Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

Building and Energy Western Australia

Energy Safety Business Plan

2023–24

Contents

Acknowledgement of Country

Building and Energy acknowledges the traditional custodians across Western Australia, paying respect to their culture and their contribution to the land, waters and community.

We pay our respects to all members of the Aboriginal communities and to Elders, past, present and emerging.

Foreword

Building and Energy is Western Australia's technical and safety regulator for the electricity industry and most of the gas industry as well as the regulator for the building, building surveying, plumbing and painting industries. I am pleased to present the 2023–24 Business Plan, which relates to Building and Energy's activities in administering electricity and gas technical and safety legislation.

This Business Plan is a key part of the process for the yearly industry funding of these activities, as required by the legislation. Once the Business Plan is approved by the Minister, it will form the basis for the Minister's determination on the overall fixed amount to be levied on energy industry participants, and the manner in which it is to be allocated between participants for 2023–24.

This year we have delivered on a number of initiatives aimed at improving safety outcomes for electricity and gas users. We undertook several initiatives aimed at raising consumers' awareness about electrical and gas safety. We continued to promote carbon monoxide safety through our Tick, Tick, Tick safety campaign. Building and Energy also led a national investigation into Swift 500 series gas cookers following two separate caravan explosions in Western Australia.

We have devoted more time and resources towards education and we have been working more closely with industry. This has proved to be very successful in improving safety outcomes. We also increased our focus and presence in remote and regional areas of the State. We attended a number of remote aboriginal communities and used the opportunity to educate electrical contractors, workers and residents about their responsibilities and of the risks presented by non-compliant electrical work.

Building and Energy has to ensure its legislation and compliance regime remain flexible and agile to adapt to new technologies and trends in the energy sector. While in recent years amendments to regulations sufficed, it is acknowledged that the primary legislation does require amendments. In 2023–24 Building and Energy will work towards progressing amendments to the *Electricity Act 1945* and the *Gas Standards Act 1972* to ensure they remain contemporary.

The evolving energy sector has resulted in an increasing demand for Building and Energy's services. This, coupled with our inability to attract and retain technical staff, continues to increase pressure on existing resources. Overcoming these constraints will be key to Building and Energy's ability to continue to effectively regulate the electricity and gas safety in Western Australia.

Saj Abdoolakhan
Director of Energy Safety
December 2022

About this Business Plan

This document sets out the 2023–24 Business Plan for the energy safety functions performed by the Building and Energy Division (Division) of the Department of Mines, Industry Regulation and Safety (DMIRS).

The Business Plan focuses solely on the delivery of functions of the Director of Energy Safety and the administration of technical safety regulations made under the *Electricity Act 1945* and *Gas Standards Act 1972*. These Acts and associated regulations set out the minimum technical safety requirements to which consumer electrical and gas installations and networks in WA must be constructed and maintained. The primary objective of the energy safety legislative framework is the safety of energy consumers and the community at large.

The Business Plan has been prepared to meet the intent of section 4 of the *Energy Safety Act 2006* and includes a statement of intent; the business environment and challenges, including major initiatives; the financial plan; ongoing and planned initiatives; details of the proposed 2023–24 energy industry levy; and achievements.

Upon approval by the Minister, this Business Plan will form the basis for the determination on the amount to be levied on energy industry participants for 2023–24 and the manner in which it is to be allocated between participants.

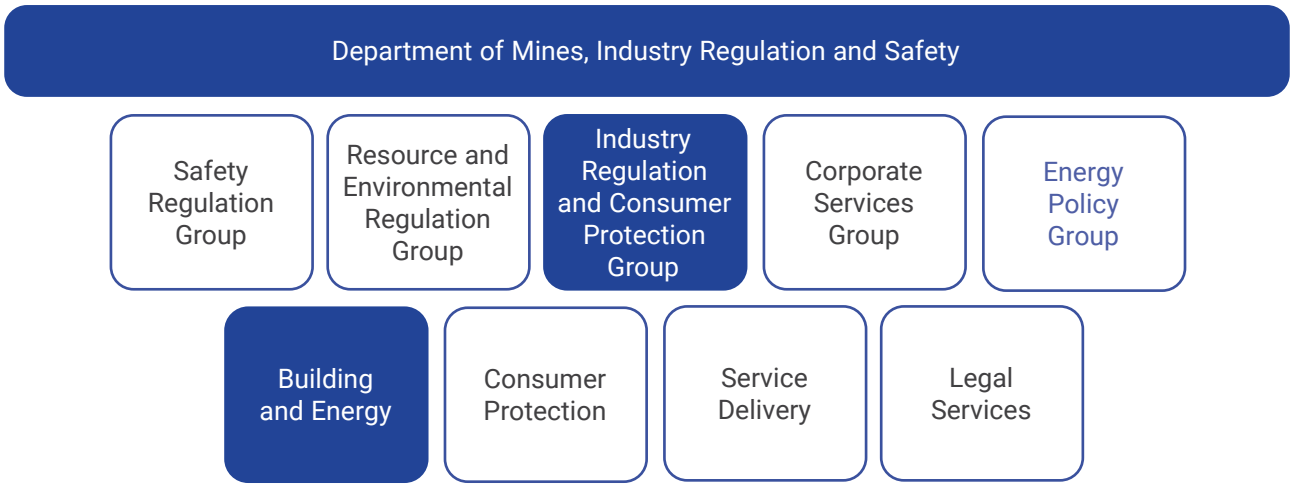
The Business Plan is divided into Building and Energy's three strategic priorities including **Consumer Safety**, **Industry Safety** and **Network Safety**, as represented in the figure below.

About Building and Energy

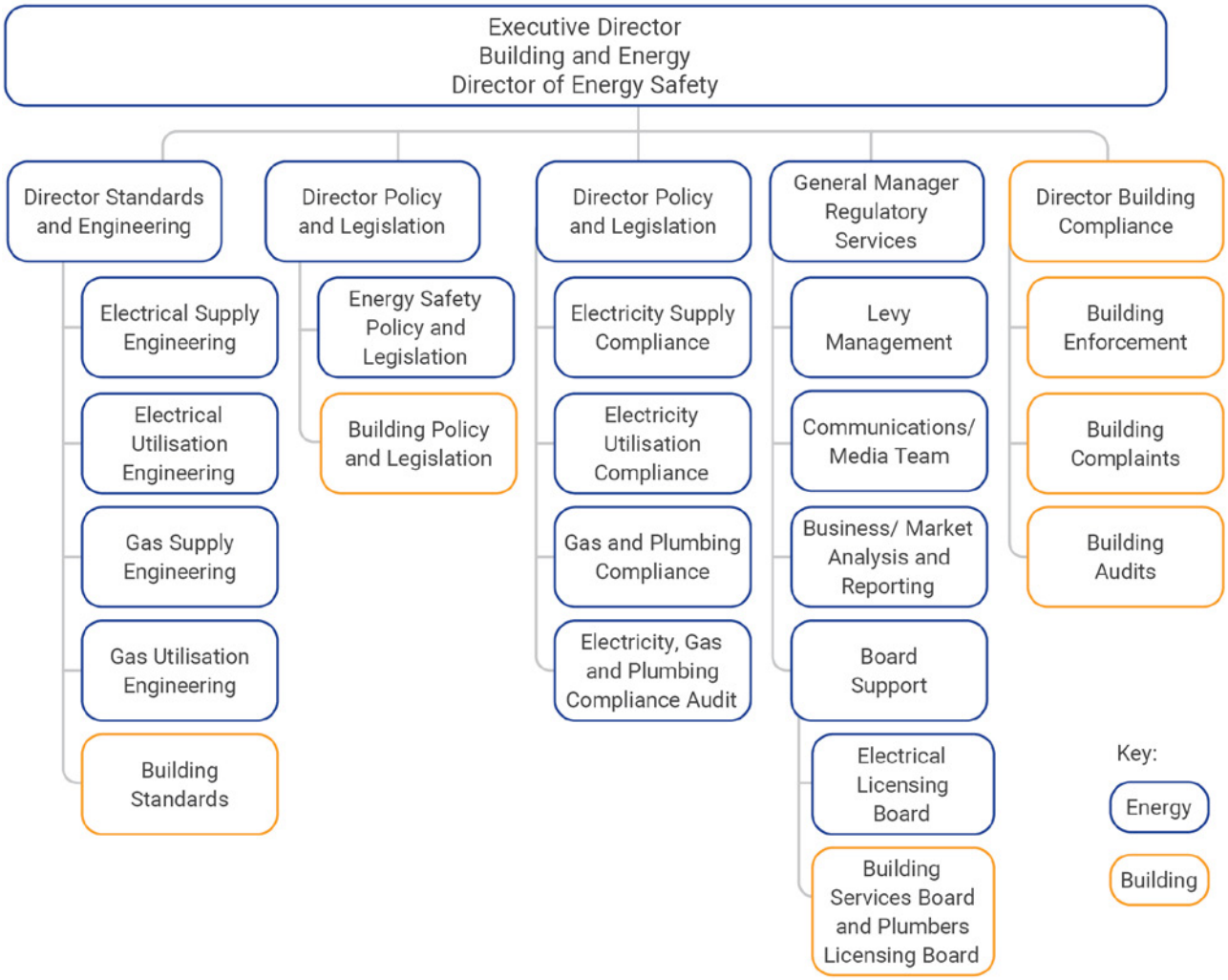
Building and Energy was established in January 2018 as a Division of the Department of Mines, Industry Regulation and Safety (DMIRS). The Division is the State's building, plumbing and energy safety regulator.

It administers a suite of building and energy safety legislation and supports the statutory offices of the Building Commissioner and the Director of Energy Safety.

Where we fit within DMIRS



Building and Energy Division Structure



Statement of Intent

Purpose and Approach:

Building and Energy embraces the purpose and approach of DMIRS, which is as follows:

Purpose: Supporting a safe, fair and responsible future for the Western Australian community, industry and resources sector.

Approach: Maximise our impact as a regulator, service provider and policymaker.

Objectives:

We share DMIRS objectives. This inter-departmental alignment drives change across the state, of which Building and Energy play a pivotal role. The following objectives are pertinent to the Energy Safety Business Plan 2023–24:

Better Places: A quality environment with liveable and affordable communities, and vibrant regions.

Strong Communities: Safe communities and supported families.

Functions:

Building and Energy has four key functions (Policy and Standards, Education, Licensing, Compliance), that collectively address the Division's strategic priorities. Functional areas are represented in the outer ring of the figure below. Building and Energy's three strategic priorities include **Consumer Safety**, **Industry Safety** and **Network Safety**.

The Business Plan is divided into these three themes. The fundamental priority underpinning Building and Energy's work is community safety.

The statutory office of the Director of Energy Safety

The Director of Energy Safety (Director) is an independent statutory office established under section 5 of the *Energy Coordination Act 1994*. The Director and supporting staff ensures that the legislation covering electricity and gas safety is effectively administered, maintained for currency and appropriately communicated to stakeholders.

Legislation administered

The Director of Energy Safety and his staff administer the following legislation:

- *Energy Safety Act 2006*
- Energy Safety Regulations 2006
- *Energy Safety Levy Act 2006*
- *Energy Coordination Act 1994 (other than Parts 1A, 2A, 2B, 2C and 2D)*
- Energy Coordination (General) Regulations 1995
- *Electricity Act 1945*
- Electricity (Licensing) Regulations 1991
- Electricity Regulations 1947
- Electricity (Network Safety) Regulations 2015
- *Gas Standards Act 1972*
- Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999
- Gas Standards (Gas Supply and System Safety) Regulations 2000
- Gas Standards (Infringement Notices) Regulations 2007
- *Gas Supply (Gas Quality Specifications) Act 2009 (Part 5)*

Core Energy Safety functions

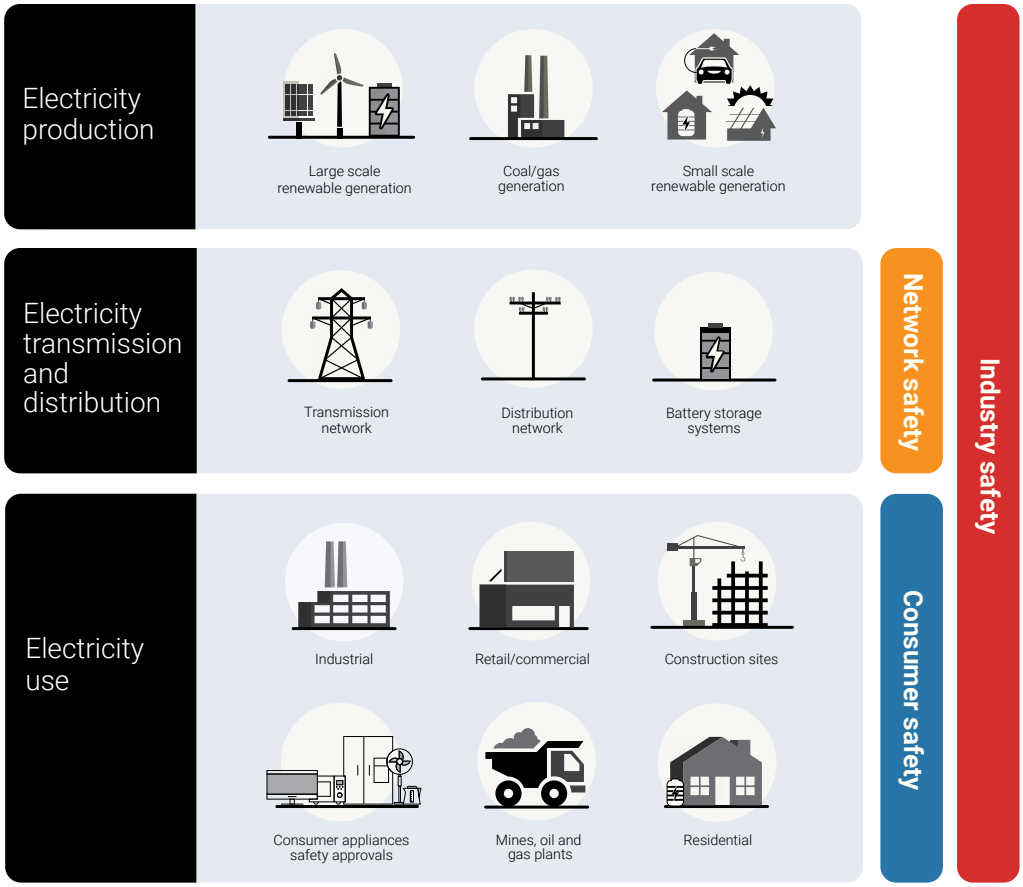
- Administer electrical and gas worker and contractor licence schemes.
- Investigate breaches of electrical and gas safety laws and pursue prosecutions and disciplinary actions under the licensing schemes.
- Prescribe minimum safe work practices for the electrical and gas industries.
- Investigate serious electrical and gas accidents (including fatalities).
- Prescribe technical safety standards to which electrical and gas-fitting work must be completed.
- Prescribe safety requirements for electricity and gas networks.
- Set and oversee the inspection regimes for work on electrical and gas installations.
- Audit electricity network operators' compliance and gas suppliers' compliance with electricity and gas networks safety legislation.
- Audit electrical network operators and gas suppliers to ensure compliance with approved inspection system plans.
- Investigate electricity and gas network safety incidents.
- Audit electrical and gas workers and contractors' compliance with legislation.
- Educate operatives in the electricity and gas industries.
- Administer electrical and gas appliances control schemes.
- Raise consumer awareness about electrical and gas safety.

