Environment, Planning and Sustainable Development Directorate

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To:	Minister for Water, Energy and Emissions Reduction	**Tracking No.:** 20/85571
Date:	18 November 2020	
CC:	Minister for Climate Action Minister for Sustainable Building and Construction	
From:	Executive Group Manager, Climate Change and Sustainability	
Subject:	Tabling of 2019-20 Minister's Annual Report under the *Climate Change and Greenhouse Gas Reduction Act 2010*	
Critical Date:	**Tuesday, 1 December 2020**	
Critical Reason:	Legislation calls for you to table an annual report within six months of the end of the financial year. This item is listed for tabling on 3 December 2020.	

- DG …/…/…
- DDG, Sustainability and the Built Environment …/…/…

Recommendations
That you:

1. **Agree** to table the 2019-20 Minister's Annual Report under the *Climate Change and Greenhouse Gas Reduction Act* 2010 (Attachment A).

Agreed / Not Agreed / Please Discuss

2. **Agree** to the Tabling Statement at (Attachment B).

Agreed / Not Agreed / Please Discuss

Shane Rattenbury MLA ……/……/……

1/12/20

Minister's Office Feedback

Please note queries on Attachment A.

Background

1. Section 15 of the *Climate Change and Greenhouse Gas Reduction Act 2010* (the Act) requires the Minister to table an annual report within six months of the end of the financial year. The annual report is required to include:

    a. the actions taken during the year in the exercise of the Minister's functions under the Act;

    b. the effectiveness of Government actions taken to reduce greenhouse gas emissions during the financial year; and

    c. the findings of a cost-benefit analysis of any government policies or programs implemented to meet the targets.

Issues

2. The 2019-20 Minister's Annual Report under the *Climate Change and Greenhouse Gas Reduction Act 2010* (the Act) is at Attachment A. This report is more succinct than previous reports, focusing on key actions and achievements, making it a more effective communications tool. However, it covers all requirements of reporting set out in the Act.

3. The report includes a section on Progress towards the Zero Emissions Government targets, as required by the *ACT Climate Change Strategy 2019-25.*

4. The estimate of total greenhouse gas emissions for the ACT in 2019-20 was 1684 kt CO_2-e. This was a 45.3% reduction on 1990 levels. The ACT's 40% reduction target was mainly met by achieving 100% renewable electricity supply. The COVID-19 pandemic has also resulted in greater than expected reductions in transport emissions. Emissions from transport are expected to rise in future inventories.

Financial Implications

5. There are no financial implications arising from the development or tabling of this report.

Consultation

Internal

6. The Climate Change and Sustainability Division has consulted across the Directorate as needed, including through the development of The Environment, Planning and Sustainable Development Directorate's (EPSDD) Annual Report.

Cross Directorate

7. Directorate input has been sourced from:

    a. Directorates' six-monthly progress reporting on implementation of the *ACT Climate Change Strategy 2019-25*, *Canberra's Living Infrastructure Plan* and *The ACT's Transition to Zero Emissions Vehicles Action Plan 2018-21*; and

    b. Directorates' reporting against the Zero Emissions Government Framework.

8. Agency contacts responsible for the above reporting have provided comment on a draft of the annual report.

External

9. No external consultation was required to produce this report.

Work Health and Safety

10. There are no work health and safety implications associated with this brief.

Benefits/Sensitivities

11. The Energy Efficiency Improvement Scheme and the small- and large-scale Feed-in-Tariff (FiT) schemes contributed approximately $178.60 to the electricity bill of a representative household in 2019-20. In absolute terms, this was slightly higher than the $164.04 reported in 2018-19. However, it was only 9% of a representative household's bill in 2019-20, compared with 10% in 2020-21.

12. The increased cost is due to the ACT purchasing more FiT supported electricity in 2019-20 to meet and maintain the 100% renewable electricity target.

13. The Energy Efficiency Improvement Scheme delivered around $300 in annual bill savings averaged across all ACT households in 2019-20.

14. ACT Government schemes that reduce energy costs for low income households are detailed in the report. These were expanded in 2019-20 by:

    a. increasing the Priority Household Target—which requires retailers to deliver a proportion their energy savings under the Energy Efficiency Improvement Scheme to low-income households—from 20%, to 30%; and

    b. introducing $100 vouchers through the Utilities Hardship Fund and additional $200 rebates for households already receiving the Utilities Concession, to support energy consumers impacted by the COVID-19 pandemic.

Communications, media and engagement implications

15. Once tabled in the Legislative Assembly the report will be published on the EPSDD website together with previous annual reports. A suggested Tabling Statement is included at Attachment B.

16. If required by your office, a media release can be prepared in consultation with the EPSDD Communications and Engagement Team.

Signatory Name:	Antonio Mozqueira	Phone:	54820
Action Officer:	Sophie Gillies	Phone:	72597

Attachments

Attachment	Title
Attachment A	Minister's Annual Report under the *Climate Change and Greenhouse Gas Reduction Act 2010*
Attachment B	Tabling statement

ACT Government
Environment, Planning and Sustainable Development

MEETING BRIEF

OFFICIAL

To:	Minister for Water, Energy and Emissions Reduction	**Tracking No.:** 20/91008
From:	Executive Group Manager, Climate Change and Sustainability	
Date of meeting:	Thursday, 21 January 2021	
Subject:	Meeting with Mr Erik Olbrei and stakeholders regarding EEIS and phase-out of fossil fuel gas	
Critical Date:	21 January 2021	

- DG …/…/…
- DDG, Sustainability and the Built Environment 12/01/21

Purpose of the meeting

To provide you with information for a meeting with Mr Erik Olbrei, Director, Harvest Hot Water, and additional stakeholders regarding the Energy Efficiency Improvement Scheme (EEIS) and the phase-out of fossil fuel gas.

Recommendations

That you **note** the possible discussion topics for your meeting with Mr Erik Olbrei.

Noted / ~~Please Discuss~~

Shane Rattenbury MLA 21/1/21

Minister's Office Feedback

Please follow up the topics raised in the meeting at coming Exec meetings.

Signatory Name:	James Priestley	Phone:	72092
Action Officer:	Anne Pentony	Phone:	65003

Purpose of the meeting:	To discuss the proposed phase-out of fossil gas, the performance of the Energy Efficiency Improvement Scheme (EEIS), and ways the EEIS may be improved. Detail of items to be discussed is provided at Attachment A.
Attendees:	• Erik Olbrei, Director, Harvest Hot Water • [redacted] President, Master Plumbers Association of the ACT • [redacted] Board Member, Master Plumbers Association, and [redacted] Plumbing • Matthew Wright, Pure Electric, and formerly of Beyond Zero Emissions
Directorate representative in attendance:	Gene McGlynn, Executive Group Manager, Climate Change and Sustainability
Day / date:	Thursday 21 January 2021
Time:	9:00 to 10:00am
Venue:	Minister's Office
Background:	The Energy Efficiency Improvement Scheme (EEIS) The EEIS requires electricity retailers to achieve energy savings in households and small-to-medium enterprises. Larger (Tier 1) retailers must undertake approved energy saving initiatives while smaller (Tier 2) retailers can either deliver energy savings activities or pay an Energy Savings Contribution (ESC), which is designed to be equivalent to the cost of delivering activities. Tier 1 retailers are also required to deliver a percentage of their obligated energy savings to low income households through the Priority Household Target (PHT). ActewAGL is currently the only Tier 1 retailer within the ACT. It is important to note that the EEIS does not direct energy retailers in the manner or with whom they partner to deliver activities. It is entirely a matter for ActewAGL which delivery partners they select. All 15 Tier 2 retailers elected to achieve 100% of their obligation under EEIS by paying an ESC in the 2019 compliance year. Tier 2 retailer contributions have totalled over $15 million since 2013 which have directly funded the successful implementation and delivery of a range Actsmart and Low Income Household programs. Mr Erik Olbrei, Director, Harvest Hot Water Mr Olbrei has written to your office three times to request meetings and raise concerns about the EEIS: 3 March 2020, (Obj: 20/10644); 30 June 2020 (Obj: 20/42418) and most recently 18 November 2020 (20/91008). Mr Olbrei has also discussed his concerns with an EEIS team member.

Concerns that Mr Olbrei has raised about the EEIS are detailed below:

- Mr Olbrei states that his business has been locked out of the EEIS by the sole Tier 1 retailer, ActewAGL. ActewAGL currently only provides access to EEIS 'rebates' to the ActewAGL Energy Shop. Tier 2 retailers opt to pay the ESC, rather than undertaking abatement activities, meaning no abatement market exists at the Tier 2 retailer level.

- Mr Olbrei has been twice unsuccessful in ActewAGL's tender process for delivering hot water heat pumps as part of the EEIS. He has raised concerns that ActewAGL's tendering process is anti-competitive.

- Mr Olbrei made a submission to the Independent Competition and Regulatory Commission (ICRC) Draft report: Retail electricity price investigation 2020-24, regarding ActewAGL's tender process for delivery of EEIS activities.

- Mr Olbrei has stated that his business installs heat pump water heaters at the same price that ActewAGL energy shop charges without access to any 'rebates'.

- The EEIS administrator has not met with Mr Olbrei to discuss his concerns.

The Ministerial responses to Mr Olbrei advised that retailers do not receive ACT Government funding to deliver EEIS activities, and that the EEIS does not mandate the offering of discounts or rebates.
On 12 May 2020, Mr Olbrei submitted an application to become an Approved Abatement Provider under the EEIS, which would allow him to deliver EEIS activities on behalf of electricity retailers.
Mr Olbrei's application has not yet been processed because issues raised in the application have prompted a review of the eligibility criteria. The issue is not yet resolved.

<u>Mr Matthew Wright, Co-founder, Pure Electric</u>

Mr Wright, wrote to the EEIS in August 2020 to request information on Approved Abatement Providers, ways to access Government subsidies under the EEIS and ways to provide service under the Scheme without partnering with retailers.

The EEIS team response advised that ACT Government does not provide subsidies for EEIS activities and provided links to the Abatement Provider List on the EEIS website, links to the

	legislation, with information about the structure of the Scheme and how it operates. Mr Wright also made multiple representations to your office in 2019 regarding concerns that the 5kW export limit for single phase solar PV installations is too low and should be increased (19/22049; 19/39594). The Ministerial response to Mr Wright outlined the reasons for the limit and the risks associated with increasing the limit.
Discussion:	It is anticipated that key discussion topics will include the high-level topics listed below. Further detail is available at Attachment A. 1. EEIS. 2. EEIS meeting its full potential. 3. Opening the Tier 1 electricity retailer EEIS activity delivery market to competition. 4. How Tier 2 electricity retailers abatement could become a reality. 5. Transition from gas to electric appliances, and old gas water heaters being replaced with new gas water heaters.
Consultation Internal:	No internal consultation was required in preparing this brief.
Cross directorate:	No cross-directorate consultation was required in preparing this brief.
External:	No external consultation was required in preparing this brief.
Media implications:	There are no anticipated media implications.

Items to be discussed

1.1 The Energy Efficiency Improvement Scheme

Achievements of the EEIS

Since the EEIS commenced in January 2013, over 78,000 households and businesses have participated in the Scheme, including more than 20,500 priority low–income households. Over 1.35 million energy saving items have been installed, delivering more than 7 million gigajoules (GJ) of lifetime energy savings, over $445 million of lifetime energy bill savings, and lifetime greenhouse gas emission reductions of around 580,000 tonnes (tCO2–e). This is equivalent to taking approximately 190,000 cars off Canberra roads for a year.

The EEIS is also supporting the installation of Energy Efficiency Improvements in Public Housing. This initiative consists of a $7 million investment to improve the energy efficiency of 2200 public houses, from 1 July 2018 to 30 June 2021. To date the program has installed over 2,600 reverse cycle air conditioners and hot water heat pumps and provided energy efficiency education programs, with the aim of transitioning these households off gas. Under a Covid-19 initiative, the ACT Government has provided another $2.6 million to extend the program to the end of 2022 and install an estimated further 1,300 systems.

EEIS Eligible activities undertaken in 2019–20 financial year (FY)

Activity No.	Description	Numbers of energy saving items installed	Number of Premises
2.1	Install a high–efficiency ducted reverse cycle electric heat pump heater (replace inefficient ducted gas heaters)	651	651
2.3	Install a specified high–efficiency electric room heater (replace inefficient flued gas heaters)	1469	1457
2.4	Install insulated space–conditioning ductwork (decommission all existing space–conditioning ductwork that is connected to an operable ducted heater)	722	722
3.1 and 3.2	Decommission an electric– resistance water heater or gas of LPG hot water system and installation of a specified high–efficiency water heater	462	461
4.2	Commercial lighting upgrade— upgrade of building lighting equipment in a business premises by replacing it with more efficient lighting equipment	46,095	665
5.1	Decommissioning and disposal of refrigerator or freezer— removing a refrigerator or freezer in working order, from a premises and destroying the refrigerator or freezer	1521	945
Total number of energy saving items and premises		50,578	4150

Issues previously raised by Mr Olbrei:

a) ACT residential energy consumption rates second highest per capita after Victoria.

b) The need for improvements under the EEIS to drive up installation rates of hot water heat pumps and reverse cycle air conditioners through cost reduction (offering government rebates).

c) EEIS underperformance in hot water upgrades - Mr Olbrei estimates that around 6000 hot water systems are upgraded in the ACT every year. He notes that 98 heat pumps were installed through the EEIS in 2018-19 FY. Mr Olbrei assumes that the majority of hot water systems installed in the ACT outside of the EEIS are inefficient gas and electric systems, which are locking in inefficiency in these households for a further decade.

d) Issues associated with ActewAGL as the only retailer conducting EEIS activities.

e) ActewAGL advertising 'rebates' but installing at the same cost as Harvest Hot Water (HHW).

f) 30% of modelled energy savings have not eventuated due to lack of Tier 2 participation.

g) Lack of responsiveness of the EEIS team and Administrator, particularly in relation to Mr Olbrei's application to become an approved abatement provider.

h) The invitation states that the participants would like to discuss old gas water heaters being replaced with new gas water heaters.

1.2 Policy Position

The EEIS has been extended to 2030, as a key mechanism for delivering on the *ACT Climate Change Strategy 2019-2025*. Key changes include:

- measuring savings in energy instead of greenhouse gas emissions to reflect the ACT's move to 100% renewable electricity from 2020;
- expanding beyond stationary energy to cover transport activities;
- increasing opportunities for low income households to improve their energy efficiency; and
- the inclusion of insulation as a new activity in 2019

The Priority Household Target (PHT) will remain at 30% for 2021 and ensuring assistance is provided to low income households.

Policy positions relating to issues previously raised by Mr Olbrei

a) ACT Government is committed to supporting ACT residents and businesses to reduce their energy consumption. It should however be noted that ACT's climate with cold winters and hot summers is a contributing factor to ACT's high per capita energy consumption.

b) The ACT Government has committed to implement a program of zero-interest loans of up to $15,000 for households and not-for-profit community organisations to assist with the upfront costs of investing in: efficient electric appliances; rooftop solar panels; household battery storage; and zero emission vehicles. This program design addresses the barrier of up-front costs that prevents many households from accessing the benefits of these technologies. It is expected that installation and purchase of these technologies will ultimately save the recipients money, therefore reducing the need for Government subsidies.

c) Installations of efficient hot water systems in the EEIS increased from 98 installs in 2018-19 FY to 462 installs in 2019-20 FY. The proposed interest free loan program will likely further increase the uptake of efficient hot water systems.

d) The ACT Government is examining options within the EEIS that could support increased competition in the retail electricity market.

e) Mr Olbrei and Mr Wright have both previously raised concerns that their competitors are accessing 'government grants' through the EEIS. However, the ACT Government does not provide rebates for any EEIS activities. The EEIS team plans to review the information on the ACT Government website to better reflect ACT Governments role in the EEIS.

f) Tier 2 electricity retailers can choose to either deliver EEIS activities or pay the equivalent cost of delivering activities through the Energy Savings Contribution (ESC). This aspect of the scheme design supports competition in the ACT electricity market by limiting barriers to participation from smaller retailers. The modelling that was undertaken to inform the Energy Savings Target of 8.6% for 2021 included the assumption that only Tier 1 retailers would deliver EEIS activities and that all Tier 2 retailers would choose to pay the ESC.

   Funds from the ESC are spent on activities that support the objectives of the EEIS. The ESC funds the following energy efficiency programs:
   - Solar for low income program
   - Actsmart Low income Energy Efficiency Program
   - Actsmart Renters' Home Energy Assessments
   - Actsmart Sustainable Home Advice program
   - Actsmart Business Energy and Water program

   The energy savings from programs funded by the ESC are not included in modelling and analysis for the EEIS.

g) The process of reviewing Mr Olbrei's application to become an Approved Abatement Provider raised questions about the appropriate accreditation requirements to ensure that abatement providers are sufficiently qualified while minimising the costs and administration. The EEIS team plans to investigate an option for businesses who have Clean Energy Regulator accreditation to be eligible to become Approved Abatement Providers rather than requiring them to be accredited under the NSW and Victorian energy obligation schemes, which have high fees attached. Small ACT businesses such as HHW are unlikely to operate in these jurisdictions. Clean Energy Regulator accreditation is used as a qualifying eligibility condition under other renewable energy and energy efficiency programs delivered by the Environment, Planning and Sustainable Development Directorate. Unfortunately, the work to review eligibility requirements has not yet been completed.

h) The EEIS discontinued gas to gas activities in 2019 in recognition of the ACT's move to 100% renewable electricity from 2020 and the ACT's emissions reduction commitments. The ACT Government does not support activities which promote the installation of new gas appliances, regardless of their efficiency, because installation new gas appliances will lock-in a reliance on gas for the lifetime of the appliance. There is currently insufficient evidence that a 'green gas' alternative to fossil fuel gas is a viable option for the future gas network.

1.3 Suggested Talking Points

You may wish to highlight the success of the EEIS to date and discuss opportunities for the Scheme to be strengthened.

2.1 Transition from natural gas to electric appliances

With no emissions from the ACT's electricity supply from 2020, the key sectors for further abatement in the ACT are natural gas use and transport, which together account for around 80% of Territory emissions. Renewable electricity offers a cost-effective and clean option to natural gas use in most homes and businesses. Currently, homes are being helped to convert to electricity through the EEIS, public housing conversions, and the low-income energy efficiency program.

The Tier 1 Retailer, ActewAGL, currently delivers three eligible activities that involve the disconnection of gas appliances, switching to efficient electric heating and cooling and hot water systems, directly contributing to the policy objective to transition away from gas.

Transitioning households and businesses off gas remains a focus of the EEIS and is central to plans for future activity development.

2.2 Policy Position

Action 4.5 of the *ACT Climate Change Strategy 2019-2025* is to develop a plan, by 2024, for achieving zero emissions from gas use by 2045. The Parliamentary and Governing Agreement for the 10th Legislative Assembly of the ACT (PAGA) also commits to phase out of fossil-fuel-gas in the ACT by 2045 at the latest. The PAGA includes actions such as supporting households and non-profit community organisations to install efficient electric appliances through zero-interest loans and providing education and communications on the shift from gas to electric.

2.3 Suggested Talking Points

You may wish to indicate the ACT Government's commitment to achieve zero emissions from gas use, and proactive policy agenda to encourage consumers to transition away from natural gas as an energy source.

The PAGA recognises the threat that climate change poses and outlines strategies, complimentary to those outlined in the *ACT Climate Change Strategy 2019-2025*, including those under the EEIS. It aims to take the next steps on climate change action to reduce greenhouse gas emissions and demonstrate what can be achieved in short time frames to assist households in the transition.

These complimentary initiatives include:

- Zero-interest loans of up to $15,000 for households and not-for-profit community organisations to assist with the upfront costs of investing in: rooftop solar panels; household battery storage; zero emission vehicles and efficient electric appliances. The program will include an education and communications component about energy efficiency and the shift from gas to electric.
- Progress a project with relevant asset owners and key stakeholders to reduce the emissions intensity of the existing ACT gas network as much as is possible, by injecting zero-emissions gas alternatives.
- Minimum energy efficiency standards regulations for rental properties in 2021 with progressive implementation over the coming years.
- A five-year, $50 million program to improve building efficiency and sustainability for social and public housing, low income owner-occupiers, and the lowest performing rental properties; this includes upgrades to government housing, and financial incentives to implement minimum energy efficiency standards in rental properties.

- Legislate to prevent new gas mains network connections to future stages of greenfield residential development in the ACT in 2021-22. Future stages of Jacka and Whitlam will be all-electric.
- Commence a transition project, working with industry and other stakeholders, to advance all-electric infill developments, with a goal of no new gas mains network connections to future infill developments from 2023.

Environment, Planning and Sustainable Development Directorate

To:	Minister for Water, Energy and Emissions Reduction	**Tracking No.:** 21/13280
Date:	20 April 2021	
From:	Executive Group Manager Climate Change and Energy	
Subject:	Response to EEIS advice from hot water installer advocates	
Critical Date:	28 April 2021	
Critical Reason:	To provide advice in a timely manner	

- DG …/…/…
- DDG, Environment, Water and Emissions Reduction 20/04/2021

Recommendations

That you **agree** in principle to setting a fee for service for the Energy Efficiency Improvement Scheme Approved Energy Saving Provider application process.

Agree / Not Agree / Please Discuss

Shane Rattenbury MLA 5/7/21

Minister's Office Feedback

1. As discussed, please prepare a detailed letter to Mr Olbrei that shares a range of data to explain the alternate analysis to his, and answers the detailed questions in his correspondence.
2. Please provide details on the outcome of the audit identified in para 16 as soon as available.
3. I remain concerned that there are still no insulation services being offered under the EEIS, and would like to discuss options to change this outcome.
4. Given that access to the EEIS is being limited to ACTEW customers, this needs to be particularly taken into account in the design of the Vulnerable Households scheme.

Background

1. The Energy Efficiency Improvement Scheme (EEIS) was modelled on existing energy efficiency obligation schemes (EEOs) and adapted to address specific conditions in the ACT, including the cool climate and low levels of competition in the electricity retail market.

2. The EEIS harmonises with the Victorian Energy Upgrade (VEU) program and the NSW Energy Saving Scheme (ESS). This takes advantage of economies of scale by adopting activities that would be cost prohibitive to create for a small jurisdiction like the ACT, and by leveraging the stringent accreditation process and compliance management processes for businesses and installers operating under the EEIS.

3. Mr Erik Olbrei, Harvest Hot Water, has written numerous letters to you to request meetings and to raise concerns about the EEIS (briefs 20/10644, 20/42418 and 20/91008 refer).

4. Mr Olbrei applied to become an Approved Abatement Provider (AAP) under the EEIS in May 2020. AAPs are now referred to as Approved Energy Savings Providers (AESP) to account for the change to the EEIS energy savings metric. Mr Olbrei's application has now been approved pending confirmation of CER accreditation details. This will allow his business to partner with electricity retailers to deliver EEIS hot water installation activities on their behalf.

5. You met with Mr Olbrei, representatives from Master Plumbers Association of the ACT and Pure Electric on 21 January 2021 to discuss their concerns with the EEIS. This group ('the Advocates') recommended changes to the EEIS during the meeting, and provided further detail following the meeting (Attachments A to D). The Environment, Planning and Sustainable Development Directorate (EPSDD) has subsequently provided you with advice regarding the Advocates' recommendations (DLO request 21/08249).

Issues

ACT uptake of efficient hot water systems

6. Mr Olbrei claims that ACT's poor installation rates for efficient hot water systems indicates that the EEIS is underperforming. Clean Energy Regulator (CER) data for the Small-scale Renewable Energy Scheme (SRES) shows that in 2018 the combined total number of efficient solar hot water systems (SHWS) and air source heat pump hot water systems was 36% lower per capita in ACT than the national average, which supports the Advocates' claim.

7. However, this data also shows that ACT heat pump hot water installations were 42% higher per capita than the national average, while ACT's installation of SHWS per capita were 72% lower than the national average. This may be due to Canberra's cold climate, which requires SHWS electricity or gas boosts for around six months of the year.

8. SRES data for 2019 and 2020 is not yet complete but indicate that the ACT's uptake of efficient hot water systems has increased significantly. ACT per capita installations of SHWS and heat pumps were 36% higher than the national average in 2020, undermining the basis of Mr Olbrei's analysis.

