POWERING THE SHIFT

Companion report to Australia's workforce roadmap for efficient electrification of homes

September 2026

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Acknowledgment of Country

This report was produced on the lands of the Wurundjeri people of the Kulin nation.

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We also thank the individuals and organisations that took part in the consultation process for this project. Stakeholders who contributed feedback to this project are not assumed to endorse its final outputs in whole or in part. This work represents industry feedback obtained through consultation and independently analysed, collated and presented by the EEC.

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INTRODUCTION

As Australian households embrace clean energy technologies, ranging from efficient electric appliances to rooftop solar and batteries, the demand for skilled workers who can deliver them will accelerate sharply. To ensure there are enough skilled workers, a range of actions will be required across industry and government.

The transition to a net zero economy, along with broader electrification trends, represents a structural shift that will reshape industries, labour markets, and communities at a scale not seen since the Industrial Revolution. In the housing sector, this shift will drive a rapid increase in demand for skilled workers to upgrade and efficiently electrify millions of existing homes. This is not a one-dimensional labour market issue: it requires action to increase workforce supply, lift skills, and strengthen the system conditions that determine whether workforce capacity and capability can respond at the pace required.

Energy performance upgrades, often referred to as 'energy retrofits'[1] are a critical piece in the race to net zero emissions and the electrification and energy efficiency puzzle. They include thermal performance improvements, appliance replacements (including fuel switching), solar and battery installations, and the deployment of home energy management systems. Collectively, these measures are among the most cost-effective pathways to reducing residential emissions. They also play a critical role in strengthening energy security by lowering peak demand, reducing household exposure to volatile energy prices, and improving the resilience of homes to heatwaves and extreme weather, while delivering co-benefits for household energy affordability and health.

In September 2026 the Energy Efficiency Council (EEC), supported by the Powering Skills Organisation (PSO) released Powering the shift: Australia's workforce roadmap for efficient electrification of homes ('the roadmap').

The roadmap does not provide an exhaustive account of every element of the workforce and skills landscape for energy retrofits in homes. Rather, it serves as a practical tool to align stakeholders around a shared vision and generate momentum for near- to mid-term opportunities for progress. Its purpose is to highlight the most immediate, actionable opportunities - the "low-hanging fruit" and "shovel-ready" options - that can deliver meaningful improvements to the residential retrofit workforce. While challenges in this area are complex and often difficult to define, the roadmap is designed to cut through decision paralysis by identifying clear, stakeholder-supported pathways forward, enabling tangible steps toward workforce reform and growth.

By identifying areas of broad agreement and high impact, the roadmap provides governments, industry, unions, and training providers with clear, actionable steps to strengthen the retrofit workforce. Importantly, it complements other sector and occupation specific strategies and policies, working toward the shared goal of ensuring Australian homes are affordable to run, climate resilient, and net zero-compatible in the decades to come.

DEFINING THE ENERGY RETROFIT WORKFORCE

Our understanding of the energy retrofit workforce is based on residential energy efficiency workforce mapping[2] undertaken by the Institute for Sustainable Futures for the EEC in 2025. This mapping identified 27 occupations critical to delivering efficient electrification solutions to Australia's existing housing stock. For the purposes of the roadmap, the EEC identified two additional occupations, bringing the total to 29.[3] The recommended actions in the roadmap are applicable to many, but not all of these occupations, with specific recommendations

1 For the purposes of this document, the term retrofit may be used as shorthand for residential energy retrofits.
2 EEC and ISF, **Residential energy upgrades workforce mapping report**, 2025.
3 See Appendix 2.

prioritising occupations where there are immediate, actionable opportunities, consistent with the approach outlined above.

The residential energy retrofit workforce encompasses a wide and interconnected group of workers involved in upgrading existing homes to improve energy performance and enable electrification. It can include:

- **Trades and technical roles** – electricians, plumbers, air conditioning and refrigeration mechanics, glaziers, insulation installers, builders, and labourers.
- **Energy and building professionals** – energy assessors, building performance experts, retrofit coordinators, and project managers.
- **Support and enabling roles** – compliance officers, safety inspectors, trainers, auditors, customer engagement specialists, real estate professionals, administrators, and finance professionals.
- **Adjacent sector roles** – manufacturing, distribution, and product specification specialists that underpin the quality and supply of technologies such as heat pumps, induction cooktops, solar PV, and batteries.[4]

Workers in this sector must develop capabilities in system integration, occupant safety, and whole-of-home performance, as well as technical and role-specific capabilities. This breadth makes the retrofit workforce one of the most diverse and complex in Australia's clean energy transition.

STAKEHOLDER-LED APPROACH

To develop the roadmap, the EEC conducted 17 one-on-one interviews with industry stakeholders to identify what they viewed as the "lowest-hanging fruit" and "shovel-ready" opportunities for strengthening the retrofit workforce, including in relation to the roles outlined above. The EEC synthesised insights from these interviews and undertook desktop research to confirm the validity and underlying rationale of the suggested actions.

Using this evidence base, the EEC developed a preliminary "straw person" set of recommended actions, which was circulated to stakeholders for feedback. Stakeholders were invited to provide input in writing and through an online industry workshop held in January 2026. This feedback informed the development of the final roadmap and report.

A detailed list of stakeholders is provided in Appendix 1. Stakeholders who contributed feedback to this project are not assumed to endorse its final outputs in whole or in part. This work represents industry feedback obtained through consultation and independently analysed, collated and presented by the EEC.

WHY DEVELOPING THIS WORKFORCE MATTERS

Upgrading the energy performance of Australian homes presents both major opportunities and significant risks for Australia's workforce. New industries and technologies will generate jobs across construction, manufacturing, services and professional sectors, supporting the broader energy transition. However, without robust workforce pipelines, skill shortages (particularly in critical trades such as electrical and building services), risk delaying energy retrofits at scale. This would not only increase costs and slow progress towards Australia's 2050 emissions targets but also undermine energy security, worsen peak electricity demand, and increase households' exposure to volatile energy prices. The transition is creating a dual challenge of workforce shortages and skills transformation, and both must be addressed together if reform is to be enduring, efficient and effective.

The EEC's *Efficient, Electric Homes: Market Acceleration Plan* estimates that, to align residential housing with the Australian Energy Market Operator (AEMO) Step Change scenario, Australia will need to electrify approximately 2.4

4 Adjacent roles are not explored for the purposes of this work.

million homes and improve residential energy efficiency by 25 per cent by 2035.[5]

The Australin Government's Built Environment Sector Plan is one of six sector plans under the Government's Net Zero Plan and sets out the pathway for the built environment to reach net zero emissions by 2050. Electrification "wherever possible" is identified as a priority area for action.[6] Early action in the built environment is critical, as relevant technologies are mature and ready for deployment at scale, unlike some harder-to-abate sectors that require longer timeframes to adjust.

In addition, while housing represents a long-lived infrastructure challenge, it is predominantly privately owned. Upgrading Australia's residential energy performance therefore depends on the decisions of millions of households, each facing different financial, informational, and practical barriers. Reducing friction and making retrofits as simple as possible, in line with these targets and plans, will be critical to achieving the required scale and pace of change.

For the workforce, the challenge is considerable. For example, modelling suggests that Australia will need around 42,000 more electricians by 2030[7] to satisfy energy workforce demand (including demand for residential energy retrofits), and 85,000 by 2050 (a 27 per cent increase on current projected supply).[8] Other trades are experiencing similar acute shortages. Alleviating these shortages will require not only recruiting and training new entrants but also improving productivity by making better use of the existing workforce, which may in turn require a range of reforms. Strengthening workforce productivity through increasing skills capability and adaptability can ease marginal pressure on labour demand, while improving safety outcomes, living wages and broader economic conditions8.

It is critical that the benefits of this transition are widely shared. Every disengaged worker represents a lost opportunity. The roadmap emphasises inclusivity, ensuring that people facing barriers to participation (including those in regional and remote areas, women, First Nations individuals and workers from transitioning industries) can access pathways into secure, rewarding jobs in the residential retrofit sector, should they desire to do so.

BROADER SKILLS SYSTEM CONTEXT

Australia's jobs and skills system is complex, encompassing education and training, migration, and labour market mechanisms. Each subsystem involves multiple actors, from governments and Jobs and Skills Councils (JSCs) to industry bodies, unions, recruitment agencies, and education providers, working together to ensure the efficient matching of skills with industry demand.

