Operations Implemented under the
Gas Safety Act 2019

Report by the Director of Gas Safety 2021/24

Consumer, Building and Occupational Services

Department of Justice

Tasmanian Government

REPORT OF THE DIRECTOR OF GAS SAFETY

This report by the Director of Gas Safety is pursuant to the section 13 of the *Gas Safety Act 2019*. It is intended to describe the operations of the Director's Office for the reporting period commencing on 3 February 2021 until 2 February 2024.

The Director of Gas Safety is a statutory appointment established by section 8 of the *Gas Safety Act 2019*. The Executive Director of Consumer, Building and Occupational Services, Mr Brad Wheeler, is the current Director of Gas Safety.

The *Gas Safety Act 2019* requires the Director of Gas Safety to deliver to the Minister a report on the Director's operations during the previous three-year period, starting on the day on which the Act commenced. The Act commenced on 3 February 2021. The Minister must cause a copy of each report to be laid before both Houses of Parliament.

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Preface

This report covers the Director of Gas Safety's operations under the *Gas Safety Act 2019* in force for the period commencing on 3 February 2021 until 2 February 2024.

The *Gas Safety Act 2019* is an Act to regulate the gas industry, to provide for safety and technical standards that ensure that the gas supply industry, gas facilities, gas installations, gas appliances, gas storage systems and gas conditioning systems are constructed, maintained and operated to a high standard of safety and in a manner that protects persons and property, and for related purposes.

The Director of Gas Safety is appointed in accordance with section 8 of the Act.

Section 9 of the *Gas Safety Act 2019* sets out the functions of the Director of Gas Safety. These are:

(a) to monitor and regulate safety and technical standards in respect of gas infrastructure, regulated activities and associated works;

(b) to monitor and regulate safety and technical standards in respect of gas storage systems, gas installations, gas appliances, automotive gas fuel systems and associated works.

The Director of Gas Safety, in administering the Act, participates in a range of activities in cooperation with the gas industry and other Government agencies. This includes gas supplier licensing functions and gas emergency management vested with the Regulator and Minister for Energy, Department of State Growth respectively.

The Director of Gas Safety's actions in relation to these functions are dealt with within this report.

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Office of the Director of Gas Safety

The Director of Gas Safety (the Director) is supported by gas specialists within the unit of Technical Regulation & Occupational Licensing which is within Consumer, Building and Occupational Services (CBOS).

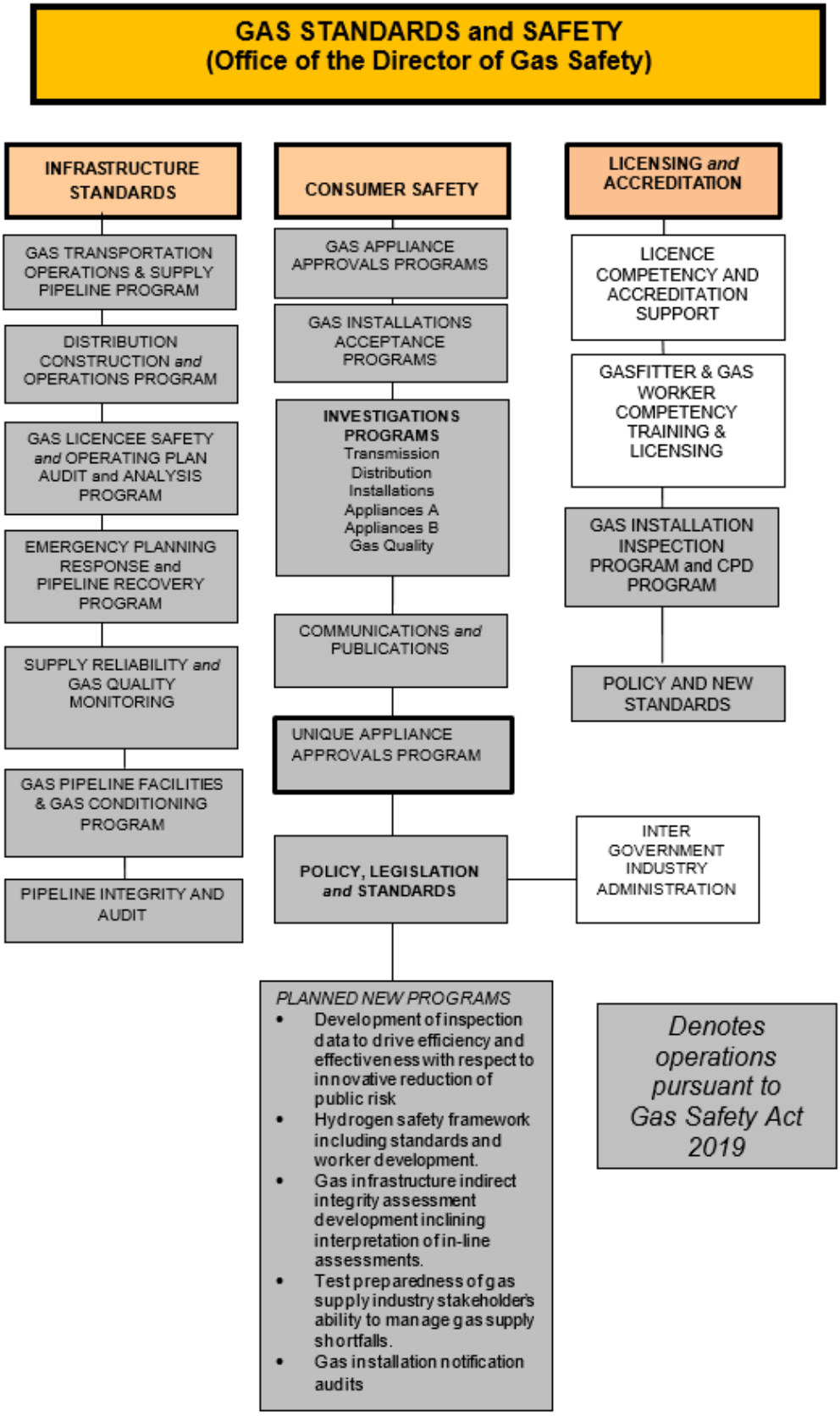
The structure of the Technical Regulation unit enables resource and knowledge sharing resulting in improved efficiencies between technical standards, occupational licensing objectives and consumer protection. The specific Gas Safety Unit is managed by the Manager Gas Safety, Mr Andrew Ayton, who is also delegated the functions of the Director.

