ROADMAP FOR INSULATION INSTALLATION

Quality control and safety in the Australian market

September 2024


AFFILIATED
INSULATION
INDUSTRY
COALITION


ATTMA
The Air Tightness Testing & Measurement Association


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of Australia

ACKNOWLEDGEMENTS

Thank you to the group of committed experts that contributed to the development of this roadmap in both 2021 and 2024. Thank you to the original funders of the 2021 roadmap, which was foundational to the 2024 update. Finally, thank you to the **Affiliated Insulation Industry Coalition** for funding the 2024 roadmap update.

INTRODUCTION

Insulation is an essential component of a healthy, comfortable building. Adequate insulation can increase thermal comfort, lower heating and cooling bills, and reduce the prevalence of illness and death. Insulation reduces pollution, greenhouse gas emissions and reliance on the electricity grid.

However, insulation needs to be properly installed to deliver its full value, and many existing buildings lack sufficient insulation in their walls, floors and even ceilings. This means that insulation needs to be installed in all new and existing buildings following appropriate quality control and safety processes.

To tackle this challenge, in 2021 leading organisations in the insulation, building and energy efficiency industries came together to prepare a roadmap to improve quality control and safety in insulation installation. This roadmap set out 24 actions to be undertaken over three years. In the following years, the insulation industry worked together and with governments to progress many of the ambitions set out in the roadmap.

The dates highlighted in the 2021 roadmap have now lapsed, however the industry remains committed to safeguarding quality and safety in the insulation industry. To that end, in 2024, led by the Affiliated Insulation Industry Coalition and the Energy Efficiency Council, work to update the roadmap commenced.

The signatories of this roadmap document are committed to implementing or supporting these actions, and recommend that governments and other non-signatories follow suit.

These actions build on extensive work undertaken over the past decade, and the signatories are confident that implementing this roadmap will ensure that insulation is installed effectively, safely, and affordably.

THE BENEFITS OF INSULATION

Insulation is used in buildings to reduce the movement of heat and sound. A wide range of products are used to insulate buildings. These include batts, panels, loose-fill, sprays, structural insulated panels, and building membranes.

When new and existing buildings have adequately specified and installed insulation, the benefits to the community include:

- Reducing Australia's annual emissions, potentially by 7.1 million tonnes of CO_2e.[1]
- Improving outcomes in physical, social, and mental health by better insulating homes and workplaces. Studies have shown for every dollar invested in vulnerable households, $7-10 in benefits are returned.[2]
- Complementing efficient electrification of space heating and cooling, enabling occupants to pre-heat and cool homes with minimal energy waste, and take best advantage of household solar.
- Enabling the right sizing of space heating and cooling systems, household batteries and other infrastructure – reducing the costs of these upgrades, and the materials required to complete them.
- Promoting grid reliability by better matching supply and demand in an energy system powered by renewables.
- Making reverse cycle heating more comfortable by increasing internal surface temperatures, thus preventing cooled air creating a cold draught.
- Helping to reduce energy bills through decreased need to run heating and cooling.
- Reducing external noise, condensation, and the possibility of mould.
- Achieving appropriate fire resistance in a cost-effective manner.
- Enhancing the climate resilience of homes.

WHY WE NEED AN INSULATION INSTALLATION ROADMAP

Installing insulation has lower risks when compared to many other construction activities, as insulation materials are relatively light, non-toxic and can be cut and installed without the use of power tools. However, like any activity in the construction industry, appropriate measures must be taken to manage risks that include working in a restricted space, working at heights, contact with hazardous materials, and electrical shock.

Insulation products must also be correctly specified and installed to maximise their benefits and reduce risks for building occupants. This includes:

- Minimising unnecessary gaps in the coverage of insulation (at the time of installation and throughout its life).
- Leaving space around heat-generating equipment (e.g., heating, fans, and downlights).
- Moisture management, such as ensuring that ceiling insulation does not touch the underside of the roof or sarking.

In February 2020 the Energy Efficiency Council and the Australian Sustainable Built Environment Council (ASBEC) released a report, Ensuring quality control and safety in insulation installation, which looked at practices in Germany, Ireland, New Zealand, the United Kingdom and United States. It found that all these countries had invested in major training and compliance programs for insulation installation.

Australian industry and governments have already undertaken a range of actions to address safety and quality-control issues associated with insulation installation. These actions include training modules, building codes and workplace health and safety regulations. Despite these efforts, additional controls and installer and consumer education are still required to ensure quality outcomes in insulation installation.

