Energy Safety Roadmap

VICTORIA
State Government

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Message from the Minister

Victoria's energy system is changing at a pace not seen before.

Homes and businesses are increasingly powered by renewable energy such as solar panels, batteries, hydrogen and bioenergy. New and emerging technologies are also continuing to develop and being used as Victoria's energy transition accelerates.

These changes are essential for reaching our climate goals, but they also bring new challenges when it comes to safety.

The Energy Safety Roadmap sets out how we will keep Victorians safe during this transition. It responds to the findings of the Energy Safety Review, which looked closely at the risks we face today and those that are likely to emerge in the years ahead.

Victoria has made great progress on energy safety over the past two decades. Fatalities and serious injuries have reduced significantly (see Figure 1), and regulators, industry and government have worked together to improve outcomes.

But we cannot stand still. The rapid shift from a centralised, fossil-fuel system to one built on renewables means our frameworks must evolve to stay fit for purpose.

This Roadmap focuses on three key areas. First, making sure households and consumers remain safe. That means improving product standards and labelling, strengthening recall processes, and ensuring the safe installation and maintenance of solar, batteries and electric vehicle chargers. It also means providing clear information so consumers understand how to use new technologies safely.

Second, updating the regulation of the renewable energy transition. Our current energy safety laws were designed for a very different system. With hundreds of renewable generators now operating across Victoria, and many more on the way, the framework needs to be more flexible and more responsive.

The Roadmap identifies actions to modernise our legislation, strengthen oversight and ensure the state's regulator, Energy Safe Victoria, has the tools and resources it needs.

And third, energy workforce licensing and skills. The energy transition requires thousands of skilled workers to install, maintain and operate new technologies safely.

We are reviewing licensing requirements for electrical workers, plumbers and gasfitters so that qualifications keep pace with technology.

We are also working to ensure that this workforce is getting the required energy safety training and experience so the next generation of workers are ready for the jobs ahead.

This Roadmap sets out a clear path for keeping people safe as our energy system changes.

Workers need training and the right qualifications to handle new technologies. And businesses need a framework that allows them to innovate while keeping safety front of mind.

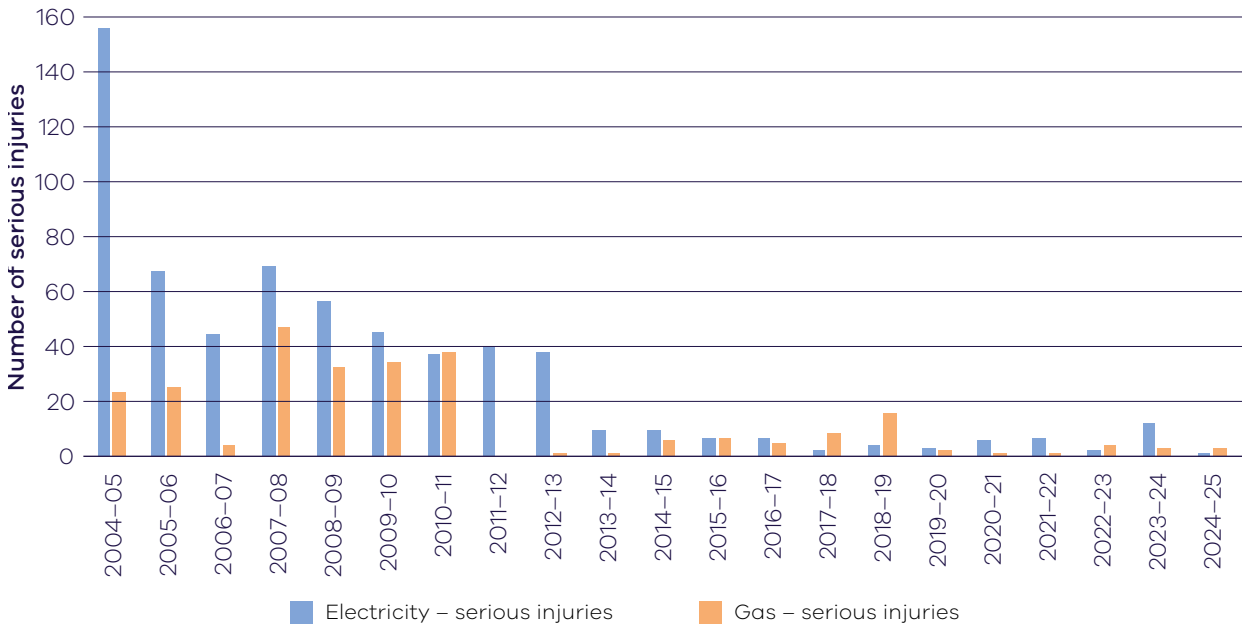
By taking action now, we can manage risks before they become problems. We can improve coordination between regulators, strengthen the evidence base for future decisions, and make sure our safety systems remain strong as the energy transition accelerates.

Victoria has always led the way on energy reform, and this Roadmap is another step in that journey. It reflects the collective effort of industry, regulators, workers and the community.

Together, we will ensure that as our energy system transforms, safety remains at its core.

The Hon. Lily D'Ambrosio MP
Minister for Energy and Resources
Minister for Climate Action
Minister for the State Electricity Commission

Figure 1: Electricity and gas serious injuries in Victoria 2004 to 2024



Source: Energy Safe Victoria annual reports 2004–05 to 2024–25

Summary

Improved energy safety

Victoria's changing energy safety environment

Victoria's energy landscape is undergoing a profound transformation, shifting from a centralised model of energy generation to a highly distributed system of generation and storage. In the late 1990s, the regulatory framework was designed for a system where a few large fossil-fuel power stations generated electricity, which was then transmitted and distributed to homes and businesses across the state. Today, this centralised model is being rapidly replaced by a decentralised network driven by renewable energy sources and advanced storage solutions, fundamentally reshaping how energy is produced, consumed, and managed.

The rise of distributed energy resources, particularly rooftop solar panels and behind-the-meter batteries, has empowered millions of Victorian households and businesses to generate, store, and even export electricity to the grid. This proliferation of small-scale, distributed systems contrasts sharply with the traditional reliance on large-scale generators. While these older generators remain operational, they are being progressively phased out in favour of wind and solar farms, as well as large-scale battery installations.

The existing regulatory framework, established to suit a centralised energy system, has delivered measurable safety improvements over the past two decades. However, it is increasingly misaligned with the realities of a distributed energy ecosystem.

The rapid adoption of new electrical devices, particularly battery-powered technologies, in Victorian homes has introduced new risks, such as fires caused by damaged or improperly used devices. Ensuring that only well-engineered equipment enters the market and educating consumers on safe usage is critical. Moreover, as battery and renewable technologies continue to evolve, regulations must be flexible and forward-looking to address emerging and unforeseen innovations.

Beyond electricity, there are now large numbers of Victorians electrifying their home gas appliances and potentially disconnecting from the gas network. Consumers who switch to electric may cap their pipes rather than permanently disconnect from the network, which may pose safety risks in the future if left unaddressed.

The growth of renewable energy infrastructure, such as wind and solar farms, further highlights the limitations of the current regulatory regime. Unlike traditional fossil-fuel generators, these renewable facilities are not subject to the same levies or oversight by Energy Safe Victoria, creating inconsistencies in regulation and funding. A fair and efficient regulatory system is needed to accommodate these new forms of distributed generation without imposing regulatory burdens not commensurate with the risks.

Maintaining a workforce skilled to the highest requirements is critical to ensuring safety and supporting this shift. Balancing the need for skilled workers from outside Victoria with the preservation of high Victorian training and licensing standards presents an ongoing challenge.

Victoria's energy system is moving from a centralised, fossil-fuel-based model to a dynamic, distributed network of renewable generation and storage. This fundamental shift demands that the regulatory framework evolve to ensure safety, fairness, and adaptability to support Victoria's renewable energy future.

What we will do – actions to keep Victorian's safe

Ensure Victorians remain safe

There is a rapid increase in the number and nature of electrical equipment[1] coming into Victorian households and businesses, many of which have Li-ion batteries in them. Energy Safe Victoria will be given increased flexibility around timing and processes for incorporating new standards. This section focuses on electrical equipment and installations used by Victorians, such as appliances, solar panels, and battery systems. Issues relating to e-scooters, e-bikes and other mobility devices are addressed separately below.

1 Electrical equipment includes devices such as mobile phones and e-scooters, as well as appliances such as heat pumps and induction cooktops.

What we will do – actions to keep Victorian's safe (continued)

Ensure Victorians remain safe (continued)

Clear and consistent product labelling is essential for consumers to identify safe electrical products. A stronger approach to labelling and product recalls will give consumers greater confidence, and allow Energy Safe Victoria and other regulators a faster and more effective way to act when products are found to be unsafe.

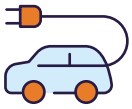
Increasing numbers of Victorian homes have solar panels and battery systems. Poor maintenance or lack of consumer awareness can increase the risks from these systems. We will build on existing guidance on operation and maintenance to continue to help consumers, installers and emergency services manage these risks.

Consumer understanding of energy safety remains uneven. Additionally, Victoria will work with the Commonwealth and other states and territories to ensure consistent messaging.

E-scooters, e-bikes and similar devices

An increasing range of e-scooters, e-bikes and similar devices are being used by Victorians. Improved flexibility around standards, better labelling and product recall, along with increased consumer education will reduce the energy safety-related risks of these products.

Electric vehicles



Safety risks associated with electric vehicles and charging are generally well controlled. Risks may arise from factors such as faulty or poorly installed charging infrastructure, lack of maintenance, and the use of non-compliant products. Electric vehicles are relatively safer than e-scooters, e-bikes and similar devices, therefore it is important not to conflate these technology types.

Widespread uptake of Vehicle-to-Home and Vehicle-to-Grid technology is expected soon, enabling electric vehicles to act as an alternative to dedicated domestic battery storage for households. This shift means that EVs will increasingly serve not only as a mode of transport but also as a key component of the home energy system, with similar safety, operation and maintenance considerations to household batteries. Regulatory coverage of EVs will be reviewed, and changes to legislation will occur if necessary, to ensure full, and proportionate, coverage of EV charging equipment.

Dynamic regulation of the renewable energy transition

Regulation of the renewable energy transition is complex. Regular reviews of the regulatory safety framework will enable a more dynamic approach to regulation, so the framework can adapt to the rapid changes in the energy sector.

There will be a broad, independent analysis of energy safety legislation to ensure that it is fit for purpose. A number of specific areas will be focused on. Core definitions will be examined to ensure they are not only up to date but will be future-proof for ongoing technological changes. The safety case and general duties regime will be reviewed to ensure it is appropriate for the increasingly decentralised energy generation and transmission network. The feasibility and potential benefits of consolidating the Electricity Safety Act, the Gas Safety Act and the Pipelines Act will be considered.

The current funding model of Energy Safe Victoria has led to perceptions that regulatory costs are not shared fairly across the sector. The funding model will be reviewed to ensure it is fair and fit for purpose, as the utility scale generation and transmission sector continues to evolve.

Energy workforce licensing and skills

It is essential the workforce for the renewable energy transition is appropriately skilled. Firstly, in consultation with key stakeholders, action will be taken to ensure that this workforce is getting the required energy safety training and experience. Secondly, Victoria's licensing regime for electrical workers, plumbers and gasfitters will be reviewed to ensure it is fit for purpose.

Part 1: Introduction

Background to the Roadmap

The Victorian Government is committed to transitioning Victoria away from fossil fuels and towards renewable energy sources for a more decarbonised and sustainable energy system. This transition is shaping how Victorians produce, use and interact with energy and energy products. This means the energy-related safety risks faced by Victorian communities and businesses are also changing.

Energy safety has been a high priority for the Victorian Government. Major reforms to the energy safety legislative framework taking place in the late 1990s and mid-2000s. Since 2004, the number of fatalities and other serious incidences has significantly decreased (Figure 1).

Existing risks relating to well established technologies in domestic, business and industry settings are well managed under the current framework.

The main focus of the Energy Safety Review and this Roadmap is to continue building on a strong safety foundation. It considers how the framework can best respond to new and emerging technology that didn't factor into the current energy safety framework.

The Victorian Government initiated the Energy Safety Review (the Review) to develop this Roadmap and keep safety front and centre. The Review assessed how well our current energy safety frameworks respond to emerging technology and identified reforms to protect Victorians through the transition. In 2023, the State Budget allocated $7.031 million to the Energy Safety Review project – spread across four financial years (2023–4 to 2026–7) under the banner 'A safe and just community transition to renewable energy'.

Victoria has set a target for 95% of electricity to come from renewable sources by 2035. Solar and wind power will likely provide most of this generation, including in homes. Energy storage, supported by energy solutions such as lithium-ion (Li-ion) batteries and other battery technology will be required in the future. So too will technologies like pumped hydro, molten salts, compressed air storage and more.

Other fuels, including renewable hydrogen, bioenergy and other fuel sources will play an increasing role, particularly in transport and energy-intensive industries.

This Roadmap sets out how Victoria's energy safety regulation and licensing will keep pace with new technologies and risks.

A foundational study was completed in 2025 to underpin the Energy Safety Review. The study draws on Australian and international research and interviews with 38 stakeholder groups across governments and industry. A broad consultation process followed to test these ideas and make sure that the options presented are robust, practical and informed by input from industry, consumers, and the wider community.

Structure of the Roadmap

The Roadmap is divided into 2 main sections:

- Part 1 sets the scene for the energy safety review and includes.
  - The problem statement, which outlines the challenges associated with the renewable energy transition as it impacts on energy safety in Victoria.
  - A section on previous reviews and other jurisdictions, highlighting assessments of energy safety in Victoria and other jurisdictions in Australia.
  - Outcomes from the public consultation process that informed this Roadmap, along with key themes raised and then covered.
  - A review of key safety risks, covering areas such as home solar PV systems, Li-ion batteries, wind farms and system-wide risks.
- The second part of the document focuses on the actions developed in response to the information presented in the introduction. These are presented under 3 Pillars:.
  - Pillar 1 focuses on actions designed mainly to ensure the safety of Victorians.
  - Pillar 2 looks at the regulatory framework around energy safety, and gives actions for improvement to ensure continued high quality safety outcomes.
  - Pillar 3 addresses workforce and training matters, to ensure skilled personnel and fit for purpose licensing.
- Finally, a 'where to from here' section gives a broad overview of the timing of action roll-out over the coming years.

Problem statement

Victoria's transition to renewable energy is changing how communities generate, use and interact with energy. This creates new and changing safety risks. Victoria's electricity network has rapidly evolved from a highly centralised system distributing electricity from a small number of fossil-fuel power generators to a decentralised system with many utility scale renewable generators, a decreasing number of fossil-fuel powered large generators, and millions of homes and businesses with solar panels and increasingly batteries.

Current regulatory and licensing frameworks built around fossil fuels are struggling to keep pace with rapid technological change, leading to the current framework for oversight and enforcement being no longer fit for purpose.

Technologies like lithium-ion batteries, renewable hydrogen and bioenergy bring new hazards from fire risks to challenges in safe installation, use and disposal.

Regulators also have limited visibility over the lifecycle of renewable energy systems, and whether or not unused infrastructure such as gas pipelines create risks as fossil fuels are phased out. This is comparable to Resources Victoria and their understanding of the number and location of old mine sites.

Fragmented reporting between regulators and slow product recall processes may slow the ability of regulators to respond quickly and learn from safety events.