Gas safety in Tasmania is a priority within CBOS's public safety program. The capturing and analysing of gas-fitting work inspection data drives education programs, enhancement of enforcement practises and intervention programs. The ultimate driver of these activities is to eliminate, as far as practicable, the risk posed by the production, transmission, distribution, storage and use of gas within Tasmania.

The Office of the Director of Gas Safety employs six Authorised Officers and one Administrative Officer, with additional administrative support as required from Technical Regulation administration and other CBOS staff. To enable appropriate and timely response throughout Tasmania, these staff are located in Hobart, Launceston and Devonport.

Resources have remained stable during the last reporting period resulting in an effective program of regionally based technical activities. Whilst COVID-19 impacted on the roll out of proactive field-based inspection activities in the early part of the reporting period, core reactionary downstream installation and infrastructure inspection services, including for industrial and commercial appliances (Type B appliances), remained effective with no adverse effects experienced by industry or stakeholders.

The Gas Standards and Safety unit (GSS) operational structure and activities are shown in Figure 1.


GAS STANDARDS and SAFETY
(Office of the Director of Gas Safety)
INFRASTRUCTURE STANDARDS
GAS TRANSPORTATION OPERATIONS & SUPPLY PIPELINE PROGRAM
DISTRIBUTION CONSTRUCTION and OPERATIONS PROGRAM
GAS LICENCEE SAFETY and OPERATING PLAN AUDIT and ANALYSIS PROGRAM
EMERGENCY PLANNING RESPONSE and PIPELINE RECOVERY PROGRAM
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POLICY AND NEW STANDARDS
INTER GOVERNMENT INDUSTRY ADMINISTRATION
PLANNED NEW PROGRAMS
• Development of inspection data to drive efficiency and effectiveness with respect to innovative reduction of public risk
• Hydrogen safety framework including standards and worker development.
• Gas infrastructure indirect integrity assessment development inclining interpretation of in-line assessments.
• Test preparedness of gas supply industry stakeholder's ability to manage gas supply shortfalls.
• Gas installation notification audits
Denotes operations pursuant to Gas Safety Act 2019

Figure 1

Vision

Consistent with the guiding aim of the Department of Justice to provide '*A safe, fair and just Tasmania*', and in accordance with departmental values and strategic plans, the Director strives to provide leadership and effective governance in respect of gas infrastructure, downstream installation safety and technical standards. This is achieved by ensuring the evolving natural gas, compressed liquefied natural gas, biogas, hydrogen and LP Gas industries achieve levels of excellence in construction, operations, reliability of supply, acceptable level of public safety and energy efficiency.

The Director of Gas Safety is responsible to ensure:

- Gas infrastructure operations achieve and maintain a high standard of safety, reliability, and control of inherent risks.
- The provision of advice to the gas industry to achieve best practice in gas safety.
- The ongoing development of communication services and the promotion of products that support consumer understanding of gas safety through education and communication.
- That industry participants participate in the development and maintenance of safe, efficient and effective gas technology and work standards for Tasmanian consumers.
- A continual improvement in national harmonisation consistency in the regulation of gas safety technical standards.

The Director understands that achieving our vision requires the application of clear principles for collaboration within our own organisation, the community, businesses and partners.

To achieve this, the following values and principles have been adopted;

Integrity: We are honest, ethical, reliable, and fair in everything we do.

Respect: We treat colleagues, stakeholders and clients with courtesy, and value the diverse experiences of others.

Accountability: We treat colleagues, stakeholders and clients with courtesy, and value the diverse experiences of others.

Inclusive: We enable our colleagues, clients and stakeholders to be respected, valued and treated equitably.

Collaborative: We actively engage with our colleagues, stakeholders and clients to make informed decisions that benefit the Tasmanian community.

SECTION 1: Gas Transmission and Distribution

Gas pipelines continue to provide a reliable supply of natural gas to consumers through Natural Gas Transmission and Distribution Facilities operated under licence by Tasmanian Gas Pipeline (TGP) and Tas Gas Networks (TGN) respectively.

There has not been any widespread or major interruption to the supply of natural gas in Tasmania during this reporting period. This can be attributed to effective planning, adequate response to incidents by gas licensees and effective collaboration between the Department of State Growth, major consumers and the Director's Office.

Network integrity is achieved by gas licensees implementing robust safety management systems outlining systematic design, construction, operation and maintenance activities in conjunction with sound engineering principles prescribed in Australian standards.

Following a comprehensive review, the Director accepted a revised safety case from TGN, outlining overarching implementation strategies for network safety management systems. The Director's safety case approval is valid for 5 years unless a revised plan is required due to significant change to the gas licensee safety management system, altered infrastructure or hazards resulting in increased levels of risk.

To ensure continued pipeline operational integrity, the implementation of licensee safety cases also underwent auditing by the Director's Office. Pleasingly, auditors remained confident in the compliance of licensee systems against the regulatory audit criteria.

Subordinate Tier 2 and 3 design and operation policy and procedures are living documents that are amended by the gas licensees due to technological advancements and as risks are identified through safety management studies (SMS) and formal safety assessments (FSA). Amendments to licensee standards to align with the outcomes of pipeline safety studies and amended prescribed Australian standards were evaluated during the reporting period.

The Director continues to maintain regular meetings with gas licensees to facilitate the open exchange of information on network operational and regulatory matters. These meetings have been held quarterly and continue to be beneficial to both licensees and the Director.

Natural Gas Rollout

Natural gas network expansion and construction has been limited to an additional 1.3 kilometres during the reporting period. Natural gas network augmentation, including decommissioning, has been predominantly associated with major developments, with smaller additions to facilitate the connection of natural gas consumers when deemed commercially viable by TGN.