9. Further detail of the ACT's uptake of efficient hot water systems and solar PV per capita is available at Attachment E.

Stakeholder Proposal to Redesign the EEIS

10. The Advocates provided recommendations for redesigning the EEIS (at Attachments A to D). They propose changing the EEIS from a retailer obligation scheme to a certificate-based scheme that requires all ACT electricity retailers to purchase energy savings certificates from AESPs at a fixed price. The Advocates also recommend removing the distinction between Tier 1 and Tier 2 electricity retailers and removing the option for Tier 2 retailers to pay an Energy Savings Contribution (ESC).

11. EPSDD advises that there are significant issues associated with the Advocates' recommendations, including their impact on the framework for ensuring Priority Households benefit from the EEIS, and a difficulty for the ACT Government to enforce a requirement that customers receive a genuine discount equal to the price of a certificate.

12. EPSDD does not recommend implementing the changes recommended by the Advocates at this time. Further detail is outlined in Attachment F.

Approved Energy Savings Provider (AESP) application process

13. EPSDD has undertaken a review of eligibility requirements for the AESP application process. The EEIS Administrator has approved a recommendation to recognise Registered Agents under the Clean Energy Regulator's (CER) Small-scale Renewable Energy Scheme (SRES) when assessing applications from an entity wanting to become an AESP under the EEIS.

14. Based on this decision, Mr Olbrei's application has been agreed, pending verification of his accreditation details with the CER SRES. This process could take approximately two to three weeks.

15. Under Part 7.55A of the *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Act), the Minister may determine fees for the Act. The Administrator proposes introducing a 'one-off', non-refundable $250 AESP application fee to recover administrative costs associated with any additional vetting, processing or compliance activity required. The Administrator seeks your in principle agreement to perform the actions required to establish the fee and create the instrument for your determination. A formal request will follow after appropriate administrative procedures are confirmed.

ActewAGL's pricing for delivering EEIS activities

16. The Advocates have raised concerns that ActewAGL's pricing for delivery of EEIS activities is not competitive. To address this, the Administrator has decided to request an independent audit using powers under section 19(3) of the Act. Under the Act, the EEIS Administrator may require an independent audit of:

    a. some or all of the information provided under section 19(2) of the Act, and

b. ‘any other information that the Administrator reasonably requires’ (as per s 19(3)(b)).

17. An audit of information provided under sections 19(2) and 19(3)(b) of the Act may address the question of whether ActewAGL is being prudent and efficient in delivering activities under the EEIS, and whether ActewAGL’s pricing for delivering EEIS activities is competitive and provides value for money for its customers.

18. Preparations are underway to audit ActewAGL’s activity delivery. Prior to proceeding, an assessment will be made whether to conduct the independent audit through the Independent Competition and Regulatory Commission (ICRC) or through a commercial provider.

Financial Implications

19. If initiated by the Administrator, ActewAGL would be responsible for potential audit costs relating to the cost of EEIS activities. This cost would then be passed on to ActewAGL customers. Alternatively, EPSDD could elect to pay for the audit costs.

Consultation

Internal

20. EPSDD Legal Services provided advice regarding options to audit ActewAGL’s delivery of the EEIS.

Cross Directorate

21. No cross-directorate consultation was necessary for this brief.

External

22. The Victorian Department of Land, Water and Planning (DELWP) provided information regarding the accreditation and compliance processes for VEU.

23. The Independent Pricing and Regulatory Tribunal New South Wales provided information regarding the accreditation and compliance process for ESS.

24. The CER provided information regarding the accreditation and compliance processes for SRES.

25. ActewAGL has not yet been advised that it will be audited. Once a decision has been reached as to the method for delivery of the audit and if it will incur a cost, ActewAGL will be advised.

Work Health and Safety

26. To ensure the safety of both installers and the ACT Community, the EEIS accreditation process requires thorough vetting to prove the applicant’s competency in activity delivery.

Benefits/Sensitivities

27. Expanding the EEIS AESP requirement to recognise registration with the CER SRES provides a streamlined approach for local hot water installers to become AESPs to support their participation in the EEIS.

Communications, media and engagement implications

28. Changes to the AESP application process will be published on the ACT Government website. No media is planned for the information in this brief.

Signatory Name:	James Priestley	Phone: x72092
Action Officer:	Emma Ereaut	Phone: x77901

Attachments

Attachment	**Title**
Attachment A	Design and re-vamped EEIS. Issues for consideration
Attachment B	ACT master Plumbers Association – summary of hot water rebates in the ACT
Attachment C	Discussion Paper – Redesign of the EEIS
Attachment D	Letter to Shane Rattenbury - 29 January 2021
Attachment E	Data analysis for Solar PV, ASHPHWS and SHWS
Attachment F	Response to proposed redesign of the EEIS

Designing a re-vamped ACT Energy Efficiency Improvement Scheme

Background

The EEIS as it currently stands has a number of deficiencies. As a retailer obligation scheme, it relies on electricity retailers who have no reason to support the Scheme's objectives to implement it. Competition is largely absent, with just three firms selected to implement Scheme activities, leaving a large number of potential participants unable to access the Scheme and therefore disadvantaged in competing with the three selected firms. Most concerningly, while the Scheme has the potential to become a major driver of energy efficiency and climate action in the ACT, at present it achieves only modest results.

Scope of a re-vamped Scheme

The Scheme could be re-vitalised, lifting ambition while building an open and competitive energy savings market that drives prices down. It could achieve replacements of around 9,000 inefficient end-of-life appliances a year. In this way, performance targets such as the following, over a ten-year period, could be realised:

- Climate action: disconnecting 90,000 households from fossil gas;
- Energy efficiency: cutting energy use for space heating and hot water by 50%; and
- Reductions in residential energy bills: cutting heating and hot water costs by 50%.

For such targets to be realised, substantial changes will be needed to the structure of the Scheme. A re-imagined Scheme could have the following elements:

- Electricity retailers required to purchase energy savings from a large and competitive pool of providers, at a fixed price, up to 8.6% of their electricity sales as at present.
- Alternatively they could pay a penalty to the Directorate, which would use these funds to purchase energy savings.
- It would operate as a de facto certificate scheme. Each unit = 1 MWh of energy savings (= 1 STC). A standard price would be set by the Directorate at say $30-$35.
- The fixed price per MWh would be set to deliver an average rebate of around $1000 for each appliance upgrade, to be passed on to households in full.
- Extension of Scheme to gas retailers could be considered.
- For simplicity, the Tier 1 / Tier 2 retailer distinction should be abolished.
- How Energy Savings Providers (ESPs – formerly Approved Abatement Providers) to be accredited is to be determined. (Licensed tradespeople can access the small-scale RET and VEET schemes without any accreditation process. If an EPSDD process is retained, it should be a streamlined 30-day process. At the least, ACT installers already approved by the CER as Registered Agents should automatically qualify).
- Reporting and record-keeping requirements to be simplified and streamlined.
- Audit and quality control systems to draw on existing systems as far as possible (e.g. Access Canberra, CER systems).

Issues for consideration

A number of design issues for a re-vitalised Scheme will need close investigation. Below is a list of issues, together with some starting points for investigation, in random order.

A de facto certificate scheme

The administrative details of how energy savings purchasing would work needs to be explored. Clearly each retailer would need to purchase MWh of savings equivalent to 8.6% of their electricity sales, and acquit these purchases to EPSDD.

- For one major element of the Scheme, viz heat pump or solar hot water installations, it may be possible to set up a very efficient arrangement by linking the ACT Government rebate to the existing STC rebate scheme. This could greatly reduce compliance auditing and processing burdens, as the STC scheme has strong quality assurance systems which require plumbing certificates, electrical certificates, serial numbers, photographs, and installer and customer signatures submitted along with the rebate form. Installers could work with STC trading firms like Greenbank or Green Energy Trading to simply the processes even more. By working with an STC trading company, with whom many plumbers have already lodged forms digitally, a combined application could be created. This could simplify the lodgement process for the plumber and it could ensure that the ACT Government is collecting all required data as efficiently as possible. We estimate the cost for this administration would be between $25 and $50 per application.

Should ESPs undergo accreditation by the Directorate, or are existing trade licencing arrangements sufficient?

In order to make the EEIS as open to competition as possible, it is desirable that a wide range of ESPs are able to participate in the Scheme. Currently providers need to apply to the Directorate for approval, but is this necessary? It would be worth examining the practice in other schemes.

- Under the federal RET scheme, no separate requirement exists for installers beyond the normal licensing requirements, and certification of work completed. An approval process exists for Registered Agents to create STCs, but this is not necessary for an installer, as aggregators are able to create STCs.
- The VEET scheme in Victoria, and the RET scheme need close examination.

Audit and quality control

It is essential that the Scheme operates to a high standard of implementation and compliance with ACT laws and regulations. What might be the least labour-intensive way to achieve the necessary degree of quality control? Various options should be examined:

- Tapping into the CER's quality control processes? Heat pump and solar hot water installations are already subject to CER quality control as part of their processes in managing the STC system. Do their processes provide sufficient oversight, with no further attention required? Or could they undertake quality control on behalf of the Scheme?

- Can Access Canberra, which already audits compliance in the ACT for plumbing and electrical work, undertake checks for the Directorate? The Master Plumbers Association notes that the ACT Government already employs expert plumbing inspectors who have the skills, vehicles, and knowledge to conduct random inspections. Plumbers are required to pay a $30 minor works lodgement fee on every heat pump installation to the ACT Government. These fees could cover the random audits.
- Or should the Directorate take on a spot audit role itself, contracting this out, checking random installations from time to time?

Systems for record-keeping and reporting

The relevant code of practice (*Energy Efficiency (Cost of Living) Improvement (Record Keeping and Reporting) Code of Practice 2019*) sets out how recording and reporting are to be done. However there is the risk that these requirements can be onerous and add significant time and cost to each installation.

- Current Scheme reporting requirements are excessive, and could be streamlined. It may be worth checking other systems that may be less demanding, and which could perhaps be drawn upon. For example, could the Victorian online reporting system be utilised for the ACT Scheme?

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ACT Master Plumbers Association
1 Page Summary of Heat Pump Hot Water Rebates in the ACT

- The current rebate scheme is limited to an ACT Government part-owned retail company who has exclusive access to effectively a government rebate. Said company already has significant buying power. The combination of the exclusive rebate and their buying power means that standard plumbing contractors cannot compete in the heat pump market. This is putting a lot of pressure on businesses already struggling to survive in the most difficult time to run a business since WW2.

- The existing rebate scheme is having a negative effect on the total heat pump installations in the ACT as most plumbers are deliberately avoiding conversations with their customers about heat pumps and steering them towards older technologies as they fear they will lose the job as they are unable to be competitive in this field.

- For residential hot water replacements, 87% of decisions are made by the first plumber who is called to site. For the ACT to effectively move to heat pump hot water technology, general plumbing contractors need to be on board and promoting the advantages of these efficient systems.

- Currently, less than 2% of hot water units are replaced before a complete breakdown failure of the customer's hot water infrastructure. If the ACT Rebate scheme was expanded to the entire plumbing community, this figure would greatly increase as plumbers are more likely to promote the benefits, efficiency and rebates of heat pump installations with their existing customer base, through their own marketing channels and whilst on-site conducting other plumbing maintenance/installations.

- The Directorate raised a concern that it would be difficult to ensure quality control comparing our suggestion that this rebate should be available to all plumbers to the disastrous insulation installations that have occurred in the past.
  The ACT MPA completely disagrees with this comparative. The Plumbing Industry is highly regulated with anyone who touches a plumbing system requiring a plumbing license governed by the ACT Government. ACT Plumbers are highly skilled and knowledgeable and are held accountable for all work that they complete in the ACT.

- The Directorate raised a concern that the administrative burden of setting up and running such a scheme would be an encumbrance.
  The ACT MPA believes this scheme could be set up extremely efficiently. By tying the ACT Government rebate to the existing STC rebate scheme, it will greatly reduce the compliance auditing and processing burdens. The STC scheme has great quality assurance requiring plumbing certificates, electrical certificates, serial numbers, photographs, and installer and customer signatures are submitted along with the rebate form. By working with an STC trading company, who plumbers already digitally lodge forms with, a combined application could be created simplifying the lodgment for the plumber and ensuring the ACT Government is collecting all required data as efficiently as possible. We estimate the cost for this administration would be between $25 and $50 per application.

- The Directorate raised a concern regarding who would conduct audits of the installations. The ACT Government already employs expert plumbing inspectors who have the skills, vehicles, and knowledge to conduct random inspections. Plumbers are required to pay a $30 minor works lodgment fee on every heat pump installation to the ACT Government. These fees could cover the random audits.

Re-designing the ACT Energy Efficiency Improvement Scheme

A discussion paper

Table of Contents

Re-designing the ACT Energy Efficiency Improvement Scheme

1 Background

The EEIS as it currently stands has many deficiencies. As a retailer obligation scheme, it relies on electricity retailers to implement it, but retailers (whose commercial imperative is to sell more electricity) have no reason to support the Scheme's objectives. The Scheme is inconsistent with the ACT's competition policies, as competition is largely absent in the Tier 1 scheme run by ActewAGL. Just three firms have been selected to implement Scheme activities; they are the only ones eligible to offer rebates on energy efficient appliances. This places all other ACT installers at a considerable competitive disadvantage. Unable to offer the rebates the Scheme offers, these installers cannot compete with the three selected firms. Finally and most concerningly, while the Scheme has the potential to become a major driver of energy efficiency and climate action in the ACT, at present it achieves only modest results.

2 Scope of a re-vamped Scheme

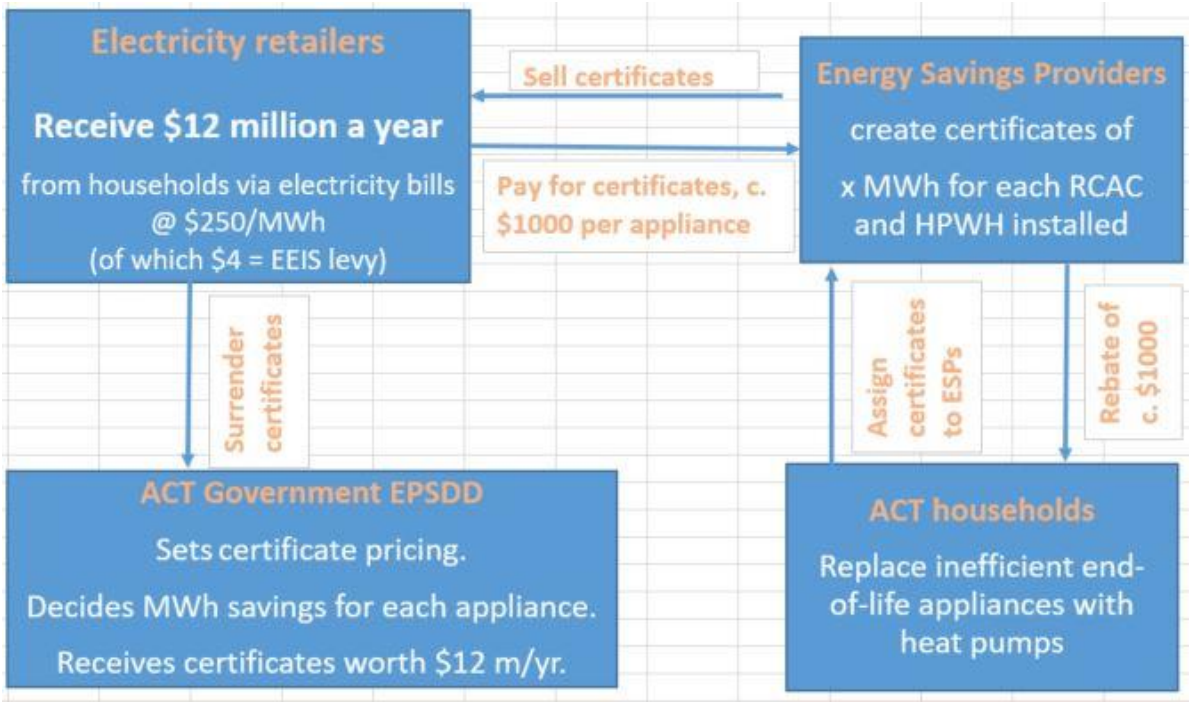
The Scheme needs to be re-vitalised, lifting ambition while building an open and competitive energy savings market that drives prices down. It could achieve replacements of around 9,000 inefficient end-of-life appliances a year. In this way, the following performance targets could be achieved over the ten years to 2030:

- Climate action: disconnecting 90,000 households from fossil gas;
- Energy efficiency: cutting energy use for space heating and hot water by 50%; and
- Reductions in residential energy bills: cutting heating and hot water costs by 50%.

For such targets to be realised, substantial changes will be needed to the structure of the Scheme. A re-imagined Scheme could have the following elements:

- Electricity retailers required to purchase energy savings equivalent to 8.6% of their electricity sales (as at present) from a large and competitive pool of Energy Savings Providers (ESPs), at a fixed price.
- Alternatively they could pay a penalty to the Directorate, which would use these funds to purchase energy savings.
- It would operate as a de facto certificate scheme. Each unit = 1 MWh of energy savings (= 1 STC). A standard price could be set by the Directorate at say $30-$35.
- The fixed price per MWh would be set to deliver an average rebate of around $1000 for each appliance upgrade, to be passed on to households in full.
- These ESPs would install energy efficient heat pump space and water heating appliances to ACT households, to replace end-of-life inefficient gas or electric appliances. The upfront cost would be reduced by the amount of the EEIS rebate, viz. c. $1000.
- Extension of Scheme to gas retailers could be considered.
- For simplicity, the Tier 1 / Tier 2 retailer distinction should be abolished.
- The method for selecting Energy Savings Providers (ESPs – formerly Approved Abatement Providers) to be accredited to the Scheme – if indeed any selection process is required – would need to be determined.
- Reporting and record-keeping requirements need to be simplified and streamlined.
- Audit and quality control systems should draw on existing systems as far as possible (e.g. Access Canberra, CER systems).

A re-designed EEIS could operate something like this:



3 Issues for consideration in re-designing the EEIS

A number of design issues for a re-vitalised Scheme will need close investigation. Below is a discussion of some of the key issues, together with some starting points for investigation.

(a) Establishing a certificate scheme

We propose that the re-vamped EEIS would operate as a certificate (as opposed to a retailer obligation) scheme. This means that ACT electricity retailers would be required to surrender to EPSDD energy savings certificates equivalent to 8.6% of their sales for the compliance (calendar) year. Each certificate would equal 1 MWh. For example, if a retailer sells 100,000 MWh of electricity in the year, they would be required to surrender certificates to the value of 8,600 MWh to the ACT Government (EPSDD).

They would purchase these from Energy Savings Providers (ESPs – formerly Approved Abatement providers) located in the ACT. We propose they should surrender certificates on a quarterly basis, as is the case with the federal Small-scale Renewable Energy Scheme.[1]

Part of the framework for the proposed scheme is already in place, as a result of the *Energy Efficiency (Cost of Living) Improvement Amendment Act 2019,* which replaced the abatement metric (tCO_2e) with a new metric, viz. MWh of energy savings, commencing on 1 January 2021.

We propose that certificate pricing be set so as to deliver an average rebate of around $1000 for each appliance replacement (which would be passed on to households in full). For example, say a household were to replace an end-of-life gas or electric hot water system with a Stiebel Eltron heat pump. This attracts 30 STCs (= 30 MWh of energy savings). If each 1 MWh of energy savings were

[1] http://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/How-the-scheme-works/Small-scale-Renewable-Energy-Scheme

priced at $35 in the re-vamped EEIS, the rebate would total $1050. This would provide a sufficient subsidy to overcome the market failure of high upfront costs for energy efficient appliances. Under this scenario, households would be strongly incentivised to replace end-of-life space and water heating appliances with efficient heat pumps. Not only would they receive the $1000 or $1050 rebate, but they would enjoy significantly lower energy bills.

The administrative procedure could be the same as for the Small-scale RET. That is, ESPs would require households to assign the certificates arising from the installation of an energy efficient appliance to the ESP, in consideration of a price reduction equal to the value of the energy savings applicable to that appliance. The ESP would create the certificates by submitting details of each installation to an electronic database in the same way as STCs are created through the CER system. The ESP would retain all paperwork (assignment form, plumbing and electrical certificates etc.) for spot audits aimed at ensuring the integrity of the system.

Two possibilities for simplification of this administrative process should be explored:

1. For one major element of the Scheme, viz. heat pump or solar hot water installations, which need to be reported anyway to the CER for STC purposes, it may be possible for the ACT EEIS to piggyback onto the CER's STC rebate scheme. It may largely eliminate paperwork for hot water installations. It could greatly reduce compliance auditing and processing burdens, as the STC scheme has strong quality assurance systems which require plumbing certificates, electrical certificates, serial numbers, photographs, and installer and customer signatures submitted along with the rebate form.
2. Another option would be for ESPs to engage STC trading firms like Greenbank or Green Energy Trading to process the EEIS certificate paperwork for them. By working with an STC trading company, with whom many plumbers have already lodged forms digitally, a combined application could be created. This could simplify the lodgement process for the plumber and it could ensure that the ACT Government is collecting all required data as efficiently as possible. We estimate the cost for this administration would be between $25 and $50 per application.

(b) Determining the MWh savings applicable to each appliance

Several options already exist for determining the MWh savings that appliances can deliver:

1. Minimal change option: Adapting the EEIS's abatement factor formulae

The EEIS itself in one of its Determinations has set out elaborate formulae for calculating the abatement factor applicable to each appliance.[2] This applied up until 31 December 2020, when the goal was to achieve abatement of greenhouse emissions. Thus the metric adopted for the Energy Savings Target was tonnes of CO2 equivalent (tCO_2e). Since electricity sales are measured in megawatt hours (MWh), it was necessary to convert MWh into tonnes of CO_2 equivalent (tCO_2e). Under another Determination,[3] the Minister determined that the number of tCO_2e to be attributed

[2] Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Determination 2019. For Activity 2.1 central air conditioning heat pump see pp. 31-2; for room RCACs see 40-1; for hot water systems see pp. 62-3 and 65-6.

[3] S 9 of the EEIS Act provided that the Minister must determine an emissions multiplier, whereby 1 MWh of electricity was deemed to produce a certain amount of tCO_2e. The instrument for this was the Energy Efficiency (Cost of Living) improvement (Emissions Multiplier) Determination 2015.

to the consumption in the ACT of 1 MWh of electricity was 0.4. Therefore this whole framework could be retained (with some adjustments to eliminate anomalies) by simply converting back from tCO_2e to MWh by reverse application of the emissions multiplier, where 1 tCO_2e = 2.5 MWh of electricity.

The anomalies that would need to be corrected are as follows:

- In the abatement calculations for heat pump water heaters (HPWHs), while the calculation for replacement of gas HWSs produces a result consistent with the STCs that each HPWHs earns, the result for replacement of electric HWSs produces results that are only about 30% of the STCs for the same systems. It appears there was an error in the original formula for the abatement factor, and this would need to be corrected. See Annex 1: Energy savings calculations for HPWHs.
- In the case of room air conditioning heat pumps (reverse cycle air conditioners - RCACs), application of the emissions multiplier produces mixed results. For replacement of fixed electric resistance heaters, the result averages around 20 MWh per replacement, which is quite reasonable. However for replacement of gas heaters it produces around 50 MWh, which is excessive, and for new installations, where nothing is replaced, it produces just 1-2 MWh (although it might be a reasonable policy setting, essentially to not provide rebates for new installations). See Annex 2: Energy savings calculations for room RCACs.
- We have not explored the calculations for central air conditioning heat pumps. This would need to be done.

2. Drawing on the Clean Energy Regulator's systems

As already noted, since heat pump and solar hot water systems are covered under the Small-Scale RET and attract STCs which equal 1 MWh, the CER already has a full suite of systems in place. We can readily find out the energy savings of each hot water appliance by consulting the CER's *Register of air source heat pump models up to 425L*.

The problem here is that heat pump space heaters, aka reverse cycle air conditioners (RCACs) are not included in the Small-scale RET. Therefore MWh energy savings data would need to be obtained from elsewhere.