Workforce planning for residential energy retrofits must therefore be integrated into this broader context. It is shaped by factors such as population growth, education pathways, qualification reform, workplace safety standards, and migration policies. While the skills system cannot resolve all challenges facing the retrofit sector, it remains one of the most critical levers available to governments and industry to ensure a steady, skilled workforce supply and to improve outcomes in this critical space. This means shaping interventions that build capacity, deepen capability, support inclusive workforce culture, and strengthen confidence that training, standards and pathways are keeping pace with industry need. It also points to the need for coordinated action across apprentices, employers, training providers and policy settings, rather than stand-alone fixes.

5 EEC, **Efficient, Electric Homes: Market Acceleration Plan**, 2025.
6 Australian Treasury, **Net Zero - Built Environment Sector Plan**, 2025.
7 PSO, **High Load, Short Supply: Bridging the gap to 2030**, 2025.
8 Jobs and Skills Australia (JSA), **The Clean Energy Generation: Workforce needs for a net zero economy**, October 2023.

FROM VISION TO ACTION

The following sections of this report set out the evidence base and rationale for the recommended actions in the roadmap, translating strategic intent into practical steps that support Australia's energy transition. The proposed actions focus on areas of broad stakeholder alignment, deliver meaningful near- to mid-term impact, and lay the foundations for long-term workforce capability and resilience. These foundations can be understood through four connected dimensions: building workforce **capacity**, strengthening workforce **capability**, fostering the **culture** needed to attract and retain workers, and lifting industry **confidence** to invest in workforce growth, upskilling and new technologies that align with residential retrofit work. They are not intended as an endpoint, but as a starting point: a pragmatic framework to align governments, industry, and training providers to catalyse coordinated action.

If adopted, these actions can represent a critical step towards building the skilled workforce Australia requires to upgrade the energy performance of its housing stock - improving energy efficiency, strengthening energy security by reducing demand and exposure to system shocks, and ensuring homes are fit for a net zero future.

1. CENTRALISING COORDINATION AND PARTNERSHIP

Centralised coordination and partnership are critical to ensure workforce and skills development activities are as aligned as possible across jurisdictions, supporting consistent, high-quality residential energy retrofit outcomes nationwide.

No.	Recommended action
1.1	Convene a national industry leadership group for residential energy retrofits.

WHY IS THIS RECOMMENDED ACTION NEEDED?

National coordination - across governments and industry - is essential to overcoming systemic barriers and delivering to high-quality residential retrofits that support Australia's transition to an affordable, net zero, climate-resilient built environment. While workforce planning is critical, successfully implementing a plan to boost the workforce will be affected by a range of factors, including government policies, including standards, regulation and programs, and other factors such as market structures and private sector initiatives. Workforce planning is most effective when policy, training reform, industry stewardship and practical implementation are treated as connected levers rather than separate workstreams.

At present, substantial work is underway to strengthen the workforce and implement reforms to training and qualification arrangements to support residential electrification. However, this effort is fragmented across jurisdictions, portfolios, trades, and government ecosystems. In the absence of coordinated national leadership, activity risks remaining piecemeal - undermining efficiency, increasing costs and delivery risk, and slowing the pace of retrofits.

A national industry leadership group would provide a missing coordination mechanism, ensuring existing efforts are aligned, gaps are clearly identified, duplication is avoided and reform efforts are focused on practical outcomes.

Effective workforce planning must operate at a system level: coordination is needed not only to grow workforce capacity, but also to align capability development, support positive workforce culture across the sector, and build confidence among employers, workers and consumers.

FURTHER CONTEXT

Effective use of the existing workforce is as important as attracting new workers. For example, installing technologies such as reverse-cycle air conditioners and heat pump hot water systems in existing homes requires work by multiple trades in some jurisdictions which can create cost and scheduling challenges and more strain on multiple trades already in shortage.

Establishing a national industry leadership group bringing together relevant JSCs, unions, industry representatives and governments would provide a mechanism for developing practical, industry-led solutions to these shared challenges, with a deliberate focus on residential energy retrofits.

As an initial priority, the group should:

- **Undertake a gap analysis and stocktake** of existing workforce, training and skills initiatives relevant to efficient residential electrification, to identify overlaps, gaps and opportunities for better alignment, and to avoid replicating work already underway.

- **Co-design a principles-based approach to safely streamline retrofits**, drawing on existing work and focusing on genuine gaps. This may include consideration of national training system settings, alternative training models, and improved skills recognition pathways.
- **Provide consolidated, industry-endorsed advice** to housing and energy ministers to support a nationally aligned, non-duplicative rollout of agreed solutions.

Over time, the group could also be tasked with developing industry-led responses to other critical barriers, including:

- Expanding apprenticeship and traineeship opportunities;
- Improving the sector's ability to respond to innovation and new technologies;
- Supporting implementation of the priority actions identified in this roadmap; and
- Better utilisation of skilled migration pathways.

While Jobs and Skills Australia (JSA) and JSCs already play important convening roles, this proposed group would intentionally extend beyond existing structures, recognising that residential energy retrofits span multiple sectors. It would span multiple levels of government, industry, unions, consumer representatives and training bodies, and operate with a whole-of-system perspective that cuts across portfolio and departmental boundaries.

Importantly, the group is not intended to replicate existing work, but to bring together the many pieces of the puzzle, break down silos between trades and government ecosystems, and focus attention on residential energy retrofits, an area that currently lacks sustained national coordination despite its central role in emissions reduction, energy security, cost-of-living outcomes and climate resilience.

Experience across energy, housing, and skills policy demonstrates that sustained attention and clear leadership are decisive factors in delivery. Establishing and resourcing a national industry leadership group would provide the focus, accountability and momentum required to move residential retrofit from aspiration to delivery.

2. GROWING AND EMPOWERING THE TRADES WORKFORCE

Trades are central to Australia's residential retrofit workforce: most critical technologies to enhance the energy performance of homes cannot be deployed without them.

No.	Recommended action
2.1	Align government procurement with skills development objectives.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Australia has committed to delivering 1.2 million new homes over five years from mid-2024.[9] At the same time, the existing housing stock will require millions of retrofits to meet strengthen their energy performance, alongside the rapid build-out of clean energy infrastructure.

These parallel demands are occurring in the context of acute and widespread trade shortages. Electrical, plumbing, refrigeration, construction, and related trades are already under pressure, and without decisive intervention, workforce constraints will become a binding limit on delivery across housing, energy, and emissions reduction objectives. Addressing this challenge will require action across all available levers, including a stronger role for government in enabling and accelerating workforce supply.

FURTHER CONTEXT

There is strong demand among young Australians for apprenticeships, yet the availability of positions has not kept pace, particularly in high-demand trades. This reflects a mismatch between population growth and the number of people entering apprenticeships and traineeships.[10]

The resulting workforce shortfalls are driving up the cost of trade services and constraining delivery across new housing, residential retrofits, and clean energy infrastructure. As PSO's recent workforce planning has emphasised, this bottleneck is not simply about learner demand; it is shaped by employer capacity, training system constraints, and the broader conditions that influence commencements and completions. It also reinforces the value of using existing skills more effectively while the pipeline grows, including through settings that improve workforce matching and reduce avoidable inefficiencies. While industry has a role in expanding training and employment opportunities, governments also exert significant influence over market conditions and workforce outcomes through policy, funding, and procurement settings.

Government procurement is one of the most powerful tools available. The Federal Government alone awards approximately 70,000 contracts each year, with a total value of $50–70 billion.[11] Likewise, states and territories have significant procurement capacity that can be leveraged. Procurement processes already consider a range of public value outcomes, including social and economic impacts. Leveraging this purchasing power to support workforce development,

9 Australian Treasury, **Delivering the National Housing Accord**.
10 Waugh et al., **The impact of increasing university participation on the characteristics of apprentices**, NCVER, 2024. ABC, **These charts show the challenge to secure the next generation of home builders**, 2025.
11 Australian Government Department of Finance, **Contract Management Guide**.

particularly through apprenticeship pathways, represents a practical and scalable intervention.

Importantly, the application of procurement levers should not be limited to renewable energy infrastructure. Similar approaches could be applied across housing, transport and public infrastructure to drive broader capability and capacity outcomes across multiple trades.

Without all levels of government demonstrating clear leadership through their own procurement practices, it is unrealistic to expect industry alone to expand apprenticeship supply at the scale and speed required.

Industry feedback highlighted the value of targeted support for the employment of early-stage apprentices and trainees. Stakeholders cautioned that where procurement or program requirements rely on broad, non-specific criteria, unintended consequences can arise. Larger contractors may meet requirements by engaging third- or fourth-year apprentices drawn from smaller firms, or by substituting trainees, rather than investing in new entrants. This does not grow the overall apprentice pipeline and can instead weaken smaller businesses that bear the cost of initial training, undermining long-term workforce development outcomes.