The Director is not aware of any intended major network extensions. Any expansions to the gas network are likely to consider the Government's Gas Decarbonisation and Future Gas Strategies.

Pipeline and Network Incident and Accident Reporting

Incident data is collated and assessed for trends to determine both the root cause and required risk controls. It is pleasing that a continued importance on investigating near miss third party activities and implementing insights has contributed to the low rate of incidents.

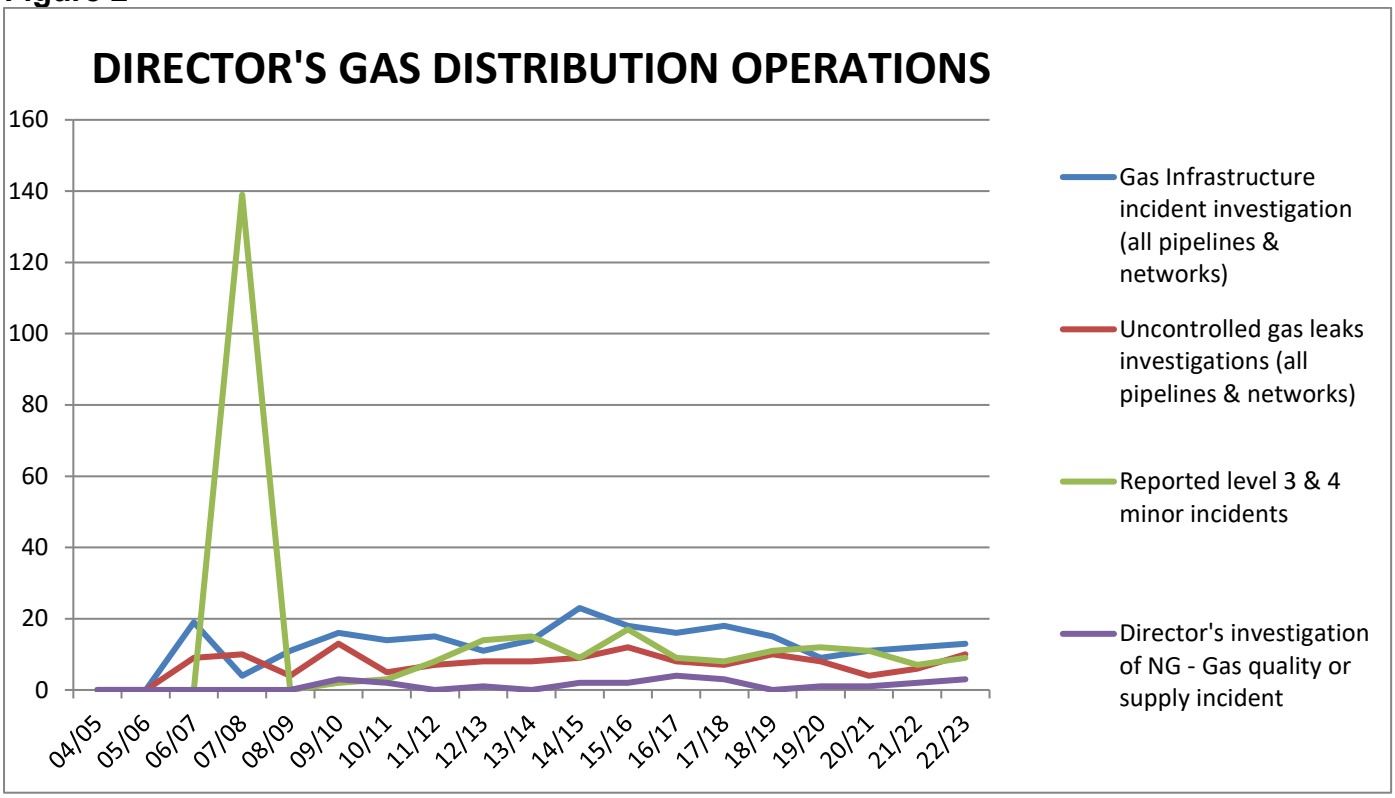
The Director is confident that the process of proactive monitoring of near miss third party encroachments, the application of lead and lag indicators, and fresh analyses to determine human factor elements will continue to result in positive safety outcomes into the future.

This approach has resulted in the identification of risks associated with untrained operation of dry hire ground excavation machinery. This has led to the Director actively engaging with hiring companies and the provision of safety information to members of the public hiring this type of equipment.

No injuries to employees or the public have resulted from any incidents, and gas infrastructure metering and isolation design has been compliant and acceptable.

Primarily, due to its proximity to increased activities in built up areas, gas distribution networks generally experience higher levels of third-party interference. Whilst data shows a slight increase in the number of incidents for the reporting period (refer Figure 2), the number of high-risk uncontrolled releases of gas have decreased, reflecting the Director's investigation focus.

Figure 2



Transmission and Distribution Infrastructure Integrity Management

The Director's regulatory focus remains on assessment and validation of infrastructure integrity and operational management including reviews of steel pipeline coating defect studies, operating pressure validation, remaining life, location class reviews, safety case and safety management studies.

Accordingly, gas licensees undertook a series of programs involving the excavation and inspection of buried station pipework, corrosion protection studies and in-line inspections to ensure the ongoing structural integrity of assets.

The integrity program implemented by the Director uses maintenance records, physical characteristics and operating history of the networks to predict the integrity of a given pipeline. The Director received and reviewed a safety management study, in-line inspection, cathodic protection, leakage survey, direct current voltage gradient (DCVG) and pipeline fitness for purpose reports during the reporting period.

Tasmania's population growth affects the likelihood of encroachment of urban development on existing pipelines. This is becoming a major reality across Australia. Consequently, the Director conducted assessments of licensee policy and procedures for the review and risk mitigation from developments within pipeline planning corridors.

In collaboration with the developers of PlanBuild, the Director enabled the inclusion of pipeline planning corridor notifications within the PlanBuild planning, building, plumbing enquiry portal. This inclusion is expected to assist developers and permit authorities when assessing proposed developments that are in close proximity to gas infrastructure.