3. Drawing on the Victorian energy efficiency scheme (Victorian Energy Upgrades - VEU)

The VEU scheme means already licensed installers/plumbers can access the VEU Scheme. They can upload documentation that would already be required under the STC scheme, thus avoiding duplication. The VEU scheme requires some geo-tagged photos and written evidence on the plumbing and electrical certificates of compliance. This documentation is what plumbers and electricians are already required to prepare for any works. The VEU scheme administratively is relatively straight forward with ample checks and balances on work quality (i.e. VBA Victoria Building Authority - the plumbing regulator and ESV - Energy Safe Victoria - the electrical inspector).

(c) Should ESPs be accredited by the Directorate?

In Canberra, a city of 420,000 inhabitants, a large market of energy efficient appliance installers exists. For installation of heat pump water heaters alone, there are hundreds of potential suppliers, as the next table shows:

Category	Total
Licenced ACT `water supply' plumbers listed by Access Canberra [1]	825
Plumbers listed in Yellow Pages for `Greater Canberra' [2]	271
Plumbing firms in ACT with websites offering HWS installation	40 and counting
Registered Agents accredited nationally by the Clean Energy Regulator and able to create STCs for hot water systems in the ACT	1,000 ? [3]
Number of *plumbing* firms authorised by ActewAGL to install solar or heat pump hot water systems in the ACT	2

[1] ***Source***: Access Canberra List of Licensed Plumbers: https://www.accesscanberra.act.gov.au/app/services/licence/#/plumber
[2]https://www.yellowpages.com.au/search/listings?clue=Plumbers+%26+gas+fitters&locationClue=Greater+Canberra%2C+ACT&lat=&lon=&selectedViewMode=list
[3] Amazingly, this information is confidential and the CER is unable to provide it. Source: CER emails to Erik Olbrei, 19 and 20 January 2021.

In this context, it is remarkable that ActewAGL has appointed just three installers to undertake its heat pump water heater installations. The ACT Government should ensure that the EEIS as open to as wide a field of qualified installers as possible, so that open competition is enhanced, producing lower prices. The simplest way to ensure the largest possible field would be to not set any accreditation requirements at all. Tradesmen are required by law to be fully licensed, and a framework of regulation and quality control already exists to ensure that all work that is undertaken meets all required standards.

So, two options need to be considered:

1. All licensed tradesmen are eligible to provide energy savings under the EEIS without any further accreditation process. The argument for this approach is that licensed tradespeople can access the small-scale RET and VEET schemes without any further accreditation process; it is sufficient that they are licenced tradespeople subject to all the normal regulations and audit processes that ensure their work meets required standards. Alternatively …

2. All prospective ESPs must be approved by EPSDD. This is the currently EEIS process where installers need to apply to the Directorate for approval. If an accreditation process undertaken by EPSDD is to be retained, it would need to be streamlined, with a performance guarantee that decisions will be completed within 30 days. The application guidelines would need to be amended to allow ACT installers to participate, without their needing to be registered with the Victorian or NSW energy efficiency schemes.

To address the accreditation question, current practice in comparable schemes needs to be examined, covering:

- The federal RET scheme, where no separate requirement exists for installers beyond the normal licensing requirements, and certification of work completed. An approval process exists for Registered Agents to create STCs, but this is not necessary for an installer, as aggregators are able to create STCs.

- The VEET scheme in Victoria.

(d) Audit and quality control

It is essential that the Scheme operates to a high standard of implementation and compliance with ACT laws and regulations. What might be the least labour-intensive way to achieve the necessary degree of quality control? Various options need to be examined:

- Tapping into the CER's quality control processes? Heat pump and solar hot water installations are already subject to CER quality control as part of their processes in managing the STC system. Do their processes provide sufficient oversight, with no further attention required? Or could they undertake quality control on behalf of the Scheme?
- Can Access Canberra, which already audits compliance in the ACT for plumbing and electrical work, undertake checks for the Directorate? The Master Plumbers Association notes that the ACT Government already employs expert plumbing inspectors who have the skills, vehicles, and knowledge to conduct random inspections. Plumbers are required to pay a $30 minor works lodgement fee on every heat pump installation to the ACT Government. These fees could cover the random audits.
- Or should the Directorate take on a spot audit role itself, contracting this out, checking random installations from time to time?

(e) Systems for record-keeping and reporting

The relevant code of practice (*Energy Efficiency (Cost of Living) Improvement (Record Keeping and Reporting) Code of Practice 2019*) sets out how recording and reporting are to be done. However there is the risk that these requirements can be onerous and add significant time and cost to each installation.

This needs examination to assess whether current Scheme reporting requirements are excessive, and could be streamlined. It may be worth checking other systems that may be less demanding, and which could perhaps be drawn upon. For example, could the Victorian online reporting system be utilised for the ACT Scheme?

(f) Abolishing unnecessary compliance plans

The Act requires electricity retailers, and abatement (now energy savings) providers to lodge compliance plans setting out how they proposed to achieve their energy savings obligations. In a certificate scheme, where the retailer simply purchases energy savings, there is really no need to prepare such compliance plans. These provisions in the Act should be abolished.

(g) Amendments to the EEIS legislation

To implement the above, a number of changes will need to be made to the EEIS Act (the *Energy Efficiency (Cost of Living) Improvement Act 2012-2020).*

Apart from matters mentioned above, we also propose that

- The distinction between Tier 1 and Tier 2 retailers by dropped, so that all are required to purchase energy savings;
- The option to provide an Energy Savings Contribution be deleted, so that failure to achieve energy savings results in application of the penalties set out in Section 22 of the Act;
- The requirement for retailers and ESPs to submit compliance plans be deleted.

The amendments that are needed are set out in Annex 3.

3 Work plan

A substantial amount of work will need to be done, but the timing is tight. For a re-vitalised Scheme to commence in January 2022, some amendments to the EEIS Act would need to be passed by June of this year (the Act requires some changes to be passed at least six months before the commencement of the next compliance year).

It may be that some of the specific tasks identified above can best be done through short-term consultancies by specialists with the right skill-set and experience. We expect that these tasks are quite modest in scope, and that they typically should not involve more than around 5 days (1 week) of consultancy work.

We suggest that something like the following timeframe would need to be achieved, including consultancy assignments:

Task	Commencing	Completion
Finalise work plan	1/02/2021	28/02/2021
Short-term consultancies:		
Establish operational details for a certificate scheme (5 days)	1/03/2021	1/04/2021
Establish energy savings values for appliances (5 days)	1/03/2021	1/04/2021
Establish how best to accredit Energy Savings Providers (5 days)	1/03/2021	1/04/2021
Assess audit, quality control, and record-keeping systems (5 days)	1/03/2021	1/04/2021
Consultations with electricity retailers	1/04/2021	15/04/2021
Prepare amendments to EEIS Act	1/05/2021	31/05/2021
Pass amending legislation through Legislative Assembly	1/06/2021	15/06/2021

Annex 1: Energy savings calculations for heat pump water heaters (HPWHs)

(a) Replacing an electric resistance water heater; and
(b) Replacing a gas or LPG water heater.[4]

Abatement factor (t CO2-e) = AAVbase – (AAVBs × Bs) – (AAVBe × Be)
Be = 0 (for medium size heat pump systems only)

RECS = STCs	STCs
Midea HP170	28
Stiebel Eltron WWK302/H, Quantum 150-08AC6-290	30
Midea HP280, Stiebel Eltron 222/H	31
Quantum 270-08AC6-290, Quantum 340-08AC6-290	32
Reclaim REHP-CO2-315GL	34

Bs = (1 – RECs × 0.0214) × 16.67 (for med heat pump systems), GJ	
Bs for Midea HP170 (28 STCs) =	6.681336
Bs for Stiebel Eltron WWK302/H (30 STCs) =	5.967860
Bs for Midea HP280 (31 STCs) =	5.611122
Bs for Quantum 270-08AC6-290 (32 STCs) =	5.254384
Bs for Reclaim REHP-CO2-315GL (34 STCs) =	4.540908

Replacement scenario	AAV_{base}	AAV_{Bs}	AAV_{Be}	Be
Replacing electric resistance HWS with med HP (42MJ/day)	6.598	0.396	0.396	0
Replacing gas HWS with medium HP (42MJ/day or 200L/day)	14.108	0.396	0.396	0

***Abatement factor* (t CO2-e) = AAVbase – (AAVBs × Bs) – (AAVBe × Be)**
Be = 0 (for medium size heat pump systems only)

Replacing electric resistance HWS with med HP (42MJ/day)	STCs	tCO2e	MWh
Abatement factor (t CO2-e) Midea HP170 =	28	3.95219094	10
Abatement factor (t CO2-e) Stiebel Eltron WWK302/H =	30	4.23472744	11
Abatement factor (t CO2-e) Midea HP280 =	31	4.37599569	11
Abatement factor (t CO2-e) Quantum 270-08AC6-290 =	32	4.51726394	11
Abatement factor (t CO2-e) Reclaim REHP-CO2-315GL =	34	4.79980043	12

Replacing gas HWS with med HP (42MJ/day or 200L/day)	STCs	tCO2e	MWh
Abatement factor (t CO2-e) Midea HP170 =	28	11.4621909	29
Abatement factor (t CO2-e) Stiebel Eltron WWK302/H =	30	11.7447274	29
Abatement factor (t CO2-e) Midea HP280 =	31	11.8859957	30
Abatement factor (t CO2-e) Quantum 270-08AC6-290 =	32	12.0272639	30
Abatement factor (t CO2-e) Reclaim REHP-CO2-315GL =	34	12.3098004	31

[4] Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Determination 2019. For Activities 3.1 and 3.2, see pp. 62-3 and 65-6.

Annex 2: Energy savings calculations: room reverse cycle air conditioners

Reference: Part 2.3, Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Determination 2019. Abatement factor (t CO2-e) = [AAVfixed + H2 + AAVvar × (ACOP – baseline)] × Capacity, where
(a) AAVfixed, AAVvar and baseline are the values prescribed in Table 2.3(a) (residential premises)
(b) ACOP for the installed model in the Energy Rating database for condition H1. Column CH in GEMS
(c) Capacity is rated heating capacity of the installed model for condition H1 in kW. Column X, GEMS.
(d) H2 given as 0 as installed models has not been tested and registered for low temperature performance under condition H2.

(a) Existing heater type	AAVbaseline	AAVfixed	AAVvar
Qualifying fixed electric resistance	3.7	1.22	0.13
Qualifying fixed gas heater	3.7	3.26	0.13
None, any, not specified	3.7	0	0.13

Proposed RCAC	(b) ACOP at H1	(c) Capacity at H1	(d) H2
Fujitsu ASTG18KMTC	4.6760	6	0
Mitsubishi Electric MSZ-GL50VGD	4.2232	5.8	0
Panasonic CS-Z50VKR	4.5389	6	0
Midea Galaxy Air HAS5003	4.2939	5.2	0
Daikin FTXZ50N/RXZ50N	4.5872	6.3	0

Abatement factor (t CO2-e) = [AAVfixed + H2 + AAVvar × (ACOP – baseline)] × Capacity

Replacing qualifying fixed electric resistance space heater			
Proposed RCAC	**tCO2e**	**At $116/t**	**MWh**
Fujitsu ASTG18KMTC	8.08128	$ 937.43	20
Mitsubishi Electric MSZ-GL50VGD	7.4704928	$ 866.58	19
Panasonic CS-Z50VKR	7.974342	$ 925.02	20
Midea Galaxy Air HAS5003	6.7454764	$ 782.48	17
Daikin FTXZ50N/RXZ50N	8.4126168	$ 975.86	21

Replacing qualifying fixed gas heater			
Proposed RCAC	**tCO2e**	**At $116/t**	**MWh**
Fujitsu ASTG18KMTC	20.32128	$ 2,357.27	51
Mitsubishi Electric MSZ-GL50VGD	19.3024928	$ 2,239.09	48
Panasonic CS-Z50VKR	20.214342	$ 2,344.86	51
Midea Galaxy Air HAS5003	17.3534764	$ 2,013.00	43
Daikin FTXZ50N/RXZ50N	21.2646168	$ 2,466.70	53

Replacing none, any, not specified			
Proposed RCAC	**tCO2e**	**At $116/t**	**MWh**
Fujitsu ASTG18KMTC	0.76128	$ 88.31	2
Mitsubishi Electric MSZ-GL50VGD	0.3944928	$ 45.76	1
Panasonic CS-Z50VKR	0.654342	$ 75.90	2
Midea Galaxy Air HAS5003	0.4014764	$ 46.57	1

Annex 3: List of amendments needed to EEIS Act

Clause 7

Note: In general, if Minister's determinations increase the EST, this must be made at least 6 months before the compliance period to which it relates commences. In any other case, 3 months is required.

Clause 11 Energy Savings Contribution by Tier 2 retailers

Need to be deleted.

Clause 14 Achieving energy savings obligations

Delete 14 (2) Delete `tier 1' so that the clause applies to all retailers

Delete 14 (2) (a) (i) retailer undertakes eligible activities

Delete 14 (3) so that Tier 2 retailers are included in (2)

Clause 17A Approved abatement providers

Clause (2) Add a sub-clause requiring the administrator to approve or reject an application within 30 days of receiving all necessary documentation.

Clause 17B AAP must lodge compliance plan

Incorporate this in the paperwork required in the AAP application to streamline the process.

Clause 18 Approval of acquired energy savings

Delete this clause and replace with a clause requiring NERL retailers to purchase abatement from AAPs, and provide these approved abatement factors on a quarterly basis, broadly the annual requirement pro rata'd.

Clause 19 Information to be given to administrator

(2) Delete (b) as retailer no longer allowed to undertake activities itself.

Delete (f) as Tier 2 no longer allowed to pay an ESC.

Clause 22 Penalties for non-compliance

Penalty as set out in Determination is $300/tonne Co2e = $120/MWh (@1 MWh deemed to = .4tCO2e).

HARVEST HOT WATER

Harvest Hot Water
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29 January 2021

Mr Shane Rattenbury MLA
Minister for Water, Energy and Emissions Reduction
Legislative Assembly Building
London Circuit, Canberra City

Dear Mr Rattenbury

Energy Efficiency Improvement Scheme (EEIS)

Thank you for our constructive meeting last Thursday 21 January. We felt you shared our enthusiasm for lifting the ambition of the EEIS to embrace the targets for 2030 that we proposed, viz.

- Climate action: disconnecting 90,000 households from fossil gas;
- Energy efficiency: cutting energy use for space heating and hot water by 50%; and
- Reductions in residential energy bills: cutting heating and hot water costs by 50%.

The current Scheme has many shortcomings

Apart from the lost opportunity to achieve ambitious goals, the EEIS as currently constituted is failing on many fronts:

- It has achieved at best a marginal improvement in energy efficiency in the ACT;
- If fails any test of open competition, with just three firms granted access to rebates;
- The uneven playing field means other firms are unable to compete;
- Some firms are on the point of being driven out of the market;
- ACT households are the losers, with few choices of product, prices and installer;
- Perverse outcomes can be seen, as plumbers push customers to stay with gas.

There is no time to lose

A substantial amount of work will need to be done, but the timing is tight. For a re-vitalised Scheme to commence in January 2022, some amendments to the EEIS Act would need to be passed by June of this year (as the Act requires some changes to be passed at least six months before the commencement of the next compliance year).

Our group has prepared a discussion paper on various design issues, and some suggestions for more detailed work that may needed. That paper is attached; we hope the Directorate will find it helpful. We suggest that something like the following timeframe will need to be achieved:

Task	Commencing	Completion
Finalise work plan	1/02/2021	28/02/2021
Short-term consultancies:		
Establish operational details for a certificate scheme (5 days)	1/03/2021	1/04/2021
Establish energy savings values for appliances (5 days)	1/03/2021	1/04/2021
Establish how best to accredit Energy Savings Providers (5 days)	1/03/2021	1/04/2021
Assess audit, quality control, and record-keeping systems (5 days)	1/03/2021	1/04/2021
Consultations with electricity retailers	1/04/2021	15/04/2021
Prepare amendments to EEIS Act	1/05/2021	31/05/2021
Pass amending legislation through Legislative Assembly	1/06/2021	15/06/2021

Quick runs on the board: A start-up trial in 2021

Finally, there are good reasons for undertaking some early actions. If the Directorate could secure $1 million from Tier 2 contributions, it could start purchasing energy savings as a transitional measure. This would enable 1,000 efficient space and water heaters to be installed in coming months, each attracting a rebate of $1000. In this way the Scheme could:

- Make a start on delivering the 90,000 replacements that need to be achieved by 2030;
- Start bringing down prices of efficient heat pump appliances in the ACT;
- Test some of the design options for a re-vitalised Scheme. The Directorate could build experience in purchasing energy savings, and possibly in acquitting energy savings from Tier 2 retailers. This would test the model that would commence for all retailers in January 2022;
- Start putting the Scheme on a competitive footing. This would establish a level playing field, providing much-needed relief to installers who currently suffer from the anti-competitive arrangements that currently exist.

If you are prepared to consider some sort of `quick runs' initiative, we would be pleased to provide a paper setting out how this might work. We hope that you agree that an opportunity exists right now to reform the EEIS and deliver ambitious outcomes for the ACT community.

We look forward to hearing back from you.

Kind regards

Erik Olbrei, Harvest Hot Water
[redacted] President, Master Plumbers Association of the ACT
[redacted] Board Member, Master Plumbers, and [redacted] Plumbing & Irrigation
Matthew Wright, Pure Electric, and formerly of Beyond Zero Emissions
[redacted] Director, Pure Electric Canberra

Attachment E

Analysis of ACTs uptake of efficient water heaters and solar

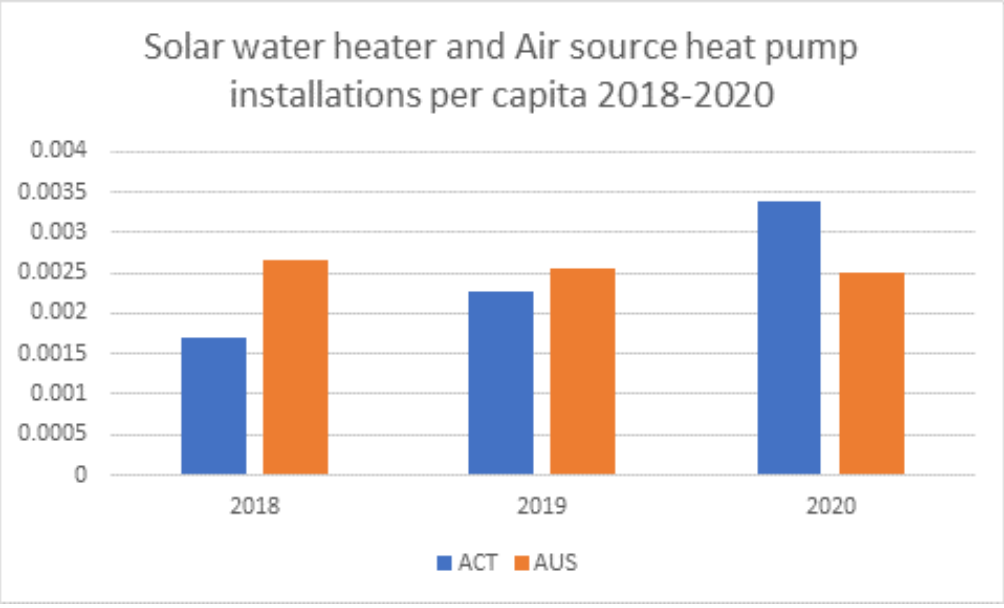
Clean Energy Regulator Small-scale Renewable Energy Scheme for Solar PV, Air Source Heat Pump and Solar Water Heater

Data from the Clean Energy Regulator (CER) Small-scale Renewable Energy Scheme (SRES) was analysed to determine ACT installations compared to the Australian (AUS) national installations for Solar PV, Air Source Heat Pumps (ASHP) and Solar Water Heaters (SWH). The data was obtained from the CER (http://www.cleanenergyregulator.gov.au/RET/Forms-and-resources/Postcode-data-for-small-scale-installations). The data for the year 2020 will be updated by 2022 and installation numbers for 2020 is expected to increase when the 12 month deeming period for claiming Small-scale Technology Certificates (STCs) has concluded.

Population data was obtained from the Australian Bureau of Statistics (ABS) (https://www.abs.gov.au/statistics/people/population). The population data for the year 2020 is current at 30 June 2020 and expected to change for the 31 December 2020 population result.

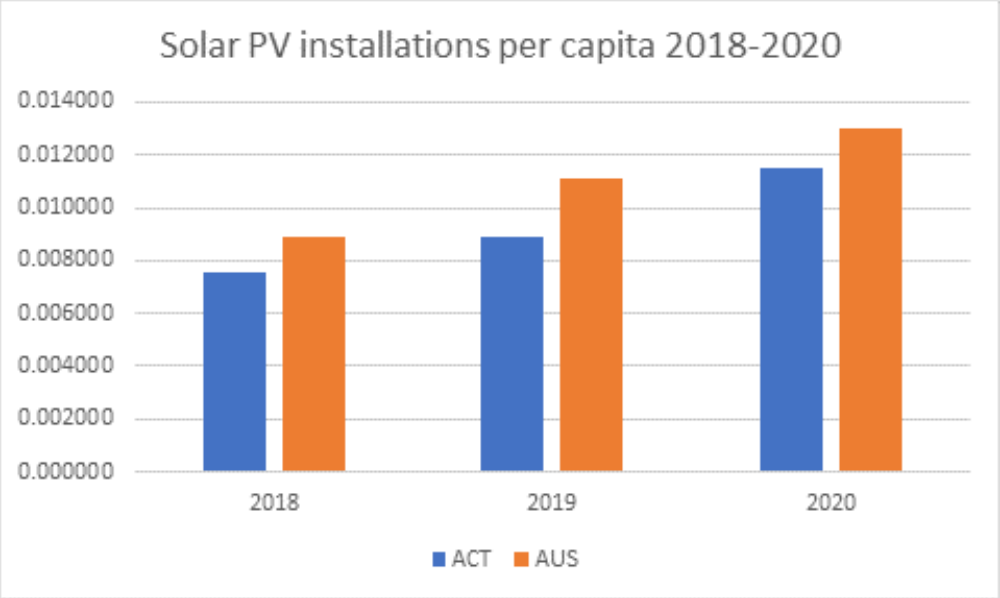
Analysis of ACTs uptake of efficient water heaters and solar compared to the national average

Graph 1: Comparison between ACT and AUS from 2018-2020 per capita installations for ASHP and SWH combined



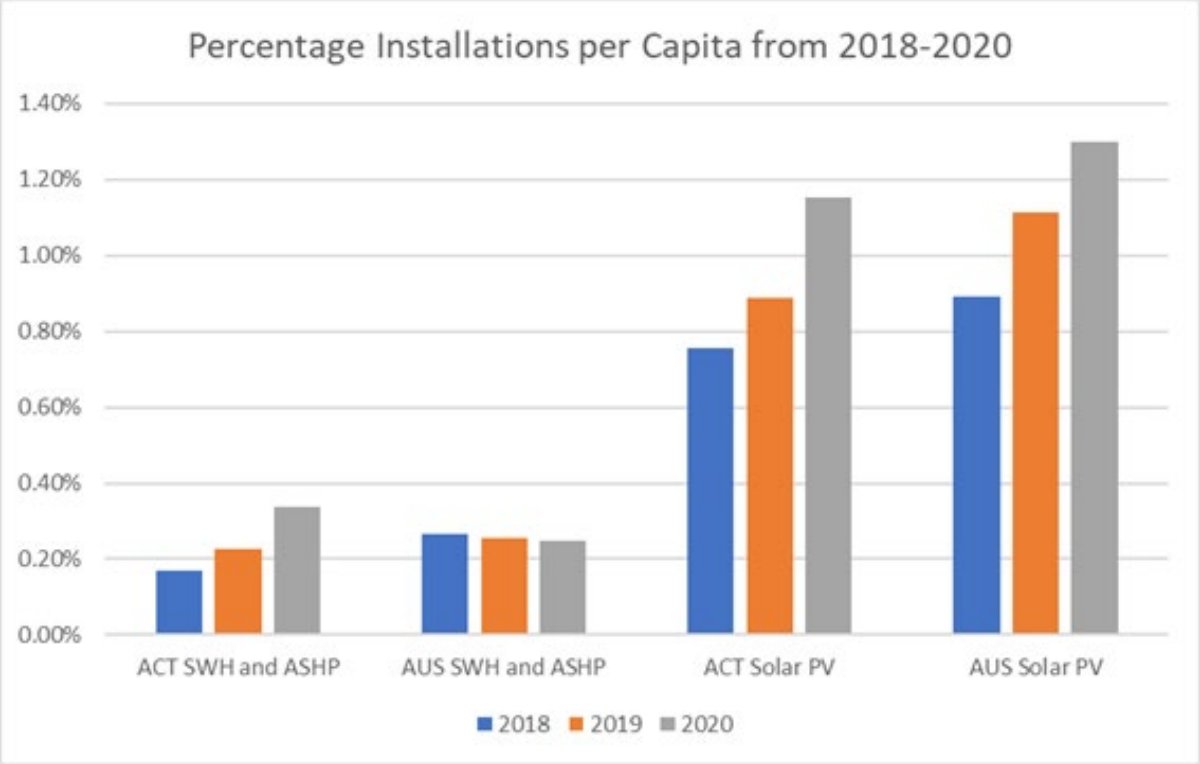
Graph 1 (above) shows there is an approximate 50% increase in the number of installations for SWH and ASHP combined from 2018 to 2020 in the ACT. For 2018 and 2019, ACT installations per capita is below the national average for installations. The analysis shows a steady increase for SWH and ASHP from 2018 through to 2019 for ACT while there is a moderate decline in installations nationally. Given the figures for 2020 installations may increase, it is uncertain if the ratio between the national average and ACT installs per capita will change.