The signatories to this roadmap propose a series of actions to deliver best practice in safety and quality control in insulation installation.

Some of these actions can be undertaken by peak bodies and companies in the insulation, building and energy efficiency industries. Some of these actions must be undertaken by governments, ideally in conjunction with industry, such as strengthening the compliance regime for building regulations.

Multiple measures are essential to ensure safety and quality control in insulation installation. The measures in this roadmap are complementary, rather than alternatives. For example, training and certification options for insulation installation will need to be supported by drivers to encourage installers to undergo training and certification.

These recommendations are set out in four broad streams:

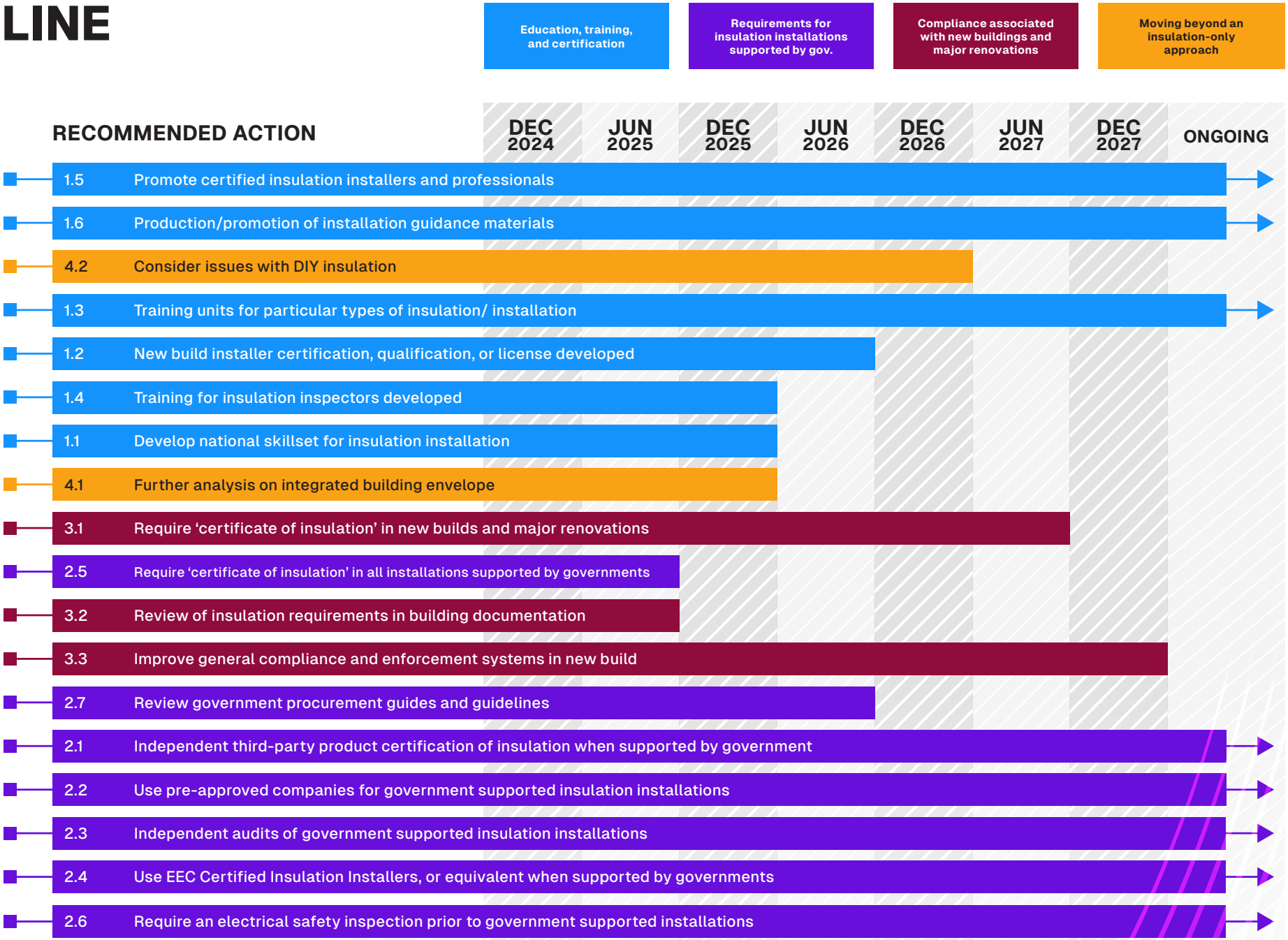
1. Education, training, and certification.
2. Requirements for insulation installations supported by governments.
3. Compliance associated with new buildings and major renovations.
4. Moving beyond an insulation-only approach.