At the same time, a growing demand for skilled workers requires licensing systems that adapt to new technology and practices. This means all parts of the regulatory system need to work together to stay coordinated and evidence-based over the long term, so that we can keep Victorians safe.

Figure 2: The electricity network of the renewable energy transition


LIQUID FUEL CARRIER
H_2
ELECTRIC VEHICLES
ENERGY EFFICIENT ALL ELECTRIC HOMES

Victoria's energy safety framework

Energy Safe Victoria is Victoria's independent safety regulator responsible for electricity, gas and pipeline safety, established under the Energy Safe Victoria Act 2005.

Energy Safe has regulatory functions under the *Electricity Safety Act 1998*, *Gas Safety Act 1997, Pipelines Act 2005*, and supporting regulations. Core functions include to

- license electrical workers and register electrical contractors
- permit the sale, supply, installation and use of electrical equipment and gas appliances/devices
- approve safety management schemes, safety cases and safety management plans for the construction, operation, maintenance and modification of electrical and gas and pipeline infrastructure, networks and industrial installations.
- investigate gas and electrical incidents
- monitor and enforce compliance with statutory obligations
- educate the community and industry to ensure they understand and are able to comply with these obligations.

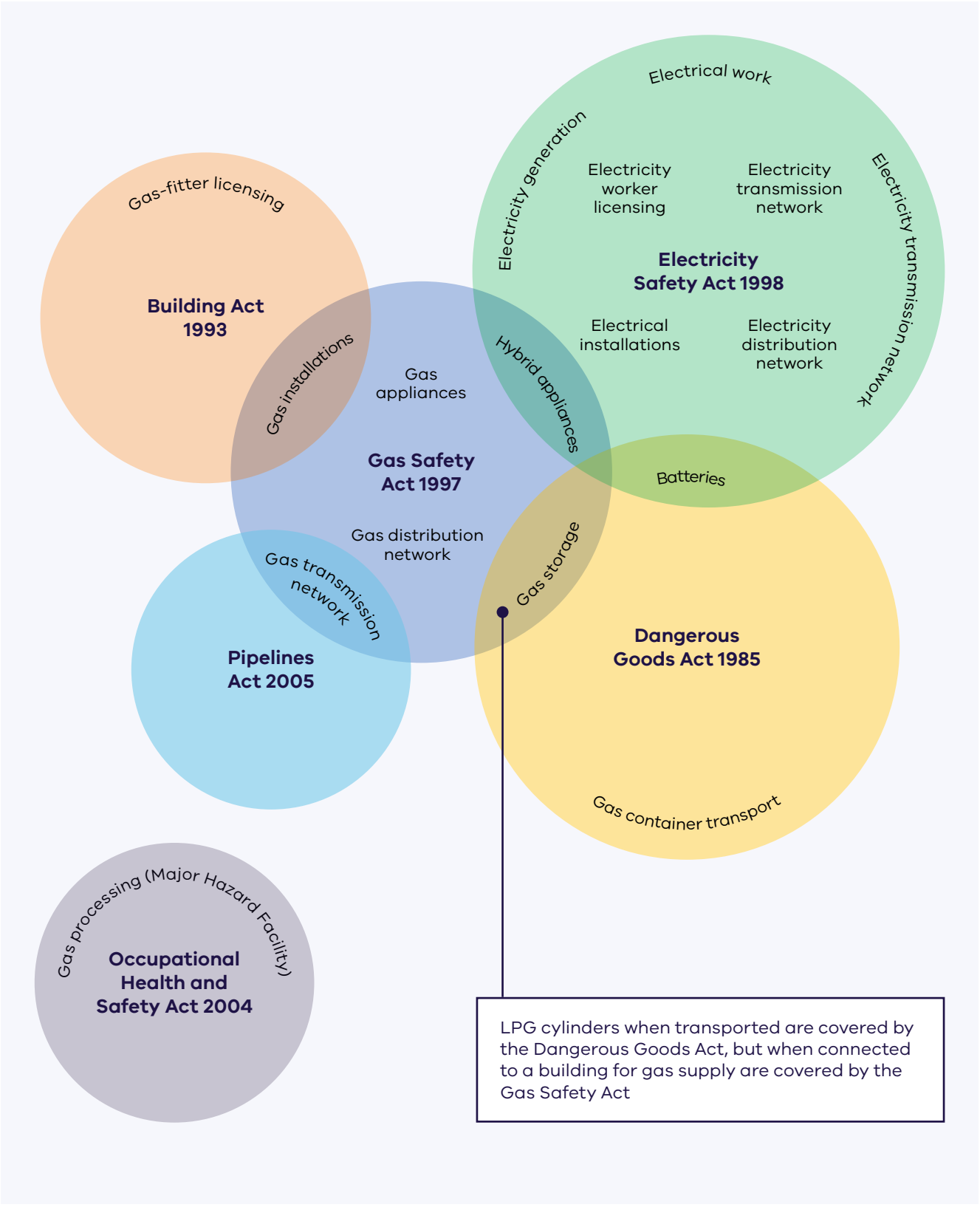
Energy Safe Victoria's regulatory role also includes overseeing major industry safety cases and safety management schemes relating to the design, construction and maintenance of electricity, gas and pipeline networks across Victoria, bushfire mitigation programs, and tree clearance around powerlines.

Energy Safe Victoria and the Building and Plumbing Commission (BPC) work together as regulators of the gas industry. Energy Safe Victoria is the gas safety regulator for Victoria, while the BPC administers the licensing and registration system for plumbers and gasfitters, and promotes and enforces plumbing (including gasfitting) standards across Victoria. While both regulators can investigate gas-related incidents, Energy Safe Victoria is considered the lead agency due to the safety implications. Both the BPC and Energy Safe promote and enforce gasfitting standards. The BPC monitors the compliance of Type A appliance work and other standard gas installation work, while Energy Safe Victoria regulates complex gas installations and Type B gas appliance work (these terms are defined in the *Gas Safety Act 1997*). For more information on the respective roles of Energy Safe Victoria and the BPC, see www.energysafe.vic.gov.au/about-us/our-organisation/working-others/victorian-building-authority.

Figure 3: Jurisdictions covering energy safety

Sector	Generation/ Processing	Transmission	Distribution	Down of meter pipes/wire	Equipment/ appliances	Work and Licensing
Electricity	**Electricity Safety Act 1998**	**Electricity Safety Act 1998**	**Electricity Safety Act 1998**	**Electricity Safety Act 1998**	**Electricity Safety Act 1998** Dangerous Goods Act 1985 (transport/ storage of batteries) Competition and Consumer Act 2010 (Cwth.)	**Electricity Safety Act 1998**
Gas	Occupational Health and Safety Act 2004 (Major Hazard Facility)	**Pipelines Act 2005** **Gas Safety Act 1997**	**Gas Safety Act 1997**	Building Act 1993 (standard installations) **Gas Safety Act 1997 (complex installations)**	**Gas Safety Act 1997** Competition and Consumer Act 2010 (Cwth.) Dangerous Goods Act 1985 (transport/ storage of gas cylinders)	Building Act 1993 (Gas-fitting under Plumbing)

Figure 4: Intersections in energy safety regulation



Energy safety in the workplace

If a site is classified as a workplace under section 5 of the *Occupational Health and Safety Act 2004* (OH&S Act), WorkSafe is responsible for administering the functions and powers, set out in the OH&S Act and *Dangerous Goods Act 1985* (DGA). This helps to prevent workplace injuries, illness and fatalities. The DGA specifically covers the transport, storage, and handling of hazardous materials such as batteries, renewable hydrogen and biogas/bio-methane.

Consumer product safety

Consumer product safety is regulated under Australian Consumer Law. Administration of consumer law is a shared function between the Australian Competition and Consumer Commission (ACCC) and Consumer Affairs Victoria (CAV).

Victoria also participates in the Electrical Equipment Safety Scheme (EESS). The EESS is a regulatory framework aimed at increasing consumer safety when interacting with household electrical equipment in participating jurisdictions. The EESS outlines the safety requirements for registration of Responsible Suppliers and equipment in a centralised register. The EESS stipulates three levels of equipment types with different registration and certification requirements for each level, based upon the assessed risk of that equipment type.

Energy Safe also has relevant powers and functions:

- under the *Electricity Safety Act 1998* to:
  - determine minimum safety standards for electrical equipment; and
  - inspect and test electrical equipment, in-scope electrical equipment or electrical installations and electrical work for compliance with the standards prescribed or relevant standards;
- under the *Gas Safety Act 1997* to:
  - to issue guidelines specifying minimum safety standards for appliances, gas equipment, gas components, gas installations, gas related services and the conveyance, sale, supply, measurement, control and use of gas; and
  - to monitor compliance of appliances, gas equipment, gas components, gas installations, gas related services and the conveyance, sale, supply, measurement, control and use of gas with the specified safety standards.

Protecting the environment and human health

The *Environment Protection Act 2017* and its supporting regulations provide a comprehensive framework, overseen by the Environment Protection Authority Victoria (EPA), to protect human health and the environment from the harmful effects of pollution and waste, end of life disposal and environmental hazards. Central to these laws is the General Environmental Duty (GED) which requires all Victorians to manage risks to human health and the environment caused by their activities. Through the *Planning and Environment Act 1987*, the Department of Transport and Planning (DTP) plays a critical role in planning approvals for large-scale renewable energy facilities. Separately, WorkSafe oversees the *Equipment (Public Safety) Act 1994*, which sets out obligations on the designers, manufacturers, suppliers, owners and operators of equipment – to ensure safety.

Building and plumbing regulatory system

The *Building Act 1993* outlines the framework for the regulation of building construction, plumbing work (including gasfitting), building and plumbing standards, building and plumbing practitioners, and the maintenance of specific building safety features in Victoria. This framework also incorporates the National Construction Code, which is developed by the Australian Building Codes Board (ABCB). It is further supported by the Building Regulations 2018 and Plumbing Regulations 2018, which are overseen by the Building and Plumbing Commission (BPC). The BPC administers the licencing and registration of builders, plumbers and gasfitters, while regulating and enforcing the National Construction Code within Victoria to maintain building and plumbing construction standards. The BPC also monitors the compliance of standard gas installation work.

> "Transparency can be improved through clearer delineation of each regulator's role, a centralised reporting system and public enforcement reporting"
>
> **Master Electricians Australia submission to the Energy Safety Review public consultation.**

The BPC monitors the compliance of work on Type A appliances and other standard gas installation work (as defined in the *Gas Safety Act 1997*) through audits and inspections. This covers domestic and light commercial installations such as cookers, space heaters, water heaters and leisure appliances. Energy Safe Victoria monitors the compliance of work on Type B appliances and other complex gas installation work.

Consumer protection and technical regulation

The regulatory functions of the Essential Services Commission (ESC) offer consumer protection and provide technical regulation of energy and gas companies under the *Electricity Industry Act 2000* and *Gas Industry Act 2001*. The ESC licenses electricity and gas companies in Victoria, establishes and maintains codes and guidelines, monitors performance, and undertakes compliance and enforcement action. The ESC also regulates participants and products within the Victorian Energy Upgrades Program (VEU). The ESC is an economic regulator that promotes the long-term interests of Victorian consumers through the price, quality and reliability of essential services.

Commonwealth regulators

The Clean Energy Regulator (CER) is an Australian independent statutory authority responsible for administering legislation to reduce carbon emissions and increase the use of clean energy. The CER also oversees installer accreditation and product approval arrangements under the Renewable Energy (Electricity) Regulations 2001 for the operation of its small-scale Renewable Energy Scheme. Solar PV system installers must be accredited by the Solar Accreditation Australia (SAA) accreditation scheme operator to be able to participate in Victoria's Solar Homes Program.

Offshore Infrastructure Regulator (OIR) and the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

NOPSEMA is the overarching authority with a long-standing role in petroleum and environmental regulation. OIR has regulatory functions within NOPSEMA, specifically focused on offshore renewable energy infrastructure. Both play roles in managing offshore gas and renewable energy infrastructure. The OIR oversees worker health and safety, infrastructure integrity and environmental management for offshore renewable energy and electricity network infrastructure. NOPSEMA oversees workforce safety and environmental management for offshore energy operations, although OIR manages these functions for offshore wind. Further, the Australian Maritime Safety Authority is responsible for the regulation and safety oversight of Australia's shipping fleet.

Australian Energy Regulator (AER)

The Australian Energy Regulator is the national economic regulator. It plays an active role in price setting and introducing incentives to encourage behaviours and investment in networks.

How these regulators interact with Victorian regulators continues to evolve, particularly as the offshore wind industry starts to develop.

Solar Victoria

Solar Victoria is a group within the Department of Energy, Environment and Climate Action (DEECA). It is responsible for delivering the Solar Homes and Victorian Energy Upgrades (VEU) programs, which are the Victorian government's key household energy transition programs. The Solar Homes program supports Victorians to participate in the renewable energy transition, by providing rebates and interest free loans to reduce the upfront costs of rooftop solar, batteries and energy efficient technologies. Solar Victoria has played an important role in adding to the highest standards of safety and quality in the solar industry, along with authorised providers and eligible products, supported by a targeted audit program.

All installers approved by Solar Victoria must be A Grade electricians and approved to participate in the program. Solar Victoria administers an audit and escalation program to ensure that installers maintain high standards of quality and safety in their installations. Solar Victoria can suspend and cancel installer participation in the Solar Homes program notwithstanding that an installer may be accredited by SAA or be permitted to undertake electrical work under an Energy Safe Victoria licence.

The VEU program is helping Victorians upgrade their homes and businesses with energy-efficient products and services by offering discounts and rebates. By supporting Victorians to make the switch to efficient electric alternatives, VEU is helping people to cut their energy bills, reduce their energy use, and lower greenhouse gas emissions. Solar Victoria develops policy including legislation, regulation and program specifications to support the VEU program, while the ESC is responsible for the administration and regulation of the program.

Solar Accreditation Australia (SAA)

SAA was approved in early 2024 as the accreditation body by the Commonwealth Clean Energy Regulator of installers of solar PV. SAA Accreditation is required by Solar Victoria for all solar installers who are approved to participate in the Solar Homes program, in addition to holding a class A electrical licence. The Clean Energy Council set the standards for residential batteries including approval of battery technologies and products. There is no relevant Australian Standard for battery products.

Solar Victoria undertakes additional assessments for technical requirements required by the Solar Homes program. Several other jurisdictions use the Solar Victoria approved products list. Solar PV products including inverters approved by the Clean Energy Council as the Commonwealth approved product listing authority are automatically eligible for federal government incentives and are adopted by Victoria and other states.

Fire Rescue Victoria (FRV) and the Country Fire Authority (CFA)

Both FRV and CFA provide guidance on reducing fire risk and responding to harm events, ensuring the safety of first responders and supporting investigations of incidents.

Standards Australia (SA)

SA is a peak non-government national body for developing Australian standards. It provides analysis to justify and prioritise the development of new standards or the revision of existing ones. SA brings together key parties and stakeholders to form a technical assessment committee for every new standard.

Previous relevant work

The Review considered previous reviews relating to Victoria's energy safety framework, either directly or indirectly. The Review also considered how the regulatory landscape has changed over time, especially in regard to the rationale, reform options and changes adopted. This assessed how similar reforms have led to better safety outcomes relating to the energy transition, and what further changes might be needed going forward.

Key findings of previous reviews used to inform this review include:

The Grimes Review

The Grimes Review (2017) focused on assessing the design and adequacy of Victoria's energy safety framework, including Energy Safe Victoria's structure and operations. The Grimes Review made 43 recommendations; eight of which focused on strengthening Energy Safe Victoria's regulatory approach, while others focused on changes to the legislative/regulatory frameworks and Energy Safe Victoria's regulatory tools. The review resulted in improved governance and increased auditing and inspection resourcing for Energy Safe Victoria.