What we regulate

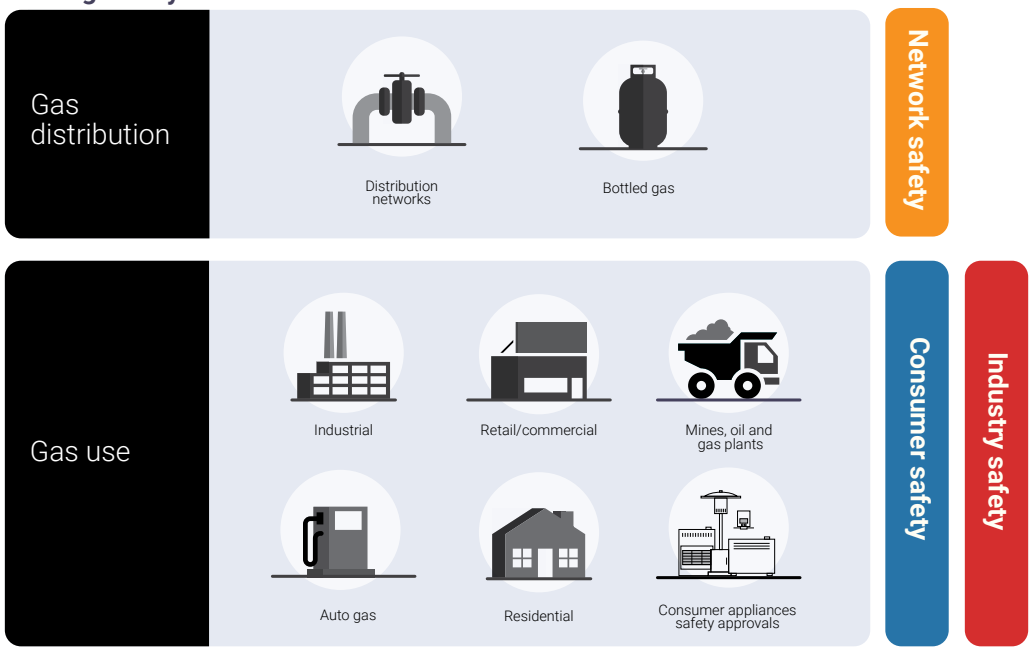
Our regulatory functions can be summarised as covering the technical and safety regulation of: electricity production; electricity transmission and distribution; electricity use (consumers' installations and appliances); gas distribution (and gas production plants connected to gas distribution systems); and gas use (consumers' installations and appliances). The following diagrams provide an overview of the WA electricity and gas regulatory frameworks. Building and Energy also regulate the licensing of electrical and gas workers to ensure only competent workers are licensed to carry out electrical and gas fitting work. Electrical Licensing is overseen by the Electrical Licensing Board.

Building and Energy's role within the Energy Regulatory Framework

Energy Safety compliance functions



Gas regulatory framework



DMIRS' Departmental Performance 2021–22

The DMIRS' outcome-based management framework was developed by the State Government as a systematic process for adoption by agencies in order to improve their effectiveness as an organisation. The outcomes are linked to the broader State Government goal – Strong Communities: Safe communities and supported families. Building and Energy contributes to the wider DMIRS performance against two of its key performance indicators;

Key effectiveness indicator: Stakeholder satisfaction with DMIRS as an effective industry regulator was 73 per cent against a target of 75 per cent.

Key efficiency indicator: Average cost per transaction to deliver industry advice and regulatory service was $221, against a target of $193.

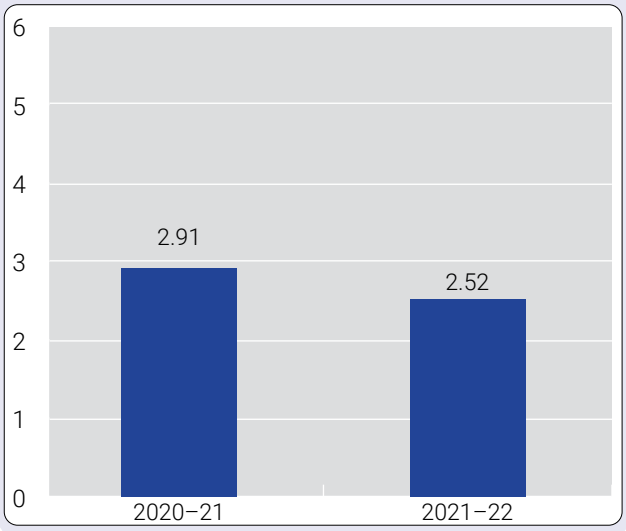
Energy Safety Performance

Building and Energy assesses its performance at a divisional level through two key performance indicators that measure the number of serious injury incidents involving electricity and gas in Western Australia.

1. Key Energy Safety Indicator

Electricity

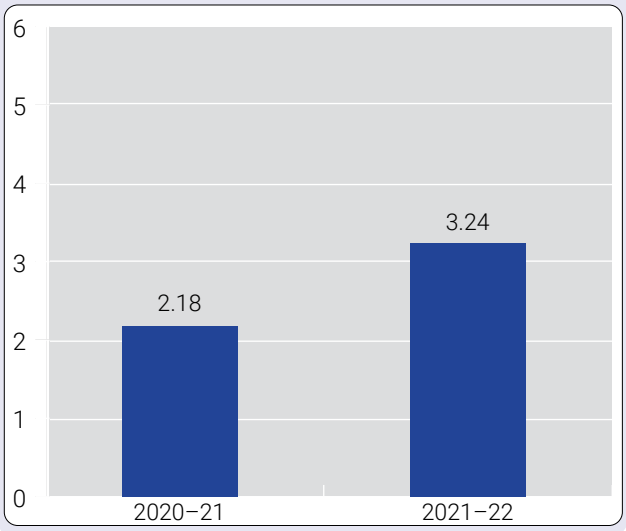
Number of electricity-related serious injuries and fatalities per million population (Target = 0).



2. Key Energy Safety Indicator

Gas

Number of gas-related serious injuries and fatalities per million population (Target = 0).



Advice to the Minister

The Director of Energy Safety provides advice and support to the Minister.

The Director of Energy Safety, Deputy Director General of the Industry Regulation and Consumer Protection Group and the Director General of DMIRS are the conduit for interactions between the Minister's office and the department. Advice and information Building and Energy provide to the Minister includes:

- Proposals and status/management reports for major policy projects;
- Proposed regulatory actions that may affect the public or businesses;
- Information releases dealing with subjects relevant to the Ministerial Portfolio;
- Reports on the status of major investigations or audits;
- Briefings on contentious energy safety issues;
- Responses to enquiries if requested to do so by the Minister or their staff;
- Resource requirements and work programs; and
- Nationally-sensitive energy issues.

2021–22 Snapshot

Inspections and Investigations

20
Building and Energy Inspectors

150
Designated Inspectors (Network Operators and Type B)

Compliance inspections

24,300
Electricity

4,100
Gas

Investigations

500
Electricity

150
Gas

Industry education and public awareness initiatives

50,000
Stakeholders engaged through industry communication.

176
Industry training sessions and advice delivered:

- Advice on licensing matters.
- Training sessions/demos on industry requirements.

8
Seminars delivered to industry at:

- Industry member nights.
- Industry conferences.
- TAFEs.

3
Major public awareness campaigns delivered:

- 'Great Outdoors. Lethal Indoors.' campaign.
- 'Shocks and Tingles' campaign.
- 'Tick, tick, tick' campaign reminding consumers to service gas heaters.

Other achievements

- Led a national safety investigation into gas cookers which resulted in a recall of defective cookers across Australia.
- Published guidance materials on private power poles for consumers.
- Increased presence in regional and remote communities by conducting electricity and gas safety inspections.
- Amended the Electricity (Licensing) Regulations 1991 to adapt to the changing landscape.
- Improved safety of barbeque gas bottles.
- Reviewed gasfitting policies to improve and streamline licensing requirements.
- Audits of two electricity network operator's Inspection System Plans undertaken.
- Enhancements to eNotice functionality for Electrical Contractors, including the ability to upload photos and test sheets.

Strategic Context

The Operating Environment

We operate in a highly dynamic environment that demands a balance between maintaining our ongoing activities and adapting to the rapidly evolving technological landscape.

Building and Energy has evolved into an agile team to facilitate this operating environment, working around environmental changes to achieve its purpose and supporting a safe, fair and responsible future for the Western Australian community, industry and consumers.

This plan has been developed to mitigate against the foreseen business challenges while ensuring the continuation of the current safety regimes for consumers, industry and networks.

Resourcing

Building and Energy has historically encountered considerable difficulty attracting and retaining the skilled and experienced technical staff it requires to perform its statutory functions. The remuneration it can offer is not competitive compared with equivalent roles in the private sector, particularly in the energy industry. This has been further exacerbated by the general shortage of skilled and specialist labour.

Pre-2021, the Attraction and Retention Incentives (ARI) led to the successful recruitment of three electrical inspectors. More recently, several attempts to recruit electrical engineers and gas inspectors have been unsuccessful. In the Gas Inspection Branch, which is tasked with implementing compliance activities to ensure the safety of gas consumers and networks, 60 per cent of positions are currently vacant.

With the energy sector in Western Australia constantly evolving, the demands for Building and Energy's services and pressure on existing resources have grown significantly. To meet this increasing demand Building and Energy will continue to look for ways that it can offer remuneration packages that are sufficient to attract and retain key technical staff.

Overcoming this problem will be key to ensuring Building and Energy's continued ability to effectively regulate electricity and gas safety in Western Australia.

Constantly evolving regulatory landscape

The emergence and/or proliferation of:

- decentralised generation;
- stand-alone power systems;
- microgrids;
- battery storage systems, directly integrated into the grid and connected to the grid via consumers' installations;
- new behind-the-meter supply arrangements;
- electric vehicles and the installation of high capacity charging assets in residential premises;
- the use of relatively high-capacity batteries in consumer devices (e.g. e-scooters and e-bikes); and
- cheaper and more efficient hydrogen fuel-cell technology;

all speak to a constantly evolving regulatory landscape for Building and Energy.

To ensure the safety of the community, legislative regimes, technical standards and industry guidance materials need to keep pace. While such matters will always lag behind technological developments, Building and Energy has to endeavour to keep this gap as narrow as reasonably possible.

Strategic Context

Automatic Mutual Recognition

Nationally consistent licensing for registered trades and professions has long been a goal of regulators across Australia. Previous efforts to harmonise yielded only limited success. In 2020, through National Cabinet, an agreement was struck to incorporate automatic mutual recognition arrangements into existing mutual recognition legislation. Under these arrangements, a worker licensed in their 'home' Australian jurisdiction would be entitled to carry out the scope of work covered by their home jurisdiction licence in any other Australian jurisdiction without need for a separate licence.

While the establishment of such arrangements comes with broad benefits, doing so without first harmonising the underlying licensing and regulatory control regimes presents considerable challenges for regulators, employers and workers seeking to utilise these arrangements.

Notwithstanding these issues, automatic mutual recognition reforms came into effect in Western Australia in March 2022 through the passing of the *Mutual Recognition (Western Australia) Amendment Act 2022,* though their application to the electrical trades has been deferred until March 2025.

Expansion of automatic mutual recognition to contractor licensing is also under preliminary consideration.

Consumer Safety Outcomes and Achievements

Building and Energy manages several initiatives to ensure safety of consumer installations. This ranges from setting technical standards for electrical and gas fitting work, through maintaining an inspection regime to ensure work undertaken on consumer installations are safe, to raising consumers' awareness about the safe use of electricity and gas.

During 2021–22, the following compliance activities were undertaken:

170
Designated Electrical and Gas Inspectors

183,300
Electrical and Gas Notices of Completion received

28,400
Installations inspected in accordance with Inspection System Plans

650
Investigations

Electricity consumer safety

Safety of non-residential installations — Residual current devices (RCD) requirements

AS/NZS 3000:2018, the primary standard governing the electrical wiring of buildings, generally requires all electrical circuits to be protected by RCD. Compliance with this standard is mandated by the Electricity (Licensing) Regulations 1999.

Through a number of identified instances of RCD not being installed in particular types of non-residential buildings, Building and Energy became aware of perceived ambiguities within these requirements.

To remove the observed uncertainty and ensure the safety of persons occupying non-residential buildings, Building and Energy produced industry guidance and ran an awareness campaign among electrical designers and contractors. Building and Energy has further made a submission to the relevant Standards Australia committee to have the matter addressed in the next revision of the standard.