These impacts are especially pronounced in regional areas, where large government contractors can attract later-stage apprentices away from local businesses to satisfy compliance settings, reducing workforce capacity for local projects and the broader community. In such contexts, alternative approaches, such as regionally based training partnerships, could enable large contractors to support first-year apprentice pathways without displacing existing local workforce capability.

Stakeholders expressed strong support for governments leading by example by embedding apprenticeship requirements into procurement frameworks, especially for large-scale projects such as Renewable Energy Zone (REZ) projects.

This could include:

- **Extending the coverage of the Australian Skills Guarantee (ASG)** to include all federally funded renewable energy and transmission projects. This could include adoption of Recommendation 2.12 of the Strategic Review of the Australian Apprenticeship Incentive System, which proposes reserving a portion of labour hours under the ASG for first and second-year apprentices.[12]
- **Using Group Training Organisation (GTO) models and structured industry release arrangements**, where appropriate, to give apprentices exposure across major infrastructure and energy projects, strengthening long-term workforce mobility into residential retrofit, new-build and other clean-economy roles.
- **Setting clear targets for First Nations apprentices and trainees** within REZ and other major government-funded projects.[13] Targets should also be considered for women and mature aged apprentices.
- **Prioritising support for employment of early-stage apprentices**, where interventions are most likely to expand the overall workforce pipeline.
- **Considering requirements for other in-demand skills on large projects**, including those that may sit outside traditional qualification frameworks.

12 Aligned with PSO, **Electrifying the Future: Policy recommendations to grow Australia's skilled energy workforce**, 2025.
13 Aligned with First Nations Clean Energy Network (FNCEN), **Powering First Nations Jobs in Clean Energy**, June 2024.

No.	Recommended action
2.2	Support the VET sector with targeted funding to improve capability and address productivity and capacity challenges.

WHY IS THIS RECOMMENDED ACTION NEEDED?

The vocational education and training (VET) sector is central to addressing Australia's skilled trade shortages and enabling the delivery of new housing, residential energy retrofits, and clean energy infrastructure. However, interested individuals face several constraints, including issues such as long waiting times before training can commence and the distance to the nearest delivery location. Without targeted support, capacity constraints within the VET system will limit the number and quality of qualified tradespeople entering the workforce, slowing the pace of the energy transition and increasing costs for households and governments. PSO's recent work notes persistent constraints in trainer supply, training infrastructure and delivery flexibility, all of which can place a ceiling on how quickly the workforce can grow, even where learner demand is strong. It further suggests that stronger participation in training and upskilling can support better productivity outcomes over time, particularly in sectors that rely heavily on specialised labour.

Strengthening VET capability and capacity is therefore essential to building a workforce that can expand at the scale and pace required.

FURTHER CONTEXT

Stakeholders identified a range of strategies to strengthen the VET sector and improve capability and address productivity and capacity challenges:

- **Increasing training places and funding** for Registered Training Organisations (RTOs) to expand delivery and improve access to trade pathways. Stakeholders noted that state and territory funding caps can sometimes undermine national goals, and that better alignment could help alleviate this pressure.
- **Extending the Clean Energy Capital Investment Fund beyond its initial term as a recurrent, ongoing program** to reflect the continuing and growing need to train the workforce in clean energy technologies.[14]
- **Supporting mobile trade school models** to improve access for regional and remote learners.
- **Leveraging technologies** such as virtual reality, augmented reality, and other digital tools which can make training more flexible, improving learning outcomes, reducing costs, and extending reach. Digital delivery also benefits apprentices and employers by aligning training with business operations, reducing travel time, and maximising productive hours. Stakeholders did not suggest fully remote training; rather that selected theory units, and some practical components are well suited to digital delivery. Stakeholders also cautioned a need for careful attention to prevent higher attrition or reduced completion rates, which could be an unintended consequence of increased reliance on technology.

14 Aligned with PSO, **Electrifying the Future: Policy recommendations to grow Australia's skilled energy workforce**, 2025.

- **Making trainer pathways more accessible** to expand the pool of qualified trainers and improve delivery quality. While some stakeholders discussed streamlining competency requirements for trainers, other stakeholders emphasised the need to maintain consistent quality standards. While Certificate IV in Training and Assessment was endorsed, ongoing continued profession development (CPD) requirements were seen as potentially too onerous which could be a barrier to attracting and retaining trainers.

While stakeholders differed on the priority of these interventions, there was broad agreement that the Federal Government should allocate targeted support to strengthen VET sector capacity, in partnership with state and territory governments where relevant. Such action is essential to grow the number of skilled tradespeople, expand apprenticeships, and support a sustainable and capable workforce to deliver Australia's housing and energy transition.

No.	Recommended action
2.3	Expand entry pathways to trades, particularly for underrepresented groups.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Improving equity of access and training outcomes for underrepresented groups is critical as the workforce cannot grow fast enough if large segments of the population remain excluded. Despite acute trade shortages, women hold fewer than 4% of hands-on roles in the clean energy sector[15] and account for just 7.8% of apprentices in male-dominated trades,[16] while the employment gap for First Nations Australians has remained largely unchanged for decades.[17]

Increasing participation from underrepresented groups is not only a matter of inclusion - it is fundamental to workforce resilience and long-term capacity. A stronger, more diverse VET pipeline is essential to ensuring Australia has the skilled workforce needed to serve communities, support the energy transition, and deliver long-term housing and infrastructure objectives. Sectors grow more effectively when people can see themselves in the work, enter through credible pathways, and remain in environments that support belonging, safety and progression.

FURTHER CONTEXT

A 2023 survey found that 10 per cent of school leavers intended to pursue an apprenticeship, with only 14 per cent of male and 5 per cent of female secondary students considering an apprenticeship pathway. It also found a geographic divide, with seven per cent of students in metropolitan areas expressing an interest in an apprenticeship, compared to 13 per cent in regional, and 15 per cent in rural areas.[18]

Career mentoring in schools, pre-apprenticeship programs and well-structured entry pathways can help individuals explore trades, gain a realistic understanding of the work, and increase retention and completion rates. They also provide an opportunity to introduce VET pathways to more diverse audiences. Key ideas from stakeholders to support underrepresented groups included:

- **Expanding Certificate II entry programs** to target women, First Nations peoples, and other underrepresented groups, with a focus on critical occupations for residential electrification, such as HVAC mechanics, electricians, and plumbers. Governments could also work to reduce costs for individuals to undertake these programs, for example, funding courses in areas of critical need, such as Certificate II in Electrotechnology, on a fee-free basis nationwide under Fee-Free TAFE initiatives.
- **Offering First Nations employment and training pathways** in regional and remote housing retrofit and microgrid programs.[19]
- **Investing in industry-aligned career mentoring in schools** that inspires students and reflects real workforce opportunities. Early engagement benefits all students and can particularly improve outcomes for underrepresented groups in trades and professional fields. Opportunities include using digital tools to provide interactive, up-to-date information on apprenticeships, traineeships, university, and other pathways, and partnering with industry to give students authentic insights into careers and workforce needs.

15 Powering Skills Organisation, **Shifting Currents Elevating Diversity in Energy Careers**, Research Brief, November 2024.
16 Apprentice Support Australia, **Boosting women apprentices in male-dominated trades**.
17 Powering Skills Organisation, **A Bright Future Growing the First Nations Clean Energy Workforce: research brief**, March 2025.
18 Powering Skills Organisation, **Electrifying the Future**, 2025.
19 Aligned with First Nations Clean Energy Network (FNCEN), **Powering First Nations Jobs in Clean Energy**, June 2024.

- **Developing a national strategy to support career influencers and promote trades pathways** that raises the profile of trades, aligns messaging with student motivations, and improves how pre-apprenticeship and VET in schools training are positioned within the education system.[20] This includes equipping career advisors, teachers, and parents with clear, consistent information, and leveraging targeted campaigns and partnerships to better communicate the value and opportunities of trades careers.

