.

Balancing multiple objectives: emission reductions, energy and bill savings

Scheme design elements	Implications
• Scheme metric is set on energy savings. • The retailer energy savings obligation is extended to gas retailers. • A sub-target is introduced for greenhouse gas emissions. • Multipliers for activities that reduce greenhouse gas emissions and save energy. • NGERs reporters are included, but in a sub-market set-up, except government offices (Territory and federal) • The PHT is maintained • A rental target is introduced. • A small business target is introduced. • Energy management systems are incentivised • Premises are restricted from receiving more than one major energy efficiency item. • A sub-target is applied to increase proportion of participating households and businesses.	• Ability to pursue multiple objectives but with lower ambitions on each objective • Supports net zero emissions strategy through the sub-target • More equitable distribution of benefits but lower savings overall • Segmenting the market into sub-targets reduces economic efficiency, especially in a market as small as the ACT • Will likely require lowering target or face the risk of higher pass-through costs • There would be considerable complexity in defining and administering the scheme, due to the multiple partitioning of the market. This could include cross-subsidisation between the "large users" and "small users" sub-markets. This may not be considered as acceptable by retailers.

Discontinue the EEIS

Scheme design elements	Implications
EEIS ceases	This would end a financially self-sustaining scheme which is delivering benefits worth four times as great as costs. Given the long-term commitments to zero net emissions targets, and ongoing public concern about energy poverty, this would require replacing the EEIS with alternative instruments to reduce emissions, manage energy poverty and energy efficiency. It would likely lead to significant budgetary outlay.

For most of the scenarios there cannot be a definite answer on whether the greater "whole of economy" benefits would be able to be achieved, should the scenario be implemented: increasing savings by increasing the targets is always possible, but retailers are then likely to incur higher costs that will then be passed on to end-customers. In most cases, the trade-off facing the government is whether to maintain (or increase) the energy saving targets or keep a focus on energy bills. This is a value judgment about the scheme's primary policy objective that needs to be investigated further.

As the EEIS is essentially a scheme applying a levy on energy consumption and using this levy to implement energy efficiency activities, the benefit of the scheme lays in the effectiveness and appropriateness of the redistribution. The greatest concern about increasing the pass-through costs is that it may impact low-income households who are the least able to take independent action to manage their energy efficiency and reduce their bills. This concern is addressed in several of the future scheme scenarios, which would focus on ensuring that EEIS benefits are shared widely among electricity users, especially low income households.

4. CONCLUSION

The EEIS has been effective in reducing household and business emissions and energy costs, for priority low-income households, typical households and small to medium businesses. In the first five years of the scheme, the EEIS was able to achieve scale on simple-to-implement activities delivering benefit to a large number of participants. The program has been cost-efficiently delivered also, with an overall low administration budget and overall positive benefit-cost-ratio.

Apart from the tension between achieving GHG reductions in the context of a commitment to 100% renewable electricity which can be addressed by switching to an energy savings metric, the main difficulty has been to ensure that the balance between overall energy savings from the scheme (effectiveness) and affordability (distributional impacts, especially affecting priority households) are maintained.

Into the future, the key points that must be addressed for successfully extending the scheme include:

- The GHG metric has become problematic in the context of a 100% RET.
- The ambition of the target is limited by regressive impacts (pass through costs).
- The EEIS extension needs to be considered in the context of other ACT policies, in order to identify how it can complement and support them.
- A decision needs to be made on the level of focus on energy poverty / affordability – there are some trade-offs between encouraging low-cost opportunities or opportunities tailored to low income households' needs.