Safety of stand-alone power systems and remote communities

Installations that supply their own electricity fall outside of the existing network operator centric work inspection arrangements. Appreciating these installations regularly go unchecked, Building and Energy conducts its own inspections.

In the 2021–22 financial year, 225 inspections were conducted, approximately half of which were in remote and regional areas of the State, with 13 being in remote aboriginal communities. These inspections resulted in 81 remedial orders being issued.

Building and Energy further utilised these inspections as an opportunity to educate electrical contractors, workers and residents of their responsibilities and of the risks presented by non-compliant electrical work.

Consumer Safety Outcomes and Achievements

Raising consumer awareness about private power poles

Poles on private land, used to support power lines connecting electricity distribution networks to consumer installations; or discrete parts of consumer installations to each other, are generally the responsibility of consumers. This includes a pole on which a network operator's and consumer's power lines are joined. This principle was confirmed by the Supreme Court of Western Australia in 2021 in its consideration of Western Power's appeal against the Court's earlier judgment relating to the 2014 Parkerville fire.

This responsibility means that consumers need to have their poles regularly inspected and to arrange for remedial work to be undertaken whenever issues are identified in order to minimise the risks of electric shock and bushfire. A suitably licensed professional may need to be engaged to carry out these activities.

Building and Energy has sought to improve consumers' awareness of their responsibilities. Efforts have included:

- collaboration with Horizon Power to develop and support a Frequently Asked Questions section on Horizon Power's website to raise awareness with consumers within Horizon Power's network service territory about maintaining private power poles;
- publication of articles in Building and Energy's 'Consumer Focus' bulletin reminding consumers about their responsibility to maintain private power poles; and
- production of consumer targeted guidance about pole replacement and renewal options which have been published on Building and Energy's website.

Building and Energy continues to campaign and raise consumers' awareness of their responsibilities and the need to fulfil these responsibilities to protect themselves and help keep the community safe.

Consumer Safety Outcomes and Achievements

Gas consumer safety

Caravan gas cooker safety

Bottle supplied gas cookers are used extensively in caravan installations. Swift is a major manufacturer and supplier of such cookers to the Australian caravan manufacturing industry. In July 2021 and April 2022, there were two separate caravan explosions in Western Australia associated with the use of the cookers from Swift's 500 series.

Following a preliminary investigation of these incidents, the Director of Energy Safety exercised his power to prohibit the use, sale, and hire of all Swift 500 series cookers in Western Australia, pending further inquiry.

Building and Energy subsequently led a national investigation into these cookers and, in collaboration with the manufacturer and its jurisdictional counterparts:

- identified the most likely causes of the incidents;
- determined the most likely defective appliances by date of manufacture; and
- finalised a remediation and communication plan for the affected cookers.

In collaboration with the Australian Competition and Consumer Commission, and the manufacturer, the affected gas cookers were made subject of a voluntary recall. As a complimentary measure, the Director of Energy Safety revised his earlier prohibition order excluding cookers remediated in accordance with the approved recall plan.

Building and Energy is monitoring the progress of the recall to ensure consumer safety.

'Great Outdoors Lethal Indoors' safety campaign

The Great Outdoors, Lethal Indoors campaign was launched in 2021–22 following the 2019 fatality at Wedge Island and in response to Building and Energy seeing an increase in incidents where outdoor portable gas appliances were being used indoors.

The use of these appliances indoors can lead to serious accidents, including fatalities. Our "Great outdoors, Lethal indoors" campaign was designed to raise awareness about the issue.

The campaign commenced in November 2021 and ran through until April 2022 to cover the peak holiday periods around Christmas and Easter.

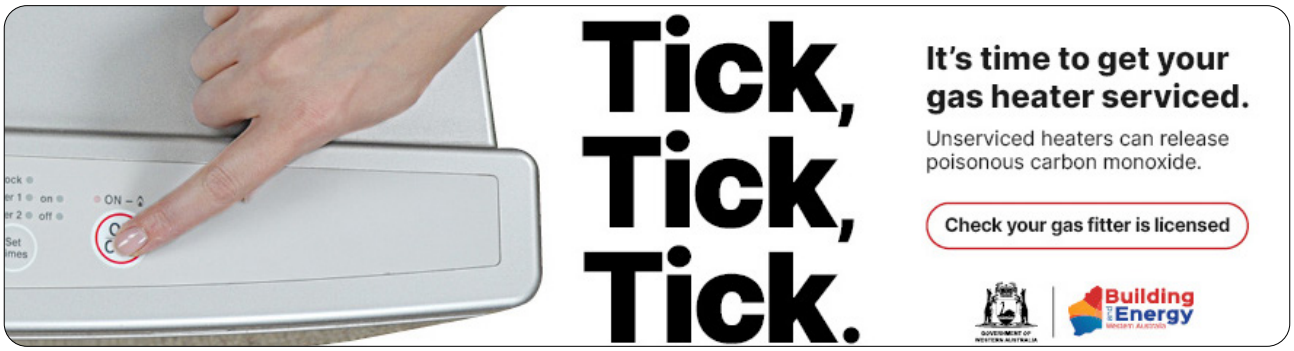
The campaign utilised TV, radio, Broadcast Video on Demand, YouTube, petrol stations, outdoor billboards, posters at roadhouses and campgrounds, Facebook and Instagram to deliver the message to holiday makers.

The campaign was highly successful with almost all channels over delivering on the planned targets.

YouTube and social media performed extremely well for the target audience with YouTube over delivering by 52 per cent and achieving a very high video completion rate.

Facebook and Instagram reached over 509,000 consumers in the target audience and served over 3.4 million impressions, over delivering planned impressions by 300 per cent.

Consumer Safety Outcomes and Achievements



New safety standards for gas installations

The principal technical standard for gasfitting work performed on consumer installations is AS/NZS 5601.1. Compliance with this standard is mandated by the Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999.

The version of AS/NZS 5601.1 currently in force is the 2013 edition. The 2022 edition, which was published in September 2022 and comes into force under the Regulations in March 2023, implements a large number of improvements intended to increase safety for gasfitters and the occupants of premises which contain gas installations.

The new edition of this standard represents years of deliberation and work which Building and Energy has contributed to through its participation in the responsible Australian Standards committee.

Safety of gas installations in the Wheat Belt and Goldfields regions

Building and Energy gas inspectors undertook an audit of the work of independent Type B gas inspectors in the Wheat Belt and Goldfields regions. The aim was to review a sample of the certification of Type B gas appliances.

Inspections of mine sites operating under 'gas fitting authorisation to undertake minor repair and breakdown work' as well LPG agents and dealers in regional areas were also undertaken.

Managing the dangers of carbon monoxide

Victorian investigations into fatalities involving open flued gas space heaters identified negative pressure as a significant causal factor. A coronial inquest into these fatalities accepted this finding and recommended changes be made to the relevant series of standards to reduce the risk of similar incidents occurring in the future.

Building and Energy was heavily involved in development of the new versions of AS/NZS 5263.1.3:2021 and AS/NZS 5263.1.8:2021, both of which came into force on 1 January 2022. After this date, open flued gas space heaters have been required to be manufactured in accordance with the new standards. This involves the incorporation of oxygen depletion censors and automated shut-off devices that trigger in a negative pressure environment.

In October 2022, to prevent Western Australia becoming a dumping ground for excess stock manufactured to the old standards, the Director of Energy Safety used his powers to prohibit the sale of such open flued gas space heaters.

To manage the risk associated with old open flued gas space heaters already installed in residential premises, Building and Energy continues to promote carbon monoxide safety through its Tick, Tick, Tick safety campaign, which urges Western Australians to have their open flued gas space heaters serviced by a licensed gasfitter at least once every two years. Additional guidance material for licensed gasfitters undertaking such servicing activities have also been developed and distributed.

Consumer Safety Outcomes and Achievements

BBQ gas bottle safety

Gas bottles for portable gas appliances will be safer in Western Australia with the introduction of the LCC27 LP gas valve.

Leaks associated with 'POL' type valves fitted to small LPG bottles, typically used for supplying gas to portable appliances (like BBQs), have contributed to a number of accidents and injuries in recent years. A new type of valve, the 'LCC27' valve, has been developed that substantially reduces the risk of such occurrences.

Through amendments to a large suite of Australian standards, some of which have commenced in the 2022-23 financial year, LCC27 valve connections will become standard for all new consumer installation and new appliances which utilise bottled supply. These installations and appliances will only be able to use LPG bottles fitted with the new LCC27 valve.

Older appliances and installations, with POL valve connections, will be able to continue to operate as LPG bottles after being fitted with the new LCC27 valve. However, as these bottles age and are gradually replaced or upgraded, LCC27 valves and connections will become the standard.

To support this transition, Building and Energy has developed and rolled out a multi-year industry education and awareness program.

Renewable Hydrogen Safety Strategy

The Western Australian Renewable Hydrogen Strategy was launched in July 2019. The strategy reflects government's ambition for Western Australia to become a significant producer, exporter and user of renewable hydrogen.

Building and Energy's focus is on the safety regulation of gas distribution networks, gas use (consumers' installations and appliances) and licensing of gasfitters to ensure that only competent workers are licensed to carry out gas fitting work.

Building and Energy is working to align its regulatory framework with the government's goals for renewable hydrogen and anticipate that it will finalise its Hydrogen Safety Strategy in early 2023.

Safety of hydrogen fuelled appliances

Renewable hydrogen has a number of possible applications. One such application is use as an alternative, clean combustion fuel. Domestic and light commercial gas appliances designed to burn purely hydrogen have already been developed in Europe and the United Kingdom, and pilot projects are now being considered for Australia.

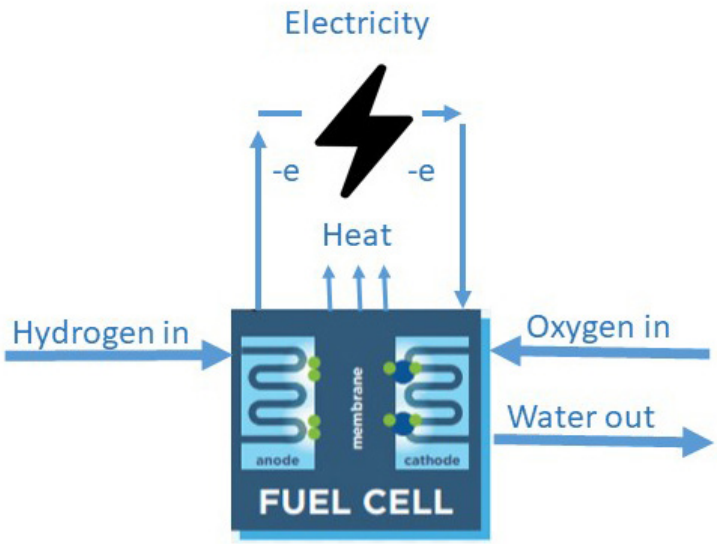
While industry's progress is rapidly gaining pace, there is a decided lack of applicable safety standards to govern what is manufactured and sold to consumers. In this space, Building and Energy is working closely with its jurisdictional counterparts, and the relevant Standards Australia committee, to develop minimum safety performance standards for appliances that operate purely on hydrogen. This work will ensure the safety of consumers and facilitate industry development.

Consumer Safety Outcomes and Achievements

Hydrogen Fuel Cells safety

Fuel cells differ from typical gas generators as they do not burn fuel to create motion to generate electricity. Fuel cells instead use a catalyst to split electrons off from their fuel and then direct these components down separate paths with the freed electrons being the source of electricity for an outflowing circuit.

An electrolyser uses an electrical current to split water into hydrogen and oxygen. This hydrogen can then be captured for later use. Where an electrolyser draws its electrical current from a renewable source, like surplus midday solar generating capacity, the captured hydrogen represents a storable form of clean energy. When combined with a hydrogen fuel cell, this is roughly similar to a battery.



Scientific advances have markedly improved the efficiency of fuel cells in recent years which, combined with the societal need to reduce dependence of carbon-based fuel sources, has driven significant investment into the emerging hydrogen industry.

While hydrogen fuel cells do not burn gas, they do require the storage and/or channelling of a pressurised and highly flammable gas in close proximity to possible ignition sources. The associated risk underscores the need for adequate safety regulation. To address this, Building and Energy has:

- adopted a number of Australian and international standards to set minimum benchmarks for fuel cell safety;
- produced specific guidance materials for industry; and
- liaised with and provided advice to various commercial parties seeking to integrate hydrogen fuel cells into their operations, or are developing hydrogen fuel cell technology to sell into the Western Australian market.

Consumer Safety Initiatives

Safety of new and emerging technologies

In March 2019, the State Government released its Energy Transformation Strategy. A major aim of the strategy is facilitating the transition from traditional to new and emerging forms of electricity generation and transportation (e.g. small scale, distributed storage and renewable generating capacity; microgrids; and peer-to-peer and various behind the meter commercial supply arrangements). The implementation of the strategy is being led by Building and Energy's sister agency, Energy Policy WA.

To date, Building and Energy has dealt with this technological transition in an ad hoc manner. In the consumer space, this has principally involved contributing to the development and update of applicable technical standards.

Commencing in 2023, Building and Energy will begin developing an Electrical Safety Strategy for emerging technologies to better align its regulatory approach with the vision set in the Energy Transformation Strategy. Technologies of particular focus for this Electrical Safety Strategy will include:

- battery energy storage systems;
- Stand-alone power systems; and
- hydrogen fuel cells (which straddle the electrical / gas safety regulatory divide).

In the space of battery energy storage systems, discussions have commenced between the Commonwealth and the state and territory regulators about the potential for developing a unified control regime, possibly building upon the existing state and territory based Electrical Equipment Safety Scheme, to regulate the sale of battery energy storage systems in Australia. These discussions are likely to continue into the 2023–24 financial year.

Building and Energy has also established a working group consisting of key State Government stakeholders to coordinate our collective management of lithium ion battery fires. The work of this group will continue into the 2023–24 financial year.