Energy Safe Victoria's review of Victoria's licensed electrical inspection regime

The Review of Victoria's licensed electrical inspection regime (2021) demonstrated that the use of licensed electrical inspectors is unique compared with other jurisdictions . Further consideration to ensure it leads to better safety outcomes is warranted.

The licensed electrical inspection review found the commercial relationship between a licensed electrical inspector (LEI) and electrician creates a risk that inspections are not impartial or free of conflict or bias. LEIs may rely on electricians for recurring work, which could make them reluctant to refuse to certify an installation. This dynamic can also affect how thorough LEIs' inspections are. There was also a concern that some LEIs do not have the necessary skills and experience to identify defective installations given the breadth of licensing classifications.

Energy Safe Victoria has since strengthened its audit program and implemented a new electrical inspector licence class for renewable energy installations. It has also introduced mandatory continuing professional development requirements for licensed electrical inspectors, licensed lineworkers, and licensed electrical workers from 1 July 2023.

Recent amendments to Victoria's energy safety legislation

The Energy Safety Review has included two rounds of legislative amendments to various energy safety acts in 2023 and 2025. These amendments were made to improve the legislation in areas that were already recognised as needing change.

The *Energy Legislation Amendment (Energy Safety) Act 2023* made amendments to the *Electricity Safety Act 1998*, *Gas Safety Act 1997*, and *Pipelines Act 2005* to address some of the most urgent gaps and weaknesses in the energy safety legislation. The included amendments to increase penalties for major energy companies who breach general duties, and changes so that owners or operators of electrical installations like wind and solar farms and big batteries will have duties and obligations in line with other major electricity companies.

The *Energy and Land Legislation Amendment (Energy Safety) Act 2025* amended the Electricity Safety Act, the Gas Safety Act, the Pipelines Act, as well as the *Energy Safe Victoria Act 2005*. Key reforms include increased entry powers for Energy Safe Victoria officers to enter premises, expand Energy Safe Victoria and court enforcement powers, as well as increase a range of penalties.

National Hydrogen Strategy development

The National Hydrogen Strategy, released in October of 2024, provides the framework to guide Australia's production, use and export of hydrogen, with the intention of positioning Australia as a global hydrogen leader. Through the development of the Strategy, Commonwealth and State Energy Ministers have found that the national gas regulatory framework needs to be refined, so that emerging renewable gas technologies (including renewable hydrogen) are fully covered by appropriate regulation.

The review of the national gas regulatory framework shows the importance of clear definitions of regulated activities and technologies to the regulatory approach. It found that legislation and regulation is sufficiently flexible to cover the new and emerging technologies, now and into the future. In the case of gas, the terms included were broadened to ensure gases other than natural gas were captured. This includes renewable hydrogen, renewable ammonia, and bio-methane.

National Electrical Safety Taskforce

The National Electrical Safety Taskforce was established in 2024 to review the national, state and territory electrical safety frameworks for household electrical consumer products. The current frameworks have protected consumers from unsafe products for many years. However, lack of harmonisation across jurisdictions has led to regulatory gaps and increased costs for industry. The review sought to understand how to achieve national harmonisation of electrical safety regulation. The review recommended a Reform Action Plan, which has been endorsed by Treasurers. It includes improving the Electrical Equipment Safety System and ensuring its adoption by all states and territories, addressing issues with the product recall framework, amending legislation so that all states and territories can regulate extra-low voltage equipment like lithium-ion batteries, and improving Australian representation on product standards committees.

Automatic Mutual Recognition

Australia introduced a national scheme for the automatic mutual recognition (AMR) of occupational licences and registrations in 2021, to promote freedom of movement of skills and services throughout the national market. All states and territories are currently participating in the AMR scheme except for Queensland. The AMR scheme is set out in the *Mutual Recognition Act 1992 (Commonwealth)* and is implemented and administered by participating state and territory governments.

The AMR scheme builds on, but is separate to, the longstanding interstate and trans-Tasman Mutual Recognition schemes. Under Mutual Recognition, a licenced worker in one jurisdiction can – for a fee – apply for and receive a licence in a second jurisdiction on the basis that they hold an equivalent licence in their home jurisdiction. Mutual Recognition is available in all Australian jurisdictions, including Queensland.

AMR is different, as it means that a licensed worker from a participating jurisdiction no longer needs to obtain a licence in a second state or territory to undertake activities they're already licensed for in their home state. This is provided they comply with any requirements to notify the relevant registration authority in the second jurisdiction of their intention to work under AMR arrangements. In Victoria, interstate electrical workers intending to work under AMR arrangements must notify Energy Safe Victoria before commencing work in Victoria.

State and territory governments have exempted some occupational categories from AMR where they have concerns about the safety of workers and the community – for example, the AMR scheme currently does not apply to registration or licensing in any class of gasfitting work.

Governments continue to work together to streamline licensing for electrical workers, with the Commonwealth Government publishing an issues paper for consultation in August 2025. The paper, *National licensing for electrical occupations*, explores options to harmonise state-based licences and lift labour mobility, while maintaining safety standards.

Public consultation activities to support the Roadmap

In 2024–25 a foundational study was conducted to underpin the Energy Safety Review. The study used public data from Australia and other countries, and interviewed 38 stakeholder groups from across governments and industry to identify key safety risks and possible solutions.

A Consultation Paper, which summarised the findings of the Energy Safety Review was published on the Engage Victoria website from 13 May to 24 June 2025 https://engage.vic.gov.au/energy-safety-review.

It aimed to prompt discussion and gather insights from industry and community stakeholders on the safety implications of Victoria's energy transition, with a focus on identifying gaps and opportunities for improvement. Town hall briefings also occurred to support the consultation in June 2025.

The Consultation Paper was structured around key themes from foundational study. It included a series of statement-based and open-ended questions designed to elicit targeted feedback on safety risks, regulatory challenges and reform priorities.

A survey was included in the Engage Victoria website, consisting of approximately 17 questions (including demographics). This included a mix of multiple choice, rating and open-ended questions, taking approximately 10–15 minutes to complete.

There were 29 responses to the survey and 10 responses to the questions within the Consultation Paper. 26 more detailed written responses were also received from a range of stakeholders, including unions, industry groups and consumer representatives.

Overall, the consultation process reflected broad support for the work undertaken and the reform options proposed. Stakeholders primarily focused on raising specific areas of concern rather than challenging the overall direction of the review.

The depth and quality of feedback received provided valuable insights and significantly informed the outcomes of the Roadmap. However, it's important to acknowledge that the data collected across the survey questions does not constitute a conclusive or representative sample of Victorian perspectives on the energy safety framework, given the low level of participation.

Key themes raised in the consultation process have been summarised below. Further detail is provided in the consultation summary.

Need to address Li-ion battery risks

Li-ion battery fires pose growing safety risks in residential and utility-scale energy systems due to thermal runaway, toxic gas release, and poor installation and disposal practices, with current building codes and emergency response protocols falling short. The risk profile is likely to change alongside evolving battery technologies and will require ongoing regulatory attention. To address these concerns, stakeholders recommended updating regulations, improving consumer education, establishing a central safety registry, and expanding disposal and emergency response programs for damaged batteries.

Gas disconnection

Many homes and businesses in Victoria are transitioning toward full electrification. Residential gas connections that are temporarily disconnected (e.g. gas meter plugged and locked without cutting the service pipe) rather than permanently abolished (i.e. cutting and capping the service pipe at the gas main) increase the potential risk of asphyxiation, fire or explosion. Not decommissioning inactive gas pipelines can result in material degradation over time.

Submissions from industry groups advocated for permanent gas disconnection (also known as abolishment) at the mains to eliminate long-term safety risks, and for improved public education.

Workforce training

Stakeholders expressed concern over the energy sector's ability to sustain a qualified workforce, citing outdated licensing frameworks, inconsistent training, and limited support for apprentices and overseas workers. Recommendations include harmonising licensing across states, improving post-trade safety training, expanding mentoring programs, and enhancing inclusion and emergency response capabilities.

> "Concerted action needs to be taken to ensure that enough trained electricians and plumbers are available to disconnect gas, decommission the network and electrify buildings."
>
> **Victorian Trades Hall Council submission to the Energy Safety Review public consultation.**

Safety case reform

Stakeholders supported reforming the safety case regime to improve efficiency, transparency and alignment with regulatory cycles. Views differ on whether it should be retained or replaced. While most submissions highlighted barriers to innovation and excessive regulatory burden, at least one stakeholder expressed confidence in the current framework's ability to manage system-wide safety effectively.

Bushfire risks

For renewable energy infrastructure, stakeholders called for stronger bushfire risk assessments, improved siting protocols and community input in planning processes.

Major trends and developments

Energy safety includes the potential risk of harm arising from an event, such as:

- fire
- explosion or electrocution from electricity, or
- fire, explosion, carbon monoxide poisoning and asphyxiation from gas.

Based on public data and interviews, five current and emerging trends and developments were identified in Victoria as having the potential to impact energy safety for Victorian communities. These are outlined below.

> "Improving CER maintenance is essential... but broader than electrical safety, it includes grid impact, data privacy and customer protections."
>
> **CitiPower, Powercor and United Energy submission to the Energy Safety Review public consultation.**

Adopting low-carbon technologies and associated decentralisation of Victoria's electricity systems

Victoria's electricity system is shifting from utility-scale energy generation, transmission and distribution networks to a more distributed and diverse system (see Figure 5). This shift has been enabled by the rise of wind and solar sourced renewables, which has seen households and other organisations generating and transmitting electricity. The deployment of battery storage technologies is further advancing decentralisation of the electricity system away from large-scale utility providers. It's also blurring the traditional distinctions between generators and distributors of electricity.

Rising use of household solar photovoltaic (PV) systems and batteries – so called 'behind-the-meter' technologies – means more and more Victorian consumers are now both purchasers and suppliers of electricity. Households can generate, store and transmit energy back into the electricity network.

The increasingly-dispersed nature of energy generation and storage across the state means there are a more avenues for the community to engage with the energy network, which can have implications for safety.

The rise of energy aggregation services (i.e. technologies which combine and manage distributed energy resources, such as virtual power plants) and other emerging and internet-connected technologies could potentially impact the level of safety and reliability of Victoria's electricity network. Consumers and industry may be exposed to cyber security risks that can also give rise to safety risks.

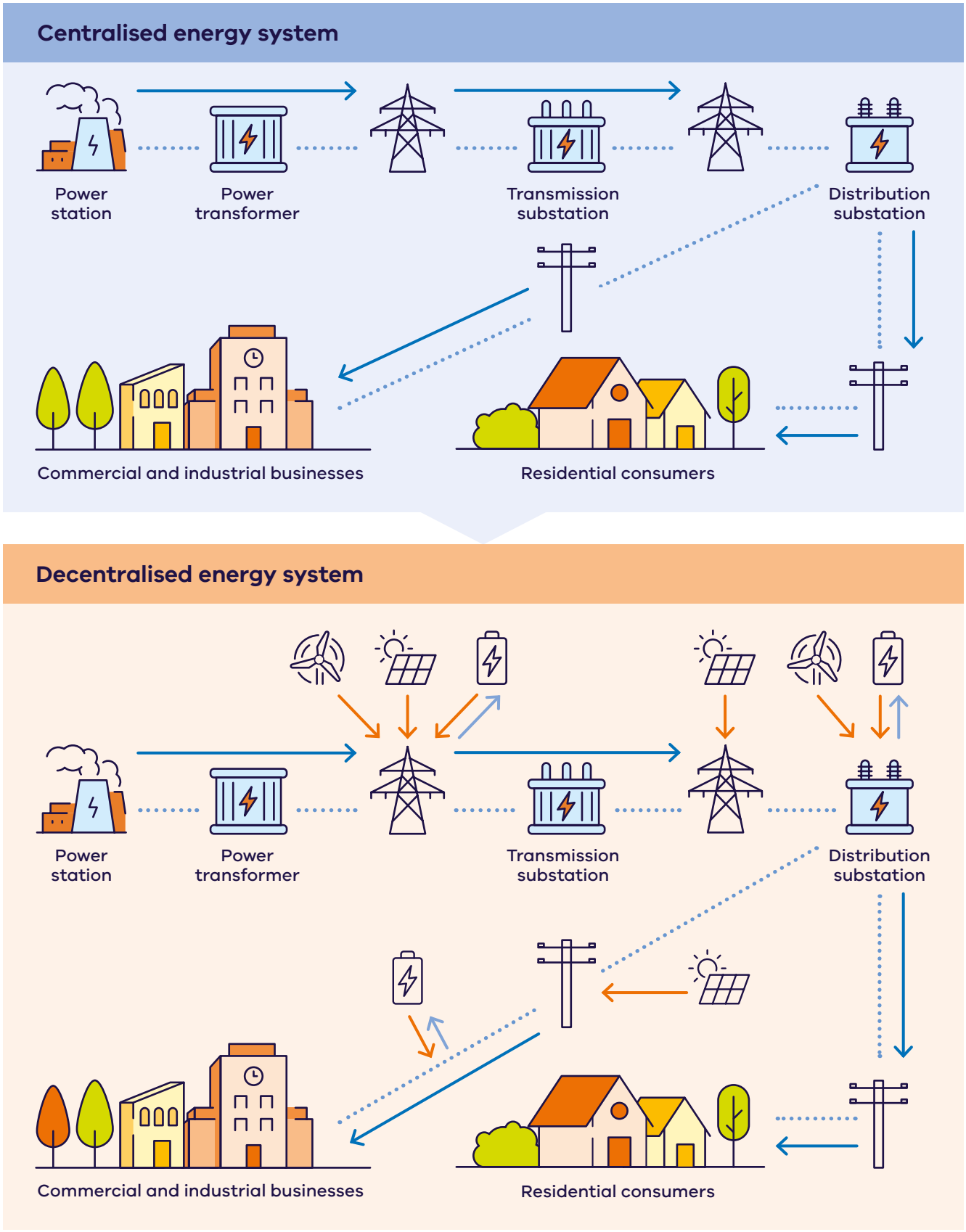
Victoria's existing approach to safety regulation was oriented toward addressing safety risks associated with utility-scale electricity networks. These were operated by a small number of regulated entities. The shift to a more dispersed energy environment leads to different types and scale of safety risks that will need to be managed.

New and emerging energy products and services that may carry new safety risks

The rapid pace of innovation and technological change in energy systems means new energy products are entering Victoria. These are readily becoming available to consumers who may not fully understand the product safety risks. Requirements for labelling and indicating appropriate product use can often also lag product innovation.

While Victoria's energy safety regulator (Energy Safe Victoria) has a range of powers to ensure the safety of imported products, challenges under the current framework continue to arise. These include safety compliance of imported products, and monitoring and management of non-compliant products. Examples of typical household products include e-transport and chargers (including e-bikes and e-scooters), electric vehicles and chargers, solar PV panels and home battery systems.

Figure 5: Decentralisation of the energy ecosystems



Generally, standards for imported products are set at the Commonwealth level, with input from state and territory regulators. Poorly-designed or built products that carry risk can be banned or controlled at the Australian border through the application of product standards, but such action can lag behind the speed of product distribution.

Operating and maintaining solar panels and Li-ion batteries is left to the consumer to manage under the current energy safety framework. Reported incidents suggest many consumers are not aware of how to appropriately maintain or dispose of renewable energy systems to ensure performance, longevity and safety.