Many stakeholder interviews conducted for this project included discussion about the merits of wage support for apprentices, particularly for those from lower socio-economic backgrounds and/or regional and rural areas, to ensure cost-of-living pressures do not limit entry pathways to, or participation in, apprenticeships. The lower socio-economic cohort remains one of the most likely to undertake trade pathways[21] and thus it is operationally critical, as well as ethical, to ensure this group is supported. Likewise, women are more likely to start an apprenticeship later in life when training wages may make it difficult to afford increased living expenses such as the cost of housing, while also supporting a family.[22]

Another area identified for further exploration is how to encourage migrants and first-generation Australians to pursue apprenticeships. While Australia has historically relied on migration as a source of population growth,[23] since 2007 migrants and first-generation Australians have been less likely to undertake an apprenticeship compared with pursuing university study. This may reflect migrant aspirations for themselves and their children, as well as changing migration policy priorities.[24]

Several stakeholders noted that trades often run in families, meaning the first generation to undertake a trade can create a generational pipeline. Identifying ways to engage these cohorts is therefore essential to building a sustainable and diverse workforce. This will be complex, falling outside of the scope of this work – but could be captured by the industry leadership group described in Recommendation 1.

Finally, several stakeholders emphasised the need to better understand why apprentice dropout rates are high in particular areas. There was strong interest in gaining deeper insight into this issue and identifying how to better support individuals throughout the apprenticeship lifecycle. This may be well suited to further research undertaken in partnership with industry and academia.

20 Aligned with Powering Skills Organisation, **Electrifying the Future**, 2025.
21 Waugh et al., **The impact of increasing university participation on the characteristics of apprentices**, NCVER, 2024.
22 DEWR, **Strategic Review of the Australian Apprenticeship Incentive System**, 2024.
23 ABS, **Overseas Migration**, December 2025.
24 Waugh et al., **The impact of increasing university participation on the characteristics of apprentices**, NCVER, 2024.

No.	Recommended action
2.4	Embed practical, industry-aligned continued professional development (CPD) requirements into trade licensing.

WHY IS THIS RECOMMENDED ACTION NEEDED?

CPD refers to the ongoing maintenance and enhancement of skills, knowledge, and competence across a professional career. Despite rapid technological change across the energy, construction and retrofit sectors, CPD is not required to maintain many trade licences in Australia, and where requirements do exist, they are applied inconsistently across states and territories. For example, in most jurisdictions the electrical industry operates without a mandatory CPD framework, increasing the risk that critical skills deteriorate or fail to keep pace with new and emerging technologies. Compounding this, upskilling rates are falling even as skill needs rapidly expand. Between 2007 and 2022, the utilities and the construction sectors saw amongst the largest declines in training participation and are now amongst the lowest levels nationally. Tradespeople (mainly electricians) generally undertake less upskilling than other occupations.[25]

Introducing consistent CPD requirements would strengthen productivity and safety outcomes, lift professional standards, and help maintain confidence among consumers, workers, and industry, as technologies, regulations, and practices evolve. CPD is a key mechanism for building and sustaining capability over time and reinforcing confidence that the workforce can adapt as technologies and service expectations change.

FURTHER CONTEXT

To keep pace with rapid technological change and ensure a safe, competent, and future-ready workforce, states and territories should embed practical CPD requirements within core trade licensing frameworks. While CPD is already required in some jurisdictions and occupations, coverage is uneven and inconsistent, creating gaps in skills maintenance and technology uptake across the workforce.

For example, electrical and other energy-related trades are experiencing rapid transformation, which includes the growing need for soft skills and digital literacy, as workers are increasingly required to navigate complex systems involving Internet of Things (IoT) devices, smart meters and renewable energy technologies.[26] Proficiency in solar, battery storage, electric vehicle systems and ozone-friendly refrigerants is becoming essential. The nature of installations, fault detection and customer interaction are also evolving.[27]

Stakeholder feedback during this project indicated strong support for CPD, provided it is designed to be practical, proportionate, and accessible, particularly for small and regional businesses. Key elements of an effective approach include:

- **Developing CPD frameworks in close consultation with industry** to ensure requirements are realistic, relevant, and responsive to evolving technologies.
- **Avoiding overly restrictive delivery models**, such as mandatory in-person training delivered solely by RTOs, which can impose significant burdens, especially for small and medium-sized enterprises (SMEs) and regional operators.

25 PSO, **Productivity and Skills: Exploring their unique relationship in the energy sector**, May 2026
26 Powering Skills Organisation, **Electrifying the Future**, 2025.
27 Ibid.

- **Enabling flexible online learning** for a substantial portion of CPD content, supported by appropriate assessment, to improve accessibility, reduce travel and downtime, and ensure genuine skills development.
- **Supporting a competitive and diverse market of CPD providers**, not limited to RTOs, to encourage quality, innovation, and value for money.
- **Establishing consistent and reliable record-keeping requirements** across all providers to support compliance, portability, and regulatory oversight.
- **Focusing CPD content** on improving worker competency, safety, and technical knowledge, while avoiding unnecessary administrative burden or models that risk profiteering.
- **Streamlining accreditation** by consolidating overlapping or duplicative requirements into CPD modules, rather than requiring workers to repeatedly undertake similar qualifications.

Taken together, these principles would support the introduction of CPD in a way that strengthens productivity, professional standards and safety outcomes, while remaining practical and workable for industry.

No.	Recommended action
2.5	Support career transitions for gasfitters.

WHY IS THIS RECOMMENDED ACTION NEEDED?

As electrification accelerates and gas is progressively phased out in some jurisdictions, many skilled gasfitters face an increased risk of displacement. Proactive investment in transition pathways (particularly into refrigeration and related trades) is critical to retaining these workers' skills, experience, and industry knowledge. Supporting reskilling and upskilling will help maintain a future-ready workforce, address growing demand in electrified technologies, and ensure the energy transition is orderly, fair, and delivers a just transition for affected workers and communities.

FURTHER CONTEXT

Across Australia, government policy and consumer behaviour is driving a shift away from gas appliances in homes and buildings.

In the Australian Capital Territory, fossil gas is being phased out by 2045, with gas connections banned in new developments from late 2023 and incentives in place to support households to switch to efficient electric appliances.[28] In Victoria, from 1 January 2027 all new homes and most new commercial buildings will be required to be built all-electric. From 1 March 2027, gas hot water systems in existing homes must be replaced with electric alternatives at end of life.[29] Similarly, new planning controls from the City of Sydney will require new residential buildings, medium to large commercial buildings, hotels and serviced apartments within the local government area to be all-electric.[30]

Beyond government action, consumers are increasingly choosing to move away from gas in the home, driven in part by cost-of-living pressures. For example, a typical household could reduce their energy costs by around $1,000 per year by electrifying their household appliances, hot water systems and space heating, even accounting for up-front costs.[31] Households who also purchase solar panels, a home battery and electric vehicles could reduce their energy costs by around 40 per cent or $4,300 per year, after accounting for upfront and financing costs.[32]

Households eager to save money are responding to these cost signals.

In practice, these trends mean that gasfitters, particularly in jurisdictions with formal gas phase-out policies, face a growing risk of displacement. This presents both a challenge and an opportunity. Gasfitters hold critical skills that will be essential to the energy transition, including their role in safely decommissioning existing gas infrastructure and their transferable capabilities in complex problem-solving, fault-finding, and the safe handling of regulated materials.

Early action is needed to support a just transition for these workers and to ensure their skills are retained and redeployed in ways that benefit communities and the energy system. Stakeholders have consistently highlighted strong synergies between gasfitting and refrigeration trades, particularly given the critical shortage of air-conditioning and refrigeration mechanics. The 2025 Occupation Shortage List shows shortages in this occupation in every state and territory.[33]

28 ACT Government, **Preventing new gas network connections**, accessed January 2026.
29 Victorian Government, **Victoria's Gas Substitution Roadmap**, accessed January 2026.
30 City of Sydney, **All electric buildings get the green light**, accessed January 2026.
31 Australian Government, **Australia's Net Zero Transformation: Treasury Modelling and Analysis**, September 2025.
32 Ibid.
33 Jobs and Skills Australia, **Occupation Shortage List**, 2025.

Encouraging and supporting gasfitters to cross-skill or transition into refrigeration and related fields would be a proactive step to protect workers while strengthening the workforce pipeline needed to install and service heat pump and other electrified technologies. This could include free or subsidised training, collaboration on bespoke transition pathways with recognition of prior learning (RPL), and targeted support in jurisdictions with gas phase-out mandates, while making opportunities available nationally to reflect broader electrification trends.