Hydrogen Safety Strategy

Building and Energy is developing its Hydrogen Safety Strategy with the goal of ensuring that the risks presented by the broad update of new hydrogen technologies and applications is adequately managed.

Implementation of the initiatives forming part of this strategy is expected to commence in the 2023–24 financial year.

Consumer Safety Initiatives

Safety campaign to raise consumer awareness about the safe use of electricity and gas

Building and Energy published an extensive range of guidance material for consumers and industry in 2021–22 and 2022–23. These guidance materials require regular reviews to ensure their currency and relevance in the environment of ongoing technological change and frequently changing industry standards. Guidance materials scheduled for review in the 2023–24 financial year include the safe use of gas appliances in a public venue.

Building and Energy further proposes to produce new guidance materials covering the safe use of small gas cylinders in campervans and marine craft.

Safety campaigns play an important role in educating the community about the dangers of electricity and gas. Following on from the guidance for non-residential RCD requirements, a consumer campaign will be delivered to remind occupiers of residential dwellings that it is necessary to test their RCD's regularly. Further campaigns will remind people to not use or fix damaged electrical equipment and to use licensed electricians and gasfitters to ensure safe and certified work is undertaken.

Marine craft gas inspection program

Following a serious explosion on board a marine craft in the Swan River in April 2022, Building and Energy is establishing a marine craft gas inspection program in cooperation with the Department of Transport. This program will initially run in the 2023–24 financial year.

Food truck and caravan safety requirements

Food trucks and caravans are becoming more popular at public events attended by large crowds. The presence of these crowds amplifies the potential consequences stemming from unsafe electrical and gas installations. Ad hoc inspections conducted during the 2022–23 financial year noted a number of alarming uses of unsafe gas and electrical installations and appliances.

In the 2023–24 financial year Building and Energy will initiate conversations with the local government sector with the goal of seeing requirements for minimum electrical and gas safety standards to be satisfied as a pre-condition of being granted food vendor permits.

Building and Energy will further undertake regular spot checks of food trucks and caravans before and during major events such as the Perth Royal Show.

Name	Description	2023–24 Target Completion
Compliance campaigns	Inspection regime programs targeting: • Marine craft gas inspection program • Electrical and gas certification for mobile food vendors.	✓
Emerging technology safety strategies	Implementation of the strategies and roadmap to manage the safety requirements for emerging technology including: • Hydrogen • Battery storage systems • Stand-alone power systems.	Ongoing
Consumer awareness campaigns	Conduct the following campaigns: • Raising awareness about electrical and gas safety • RCD testing for residential properties.	✓

Industry Safety Achievements

During 2021–22, the following industry development initiatives were delivered:

176
Training sessions and advice to industry members

5
Industry publications produced

8
Seminars to to industry

Industry Education

Building and Energy held the 2021 Western Australia Electrical, Gas and Plumbing Inspectors' Conference at Optus Stadium in late 2021. This event brought together more than 200 inspectors and guests for a full day of education, updates and networking and was a great success.

There was a focus on fire investigation techniques, emerging lithium Ion battery technologies, emerging trends in hydrogen gas and updates to technical standards.

We continue to partner with training organisations, industry organisations and unions to provide educational seminars and professional development opportunities to industry.

Industry Development

In the 2021–22 financial year, 66 presentations were held for electrical industry participants and 12 presentations were held for gas industry participants.

Presentations spanned a variety of topics, were delivered around the State and to a variety of audiences including network operator employed and independent inspectors, licensed contractors (with the support of their industry associations), licensed workers and workers completing apprenticeships and traineeships as electricians and gasfitters.

Electrical Licensing Reforms

In 2020, Building and Energy conducted a review of the electrical licensing regime set out in the Electricity (Licensing) Regulations 1991. Several issues were identified. A first tranche of amendments to these regulations came into effect in March 2022. These amendments included:

- removal of technical eligibility requirements for non-technical Electrical Licensing Board positions to improve gender diversity on the Board;
- enabling electrical apprentices to commence work under supervision from the point-in-time of entering into their training contracts (as opposed to only after being expressly licensed); and
- clarifying electrical contractor insurance requirements.

Building and Energy will continue to work to progress further tranches of amendments during the 2023–24 financial year.

Industry Safety Achievements

Gas Licensing Reforms – Class G and I Licensing Policies

Gasfitting work may be authorised by one of three different types of licensing instrument: a permit, an authorisation or a certificate of competency. Authorisations are issued only in narrow and/or novel circumstances and certificates of competency are a legacy instrument which, while still valid, have not been available to new applicants for almost 20 years. This leave permits, which are used to authorise the work of the majority of industry participants. Permits are issued by reference to a number of classes of gasfitting work defined in the Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999.

The underlying eligibility requirements for a gasfitting permit are not dealt with in the Regulations but left to the discretion of the Director of Energy Safety to determine as the licensing authority.

Class G gasfitting is work on a consumer's gas installation comprising simple appliances, household appliances and piping systems operating up to a pressure of 200 kilopascals (kPa). Following extensive consultation, the Director of Energy Safety approved an updated Class G licensing policy. The updated policy addresses a number of industry concerns and keeps pace with the developments in the national training framework.

Class I gasfitting is work on a consumer's gas installation associated with large and/or complex gas appliances or gas piping systems operating above a pressure of 200 kPa. Building and Energy has been reviewing the existing Class I licensing policy with a view to updating the relevant education and experience requirements. Industry consultation is ongoing and the policy is expected to be finalised by the end of the 2022–23 financial year.

Gas Licensing Reforms – Trainee Licensing

A person generally needs to be licensed to conduct gasfitting work in Western Australia. This includes trainees. Several issues were identified with existing trainee licensing arrangements, both for people first entering the trade and for those seeking to expand their skillsets.

Building and Energy is working with the Parliamentary Counsel's Office to finalise amendments to the Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999 to resolve these issues. It is anticipated these amendments will come into effect in the second half of the 2022–23 financial year.

eNotice Improvements

eNotice is Building and Energy's online platform for generating and serving statutory work notices. It is used by gasfitters, electrical contractors and plumbers.

In the 2021–22 financial year, Building and Energy updated the relevant electrical work notice modules to allow electrical contractors to upload installation test sheets and photographs of completed work. This has simplified record keeping for electrical contractors and is proving a valuable resource for both Building and Energy and network operator employed electrical inspectors.

Building and Energy is proposing to establish equivalent functionality for the gasfitting work notice modules. Consultation with industry is underway and changes, if ultimately approved, are anticipated to come online in the 2023–24 financial year.

Industry Safety Achievements

Building and Energy ensures the safety of electricity and gas workers by setting and enforcing minimum prescribed technical safety requirements for electrical and gas work.

Our industry development activities include ensuring:

- technical standards adequately address trends in industry;
- industry are adequately informed about changes to standards and legislation;
- learnings from our investigations are shared with industry; and
- appropriate enforcement actions are undertaken, depending on the severity of the breaches of legislation found, to change behaviour.

During 2021–22, the following industry safety outcomes were realised:

97%
Electrical installations inspected found to comply with legislation

4,070
Inspectors' Orders and Notices of Defect issued

77%
Gas installations inspected found to comply with legislation

Electrical industry safety

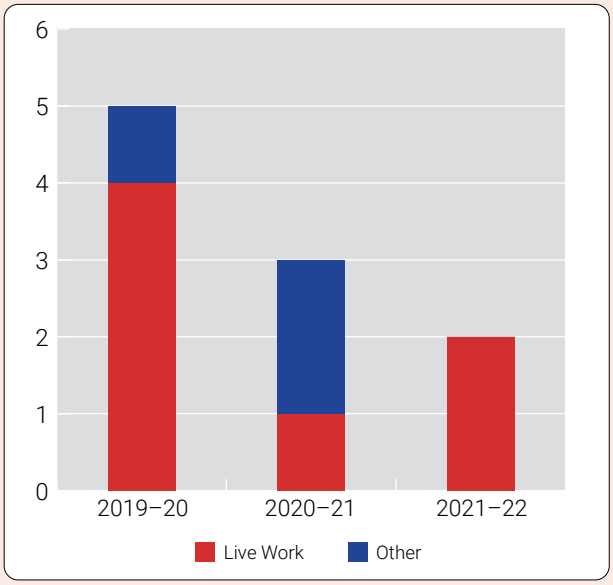
Electrical workers are at greater risk of electric shocks and electrocution than members of the general public or workers in other occupations.

In 2021–22, there were two serious accidents involving electrical workers in Western Australia. Both incidents resulted from work being done on energised equipment. There were no fatalities involving electrical workers.

The Electricity (Licensing) Regulations 1991 prohibit work on energised equipment and the number of such incidents has decreased over the three years from 2019–20.

Incidents of serious fatalities and accidents involving electricity occurring in roof spaces are avoidable if the main power is switched off prior to work being undertaken. Building and Energy's public awareness campaign is aimed at reminding workers and homeowners to turn the power off prior to commencing work in roof spaces.

Electrical worker fatalities and serious accidents



Gas industry safety

There were no fatalities in the past 12 months involving gas workers. However, there was a serious accident where a gas fitter was injured while attempting to light a gas hot water system.

There is an ongoing focus to improve the knowledge and skills of the industry and its workers through training and education sessions with licenced workers and by sharing learnings from incidents both in Western Australia and in other jurisdictions.

Building and Energy is conscious that the rapid development in the hydrogen space will present new challenges to industry. A number of initiatives are included in this Business Plan to support the greater role of hydrogen in the future.

Industry Safety Initiatives

Review of licensing policies

Building and Energy aims to review licensing policies on a regular basis to ensure currency and effectiveness. In the 2023–24 financial year, the following policies are scheduled for review:

- Class P licensing policy – gasfitting work on a gas installation associated with the storage and dispensing of gas for refuelling motor vehicles; and
- Gasfitting authorisation – used to authorise novel scope of work by multiple persons (concerns have been raised that, over a number of years, the use of authorisations has gradually expanded and is now being used by some as a means for getting around requirements to employ individually licensed workers).

Continuation of ongoing compliance and education programs

In the 2023–24 financial year, Building and Energy will continue on with its:

- off-grid solar inspections program;
- inspection program for caravan and remote community gas installations which operate from bottled supplies;
- audit of electricity network operator's electricity network safety management systems and gas network operator's safety cases; and
- pro-active engagement with industry participants through presentations, workshops and a number of other avenues.

Review of the Electricity (Licensing) Regulations 1991

A number of reforms to the Electricity (Licensing) Regulations 1991 are under active consideration. These include:

- establishing fit and proper person licence renewal requirements;
- establishing rights of appeal to the State Administrative Tribunal for persons aggrieved with certain decisions of the Electrical Licensing Board; and
- introducing mandatory skills maintenance requirements, starting with low voltage rescue and cardiopulmonary resuscitation training.

Pending the outcome of such consideration, and State Government support, amendments to implement such reforms are anticipated to take place in the 2023-24 financial year.

Review of the *Gas Standards Act 1972*

There remains an ongoing need for a review of the *Gas Standards Act 1972,* which has been noted in previous Energy Safety Business Plans.

Building and Energy plans to initiate a broad review of the Act in the 2023–24 financial year. In addition to reviewing the existing regulatory framework, matters to be considered include:

- regulation of self-supplied installations;
- establishing of contractor licensing; and
- possible harmonisation (or combination) of gasfitter's and plumber's licensing regimes.

Future fuels project

Building and Energy is collaborating closely with the Future Fuels Cooperative Research Centre on a number of research projects focussed on enabling the transition to renewable fuels. These projects include:

- analysing the impact of hydrogen on the performance of industrial gas turbines;
- assessing the impact on end users of injecting bio-methane into the existing natural gas distribution networks; and
- assessing the performance of simple household gas appliances, designed to operate on natural gas, when hydrogen is blended into the supply.

This initiative will continue through 2023–24.

Industry Safety Initiatives

Amendments to legislation to improve compliance

Through late 2020 and early 2021, Building and Energy worked closely with Energy Policy WA to develop regulatory reform options to address various operational issues in our respective energy markets and energy safety legislation. The proposed reforms by Building and Energy principally related to a range of compliance matters (e.g. inspector's powers, time limits on commencing prosecutions and information sharing).

In 2023–24 Building and Energy will work towards developing these reform options further for Government's consideration.

Setting technical safety standards for industry

Building and Energy works closely with other technical safety regulators across Australia, such as the Electrical Regulatory Authorities Council (ERAC) and the Gas Technical Regulators Committee (GTRC), to continually improve safety and technical standards.

By participating in relevant standards committees, along with other regulators and industry, we facilitate ongoing safety improvements applicable to energy installations, equipment, appliances and networks to protect industry and the community. We are represented on the following electricity and gas standards committees:

STANDARDS Australia

Electricity:

- EL-001 Wiring Rules (Standards Australia)
- EL-043 High Voltage Installations (Standards Australia)
- EL-052 Electrical Energy Networks, Construction and Operation (Standards Australia)
- EL-062 Smart Grids (Standards Australia)

Gas:

- AG-001 Gas Appliances (Standards Australia)
- AG-006 Gas Installation (Standards Australia)
- AG-008 Gas Distribution (Standards Australia)
- AG-010 Natural Gas Quality Specifications (Standards Australia)
- AG-011 Industrial and Commercial Gas-Fired Appliances (Standards Australia)

Name	Description	2023–24 Target Completion
Industry awareness campaigns	Electrical and gas proactive industry engagement including annual gas and electrical inspector forums, TAFE and industry briefings, and publication of safety alerts and newsletters.	Ongoing
Compliance campaigns	Proactive site visits to enforce supervision requirements, especially for apprentices. Remote communities will be supported during the year with a number of dedicated inspection and engagement campaigns.	Ongoing
Electrical and gas worker competency improvement	Investigation into the merit of continuing professional development requirements for electrical and gas workers.	Ongoing
Future fuels project	Conduct research projects focussed on enabling the transition to renewable fuels.	Ongoing
Improvements to legislation	Regular review of policies and subsequent amendments to relevant legislation to improve licensing and compliance.	Ongoing

Network Safety Achievements

Decommissioning of gas distribution networks

The Gas Standards (Gas Supply and System Safety) Regulations 2000 govern the safe operation of reticulated gas distribution networks. Gaps in these regulations were identified with respect to decommissioning, particularly in the context of a gas distribution network being wholly abandoned. These gaps were identified following the announced shutdown and abandonment of the Esperance gas distribution network.