Graph 2: Comparison between the ACT and the national average from 2018-2020 for Solar PV



Graph 2 (above) shows a steady increase in Solar PV installations for both ACT and AUS. It is interesting to note that both ACT and Australia have a steady increase in Solar PV installations. While the ACT per capita installations are lower for each year, 2018-2020, for solar PV than in AUS.

Graph 3: Percentage Installations per capita for Solar PV and ASHP and SWH combined from 2018-2020 for AUS and ACT



Noting that both CER 2020 data and ABS 2020 population data have yet to be concluded, in Graph 5 there is a clear increase in installations per capita for the ACT and moderate decline in installations

in AUS for ASHP combined with SWH. Both ACT and AUS show an increasing trend for Solar PV installations.

Table 1: Percentage of ACT installations for ASHP and SWH combined and Solar PV compared to AUS from 2018-2020

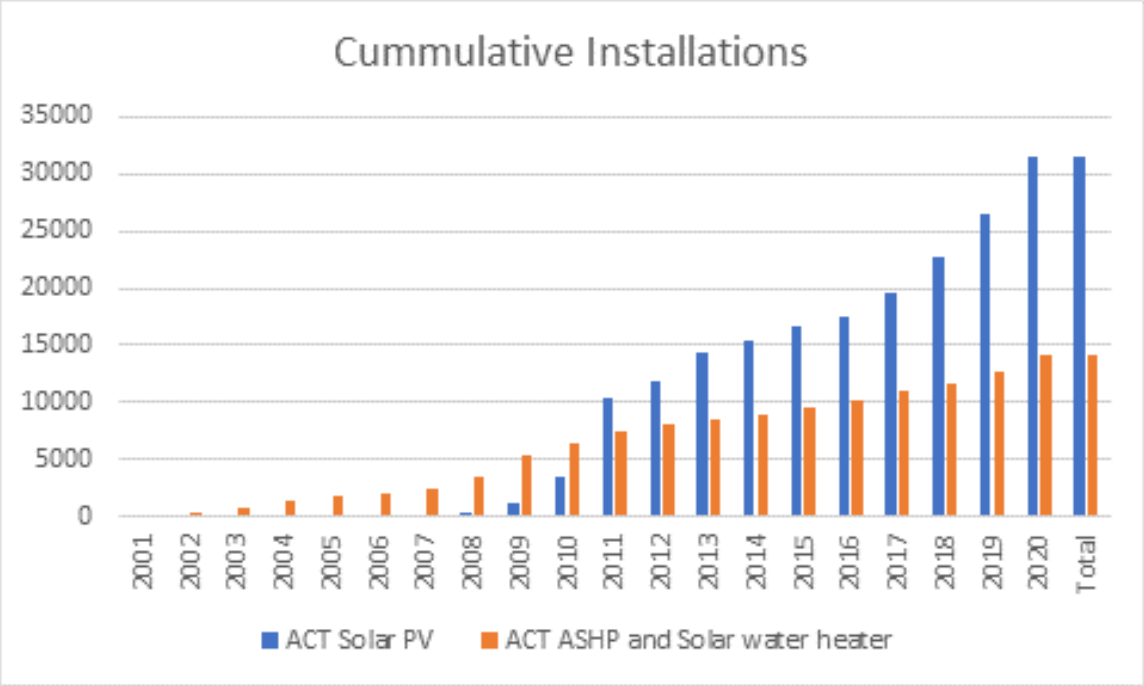
Percentage of ACT installations compared to AUS	ASHP and SWH	Solar PV
2018	64.3%	84.7%
2019	88.7%	79.8%
2020	135.7%	88.5%

Table 1 contains the percentage of ACT installations for ASHP and SWH combined and Solar PV compared to the national average from 2018-2020. There is substantial increase from 2018-2020 for ASHP and SWH installations in ACT compared to the national average from 64.3% in 2018 to 135.7% in 2020. The percentage of ACT installations for Solar PV remains somewhat steady compared to the national average between 79-89%. Given the figures for 2020 installations may increase, it is uncertain if the ratio between the national average and ACT installs per capita will change.

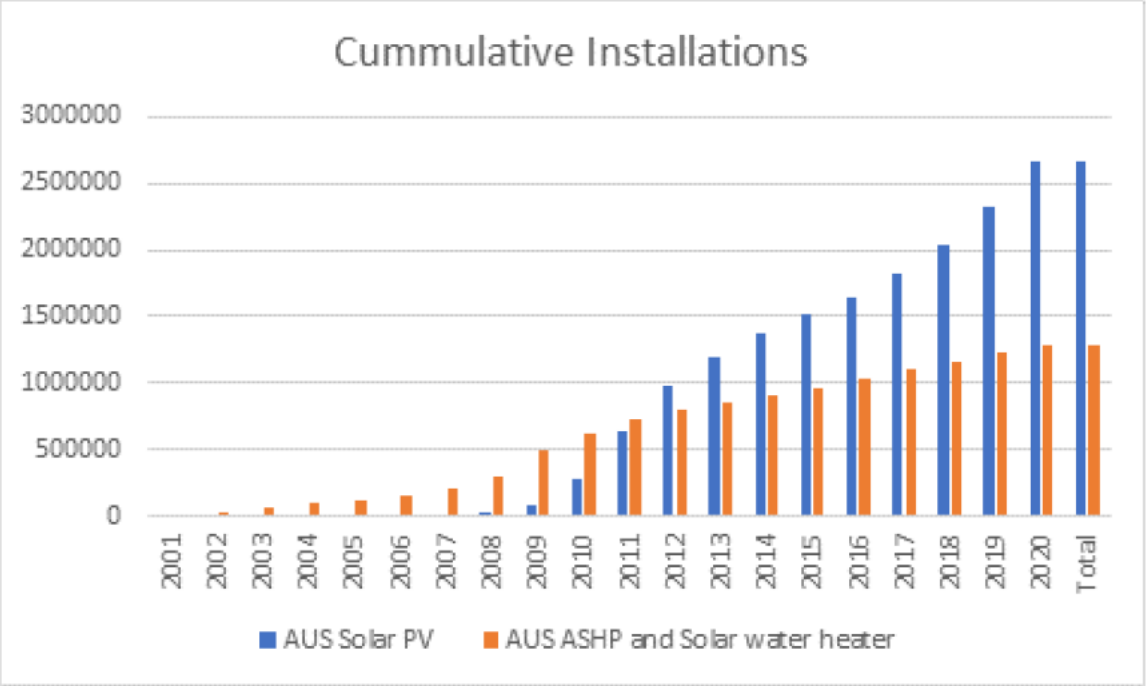
Analysis of ACTs installation numbers for efficient water heaters and solar

The cumulative number of installations for Solar PV and ASHP combined with SWH from the year 2001 to 2020 is shown in Graphs 4 and 5 below for both the ACT and Australia. Both ACT and Australia show an increasing rate of installations for Solar PV with a moderately increasing rate of installations for ASHP and SWH combined. This may be due to lowering cost and increasing technology associated with Solar PV.

Graph 4: Cumulative Installations for Solar PV and ASHP and SWH combined in the ACT



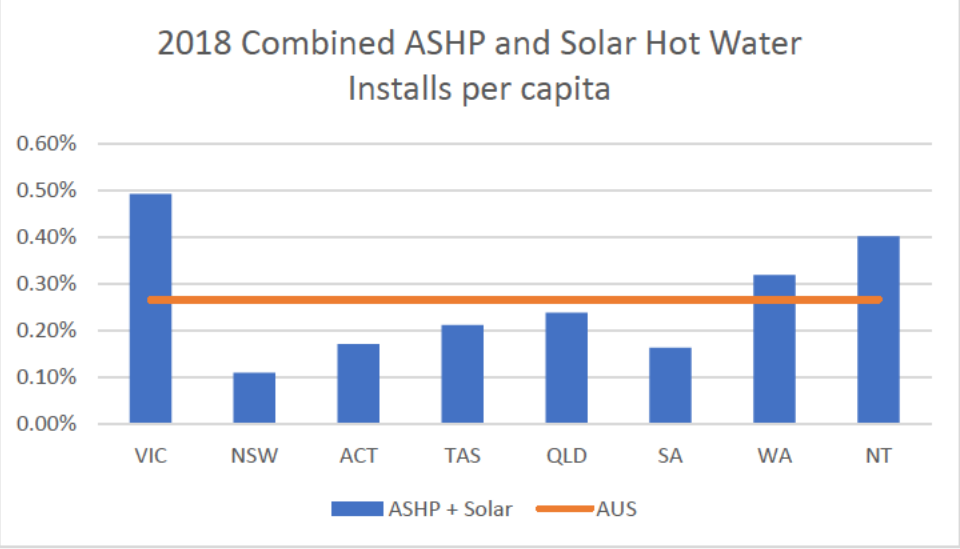
Graph 5: Cumulative Installations for Solar PV and ASHP and SWH combined in AUS from 2001-2020



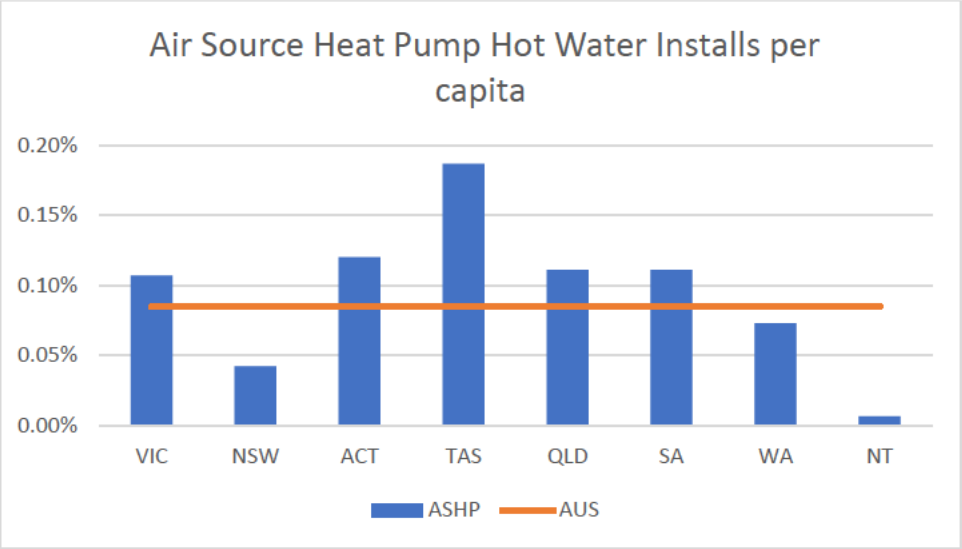
2018 SRES data for hot water systems

The following graphs show ACT's per capita installation rates of efficient hot water systems that receive SRES certificates in comparison to national average per capita installation rates. The graphs show that in 2018, ACT's installation rates for air sourced heat pump hot water systems was 42% higher than the national average, while ACT's installation rates for solar hot water systems was 36% lower than the national average.

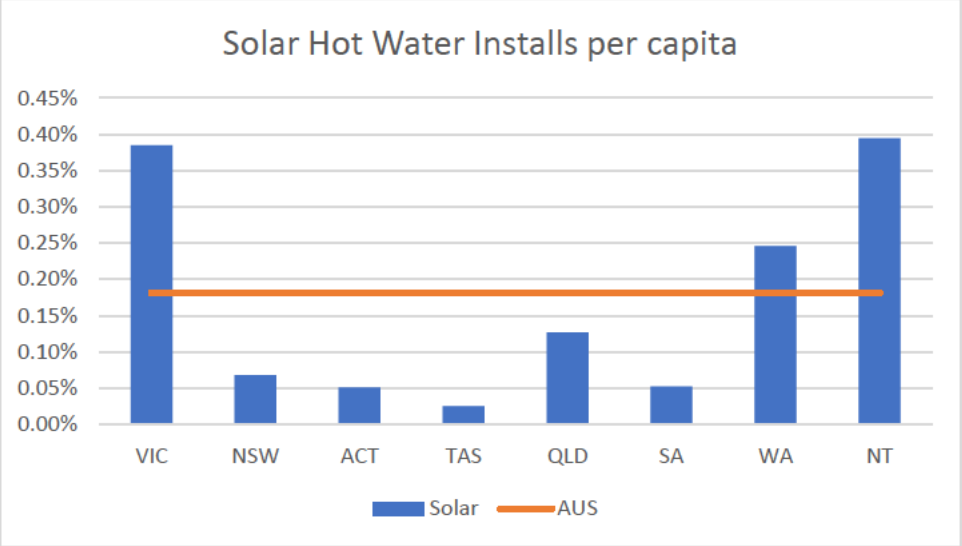
Graph 6: Per capita installation rates for solar hot water systems and air sourced heat pump hot water systems combined in 2018



Graph 7: Per capita installation rates for air sourced heat pump hot water systems in 2018



Graph 8: Per capita installation rates for solar hot water systems in 2018



EEIS hot water activities

Installation of solar hot water systems is an eligible activity under the EEIS, though no retailer has chosen to deliver this option. ActewAGL began installing EEIS ASHPHWS as part of the EEIS in 2018 and continues to offer this activity. The number of ASHPHW installed by ActewAGL for the EEIS was 33 in 2018 and 225 in 2019. While the EEIS allows installation of solar hot water systems with electric boosters, the product requirements do not allow installation of solar hot water systems with gas boosters.

ACT's climate

ACT's cold climate requires gas or electric boost for solar hot water systems at least 6 months of the year. It is also worth noting that solar hot water systems use roof space that could otherwise be used for solar PV systems which provides more benefits for similar installation costs compared to a solar hot water system with a heat pump electric booster.

Attachment F

Response to the advocates proposed redesign of the EEIS

1. The Advocates provided recommendations for redesign of the EEIS in Attachments A, Attachment B, Attachment C and Attachment D. They propose changing the EEIS from a retailer obligation scheme, to a certificate-based scheme that requires all ACT electricity retailers to purchase energy savings certificates from Approved Energy Savings Providers (AESPs) at a fixed price. The advocates recommend removing the distinction between Tier 1 and Tier 2 electricity retailers and removing the option for Tier 2 retailers to pay an Energy Savings Contribution (ESC).

2. EEIS currently requires Tier 1 electricity retailers to deliver eligible activities to meet their Retailer Energy Savings Obligation (RESO) and allows Tier 2 electricity retailers to meet their RESO by either delivering activities or by paying an ESC. Tier 1 and Tier 2 retailers can deliver activities themselves or they can partner with AESPs to deliver activities. Retailers that partner with AESPs are responsible for ensuring that AESPs deliver activities in compliance with the requirements of *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Act).

3. The EEIS ensures that Priority Households benefit from the scheme by requiring Tier 1 retailers to meet a Priority Household Target (PHT) by delivering a percentage of their RESO to Priority Households. The Energy Savings Contribution funds ACT Government energy efficiency programs, including programs that target low income households and renters. The advocates recommended changes would impact the current framework for ensuring Priority Households benefit from the EEIS. It is not clear who would be responsible for ensuring activities are delivered to Priority Households.

4. A strength of retailer obligation schemes is that electricity retailers have a vested interest in maintaining customer satisfaction, which encourages quality products and installations. The certificate-based scheme recommended by the Advocates would shift the compliance responsibilities from electricity retailers to AESPs. Therefore, a certificate-based scheme would require increased ACT Government audit and compliance measures. The increased resourcing required for this would likely increase the cost of the delivery of the Scheme.

5. The Advocates recommend, in Attachment A and Attachment C, that the EEIS change to a certificate-based scheme with a fixed price per MWh energy saved, with savings being passed on in full to the customers. It would be difficult to for ACT Government to define the appropriate market price for delivering activities to enforce the requirement that discounts be passed on in full. The two certificate-based energy efficiency obligation schemes operating in Australia, the NSW Energy Savings Scheme (EES) and the Victorian Energy Upgrades program (VEU), allow market forces to determine the price of certificates and the savings that are passed on to the customers. There is no requirement that certificate price be paid in full to customers.

6. Certificate based schemes are meant to encourage competition between certificate providers, increasing innovation and energy savings at least cost due to market competition between certificate providers. Typically, a certificate-based scheme is most beneficial where there are many obligated parties or efficiency supply businesses. The ACT is a small market, compared to other schemes worldwide or even in Australia. This means that it may not be an attractive market for certificate providers. EPSDD considers it unlikely that ACT would be able to generate the level of competition required to support a cost effective certificate-based scheme.

7. The Advocates state that the record keeping and reporting requirements for the EEIS are too rigorous. EPSDD has developed the codes of practice to ensure that energy efficiency measures are delivered to a quality and safe standard. Eligible activities were developed in consultation with stakeholders, with the aim to ensure quality installations while minimising costs and administrative burden. Customer satisfaction for customers receiving upgrades under the EEIS are maintained at a very high level and the safety record of the EEIS under these record keeping requirements remains unblemished.

8. For the reasons outlined above, EPSDD does not recommend implementing the changes recommended by the Advocates at this time. Even if agreed, the advocates recommend timeframes for their proposed amendments to the *Energy Efficiency (Cost of Living) Improvement Act 2012* to be completed by June 2021, which are not viable. Even if the proposed approach was considered desirable, it would not be possible to undertake appropriate analysis, consultation, administrative, legal and cabinet processes to amend the Act in this timeframe.

9. The Advocates recommend leveraging the Clean Energy Regulator Small-scale Renewable Energy Scheme's record keeping and compliance requirements for solar hot water installers to create Small-scale Technology Certificates (STCs) for installation of eligible solar hot water systems and air sourced heat pump hot water systems. EPSDD periodically reviews eligible activities and provides an opportunity for stakeholder input in this process. The EEIS Administrator has agreed to allow CER Registered Agent status to be used as a pathway to AESP accreditation.

WELLBEING IMPACT ASSESSMENT

Energy Efficiency Improvement Scheme **EPSDD** **Wellbeing Impact 1**

Impact description

The Energy Efficiency Improvement Scheme (EEIS) helps to remove/reduce cost barriers to the uptake of energy efficient appliances and other energy savings activities. This not only leads to savings on energy bills but also improved thermal comfort in homes and businesses, particularly in the face of a changing climate and more extreme weather conditions.

Who is affected?

ACT households and small-to-medium businesses who receive energy savings activities under the scheme.

An independent review of the EEIS in 2018 found that a large proportion of ACT households and businesses had already benefitted through the scheme. However, there is likely to be a large degree of variation in the magnitude of the benefit received i.e., the cost and energy savings for households receiving energy efficient heating and cooling upgrades will be much more significant than those of households receiving lighting upgrades.

Direction and type of impact

Positive - major For households and businesses receiving energy savings activities, the impact can be major

Timeframe

Between one and five years The impact will be realised within 1-5 years and then sustained over a significant period (as savings associated with cost-efficient energy efficiency upgrades can be enough to repay the initial investment within a small amount of time and ongoing bill savings extend over the lifetime of the products)

Evidence base and data

(Tier 1) electricity retailers are required under the legislation to provide reporting on energy savings activities delivered within a given compliance period. Compliance reports show the number of households receiving energy savings activities and their lifetime bill savings can be derived from this information. The legislation requires that compliance reports be independently audited, and data submitted is also reviewed and cross-checked by the EEIS compliance officer.

Periodic consultation is undertaken with key EEIS stakeholders, an extended group of peak bodies, energy savings providers and energy interest groups. The most recent stakeholder consultation was conducted from late 2018 to March 2019 ahead of the extension of the EEIS to 2030. The outcomes of this consultation are provided in the following report: EPSDD (2019). 'Results of Consultation on an Energy Efficiency Improvement Scheme Extension. Incorporating Feedback on proposed new activities' URL: https://www.environment.act.gov.au/__data/assets/pdf_file/0006/1384215/Results-Of-Consultation-On-An-Energy-Efficiency-Improvement-Scheme-Extension.pdf)

Accountability and evaluation

The outcomes from the EEIS up to the end of 2017, and the likely impacts of its continuation to 2030 were thoroughly tested through the 2018 independent review (the Review), initial modelling, consultation and detailed modelling of a potential extension.

Point Advisory (2018). 'Review of the Energy Efficiency Improvement Scheme', URL: https://www.environment.act.gov.au/energy/smarter-use-of-energy/energy-efficiency-improvement-scheme/publications

An annual phone survey is conducted with electricity consumers who have received energy savings activities to evaluate their level of satisfaction with the scheme delivery and their perception of energy savings.

Key stakeholders are periodically consulted via stakeholder forums to gain feedback that is then used to optimize the scheme settings in future years.

Key relationships

Key collaborators are electricity retailers that are obliged under the legislation to deliver energy savings activities to households and small-to-medium businesses. Further collaborators may include hot water installers; RCAC installers; gas fitters; plumbers.

Other key stakeholders are ACT electricity consumers who can receive energy savings activities. A targeted stakeholder group within this broader category is households classified as priority households under the scheme.

The most recent stakeholder consultation was conducted from late 2018 to March 2019 ahead of the extension of the EEIS to 2030. A stakeholder forum held in February 2019 was attended by 75 stakeholders including energy retailers, industry and community peak bodies and government.

Wellbeing domain

Housing and home

Energy Efficiency Improvement Scheme

EPSDD **Wellbeing Impact 2**

Impact description

By setting a Priority Household Target, the EEIS helps to reduce energy poverty by requiring the delivery of energy savings activities to vulnerable households. This leads to savings on energy bills in these households. By providing opportunities for vulnerable households to access energy efficiency upgrades, the EEIS serves as one pathway for achieving a just transition to net zero emissions.

A planned review of the Priority Households definition under the legislation will consider options for expanding this definition to include more financially diverse households, including renters, Family Tax Benefit B recipients and Services Access card holders. There is scope to include Aboriginal and Torres Strait Islander households within the definition, however, any decision to do so would need to be informed by close consultation with the community to consider the extent to which this is appropriate. Other options for increasing the accessibility of the EEIS to Aboriginal and Torres Strait Islander people might include a targeted and culturally appropriate communications strategy, which would also need to be developed in full consultation with relevant stakeholders.

Who is affected?

Priority households (as defined under the legislation) who receive energy savings activities. Since 2013, more than 20,500 priority households have benefitted from the scheme. The number of priority households receiving energy savings in future years will be dependent on both the Priority Household Target (and whether or not this in increased or reduced in future years) and the mix of eligible energy savings activities being delivered by retailers (as some activities will deliver greater energy savings with a flow on effect for the number of households receiving activities).

Direction and type of impact

Positive - major For priority households receiving energy savings activities, the impact is likely to be major

Timeframe

Between one and five years The impact will be realised within 1-5 years and then sustained over a significant period (as savings associated with cost-efficient energy efficiency upgrades can be enough to repay the initial investment within a small amount of time and ongoing bill savings extend over the lifetime of the products)

Evidence base and data

(Tier 1) electricity retailers are required under the legislation to provide reporting on energy savings activities delivered within a given compliance period. Compliance reports show the number of households receiving energy savings activities, including the proportion of activities delivered to priority households. The legislation requires that compliance reports be independently audited, and data submitted is also reviewed and cross-checked by the EEIS compliance officer.