No.	Recommended action
2.6	Review and modernise the plumbing apprenticeship.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Heat pump hot water systems (HPHWS) are being adopted at an accelerating rate across Australia, partly driven by state and territory regulations to phase out gas generous incentives for HPHWS. Energy and climate policymakers expect these systems will playing an important role in the energy transition because of their high energy efficiency and potential to store thermal energy. Plumbers are a critical and influential decision-maker in household replacement choices, which tend to be made when a home's hot water system breaks down. However, current plumbing apprenticeship requirements mandate gas training and experience, while training in HPHWS remains optional, leading many plumbers to recommend like-for-like replacements rather than upgrades to HPHWS. This misalignment with policy direction and consumer trends presents a clear gap. It is therefore critical that plumbers understand the role and benefits of HPHWS, and are equipped to correctly size, site, and install these systems to a high-quality standard.

FURTHER CONTEXT

Government programs and regulations are actively reducing the use of gas hot water in homes, while incentivising efficient electric and HPHWS technologies. These systems are increasingly popular due to lower running costs, environmental benefits and government subsidies.

Consultation with industry stakeholders highlighted that retraining existing plumbers in HPHWS is costly and challenging, particularly without CPD requirements to drive demand.

Apprentices can currently complete their qualifications without any hands-on experience with HPHWS, which is an elective unit. As gas use declines, businesses will find it harder to train apprentices on gas, creating a potential bottleneck - an issue already reported in jurisdictions with lower gas prevalence, such as Tasmania. This challenge is expected to grow due to electrification trends, net zero policies, and broader regulatory settings.

Updating the apprenticeship will require industry to submit a Case for Change to BuildSkills, providing evidence, rationale, and justification for review and amendment of the training package. Consultation for this project indicated the following priorities:

- Introduction of flexible competency choices, including consideration of optional gas units, reflecting declining gas work and the shift toward electrification.
- Ensuring newly qualified plumbers have hands-on experience with efficient electric technologies, including HPHWS.

Stakeholders cautioned that gas hot water will remain in the market, so a decline in plumbers with gas skills could create shortages for installation, maintenance, or decommissioning. While current qualified and apprentice plumbers maintain these skills, supplementary training or skills recognition mechanisms may be needed if shortages arise in the future due to a change in training and qualification arrangements.

Noting that a review of the national training package and qualification is time-consuming, an immediate challenge remains: many plumbers lack knowledge of HPHWS and the need to coordinate multiple trades on site can lead to sub-optimal outcomes for both consumers and trades.

In the short term, industry support should focus on helping businesses optimise existing trades and arrangements to achieve better household outcomes, for example, coordinating electrification projects so all relevant trades are available on site, and trades understand their licensing and regulatory obligations and limitations.

While it does not strictly fit the scope of this roadmap project, ideas discussed included whether the prevalence of HPHWS and heat pumps more broadly, including reverse-cycle air conditioners (RCACs), which span refrigeration, electrical, and plumbing trades, might warrant consideration of a new trade or occupation entirely. While potentially contentious, there was clear industry willingness to at least explore this discussion, reflected in both the project workshop and project interviews. This discussion could be progressed through the national industry leadership group described in Recommendation 1.

No.	Recommended action
2.7	Improve skills recognition pathways for skilled migrants already in Australia.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Australia's housing, clean energy, and electrification targets require maximising the availability of skilled workers. Currently, around 18,000 migrants with relevant construction skills are unable to fully apply their expertise due to barriers in skills recognition.[34] Without action, this represents a significant underutilisation of talent that could support residential retrofit, electrification, and other priority projects.

FURTHER CONTEXT

Harnessing this migrant workforce is an important component of meeting national housing, clean energy, and electrification objectives. Skills recognition barriers limit migrants' ability to contribute in a timely and efficient manner, even when they hold internationally recognised qualifications. These barriers can include overly prescriptive training package requirements, lack of structured RPL pathways, and gaps in mutual recognition of overseas qualifications.

NEAR-TERM ACTIONS

- Governments should collaborate with industry, unions, and other stakeholders to fast-track a national RPL model. This would allow skilled migrants to re-enter their construction professions more efficiently, reducing delays and reliance on extended retraining programs. This should account for and build upon the current established processes related to the Offshore Technical Skills Record (OTSR), Trades Recognition Australia (TRA and associated Minimum Australian Context Gap training).
- Targeted RPL processes or pilot programs could be developed based on industry endorsement rather than strictly adhering to existing training packages. Short or targeted course completion could complement these processes, providing assurance of competence in priority areas such as residential retrofit, electrification, or emerging technologies. A current BuildSkills project aims to investigate the appropriateness and development of a Minimum Australian Context Gap course for skilled migrant plumbers, who are aiming to acquire an occupational license in Australia. The learnings from this project, and others like it, could be harnessed to pilot or further establish further programs.

MID-TERM ACTIONS

- Governments should establish or expand mutual recognition agreements for construction-related qualifications between countries, streamlining the movement of skilled workers across jurisdictions and ensuring faster, more efficient workforce mobilisation.
- These agreements could provide a longer-term, sustainable solution to skills shortages while maintaining high standards of safety, quality, and compliance across the construction and electrification sectors.

While reducing barriers is important, it remains essential that individuals authorised to work in Australia possess the appropriate skills to meet local requirements, including knowledge of relevant Australian standards, and local safety and licensing obligations.

34 Master Builders Association NSW, **Skilled migrant workers underutilised despite construction industry shortages**, 2024.

Safely reducing barriers to skills recognition would increase the effective supply of skilled workers and enhance productivity in residential retrofit and other critical areas. It would also provide a clear, nationally coordinated pathway for migrant workers, integrating them fully into Australia's workforce and supporting both industry growth and broader economic outcomes.

No.	Recommended action
2.8	Support women in trade and retrofit careers.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Women remain significantly underrepresented in trades and on worksites, limiting the available workforce and exacerbating skills shortages. Unsafe or unwelcoming environments, lack of visible role models, and limited access to targeted support can act as barriers to recruitment, retention, and career progression. Addressing these barriers is essential to unlock this talent pool, improve workforce diversity, and ensure a resilient, future-ready trade and retrofit sector. This is fundamentally a workforce culture issue with direct implications for capacity and confidence; without inclusive workplaces and visible progression pathways, the sector will continue to operate below its workforce potential.

FURTHER CONTEXT

PSO's 2025 Workforce Plan reinforces that workforce diversity is not peripheral to supply challenges: culture, belonging and visible pathways are essential conditions for expanding and retaining the workforce over time.

While women make up 47.8 per cent of all workers in Australia, they represent just 17.8 per cent of energy sector workers, falling to 4.4 per cent among electricians and just eight per cent of the current energy-related trades apprentices.[35] Retention is also a major challenge, with apprentice completion rates in male-dominated trades for women being lower than for men.[36]

Apprenticeships offer an important pathway for women into trade careers, but women face significant barriers, including sexism, isolation, harassment, and poor workplace conditions.

These challenges contribute to higher attrition: 14% of women drop out of apprenticeships compared with 7% of men.[37] Women in trades are also twice as likely to observe bullying (46% vs 24%)[38] and often find themselves as the only woman on a worksite or part of a very small minority, navigating a work culture that has not adapted to support gender equity.

Women make up less than 10% of apprentices in male dominated trades.[39] Without improving recruitment, retention, and workplace culture, this skills gap cannot be addressed.

While there is no short- or mid-term solution to the problem, stakeholders identified opportunities to make progress on this issue in the near to mid-term:

- **Pathways into management** – Targeted training, scholarships, mentoring, and leadership programs to support women progressing into management roles. Increasing visibility through mentorship and networks is critical: "you can't be what you can't see."
- **Safe and respectful workplaces** – Strengthen and enforce zero-tolerance policies on discrimination and harassment, supported by clear reporting pathways, leadership accountability, workforce education, and dedicated regulator resources for advice and complaint handling.
- **Incentives for apprentices** – Provide targeted financial support to female apprentices and their employers to encourage uptake, retention, and career progression.

35 Powering Skills Organisation, **Electrifying the Future**, 2025.
36 Ibid.
37 NCVER 2019 in DEWR, **Strategic Review of the Australian Apprenticeship Incentive System**, 2024.
38 DEWR, **Strategic Review of the Australian Apprenticeship Incentive System**, 2024.
39 Apprentice Support Australia, **Boosting women apprentices in male-dominated trades**, May 2025.

- **Access to amenities** – Ensure all workers have access to clean, appropriate toilet and amenity facilities, with practical flexibility for small or short-duration projects to maintain safe and equitable conditions.[40]
- **Access to gender-appropriate personal protective equipment (PPE)** – Ensure all workers have access to affordable and properly fitting PPE. A lack of access to this contributes to negative perceptions that women's participation is not the norm, undermining perceptions of physical and psychological safety. Addressing these material barriers is an essential part of cultural change. [41]

40 Aligned with Powering Skills Organisation, **Electrifying the Future**, 2025.
41 Ibid.

3. ACHIEVING FULL PROFESSIONALISATION OF THE THERMAL PERFORMANCE WORKFORCE

Thermal performance is the foundation of an energy efficient home. Industry-led initiatives have significantly advanced workforce professionalisation, and with targeted support, this progress can be brought to full maturity.