Some of these measures can be developed in parallel, but some will have to be sequential.

Finally, the measures in this roadmap focus specifically on safety and quality control in the installation of insulation. Further work should be undertaken to ensure that building design, construction and retrofit processes integrate all elements of the thermal envelope (including insulation, glazing, and minimising thermal bridging), air tightness and systems for heating, cooling and ventilation.

A broad range of organisations are committed to working with governments to ensure that insulation installation prioritises safety and quality. We look forward to working with governments and a broad range of stakeholders to deliver better buildings.

TIMELINE


Education, training, and certification
Requirements for insulation installations supported by gov.
Compliance associated with new buildings and major renovations
Moving beyond an insulation-only approach
RECOMMENDED ACTION
DEC 2024
JUN 2025
DEC 2025
JUN 2026
DEC 2026
JUN 2027
DEC 2027
ONGOING
1.5 Promote certified insulation installers and professionals
1.6 Production/promotion of installation guidance materials
4.2 Consider issues with DIY insulation
1.3 Training units for particular types of insulation/ installation
1.2 New build installer certification, qualification, or license developed
1.4 Training for insulation inspectors developed
1.1 Develop national skillset for insulation installation
4.1 Further analysis on integrated building envelope
3.1 Require 'certificate of insulation' in new builds and major renovations
2.5 Require 'certificate of insulation' in all installations supported by governments
3.2 Review of insulation requirements in building documentation
3.3 Improve general compliance and enforcement systems in new build
2.7 Review government procurement guides and guidelines
2.1 Independent third-party product certification of insulation when supported by government
2.2 Use pre-approved companies for government supported insulation installations
2.3 Independent audits of government supported insulation installations
2.4 Use EEC Certified Insulation Installers, or equivalent when supported by governments
2.6 Require an electrical safety inspection prior to government supported installations

RECOMMENDED ACTIONS

1. EDUCATION, TRAINING AND CERTIFICATION

Education, training, and certification are critical for ensuring quality and safety, as they equip professionals with the knowledge and skills needed to properly install, maintain, and assess insulation work, while maximising quality and minimising risk. These measures also ensure compliance with industry standards and regulations.

No.	Recommended action	Detail	Key Partners	Timeline
1.1	Develop a national skillset for insulation installation	A national skillset and qualification should be developed for insulation installation, based on the current package relied on to become an EEC Certified Installer.	BuildSkills Australia, the AIIC and its members, other insulation organisations.	December 2025
1.2	Develop a new certification, qualification, or license for insulation installers in new builds and major renovations	The current EEC Certified Insulation Installer Certification is best suited to insulation installers in the retrofit space. A new certification, qualification, or license for insulation installers working in new builds and major renovations should be developed based on national skillset units (recommended action 1.1), and/or existing industry training as appropriate.	BuildSkills Australia, the AIIC and its members, the EEC, other insulation organisations.	June 2026
1.3	Develop additional training units for particular types of insulation and installation	The insulation industry should develop training units for specific types or aspects of insulation and installation, such as pumped insulation, structural insulated panels, and the installation of wall and underfloor insulation. These units could be counted toward CPD (continued professional development) requirements when maintaining installer certification.	The AIIC and its members, other insulation organisations, and government partners as necessary.	Ongoing
1.4	Develop training for insulation inspectors	Those that conduct building inspections or other 'audits' may require additional training to correctly and rapidly assess whether insulation has been installed in accordance with relevant requirements. Consideration for this training should be made during the development of the national skillset for installers (1.1)	The AIIC and its members, the Australian Institute of Building Surveyors, Build Skills and other relevant insulation organisations and education and training organisations.	December 2025
1.5	Industry leaders use or promote certified insulation installers and professionals	The insulation and construction industry should recommend or voluntarily commit to using trained and certified insulation installers for construction and retrofit work.	The AIIC and its members, other insulation organisations, other industry associations.	Ongoing

No.	Recommended action	Detail	Key Partners	Timeline
1.6	Production of installation guidance materials	The insulation industry should continue its work to develop and promote education materials, such as the ICANZ Insulation Installers Handbook and guidance videos on insulation installation.	The AIIC and its members, Installers, and other insulation organisations.	Ongoing

2. REQUIREMENTS FOR INSULATION INSTALLATIONS SUPPORTED BY GOVERNMENTS

Governments that place strong quality and safety requirements on insulation installations best ensure that public funds are used efficiently, while safeguarding the health and safety of installers and occupants.