The rate at which new technology is taken up amongst consumers may be faster than the rate at which regulators can assess the risks. Governments could also struggle to implement measures to control risk and ensure compliance with safety outcomes. This is seen through increasing access to international products through online buying, which increases the risk of non-compliant or unsafe products entering into homes.

Renewable hydrogen is an emerging technology in transportation that's most immediately relevant to long-haul trucking, aviation, and maritime activities. It could also be used as a fuel in gas fired power generators for electricity generation and be blended into the gas distribution network. Its potential application within the state is expected to take time to be realised.

Biomethane is derived from biogas. Biogas usually comes from captured landfill gas, captured gas from sewage and water treatment facilities, and captured gas from agricultural waste. Biomethane is also derived from organic inputs specifically used to generate biomethane, such as organic industrial by-products (like woodchips), agricultural products specifically grown to generate biogas, and organic household waste. Biofuels that are distinct from biogas/biomethane, are also emerging in the aviation and maritime sectors. The potential safety concerns and how they best might be managed – both in use and whilst being transported – is an emerging area.

Workforce required to install, operate, maintain and dispose of renewable technologies

The changing nature of energy products, particularly in a residential setting, is changing the requirements for workers who supply, install, maintain and dispose of these products. Regard will also need to be given to the reuse of products such as PV panels, as this market is expected to grow as the primary market for panels increases. Workers will need to be sufficiently skilled and trained to manage the safety risks associated with new and emerging technologies. Skills in managing energy generation and storage technologies will also be required in a wider set of sectors, such as transport, as electrification expands.

Workers will need proper training and resources to safely handle new technologies and meet growing demand as the energy transition continues. Current projections expect a shortage in appropriately skilled workers.[2]

The licensing and certification regime that regulates how the workforce install, service or decommission these products and technologies may no longer be fit-for-purpose.

A perception of increased safety risk arising from the energy transition could damage the community's confidence in and attitude toward this transition

Fires caused by Li-ion batteries are becoming more frequent. This is due to the increasing number of consumer products containing Li-ion batteries, combined with incorrect use of these batteries. For example, there are observed instances of poor maintenance and storage practices of electric bikes leading to fires.

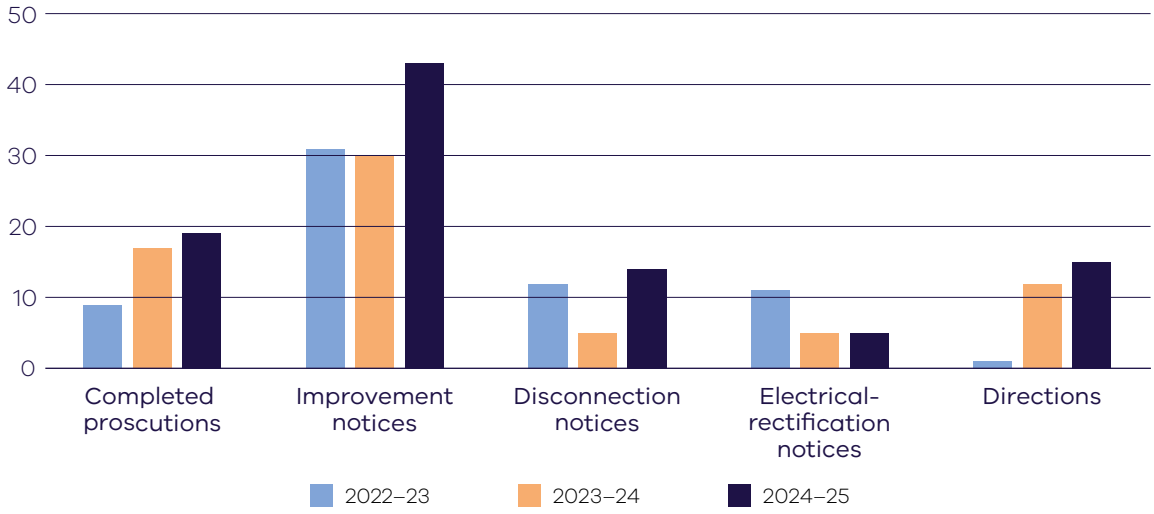
2 Race for 2030 (2024). Electricity sector workforce projections for the 2024 Integrated System Plan and for Australia. https://www.racefor2030.com.au/project/australian-electricity-workforce-for-the-2024-integrated-system-plan/

Li-ion batteries can ignite and burn more rapidly than other types of batteries. Sellers are not obliged to inform customers about safety risks associated with the batteries in these products.

A lack of familiarity around how these sorts of incidents are responded to may undermine public confidence in the energy transition. First responders are developing safety processes which aim to improve responses to these kinds of safety incidents and minimise risks.

What is already being done

Energy Safe Victoria enforcement activities



Source: Energy Safe Victoria Annual Report 2022–23, 2023–24 and 2024–25

Since 2021, Energy Safe Victoria has undertaken a program of transformation to ensure it can operate as a fit-for-purpose, modern regulator. This transformation has been supported by recent legislative amendments through the *Energy Legislation Amendment (Energy Safety) Act 2023*, and *Energy and Land Legislation Amendment (Energy Safety) Act 2025*. Together these Acts expanded the range of compliance and enforcement tools available to Energy Safe and increased penalties so they were more commensurate with those available to other regulators.

The actions set out in this Roadmap are designed to build on these reforms to continue to modernise the framework, strengthen oversight and enable dynamic regulation to continue through the rapid changes occurring in the energy sector.

Sources: Energy Safe Victoria Annual Reports 2022–23, 2023–24 and 2024–25, Energy Safe Victoria Corporate Plan 2025, Grimes Implementation Update 2023.

End of life and waste management of renewable energy technologies and fossil fuel assets

Products approaching their end of life, must be appropriately decommissioned and disposed of to maintain safety. Some solar panels, wind turbines and battery energy storage systems are starting to reach their end-of-life, some of which such as PV panels and EV batteries, may be suitable for reuse. In such case of reuse, safe de-installation, testing, handling and re-installing will be required. This is creating new waste streams that may carry a different type of safety risk if not appropriately managed.

The increase in Li-ion batteries in consumer products is leading to more batteries being disposed of. Victoria already has measures in place to manage Li-ion battery disposal and safety. E-waste, including batteries, has been banned from landfill since 2019, making it illegal to place items with a plug, battery or power cord in household rubbish or any general waste stream. The Government has funded the upgrade of 140 e-waste collection and storage facilities and invested in three specialist recyclers – Envirostream and Ecobatt for Li-ion batteries and Resource Pty Ltd and Ecobatt for single-use alkaline batteries. Victorians can also dispose of loose batteries via the B-cycle scheme.

Whilst Victoria already regulates battery disposal through the e-waste landfill ban, incorrectly discarded[3] batteries have the potential to cause fires and leak toxins. This is becoming more common in waste facilities and waste transport vehicles.

Stockpiling of batteries can increase the risk of fire, so Australian processing capability and export pathways will need to be improved to handle the increasing volumes of battery waste. As battery energy storage systems (BESS) and electric vehicle (EV) batteries reach their end of life, best-practice management will become more critical. While these matters result directly in risks to the waste and recycling sector, they also present risks to people working in the sector and those living nearby – through fires, toxic smoke, and potential land or groundwater contamination from waste batteries. The Review has taken a whole-of-lifecycle approach to fully consider and address these risks, alongside broader energy safety risks.

More homes and businesses in Victoria are moving toward electrification and more measures must be undertaken to safely decommission existing gas infrastructure. Disconnections from the gas network where pipes are capped at the point of gas delivery, instead of abolishing the connection, could result in a fire or explosion. This risk will rise as more residential homes and businesses in Victoria become disconnected from the gas network.

Case study

What is already being done

The Victorian Government has started work on a mandatory product stewardship scheme for small batteries and electrical products with batteries embedded in them. This will mean that suppliers of these products in Victoria will be required to take responsibility for their products throughout their lifecycle, including at the end of their life, ensuring they are safely collected and recycled, and critical components recovered for further use.

In the meantime, to increase safe disposal points throughout Victoria and reduce batteries in kerbside bins, the Government is funding local councils and charities to install new, or upgrade existing, battery drop-off points. It's also using the successful Small Acts, Big Impacts campaign to help Victorians better understand why they shouldn't put batteries and items with embedded batteries in household bins and where to take them instead.

And for industry, Victoria's Environment Protection Authority is developing national guidance for the safe storage and management of lithium ion batteries.

3 Since 2019 it has been illegal in Victoria to dispose of e-waste, including all types of batteries, in landfill. Voluntary e-waste programs have been set up in Victoria since 2007 when Byteback, the first computer recycling program, was launched.

Key safety risks

The Energy Safety Review identified current trends and developments in Victoria with the potential to impact energy safety.

Definition of safety risks

In line with Victorian legislation and regulatory practice, a safety risk is defined as the risk of a harm event caused by electricity or gas. A harm event is one that can cause death, injury and damage to property. In the context of safety risks arising from the energy system, the key focus areas include the risk of fire, explosion and electrocution from electricity as well as fire, carbon-monoxide poisoning and asphyxiation from gas.

Key safety risks identified by the harms assessment

A harms assessment was used to evaluate the level of harm arising from the energy transition. Risks that exist as part of the traditional energy system are effectively managed under current regulatory settings. The energy transition is introducing new risks that may not be sufficiently covered by the current energy safety framework. The Energy Safety Review has therefore focussed on identifying these newer and emerging risks. The key emerging safety risks that haven't been mitigated as low as reasonably practicable through the existing safety frameworks are summarised below.

Use of Li-ion batteries in a residential setting

Li-ion batteries were identified as an emerging safety risk due to the increased reported number of incidents and the severity of resulting fires, injuries and property damage. Li-ion batteries can self-combust when damaged or used incorrectly, with fires caused by Li-ion batteries igniting at a much faster rate than conventional batteries (which is called thermal runaway) due to their chemical composition.

The use of Li-ion batteries in small e-transport devices (e.g. e-bikes and e-scooters) means this technology is increasingly found in homes across Victoria. Safety risks associated with Li-ion batteries are reported to arise from:

- damage due to mishandling
- using incompatible chargers or overcharging batteries of e-bikes and e-scooters
- using replacement or recycled parts
- improper disposal through the general waste system.

If Li-ion batteries go into thermal runaway, this requires a different response from first responders to extinguish resulting fires. Lack of labelling or site-specific information can mean that firefighters aren't always aware when they are dealing with a Li-ion battery generated fire, which may increase the risk of physical injury and harm.

What is already being done

In 2024–25 Energy Safe Victoria carried out:

- **9,517** hazardous bushfire risk area inspections
- **4,235** low bushfire risk area inspections
- **98** residential solar installation audits
- **4** solar installation audits
- **14** wind installation audits
- **11** battery installation audits

Source: Energy Safe Victoria Annual Report 2024–25

Residential solar systems and battery energy storage systems (BESS)

Safety risks associated with solar panels and energy storage batteries in a residential setting are largely attributed to:

- Product quality issues (i.e. product faults).
- Inaccurate, faded or incomplete labelling, leading to improper handling or maintenance.
- Incorrect installation practices such as incorrect wiring of solar panels / inverters, non-compliant placement (e.g. restricted zones near habitable spaces, too close to eaves, ridges or roof edges), failure to meet spatial requirements, or use of faulty or substandard components. These issues are addressed in Australian standards, such as AS/NZ 5033 for PV arrays. Failure to follow these standards can increase fire and electrical safety risks.
- Lack of awareness amongst consumers as to how they should maintain their solar panel systems. Improper or no maintenance can then lead to potential fire hazards.
- Mishandling of batteries and increasing risk of thermal runaway, including damage leading to fire, incorrectly operating products and using incompatible chargers or replacement batteries. The use of smoke alarms is recommended where an energy storage system is installed, and in some cases required under AS/NZ 5139 – particularly where battery systems are installed indoors close to habitable rooms – to reduce the risk of injury and property damage.

Alongside the use of solar PV and household battery systems, there is an increasing uptake of service providers to manage these systems. While the number of reported incidents is low, there is still a risk of electrical surge or flash events that may increase the risk of electrocution. This is partially due to the increase in networked energy systems linking multiple households, which are managed remotely by a third party.

Larger scale battery installations, including Li-ion battery installations (neighbourhood and utility scale)

New mid-scale energy generation, storage and management services that use Li-ion batteries are not protected by the same regulatory, design and fire safety standards as large industrial sites. Risks from these services include increased bushfire risk in remote and regional settings, both from bushfires threatening battery installations and from the potential for battery failures to ignite or exacerbate bushfire. (Note: "Li-ion" refers to a range of chemistries, including newer lower risk types such as lithium iron phosphate [LFP], which have different fire and safety risk characteristics.)

Neighbourhood batteries and other electrical installations in small-scale communal or workplace environments have risk mitigations according to individual safety assessments. These batteries are subject to different regulatory requirements than would normally be required at an industrial site, due to their lower energy safety risk profile.

Solar farms can pose a risk of fire, for example if vegetation at the site is not appropriately managed and is too close to electrical equipment that may pose an ignition risk.

Utility-scale batteries are generally subject to more thorough regulatory oversight and higher safety standards – but still carry risk given their size, potential energy release, and location near critical infrastructure.

Wind farms

Wind farms can incorporate large-scale battery energy storage systems to manage intermittency and grid stability. In these cases, the risks associated with Li-ion batteries (such as fire, toxic gas release and disposal challenges) are relevant in addition to the turbine-related risks outlined below.

Wind turbines may pose worksite safety risks, with incidents that have occurred to date being during construction and installation, prior to the turbines being activated.

Other potential safety risks include falling debris and the risk of people being struck or crushed by falling items of large equipment. Utility-scale applications need to comply with occupational health and safety (OH&S) regulatory obligations – and while available information suggests that the number of deaths and serious injuries attributed to wind farm installations is low, the residual risks can have serious consequences.

Wind turbines have also been documented as catching fire. This carries an additional risk of falling debris – both as a consequence of the fire and a large drop zone due to the height of the turbines combined with the effects of wind. In some cases this may lead to ground fires. In June 2024, a wind turbine caught fire near Portland, Victoria, and later ignited a small grass fire at the base of the tower.

What is already being done

Case study

Energy Safe Victoria – wind farm inspection blitz in 2025

Energy Safe Victoria undertook a wind farm inspection blitz to gain a statewide view of risk management and strengthen engagement with industry. This proactive program was designed to build a clear picture of safety controls, identify improvement opportunities, and share expectations with owners and operators.

Over June–July 2025, Energy Safe Victoria teams visited 43 operational wind farms and inspected 183 turbines – around 10% of the state's fleet. The review combined document checks with on-site inspections of towers, nacelles, and critical systems.

Observations from the inspection indicated a strong commitment to safety across the sector. Variations were noted in areas such as electrical labelling, housekeeping inside nacelles, and approaches to lightning protection and fire detection. These were considered opportunities for consistency and improvement rather than systemic failures or immediate safety issues.

Other energy storage technologies (excluding Li-ion batteries)

A range of new and emerging energy storage technologies were considered in the harms assessment, including systems such as pumped hydro, molten salts and compressed air. New energy storage technologies potentially have safety risks that are different from older technologies such as hydro storage.