No.	Recommended action
3.1	Support the professionalisation of Australia's insulation installation workforce by requiring trained installers and inspectors across retrofit initiatives and regulatory schemes.

WHY IS THIS RECOMMENDED ACTION NEEDED?

The thermal performance of a home is critical to health, comfort, climate resilience, and affordability, while also ensuring efficient electric technologies like reverse cycle air conditioners (RCACs) operate effectively. The insulation industry has made significant progress in professionalising the workforce. Governments have an imminent opportunity to further advance these efforts and improve outcomes for workers and households.

FURTHER CONTEXT

Insulation is critical for efficient electrification because it enables the rightsizing of appliances such as air conditioners and solar lowers peak demand, reducing household energy bills and exposure to energy price volatility and deferring costly network upgrades. It also improves health outcomes by reducing avoidable strain on the healthcare system and minimising absenteeism from work and school.[42] This is particularly important in Australia, where most housing stock was built before minimum efficiency standards were introduced and therefore requires thermal performance upgrades to meet modern standards of efficiency and comfort.

Despite insulation's critical role in efficient, electrified homes, the industry has historically been largely unregulated, and workers lacked access to national training products to support quality and safety on the job. In response, the insulation industry supported the EEC in developing the EEC Certified Insulation Installer (EEC CII) program. Governments also contributed through development of an industry training unit and support for the EEC CII program.

Until now, installers have relied on on-the-job training or the informal 'Skill Set' prescribed by EEC CII Certification. The insulation industry recently collaborated with BuildSkills to develop new national training products for insulation installers, expected to be released in late-2026.

42 Sustainability Victoria, **The Victorian Healthy Homes Program Research findings**, 2022. Grimes et al., **Cost Benefit Analysis of the Warm Up New Zealand: Heat Smart Programme Ministry of Economic Development**, 2012 and Pierse et al., **Healthy Homes Initiative: five year outcomes evaluation**, 2024. Gilbertson et al. 2006, 'Home is where the hearth is: Grant recipients' views of England's Home Energy Efficiency Scheme (Warm Front)', **Social Science & Medicine vol. 4 issue 4**, pp. 946-956.

Governments can further support this progress by driving uptake for the new Skill Set through:

- Requiring attainment for installers in all government retrofit programs and applicable regulations, including minimum rental standards; and
- Requiring attainment (as a minimum) for inspectors in all government program and regulatory audit regimes, noting an industry preference for a qualification is observed.

No.	Recommended action
3.2	Develop and implement a skills recognition mechanism for window installation.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Glass and windows are critical components of a building's thermal envelope and are often the weakest point for heat loss and gain. Strong thermal performance is essential to household health, comfort, climate resilience, and energy affordability. The glazing industry has identified a skills gap in the correct installation of window assemblies, which can significantly undermine the performance of otherwise high-quality products.

FURTHER CONTEXT

Homes with high energy performance depend on a high-quality thermal shell. However, retrofit window installations are often undertaken by inadequately skilled workers with limited regulatory oversight, creating risks to build quality, thermal performance, and moisture management.

The glazing industry has identified a skills gap in the installation of window assemblies that could be addressed through the development of an industry-led micro-credential.[43]

Government(s) and industry should collaborate to develop a training and skills recognition pathway for window assembly installation. Over time, governments should consider introducing a licensing or regulatory mechanism that requires evidence of completion of this training for both retrofit projects and new builds. This would drive demand for the training, and lift standards in the industry.

43 Institute for Sustainable Futures and Energy Efficiency Council, **Residential Energy Efficiency Workforce Mapping Report**, 2025.

No.	Recommended action
3.3	Develop and implement a skills recognition mechanism for draught proofing.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Draught proofing plays a key role in improving the energy performance, comfort and affordability of homes. However, it is currently viewed as a low-skill activity and there is no designated trade or recognised skills pathway for draught proofing, creating a gap for industry, consumers and governments. Despite being acknowledged in previous work,[44] this gap has not yet been addressed, limiting confidence in installation quality and potentially limiting governments' interest in incentivising draught proofing through energy efficiency programs.

FURTHER CONTEXT

Draught proofing is consistently described as a high-impact, low-cost efficiency measure, but stakeholders note the absence of a formal training or skills recognition pathway that consumers, governments and programs can reference.

Industry has identified a skills gap in the installation of draught proofing features that could be addressed through the development of an industry-led micro-credential.[45] Developing a fit-for-purpose pathway would provide a clear benchmark for quality, and support consistent standards of delivery of this work.

Stakeholders emphasised that any training or skills recognition mechanism should be cost-effective and lightweight, focused on core competencies, as draught proofing is a lower paid role, often undertaken at the labourer/handyperson level. This includes ensuring installers understand common air leakage points throughout the building envelope, rather than narrowly focusing on visible measures such as sealing doorways.

Consultation also highlighted gaps in auditing and inspection capability. In particular, improved understanding of ventilation and moisture management is needed among those undertaking inspection roles to avoid unintended consequences. This is likely best addressed through targeted upskilling within existing audit and inspection frameworks.

44 Ibid.
45 Ibid.

4. SUPPORTING PROFESSIONALS TO DRIVE RESIDENTIAL ENERGY RETROFITS

Real estate agents, designers, administrators, salespeople and other professionals play a critical role in supporting home energy retrofits. They need the right skills and knowledge to provide effective advice.

No.	Recommended action
4.1	Upskill residential builders to better understand the value of energy efficient, high performing homes.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Residential energy retrofits are often delivered as part of large renovation projects, placing builders - and their sales, design and administrative staff - in a key position to influence household decisions. Ensuring this cohort understands and values efficient electrification is therefore critical to improving retrofit outcomes.

FURTHER CONTEXT

Across both new build and retrofit markets, builders play a central role in shaping housing outcomes. Many tradespeople and professionals move between these markets, meaning knowledge, practices and expectations can transfer across the broader building sector. Improving builder capability in efficient electrification can therefore deliver system-wide benefits.

Stakeholders agreed that greater support is needed to educate builders and their staff so they can confidently promote high energy performance outcomes. Consultation identified a range of high-quality resources already available,[46] as well as others currently under development.[47]

Governments could accelerate uptake and drive demand for training by incentivising completion of targeted education modules for staff in construction businesses. This could include direct subsidies for training, or linking completion to compliance mechanisms, such as mandatory disclosure schemes[48] where in place, licensing (including via CPD requirements, see Recommendation 2.4) or other regulatory requirements, noting that specific approaches may vary across jurisdictions

46 Example: SA Department for Energy and Mining, **Learning Hub for Energy Efficient Construction**.
47 For example, ASBEC and Race for 2030's Development of industry training in building climate resilient and sustainable homes project.
48 Mandatory disclosure schemes typically require energy performance ratings to be undertaken and disclosed to prospective home buyers and renters.

No.	Recommended action
4.2	Develop and implement training and skills recognition mechanisms for real estate industry professionals.

WHY IS THIS RECOMMENDED ACTION NEEDED?

As interest in home energy performance increases and regulations such as mandatory rating and disclosure of homes' energy performance are progressively introduced, it is essential that the real estate industry has a sound understanding of energy efficiency, home energy ratings, and disclosure requirements. Real estate professionals, including agents, valuers and others, play a key role in communicating this information to buyers and renters and influencing how efficient electrification is valued in the market.

FURTHER CONTEXT

The Australian Capital Territory (ACT) Government has operated a mandatory energy efficiency ratings and disclosure scheme since 1999,[49] but, despite interest expressed by energy ministers over decades, other states or territories have not implemented similar regulations. Momentum is now building, with strong stakeholder and government interest in the policy.

The New South Wales (NSW) Government and the Federal Government have trialled the use of Home Energy Ratings at the point of sale and lease. This NSW-led pilot tested systems outlined in the nationally agreed Home Energy Ratings Disclosure Framework and will inform decisions on transitioning to mandatory disclosure, both in NSW and across other jurisdictions. From mid-2026 NSW has commenced the voluntary rollout of Home Energy Ratings disclosure.[50]

If these reforms progress, real estate agents operating in states with the regulations will be required to understand energy ratings, explain their significance, and comply with new disclosure obligations. Without targeted capability-building, there is a risk that disclosure becomes a compliance exercise rather than a tool that drives improved housing energy performance and informed consumer choice.