No.	Recommended action	Detail	Key Partners	Timeline
2.1	Insulation materials used in installations supported by governments should have independent third-party building product certification.	Product quality should be safeguarded through the requirement of independent third-party building product certification through the Australian Building Codes Board administered **CodeMark** Certification Scheme, or similar JAS-ANZ governed certification scheme.	Governments.	Ongoing
2.2	Only use pre-approved companies for government supported insulation installations	In many jurisdictions where government programs support the installation of insulation, insulation installation companies must be pre-approved as meeting certain criteria. Australian governments should adopt a similar approach, which may include pre-approval of companies that demonstrate use of best practice processes, and certified installers.	Governments.	Ongoing
2.3	Independent audits of government supported insulation installations	Where government programs support the installation of insulation, they should undertake or contract independent inspectors to conduct audits on a sample of installations (e.g., five per cent).	Governments.	Ongoing
2.4	Installers contracted to undertake insulation work hold an EEC Certified Insulation Installer certification, or equivalent	When governments support insulation retrofits, they should require installers to adopt best practice training and certification activities. Governments should refer to current, industry endorsed training and certification options, such as the EEC's Certified Insulation Installer Certification, or equivalent. This supports insulation installers to manage quality and safety effectively, especially around electricity.	Governments.	Ongoing

No.	Recommended action	Detail	Key Partners	Timeline
2.5	A 'certificate of insulation installation' should be required for all installations supported by governments	Currently, building owners and occupants find it difficult to determine the quality of an insulation installation, even if it has been recently completed. Requiring a certificate of insulation installation for this work can help to support householders and builders to understand the status and quality of their insulation, as well increase accountability. Industry can lead on supporting governments with template certificates, in line with the Australian Standard AS3999.	Insulation industry organisations representing installers, Governments.	June 2025
2.6	Require an electrical safety inspection to be undertaken by a licensed electrician prior to government supported installations	An electrical safety inspection (or 'check') should be undertaken prior to insulation installation to identify any electrical risks, ensure any required electrical upgrades are undertaken to support the safe installation of insulation, and to minimise electrical safety risks to the installer and householder.	Governments.	Ongoing
2.7	Review government procurement guides and guidelines to ensure insulation installations meet appropriate standards.	Governments should review procurement guides and guidelines to ensure that: ▪ All installers contracted to undertake insulation work are required to hold an EEC Certified Insulation Installer certification, or equivalent. ▪ All insulation materials procured should have independent third-party building product certification through the Australian Building Codes Board administered CodeMark Certification Scheme, or similar JAS-ANZ governed certification scheme. ▪ Fit for purpose application of products supported by appropriate warranties. ▪ Electrical safety inspection undertaken by a licensed electrician should take place prior to installation.	Governments, local government associations.	June 2026

3. COMPLIANCE ASSOCIATED WITH NEW BUILDINGS AND MAJOR RENOVATIONS

New builds and major renovations are an opportunity to 'get it right the first time' when it comes to thermal performance and comfort. Compliance activity in this space fosters trust, accountability, and increases the likelihood that householders get the best standard of insulation installation possible.

No.	Recommended action	Detail	Key Partners	Timeline
3.1	A 'certificate of insulation installation' should be required for all new builds and major renovations	There are currently significant variations in requirements for Certificates of Insulation Installation between jurisdictions. Some jurisdictions require a certificate signed by the installer or builder, others do not. All jurisdictions should require a formal Certificate of Insulation Installation as a first step. Later upgrade this requirement so certificates are signed off by a building certifier to obtain a Certificate of Occupancy. The building certifier should sign a statement that confirms they have sighted either the insulation installation or time-and-location stamped photographs of the insulation installation. Industry to lead on supporting governments with template certificates in line with the Australian Standard AS3999.	Governments and applicable building regulators.	June 2027
3.2	Undertake a review to ensure insulation requirements are specified in building documentation	The proposed details of insulation (e.g. R-value) in a new building are already specified for NatHERS assessments. However, these details are not always transferred to all construction documentation. This means that design intentions are not always translated into construction. Governments should work with energy assessors, architects and building designers to determine how to ensure that insulation is always specified in building documentation.	Governments, associations for energy assessors, architects and building designers.	June 2025