- Pumped hydro energy storage systems (PHES): Potential safety risks are typically site-dependent. These sites and systems will need to be assessed to better understand the risks of failure and flooding during operational phases, as well as potential safety risks during construction.
- Molten salt: Leakages within molten salt reactors may pose a potential risk of thermal burns due to rapid heat production and hazardous chemical exposure.
- Compressed air: System instability may lead to unexpected ignition and fires if not monitored and managed effectively.
- Graphite block storage: A graphite block storage system has been under trial in Wodonga at the Mars Petcare factory since 2022. The system carries similar thermal burn risks to a molten salt system.
- Flow Batteries (Vanadium, Zinc-Bromine, other alternate chemistry): redox flow batteries (RFBs) exist in various chemistries. They can decouple power from energy which can save costs in long-term applications. Flow battery characteristics include non-flammability and having a long life-span with minimal degradation over 25+ years.

Renewable gases

Renewable gases (including biomethane and renewable hydrogen) will play a critical but targeted role in meeting Victoria's commitment to be net-zero by 2045. They will help to decarbonise residual fossil gas usage in Victoria's industrial and gas-powered generation (GPG) sectors.

Renewable hydrogen could have a role to play in decarbonising long haul trucking, aviation and maritime activities. Failure to detect leakage of pressurised gas in both industry and transport contexts might lead to explosions and fire. This could be the result of malfunctioning safety management systems (e.g. alarms, sensors), or human error (e.g. failure to adhere to safety requirements).

Biomethane carries the exact same risk as fossil gas. The firefighting methods for H_2 appear to be the same as for fossil gas or LPG – isolate the source of gas and protect the exposures – with the difference being that the H_2 flame is invisible.

Gas

Many homes and businesses in Victoria are transitioning toward full electrification. Residential gas connections that are temporarily disconnected (e.g. gas meter plugged and locked without cutting the service pipe) rather than permanently abolished (i.e. cutting and capping the service pipe at the gas main) increase the potential risk of asphyxiation, fire or explosion. Not decommissioning inactive gas pipelines can result in material degradation over time.

The use of biomethane, for either gas replacement or generating electricity, is regulated through the Gas Safety Act and the Pipelines Act.

Risks arising from the traditional energy system that are effectively managed under current regulatory settings include open-flued gas space heaters (OFGSH) and liquefied petroleum gas (LPG) cylinders for domestic use. Since August 2022, OFGSH are not permitted to be installed unless they automatically shut down when they spill toxic carbon monoxide or other combustion products into the living space. To mitigate the risks of fire and explosion from domestic LPG cylinders, new Australian standards were introduced in 2021 and 2022 – which mandated new safety mechanisms for new barbecue connections and cylinder valves.

Closures of coal-fired power plants

The scheduled closures of Victorian coal-fired power plants may lead to reduced maintenance and management of these assets in their final years of operation. This could see a decline in asset integrity and reliability, which could lead to fires and cause grid instability – especially during peak demand periods or emergencies.

Worker safety

Some renewable energy products don't have sufficient labelling, making it harder for workers who install or maintain these products to understand the specific safety risks associated, or which protocols are required to manage safety risks. Examples include equipment associated with home battery systems, as well as labelling to inform first responders that a Li-ion battery may be on the site.

The nature of the energy transition means workers are often engaging with new products. Risks can arise at the system level, like workers being exposed to arc flashes caused by electrical faults in equipment connected to a system. While learnings from existing technologies will provide indicative examples of what to look out for, this can't mitigate safety risks that could arise from new products altogether. The wide range of current and emerging renewable energy technologies will require an appropriately trained and accredited workforce to install, operate and service these technologies.

Measures to retain skilled workers who serve existing needs that will be impacted by the transition by households and businesses from gas to electricity (such as gasfitters) should be considered – so that the skills of this workforce are maintained and kept up to date.

Part 2: Actions to keep Victorians safe through the renewable energy transition

The Roadmap identifies 3 Pillars in reform for Victoria's energy safety framework. These are based on foundational study and consultation.

These reforms aim to make sure that:

- Victorians stay safe through the renewable energy transition
- the renewable energy transition is regulated in an agile and effective way, and
- the workforce for the renewable energy transition is appropriately trained.

These Pillars have been developed around a series of priorities:

- improving consumer safety when interacting with renewable energy products
- making sure the scope of the regulatory framework is broad and agile enough to capture new and emerging technologies and respond to new risks as they arise during the energy transition
- equipping regulators with fit-for-purpose tools and powers to manage energy safety risks
- enabling industry to innovate during periods of rapid change in technology and regulatory requirements, with transitional arrangements used where needed to support the Victorian Government's commitment to promoting business
- providing sufficient training alongside suitable licensing for workers, and
- effectively using public education to help consumers to practice safety.

All of these actions are designed to build on the strengths of the existing energy safety regulatory framework, to enhance harmonisation and consistency across other jurisdictions, and to keep working towards regulatory best practice. They recognise the strong safety record achieved in Victoria so far, the significant work that's been undertaken by regulators to build, and enhance, a fit-for-purpose regulatory system, and how the Commonwealth Government can support these endeavours.

The actions are in-line with the principles of best practice regulation, and mutual recognition, that have been agreed between the Australian Commonwealth, State and Territory Governments. This will help to minimise red tape and promote the freedom of movement of goods and services in a national market throughout Australia.

The actions outlined in the Pillars have been based on a series of foundational principles:

- safety risk has been defined as the risk of harm to align with existing Victorian legislation and regulatory practice
- the objective of safety regulation has been defined as regulation that mitigates the risk of harm to the extent that is "reasonably practicable," which is consistent with a general duty obligation in a regulatory context while recognising that safety risk will never be zero
- the actions are aligned with an outcome-based approach, consistent with the Victorian Government's view of regulatory best practice
- the actions set out to improve the effectiveness of safety regulation, and regulatory practice, while being as efficient as possible
- the actions prioritise what is in the remit of the Victorian Government to change, and explore other reform options that require advocacy and collaboration at a federal level.

Pillar 1: Ensuring Victorians remain safe through the renewable energy transition

The safety of Victorians while dealing with energy is vital. As the type and number of electrical equipment that consumers deal with increases at pace, so too does the potential increase in risks if they're not well managed. This highlights just how important it is to maintain the safeguards already in place, while straightening the steps taken to address emerging challenges.

These actions address shortcomings that have been identified in areas where householders and consumers interact with energy, most often electrical and gas appliances. Australian standards provide a thorough process to maintain both the quality of electrical and gas equipment coming into Australia, and how the equipment is installed. However, the regulatory framework in Victoria doesn't give Energy Safe Victoria enough flexibility to determine which standards certain products must comply with, or when a new standard must be adopted. The use of compliance codes could complement Australian standards as they can provide Energy Safe Victoria with a more flexible way to give regulated entities certainty for complying with their duties.

Product labelling/recalls

Clear and consistent product labelling helps consumers identify safe products and understand how to use them correctly. Inconsistent labelling and complex recall processes can delay the removal of unsafe products from the market, leaving households exposed to unnecessary risks. A stronger approach to labelling and recall would give consumers more confidence and give Energy Safe Victoria alongside consumer regulators such as CAV and interstate energy safety regulators a faster, and more effective way to act.

Operation and maintenance of solar PV/batteries

As household battery storage systems become more common, proper installation, ongoing maintenance and safe decommissioning is critical. Poor maintenance practices or a lack of consumer awareness can increase the risks of fire, electric shock, or system failure. Clearer guidance and requirements around operation and maintenance will help consumers, installers and emergency services manage these risks effectively, so that batteries stay safe throughout their life

What is already being done

In 2024–25 Energy Safe Victoria assisted with **10 recalls** of electrical equipment that have the risk of electric shock or fires. Recalls published on the ACCC website are Australia wide. The ACCC is the lead regulator for product recalls in Australia.

Energy Safe Victoria issued **75 notices** during 2024–25, requesting documentation and other relevant information to determine if the appliances were compliant. Energy Safe Victoria issued **8 official warning letters** to suppliers that supplied or offered to supply non-compliant electrical equipment on the market. **8 infringement** notices were also issued to suppliers that supplied non-compliant e-scooters on the Victorian market.

Source: Energy Safe Victoria Annual Report 2024–25

Support and educate consumers on the safety risks associated with dormant gas connections in the context of households moving to all-electric

Gas connections that are disconnected without being fully abolished can present an ongoing risk of asphyxiation, fire and explosion. Over time, there is an increasing risk that land users aren't aware that there is live gas infrastructure on the property and the infrastructure may not be properly maintained.

E-scooters, e-bikes and similar devices and other electrical equipment that may pose safety risks

An increasing range of e-scooters, e-bikes and similar devices are being used by Victorians. Improved flexibility around standards, better labelling and product recall, along with increased consumer education will reduce the energy safety-related risks of these products. Energy Safe Victoria may also require additional flexibility to declare emerging electrical products or components associated with e-mobility device, as in-scope for more specific safety and testing requirements. This will ensure that regulatory coverage keeps pace with evolving technologies and new product types entering the Victorian market.

Electric vehicles

Electric vehicles are considered part of the energy system, when they're charging and discharging electricity. While EVs have a strong safety record, there are potential safety risks associated with faulty or poorly-installed charging infrastructure, lack of maintenance, and the use of non-compliant products. Without clear standards and strong consumer awareness, these risks can increase the likelihood of fire, electrocution, or equipment failure. Consistent regulation and guidance across jurisdictions will help manage these emerging risks and give consumers more confidence that EV charging can be carried out safely at home, or in public spaces.

The Energy Safety Roadmap contains a holistic set of actions which can apply to different technologies, across the lifecycle, as the energy system evolves.

Additionally, in large multistorey apartment buildings, existing car parks may sit below services like gas and water utilities. This requires great care to be taken when installing charging infrastructure. Installing EV charging in apartments is often costly and complex, requiring upgrades to shared electrical infrastructure and approval from owners corporations.

Stakeholders like the Australasian Fire and Emergency Service Authorities Council (AFAC) (now the National Council for Fire and Emergency Services) have previously classified EV charging as a special hazard in the draft National Construction Code, which requires higher levels of protection than is currently mandated.

These factors can be barriers of uptake, along with higher insurance premiums in multi-unit residential buildings.

We need to make sure there is enough regulatory coverage for existing buildings to meet the risks involved. For example, increased fire risks associated with Li-ion batteries in other electrical equipment, like e-scooter and e-bike chargers, could potentially damage consumer confidence in EVs (which are relatively safer than e-scooters, e-bikes and similar devices). It is important to not conflate EVs with Li-ion batteries in other electrical equipment, such as e-scooters and e-bikes.

We'll review the definitions of electrical equipment to clarify any uncertainty around the provisions that apply to EVs and charging, charging infrastructure, and what constitutes electrical work relating to EVs equipment (see Pillar 2 of this Roadmap). The Roadmap will also aim to improve the monitoring of EVs when they are when charging or discharging and are considered an electrical installation. This is important as EVs become more frequently used for bidirectional home energy storage. EVs used as home batteries need to be used safely and regulated similarly to other home batteries.

Increased demand will lead to more work on EVs and expose workers to risks when maintaining the charging equipment off road, or maintaining the vehicle itself.

Electric heavy vehicles can be complex for autoelectricians, or retrained mechanics, to service. A small car may be able to have its batteries swapped with a like-for-like replacement. However, heavy vehicles may have high voltage cables and systems that often require a more specialised skillset than those of autoelectricians or retrained mechanics.

Pillar 3 seeks to address these issues and manage the need for high quality, trained workers, which is widely expected to be a challenge as the demand for these workers increases throughout the energy transition.

We'll also review different types of licences so that workers handling high-risk tasks (like installation and maintenance) have the right qualifications for safety. This includes investigating options for trades working on electric vehicles. It may also include options for a new licence to enable suitably qualified workers can maintain passenger vehicles up to 2.5 tonnes, provided the vehicle is unplugged or safely de-energised by a licensed electrical worker.

"The existing framework of vehicle standards, building codes, and workforce training in Australia has so far proven effective in maintaining public safety during the initial phase of the EV transition"

Electric Vehicle Council submission to the Energy Safety Review public consultation

National approach to consumer education

Consumer understanding of energy safety is still uneven, with consumers often unaware of the risks associated with new technologies or how to respond to safety incidents. A nationally coordinated approach to consumer education would lead to more consistent messaging across jurisdictions, reduce duplication of effort, and help shape a stronger culture of safety. Victoria can work with other states and territories to make sure consumers are receiving clear, practical information on how to use energy technologies safely, regardless of where products are purchased or installed.

Victoria has long-standing high standards in worker training and oversight in this area. The rapid and recent uptake in solar PV and battery installation has brought new products into and onto Victorian homes. However the full lifecycle and maintenance of these products is not yet fully understood or regulated, particularly when it comes to end-of-life management, safe disposal and recycling pathways, as well as clear ongoing maintenance responsibilities for both households and installers

Action 1: Increase flexibility around standards

Rationale: Australian standards are relatively static and move at a slower pace than market innovation, creating potential for a regulatory gap. Jurisdictions adopt standards differently some automatically on the date of publication by Standards Australia, while others specify a later date, leading to inconsistency and confusion for industry and consumers. Greater flexibility with adopting standards and setting suitable commencement dates would support smoother implementation. The automatic implementation of Australian standards does not give regulators such as Energy Safe Victoria adequate time to consult with industry and unions, and prepare advice or guidance materials to support roll-out of new standards. This would also give industry greater time to prepare systems and practices as may be required by the arrival of a new Standard.

Concerns remain around imported components that do not meet Australian standards – such as lifts, mobile tower batteries and switchboards. Once installed, these form part of electrical installations, creating challenges for certification and raise issues for licensing compliance. There are concerns that Commonwealth import standards are limited in some respects (eg towards asbestos content, e-scooters and some inverters). The review will consider if the Victorian Government needs to take action to address these limitations.

> "Regulators should be equipped with appropriate tools and powers to be able to keep pace with innovation and construction trends."
>
> **Master Builders Victoria submission to the Energy Safety Review.**

Action 1A: Flexibility around application of standards

Give Energy Safe Victoria more flexibility on applying standards, such as what standards products or installations must comply with and/or the date by which a new or updated standard must be adopted. This flexibility will lead to improved safety by allowing Energy Safe Victoria to require compliance with standards to the extent they are fit-for-purpose It will also allow for the adoption also allowing the adoption of standards to be delayed where regulated entities need time to implement changes.

Action 1B: Enable Energy Safe Victoria to issue compliance codes

Explore options that would enable Energy Safe Victoria to make use of regulatory guidance tools such as compliance codes in the absence of, or in addition to, standards. If any legislative changes are required, these could be carried out in conjunction with Action 7.

Case study

What is already being done

Action 1 – Updates were made to Standard AS/NZS 5033:2021

Updates were made to Standard AS/NZS 5033:2021 (Installation and safety requirements for photovoltaic (PV) arrays) in 2021 to remove the mandate for DC isolators (a DC isolator is a safety switch that safely disconnects direct current power), in response to industry claims that such isolators made systems more vulnerable to fires and faults. Standards Australia agreed to this change after comparing different requirements around the world. It provides installers with greater flexibility to follow other safety measures where they divert from a DC isolator. "With millions of solar PV panel systems being installed across Australia, clear and relevant standards are paramount in supporting safe practice for industry professionals, homeowners and businesses," said Roland Terry-Lloyd, Head of Standards Development at Standards Australia. "At the time the 2014 standard was written, solar panels were at most 250W per panel, but technology is quickly changing, and it's not unusual for panels to be greater than 400W," said EL-042 Co-Chair Sandy Atkins. Australia previously had a limitation of 600V for panels for houses but recently aligned with international requirements of 1000V.