Before You Dig Australia (formerly Dial Before You Dig)

During the reporting period, national Dial Before You Dig (DBYD) entities agreed to transform into a single national organisation known as Before You Dig Australia (BYDA). This change is expected to deliver higher levels of operational efficiency, with more focused support to members, users and the wider community. There has not been any change to the referral services.

The Director strongly encourages the use of the BYDA service by all infrastructure owners and contractors undertaking civil excavation in the proximity of gas infrastructure.

Considering the organisational transition, the Director's Office continues to actively engage with BYDA and other stakeholders. This has included gas industry forums to ensure alignment of BYDA messaging and benchmarking/determination of incident root cause/s.

The identification of offenders' rationales, if disregarding well publicised advice, shapes ongoing targeted regulatory and educational activity aimed at driving the use of the BYDA referral service. This resulted in the Director and BYDA presenting across the State as part of the Work Health and Safety Week and the allocation of CPD points for participants of the BYDA training.

Isolated Gas Networks

No new isolated gas networks were constructed in the reporting period.

The Director reviewed and approved a revised safety case for the single inset network (LP Gas) at Glenara Lakes, Launceston with annual audits submitted for review to ensure the satisfactory implementation of the approved safety case. These audits determined the integrity of the network was sufficient to provide a safe gas supply. However, they also highlighted that broader emergency response exercises are required to test ongoing network reliability systems across diverse stakeholders.

Consequently, the Director has participated in, and audited, two emergency response exercises. One exercise involved a physical response from the Tasmania Fire Service which provided all participants with a greater awareness of emergency roles and infrastructure configurations. The Director actively monitors the close out of all audit actions.

Gas Pipeline and Network Life Cycle Auditing

The Director continues to implement an audit program in accordance with its gas infrastructure audit policy. The policy provides for a systematic, structured and consistent auditing approach across all gas infrastructure and licensees. This policy also outlines audit principles and the underlying strategy adopted to ensure gas infrastructure is appropriately managed.

The natural gas pipeline integrity management audits continued to be a priority during the reporting period. These audits detail the adequacy of permit to work management, contractor management and incident investigations (determination of root cause analysis driving continued improvement).

Table 1: Director's Gas Pipeline and Network – Life Cycle Administration and Safety Program

Formal Safety Instrument	Administrative Program	Purpose
Gas Licensee – Pipeline Integrity management plan	Initial document and implementation review	Pipeline system design, construction, operation and maintenance activities, in conjunction with the application of sound engineering principles with due regard to safety
Gas Licensee Pipeline maximum operating pressure review	5 year review	Technical compliance and public safety
Steel pipeline integrity plan review	Direct current and ground variance for direct assessment	Detect and monitor deterioration of pipeline protective coating condition
	Inline inspection of pipelines	Detect and monitor internal condition of pipe and its capability to operate at MAOP
	Pipeline quality gas review	Detect out of specification product, frequency and effects analysis
	Finalisation of electrical installations in hazardous areas audit	Maintain safe electrical installations at meter stations to ensure acceptable network reliability and public safety
Gas Licensee – Full Safety Assessments of gas networks	Review of infrastructure hazards and currency of protective systems	Maintenance of public safety and pipeline management from encroachment
Gas Licensee – Safety management systems	Review currency with operations and construction	Maintain acceptable network reliability and public safety
Gas Licensee – Network design certifiers acceptance	Approval of Independent Design Certification	Technical compliance of new networks designs
Gas Licensee Operations Auditing	Audit implementation of accepted safety cases	Maintenance of public safety through acceptable pipeline operations

Gas Licensee Performance Reporting

Lag (near miss) and lead indictors are collated and reviewed across reporting periods to determine the ongoing adequacy and effectiveness of risk mitigation actions including safety-critical operations, maintenance activities, hazard identification, training, network integrity and emergency preparedness.

Table 2: Example of Data Collected
Tas Gas Networks Performance (extracted from the TGN annual reporting data to the Director 2022/23 financial year)

Statistics	Polyethylene Mains		Steel Mains
	500 kPa	1000kpa	5.0 MPa
Length of distribution network (kilometres)	742	53	45.95
Public third-party reported gas leaks	189		0
Gas escapes on mains not caused by third parties	2	0	0
Kilometres of network subjected to leak survey	76	50	46
Leaks detected during surveys	2	0	0
Emergency/Incident response			
Level 4 incidents	10		
Level 3 incidents	0		
Level 2 or 1 incidents	0		
Emergency response exercises planned	4		
Emergency response exercises completed	4		
Average time to respond to emergency notification	18 minutes		
Longest time to respond to emergency notification	67 minutes		
Dial before you dig enquiries	16,204		
Third-party interference where Dial Before You Dig enquiries were performed	5		
Operational performance			
Scheduled audits	281		
Non-conformance identified	395		
Non-conformance not corrected in scheduled time	0		
Gas quality tests	4		
Gas quality excursions (including odorant)	0		
Pressure/temperature excursions	0		
Cathodic protection system surveys conducted	2		
Unsatisfactory CP system test results	0		

SECTION 2: Gas Retailing

GloBird Energy Pty Ltd and Eastern Energy Supply Pty Ltd were recently approved for retail licences alongside existing NG retail licensees Aurora Energy Pty Ltd and Solstice Energy Retail Pty Ltd (formerly Tas Gas Retail Pty Ltd).

To date, GloBird and Eastern Energy have not provided the Director with a safety case detailing their initiatives to manage the safety of regulated activities. These safety cases would require scrutiny and acceptance prior to the supply of natural gas to industrial, commercial and domestic retail consumers.

The Economic Regulator renewed Solstice Energy Retail Pty Ltd's gas retail licence pursuant to the *Gas Industry Act 2019* for a further 10 years, with effect from 21 August 2023.

Consumer connections to the natural gas network decreased by 2.5% during the reporting period.

Gas Retailer Emergency Gas Curtailment Planning

Gas licensee plans are required to be aligned with industry agreed gas quality and emergency gas supply coordination provisions. These safety cases are reviewed on a five yearly cycle, changes affecting operational risks may demand an earlier review.