An annual phone survey is conducted with electricity consumers (incl. priority households) who have received energy savings activities to evaluate their level of satisfaction with the scheme delivery and their perception of energy savings.

Periodic stakeholder consultation for the EEIS includes community organisations with a focus on providing support to vulnerable households e.g., ACTCOSS and Care Financial. This provides a channel for receiving feedback on the impact of the scheme on vulnerable households and how the scheme settings might be adjusted to increase opportunities for priority households.

Accountability and evaluation

The outcomes from the EEIS up to the end of 2017, and the likely impacts of its continuation to 2030 were thoroughly tested through the 2018 independent review (the Review), initial modelling, consultation and detailed modelling of a potential extension.

Key stakeholders are periodically consulted on issues around the Priority Household Target and to support the design of complementary measures to assist the EEIS in reaching priority households. The most recent stakeholder consultation (conducted from late 2018 to March 2019) sought feedback, amongst other issues, on how to increase opportunities under the scheme for priority households.

Key relationships

Key collaborators are electricity retailers that are obliged under the legislation to deliver energy savings activities to priority households. Support service providers for vulnerable households also play a role in terms of issuing referrals for energy savings activities and providing feedback to EPSDD regarding relevant aspects of the legislation including the priority households definition and target. Other key stakeholders are priority households as defined under the legislation.

The most recent stakeholder consultation was conducted from late 2018 to March 2019 ahead of the extension of the EEIS to 2030.

Wellbeing domain

Living standards

Energy Efficiency Improvement Scheme — EPSDD — Wellbeing Impact 3

Impact description

By facilitating uptake of energy savings activities, the EEIS makes a direct contribution to reducing the Territory's GHG emissions while also increasing the resilience of ACT households and small-to-medium businesses to a changing climate.

Who is affected?

All Canberrans would benefit from a safer climate.

Those households and businesses receiving energy savings activities are likely to be better adapted and more resilient to a changing climate and more extreme weather conditions.

Direction and type of impact

Positive - major All measures that can lead to emissions reductions and thereby the avoidance of dangerous climate change will have a major (direct and sustained) impact on Canberrans through maintained quality of life.

For those households and businesses receiving energy savings activities, the impact is even more pronounced as they will be better equipped for a changed climate/extreme weather conditions.

Timeframe

Five years plus

Evidence base and data

(Tier 1) electricity retailers are required under the legislation to provide reporting on energy savings activities delivered within a given compliance period. Energy savings achieved can be translated into avoided emissions to gain a clear picture of the impact of the scheme in relation to emissions reductions.

Accountability and evaluation

The emissions saved from mass implementation of small efficiency measures are reported for the lifetime of the replaced product against the upgraded product.

Savings are reported and evaluated within the Directorate's Annual Report.

Key relationships

Key collaborators are electricity retailers that are obliged under the legislation to deliver energy savings activities.

Further collaborators may include hot water installers; RCAC installers; gas fitters; plumbers.

Stakeholders are ACT electricity consumers who can receive energy savings activities. A targeted stakeholder group within this broader category is households classified as priority households under the scheme.

More broadly, all Canberrans are stakeholders in the sense that they would benefit from measures that allow the ACT Government to meet its emissions reductions targets.

Wellbeing domain

Environment and climate

Energy Efficiency Improvement Scheme	EPSDD	Wellbeing Impact 4

Impact description

The EEIS exerts a minor fiscal impact on electricity consumers through average weekly pass-through costs to households of 55c per week (for a two-person household and based on 2019-20 figures).

Who is affected?

Electricity consumers in the ACT who have not received any energy savings activities and, as such, are paying for a scheme from which they receive no benefit.

Direction and type of impact

Negative - minor The negative impact for the majority of electricity consumers is minor. For those households experiencing energy poverty and least able to afford energy efficiency upgrades, the impact is potentially more significant. In both cases, the impacts are sustained for as long as households/businesses do not, or cannot, access energy savings activities under the scheme.

Timeframe

Within one year This negative impact is immediate and ongoing for as long as the EEIS continues to be legislated or until such time as all ACT households and small-to-medium businesses have received energy savings activities resulting in savings on energy bills.

Evidence base and data

A stakeholder consultation conducted from late 2018 to March 2019 ahead of the extension of the EEIS to 2030 also sought feedback on the impact of the scheme on vulnerable households.

Accountability and evaluation

Key stakeholders are periodically formally and informally consulted regarding the potential impact of the EEIS on vulnerable households, particularly those experiencing energy poverty.

Key relationships

Key collaborators are electricity retailers that are obliged under the legislation to deliver energy savings activities to households and small-to-medium businesses.

The most recent stakeholder consultation was conducted from late 2018 to March 2019 ahead of the extension of the EEIS to 2030.

Wellbeing domain

Living standards

Relevant well-being indicators:

Under *Environment and climate*

- **Climate resilient environment and community:** Climate mitigation and adaptation will become increasingly important to track as they contribute to both personal wellbeing, the wellbeing of the economy, and society as a whole. This indicator will measure climate mitigation and adaptation by tracking greenhouse gas emissions, tree canopy coverage, waste, and community preparedness for climate change impacts and extreme weather events.

Under *Housing and home*

- **Housing suitability:** Having a house or place that is suitable to your needs is a key determinant of wellbeing. This indicator will measure the proportion of households that are overcrowded in the ACT and will include a housing suitability index which measures household accessibility and quality.
- **Rental stress:** Having access to affordable, safe and sustainable housing is an important factor that contributes to social and economic participation. Rental affordability is a complex issue determined by the interaction of both rental supply and demand and is affected by levels of employment and income. This indicator will measure rental stress in Canberra by tracking the percentage of low-income households that spend more than 30 per cent of gross income on rental costs.

Under *Living standards*

- **Cost of living:** High cost of living adds pressure to people's living standards, which may in turn impact on their wellbeing. This indicator will measure cost of living in the ACT via the Consumer Price Index, reporting on changes in the price level of a range of consumer goods and services.

Environment, Planning and Sustainable Development Directorate

To:	Minister for Water, Energy and Emissions Reduction	**Tracking No.:** 21/35674
Date:	16 June 2021	
From:	Executive Group Manager, Climate Change and Energy	
Subject:	2022 target setting for Energy Efficiency Improvement Scheme (EEIS)	
Critical Date:	28 June 2021	
Critical Reason:	To allow for the disallowable instruments to be notified by 30 June 2021	

- DDG, Environment, Water and Emissions Reduction 21/06/21

Recommendations

That you:

1. **Agree** to set the following values for the EEIS for the next compliance period from 1 January 2022 to 31 December 2022:
    a. Energy Savings Target: 12.5%
    b. Energy Savings Contribution: $32/MWh
    c. Priority Household Target: 40%
    d. Shortfall Penalty: $83/MWh;

Agreed / Not Agreed / Please Discuss

2. **Sign** the Disallowable Instruments at Attachment A, Attachment B, Attachment C; Attachment D;

Signed / Not Signed / Please Discuss

3. **Note** the Explanatory Statements at Attachment E, Attachment F, Attachment G, Attachment H; & the Regulatory Impact Statements at Attachment I and Attachment J.

Noted / Please Discuss

Shane Rattenbury MLA 29/6/21

Minister's Office Feedback

Background

1. The Energy Efficiency Improvement Scheme (EEIS/the 'Scheme') Energy Savings Target (EST), Energy Savings Contribution (ESC) and Shortfall Penalty are set by Disallowable Instrument. Each of these can be set for several years in advance and reviewed and adjusted as needed. The Priority Household Target (PHT) is set annually by Disallowable Instrument for each compliance period.

2. Prior to 2020, the EEIS determined energy savings in the ACT using an emissions abatement metric. As of 2020, the ACT secured a 100% renewable electricity supply and, in line with this, the EEIS transitioned to an energy savings metric. This change has informed the recommended setting for the 2022 EST.

3. The *Energy Efficiency (Cost of Living) Improvement Act 2012* (the Act) requires a Determination to be made on the EST and PHT at least six months prior to the start of the compliance period if the value increases (by 30 June), or three months prior if there is no increase (by 30 September).

4. Explanations for the function of each setting are provided below:

    a. The EST requires Tier 1 electricity retailers to deliver lifetime energy savings equal to a set percentage of their total electricity sales in the ACT. This is known as the Retailer Energy Savings Obligation (RESO), which has been set at 8.6% since 2016.

    b. Tier 2 electricity retailers must either meet the EST requirement or pay an ESC for a proportion of their sales equal to the EST. The ESC setting aims to achieve parity in EEIS costs between Tier 1 and Tier 2 retailers.

    c. The Shortfall Penalty is a disincentive for non-compliance. EEIS compliance has been extremely high, and the Shortfall Penalty has never been applied.

    d. The PHT aims to increase opportunities for priority households to reduce energy use and cost. For 2020 and 2021, the PHT was set at 30% of the RESO.

5. It is important to review and re-set these settings at appropriate intervals to enable the EEIS to remain efficient, effective and fit-for-purpose, taking into consideration the objects of the Act, which are to:

    a. encourage the efficient use of energy; and

    b. reduce greenhouse gas emissions associated with energy use in the Territory; and

    c. reduce household and business energy use and costs; and

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

Issues

6. The Environment, Planning and Sustainable Development Directorate (EPSDD) has sought independent analysis from Energetics to inform the recommended EEIS settings for 2022.

7. The below values for each of the settings are proposed for the compliance period 1 January 2022 to 31 December 2022:

Policy setting	**Current Value**	**Proposed Value**
Energy Savings Target	8.6%	12.5%
Priority Household Target	30%	40%
Energy Savings Contribution	$46.50/MWh	$32/MWh
Shortfall Penalty	$120/MWh	$83/MWh

8. It is recommended that these targets be set for a single compliance period only, given some uncertainty around the effects of transitioning from an emissions abatement metric to an energy savings metric. Early indications are that the Scheme's level of ambition is reduced under an energy savings metric if key parameters are maintained at their current levels. This is due to differences between numerical abatement values under the previous emissions abatement metric and those under the energy savings metric.

Changes to the Energy Saving Target

9. ActewAGL Retail's (AAR) Compliance Plan for 2021 indicates that, under the energy savings metric, AAR aims to deliver far fewer installations while still meeting the current 8.6% target. The implication of this is that if the current settings were retained, energy savings and emissions reductions delivered through the EEIS would be reduced.

10. Additionally, AAR has a surplus carry-over of 248,702 MWh for the Scheme in 2020, with a forecast surplus of 206,088 MWh for the end of 2021. Energetics' modelling has shown that even with a moderate increase in the EST (i.e. to 9.5%), AAR would be able to draw down its surplus over the remaining years of the Scheme until 2030.

11. The recommendation to increase the EST has been made to maintain the level of activity seen under the emissions metric and to absorb AAR's surplus within a shorter timeframe, thereby preventing a slowing down of activity delivery over future years of the Scheme.

Changes to the Priority Household Target

12. The effect of increasing the PHT from 30% to 40%, combined with proposing an increase to the EST from 8.6% to 12.5%, will mean almost doubling AAR's obligation within the PHT. However, this is only in context of the proportionately lower level of activity delivery under an energy savings metric from 2021. Assuming the proposed 12.5% EST is adopted (thereby helping to maintain the level of activity seen under the emissions metric), the proposed increase to the PHT would represent a moderate increase in the proportion of activities that must be delivered to priority households.

13. AAR has a contract in place with Housing ACT until June 2022 to deliver 1,300 heater and hot water replacement activities to priority households. Based on information from AAR's 2021 Compliance Plan and insights from Housing ACT, it is anticipated that this contract

could contribute approximately 50% towards AAR achieving its PHT in 2022 under the proposed target of 40%. Increasing the PHT will ensure non-Housing ACT priority households receive support through the scheme as well.

Costs to consumers

14. Costs of up to $4/MWh for delivering the Scheme are allowed to be passed directly on to consumers. The energy savings target has been set to align with the maximum allowable pass-through cost and is in line with the cost that has been allowed by the Independent Competition and Regulatory Commission over recent years. For a residential customer using 6,500kWh per annum, the bill impact will be approximately $26 per annum.

15. If the EST was to remain at the current 8.6%, analysis indicates the costs to consumers would reduce to $2.71/MWh or $17.60 per annum. Energetics' analysis further indicates that an EST of 12.5% will help address the reduction in ambition associated with the transition to an energy savings metric, without imposing costs on ACT electricity users beyond the current amount of $4/MWh. This is the recommended position as it most effectively balances the competing objectives.

ActewAGL Retail comments

16. AAR has indicated its opposition to any increase in the EST or PHT. However, based on the considerations outlined above, EPSDD is of the view that the proposed increases in the targets are necessary to ensure that the Scheme continues to deliver on its key objectives in the 2022 compliance year, including supporting priority households across the Territory. Further adjustments to the targets may be necessary once more information comes to light on the impact of transitioning to the energy metric.

Attachments

17. The final report *Analysis for EEIS Policy Settings for 2022*, prepared by consultant Energetics, is provided at Attachment K. An outline of the considerations and rationale underpinning the recommended settings values is provided at Attachment L. This considers findings from the final report.

18. Disallowable Instruments are provided at Attachment A, Attachment B, Attachment C and Attachment D for your signature. The disallowable instruments will be notified by 30 June 2021. Associated Explanatory Statements and Regulatory Impact Statements are provided at Attachments E-J.

Financial Implications

19. There are no financial implications associated with this brief.

Consultation

Internal

20. EPSDD Legal Services has reviewed this briefing package.

Cross Directorate

21. No cross-directorate consultation was required for this brief.

External

22. AAR was provided indicative information that the EST and PHT may increase. In addition to indicating its opposition to the proposed targets, AAR has recommended that:
    a. In future years, any notice for changes to targets occur by April each year, to enable more accurate forecasting of costs to the ICRC (as well as internal decisions).
    b. The ACT Government provide a view of its long-term forecast EST and PHT targets, and also share Scheme performance reporting with AAR.
    c. The analysis of lowest marginal cost abatement activities be updated as part of each annual review and shared with AAR to determine and signal priorities for undertaking energy efficient activities.
23. These recommendations will be taken into consideration for the 2023 target setting process.

Work Health and Safety

24. There are no work health and safety issues associated with this brief.

Benefits/Sensitivities

25. Setting the EST, ESC, Shortfall Penalty and the PHT enables retailers to develop compliance plans to meet their Energy Savings Obligation under the EEIS.
26. Increasing the EST will help to adjust the transition to an energy metric, thereby reinstating an appropriate level of scheme ambition and ensuring that it is fit for purpose.
27. Increasing the PHT is also anticipated to help alleviate energy hardship that may be exacerbated by expected increases in electricity prices.
28. The only Tier 1 retailer, ActewAGL, may make representations to you and to the Environment, Planning and Sustainable Development Directorate as result of increasing of targets relating to activity delivery.

Communications, media and engagement implications

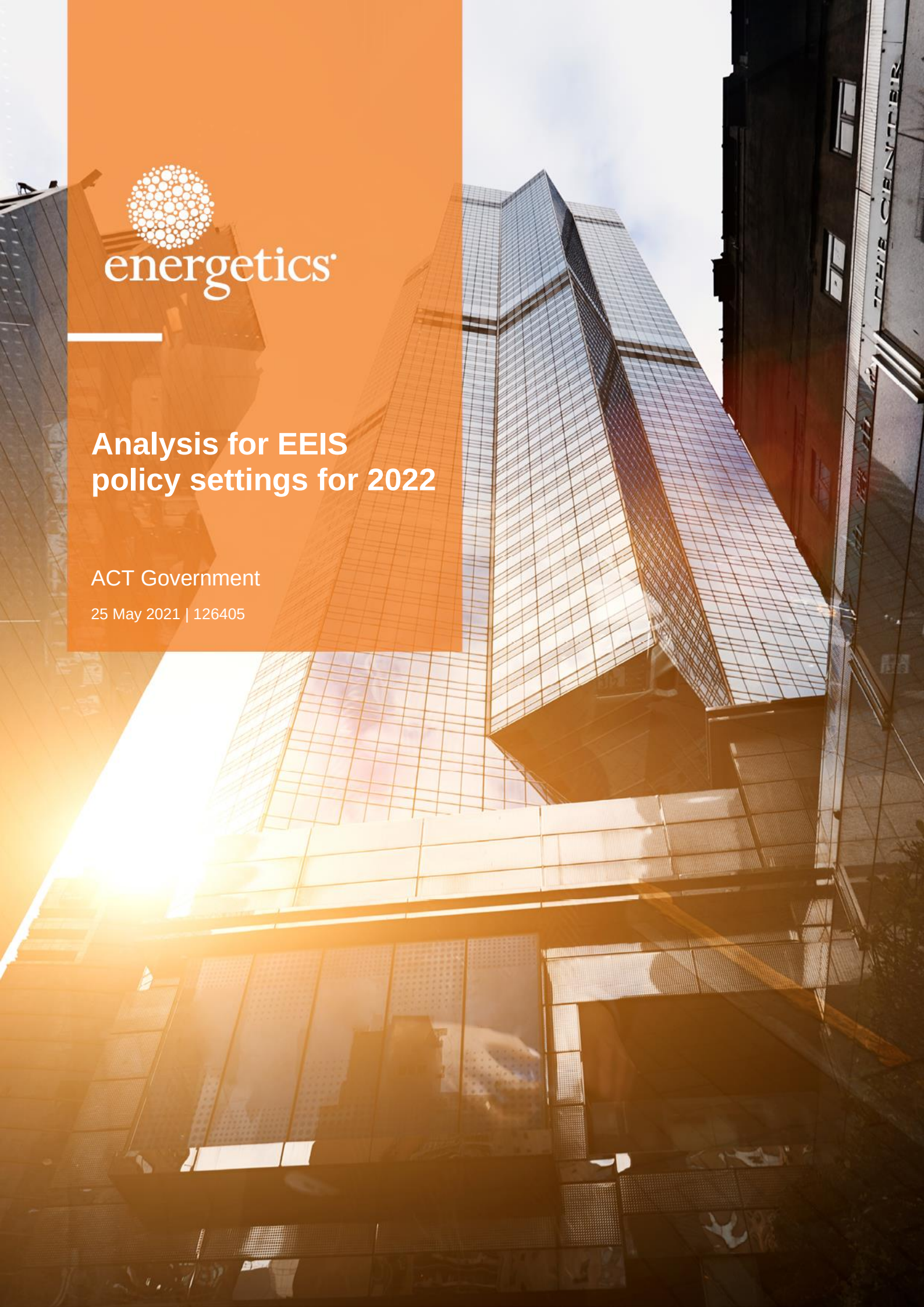
29. No media announcements are recommended for these settings. Electricity retailers and Approved Energy Saving Providers will be advised through direct email. Links to relevant legislation on the EEIS website will be updated immediately after notification.

Signatory Name:	Cath Collins	Phone:	6205 9568
Action Officer:	Emma Ereaut	Phone:	6207 7901

Attachments

Attachment	Title
Attachment A	Energy Savings Target – Disallowable Instrument
Attachment B	Energy Savings Contribution – Disallowable Instrument
Attachment C	Penalties for non-compliance (Shortfall Penalty) – Disallowable Instrument
Attachment D	Priority Household Target – Disallowable Instrument
Attachment E	Energy Savings Target – Explanatory Statement
Attachment F	Energy Savings Contribution – Explanatory Statement
Attachment G	Penalties for non-compliance (Shortfall Penalty) – Explanatory Statement
Attachment H	Priority Household Target – Explanatory Statement

Attachment I	Energy Savings Target, Energy Savings Contribution and Shortfall Penalty – combined Regulatory Impact Statement
Attachment J	Priority Household Target – Regulatory Impact Statement
Attachment K	Analysis for EEIS Policy Settings for 2022 – Final Report
Attachment L	Context and rationale for EEIS 2022 targets



energetics

Analysis for EEIS policy settings for 2022

ACT Government

25 May 2021 | 126405

Executive summary

The 2019 Review into the Energy Efficiency Improvement Scheme recommended that the ACT Government continue the scheme at the existing level of ambition (energy savings equivalent to 8.6% of electricity sales) and with a pass-through cost of $4/MWh. The Review also recommended that the Tier 2 contribution and pass-through costs should be updated annually, based on the actual implementation costs borne by the Tier 1 retailers in the previous year.

This report examines the performance of the scheme in 2021 to inform the scheme settings for 2022. The key findings suggest that the level of ambition of the scheme could be increased in several ways:

- The analysis of the (limited) information about the operation of the scheme in 2021 suggests that the current pass-through cost of $4/MWh may be too high for the current level of ambition
- The evolving nature of the measures in the scheme may mean that the assumed cost escalation to deliver measures in priority households compared to other premises may be too high and a reduction from 50% to 25% is warranted. Reducing the assumed escalation will place downward pressure on the modelled pass-through cost
- The Tier 1 retailer has exceeded its obligation to deliver savings in 2021 and has a large pool of carry-over savings. This was achieved without having to draw on the home insulation measure which was thought to be the lowest cost source of energy savings when the scheme extension was modelled in 2018. The measure could be available for delivering savings in 2023
- The impact of changes to the scheme metric and measures means that while the savings target is being achieved, emissions abatement is less.

Informed by these observations, several options for 2022 were modelled. The table presents the key outcomes for these options for 2022.

Objective	Savings target	Pass-through $/MWh	Average annual abatement kt CO_2e	NPV $millions	Drop in natural gas emissions in 2030
Increase the scheme target from 8.6% to 9.5%	9.5%	$2.71	32.4	$17.9	9%
Adjust the target so the forecast pass-through cost is $4/MWh	12.5%	$4.00	48.4	$15.6	15%
Same average annual abatement in 2021 to 2030 as observed in 2013 to 2020	18.1%	$7.62	76.7	-$6.6	24%
Fully deploy all modelled measures	47.4%	$37.21	197	-$172.3	62%

Informed by the modelling and the conclusions above, we make the following recommendations for the EEIS in 2022.

Recommendation	Rationale
Increase the priority household target to 40%	The evidence suggests that implementing measures in priority households is not the burden expected and so the impact on the cost of the scheme is less. Further, assistance to priority households is consistent with ACT Government policy.
Increase the level of ambition (ie. the savings target) to 12.5%	The level of ambition can be increased given the funding available via the existing pass-through cost.
Keep the pass-through cost at the current $4/MWh	The modelling suggests that the target of 12.5% can be achieved without requiring an increase in the pass-through cost. Funds from the pass-through cost are being used to reduce the ACT's emissions, address energy poverty in priority households and deliver a net economic benefit to the ACT.

The energy savings contribution will need to be adjusted to $32.00/MWh, consistent with the change in the savings target.

Table of contents

1. Background

The Energy Efficiency Improvement Scheme (EEIS) is a retailer obligation energy efficiency scheme underpinned by the Energy Efficiency (Cost of Living) Improvement Act 2012. The scheme aims to encourage the efficient use of energy, reduce greenhouse gas emissions associated with energy use, lower household and business energy use and costs, and increase the opportunities for priority households to reduce energy use and costs. Tier 1 retailers (currently only ActewAGL) are required to implement energy saving improvements in residential and business premises in the ACT. Smaller (Tier 2) retailers have the option of implementing measures in residential and business premises, or can pay an energy savings contribution (ESC) to the ACT Government equivalent to the cost of measures they would otherwise need to implement.

The cost of measures or contributions of the Tier 1 and Tier 2 retailers is recovered through a pass-through cost imposed on all electricity users in the ACT.

The Act allows the scheme to run until 31 December 2030. An independent review of EEIS completed in 2018 confirmed that EEIS has been successful in delivering on its objectives. The Review recommended that EEIS be continued beyond 2020 and modelling in 2018 has confirmed that there were economic benefits to be realised from the EEIS until the end of 2030.

The review of the EEIS completed in 2018 recommended that the ACT Government explore changes to several design elements of the scheme. The following table summarises the findings and recommendations.