Recommended actions include:

- **Developing training and skills recognition pathways** focused on communicating the value of energy efficiency to buyers and renters.
- **Developing training and skills recognition pathways** to support understanding of, and compliance with, energy rating and disclosure requirements.
- **Driving demand for training** through regulatory levers, including mandatory disclosure at point of sale and lease, and minimum energy efficiency standards for rental properties, rather than relying on voluntary uptake alone.

Further, stakeholders noted that there is value in teaching real-estate agents how to give practical advice to homeowners about how to improve ratings, once they are known.

Stakeholders flagged a range of existing or developing work that could be leveraged to support these actions, however without clear demand drivers, upskilling across the real estate sector will be slow and inconsistent.

Consultation also noted that discussions are underway with BuildSkills regarding potential national training pathways, and that in some cases short courses or targeted credentials, outside the national training system, may be more appropriate than full qualifications.

49 Nationwide House Energy Rating Scheme, Home Energy Ratings Disclosure.
50

No.	Recommended action
4.3	Pilot a retrofit coordinator role for standalone residential homes.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Upgrading existing homes can be complex, particularly where multiple energy efficiency or electrification measures are required. Householders often face challenges in understanding which upgrades are needed, the appropriate sequencing of works, how to identify and engage suitable trades, how to coordinate installations, and how to ensure quality outcomes. These challenges act as a material barrier to achieving lowest-cost, highest-impact efficient electrification in existing homes. Roles that improve coordination can build household confidence in the retrofit process, while also making better use of existing workforce capacity.

Without independent and coordinated advice and support, householders frequently report that they "do not know where to start," or who to trust. This can result in sub-optimal sequencing of upgrades, missed opportunities to maximise benefits, higher costs over time, or failure to proceed with upgrades altogether.

FURTHER CONTEXT

The concept of a retrofit coordinator has been discussed by stakeholders for some years. Most recently, it was included as a recommendation of the Residential Energy Efficiency Workforce Mapping Report, authored by the Institute for Sustainable Futures for the EEC. The role would support householders to navigate what can be a fragmented and technically complex process, enabling efficient electrification to occur in a more cost-effective, integrated, and impactful way.

While existing detached homes share common characteristics, each dwelling also presents unique design, condition, and occupancy considerations. Tailored, whole-of-home advice is therefore critical to achieving optimal outcomes. In the absence of such advice, householders are more likely to pursue isolated measures rather than coordinated upgrades that deliver stronger energy performance, cost, and comfort benefits.

There are established international precedents for this role. For example, in the United Kingdom (UK), the retrofit coordinator role was formalised through the PAS 2035 framework, developed by the British Standards Institution in collaboration with industry and government. PAS 2035 (alongside PAS 2030) provides a quality-assurance framework for domestic retrofit activity and is embedded in several UK government programs.[51]

Under this framework, a retrofit coordinator is a certified professional responsible for overseeing the end-to-end delivery of retrofit projects in existing homes, ensuring that measures are appropriately specified, sequenced, and delivered in line with safety, quality, and performance requirements. Key functions include:[52]

- **Assessing the property**: Identifying opportunities to improve energy performance, including insulation, glazing, ventilation, and heating upgrades.
- **Planning retrofit measures**: Developing a tailored, whole-of-home plan that reflects building characteristics and household needs.
- **Ensuring compliance**: Confirming alignment with relevant standards and health, safety, and sustainability requirements.

51 National Energy Foundation, **PAS 2035 and PAS 2030: retrofit, accreditation and certification**, updated 19 August 2025.
52 National Energy Foundation, **An Introduction to Retrofit Coordinators, Retrofit Assessors & What They Do**, Updated 7 July 2025.

- **Managing stakeholders**: Coordinating trades and service providers to ensure works are delivered efficiently, on time, and within budget.
- **Post-retrofit evaluation**: Verifying that installed measures perform as intended.

This role has been critical in improving quality, reducing risk, and supporting consumer confidence in retrofit programs.

In the Australian context, pilot projects to test the retrofit coordinator role could provide insights into how a single, independent point of guidance for householders, combining technical knowledge with project coordination capability could support integrated and well-sequenced upgrades. This approach could help determine whether creating a new role would address common barriers, improve outcomes, and reduce long-term costs.

However, stakeholders consistently noted that without a clear demand driver, it is unlikely that the full benefits of such a role could be realised at scale.

Stakeholders identified the following recommended actions:

- Pilot retrofit coordinator roles for standalone homes in collaboration with governments, training providers, and industry bodies, ensuring delivery models are practical, equitable, and well governed.
- Link pilots to a clear demand driver, such as incentive programs, mandatory disclosure requirements, or other regulatory mechanisms, to support uptake and ensure sufficient utilisation of the workforce.

No.	Recommended action
4.4	Pilot a retrofit coordinator role for residential strata buildings.

WHY IS THIS RECOMMENDED ACTION NEEDED?

Residential strata buildings face significant barriers to undertaking energy retrofits. While apartment owners encounter many of the same challenges as households in standalone homes, these are compounded by collective decision-making, shared infrastructure, legislative requirements, and the involvement of multiple stakeholders. Without targeted support, these complexities often delay or prevent upgrades, limiting access to cost-effective and well-sequenced improvements for apartment households and residential strata buildings.

FURTHER CONTEXT

The concept of a retrofit coordinator has been discussed by stakeholders for several years. Most recently, it was included as a recommendation in the Residential Energy Efficiency Workforce Mapping Report, authored by the Institute for Sustainable Futures for the EEC. Through consultation for this project, it became clear that the role is not a single position but two distinct roles, one for stand-alone homes (recommended action 4.3), and one for residential strata, as subject-matter expertise in residential strata is a critical point of differentiation.

Residential strata buildings face many of the same challenges as standalone homes, including understanding which upgrades are needed, sequencing works, engaging appropriate trades, coordinating installations, and ensuring quality outcomes. In strata settings, these challenges are compounded by additional layers of complexity, including governance and decision-making through owners' committees and owners corporations, strata-specific legislative and regulatory requirements, shared building systems (particularly in older buildings), a high prevalence of embedded network restrictions, restrictive architecture, and the involvement of additional stakeholders such as strata managers, facilities managers, and specialist consultants.

As a result, energy performance and electrification upgrades in apartment buildings are frequently perceived as "too hard", even where there is strong interest from residents.

Pilot programs for a residential strata retrofit coordinator role could test whether such a role could help manage these complexities by providing independent, integrated guidance to householders, owners corporations, strata managers, and councils. The theory would be that this role could support practical, well-sequenced upgrades, assist with navigating regulatory and technical constraints, and help embed electrification and efficiency measures into long-term maintenance planning. This is particularly important for apartment households, who are often excluded from, or face significant barriers in accessing, incentive programs available to standalone homes.

This role would require a mix of technical, regulatory, project coordination, and mediation skills. Training and recruitment pathways should therefore target strata management professionals and specialist consulting firms.

Stakeholders also noted that:

- **Decision-making timeframes in strata are often long**, and the technical, governance, and commercial challenges can be considerable.
- **Short-term pilot funding limits impact**. While local governments have funded projects in this space, the stop-start nature of short-term funding results in the loss of capability, momentum, and value.
- **Longer-term funding windows for pilots is required** to allow trust to be built, complex projects to progress, and benefits to be realised.

- **Pilot programs are well suited to delivery through local government or not-for-profit providers**, given their trusted role, local knowledge, and experience supporting strata communities.

Without a clear demand driver and sustained funding, stakeholders consider it unlikely that the full benefits of retrofit coordinator roles in residential strata could be realised at scale.

Recommended actions include:

- **Pilot retrofit coordinator roles** in collaboration with local governments, not-for-profit providers, strata managers, and building management services.
- **Fund pilots over longer timeframes** to reflect slow decision-making cycles and complex technical pathways in strata buildings.
- **Drive demand** by embedding electrification and energy efficiency considerations into legislated maintenance planning requirements for residential strata buildings.