The Director recently accepted a revised Aurora Energy Pty Ltd plan which was necessary due to changes in operations.

The Director recently released a Communications Protocol for off specification natural gas incidents which provides a collaborative framework, endorsed by stakeholders, for the management of any future off specification NG incidents.

The Director remains as the Tasmanian Jurisdictional Contact Officer (JCO) under the National Gas Emergency Response Advisory Committee (NGERAC). This committee was convened during the reporting period to manage cross-border gas supply risks associated with national supply shortage (May/June 2022), Iona storage depletion notice (July 2022), supply chain industrial action (October 2022 and June 2023) and gas odorant supply shortages (January 2023).

Gas supply volatility across the region resulted in the implementation, in June 2023, of gas market reforms that seek to provide the Australian Energy Market Operator (AEMO) with the tools to address both the emerging issues and to deliver longer term solutions to manage threats to gas supply to the east coast gas market.

The Director participates in weekly national teleconferences over the summer period to discuss potential gas production/storage, weather and gas fired power generation matters that may pose a potential threat to Tasmanian natural gas supplies. These meetings are invaluable to the insight on appropriate coordination and response to supply emergencies which support the advice to the Minister on how to respond to natural gas supply situations.

A staff availability roster is operational for after-hour response to onshore gas infrastructure and installation incidents, as well as intrastate, interstate and offshore supply or gas quality issues. This resource is invaluable to providing technical support to first responder agencies and in the recovery of essential energy to households and industry in a timely manner.

Ongoing gas supply emergency response exercises provided valuable learning opportunities with respect to communication protocols between the Department of State Growth, the AEMO, NGERAC and the Director. These exercises also offered the opportunity to consider responses and interoperability processes when managing major electricity and gas supply shortfalls.

Considering the majority of NG supplied to Tasmania originates from the ESSO facility in Longford Victoria, valuable inter-jurisdictional interaction insights were realised during the Director's participation in the Victorian Emergency Risk Assessment (VERA) 2023 Gas Supply Disruption Review Workshops.

The Director also conducted an audit of an emergency response exercise facilitated by Aurora Energy Retail to ensure the ongoing preparedness of this licensee.

SECTION 3: Gas Suppliers, Storage Systems and Conditioning

Co-operation with all gas suppliers continues to result in improved gas safety standards and compliance.

Liquefied Natural Gas (LNG)

Supply of LNG to industrial consumers remains an alternate energy option for large and small consumers isolated from the NG pipelines.

The consumption of LNG as a fuel to propel ships has ensured the full utilisation of BOC's Westbury LNG gas pipeline facility. The Director has been in discussions concerning other vessel operators considering the economic energy advantages provided by LNG. Additional vessel bunkering in Tasmania will require the expansion of the current LNG production facility.

GSS continues to audit the safe management of BOC's Westbury LNG gas pipeline facility and LNG suppliers in consultation with the Major Hazard Facility (MHF) branch of WorkSafe Tasmania. The audit undertaken during this reporting period included safety management system actions (2021), pressure and temperature management of bulk storage tanks (2022) and asset management (2023).

As a result of these audits, the Director has implemented an ongoing programmed maintenance performance focus including monitoring of safety-critical instrument functional testing indicators and performance trending.

Liquefied Petroleum Gas (LPG)

LPG connections remain high in areas not serviced by NG networks.

Public safety for the LPG storage, supply, installation, and vehicle gas conversion industries, has been maintained as part of the Director's administrative role. This involves ongoing coordination and consultation between the Director, WorkSafe Tasmania and LPG suppliers.

Ongoing engagement with LP gas suppliers has increased LPG supply location compliance and safety. The subsequent review of delivery driver training, compliance checklists, and non-conformance reporting continues to drive considerable consumer requests for gas installation safety and compliance assessments.

Incident causation data compelled an investigation into the replacement of the current POL connection used to connect gas cylinders and portable appliances. During the reporting period, the Director and the Gas Technical Regulator Committee (GTRC), through consultation with industry, have facilitated the roll out of a safer LCC27 valve in the leisure gas portion of the industry. It is expected that the replacement valve will provide measurable public safety value as a result of incorporated leakage prevention features.

Localised flooding experienced during the reporting period highlighted the potential risk floodwater poses to LP Gas cylinders connected to consumer installations. Consequently, the Director is working with gas suppliers to ensure at risk sites are identified and adequate risk mitigation is implemented in those instances.

Biogas and Hydrogen

The search for alternative energy is driving considerable growth and new projects to offset energy costs and meet environmental expectations. This has been further driven by the Government's aspirations outlined in the Tasmanian Renewable Hydrogen Action Plan and Bioenergy Vision.

Accordingly, the Director has participated in the advancement of national and state policies and strategies for the development of a hydrogen economy in close coordination with ReCFIT and the Commonwealth Climate Adaptation & New Industries Division of the Department of Climate Change, Energy, the Environment and Water. Excitingly, this has resulted in GSS meeting and working with a considerable number of hydrogen development proponents intending to utilise hydrogen for ammonia export, as a transport fuel

and injection into existing/new gas networks. These activities are expected to intensify following the recent $70 million funding injection into the Tasmanian Green Hydrogen Hub at Bell Bay. The Director's activities are outlined in Table 3.

This new program has required substantial resources and is not without its challenges, including those associated with the safety risks of hydrogen production, storage, transport and utilisation, and the need to develop appropriate safety standards without unduly restricting hydrogen application. To ensure Tasmania is at the forefront of standardisation development, the Director is a contributing member of the Hydrogen Technologies Australian Standards Committee (ME-093) and the Future Fuels Cooperative Research Centre. The Director is also advocating amendments to existing legislation to ensure hydrogen fuel cell electrical vehicle regulatory policy is consistent with existing LP Gas, compressed natural gas (CNG) and LNG vehicle fuelling frameworks.