Additionally, AS/NZS 5033:2021 also aligns with international standard IEC 62548:2016, Photovoltaic (PV) arrays – Design requirements. "Solar is booming worldwide, so it's important we align with international standards so that the Australian market can use international products and technologies as well," said Mr Atkins. "Therefore, AS/NZS 5033:2014 was limiting for installation professionals," Mr Atkins finished.

These changes to AS/NZS 5033 highlight the relatively slow moving nature of the standards process in the face of rapid technological advances. This Standard was first developed in 2014, and there was rapid technological change from that time onwards, but it took until 2021 before the Standard was updated. Action 1A will address this by improving flexibility of updating standards, or add flexibility by also applying other regulatory tools to support Australian standards.

Source: Standard Australia website (https://www.standards.org.au/news/australian-solar-standard-as-nzs-5033-revised-to-support-growing-solar-industry)

Action 2: Improve product labelling and efficiency of urgent product and related materials recalls

Rationale: There is a growing risk of unsafe or non-compliant electrical products entering the Victorian market due to inconsistent labelling, poor traceability and delayed recall processes. Current regulatory powers limit the ability of Energy Safe Victoria to oversee product labelling and enforce compliance with Australian standards the point of import or sale. Strengthening labelling oversight will help identify unsafe products earlier, reduce reliance on recalls, and ensure that emerging technologies and imported goods are accurately labelled and traceable. Energy Safe Victoria also has limited powers to direct product recalls outside Victorian borders, including sellers based in other states who sell to Victorian consumers.

Action 2A: Improve product labelling

The Victorian government will consider options to strengthen labelling of products in Victoria, potentially through additional powers for regulators like Energy Safe Victoria. This could include powers requiring labelling of products in respect of their fire hazard, particularly Li-ion battery products, to support consumers and first responders where national processes are insufficient. The scale of any response would consider current and potential state and national requirements. If any regulatory or legislative changes are required, these could be done in conjunction with Action 7. Any response may be scaled, and may reflect the actions of other jurisdictions and funding priorities.

> "There is a growing risk of unsafe or non-compliant products entering the domestic market"
>
> **Master Builders Victoria submission to Energy Safety Review public consultation.**

Action 2B: Product recalls

The Victorian Government is committed to working towards nationally consistent markets. The Victorian Government will work with the Commonwealth Government, Standards Australia, and first responder agencies such as the CFA and FRV to:

- Advocate with other jurisdictions and the ACCC to enable faster recall of dangerous products through compulsory powers at a national level.
- Engage with the ACCC and other governments on better coordination across jurisdictions.

What is already being done

Case study

Action 2

Since 2020, 15 incidents of property damage in Australia have been linked to LG solar storage batteries, in one case destroying a Victorian home. On recommendation by the ACCC, a notice was issued to impose a mandatory recall on the grounds that LG was not taking satisfactory action to prevent injury from the affected batteries.

Prior to this, LG undertook a widespread advertising campaign to alert consumers about potential safety risks. They committed to committed to remedying the impact to consumers from using affected batteries over the course of 12 months.

Action 3: Operation and maintenance of domestic solar PV, battery storage and other emerging technologies

The Victorian Government will consult with industry and unions, to:

- Examine options for ensuring timely inspections for technologies such as solar, batteries, and EVs used as home storage, so that these systems continue to be maintained effectively in all relevant built environments, including modular or prefabricated construction.
- Improve compliance with AEMO's register of installed residential solar PV panels and energy storage systems. AEMO uses the register to fulfil its reporting obligations and manage the National Electricity Market (NEM).
- The proposed Victorian CER reforms or national CER Technical Regulator register may provide opportunities. Under these proposed programs, CER providers would be progressively required to register their businesses. Such data could inform auditors of where solar and battery systems are installed so they can be audited and rectified.

Explore legislative, regulatory and non-regulatory mechanisms to support regular maintenance and improve consumer education. One option could be for installers or retailers to send periodic reminders (e.g. every 2 years) that their solar, battery or EV system may need inspection or servicing. These reminders would need to comply with the Sales Code of Conduct (e.g. avoiding practices such as cold calling) and align with best practice guidelines. The intent is not to generate sales, but to provide a measure that encourages safe and regular system checks. In other jurisdictions, while mandatory regimes for routine maintenance of PV and battery systems are rare, requirements are increasingly reflected in standards and regulatory proposals. The international standard IEC 62446-2 sets out periodic inspection and maintenance practices for PV systems.

"We recommend adding specific requirements for... clear marking of Li-ion battery locations... visible information regarding de-energisation methods."

PVSTOP submission to the Energy Safety Review public consultation.

"The ETU and NECA support identifying and evaluating options for ensuring timely inspections, including for solar, batteries, EVs used as home storage, to ensure ongoing safety."

ETU and NECA joint submission to the Energy Safety Review public consultation.

Case study

What is already being done

Action 3

Open-flued gas space heaters (OFGSH) can potentially spill carbon monoxide (CO) into the living space, which can cause serious injury or death. This can occur if the OFGSH is not properly installed or maintained, or if it is operated in poorly ventilated or negative pressure conditions. These conditions are more likely to arise in well-sealed, energy efficient homes, or where powerful exhaust fans or rangehoods are in use – conditions in which OFGSHs were not originally designed to operate.

Tragically, there have been three confirmed fatalities caused by CO poisoning from OFGSHs in Victoria since 2010: Chase and Tyler Robinson (2010) and Sonia Sofianopoulos (2017).

One of the key recommendations from the 2018 coronial inquest into the death of Mrs Sofianopoulos was to phase out OFGSHs. In response, the Victorian Government has led the following reforms:

- From 1 January 2022, newly manufactured OFGSHs are required to automatically shut down within 15 minutes of detecting CO spillage under negative pressure conditions (Australian Standard AS5263.1.3).
- From 1 June 2022, Australian Standard AS4575 is mandated as the standard for carrying out Type A gas appliance servicing, and gasfitters must lodge records of this servicing work with the Building and Plumbing Commission.
- From 1 August 2022, OFGSHs are not permitted to be sold, installed or reinstalled unless they have automatic shutdown capability. OFGSHs installed before 1 August 2022 may continue to be used, however householders are recommended to have them serviced at least once every two years by a qualified gasfitter.

Other actions the Victorian Government has taken on OFGSHs include:

- Inspecting and/or replacing OFGSHs and installing CO alarms in state-managed public housing.
- Introducing minimum rental standards that mandate two-yearly gas safety checks on gas appliances.
- The Building and Plumbing Commission requires gasfitters to complete a CO training module before they can renew their registration or licence for Type A gas appliance servicing.

Energy Safe Victoria has also run a CO awareness campaign every year since 2011 urging households to have their gas heaters serviced every two years by a qualified gasfitter.

This case study illustrates some of the challenges and complexities of addressing risks in domestic systems.

Action 4: Support and educate consumers who choose to switch to electric to do so safely

Rationale: Consumers who switch to electric may disconnect rather than abolish their gas connections, giving rise to an emerging safety risk as unused gas pipelines degrade over time. There is an increasing risk that land users are unaware of the live gas infrastructure on the property and the infrastructure may not be properly maintained

Support and educate consumers

What is already being done

Case study

Action 4

Energy Safe Victoria advertising campaigns 2023–24:

- **Be Sure** - raise awareness about the danger of carbon monoxide poisoning in open-flued gas heaters ($820,000)
- **Keeping you Energy Safe Always** – addresses community awareness about requirements for electricians to issue a certificate of electrical work ($250,000)
- **Show your solar some love** – to encourage maintenance of home solar systems by licensed electrician every 2 years ($180,000)
- **Electrical DDIY (Don't Do It Yourself)** – to encourage non-electricians to get an electrician to carry out all home electrical work ($200,000).

Source: Energy Safe Victoria Annual Report 2023–24

Action 4A: Continue to support consumers wishing to permanently disconnect from the gas network

The Victorian Government will, in consultation with the Commonwealth Government, industry and unions, improve online educational materials for consumers who choose to move to electric, to support them to do so cost-effectively and safely.

Action 4B: Manage responsibility for dormant gas connections

The Victorian Government will, in conjunction with the Commonwealth Government, industry and unions, clarify responsibilities for managing the risks arising from dormant connections. This includes reviewing the appropriateness and effectiveness of gas retailers' and distributors' obligations relating to gas disconnections and abolishments, and providing stronger guidance for industry so that consumers are advised of the safety risks and benefits of each option.

Action 4C: Improve access to high quality data

The Victorian Government will, in conjunction with the Commonwealth Government, industry and unions, work to improve access for government and industry to high quality data on dormant gas connections, to enable analysis of the safety risks, issues and trends. While the Australian Energy Regulator already collects quarterly disconnections data from gas distributors[4], more detailed data is needed to understand the relative risk profiles of dormant connections versus abolishments, and explore opportunities for systemic or location-based, cost-effective solutions.

> AusNet supports "requiring communication from energy retailers on the safety risks of prolonged temporary disconnections and the benefits of abolishing a connection when a customer intends to permanently exit the gas (or electricity) network."
>
> **AusNet submission to the Energy Safety Review public consultation.**

4 https://www.aer.gov.au/publications/reports/performance/gas-quarterly-disconnection-reporting

Action 5: E-scooters, e-bikes and similar devices and other electrical equipment that may pose safety risks

Rationale: There is a risk of dangerous products and inappropriate use of e-transport equipment such as e-scooters and e-bikes persisting in the market due to lack of appropriate standards and regulation.

Across government, the issues arising from this type of equipment are being looked at. This includes recent consultation from the Department of Transport and Planning on banning these devices from public transport.

Action 5: Consider stronger requirements for e-scooters, e-bikes and other electrical equipment that may pose safety risks

The Victorian Government will explore stronger requirements on e-scooters, e-bikes and similar devices and other electrical equipment that may pose safety risks. This may include requiring these devices to be sold with consumer-friendly marking, with specified information for consumers, and meeting specified standards.

The Victorian Government will also review the powers available to Energy Safe Victoria to appropriately regulate e-transport equipment, and consider options to strengthen regulatory tools. The scale of any response will depend on the outcomes on Energy Safe Victoria's current consultation process on these matters. If any regulatory or legislative amendments are needed, these will be carried out in conjunction with those in Action 7.

"VACC is concerned by the increasing number of e-bikes... that do not comply with Australian Standards or Australian Design Rules"

Victorian Automobile Chamber of Commerce (VACC) submission to the Energy Safety Review public consultation

"Victorian fire services are responding to at least one significant Li-ion battery-related fire each week"

CFA submission to the Energy Safety Review public consultation

What is already being done

Case study

Action 5 – E-scooter fires/incidents

It is reported that Li-ion batteries cause fires nearly every day across Australia. In February 2025, an e-bike on charge was suspected as the cause of a fatal fire in Guildford, New South Wales. Fire Rescue NSW Fire Investigation and Research Unit found an incompatible charger was powering the e-bike battery in the bedroom that was the source of the fire. Investigators believe the battery overheated while being charged, leading to the house fire. FRNSW report that firefighters encountered a li-ion battery fire every day during February 2025.

Source: ABC news on-line (E-bike battery behind fatal house fire at Guildford in Sydney's west – ABC News)

Action 6: Consumer education and consistent electrical standards for batteries

What is already being done

Case study

Action 6

Energy Safe Victoria issued a direction under section 141(2) of the Electricity Safety Act 1998 on 27 September 2023. The direction prohibited the reconnection of an unsafe battery energy storage system and solar array at a residential property in Werribee by anyone other than a licensed electrical worker. The direction was issued to address safety concerns posed by the system, which was powering a residence and feeding electricity back into the grid.

Source: Energy Safe Victoria Annual Report 2023–24.

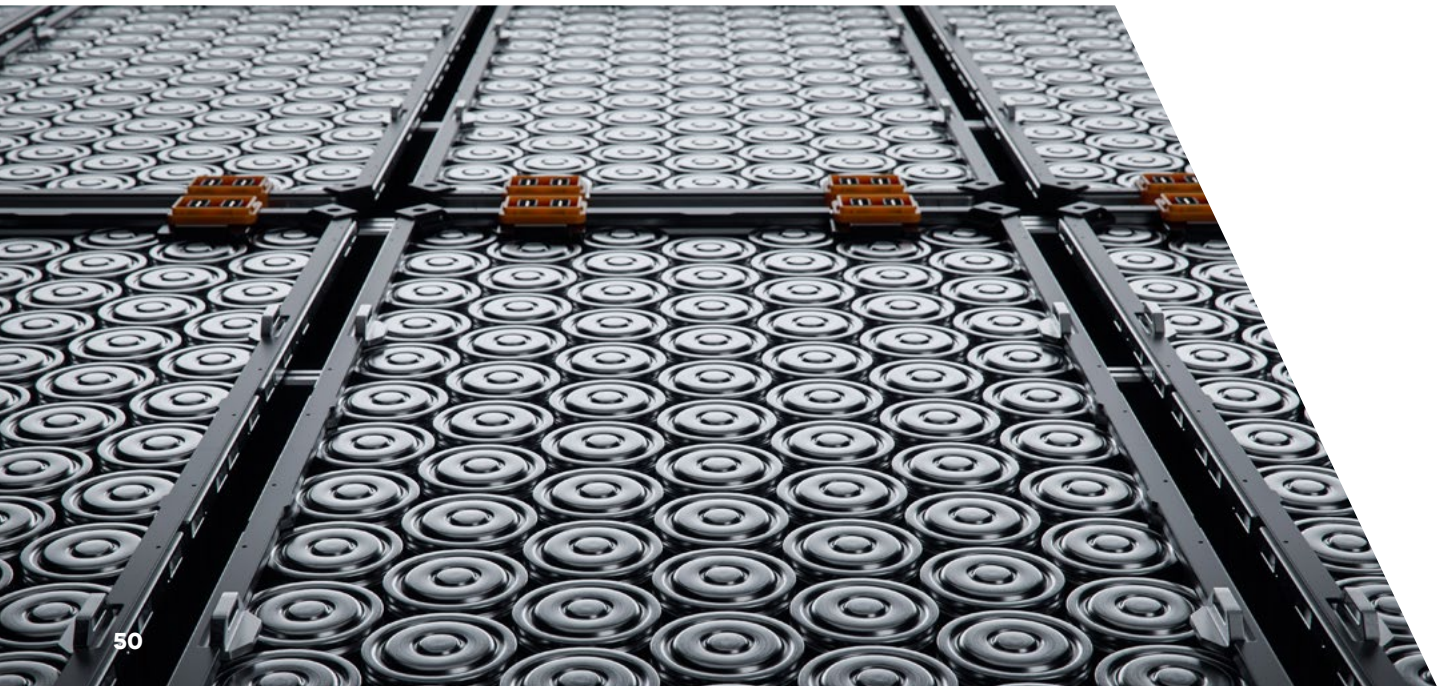
Energy Safe Victoria is running the "Before you know it" campaign, to inform consumers about safe Li-ion battery charging

https://www.energysafe.vic.gov.au/before-you-know-it

Rationale: Recent incidents involving Li-ion batteries highlight a critical gap in consumer awareness regarding their safe operation, maintenance and disposal. Li-ion batteries are more likely to catch fire when not managed correctly. These battery fires can lead to thermal runaway and intense, persistent fires which are difficult to extinguish. As Li-ion batteries become increasingly integral to Victoria's transition to net-zero emissions, the frequency of safety incidents is expected to rise. Addressing this issue is essential for public safety and supporting the state's sustainability goals. It is also important to recognise that battery technologies will continue to evolve, and the associated risk profile will change with this evolution, requiring the regulatory framework to remain adaptable and responsive over time.