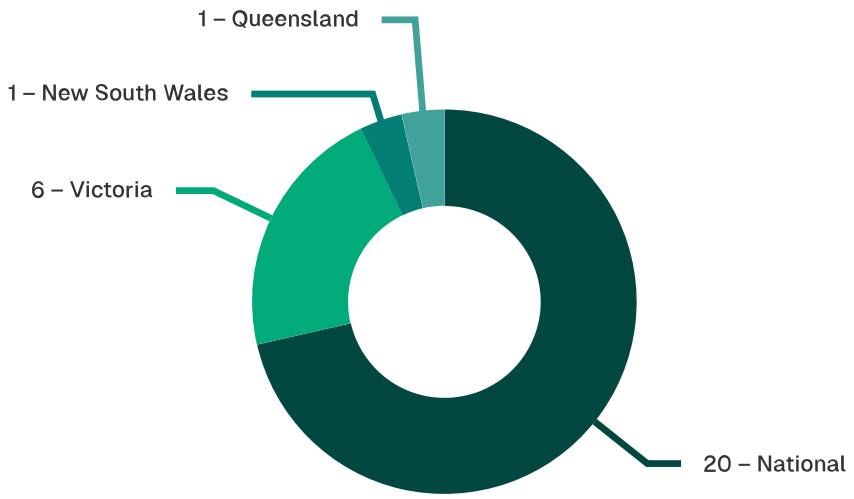
APPENDICES

APPENDIX 1: STAKEHOLDER INFORMATION

Stakeholders who contributed feedback to this project are not assumed to endorse its final outputs in whole or in part. This work represents industry feedback obtained through consultation and independently analysed, collated and presented by the EEC.

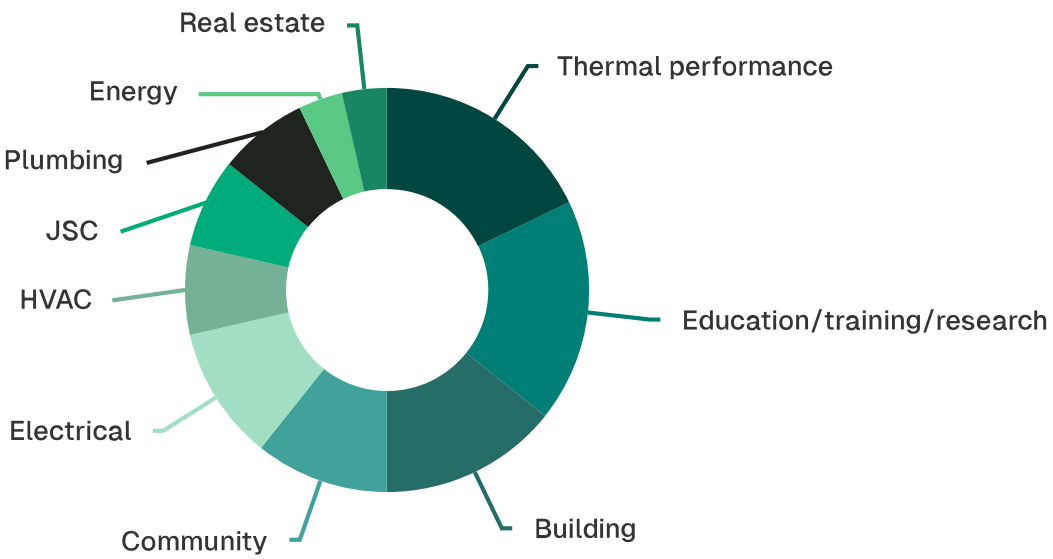
- Australian Industry Group Centre for Education and Training
- Air Tightness Testing & Measurement Association (ATTMA)
- Air-Conditioning & Refrigeration Equipment Manufacturers Association of Australia (AREMA)
- Australian Glass & Window Association (AGWA)
- Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH)
- Australian Insulation Installers Association (AIIA)
- Australian Sustainable Built Environment Council (ASBEC)
- BuildSkills
- Climateworks
- Electrical Trades Union (ETU)
- Green Building Council of Australia (GBCA)
- Housing Industry Association (HIA)
- Institute for Sustainable Futures (ISF)
- Insulation Australasia
- Insulation Council of Australia & New Zealand (ICANZ)
- Let Me Be Frank
- Master Builders Australia (MBA)
- Master Electricians Australia (MEA)
- Master Plumbers
- Melbourne Polytechnic
- National Electrical and Communications Association (NECA)
- Owners Corporation Network (OCN)
- Plumbing Industry Climate Action Centre (PICAC)
- Powering Skills Organisation (PSO)
- Real Estate Institute of Australia (REIA)
- State Electricity Commission of Victoria (SEC)
- Strata Community Association (VIC)
- Swinburne University

Stakeholder location



As this was a national project, the majority of stakeholders interviewed (88%) were national organisations. When factoring in additional stakeholder attendance at the industry workshop, national bodies accounted for around 71% of total stakeholder engagement. The remaining participation skewed toward Victorian stakeholders primarily because attendance was voluntary and several additional Victorian organisations chose to participate in the industry workshop. In particular, numerous Victorian based groups with a strong interest in apartment strata issues attended to advocate for improved skills and advice for residents in that sector.

Stakeholder type



Stakeholders with an interest in electrical and HVAC work, general building work, and thermal performance (including glazing, insulation and draught proofing) were the most strongly represented. The plumbing industry was also well represented. This aligns with the occupations identified through the earlier skills-mapping exercise as being most closely associated with efficient residential electrification (see Appendix 2).

APPENDIX 2: KEY OCCUPATIONS IDENTIFIED TO DELIVER ENERGY RETROFITS IN AUSTRALIA

In March 2025, the EEC released the Residential Energy Efficiency Workforce Mapping Report which was prepared for the EEC by the **Institute for Sustainable Futures.** It identified 27 key occupations to deliver efficient electrification in Australia:

No.	Role	ANZSCO[53]
1	Airconditioning and refrigeration mechanic	342111 Airconditioning and refrigeration mechanics
2	Architect	232111 Architect
3	Bankers and financiers	552211 Credit or Loans Officer
4	Builder	133112 Project Builder
5	Building and construction labourer	3211 Building and Plumbing labourers
6	Building Designer	312111 Architectural Draftsperson
7	Building Inspector/Certifier	312113 Building Inspector
8	Building Supervisor	131112 Construction Manager
9	Database Administrator	262111 Database Administrator
10	Electrical Engineer	233311 Electrical Engineer
11	Electrical engineering draftspersons and technicians	312311 Electrical Engineering Draftsperson 312312 Electrical Engineering Technician
12	Electrician	341111 Electrician
13	Energy Assessor	399999 Technicians and Trades Workers not elsewhere classified

53 ANZSCO refers to the Australian and New Zealand Standard Classification of Occupations. The ANZSCO codes assigned to these roles are identified in Table 3 of the **Residential Energy Efficiency Workforce Mapping Report**, 2025, and replicated here, with minor edits to roles 4 and 14. ANZSCO has recently been replaced with Occupation Standard Classification for Australia (OSCA). **OSCA correspondence tables** are available via the ABS.

No.	Role	ANZSCO[53]
14	Energy retailers	5411 Call or Contact Centre Workers 2221 Financial Brokers
15	Glazier	333111 Glazier
16	Insulation installer	821411 Building Insulation Installer
17	Interior designer	232511 Interior Designer
18	Mechanical engineer	233512 Mechanical Engineer
19	Mechanical engineering technicians and draftspersons	312511 Mechanical Engineering Draftsperson 312512 Mechanical Engineering Technician
20	Plasterer	333211 Plasterer
21	Plumber	334111 Plumber
22	Product designer	232312 Industrial Designer
23	Program administrator	511112 Program or Project Administrator
24	Property manager	612112 Property Manager
25	Property valuer	224512 Property Valuer
26	Real estate agent	612114 Real Estate Agent
27	Retail salesperson	621111 Retail Sales Assistant

For the purposes of this work, the EEC identified a further two roles:

No.	Role	ANZSCO
28	Handyperson[54]	8993 Handypersons
29	Gasfitter[55]	334114 Gasfitters

54 For draught proofing and insulation installation.
55 For the decommissioning of gas appliances and connections.

The **2025 Residential Energy Efficiency Workforce Mapping Report** provides substantial detail on the 27 roles identified by the report. Interested stakeholders may view *Section 6: Workforce Mapping* for outlines of each identified role, including:

- A description of day to day tasks and how the role contributes to residential decarbonisation.
- Relevant ANZSCO codes and associated occupations.
- The energy efficiency activities undertaken in new construction, major renovations, and energy efficiency upgrades to existing residential buildings, summarised under 'energy upgrade activities' and 'energy related technical skills'.
- An overview of skills, drawn directly from the Australian Skills Classification, covering:
    - a. Core competencies
    - b. Non technical skills
    - c. Technology, tools and software.
- Proof of professional proficiency, where required.
- Foundational training pathways, where available.
- Professional development pathways, including both trade specific and energy efficiency related options.

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