In parallel with hydrogen, biogas is attracting increased interest. Based on the increased frequency of enquires received by the Director's Office, the expectation is that biogas (dairies, rural husbandry), municipal and industrial waste gas capture and combustion for energy generation will increase. This includes the development of biogas generation and utilisation systems at two dairy companies in North West Tasmania and TasWater's continual upgrade and use of biogas resources at wastewater sites.

Due to the specialist knowledge required for the ongoing safety and technical management of these evolving industry sectors, the Director continues to review the current GSS resourcing structure to ensure the output's existing competencies are utilised to provide a contemporary regulatory environment that meets stakeholder and imminent alternative gas project expectations.

On 28 October 2022, Energy Ministers agreed to amendments to the National Gas Law and Regulations to bring hydrogen, biomethane and other renewable gases under the national gas regulatory framework. These new measures are intended to take effect in 2024, subject to the Bill's passage through the South Australian Parliament, as amendments come into law on a date fixed by proclamation.

Table 3: Alternative Fuel Proposals/Projects

Proponent	Proposal/Project
Woodside	H2TAS Renewable Hydrogen and Ammonia Facility.
Tas Gas Networks	Dedicated H2 networks and injection into existing licensed pipelines.
Origin	Bell Bay Green Ammonia Project for Export (GRAPE).
Grange Resources	H2 production and conversion of existing furnaces at Port Latta.
ReNu Energy Limited	Countrywide renewables – three regional green hydrogen electrolysis production facilities with local take offs for transport etc.
Blue Economy CRC	Hydrogen Microgrid facility incorporating electrolyser, compression, storage and Microturbine. Local offtakes expected including Metro Bus Trial.
Line Hydrogen	Construction and operation of a 7.6 MW green hydrogen production facility for transport and local offtakes.
Fortescue Future Industries	Green ammonia export facility.
Metro	Zero emissions bus trial including fuel cell electrical buses and refuelling facility.
Toyota	EODev H2 generators utilising a Toyota Fuel Cell; substitute for diesel/petrol generators.

Proponent	Proposal/Project
Lavo	Integrated hydrogen energy storage system (battery).
Meander Valley Council and Optimal Group	Biogas production, distribution networks and Bio-LNG production.
Saputo Dairy Australia	Planning and installation of a Biogas Treatment Unit to condition the biogas by knocking out liquid from gas stream and removing quantities of VOC and H2S to the specifications required for existing site boiler.
UTAS	Designing and installing a micro PEM electrolyser, fuel cell and hydrogen for research purposes.

SECTION 4: Gas Installations and Appliances

The installation of new gas installations and gas appliances continues to maintain a high demand for the Director's safety and technical compliance programs.

Applications for new and alterations/additions to existing Type B gas appliance and complex gas installation acceptances have remained relatively steady during the reporting period. The regulatory focus for these higher-risk installations is by nature resource intensive due to the need to undertake desktop design reviews and an increased onsite compliance focus.

Standard gas installation inspections remain a priority for the Director. A slowdown in activity during the COVID-19 pandemic allowed the enhancement of this program's productivity in line with industry and public expectations. This created an opportunity to increase the efficiency and effectiveness of this program when constraints were wound down.

For example, this program achieved 660 standard gas installation compliance inspections during the 2022-23 financial year. Considering there were 3802 gas-fitting notices received for gas-fitting work during this period, this represents an inspection rate of 17% of all notified standard gas installations. These inspections unearthed 100 gas installations with some form of non-compliance when measured against the requirements of prescribed standards (15% of inspections). This figure has substantially reduced when compared to the previous reporting period that recorded a rate of 29% non-compliance. This shows that GSS programs are working at substantially reducing public risk.

Notification and Certification

The *Gas Act 2019* installation, notification and certification procedures used by gas-fitters to certify installation compliance continue to operate effectively.

The Director continues to investigate improvements in response to industry calls to streamline and upgrade the current paper-based notification processes. It is envisaged that, over time, any future system will allow for the management of enforcement actions, integration of occupational licensing and other current data to drive educated risk-based compliance programs and scheduling for gas installation safety inspections.

Through collaboration with all gas suppliers, the Director's certification auditing has identified a minor number of gas-fitters who continue to not provide notification that they have undertaken prescribed work. Given the importance of information provided in gas-fitter notifications for the targeted remediation of unsafe gas appliances, the Director has implemented further regulatory enforcement actions aimed at promoting compliance.

Auditing also identified that gas-fitters were not aware of their obligation to provide certification for gas-fitting work involving the servicing of gas installations and appliances. Subsequently, a targeted education program was implemented which has resulted in increased knowledge of the as-installed gas installation landscape, including ongoing risks posed by older less technologically advance gas appliances.