To address these gaps, Building and Energy is preparing amendments to the regulations. Drafting of an amending instrument is well underway and consultation with key stakeholders concluded in October 2022. It is anticipated that the proposed amendments will come into effect in the first quarter of 2023.

Hydrogen Blending Pilot Project

One of the goals of the Western Australian Renewable Hydrogen Strategy is to blend hydrogen into the State's natural gas distribution systems.

As a first step along the path to achieving this goal, the State Government, in partnership with ATCO (the operator of the gas distribution network for the Perth metropolitan area), is running a pilot project. This project is seeing hydrogen blended into a small portion of ATCO's distribution network. The test area consists of three isolated branches of the ATCO distribution system in the Jandakot area and encompasses approximately 2,700 customer connections. The rate of blending is starting at two per cent and will gradually be increased.

Building and Energy assisted the Government in devising the scope for the project and reviewed and provided guidance in respect to ATCO's updated safety case, which details how it proposes to manage the risks that this project presents to its distribution network, its customers and the community.

Electricity lodgement of reports

The Gas Standards (Gas Supply and System Safety) Regulations 2000 imposes obligations on operators of gas distribution networks with respect to a number of characteristics of the gas which they supply to their customers.

Network operators are further required to:

- sample their gas at various times and points within their distribution networks;
- test those samples against the prescribed characteristics; and
- report their test results to Building and Energy.

In November 2022 Building and Energy completed improvements to its eNotice platform to enable the electronic submission of these reports, the content of which is automatically exported into Building and Energy's compliance management system for analysis and storage.

Investigation into the Narrogin bushfire

On 6 February 2022, the Wickepin-Narrogin bushfire destroyed 18,000 hectares of farmland and thousands of sheep. The fire started from Western Power's high voltage power line conductors clashing.

Following the preliminary findings of the investigation, the Director of Energy Safety issued an Inspector's Order requiring Western Power to immediately remediate the risk posed by the conductors at the location. Building and Energy investigation is progressing and should conclude by the end of 2022–23.

The Director of Energy Safety has also asked Western Power to identify other power lines of similar construction at risk of conductor clashing and to develop a remediation program to mitigate bushfire risks. Western Power has subsequently developed a plan which will see the bays identified, inspected and, if required, temporarily treated by 30 November 2022 before the permanent remediation of all remaining bays before the end of 2023.

Network Operators such as Western Power are obligated to manage bushfire risks originating from power lines and implement mitigation strategies. Building and Energy will monitor Western Power's strategies and remediation program progress.

Network Safety Achievements

Audit of Network Operators' Inspection System Plans

In 2020, Building and Energy published updated inspection plan guidelines for electricity network operators and gas suppliers. These guidelines refined the risk targeting of the respective permissible sampling methodologies.

In the 2021–22 financial year, Building and Energy reviewed and approved a number of updates to such inspection plans.

The Inspection System Plans (ISP) of two electrical network operators were audited during the reporting period including Western Power and the Peel Business Park, in Nambeelup. The Peel Business Park is Australia's first renewable energy industrial microgrid.

Both audits found that inspections undertaken by designated electrical inspectors complied with the approved ISP.

Network Operators' Electrical Network Safety Management Systems (ENSMS)

Under the Electricity (Network Safety) Regulations 2015, major network operators are required to develop and implement ENSMS which comply with the requirements of AS 5577 and detail how they will ensure their networks operate safely and that work performed on their networks is carried out in a safe manner.

During the 2021–22 financial year, an audit of Western Power's ENSMS was conducted. The audit data is currently being analysed.

Electricity (Network Safety) Amendment Regulations 2021

The Electricity (Network Safety) Amendment Regulations 2021 were made to enable network operators to adopt renewable energy technology solutions under network safety regulations.

Key additions were Standalone Power Systems to replace traditional poles and wires that inherently present electric shock and bushfire risks. The addition of storage works enables battery storage, microgrids and other grid support technology to maintain security and safety of supply. These amendments ensure electricity safety regulation is contemporary and facilitates decarbonisation in an adaptive and safe way.

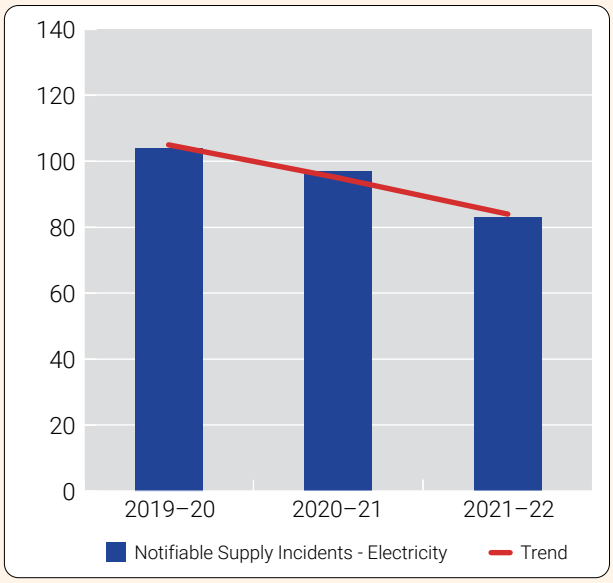
Network Safety Outcomes

Building and Energy actively monitors network safety incidents and gauges the effectiveness of network operators' asset management strategies. We also undertake investigations into 'notifiable incidents' reported by the electricity and gas network operators and suppliers.

86

Investigations of network operators' incidents during 2021–22

Number of notifiable electricity network incidents reported

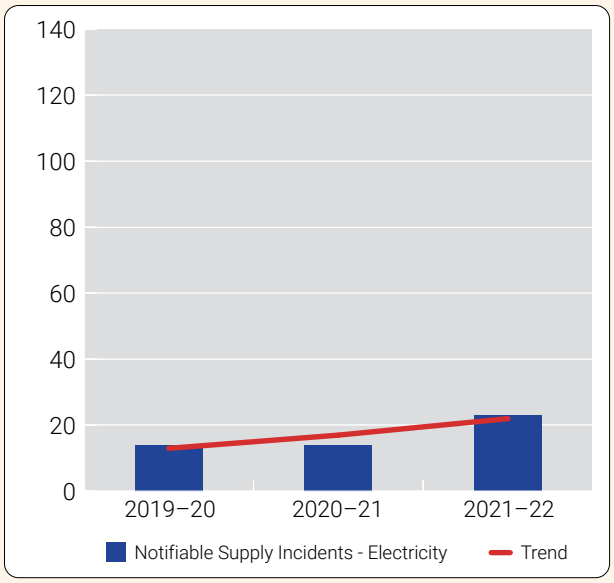


Under the Electricity Network Safety Regulations 2015, electricity network operators are required to notify the Director of Energy Safety of all notifiable incidents which occur on their respective networks. Building and Energy undertakes investigations into these incidents.

A review of the trends of notifiable incidents over the past three years indicates a downward trend.

Electricity network operators are also required to publish their respective Network Safety Performance quarterly. A general downward trend is evident in the number of pole fires, unassisted power pole failures, streetlight pole failures, conductor and stay wire failures in the South West Interconnected System (SWIS), North West Interconnected System (NWIS) and Horizon Power networks.

Number of notifiable gas network incidents reported



There is an increasing trend in the number of notifiable incidents reported on gas networks over the past three years. The number of such incidents are low compared with electricity supply incidents with 23 incidents reported for 2021–22.

The majority of these incidents were caused by third party strikes, resulting from contact with gas pipelines and network assets during excavation work or work in the vicinity of gas network assets. While these incidents caused loss of supply to consumers, main breaks and gas release and, on some occasions fires, none of them resulted in injury or fatality.

Building and Energy continues to work with network operators to raise consumer and industry awareness about Dial Before You Dig and other controls in place to mitigate such risks.

Network Safety Initiatives

Third-party constructors of electricity transmission and distribution assets

The targeted safety obligations in the Electricity (Network Safety) Regulations 2015 are predicated on the assumption that transmission and distribution assets are constructed by or under the control of their eventual operator. This assumption has proven to be increasingly flawed.

In recent years, it has become common practice for third parties to construct electricity transmission and/or distribution assets and then 'gift' those assets to the eventual network operator. The most common example is residential property developers creating new subdivisions. Other examples include remote industrial customers and remote electricity generators (e.g. wind farms) which need to be connected to existing transmission or distribution networks. In each of these cases, the third party is constructing and gifting the relevant assets because these are terms upon which they are able to be connected to the larger transmission or distribution system.

Building and Energy will continue to work with Western Power and Horizon Power to ensure these alternative construction arrangements are adequately captured in the regulations so the transmission and distribution assets, in construction and when brought into operation, do not present an undue hazard.

Broader consultation is yet to occur and amendment of the regulations is not anticipated until the 2023–24 financial year.

Other Electricity (Network Safety) Regulations 2015 amendments

A number of other minor issues have been identified in the Electricity (Network Safety) Regulations 2015. These include the need to clarify:

- the framing of the newly partitioned passive safety obligations imposed on network operators (inserted in December 2021);
- Building and Energy's powers to audit a network operator's safety management system; and
- reporting obligations relating to fires ignited by electricity transmission and distribution assets.

Building and Energy will seek to amend the Regulations to resolve these issues at the same time as it addresses the above described third-party constructor issue.

Network Safety Initiatives

Amendments to gas safety standards to facilitate the blending of hydrogen

'Natural gas' is the term used to refer to a blend of natural hydrocarbon gases which are commonly used as a fuel. The composition of the blend varies depending upon its source. A degree of standardisation is required to ensure its safe transportation and ultimate use. The parameters of this standardisation in Australia are set out in AS 4564:2020 – General-purpose natural gas. The Gas Standards (Gas Supply and System Safety) Regulations 2000 require the operators of gas distribution systems to comply with this standard.

A key goal of the Western Australian Renewable Hydrogen Strategy is to blend hydrogen into the State's existing gas distribution systems. This particular type of blending is not adequately covered by AS 4564.

During 2023–24, Building and Energy will develop and pursue the implementation of a series of amendments to this standard to address and better enable lawful hydrogen blending.

Continued support of future fuels projects

Building and Energy will continue to support a series of gas industry projects being carried out in Western Australia. These include projects covering:

- the construction of hydrogen vehicle refuelling stations;
- the retrofit of fuel cells into mining equipment;
- the integration of fuel cells into existing installations and connection to electricity distribution systems;
- the injection of hydrogen into the natural gas distribution networks; and
- the injection of bio-methane into natural gas distribution networks.

Name	Description	2023–24 Target Completion
Audit of Electricity Network Operator's Compliance	Audit of one electricity Network Operator's Electrical Network Safety Management System (ENSMS).	✓
Electricity Regulation Improvements	Amendments to Electricity (Network Safety) Regulations 2015 to address current limitations.	✓
Audit of Gas Network Operator's Compliance	Audit of one gas Network Operator's Safety Case.	✓
Hydrogen blending in natural gas	Support for the increased proportion of hydrogen in natural gas distribution network including: • changes to Regulations and Codes of Practice. • amendments to Standards. • education of Industry and Consumers.	Ongoing

2023–24 Financial Plan

The following Financial Plan presents the energy safety associated expenditure and revenue budget forecasts of Building and Energy (both capital and operating), for 2023–24 and three out-years.

It also includes a comparison between the budget and actual out-turn for 2021–22 as well as the approved budget for the current (2022–23) financial year.

The 2023–24 Financial Plan presents the full costs and revenues of Building and Energy that are attributable to energy safety functions, to ensure:

- consistency and alignment with presentation of the State Budget;
- consistency and alignment with the internal budget of DMIRS;
- consistency between budget estimates and reporting of actual results, resulting in strong financial; management information to assist decision-making and planning;
- the impact of non-cash costs and any cost-escalation factors are understood;
- decisions about revenue sources (i.e. industry levy levels and reviews of tariffs, fees and charges) are made in view of full cost expectations; and
- the full cost of delivery of the energy safety related operations and functions of Building and Energy, which includes recognition that non-cash expenses, such as depreciation and leave liability expenses, are met by revenue from the industry funding model and licensing activity.

While the budget estimates are presented on a full accrual basis, the cash impact is also shown, including cash reserve estimates.

The Financial Plan provides details of:

- planned operating expenditure, including non-cash expenses such as depreciation and leave liability movement;
- planned capital expenditure;
- estimated revenue from electrical and gas licensing activities and other minor revenue-generating activities; and
- the energy industry levy required to make up the shortfall between expenses and revenues.

Estimates are provided for 2023–24 and the subsequent three years. By their nature, projections for the subsequent years are less accurate and are subject to review prior to each year.

Expenditure estimates have been escalated based on known incremental factors (such as salary increments that are established in Awards and State Wage Policy)) or on an average at a rate commensurate with the expected rate of the Consumer Price Index (CPI).

Licensing revenue projections have been based on expected licensing activity. Licensing revenues have also been escalated in subsequent years where appropriate by a rate of five per cent, or commensurate with expected CPI levels.

Building and Energy is working on a range of activities to support and facilitate the government's broader initiatives in the energy sector. This includes a review of the legislative framework to ensure it can adapt to emerging technologies and new trends in the sector including the emergence of battery energy storage systems, standalone power systems and several initiatives to promote the use of renewable hydrogen. Building and Energy's compliance activities will also have to adapt to changes in the sector and it will have to be adequately resourced to do so. This is reflected in the expenditure forecast for 2023–24. It is proposed that the levy be increased by five per cent to $8.0 million for 2023–24 and continues to increase by CPI each year thereafter to fund Building and Energy's activities in an evolving energy sector.