AusNet supports "National coordination on licensing and safety standards, particularly for high-risk technologies like lithium-ion batteries."

AusNet submission to the Energy Safety Review public consultation.



Action 6A: Assess need to strengthen education for consumers on the risk and safe practices associated with batteries

The Victorian Government will work with fire agencies and industry to assess the need for strengthened public education about battery safety. Government will collaborate with Energy Safe Victoria, fire agencies and industry to consider the need for further trusted information on batteries used in homes and in mid-to-large scale installations.

If implemented, this work will provide consumers with vital safety information, covering safe use, storage, fire prevention, and end-of-life disposal of batteries. This action notes that existing consumer education programs are already delivered by Energy Safe Victoria and other agencies.

Action 6B: Advocate for a national approach to consumer safety for products containing batteries

The Victorian Government is participating in national forums designed to require manufacturers to provide clear safety instructions and warnings with all Li-ion battery powered products. This includes a cross-jurisdictional working group, led by NSW, that is pursuing reforms under the Australian Consumer Law for information requirements and other measures to address the safe use of Li-ion battery powered e-transport devices.

States are also considering appropriate mechanisms to implement the action plan following the National Electrical Safety Taskforce's Review of the Regulatory Framework for the Safety of Household Electrical Products. These matters are then considered through national meetings of Consumer Affairs Ministers and Consumer Electrical Safety Ministers. These forums will explore potential regulatory measures which would require manufacturers to provide clear safety instructions and warnings with all Li-ion battery-powered products.

These activities aim to ensure that Li-ion battery products entering Australia through any jurisdiction will meet the same minimum requirements, providing consistent protections and education for consumers and enabling suppliers to more easily understand and comply with requirements.

Pillar 2: Dynamic regulation of the renewable energy transition

When Victoria's legislated energy safety framework was established in the 1990s, it was designed for a centralised, fossil-fuel-based electricity system that evolved slowly and predictably. Since then, some of these large generators have been retired, while solar and wind farms and utility-scale batteries have risen in prevalence. This means the framework needs significant updates too.

The widespread adoption of domestic PV generation and the rapid increase in home or behind-the-meter (BTM) batteries, a type of consumer energy resource (CER), also highlights the need for a more flexible and efficient regulatory approach. Despite two rounds of changes to the Electricity Safety Act and Gas Safety Act since 2024, there are still areas for improvement. Key definitions in the legislation may need revision to remain relevant to the evolving types of electrical installations. Some stakeholders have also called for consolidating the current framework of three Acts into a single Act to reduce complexity and duplication (which was also a recommendation of the Grimes Review). The Victorian Government is focusing on undertaking regular reviews of the regulatory safety framework as well, to enable a dynamic approach to regulation, to keep the framework adaptable as the energy sector continues changing. There have also been calls to look into streamlining the regulations that sit under these three Acts.

Figure 6: Regulators involved in the energy industry

Large-scale, complex energy facilities, like utility-scale generation, are currently subject to general duties and a mandatory safety case regime. This isn't the case for renewable generators. While this regime is well understood by the industry, it was designed for a centralised, fossil-fuel-based generation system. The major changes in the size, number, and type of electricity generators across Victoria has led to the need for a more flexible and efficient process. The rapid increase in the number of renewable generators has also increased demands on the regulator, Energy Safe Victoria. The current funding model, where only some market players are levied by Energy Safe Victoria, has also led to perceptions of unfair burden distribution across the regulated sector.

Case study

What is already being done

On 28 February 2024, Energy Safe Victoria issued a direction to the Cohuna Solar Farm in line with section 141(2)(e) of the Electricity Safety Act 1998. It followed an investigation into a serious electrical incident involving fire at the solar farm on 20 November 2023. This followed a prior direction issued to the solar farm in relating the fire.

The direction required the solar farm owner to disconnect and stop using all items of specified equipment, report failures of overheating of specified equipment to Energy Safe Victoria and notify Energy Safe Victoria of any proposed technical solution 5 days prior to implementation.

The Victorian Government is taking proactive steps to address these challenges. This includes advocating for a national energy safety policy forum that enables policy collaboration across energy, transport, and construction sectors. The government is advocating for stronger oversight and funding for compliance activities under Commonwealth Government initiatives, such as the Cheaper Home Batteries Program. The government is looking to modernise risk and incident management and reporting, undertaking regular reviews of the regulatory safety framework to enable dynamic regulation. These measures will help to keep the regulatory framework fit-for-purpose and ready to adapt to the rapid changes in the energy sector.

"The Victorian Trades Hall Council recognises that regulatory and licensing frameworks must keep pace with emerging technologies, and that managing energy safety risks is integral to achieving the social license necessary to achieving a successful energy transition"

Victorian Trades Hall Council (VTHC) submission to the Energy Safety Review public consultation.

Action 7: Reform of the statutory energy safety framework

Rationale: To consider legislative changes that are necessary to ensure Victoria's energy safety laws are fit-for-purpose and aligned with the expectations of government, industry and the broader community.

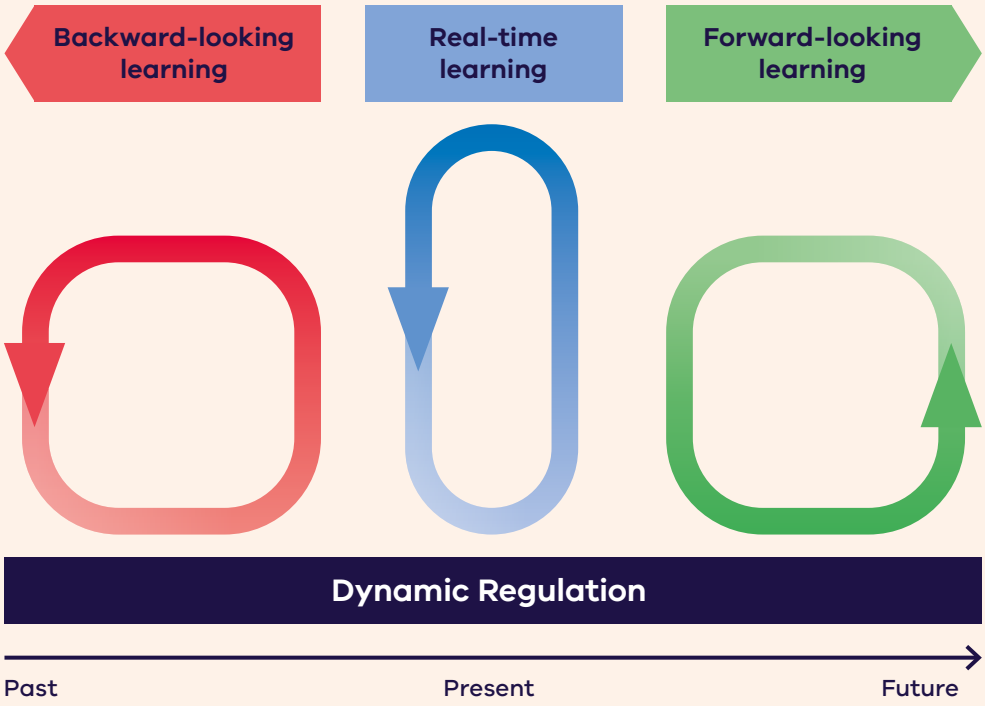
The Victorian Government will conduct an independent analysis of the reforms needed to ensure Victoria's statutory energy safety framework, including its Acts and Regulations, is consistent with the policy outcomes identified in the Energy Safety Review. Victoria will maintain a principles-based approach in the acts, with prescriptive details to be contained in the associated regulations. At a minimum this will address the following aspects:

- Introduce greater flexibility in adopting standards.
- Review definitions across the Acts (including the Electricity Safety Act, the Gas Safety Act, the Pipelines Act and *Dangerous Goods Act 1985*) to ensure relevance and effectiveness. This would build on reforms already being progressed by WorkSafe. The review will consider whether key definitions enable regulators to have an appropriate remit, and ensure the regulation of all significant electricity generation and storage installations are within Energy Safe Victoria's scope. At a minimum, the following definitions in the Electricity Safety Act would be reviewed: 'electrical installation', 'complex electrical installation', 'electrical equipment', and aspects relating to supply, energisation and certification. The review of definitions should also consider PV systems, and all energy storage systems that discharge electricity to the grid; how non-fixed electrical installations and systems are treated in practice, particularly those that are periodically plugged in to an external power source; and whether reforms are needed to accommodate the safety risk of offshore electrical generation.
- Consider the appropriate use of performance based versus prescriptive regulation. It would also review the appropriateness of duties, obligations and powers being contained within regulations versus primary legislation, and the need to consider streamlining regulations.
- That regulators are given flexibility to apply regulatory obligations such as general duties and the safety case regime to different duty holders that are commensurate with safety risks. The review will investigate ways to streamline the safety case process to meet future needs, while ensuring safety in the wake of a significant increase in the number, types and capacity of generation sites. The review will explore the defence provisions in the Electricity Safety Act and Gas Safety Act. The aim will be to provide a more effective and efficient safety case regime for industry. A streamlined regime would enable Energy Safe Victoria to deploy its resources to the areas of greatest and emerging safety risks.
- Regulatory instruments made under the various energy safety acts, such as the Exemption Order, will also be in scope of the analysis.
- The review will clarify that designers and engineers remain accountable to Victorian legislative requirements in regards design requirements for electrical installations, regardless of where the design originates.
- Assess the feasibility of consolidating the 4 energy safety acts, noting feedback that there are some challenges associated with having multiple acts in the energy safety framework. Benefits would potentially include reduced duplication or inconsistency of functions and powers between the acts, and reduced regulatory burden for regulated entities. This would also consider streamlining the various regulations made under each of the Acts.
- Licensing and registration requirements will also be considered in the review, covering aspects such as work on unplugged EVs, and the electrical inspection framework (see also Action 12).

The performance of the regulatory system will continue to be monitored by reviewing safety incident data and energy asset deployment, by tracking global trends and through consultation with key stakeholders.

> "The safety case model offers a structured, risk-based approach that supports innovation and efficiency and is an appropriate model for adapting to new safety risks such as those from decentralised and bi-directional energy flows."
>
> **AusNet submission to the Energy Safety Review public consultation.**

Figure 7: The dynamic regulatory framework



Dynamic Regulation:

Utilises historical safety data and past asset deployment to guide regulation.

Anticipates future scenarios by tracking global trends and local consultations.

Adjusts between education, guidance, and rules based on context and cost.

Case study

Response to the February 2009 Black Saturday bushfires

The 2009 Victorian bushfires claimed 173 lives, destroyed or damaged more than 2,000 homes and burned about 430,000 hectares of land. Fires started by power lines caused 159 of the deaths. The Victorian Bushfires Royal Commission (VBRC) was established to investigate the causes of, and response to, these bushfires.

The VBRC Final Report was handed down on 31 July 2010. It included 67 recommendations, addressing a broad range of issues like powerline safety, community warnings, shelter options, emergency management governance and incident management, planning and building, and land and fuel management. Implementing these recommendations required coordinated action by many Government authorities and industry.

Complex administrative and legislative interventions over the next decade led to significant reform to Victoria's energy safety regulatory framework and safety-related powerline infrastructure requirements. Emergency management arrangements also underwent significant reform, particularly through the State's commitment to an all-agencies, all-communities approach.

What was learned from these interventions can be applied to delivering this Roadmap's Pillar 2: Dynamic regulation of the renewable energy transition. It can help to make sure that different that different parts of the regulatory systems work well together and keep the system fit for purpose over the long term.

This case study illustrates some of the challenges and complexities of addressing risks in domestic systems.

What is already being done

Case study

Action 7

Many electricity and gas companies are required to submit compliance documentation to Energy Safe Victoria for acceptance every 5 years.

This includes:

- Electricity Safety Management Schemes
- Bushfire Mitigation Plans
- Electric Line Clearance Management Plans
- Gas sector Safety Cases
- Pipeline Management Plans
- Construction Safety Management Plans

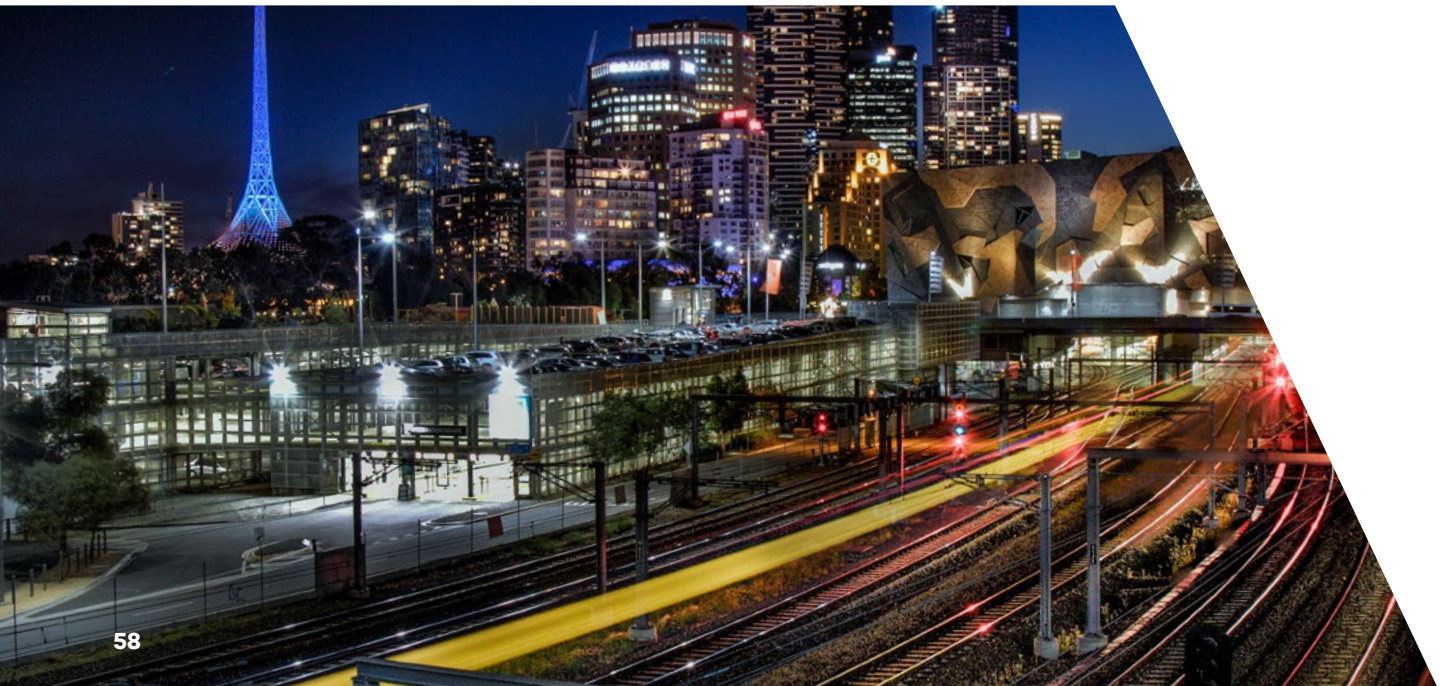
These documents are collectively known as safety cases.

"In all cases, greater clarification and corrections must be considered with the Electricity Safety Act and its associated instruments refer to rail- and tramways. As it stands, the approach taken is outdated, obsolete and longer fit-for-purpose."

ETU/NECA joint submission to the Energy Safety Review public consultation.