No.	Recommended action	Detail	Key Partners	Timeline
3.3	Governments should improve general compliance and enforcement systems for installation of insulation in new build and major renovations	To support this, governments should: ▪ Require that all building documentation include insulation requirements in a standardised format. ▪ Consider how digital tools (such as time-and-location stamped photographs) could be better utilised to cost-effectively incorporate increased quality checks of insulation installation in new build. ▪ Support industry groups to offer funded training programs on working with and around insulation at the apprentice and certified tradesperson level. ▪ Implement a nationally aligned approach to the recommendations from the *Shergold Weir Building Confidence Report*. ▪ Require independent audits of insulation installations.	Governments.	December 2027

4. MOVING BEYOND AN INSULATION ONLY APPROACH

Considering the benefits of integrated building envelope upgrades, rather than viewing individual energy efficiency products such as insulation in isolation, would help to improve the performance, energy consumption, comfort, and durability of buildings. This can address interdependencies within the building system, leading to effective and long-lasting improvements in performance.

No.	Recommended action	Detail	Key Partners	Timeline
4.1	Undertake further analysis on options for integrated building envelope in new construction and retrofit	This work would explore options to foster a market for more integrated buildings, build capacity for building retrofits at scale, and communicate the importance and benefits of integrated energy efficiency upgrades.	Governments, NatHERS, CSIRO, insulation industry organisations.	December 2025
4.2	Consider issues associated with DIY insulation	Government and industry should consider issues associated with ‘do-it-yourself’ (DIY) insulation once appropriate systems are in place for professional installers.	The AIIC and its members, and other insulation organisations, governments.	December 2026

KEY INSULATION INDUSTRY ACHIEVEMENTS SINCE THE 2021 INSULATION ROADMAP WAS PUBLISHED

- ☑ Formation of the Affiliated Insulation Industry Coalition (AIIC) to pursue roadmap outcomes.
  - Insulation resources list published.
  - AIIC policy priorities published.
  - Best practice compliance document published.
  - Working safely around insulation guidance and poster published.
  - Insulation in Australia 2024 report published.
- ☑ Launch of EEC Certified Insulation Installer Certification.
- ☑ Industry reviewed entry level insulation installer training and accreditation, updated EEC Certified framework, and developed EEC001 – Prepare for insulation retrofitting within ceiling spaces.
- ☑ Energy Efficiency Council development of thermal performance Energy Management Fundamental (endorsed by the AIIC).
- ☑ ICANZ Guide to assessing ceiling insulation R-values in existing homes (endorsed by the AIIC).
- ☑ ICANZ Insulation Installers Handbook - Professional Installation Guide V8 released.
- ☑ Videos prepared for other trades (particularly plumbers and electricians) on the importance of insulation on QIN CodeSafe.
- ☑ Industry development of spray foam insulation training.
- ☑ Development of contextualised Insulation Industry training resources by ICANZ.
- ☑ Development of fact sheets on polymer insulation by AMBA.
- ☑ Release of the Value of Insulation Report by Energy Efficient Strategies by ICANZ.
- ☑ Establishment of the intergovernmental forum on insulation.
- ☑ Introduction of minimum rental standards for ceiling insulation in the ACT.
- ☑ Consultation for the possible introduction of minimum rental standards for ceiling insulation in Victoria.
- ☑ Inclusion of insulation in the ACT's Sustainable Household Scheme, Tasmanian Energy Saver Loan Scheme, and as a requirement for insulation in the Home Energy Upgrades Fund where insulation is funded.

www.eec.org.au/insulation-roadmap

ENDNOTES

1 ASBEC, **The Bottom Line – household impacts of delaying improved energy requirements in the Building Code**, 2018. (**https://www.asbec.asn.au/wordpress/wp-content/uploads/2018/03/180208-ASBEC-CWA-The-Bottom-Line-household-impacts.pdf**)

2 Sustainability Victoria, **The Victorian Healthy Homes Program Research findings**, 2022, and Grimes et al., **Cost Benefit Analysis of the Warm Up New Zealand: Heat Smart Programme Ministry of Economic Development**, 2012. (**https://www.sustainability.vic.gov.au/research-data-and-insights/research/research-reports/the-victorian-healthy-homes-program-research-findings**) (**https://www.motu.nz/assets/Documents/our-work/urban-and-regional/housing/Cost-Benefit-Analysis-of-the-Warm-Up-New-Zealand-Heat-Smart-Programme.pdf**)