Table 1: Recommendations regarding EEIS design from the 2018 Review

Design element	Analysis and findings	Recommendations
Overall scheme metric	GHG emissions and energy (including giving electricity less weighting) were tested. The results showed that an unweighted metric balances energy savings and emissions reductions.	Use an unweighted energy metric.
Eligible retailers	Extending the obligation to gas retailers and lowering the Tier 1 threshold was examined. The Review found that expanding the scheme obligation will lead to additional implementation of measures and a better spread of the burden associated with the funding of the measures. It will however require gas retailers to reduce their sales and this could cause problems in the market. Similarly, lowering the Tier 1 threshold could lead to inefficiencies as smaller retailers are required to implement measures.	Do not expand the scheme to include gas retailers. Do not lower the Tier 1 threshold.

Additional targets	Several sub-targets including rental properties, not for profits, SMEs were tested, however these were found to be both less effective and would increase the cost of the scheme.	Retain the priority household target, consistent with ACT Government social objectives.
Eligible beneficiaries	Extending the scheme to NGER facilities was assessed, as was constraining households to just one measure and partitioning the market. However, extending the scheme in this way was not found to be beneficial.	Do not extend to NGER facilities.
Multipliers on priority measures	Conflicts with other design elements such as the choice of the metric, any weighting applied to different energy types within the energy metric, and the adoption of the priority household target.	Not recommended.

The 2018 Review also identified five potential primary objectives for the scheme and recommended that these objectives be assessed. A description of the five objectives follows.

Table 2: Possible options for the EEIS objective

Objective	Description
Business as usual	A continuation of the scheme as it is.
Targeted bill savings	Tailoring the scheme to deliver benefits to targeted sectors of the economy.
Lowest cost of energy efficiency improvements	Delivering the lowest cost improvements in energy performance.
Highest greenhouse gas emission reductions	Maximising the greenhouse gas emissions reduction opportunity.
Balancing multiple objectives: emission reductions, energy and bill savings, support for priority households	This objective tries to address several objectives such as targeting specific sectors, delivering energy performance improvements and driving emissions abatement.

The Review found that the 'balanced' objective yields the best outcomes in terms of economic value of the scheme to the ACT and the volume of savings delivered to households. The 'balanced' objective also captures the recommendations for the design elements in the previous table. The outcomes of the 'targeted' goal were similar with a slightly higher economic benefit to the economy but a higher pass-through cost.

Some of the energy saving measures that were part of the EEIS were found to no longer add value to the ACT and were therefore removed from the scheme model. Lighting measures were removed as low energy lighting is now business as usual. Incentives for gas installation or

upgrades were taken out as this reflected the emissions reduction benefit of electrification. New measures that improved the performance of space conditioning were added. Examples are insulation of building shells, upgrading ductwork and further gas-to-electric measures.

The energy savings associated with different measures were also updated. This was done to reflect the values used in the calculations of the energy savings factors in the EEIS regulations, as well as more recent experiences of implementation and associated costs. This is an on-going activity and will be part of the current project.

The analysis of the scheme with these new measures carried out in 2018 showed that there are substantial untapped opportunities for energy savings, and that continuation of the EEIS at the appropriate level offers a net economic benefit to the ACT. Table 3 suggests that the energy savings contribution and pass-through cost could be reduced in a post-2020 scheme. However, it must be noted that the removal of low cost and well understood lighting measures introduced further uncertainty into the modelling which may in turn created risks when setting the Tier 2 contribution and the pass-through costs.

Table 3: Modelled and recommended settings for 2021

	Recommended settings	What the 2019 modelling found
Target	8.6%	8.6%
ESC	$46.50/MWh	$39.07/MWh
Pass-through charge	$4.00/MWh	$3.36/MWh
Priority household target	30%	30%

The 2018 Review therefore recommended that the ACT Government continue the scheme at the existing level of ambition (energy savings equivalent to 8.6% of electricity sales). The Tier 2 contribution and pass-through costs should be updated annually, based on the actual implementation costs borne by the Tier 1 retailers in the previous year.

The aim of this current study is to inform the establishment of the settings for the EEIS in 2022. These settings are the Energy Savings Target (EST), Energy savings Contribution (ESC), Priority Household Target (PHT) and the Shortfall Penalty.

2. Updates to the EEIS model

2.1. Updates to activities

The chart below shows the relative take up of measures in the modelling of the scheme extension. The scale is the volume of abatement delivered.

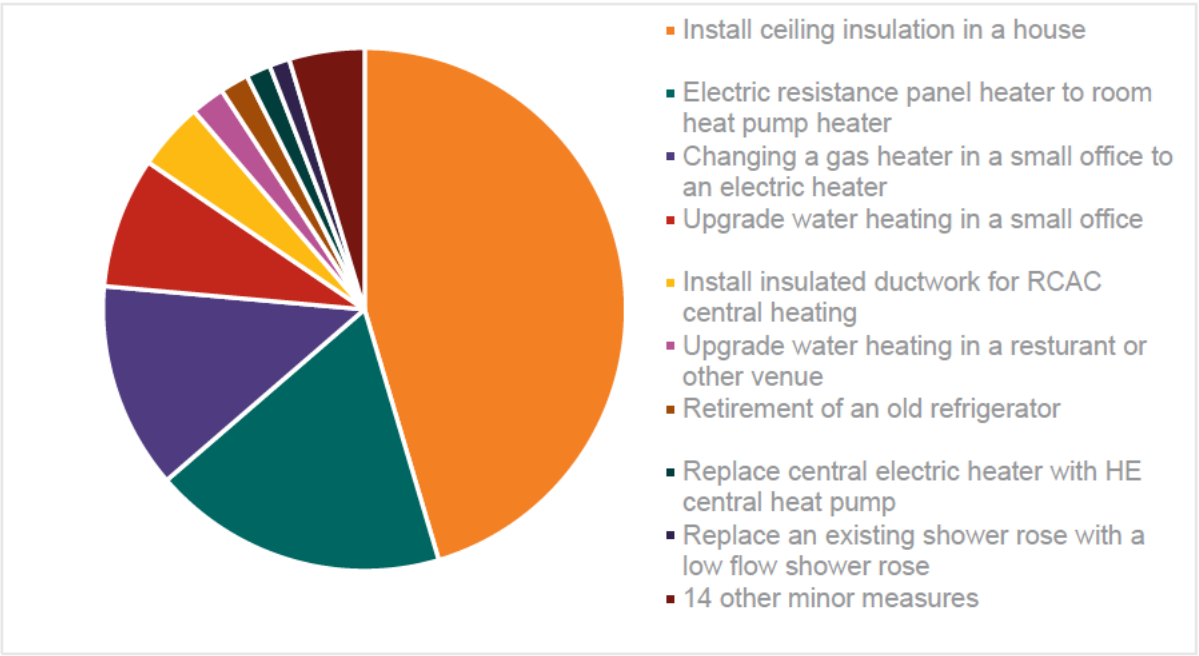


Figure 1: Forecast uptake of measures in the modelling of the scheme extension[1]

Figure 1 shows how the forecast abatement was dominated by home insulation measures. Several measures associated with upgrades to space heating were also important. Some abatement was also delivered by improvements to hot water heating efficiency. The EEIS Eligible Activities Determination[2] requires that activities be implemented by certified installers. In 2021, certification of installers of insulation was not generally available and so the installation of ceiling insulation was not taken up. Removing the ceiling insulation activity from Figure 1 leads to the distribution of activities shown in Table 4. The table also shows the actual distribution of measures reported in ActewAGL's 2021 and 2020 Compliance Plan and the reports to ACT Housing on measures deployed by ActewAGL in priority households.[3]

[1] Source: Energetics analysis
[2] https://www.legislation.act.gov.au/di/2020-32/
[3] The commercial-in-confidence ActewAGL 2021 and 2020 Compliance Plan and the reports to ACT Housing on measures deployed by ActewAGL in priority households were made available to the study team. We aggregated similar measures and used average values for energy savings per measure to derive to total savings due to the aggregated measures.

Table 4: Forecast and actual distribution of implemented EEIS measures

Measure	Modelling of the post-2020 scheme (excluding insulation)	ActewAGL's 2021 and 2020 Compliance Plan	Measures implemented in ACT Housing's properties
Upgrades to room heating	62%	74%	83%
Upgrades to water heaters	20%	8%	14%
Retirement of an old refrigerator	4%	3%	0%
Upgrades to central heating	3%	3%	3%
Other measures	12%	13%	0%

There is broad alignment between the measures that were predicted to be implemented and the measures that have been implemented. We therefore have some confidence that the savings energy and implementation costs of the activities in the model are robust.

The data in the reports to ACT Housing also provide some guidance regarding the cost to deploy popular measures. The reports to ACT Housing contain the monthly invoice amounts which show the amount that ActewAGL invoices ACT Housing to deploy the measures. This can be considered as the co-contribution by the homeowners. There is sufficient variation in the monthly deployment figures and monthly invoices to estimate the cost for the five measures via a regression analysis.[4]

Table 5: Implied cost of deployed measures

	Indicative co-contribution	Statistically valid	ActewAGL promotion	Implied cost of measure
RAC-gas to electric	$1000	Yes	$1000	$2000
RAC-electric to electric	$2700	Yes	$1000	$3700
Ducted gas	$18600	Marginal	$1500	$20100
Ducted RCAC	$1100	No		
Hot water heater	$3400	Yes	$750	$4150

While these costs were broadly consistent with the values used in the modelling, the costs of the activities in the model have been updated to reflect these values.

Home insulation

The modelling for the 2021-2030 extension of the scheme forecast that home insulation activities will be the most common abatement activity supported by the scheme. We understand that delays in rolling out the necessary training and accreditation for installers of home insulation have

[4] Due to the confidential nature of the data, the values used in the regression analysis have not been included in this report.

prevented the Tier 1 retailer from deploying this measure. The EEIS model has been revised to delay the take-up of home insulation activities until the 2023 period.

2.2. Projected electricity consumption

This was updated in line with information provided in the workbook "Projecting EEIS emission savings 2018-2020 VA" (Row 149 of the ACT Energy use sheet). The values are below.

Table 6: Forecast electricity consumption for the ACT

Financial Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Electricity use (GWh)	3133	3161	3189	3217	3245	3274	3303	3332	3361	3391

2.3. Energy prices

Some minor changes to energy prices were made as outlined below:

- The wholesale price for electricity in the ACT was made equal to the weighted average of the FiT contracts. The table below lists the data. We added $14.30/MWh to capture transmission costs outside of the ACT. This is the average revenue per MWh for TransGrid

Table 7: ACT Renewable Energy Sources[5]

Facility	Generation	FiT Price ($/MWh)
309 MW Hornsdale Wind Farm	1,232,566	$80.70
80.5 MW Ararat Wind Farm	271,700	$87.00
19.4 MW Coonooer Bridge Wind Farm	81,856	$81.50
100 MW Sapphire Wind Farm	349,703	$89.10
91 MW Crookwell 2 Wind Farm	304,099	$86.60
13 MW Mugga Lane Solar Farm	22,360	$178.00
7 MW Williamsdale Solar Farm	14,855	$186.00
20 MW Royalla Solar Farm	37,609	$186.00
Weighted average		**$86.84**

- We adjusted the residential electricity price based on ActewAGL 'Home' rate and the business electricity price based on the 'Business' rate
- The gas prices for end users (residential and business) were updated to reflect current ActewAGL default offerings.

[5] https://www.environment.act.gov.au/__data/assets/pdf_file/0007/987991/100-Renewal-Energy-Tri-fold-ACCESS.pdf

3. Modelling the EEIS from 2022 to 2030

In addition to the parameters discussed above, certain additional key variables are used in the model and to produce the reported results. These are listed in the following table.

Parameter	Value	Source
Market share of the Tier 1 retailers	80%	Figure provided in the RFQ
Average annual electricity sales (MWh)	3,261,000	Row 149 of the ACT Energy use sheet of the "Projecting EEIS emission savings 2018-2020 VA" workbook (the Workbook[6])
Lifetime energy savings from the current scheme (2013 – 2020)	2,437 GWh	Sum of cells E56 to L56 of sheet "1. Savings summary" of the Workbook, converted from GJ to GWh
Lifetime GHG reductions from the current scheme (2013 – 2020)	613,754 tonnes	Sum of cells E111 to L111 of sheet "1. Savings summary" of the Workbook
Lifetime bill savings from the current scheme (2013 – 2020)	$428,298,112	Sum of cells E166 to L166 of sheet "1. Savings summary" of the Workbook
Cumulative emissions savings achieved in 2025 from the current scheme	474,331 tonnes	Sum of cells E592 to Q592 of sheet "2b. Savings 13 to 17" plus the sum of cells L121 to L143 of sheet "3c. Cumulative savings" of the workbook)
Cumulative emissions savings achieved in 2030 from the current scheme	604, 524 tonnes	Sum of cells E592 to V592 of sheet "2b. Savings 13 to 17" plus the sum of cells Q121 to Q143 of sheet "3c. Cumulative savings" of the workbook)

While the period under consideration begins in 2022, the modelled period still commences in 2021 to correctly account for measures taken up in 2021.

The base case of the modelling of the EEIS from 2022 to 2030 (the post-2021 modelling) uses the same target (8.6%) and priority household target (30%) as the existing scheme but with the revisions discussed in the previous section. The EEIS model estimated the pass-through cost to be $2.55/MWh and the ESC to be $29.72/MWh. That is, the current pass-through cost of $4/MWh has been confirmed as being too high. This was flagged during the modelling of the extension to 2030 but uncertainty around the changes to the scheme warranted some caution. We note that the ActewAGL 2021 and 2020 Compliance Plan indicates that ActewAGL could meet its 2021 target

[6] The Workbook was supplied to Energetics in an email from Cat Cullen on 23/04/2021 at 1:15 PM.

solely with savings carried over from 2020. Detailed results of this model run (Run 1) and all other model runs are in Appendix A.

3.1. Impact of the priority household target

Increasing the level of ambition to 12.3% while holding the priority household target at 30% results in a forecast pass-through cost of $4/MWh (Run 2). However, this outcome is less advantageous to the economy than the ACT – the NPV falls from the base case value of $19.1 million to $15.0 million. Some more combinations of the savings target and the PHT that yield a pass-through cost of $4/MWh are in Table 8. The impact in the model of different priority household targets is to increase the cost of the scheme because, associated with the PHT is an associated increase in cost to deploy measures in priority households i.e., the model assumes that it costs more to deploy measures in priority households than other premises. The earlier modelling to confirm the extension of the scheme used an increase of 50%. This value may be an overestimate of the cost. The table also shows how reducing the cost escalation to 25% allows the scheme's level of ambition to the increased while holding the pass-through cost to $4/MWh.

Table 8: Savings target and priority household target for a $4/MWh pass-through cost (Runs 2 to 7)

	Increase in cost to deploy measures in priority households	
	50%	25%
Priority household target	**Energy savings target**	
30%	12.3%	12.7%
40%	12.2%	12.5%
50%	11.9%	12.4%

There is some justification in reducing the cost escalation to 25% in the model. The original justification was that it would be more difficult to engage with the priority households, especially if the deployment model relied on implementing low cost-low impact measures such as lighting upgrades. However, if the Tier 1 retailers are working through ACT Housing or relevant NGOs to deploy high cost but higher impact measures, then the challenge of signing up households is reduced.

The remainder of the modelling will use a 25% cost escalation for the priority households. Noting the aspiration of the ACT Government to provide more support to priority households, the remainder of the modelling will use a PHT of 40%.

3.2. Impact of the level of ambition

Figure 2 shows the impact of the energy savings target on the pass-through cost and the economic benefit to the ACT. The value to the ACT economy is calculated as the present value of the annual difference between the amount that the ACT economy saves by not needing to buy as much energy less the net cost of the measures. The net cost is the amount of money that leaves the ACT due to a measure being implemented.

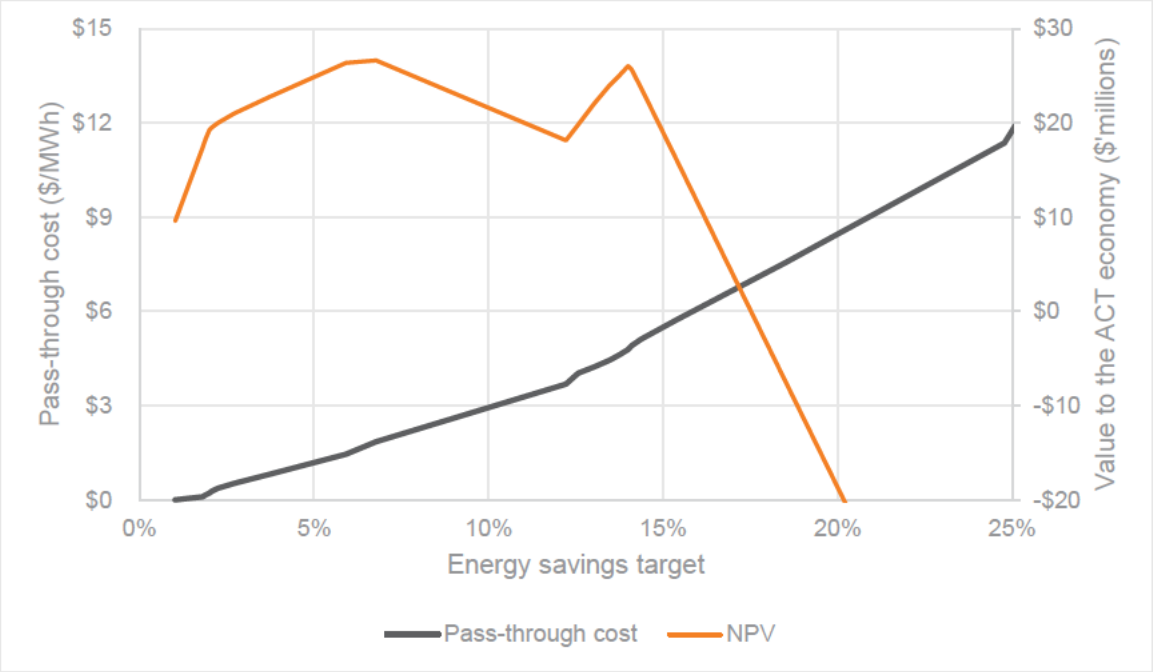


Figure 2: Impact of the energy savings target on the pass-through cost and value of the EEIS (Runs 8 to 13)

Several features of the scheme are seen in the figure. First, as the level of ambition increases beyond about 18%, the scheme begins to impose a burden on the economy. This is because the incentive value gets sufficiently high to drive the uptake of measures that are not cost effective. High incentive levels are needed to achieve the high targets. Savings targets beyond 15% are not recommended.

Secondly, the value of the scheme to the ACT economy reflects a balance between incentivising measures that deliver an economic benefit and ensuring that measures that do not deliver a benefit are not incentivised. Replacing a room gas heater with a room heat pump heater (reverse-cycle air conditioner) is not cost effective from the perspective of the ACT economy. However, once the incentive is high enough to achieve energy savings beyond 7%, participants in the scheme see the measure as being cost effective for them. Therefore, participants take up the measure to the detriment of the ACT economy.

3.3. Some specific scenarios

The next table lists some specific scenarios or options for 2022 that could be considered by the ACT Government.

Option	Description
Modest increase in ambition	ActewAGL have indicated that they have a significant excess of savings, approximately equal to the volume needed to meet the current annual target. A modest increase in the savings target of the scheme from 8.6%

	to 9.5% will rundown that surplus over the remining life of the scheme assuming no change in annual activity.
True $4/MWh pass-through cost	The modelling of the scheme both in 2019 and now suggests that the actual cost of the scheme is around $3 per MWh of electricity consumed in the ACT. This outcome has been supported by evidence provided by ActewAGL to the scheme regulator. However, the current pass-through cost is $4/MWh, and this is used to set the Energy Savings Contribution. This option sees the level of ambition increased so that the pass-through cost estimated by the model is $4/MWh. This option offers additional emissions abatement and energy savings without imposing additional costs on ACT electricity users.
Constant average annual emissions reduction	The annual level of emissions abatement achieved by the EEIS has been falling and is now around 50% of the average level achieved in the period from 2013 to 2020. This reflects the falling emissions intensity of the ACT's electricity and changes to the measures supported by the scheme. However, it is a concern given that the EEIS is part of the ACT's suite of programs to drive its progression to zero emissions. This option aims to deliver average annual abatement over the period from 2021 to 2030 of 76,700 tonnes CO_2e which is equivalent to the average annual abatement delivered by the scheme in the period from 2031 to 2020.[7]
Maximum emissions reduction	This option determines the abatement that is possible if all measures are deployed to their maximum limit, and it represents the maximum abatement that the scheme can deliver with the current set of measures.

A summary of the modelled outcomes is in Table 9. More details are in the appendix.

Table 9: Key outcomes of the modelled options

Objective	Savings target	Pass-through $/MWh	Average annual abatement kt CO_2e	NPV $millions	Drop in natural gas emissions in 2030
Slight increase in ambition	9.5%	$2.71	32.4	$17.9	9%
Real $4/MWh pass-through	12.5%	$4.00	48.4	$15.6	15%
Same average annual abatement	18.1%	$7.62	76.7	-$6.6	24%
Maximum emissions reduction	47.4%	$37.21	197	-$172.3	62%

[7] The estimate of the average annual abatement for the scheme to 2020 was taken from "Projecting EEIS emission savings 2018-2020 VA". This workbook was prepared by Point Advisory when they did the review of the scheme to 2018. As well as reporting the lifetime savings for measures implemented in 2013 to 2018, it included estimates for lifetime savings for measures implemented in 2019 and 2020.

Note that the annual abatement and the drop in natural gas emissions shown in the table have been adjusted to account for the fraction of electricity sales attributed to the Tier 1 retailer (ActewAGL). The modelling of the scheme assumes that no Tier 2 retailer implements savings measures but that they elect to pay the Energy Savings Contribution. Therefore, no abatement is delivered by the Tier 2 retailers. The NPV has also been adjusted to reflect this.

The option of increasing the level of ambition so that the expected pass-through cost is $4/MWh appears to offer a significant increase in abatement with only a minor impact of the value of the scheme to the ACT economy. Further, it aligns the level of ambition with the actual current cost and so should have minimal impact of electricity bills.

Increasing the level of ambition so that the same average annual abatement is achieved to the end of the decade as was achieved for the scheme to 2020 results in a 90% increase in the pass-through cost thus impacting residents. It also sees the economic value of the scheme (i.e., the NPV) to the ACT economy falls below zero.

The modelling of a scheme that targeted maximum possible abatement was interesting. It indicated two issues:

- It will be very costly to implement certain measures that eliminate gas usage. This is reflected in both the pass-through cost ($37.21/MWh) and the value to the ACT economy.
- Additional measures are required to eliminate gas use in the residential and commercial sectors.

Energetics recommends that the ACT Government adopt the real $4/MWh pass-through option.

4. Recommended settings for 2022

The modelling of the settings for 2022 and beyond has established a few points:

- The analysis of the (limited) information about the operation of the scheme in 2021 suggests that the current pass-through cost of $4/MWh may be too high for the current level of ambition. There is therefore a case to either lower the pass-through cost (and the associated energy savings contribution) or raise the level of ambition.
- The evolving nature of the measures in the scheme may means that the assumed cost escalation required to deliver measures in priority households compared to other premises may be too high and a reduction from 50% to 25% is warranted. This has the effect of reducing the ESC and pass-through cost for a given level of ambition or can allow for an increase in the priority household target.
- The one Tier 1 retailer has exceeded its obligation to deliver savings in 2021 and has a large pool of carry-over savings. This was achieved without having to draw on the home insulation measure that was thought to be the lowest cost source of energy savings when the scheme extension was modelled. Suitably qualified installation installers may not be available in 2022 but will be available in 2023 and this will open a new source of low-cost energy savings to the scheme.
- The model of the EEIS suggests that raising the level ambition so that the modelled pass-through cost is $4/MWh will result in a 50% increase in the greenhouse gas abatement delivered by the scheme in the period to 2030 without impacting electricity users in any material way.