"AusNet supports a move towards more harmonisation of the energy safety framework and regulation through the application of a streamlined safety case regime to new forms of generation"

AusNet submission to the Energy Safety Review public consultation



Action 8: Assess Energy Safe Victoria's resourcing model to give effect to regulatory responsibilities

The Victorian Government will develop an activity-based costing model which will assess required resourcing to give effect to Energy Safe Victoria's regulatory responsibilities, while maintaining fiscal discipline for a suitable level of risk-based regulation.

This is in line with the Department of Treasury and Finance Pricing for Value Guide. As legislative changes in line with Action 7 will impact Energy Safes Victoria's regulatory practices, this will need to consider any such changes too.

Action 9: Build a robust evidence base for future energy safety measures

In order to provide a robust evidence base for future safety measures the Victorian Government will explore a national framework for energy safety reporting with other jurisdictions to:

- Consider a centralised framework for energy safety reporting to the Victorian Government.
- Improve visibility of energy safety risks, harms and causes.
- Identify reporting mechanisms that could be implemented to improve coordination of the oversight of novel energy safety risks and energy safety events, no matter the sector, product or technology.
- Work toward harmonisation of safety compliance standards that enable integrated reporting from the regulated community, through an improved and national understanding of energy safety requirements.
- Collaborate with peak bodies to ensure full and regular public reporting occurs on energy safety incidents nationally. This could potentially be through a reporting portal where consolidated information is published and is accessible to relevant regulators, the regulated community, businesses and consumers.

Action 10: A national energy safety policy forum for cross-sector collaboration for new and novel safety risks

The Victorian Government will advocate to:

- Seek to ensure energy safety policy is scoped into the current national working groups under ECMC.
- Engage with other jurisdictions on options for a national approach to energy safety policy that will ensure policy collaboration across energy, transport and construction to work through new and novel safety risks (including national transport and maritime sector risks, product risks, technology risks, and reuse of assets in the emerging gas sector).
- To ensure Commonwealth Government initiatives, such as the Cheaper Home Batteries Program, includes stronger oversight, funding for compliance activities, and safeguards for consumers to support the rollout, based on requirements that exist under the Victorian Solar Homes Program.
- Ensure collaboration on sharing safety incidence data and using data to develop best practice guidance and national codes or guidelines, where appropriate.
- Support community engagement as changes in the energy sector arise, to communicate where consumers can access guidance on how to keep their homes safe and which regulators to contact for more information.

Pillar 3: Energy workforce licensing and skills

Victoria's energy transition, brings with it the arrival of new technologies – and new challenges – for industry and the workforce generally too. The Victorian Government has prioritised a review of Victoria's licensing classification regime for electrical workers, plumbers and gasfitters, along with further development of apprenticeships so that workers have the skills to engage with emerging technologies.

The continued expansion of the renewable energy sector is expected to put a strain on the labour market, with an increased demand for electricians, mechanical trades and engineers. The current workforce is being stretched to perform roles that might need further training, with additional skills needed for safety.

Victoria introduced mandatory continuing professional development (CPD) for designated electrical workers on 1 July 2023, as a condition of renewing their license every five years. CPD is designed so that electrical workers' skills keep the pace of technologies, the latest safety practices and changing Australian standards and regulations. However, more needs to be done.

The actions in this Pillar seek to develop an expanded and enhanced workforce, by reviewing and reforming licensing classifications for electrical workers, plumbers and gasfitters. New and emerging technologies and their application in the provision of energy to householders and industry will require a reassessment of current licensing classifications make sure they stay up to date and fit-for-purpose.

"AusNet note that without a coordinated and well-supported workforce strategy, the sector risks a growing mismatch between the pace of technological change and the availability of safety-competent personnel."

AusNet submission to the Energy Safety Review public consultation.

Attracting and retaining new energy sector apprenticeships, while keeping the workforce up-to-date and engaged with emerging energy technologies, is also critical.

These reviews will align with the Victorian Government's Energy Jobs Plan. The plan will support the development of Victoria's workforce to deliver the State's target of 95% renewable electricity generation by 2035, while driving investment confidence to enable the energy transition.

It is proposed that the review of the licensing classification regime and the development of apprenticeships will be conducted through collaboration with peak industry bodies, key stakeholders including unions, and with other jurisdictions including the Commonwealth.

Commonwealth Issues Paper – National Licensing for Electrical Occupations

The August 2025 Commonwealth issues paper on national licensing for electrical jobs suggests harmonising state-based licences to lift labour mobility while still maintaining high safety standards. It finds different state rules make it hard for electricians to work across borders quickly. Current Automatic Mutual Recognition (AMR) settings are complex and inconsistent. Some states don't participate, some exclude electrical licences, and many add extra steps like notifications which slow projects and add costs.

The Commonwealth's issues paper sets out three options, including:

- a single national licence
- a stronger AMR model
- a hybrid that standardises and improves core licence types, removes most exemptions and improves data-sharing between regulators.

The option for a stronger AMR model maintains Energy Safe Victoria's safety mandate and keeps safety management in the sector strong, while unlocking labour mobility, growing the labour resource, and making it easier to get skilled electricians where needed.[5] However, other options proposed in the Commonwealth's issues paper could alter Energy Safe Victoria's role.

What is already being done

Continuing professional development (CPD) for electrical workers became compulsory in Victoria to those wanting to renew their licence on 1 July 2023.

Electrical licence holders must now complete **8 hours of Skills Maintenance training** every 5 years to renew their licence.

6,485 electrical workers completed their skills maintenance training in 2023–24.

The training was delivered on Energy Safe Victoria's behalf by **11 registered training organisations**.

Source: Energy Safe Victoria Annual Report 2023–24

5 The Australian Government – Treasury Issues paper: National licensing for electrical occupations (August 2025)

Action 11: Ensuring safety in workforce training and skills development to encompass new and evolving technologies

- The Victorian Government will work with key stakeholders to ensure training and skills programs with industry include energy safety as a key priority. Training and skills programs may be delivered under Solar Victoria's Electrification Workforce Program, and the existing Continuing Professional Development program (run by Energy Safe Victoria). The Skills and TAFE and higher education sectors will continue to play a role in delivering training to meet Victoria's clean economy and workforce needs.

The Victorian Government will:

- Support worker training by including safety training as part of other specialised training programs and centres where possible.
- Consider developing advanced hydrogen first responder training, in partnership with AFAC, Australia's peak body for fire and emergency services, on behalf of the National Hydrogen and Low Carbo Fuels Working Group. This training will be publicly available on AFAC's website and easily accessed by Victoria's First Responders.
- Consider delivery of skills and/or redesigned units and qualifications in renewable energy to support the workforce, facilitated by partnerships between the Victorian Skills Authority, Office of TAFE Coordination and Delivery and the TAFE Network.
- Increase the TAFE Network's capacity to respond to offshore wind industry workforce needs by establishing an Offshore Wind Skills Lab. TAFE Gippsland is leading the implementation of the Skills Lab on behalf of the TAFE Network. The Skills Lab will develop key educational offerings and a roadmap to strengthen the capacity of the TAFE Network to contribute to building the offshore wind industry workforce. Funding has been provided as part of the $3.45m package to establish three Clean Economy Skills Labs.
- Continue to implement the 10-year Clean Economy Workforce Development Strategy, with progress updates to be published in the annual Victorian Skills Plan.

Action 12: Victoria's licensing classifications for electrical workers, plumbers and gasfitters

The Victorian Government will develop proposals in consultation with key stakeholders to:

- Review licensing classifications for electrical and gas workers to ensure they are and continue to be relevant, considering needs for cross trades to align with national mutual recognition commitments. Workers should also receive proper training to handle new safety risks as they are identified. The review of licensing classifications will be underpinned by the process improvements and through the review of key definitions in energy safety legislation outlined in Pillar 2 ('Dynamic regulation of the renewable energy transition') to ensure licensing can evolve with the overall framework. This will include exploring licensing pathways for apprentices, and post-trade qualifications, to ensure consistency across legislation, supporting safe workforce development.
- Review different types of licenses to ensure workers handling high-risk tasks and emerging technologies (examples may include the wiring of modular homes) have the right qualifications for safety. This should cover for example how Registered Electrical Contractors certify imported components of for example lifts, switchboards and relocatable homes not built to Australian standards and whether the exemption conditions for persons carrying out electrical installation work are appropriate.
- Investigate options for trades working on electric vehicles (the intersection between electrical workers and mechanics). This may include options for a new licence to enable suitably qualified workers the opportunity to maintain passenger vehicles up to 2.5 tonnes, provided the vehicle is unplugged or safely de-energised by a licensed electrical worker.
- Consider any risks associated with changes to licensing classification and supervision requirements, since product certification and installer accreditation is currently undertaken by private industry bodies. Those requirements imposed by the Commonwealth under its STC scheme will end in 2030, and Solar Homes is due to conclude rebates and interest free loan offerings in 2027–28. These changes may reduce the effectiveness of industry self-regulation as they remove current standards and guidance provided to industry participants.
- The development of proposals for licensing classification will also take account of:
  a. the commitment Australian governments have made to progress mutual recognition of occupations,
  b. the March 2025 announcement by the Commonwealth Government that it will work with states, territories, businesses and unions to design a national licensing scheme for electrical trades people,
  c. the Commonwealth Government's Cheaper Home Batteries Program,
  d. the Victorian Government's CER Protections Framework (to avoid regulatory overlap).
- Review the relationship between LEIs and electricians to ensure there is no conflict of interest. Further work is needed to evaluate if Energy Safe Victoria's audit program helps reduce the risk of conflict / bias between LEIs and electricians.
- Determine the role Energy Safe Victoria and other regulators – such as the Building and Plumbing Commission – can play as Victorians work more frequently with renewable hydrogen and other renewable gases.

"AusNet notes that licensing classifications must be updated to reflect the complexity of modern energy systems."

AusNet submission to the Energy Safety Review public consultation.

"We believe that there are some areas where the interactions between the training, licensing and regulatory systems could be strengthened to ensure that each remains fit-for-purpose in a rapidly changing energy grid, and that Victoria continues to represent the national benchmark when it comes to electrical security, safety and stability."

ETU/NECA joint submission to the Energy Safety Review public consultation

What is already being done

Case study

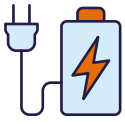
Action 12

On 10 August 2023 at Ringwood Magistrates' Court, J.L. Hutt Electrical and its director, Jason Hutt, together with Austin Calverley (licensed electrical installation work and onsite supervisor), pleaded guilty to various offences relating to the electric shock and resulting injuries sustained by an unsupervised electrical apprentice. J.L. Hutt Electrical and Jason Hutt received fines and incurred costs totalling $30,599 in relation to the prosecution brought by Energy Safe Victoria and WorkSafe. Austin Calverley was fined $2,500.

Where to from here?

The Victorian Government will keep developing new policies and actions in each of the 3 Pillars to lead to a safe renewable energy transition. The Department of Energy, Environment and Climate Action will be the lead agency on most of these actions, through collaboration, where appropriate with industry and industry groups, unions, regulators, other government departments and agencies in Victoria and with other jurisdictions.

Some of the key milestones are shown below. These milestones will continue to evolve over time, and their exact release or outcome dates may vary from those indicated below.

Pillar of energy safety		Action
1. Ensuring Victorians remain safe		1. Increase flexibility around standards
		2. Improve product labelling and product recalls
		3. Operation and maintenance of domestic PV and batteries
		4. Support and educate consumers who choose to switch to electric to do so safely
		5. E-scooters, e-bikes and similar devices and other electrical equipment that may pose safety risks
		6. Consumer education and consistent electrical safety standards for batteries

* Dependent on future Government priorities and subject to decision by the Government of the day

2026 →	2027 and beyond* →
Flexibility around application of standards – Research, review and consultation in early 2026. Prepare for legislation amendment. Enable Energy Safe Victoria to issue compliance codes – Establish working group, followed by consultation.	Commence legislation amendment process (if this is the response). Commence legislation amendment process if needed.
DEECA to consider legislative and/or regulatory amendments to strengthen Energy Safe Victoria's ability to make declarations regarding products. Product recalls – Victorian Government to work with the Commonwealth Government and Standards Australia to advocate for e-scooters and other devices to be included in the EESS	Work to harmonise regulations and powers across states and territories.
Establish a cross-agency working group, audit current compliance framework, and evaluate enforcement options. Develop Regulatory Impact Statement	Legislative or regulatory changes as required.
DEECA, Energy Safe Victoria and other Victorian Government departments assess the need to update fact sheets regarding permanent gas disconnection. Collate data and establish monitoring to understand gas connections and disconnection practices	Implementation of monitoring processes with gas distributors.
DEECA to consider legislative and/or regulatory amendments to strengthen Energy Safe Victoria's ability to make declarations regarding products.	
Partner with other agencies	Work with partner agencies to educate consumers on the risks and safe practices associated with Li-ion batteries.

Pillar of energy safety		Action
2. Dynamic regulation of the renewable energy transition		7. Reform of the statutory energy safety framework
		8. Assess Energy Safe Victoria's resourcing model to give effect to regulatory responsibilities
		9. Build a robust evidence base for future energy safety measures
		10. A national energy safety policy forum
3. Energy workforce licensing and skills		11. Ensuring safety in workforce training and development
		12. Victoria's licensing classifications for electrical workers, plumbers and gasfitters

* Dependent on future Government priorities and subject to decision by the Government of the day

2026 →	2027 and beyond* →
DEECA will commission an independent analysis of the regulatory framework in consultation with industry and unions. There will be public consultation on key changes to aspects of the energy safety legislation, including definitions, thresholds, the general duties and safety case regimes. The review will also assess the possibility of consolidating the energy safety acts into a single act.	Commence legislation amendment process if needed.
The Victorian Government will develop an activity-based costing model regarding Energy Safe Victoria's regulatory responsibilities. Develop a policy proposal if required.	Commence legislation amendment process if needed.
DEECA and Energy Safe Victoria to work with other regulators and emergency services to consider the need for a centralised incident database.	On-going collaboration as required if a new system needs to be established.
Scope energy safety policy into the current national working groups under ECMC.	
The Victorian Government will work with key stakeholders to make sure that training and skills programs include energy safety as a key priority.	New projects commencing in January 2026 are funded through to January 2028.
Review the different types of licenses to make sure workers have the right qualifications for safety. Options paper and consultation in 2026.	Commence regulatory and/or legislative proposals if needed.

Glossary

Term	Definition
ABCB	Australian Building Codes Board
ACCC	Australian Consumer and Competition Commission
BESS	Battery electric storage system
BTM	Behind-the-meter
CER	Clean Energy Regulator
CER	Consumer Energy Resources
CFA	Country Fire Authority
CPUE	CitiPower, Powercor and United Energy
DEECA	Department of Energy, Environment and Climate Action
DER	Distributed Energy Resources
DTP	Department of Transport and Planning
EESS	Electrical Equipment Safety System
ERAC	Electrical Regulatory Authorities Council
ESV	Energy Safe Victoria
EV	Electric vehicle
EVC	Electric Vehicle Council
FRV	Fire Rescue Victoria
kW	Kilowatt
kWh	Kilowatt hour
MBV	Master Builders Victoria
MEA	Master Electricians Australia
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OIR	Offshore Infrastructure Regulator
PHES	Pumped hydro energy storage
PV	Photovoltaic
SA	Standards Australia
SAA	Solar Accreditation Australia
VACC	Victorian Automotive Chamber of Commerce
VTHC	Victorian Trades Hall Council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