Cash reserves held in the Special Purpose Energy Safety Account remained in the acceptable range in 2021–22. The level of cash reserves required to remain at an optimal level is between $11 million and $13 million. This is to ensure that sufficient funds would be available to cover leave liability as it falls due, income received in advance, accumulated depreciation to replace assets as they come to the end of their useful lives, unplanned extraordinary expenses associated with major investigations (such as large electricity-caused bushfires) and to provide sufficient funding for energy related operations for at least a quarter should it encounter funding collection challenges.

The 2023–24 Financial Plan has been set to continue to be sustainable with cash reserves that reflect self-sufficiency and flexibility over the forward estimates period, while ensuring an appropriate level of cash is maintained, albeit lower than the optimal level. The cash level will be assessed for the 2024–25 business plan to ensure that revenues are sufficient to bring the cash balance back within the optimal range.

As has been identified over many years, the most significant risks to the budget are from factors outside of Building and Energy's control that will impact licensing activity. Electrical and gas licence volumes continue to grow, reflecting the resources boom in Western Australia. It has been noted for the past several years that, should the resources sector slow-down affect licensing activity, without another trades-related sector experiencing significant growth, revenues from electrical and gas licensing activity may decline over several years.

This has not significantly impacted Building and Energy's financial position. There has been a slight slow-down in the long-term rate of growth that had been experienced over previous periods. Should this decline become more significant and have a more material impact on revenue forecasts, decisions concerning either the functions of Building and Energy, further commensurate increases to the industry levy, or increases to licensing fees above CPI in order to bring them closer to full cost recovery rates will need to be considered.

The financial plan has been prepared consistent with financial reporting requirements and with internal DMIRS budgeting processes.

The current year (2022–23) budget estimates reflect the budget approved by the Minister in the 2022–23 Business Plan.

The financial implications of this Business Plan have been approved by the Expenditure Review Committee as part of the 2022–23 Mid-Year Review process.

2023–24 Financial Plan

Financial Year	2021–22 Budget $'000	2021–22 Actual $'000	2022–23 Approved Budget $'000	Escalated $ 2023–24 $'000	2024–25 $'000	2025–26 $'000	2026–27 $'000
Expenses							
1. Recurrent Expenditure							
a) Employee benefits expense	7,861	7,810	9,095	9,649	9,890	10,138	10,391
b) Corporate service charges	2,814	3,751	3,727	3,841	3,937	4,035	4,136
c) Licensing services charges	900	984	656	1,008	1,033	1,059	1,086
d) Depreciation expense	400	301	466	308	308	308	308
e) Legal services	373	267	342	273	280	287	294
f) Accommodation expenses	1,214	1,378	1,178	1,411	1,446	1,482	1,519
g) IS support/maintenance (CMS)	201	259	208	343	351	360	369
h) IT and minor equipment replacement	44	19	46	47	49	50	51
i) Other recurrent expenses	3,390	1,481	3,449	3,000	3,075	3,152	3,231
Total Recurrent	**17,197**	**16,250**	**19,167**	**19,880**	**20,369**	**20,871**	**21,385**
2. Capital Expenditure							
a) Software replacements (CMS)							
b) CMS project management	267	30					
c) On-line compliance and customer interface functionality							
Total Capital	**267**	**30**	**0**	**0**	**0**	**0**	**0**
Total Expenses	**17,464**	**16,280**	**19,167**	**19,880**	**20,369**	**20,871**	**21,385**
3. Income							
a) Industry Levy	7,225	7,225	7,586	7,965	8,164	8,369	8,578
b) Licensing Fees	7,701	7,695	8,256	8,099	8,302	8,509	8,722
c) Indian Ocean Territories	48	0	48	48	49	50	51
d) Other revenues	53	9	10	10	10	10	11
Total Income	**15,027**	**14,929**	**15,900**	**16,122**	**16,525**	**16,938**	**17,362**
Surplus/(Deficit) for the period	**(2,437)**	**(1,351)**	**(3,267)**	**(3,758)**	**(3,844)**	**(3,933)**	**(4,023)**

Cash Balances

On a cash basis the above budget is reflected as:

Financial Year	2021–22 Budget $'000	2021–22 Actual $'000	2022–23 Approved Budget $'000	Escalated $ 2023–24 $'000	2024–25 $'000	2025–26 $'000	2026–27 $'000
Estimated Opening Balance	**14,963**	**14,012**	**12,975**	**10,653**	**8,153**	**5,566**	**2,891**
Industry Levy	7,225	7,225	7,586	7,965	8,164	8,369	8,578
Licensing Fees	8,051	8,477	8,556	8,399	8,601	8,809	9,022
All other revenues	101	9	58	58	59	60	62
Cash expenses	(16,414)	(17,219)	(18,051)	(18,922)	(19,411)	(19,913)	(20,427)
Cash movement	**(1,037)**	**(1,508)**	**(1,851)**	**(2,500)**	**(2,587)**	**(2,675)**	**(2,765)**
Estimated Closing Balance	**13,926**	**12,504**	**11,124**	**8,153**	**5,566**	**2,891**	**126**

Notes and explanations

Note 1: Recurrent expenditure

a) Employee benefits expense: includes all expenditure associated with Building and Energy's permanent, contract and temporary employees, known salary increases under awards and State Wages Policy and direct on-costs such as leave entitlements and other employee entitlements.

b) Corporate service charges: Building and Energy relies on central Corporate Services support (covering finance, HR and IT support) to be provided by DMIRS. The amounts shown are the estimated costs provided by the DMIRS Corporate Services Division, including employee benefits costs for Corporate Services support employees.

c) Licensing services charges: Building and Energy relies on licensing processing services to be delivered by the DMIRS Licensing Services Directorate, with which a Service Level Agreement is in place. The amounts shown are the estimated costs provided by the DMIRS Licensing Services Directorate, including employee benefits costs for Licensing Services employees.

d) Depreciation expense: covers the cost of depreciation of Building and Energy's assets, including software systems. The bulk of the depreciation expense relates to the Compliance Management System, which was commissioned during 2014–15 and which has a significant impact on depreciation expense from 2016–17 onwards.

e) Legal services: these services are provided by the DMIRS in-house legal team with an allocation of costs for work related to energy safety matters, including employee benefits costs for Legal Services employees.

f) Accommodation expenses: covers expenses relating to Building and Energy's office accommodation, including lease costs, maintenance and minor works, cleaning and utility costs.

g) Information Services (IS) support and maintenance, Compliance Management System (CMS): includes recurrent costs associated with support, licensing and maintenance of CMS.

h) Information technology (IT) and minor equipment replacement: covers routine replacement of desktop personal computers, local printers and related equipment. This has previously been included as part of the capital budget, but minor equipment costing less than the capitalisation threshold is expensed as costs are incurred during the year. This item includes the cost of mobile computing technology used in conjunction with CMS in supporting inspectors undertaking field work.

i) Other recurrent expenses: includes all insurance costs, superannuation, communications services, safety awareness campaigns, travel, training, printing, management and maintenance of a vehicle fleet, technical services, recruitment, taxation expenses, various consumables and other services necessary for operating an office. Building & Energy will conduct major safety awareness and education campaigns in 2023–24, as detailed in this Business Plan.

Note 2: Capital expenditure

a) CMS Software replacement reflects the capital costs of completing identified software enhancements.

b) CMS project management reflects the capitalised internal IS project support costs for implementation of the CMS system enhancements.

c) Online compliance and customer interface functionality: works on enhancements to CMS or other systems to improve online compliance and customer interface.

Note 3: Income

a) Industry levy: This is the energy industry levy necessary to ensure the Director's energy safety operations are fully funded to carry out legislated functions.

   The levy is the amount needed to make up the difference between expected expenditure and the sum of the revenues of (b), (c) and (d) below for all four years of the forecast.

b) Licensing fees: are derived from electrical worker, electrical contractor, and gas fitter licence fees. The licensing fee revenue is presented on an accrual basis. For 2021–22 licensing fee revenue was $7.7 million. On a cash basis the amount is $8.5 million.

c) Indian Ocean Territories (IOT): DMIRS has a service agreement with the Commonwealth's Department Indian Ocean Territories (IOT): DMIRS has a service agreement with the Commonwealth's Department of Infrastructure, Transport, Cities and Regional Development (DITCARD) to supply regulatory services to the IOT similar to those it provides on the WA mainland, but at full cost to DITCARD. Building and Energy provides electricity and gas regulatory services under this agreement and the expected reimbursement is shown.

d) Other revenues: This reflects income from the sale of publications to industry and other minor recoups.

Note 4: Cash Balances

Cash balances form part of the DMIRS bank account and are classified as restricted cash. The cash at bank balance was $12.5 million at the end of 2021–22, which remains within the targeted cash balance.

It is considered prudent financial management to aim for a closing cash balance at the end of each budget period sufficient to cover potential cash costs (liabilities) where non-current expenses have been recognised. For example, leave liability growth is included in Employee Benefits Expenses and this expense is covered by the industry levy. Cash balances should therefore be sufficient to cover the cash value of the leave liability. The leave liability value recognised is $1.9 million as at 30 June 2022.

Additionally, it is prudent to allow for fluctuations in revenues across years and/or potential non-receipt of quarterly levy payments, and to provide some level of assurance should there be large unplanned expenditure associated with one or more major investigations. It is considered that $1 million is a reasonable amount to be held for this purpose.

Depreciation and amortisation of Building and Energy's assets is recognised as an expense each year, in line with normal accounting practice. The depreciation accumulates in recognition that it provides a source of funds to replace the asset at the conclusion of its useful life. Accordingly, the value of accumulated depreciation and amortisation should be recognised and maintained as a cash-holding. The value of accumulated depreciation and amortisation is $1.3 million as at 30 June 2022.

The licence fees that are received for more than a single year (some for three years, some for five), represent accrued or unearned income that should not represent cash available for expenditure in the year it is received. The total amount (incorporating both current and non-current unearned income) in the Energy Safety Special Purpose Account at 30 June 2022 is $8.7 million. This is recognised as unearned income and it is reasonable that the bank balance should hold this income as it is not earned until later years.

Based on these factors, the targeted cash balance that is considered reasonable is between $11 million and $13 million. It is forecasted that the cash reserves will decrease to below this target in the out years, if the industry levy is only increased by CPI. Building and Energy will continue to monitor the cash position and will provide options to Government in future years should sustainability of the account become an issue.

Industry Levy

Industry Levy Statement

This Statement is produced in accordance with section 6(1) of the *Energy Safety Act 2006* (the Act).

The Act makes provision for the collection of a levy from energy industry participants. The levy is in accordance with section 6(1)(c) of the Act and the related *Energy Safety Levy Act 2006*. Similar contribution schemes operate for other Divisions of DMIRS and are levied on the gas and electrical industries in other jurisdictions.

For 2023–24, the proposed Energy Safety Industry Levy will be $7.965 million. The Act allows the responsible Minister to determine the levy for the financial year, for notice of this to be published in the Gazette and for the Director of Energy Safety to issue notices of assessment accordingly. All revenue raised from the levy will be used solely for energy safety-related activities.

As required by the governing legislation, this section of the Business Plan details the methodology for the calculation and allocation of the appropriate portions of the levy to individual industry participants.

Industry Levy Quantum

It is required that the levy be applied at a level sufficient to enable the full costs of energy safety operations to be met. Accordingly, a levy of $7.965 million is proposed in this Business Plan for 2023–24.

This enables sufficient funds for the full structure of Building and Energy's energy safety-related operations, to meet the costs of its liabilities and support and facilitate the Government's broader initiatives in a changing energy sector. This includes a review of the legislative framework to ensure it can adapt to emerging technologies and new trends in the sector including the emergence of battery energy storage systems, standalone power systems and several initiatives to promote the use of renewable hydrogen.

The proposed levy for 2023–24 represents an increase of five per cent from 2022–23. As explained in the financial plan, this reflects estimated costs and other revenue sources related to energy safety functions for Building and Energy and also considers the optimal cash holding level.

It is recognised that Building and Energy is unlikely to have a full staffing contingent at all times during any given financial year. Historical vacancy rates, coupled with improved recruitment successes in recent years gives reasonable confidence that the vacancy rates will fall and remain relatively low and steady through 2023–24 and beyond, and surplus funds will not be realised from under-expenditure at the same levels as has been experienced in prior years.

Apportionment of Levy between energy sectors

The proposed 2023–24 industry levy of $7.965 million will be apportioned as 67 per cent to the electrical industry and 33 per cent to the gas industry in accordance with section 6(2) of the Act.

Therefore, the total levy contribution to be received from participants in the electrical industry will be $5337 million, and from participants in the gas industry it will be $2.628 million.

Method for allocation of Levy within energy sectors

To allocate the levy within each industry sector, the Director will continue to use the model devised for the allocation of the 2006–07 levy after consultation with industry. The model is based on the following:

a) Levy allocation across the gas sector to be based on the number of gas consumer sites supplied by each gas distribution system licence holder and LP gas distributor supplying LP gas in bulk and in portable 45kg cylinders in WA, subject to a minimum aggregate total of 500 sites. The aggregate may be based on multiple networks.

b) Levy allocation across the electricity sector to be based on the aggregate number of consumer sites served by each network operator subject to a minimum aggregate total of 500 sites. The aggregate may be based on multiple networks.

In mid-2022, the Director wrote to all participants in both energy sectors requiring them to confirm, in accordance with regulation 4(5) of the Energy Safety Regulations 2006, the number of LP gas and consumer sites connected. Responses were received from all participants.

Based on the information received, the proportion of all consumers supplied by each supplier within both industry sectors was established. This proportion was then used to calculate the annual levy contribution payable by each participant.

A similar survey will be carried out in mid-2023, determining the levy contribution allocations for each supplier for 2023–24.

Administration of the Levy Scheme

A confidential database is maintained of industry site or operator-specific information that provides an audit trail in support of the levy calculations for each participant.