Informed by the modelling and the conclusions above, we make the following recommendations for the EEIS in 2022:

Recommendation	Rationale
Increase the priority household target to 40%	The evidence suggests that implement of measures in priority households is not the burden expected and so the impact on the cost of the scheme is less. Further, assistance to priority households is consistent with ACT Government policy.
Increase the level of ambition (i.e., the savings target) to 12.5%.	Our analysis suggests that the level of ambition can be increased given the funding available via the existing pass-through cost. A target of 12.5% should see the actual cost of the scheme borne by ActewAGL approach the $4/MWh, the current pass-through cost. No rise in the actual pass-through cost is needed as it is already set at $4/MWh so the impact to electricity users in minimal.
Keep the pass-through cost at the current $4/MWh	Unless the ACT Government has seen major push-back from the community regarding the current pass-thought cost, there is no incentive to reduce it. Further, the recommended increase in the level of ambition will see actual costs to ActewAGL approach the current pass-through cost. Funds from the pass-through cost is being used to reduce the ACT's

	emissions, address energy poverty in priority households and deliver a net economic benefit to the ACT.
Change the ESC to $32.00/MWh	This is a direct consequence of the changing to the savings target.

The figures below show the projected impact on electricity and gas consumption in the ACT of an increase in the savings target to 12.5% corresponding to a true pass-through cost of $4/MWh. Figure 3 shows how the EEIS has a minor impact of the ACT's electricity consumption but not enough to prevent electricity consumption in the ACT from rising in the period to 2030. While this does not have an impact on the ACT's emissions because of the 100% renewable electricity, it may mean that the ACT must acquire additional renewable electricity to ensure that its electricity supply remains 100% renewable.

Some of the measures promoted by the EEIS such as the building insulation and commercial appliance measures reduce electricity consumption. However, others promote electrification of space or water heating. These lead to a significant reduction in the consumption of natural gas and hence emissions associated with natural gas. But they also increase electricity consumption. Business-as-usual projected a fall in gas consumption and the EEIS will accelerate this fall through the promotion of electrification.

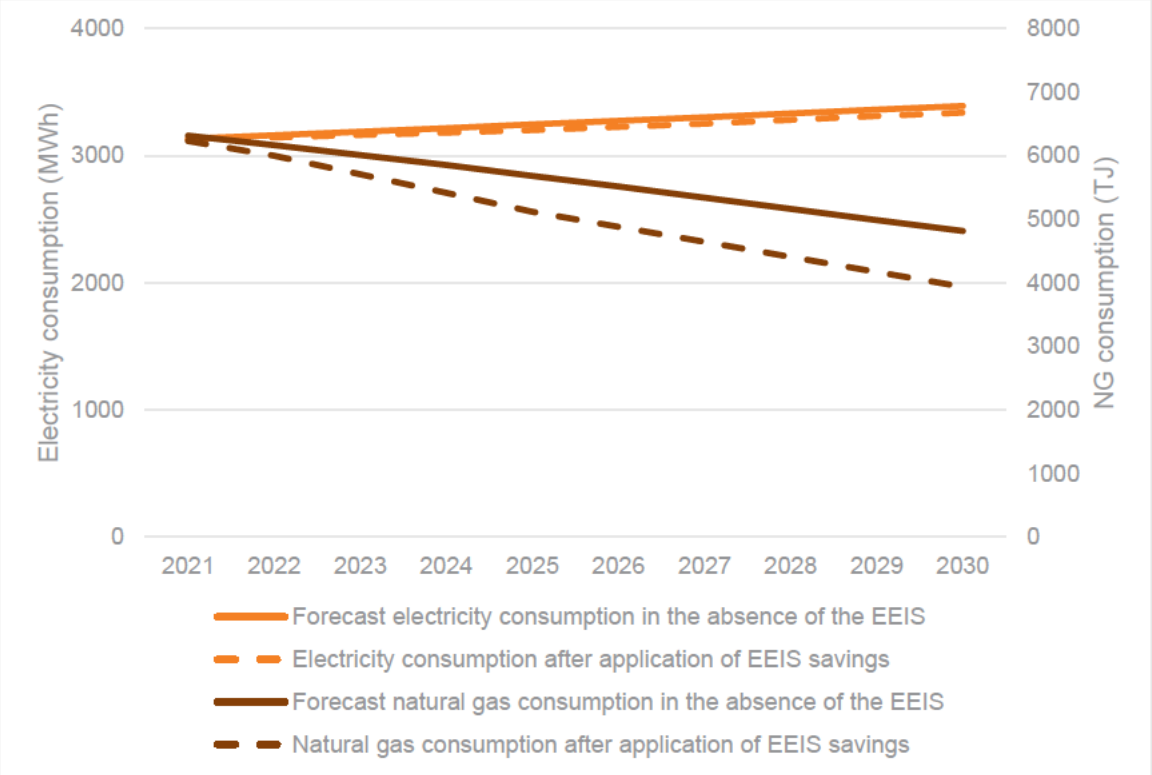


Figure 3: Impact of the EEIS on the ACT's electricity consumption

Appendix A Results in detail

Part 1: Details of the modelled options

Note: Details of the impact of the priority household target and the level of ambition follow this section.

Run	Base case (BC)	Modest increase in ambition (MI)	True $4/MWh pass-through cost (TPT)	Constant average annual emissions reduction (Const)	Maximum emissions reduction (Max)
Energy Savings Target %	8.6%	9.5%	12.5%	18.6%	47.4%
Priority Household Target (PHT) %	30%	40%	40%	40%	40%
Priority household cost scaling	50%	25%	25%	25%	25%
Energy Savings Contribution (ESC) In $ per MWh, base the calculation for the expected costs for a Tier 1 electricity retailer to deliver 1MWh of energy savings.	$29.73	$28.75	$31.97	$40.92	$78.46
Annual Energy Savings Contribution ($millions), anticipated from Tier 2 retailers opting out of activity delivery (20% of total sales).	$1.67	$1.78	$2.61	$4.97	$24.27
Average annual lifetime energy savings due to measures implemented in a particular year over the duration of the scheme (GWh), based on best available estimate of ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).	See table below				
Lifetime energy savings from the scheme overall (2013 – 2030) in GWh, based on best available estimate of ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).	4684	4914	5701	7294	14810

Average annual lifetime emissions reductions delivered each year, in tCO_2e, based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	See table below				
Lifetime emissions reductions from the scheme overall (2013 – 2030), in $ktCO_2e$ based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	889	940	1098	1381	2592
Annual lifetime bill savings ($millions) scaled for Tier 1 only delivery of EEIS activities (80%).	See table below				
Lifetime bill savings ($millions) from the scheme overall (2013 – 2030), taking account of savings delivered to date, and projected as per the EEIS projections database (to be supplied)	$749.0	$767.0	$841.0	$1,024.0	$1,905.0
Average annual residential bill increase, in dollars, based on the average two-person household with no gas, which totals 7.151 MW/year.	$18.31	$19.52	$28.60	$54.49	$266.10
Pass-through cost ($/MWh), including the assumption of a 30% PHT. Present in terms of $/MWH for all energy types – although only applied to electricity.	$2.56	$2.73	$4.00	$7.62	$37.21
Cumulative emissions savings achieved in 2025 from the scheme overall (2013 – 2030), based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	506000	514000	539100	577000	739700
Cumulative emissions savings achieved in 2030 from the scheme overall (2013 – 2030), based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	720400	746500	826900	959200	1523300

Net present value ($millions) taking account of the anticipated ESC presented above.	$19.1	$17.9	$15.6	-$6.6	-$172.3

Average annual lifetime energy savings due to measures implemented in a particular year over the duration of the scheme (GWh), based on best available estimate of ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).

Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
BC	149	149	366	366	366	350	125	125	125	125	2247	225
MI	172	172	404	404	404	329	148	148	148	148	2477	248
TPT	251	251	542	542	542	228	227	227	227	226	3264	326
Const	414	414	706	706	706	391	390	390	390	351	4857	486
Max	1196	1196	1488	1488	1488	1173	1172	1172	1172	827	12373	1237

Average annual lifetime emissions reductions delivered each year, in tCO_2e, based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).

Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
BC	18300	18300	44800	44800	44800	42800	15300	15300	15300	15200	274900	27490
MI	22700	22700	53200	53200	53200	43400	19500	19500	19500	19500	326400	32640
TPT	37200	37200	80500	80500	80500	33800	33700	33600	33600	33500	484100	48410
Const	65400	65400	111400	111400	111400	61700	61600	61600	61600	55400	766900	76690
Max	191300	191300	237900	237900	237900	187600	187500	187400	187400	132300	1978500	197850

Annual lifetime bill savings ($millions) scaled for Tier 1 only delivery of EEIS activities (80%).

Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
BC	$21.3	$21.3	$52.3	$52.3	$52.3	$49.9	$17.9	$17.8	$17.8	$17.8	$320.7	$32.1
MI	$23.6	$23.6	$55.2	$55.2	$55.2	$45.0	$20.3	$20.2	$20.2	$20.2	$338.5	$33.8
TPT	$31.8	$31.8	$68.6	$68.6	$68.6	$28.8	$28.7	$28.7	$28.7	$28.5	$412.7	$41.3
Const	$50.8	$50.8	$86.5	$86.5	$86.5	$47.9	$47.8	$47.8	$47.8	$43.0	$595.6	$59.6
Max	$142.8	$142.8	$177.5	$177.5	$177.5	$140.0	$139.9	$139.9	$139.9	$98.7	$1,476.4	$147.6

Part 2: Impact of the priority household target and the level of ambition

Run	1	2	3	4	5	6	7	8	9	10	11	12	13
Energy Savings Target %	8.6%	12.3%	12.21%	11.99%	12.72%	12.51%	12.41%	8%	8.6%	10%	15%	20%	22%
Priority Household Target (PHT) %	30%	30%	40%	50%	30%	40%	50%	40%	40%	40%	40%	40%	40%
Priority household cost scaling	50%	50%	50%	50%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Energy Savings Contribution (ESC) In $ per MWh, base the calculation for the expected costs for a Tier 1 electricity retailer to deliver 1MWh of energy savings.	$29.72	$32.42	$32.76	$33.37	$31.44	$31.97	$32.23	$28.16	$28.44	$28.89	$36.67	$42.18	$43.80
Annual Energy Savings Contribution ($millions), anticipated from Tier 2 retailers opting out of activity delivery (20% of total sales).	$1.67	$2.61	$2.61	$2.61	$2.61	$2.61	$2.61	$1.47	$1.60	$1.88	$3.59	$5.50	$6.29
Average annual lifetime energy savings due to measures implemented in a particular year over the duration of the scheme (GWh), based on best available estimate of	See table below												

ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).													
Lifetime energy savings from the scheme overall (2013 – 2030) in GWh, based on best available estimate of ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).	4678	5655	5622	5564	5756	5701	5674	4522	4684	5044	6349	7652	8179
Average annual lifetime emissions reductions delivered each year, in tCO2e, based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	See table below												
Lifetime emissions reductions from the scheme overall (2013 – 2030), in $ktCO_2e$ based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	887	1097	1097	1087	1099	1098	1097	852	889	969	1162	1464	1586
Annual lifetime bill savings ($millions) scaled for Tier 1 only delivery of EEIS activities (80%).	See table below												
Lifetime bill savings ($millions) from the scheme overall (2013 – 2030), taking account of savings delivered to date, and projected as per the EEIS projections database (to be supplied)	$749.0	$831.0	$823.0	$816.0	$854.0	$841.0	$835.0	$736.0	$749.0	$777.0	$955.0	$1,050.0	$1,087.0
Average annual residential bill increase, in dollars, based on the average 2-person household with no gas, which totals 7.151 MW/year.	$18.26	$28.60	$28.60	$28.60	$28.60	$28.60	$28.60	$16.10	$17.51	$20.65	$39.32	$60.30	$68.94

Pass-through cost ($/MWh), including the assumption of a 30% PHT. Present in terms of $/MWH for all energy types – although only applied to electricity.	$2.55	$4.00	$4.00	$4.00	$4.00	$4.00	$4.00	$2.25	$2.45	$2.89	$5.50	$8.43	$9.64
Cumulative emissions savings achieved in 2025 from the scheme overall (2013 – 2030), based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	505900	539000	538900	536200	539200	539100	539000	500400	506000	518500	548200	588000	604200
Cumulative emissions savings achieved in 2030 from the scheme overall (2013 – 2030), based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).	719800	826400	826100	820200	827400	826900	826600	701900	720400	761200	858500	997600	1054100
Net present value ($millions) taking account of the anticipated ESC presented above.	$19.1	$15.0	$14.5	$14.4	$16.5	$15.6	$15.3	$19.9	$19.1	$17.2	$15.2	-$14.9	-$27.0

Average annual lifetime energy savings due to measures implemented in a particular year over the duration of the scheme (GWh), based on best available estimate of ACT electricity sales, scaled for Tier 1 only delivery of EEIS activities (80%).

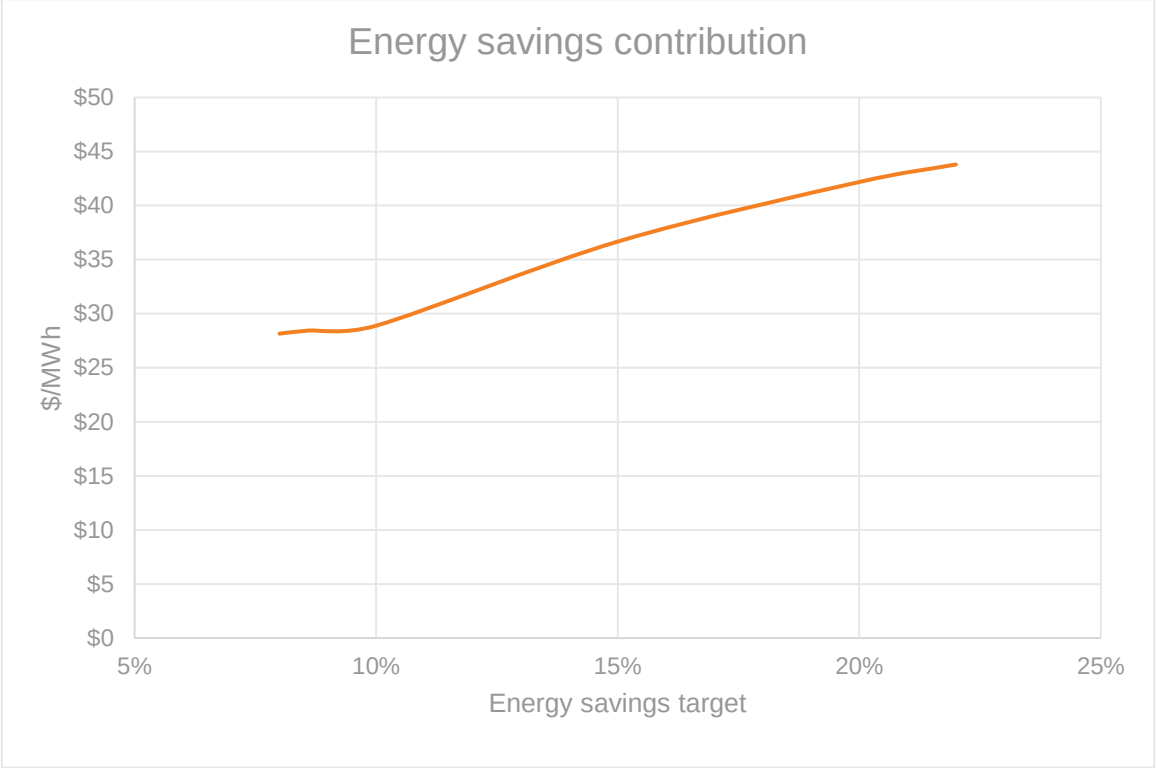
Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
1	149	149	365	365	365	351	125	124	124	124	2239	224
2	247	247	538	538	538	223	223	222	222	221	3218	322
3	243	243	535	535	535	220	219	219	219	218	3185	318
4	237	237	499	499	499	304	213	213	213	213	3127	313
5	257	257	548	548	548	233	233	232	232	231	3319	332
6	251	251	542	542	542	228	227	227	227	226	3264	326
7	248	248	540	540	540	225	224	224	224	223	3237	324
8	133	133	337	337	337	332	148	109	109	109	2085	209
9	149	149	366	366	366	350	125	125	125	125	2247	225
10	185	185	424	424	424	321	161	161	161	161	2607	261
11	320	320	611	611	611	296	296	295	295	257	3912	391
12	450	450	741	741	741	427	426	426	426	387	5215	522
13	503	503	794	794	794	479	479	478	478	439	5742	574

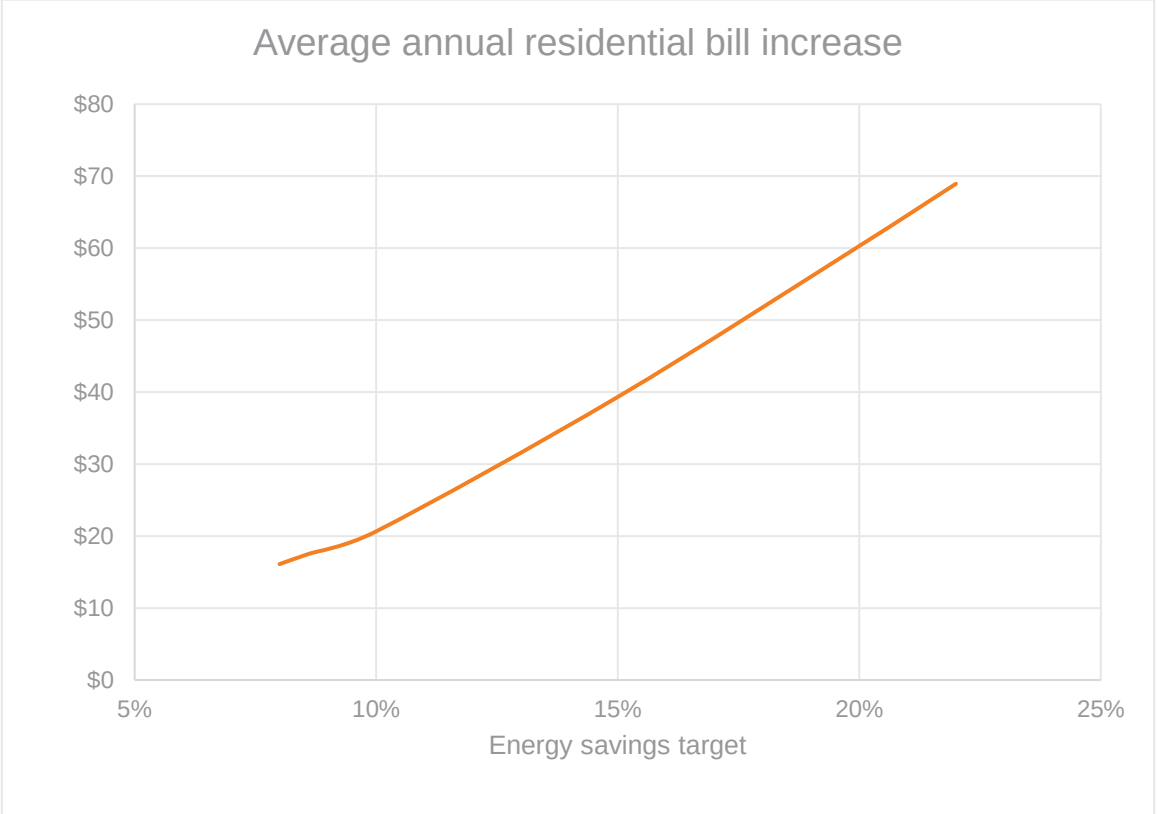
Average annual lifetime emissions reductions delivered each year, in tCO2e, based on expected grid intensity of zero tCO_2e/MWh, and scaled for Tier 1 only delivery of EEIS activities (80%).

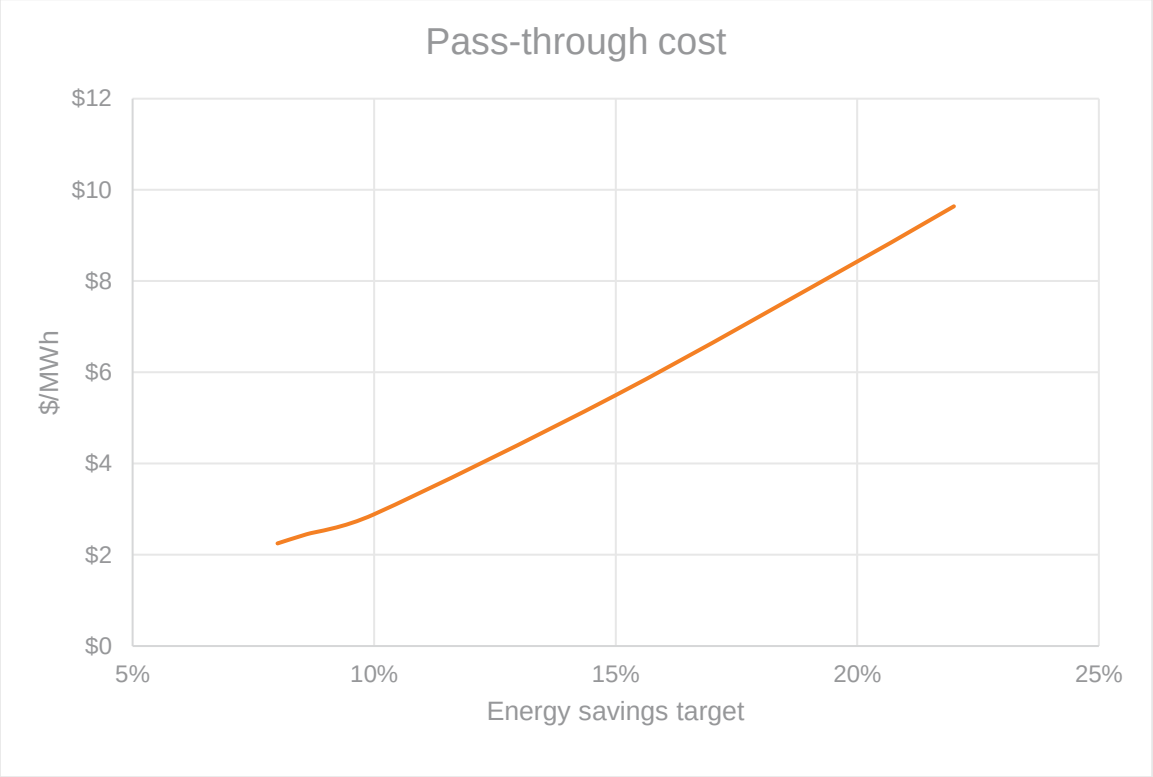
Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
1	18200	18200	44600	44600	44600	42700	15200	15200	15200	15200	273700	27370
2	37000	37000	80800	80800	80800	33500	33400	33400	33400	33200	483300	48330
3	36900	36900	81000	81000	81000	33300	33200	33200	33200	33100	482800	48280
4	35900	35900	75500	75500	75500	46000	32300	32200	32200	32200	473200	47320
5	37500	37500	80100	80100	80100	34100	34000	33900	33900	33800	485000	48500
6	37200	37200	80500	80500	80500	33800	33700	33600	33600	33500	484100	48410
7	37100	37100	80700	80700	80700	33600	33500	33500	33500	33300	483700	48370
8	15200	15200	38600	38600	38600	38000	16900	12500	12500	12400	238500	23850
9	18300	18300	44800	44800	44800	42800	15300	15300	15300	15200	274900	27490
10	25300	25300	57800	57800	57800	43800	22000	22000	22000	21900	355700	35570
11	44800	44800	85700	85700	85700	41600	41500	41400	41400	36100	548700	54870
12	73400	73400	120800	120800	120800	69600	69400	69400	69400	63100	850100	85010
13	85100	85100	134500	134500	134500	81200	81100	81000	81000	74400	972400	97240

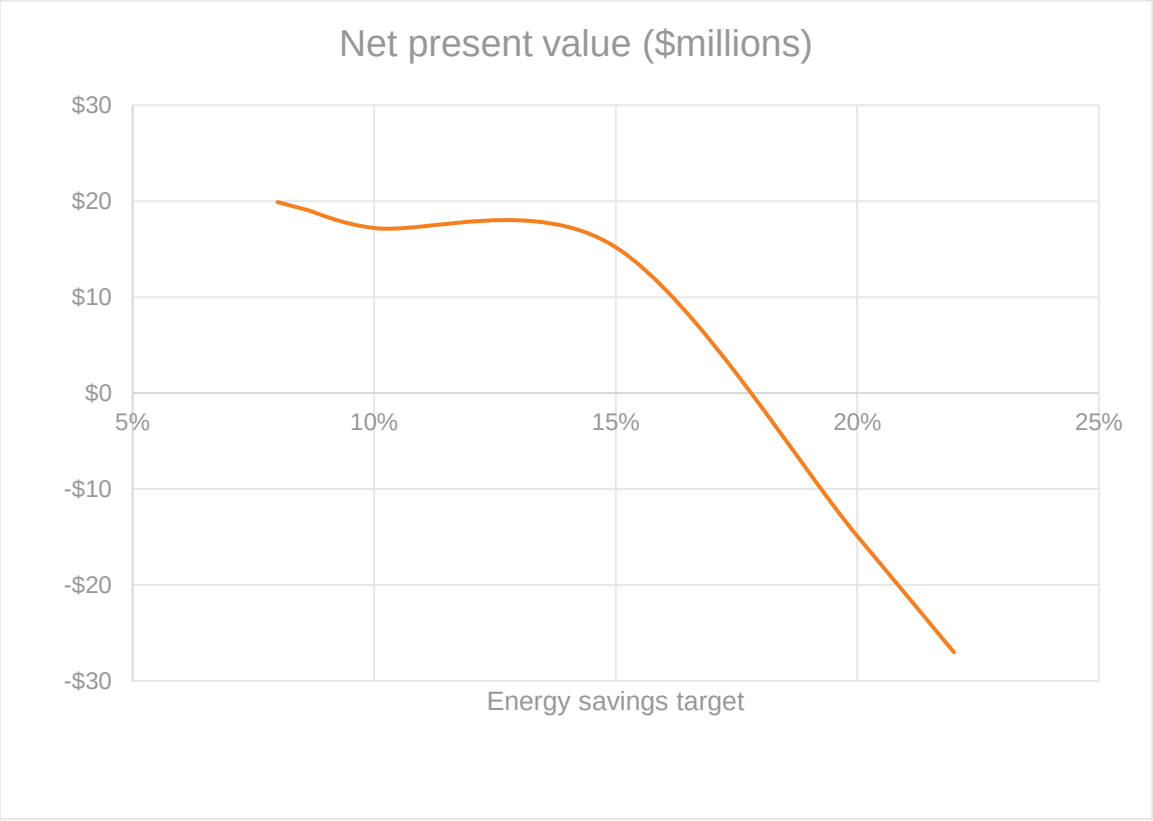
Annual lifetime bill savings ($millions) scaled for Tier 1 only delivery of EEIS activities (80%).