Complex and Prescribed Standard Gas Installation Design Acceptance

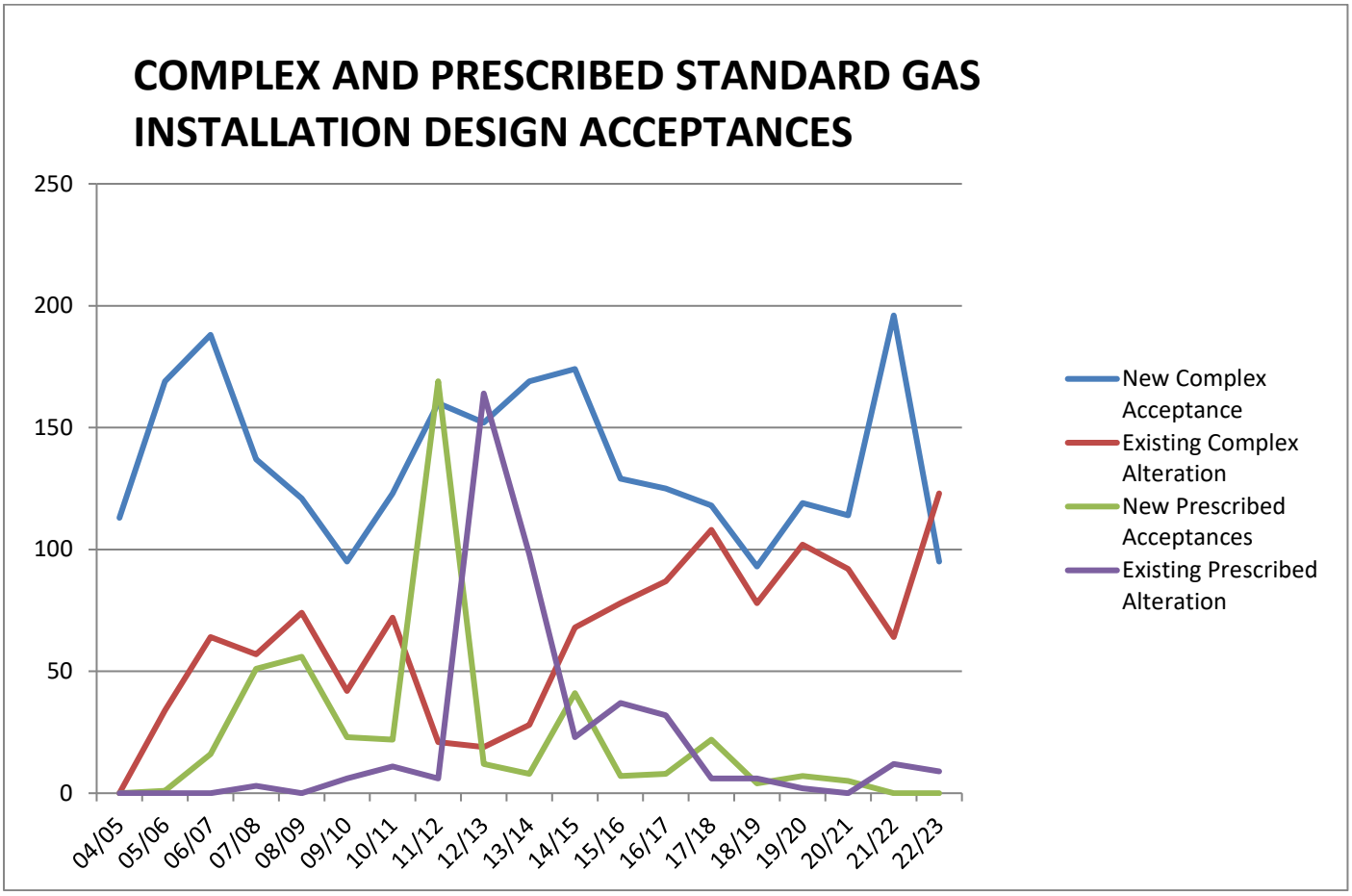
Complex gas installation submissions remain reasonably steady. This resulted in GSS completing the design assessment of 228 complex gas installations on average per year during the reporting period. These were primarily at commercial sites. This prescribed function is essentially reactive to industry demand and linked to consumer gas uptake.

The ongoing number of alterations and additions to existing gas installations illustrates that those who have previously shifted to gas as a source of energy have experienced benefits and are looking to further decrease costs and business efficiencies.

Prescribed standard gas installation connections have continued a downward trend with the vast majority of applications for acceptance received by the Director's Office due to removal and decommissioning of gas installations. This has been driven by a change in focus to the electrification of social housing.

A significant resource was allocated to major gas installations including the recently commissioned furnace 4 at Grange Resources (including steel pipeline hot tap), TasTAFE Water & Energy Trades Centre of Excellence, Devonport Novatel and turbine software upgrades at the Tamar Valley Power Station. Due to the size, location and associated risks, the Director received and reviewed safety management systems developed for the ongoing integrity and safety of these gas installations.