Independent auditors were engaged in late 2021 to verify that the participants had robust systems and processes in place to support the customer numbers reported to the Director, so that the apportionment of the levy was undertaken on a reasonable basis. It is expected that this audit will be conducted every three years.

Although the total levy amount falls due for payment at the beginning of each financial year, industry participants will be invoiced quarterly, as in previous years.

The formal assessment for the year will be communicated to individual participants concurrently with an invoice for the first payment. In accordance with section 17(3) of the Act, if an instalment is not paid at or before the due date, the whole of the annual levy becomes due and payable immediately. There will be no reduction in liability as a result of departures from the industry during the year, or back-accounts for new participants to the industry during the year.

Appendix A – 2021–22 Safety Statistics

Building and Energy actively monitors trends of incidents to inform its risk-based compliance regime.

This section contains statistical information about electricity and gas incidents recorded in Building and Energy's Compliance Management System (CMS) as reported by industry and the general public.

A summary of the trends as of 30 June 2022 is provided in this appendix.

Electrical Safety Statistics

Electrical fatalities

There were no electricity related fatalities reported during 2021–22. The number of reported fatalities has been sporadic over the past 10 years, but indicates a gradual declining trend. Building and Energy has been focussed on safety education.

Chart A: Electricity related fatalities per million population

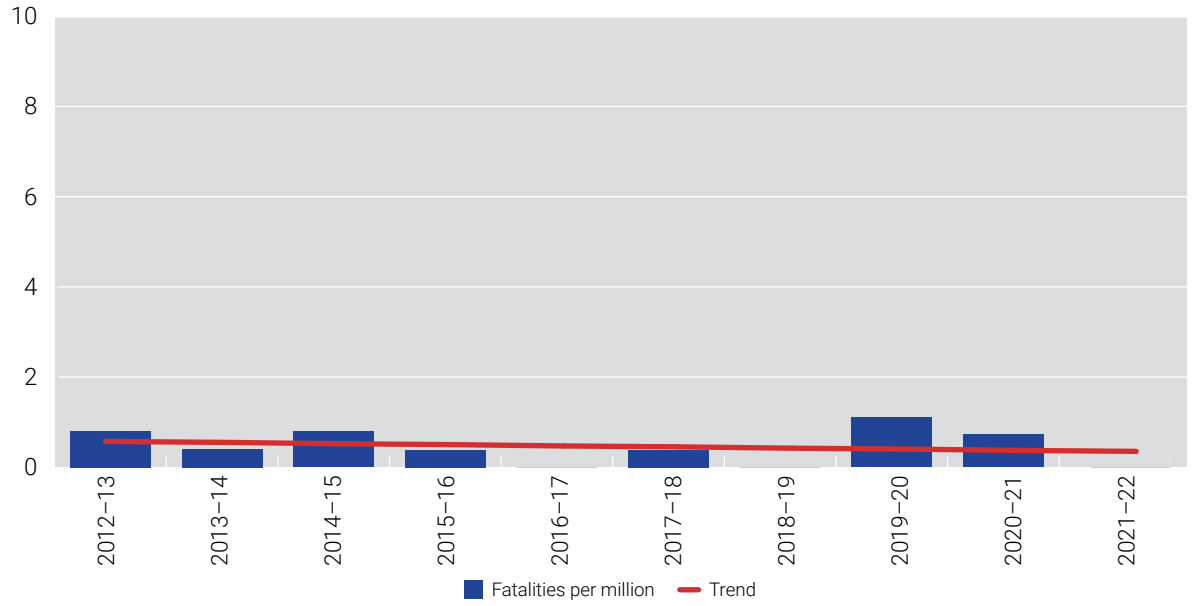
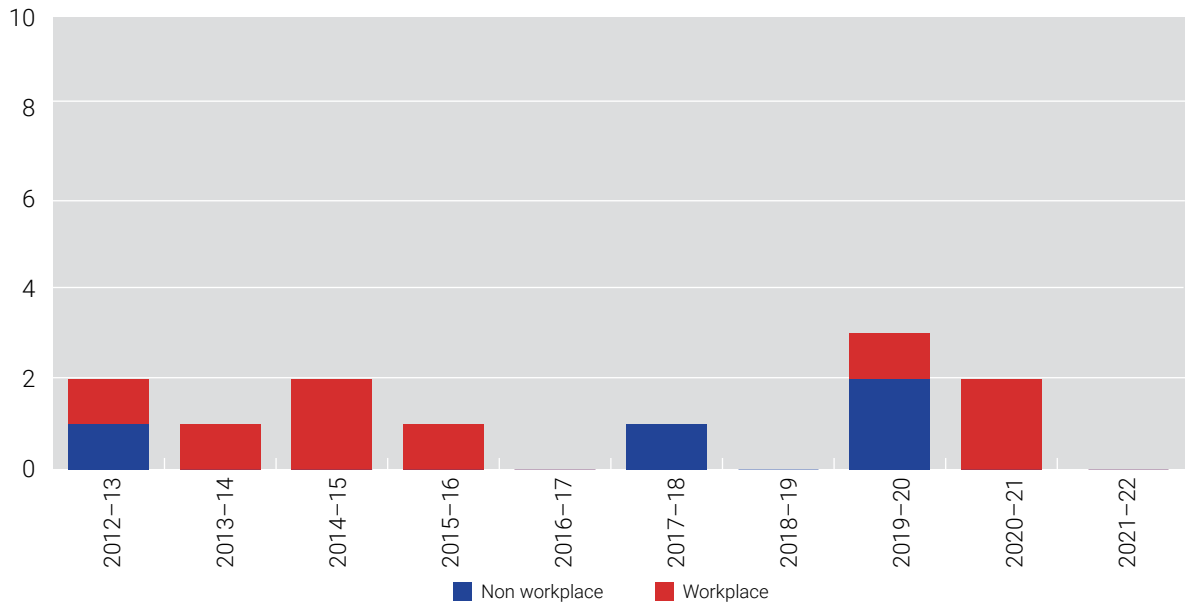


Chart B: Workplace and non-workplace electrical fatalities



Over the ten year period from 2012–13, the incidents occurring in the workplace were double those occurring in the non-workplace.

Electrical accidents – non-fatal

Accidents have been broadly classified into serious electrical accidents, which include incidents that required hospitalisation for treatment of injuries, and/or require medical treatment where first-aid or medical attention, excluding attendance for a precautionary electrocardiograph (ECG), was sufficient for the treatment of injuries sustained in the incident.

The number of electrical accidents (non-fatal) per million population in WA has seen a declining trend over the past 10 years (Chart C). During 2021–22, there were seven serious non-fatal accidents reported.

Several measures have been put in place to improve electrical safety outcomes that may have contributed to the decline in the number electrical accidents. These include, but are not limited to, the introduction of Residual Current Devices (RCDs), implementation of legislation preventing live work by electrical workers, a robust inspection regime, stringent appliance approval requirements and increased consumer and industry awareness through safety campaigns.

Chart C: Electrical accidents per million population

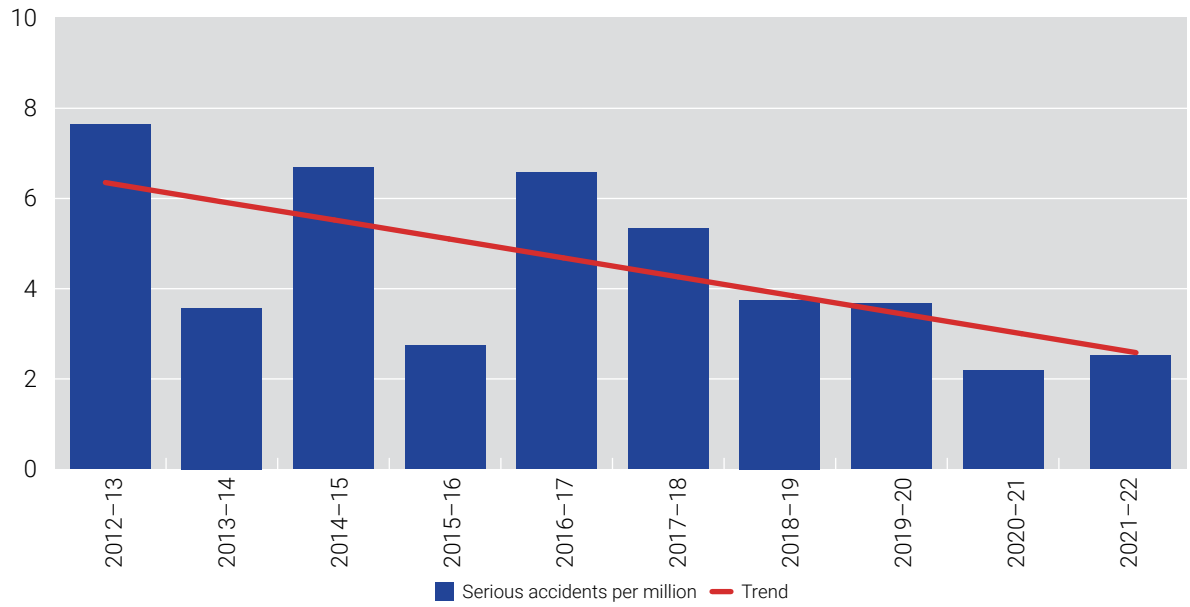
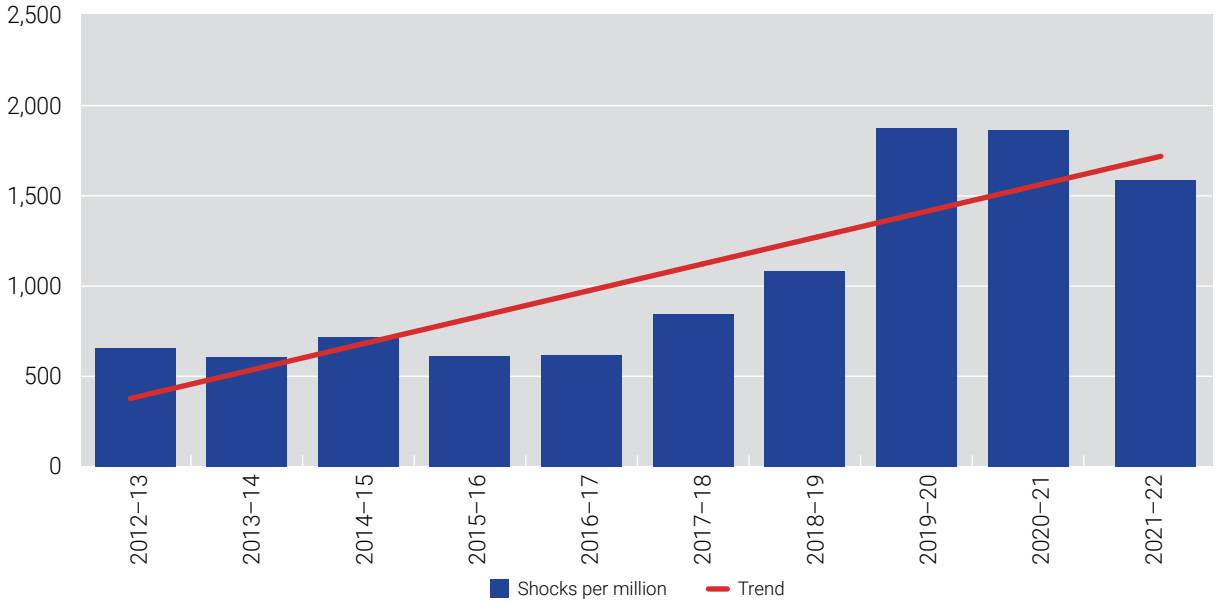


Chart D: Electrical shocks per million population



Electric shocks

An electric shock that does not cause injury or harm may be experienced due to an error by a person (e.g. contacting energised parts), faulty equipment in the home or workplace, or due to a fault or deficiency with the electricity supply network.

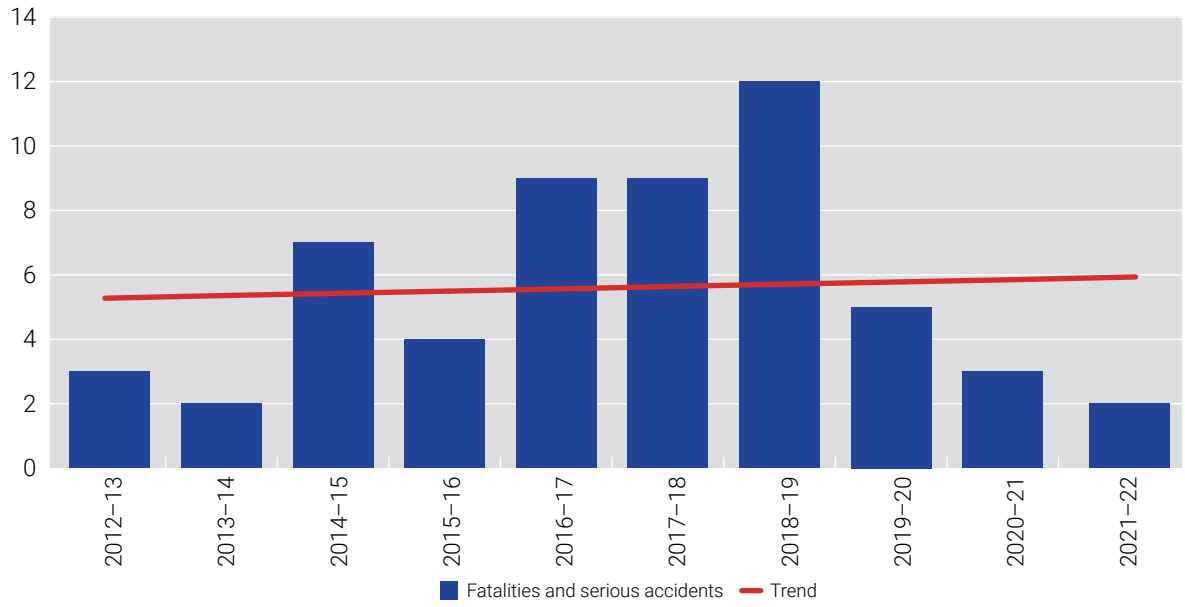
Building and Energy's '*shocks and tingles*' advertising campaign which commenced during 2019–20 influenced an increase in the awareness among the general public and industry about the importance of reporting such incidents to network operators.