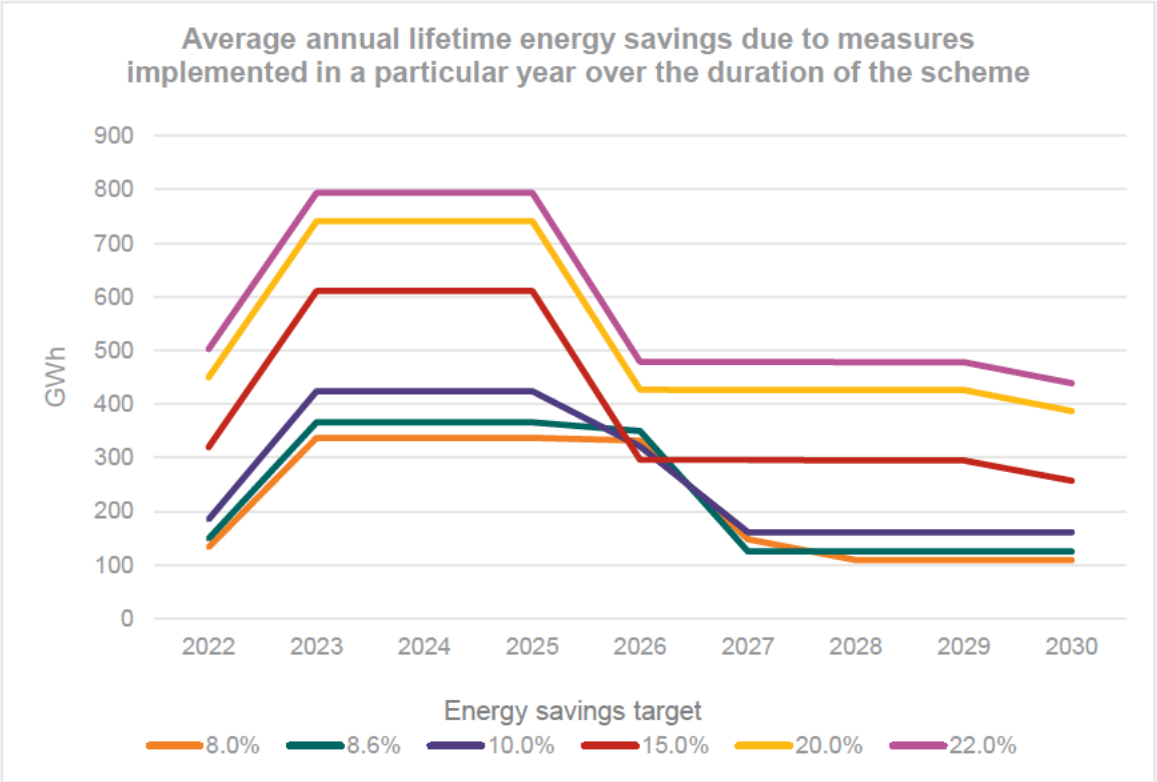
Run	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	Average
1	$21.3	$21.3	$52.2	$52.2	$52.2	$50.0	$17.8	$17.8	$17.8	$17.7	$320.3	$32.0
2	$30.8	$30.8	$67.3	$67.3	$67.3	$27.9	$27.8	$27.8	$27.8	$27.7	$402.5	$40.2
3	$30.2	$30.2	$66.3	$66.3	$66.3	$27.3	$27.2	$27.1	$27.1	$27.1	$394.9	$39.5
4	$29.4	$29.4	$61.9	$61.9	$61.9	$37.7	$26.5	$26.4	$26.4	$26.4	$387.8	$38.8
5	$32.9	$32.9	$70.2	$70.2	$70.2	$29.9	$29.8	$29.8	$29.8	$29.6	$425.2	$42.5
6	$31.8	$31.8	$68.6	$68.6	$68.6	$28.8	$28.7	$28.7	$28.7	$28.5	$412.7	$41.3
7	$31.2	$31.2	$67.8	$67.8	$67.8	$28.3	$28.2	$28.2	$28.2	$28.0	$406.8	$40.7
8	$19.7	$19.7	$49.9	$49.9	$49.9	$49.1	$21.8	$16.1	$16.1	$16.0	$308.0	$30.8
9	$21.3	$21.3	$52.3	$52.3	$52.3	$49.9	$17.9	$17.8	$17.8	$17.8	$320.7	$32.1
10	$24.8	$24.8	$56.6	$56.6	$56.6	$42.9	$21.6	$21.5	$21.5	$21.5	$348.4	$34.8
11	$43.0	$43.0	$82.3	$82.3	$82.3	$39.9	$39.8	$39.8	$39.8	$34.6	$526.7	$52.7
12	$53.6	$53.6	$88.3	$88.3	$88.3	$50.8	$50.7	$50.7	$50.7	$46.1	$621.3	$62.1
13	$57.7	$57.7	$91.1	$91.1	$91.1	$55.0	$54.9	$54.9	$54.9	$50.4	$658.9	$65.9

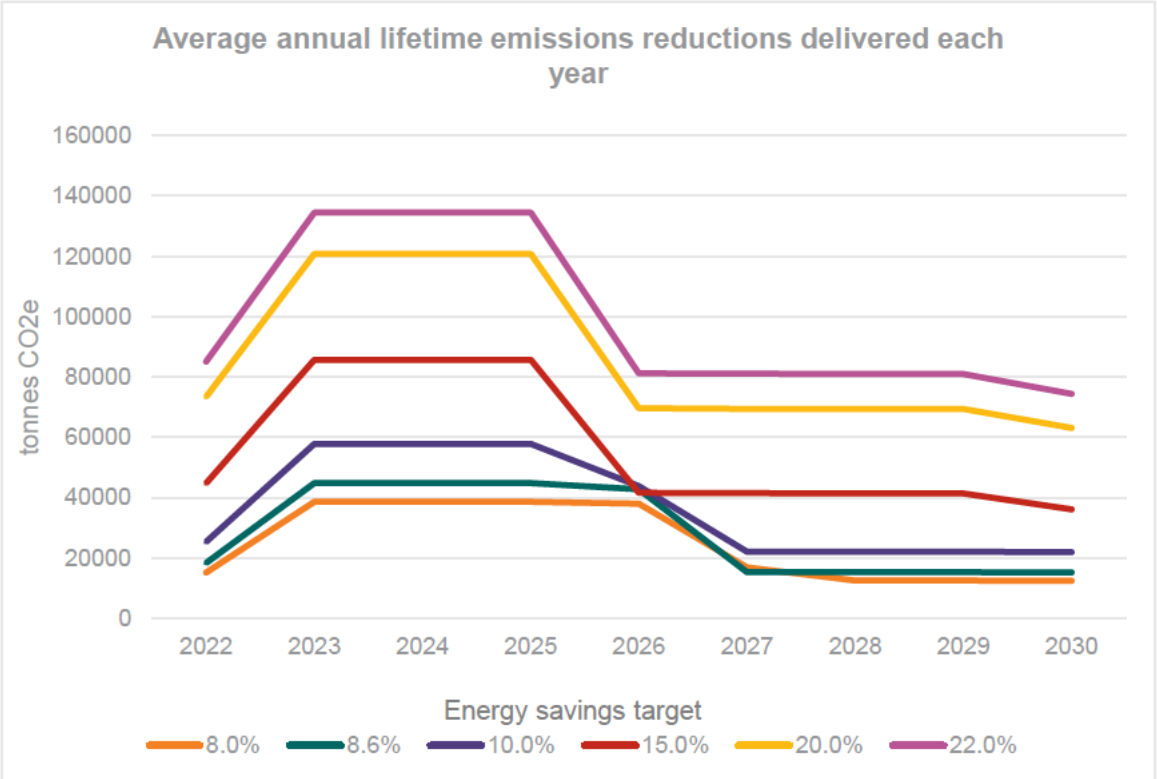


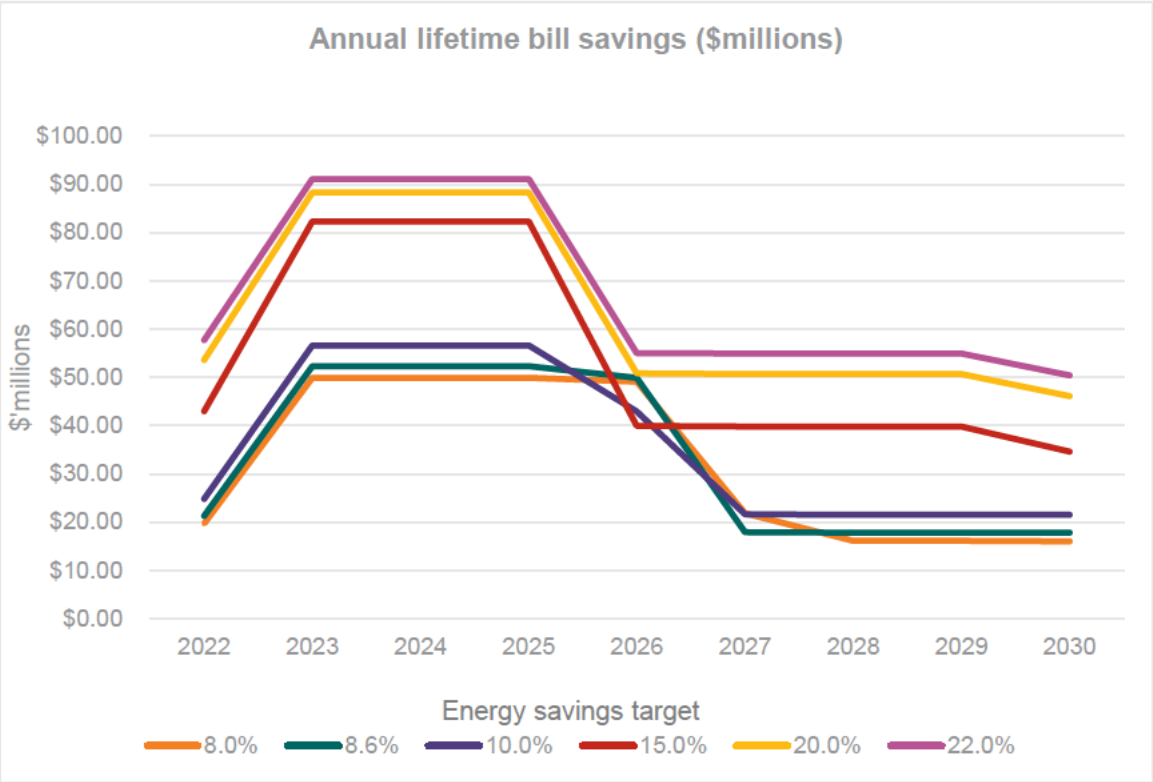












Document control

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About Energetics

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We're more than carbon neutral. Sustainability is core to Energetics' business.
We became a 'Climate Active' certified organisation in 2019, and in 2021 we verified our SBT through the SBTi.

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Context and rationale for the EEIS 2022 targets recommendations

Prior to 2020, the Energy Efficiency Improvement Scheme (EEIS/the 'Scheme') determined energy savings in the ACT using an emissions abatement metric. As of 2020, the ACT secured a 100% renewable electricity supply and, in line with this, the EEIS transitioned to an energy savings metric. It has become apparent based on subsequent observation and analysis that under the energy savings metric, the level of ambition at the same target is not equivalent to that under the emissions abatement metric.

The Environment, Planning and Sustainable Development Directorate (EPSDD) engaged Energetics to examine the performance of the scheme in 2021 and provide recommendations for the Scheme settings for 2022. Energetics' report is provided at Attachment K.

EPSDD recommends changes to the settings associated with the EEIS. The recommended settings, as outlined in Ministerial brief 21/35674 and below, would result in the following:

- Lifetime energy savings for 2013-2030: 5,701 gigawatt hours
- Actual pass-through: $4/megawatt hour (MWh)
- Average annual abatement (2021-2030): 48.4 kilotonnes carbon dioxide equivalent (CO_2e)
- Net Present Value: $15.6 million
- Reduction in emissions due to natural gas in 2030: 15%

Energy Savings Target (EST)

Recommended to increase from 8.6% to 12.5%

The EST requires Tier 1 electricity retailers to deliver lifetime energy savings equal to a set percentage of their total electricity sales in the ACT. This has been set at 8.6% since 2016 and it was recommended by Energetics in 2019 to retain the 8.6% target to 2023.

The recommendation to increase the EST this year is in direct response to an observed impact of the Scheme transitioning from an emissions abatement to an energy savings metric. At the time of setting the EST in 2020, the energy metric and associated energy savings factors for eligible activities had been delivered by consultants, Energy Efficient Strategies. Upon testing the new energy savings factors with the recommended settings, it became clear that the numerical abatement values under the previous emissions metric do not equate directly to the numerical abatement values under the energy savings metric. The hypothesis at that time was that this may lead to a decrease in the rate of installation by the Tier 1 retailer (ActewAGL). The EST was therefore set for one year only to trial its effect.

Early indications from ActewAGLs Compliance Plan for 2021 are that, under the energy savings metric, ActewAGL aims to deliver far fewer installations while still meeting the current 8.6% target. Additionally, ActewAGL Retail has a surplus carry-over of 248,702 MWh for the Scheme in 2020, with a forecast surplus of 206,088 MWh for the end of 2021. The implication of this is that if the current settings were retained, energy savings and emissions reductions delivered through the EEIS will be reduced. To ensure an appropriate level of ambition for the scheme, it is therefore appropriate to increase the EST.

Under the Act, a retailer can carry over an energy savings surplus from a prior compliance period to meet its obligations in the current compliance period. An increased EST would help absorb some of this and ensure that activity delivery does not slow down significantly over future years of the scheme.

Additional considerations for setting the EST

Analysis of the (limited) information about the operation of the Scheme in 2021 suggests that the allowable pass-through cost of $4/MWh may be too high for the current level of ambition. This means that it is possible to increase the ambition of the scheme without placing a higher cost burden on ACT energy consumers.

Another key consideration is Net Present Value (NPV), which demonstrates the value to the ACT economy. As the EST increases, more emissions abatement is achieved but the pass-through cost increases and the NPV decreases.

The NPV is an indication of how much value remains in the ACT. This calculation considers the present value of the amount that the ACT economy saves by not needing to buy as much energy, less the net cost of the measures. The net cost is the amount of money that leaves the ACT due to a measure being implemented. Due to limited industry and manufacturing within the ACT, it is generally considered that labour value stays in the ACT, while most equipment value leaves the ACT. For example, for an activity such as installation of a ducted reverse cycle air conditioner, the value of the equipment would leave the ACT.

Broadly, the NPV benefit starts to decline as the incentive value gets sufficiently high to drive the uptake of measures that are not cost effective to the ACT economy. This does not mean that the Scheme is not cost-effective to participants in the Scheme. For example, replacing a room gas heater with a room heat pump heater (reverse-cycle air conditioner) is not cost effective from the perspective of the ACT economy. However, it may offer sufficiently high energy savings for a Scheme participant to see it as a cost-effective measure for them.

There are several competing objectives to consider and balance.

According to Energetics' analysis, if the EST was increased slightly to 9.5% the NPV would be $17.9 million and would deliver average annual abatement of 32.4 kilotonnes CO2e. The real pass-through cost to consumers of this option would be reduced to $2.71/MWh.

However, an EST of 12.5% offers 48.4 kilotonnes CO2e emissions abatement, which helps to address the reduction in abatement associated with the transition to an energy savings metric, without imposing costs on ACT electricity users beyond $4/MWh. This is the recommended position as it most effectively balances the competing objectives.

It is important to note that EST values over 18% would have a negative NPV.

It has also been noted that a higher target (12.5%), results in a wider diversity of measures being implemented under the Scheme in 2022 than 2021. This has an additional benefit of a general reduction in electricity demand and therefore a reduced impact on electricity infrastructure, which will support the ACT to deliver other initiatives under its net zero emissions by 2045 target.

It should be noted that with the implementation of the energy metric from 1 January 2021, ActewAGL have forecast in their 2021 Compliance Plan to almost halve the rate of installation of hot water and heating and cooling systems and end commercial lighting activity, but still meet 8.6% EST. They will use only 17% (approx. 40,000 MWh) of the large 2020 surplus carry-over of 248,702 MWh to assist with achieving this. For context, ActewAGLs entire Retailer Energy Savings Obligation is 198,365 MWh for 2021. This is further indication of the need to raise the target, to adjust for the impacts of the switch to an energy metric.

Finally, in setting the EST for 2021 a decision was made to go with a higher target and lower NPV, to raise the ambition of the Scheme. This suggests that a trend towards higher targets may be appropriate.

Sensitivities

It is important to note, in relation to NPV, that the consultant did not have access to a general equilibrium model, which would have enabled a more rigorous analysis. As such, the NPV analysis for

2022 does not appear to align with that in previous years (the NPV results were previously modelled as $5.3 million for 2021).

In terms of the potential impact of a 12.5% EST, ActewAGL Retail may swap to delivering any activity that will provide it with a higher energy savings potential. The change may also further disincentivise Tier 2 retailers from activity delivery, although this risk may be mitigated by providing an explanation for Tier 2 retailers of how the energy savings metric works.

Finally, while a 12.5% EST may not decrease emissions as much as a higher EST, it is anticipated that the target may reduce ActewAGL Retail's surplus by 80% over the remaining years of the scheme, provided the retailer does not increase its installation rate. ActewAGL Retail's energy savings result for 2019 was 94,000 tC02-e and its forecast result for 2021 is 135,000 tC02-e. This reflects the retailer's anticipation that the energy savings metric would affect it negatively; ActewAGL Retail increased its install rate to ensure a large surplus buffer. Its surplus forecast for 2020 is 99,481 tC02-e (248,702 MWh) and for 2021 is 82,435 tC02-e (206,088 MWh).

Priority Household Target (PHT)

Recommended to increase from 30% to 40%

The PHT is the percentage of the Retailer Energy Savings Obligation (RESO) that must be delivered to priority households under the Scheme. This is an important aspect of the Scheme, as energy savings can make a significant and meaningful difference to energy affordability and comfort of priority (vulnerable and low-income) households, assisting directly with the Government priority of a 'Just Transition.'

In 2020, the consultant's model had incorporated a 50% increase in cost to deliver measures in priority households under an 8.6% target. This was based on the notion that low-cost, low impact measures were likely to be undertaken in priority households. However, with the ongoing contract ActewAGL Retail has with Housing ACT and the recognition that high cost, but high impact activities are undertaken, the difficulties in signing up priority households are reduced. As a result, Energetics' modelling now uses a 25% cost increase.

This reduction in cost provides two options for the EST settings:

1. reduce the pass-through cost and Energy Savings Contribution (ESC); or
2. allow for an increase in the PHT.

Increasing the PHT is the recommended position. Under the first option, reduced pass-through cost and ESC impacts the Tier 1 retailer negatively, with less capacity to pass through costs to consumers while managing a higher EST; and lowering the ESC reduces Tier 2 contributions and disincentivises the uptake of activity delivery. The second option of increasing the PHT ensures that the Scheme is prioritised to households that need it most; reducing energy use and costs to these households.

Energy Savings Contribution (ESC)

Recommended to decrease from $46.50 per MWh to $32 per MWh

The ESC is the contribution that must be paid by who are not delivering activities under the Scheme.

The recommended setting is designed to maintain a level playing field between Tier 1 and Tier 2 retailers to support genuine competition between retailers. All Tier 2 retailers are currently opting to pay the ESC as an alternative to delivering activities. Under the updated settings, the overall Tier 2 contributions will be retained at similar levels to now, if no Tier 2 retailers deliver EEIS activities.

The proposed adjustment is consistent with the recommended change in the EST. The ESC calculation is based on the expected costs for a Tier 1 electricity retailer to deliver 1 MWh of energy savings. As with the scheme delivery costs being achieved by ActewAGL, the current ESC equates to a pass-through cost of $4/MWh in electricity bills. Taken together, this is a clear signal that the current market rate for EEIS energy savings involves a pass-through cost of $4/MWh across all ACT electricity sales.

Shortfall Penalty

Recommended to decrease from $120 per MWh to $83 per MWh

The Shortfall Penalty aims to disincentivise non-compliance, including the risk of Tier 1 retailers not delivering activities. If the penalty is too low, Tier 1 retailers may choose to pay the penalty instead of delivering activities. The Independent Competition and Regulatory Commission (ICRC) uses the Shortfall Penalty as a ceiling on its price determination.

Compliance within the EEIS has been extremely high and, to date, the Shortfall Penalty has never been applied.

Under current arrangements, it is common practice that the Shortfall Penalty is calculated as 2.6 times the ESC.

Other EST settings considered

Two additional EST options were considered.

The first was a slight increase in ambition, to an EST of 9.5%. This would have resulted in a pass-through cost of $2.71/MWh, and a higher NPV of $17.9 million. However, a critical concern was that this setting would not sufficiently address the surplus currently held by ActewAGL Retail, nor would it sufficiently address emissions abatement as per the objects of the Act, with an average annual abatement (2021-2030) of 32.4 kilotonnes CO2e, and a 9% reduction in emissions due to natural gas in 2030. It was determined that stronger abatement outcomes would be more suitable.

The second option considered was one that would result in the same average annual abatement as for the period from 2013 to 2020, under the emissions abatement metric. This would have required an EST of 18.1%. While this setting would have achieved an average annual abatement (2021-2030) of 76.7 kilotonnes CO2e, and a 24% reduction in emissions due to natural gas in 2030, it also would have seen pass-through costs increase to $7.62/MWh, which was considered prohibitive due to other energy cost increases consumers are experiencing (based on the anticipated outcomes of the forthcoming ICRC pricing determination, due for release in early June 2021). It was noted that the pass-through cost is just a ceiling cap on costs and is not necessarily reflective of the actual cost to deliver; however, this option was still not considered preferable. Additionally, the NPV would be significantly reduced, to -$6.6 million.