During 2021–22 there were 4,414 electric shocks reported.

Electrical Worker Safety

Electrical workers are at greater risk of electric shocks and electrocution than members of the general public or workers in other occupations. Despite greater knowledge related to working with electricity, most of the incidents involving electricians result from performing tasks on energised electrical equipment.

Chart E: Fatalities and serious accidents involving electrical workers in WA

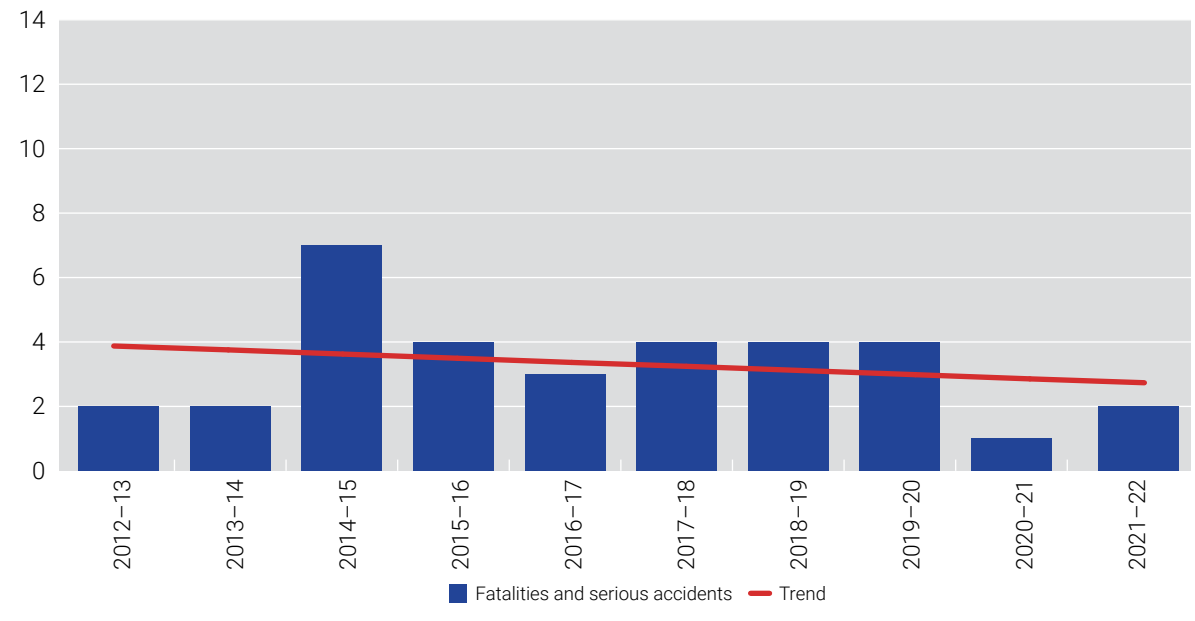


In Chart F below, the trend of fatalities and serious accidents resulting from 'live' work involving electricians is declining. In 2018, new legislation was introduced that prohibits electrical work to be performed on or near an exposed energised part of an electrical installation that can be de-energised.

This was followed by an industry safety awareness campaign to educate industry on the dangers of working live and the related new legislation.

Building and Energy has conducted recent safety education to raise awareness about the electrical dangers in roof spaces and to remind workers and consumers to switch the main power off before entering the roof space.

Chart F: Fatalities and serious accidents resulting from 'live' work involving electricians in WA

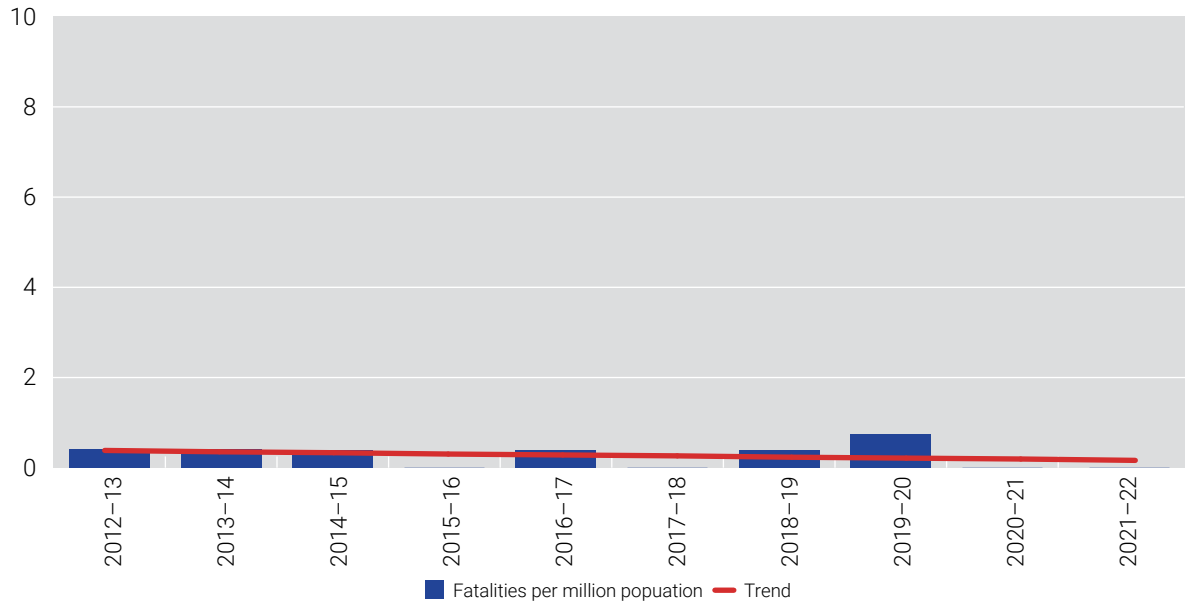


Gas Safety Statistics

Gas fatalities

There were no gas related fatalities reported in 2021–22. The trend for gas fatalities indicates a very low number of such incidents.

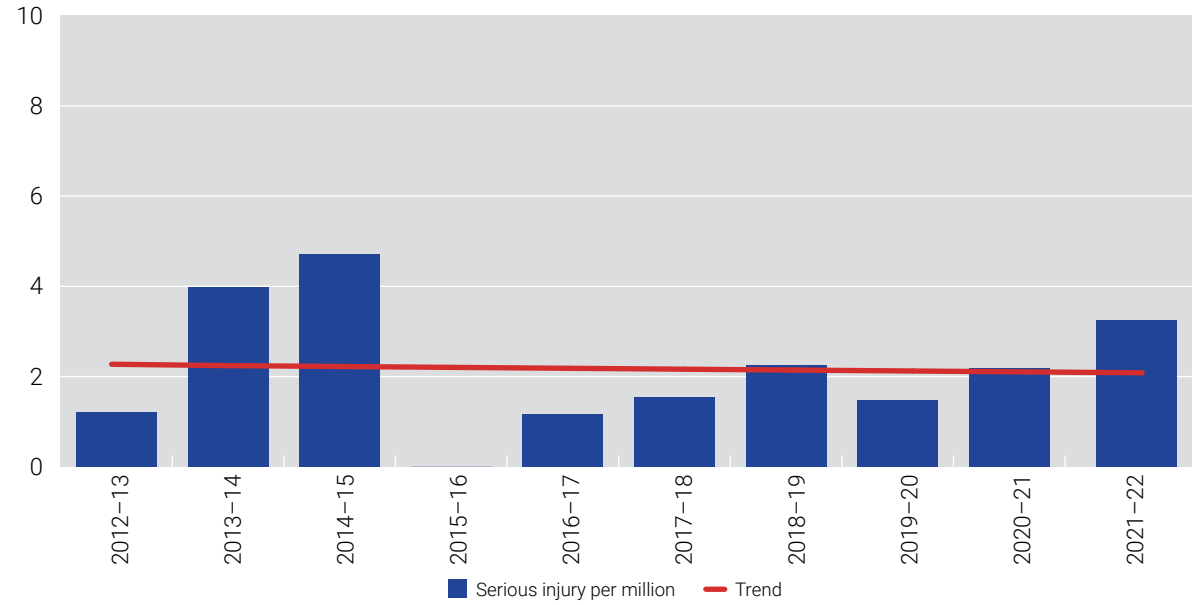
Chart G: Gas related fatalities per million population



Gas accidents – serious injury

There were four reported serious accidents with nine people injured in 2021–22. By the very nature of gas incidents, multiple people can be injured in a single incident.

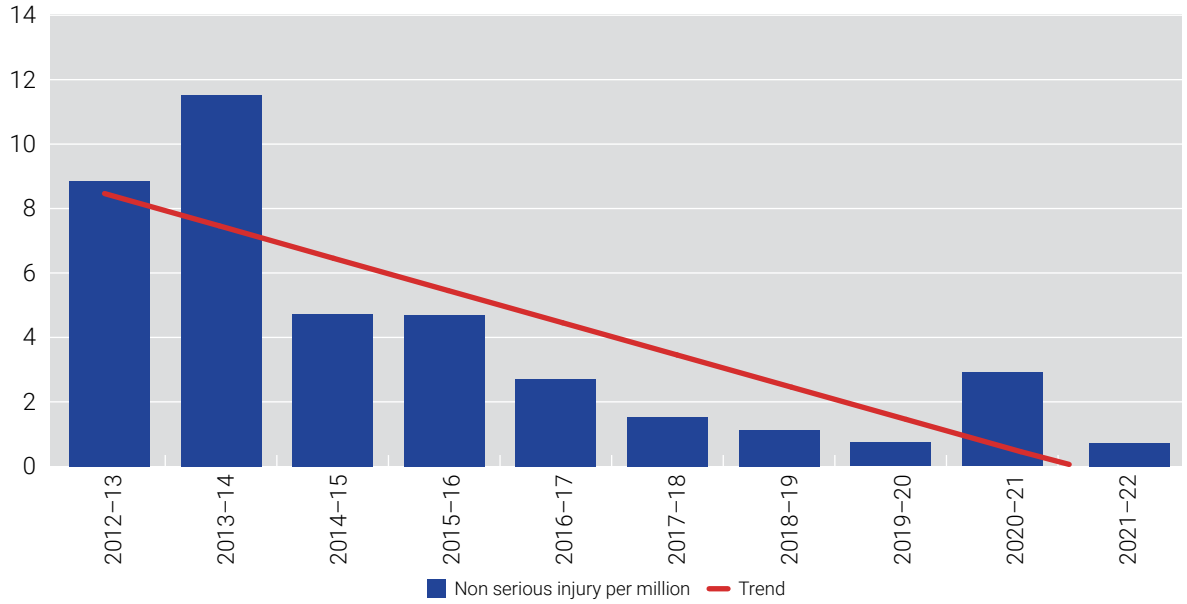
Chart H: Gas related incidents resulting in serious injury per million population



Gas accidents – non-serious injury

There were two gas related incidents which resulted in minor injury in 2021–22. The trend of such incidents indicates a sharp decline over the ten years from 2012–13.

Chart I: Gas related incidents resulting in non-serious injury per million population



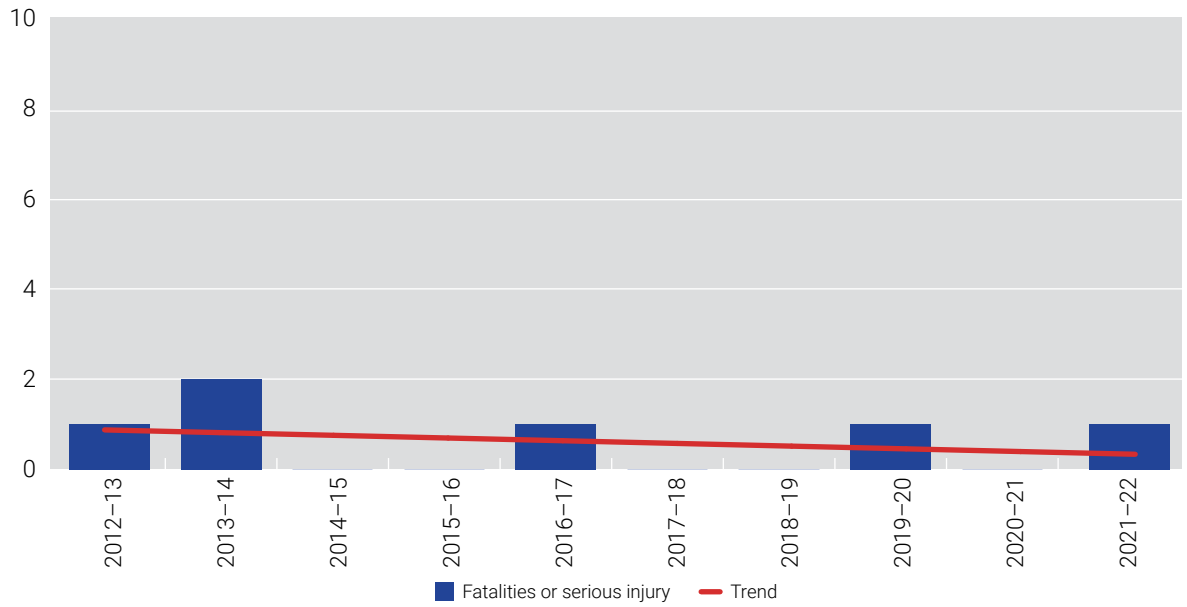
Gas worker safety

Safety outcomes in relation to fatalities and serious injury involving gas workers is generally positive with no fatalities reported over the ten years from 2012–13.

The incidents in the chart below relate only to serious accidents.

There was one serious accident involving a gas workers in 2021–22. A gas fitter was injured while attempting to light a gas hot water system.

Chart J: Gas incidents resulting in fatality or serious injury involving gas workers



Government of Western Australia

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