Figure 3

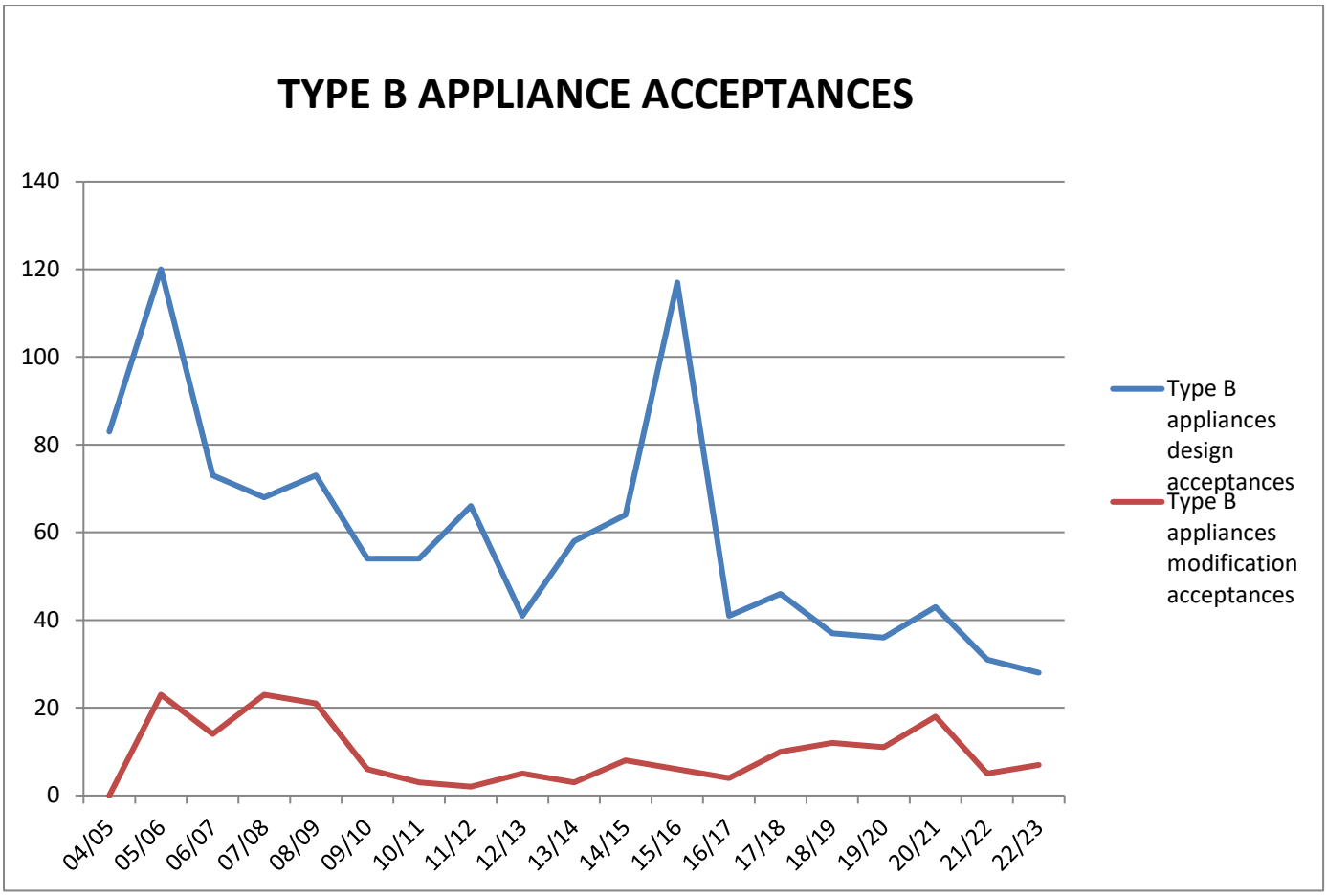


Type B Gas Appliance Acceptance

The Director's Office completed acceptances for 132 Type B gas industrial appliance designs during the reporting period. Significant projects continue to impact on the demand for the services of the Director's Office and staff expertise, including acceptance and integrity management of the conversion of furnace 4 at Grange Resources and turbine software upgrades at the Tamar Valley Power Station.

The expansion of appliance control functions and their use in the gas industry to provide energy efficiencies has increased the complexity of Type B appliances and demanded extended application reviews and acceptance time frames.

Figure 4



Type A Gas Appliance Class Certifying External Authorities

Safety-critical testing of high-risk appliances was implemented by the Director in February 2021. This followed recommendations of a cost-benefit analysis that advocated two-yearly safety-critical testing of high-risk gas appliances. Considering options for the administration of such appliances, on and off the high-risk appliance list, supported a hazard-based model administered by the GTRC. Subsequently, the GTRC meets twice a year with certification bodies to consider risks associated with distinct appliance use and national incident data.

The number of authorities approved by the Director to certify Type A gas appliances and components reduced from 6 to 5 during the reporting period following Vipac Engineers & Scientists Ltd's decision to leave the Australian market. Gas appliances and components must be certified as compliant with safety standards before being made available for sale in Tasmania.

Energy Safety Victoria (ESV) audited the certifying bodies for the purpose of testing performance against appliance conformance standards. Performance reporting is supplied to each state and the Director accepts the interstate regulator's audit results.

The activities of approved external authorities is measured against nationally consistent gas appliance certification rules published by the GTRC. These rules provide for greater consumer protection owing to harmonised requirements across Australian and New Zealand jurisdictions and consistency of information to external authorities and other stakeholders.

Table 4: Tasmanian approved gas appliance external authorities

Organisation	Address
Australian Gas Association	66 Malcolm Road, Braeside, VIC 3195
BSI Group Australia	Suite 5.02, 484 St Kilda Road Melbourne VIC 3004
Global Mark Pty Ltd	Suite 4.07, 32 Delhi Road, North Ryde, NSW 2113
IAMPO R&T Oceana 'Gas Mark'	1040 Dandenong Road, Carnegie, VIC 3163
SAI Global	286 Sussex Street, Sydney, NSW 2000

Type A Gas Appliance Acceptance – Individual Appliance Certification Schemes

The Director continues to maintain a policy that single gas appliances imported into Tasmania may undergo individual site safety certification and acceptance. This scheme allows unique new non-certified individual appliances to undergo inspection for safety certification against relevant technical standards determined by the Director. Appliance testing undertaken under the individual appliance scheme is less rigorous than laboratory assessment offered by mainstream type testing schemes. Consequently, the scheme must be utilised for genuinely unique gas appliances as opposed to financial gain from importing gas appliances.

A single specific certification scheme approval was granted by the Director during the reporting period for a unique 4 burner cooking range. The availability of overseas gas appliances through the internet is expected to maintain demand for individual certifications.

Prohibition of Sale, Product Withdrawal and Recall of Gas Appliances and Components

The Director may, pursuant to section 50 of the Act, prohibit the supply, sale or use of unsafe gas appliances or components. Due to proactive voluntary recalls and appliance remediation actions taken by gas appliance manufacturers and importers there was only a single prohibition issued on the sale of unsafe and non-compliant gas appliances during the reporting period.

Modern building construction requirements, including reduced ventilation—particularly where there is a negative pressure environment caused by operating kitchen range hoods or bathroom exhaust fans (or both)—have caused concerns nationally with respect to open-flued gas heaters. The combination of a negative pressure environment and new building standards significantly increases the risk of fatality or serious injury from carbon monoxide poisoning.

As a result, the Australian Standard (AS/NZS 5263) was amended to reduce risks associated with open-flued gas heaters. This amendment required additional monitoring devices within the appliance to shut down the heater if dangerous flue gases (carbon monoxide) started entering the room containing the equipment. Due to the speed that industry chose to act on these amendments, and the risks associated with a protracted transition to improved safety requirements, the Director issued a notice prohibiting the sale and installation of open-flued gas heaters that did not meet the requirements of AS/NZS 5263.1.3:2021 Amendment No. 1. The prohibition commenced on 1 December 2022, and will remain in effect until it is withdrawn by the Director.

The Director's Office is actively assisting and supervising gas appliance recalls and safety alerts detailed in Table 5, including subsequent remedial programs instigated during the reporting period. Please note that this is not an exhaustive list of gas appliance recalls initiated during the reporting period.

Table 5: Tasmanian gas appliance and components prohibition of sale, product withdrawal, recall, and safety alert

Appliance	Action	Reason for Action
Coast RV Pty Ltd — Suburban Recreational Vehicle Water Heater	Voluntary national recall, newsletter article, direct mail out to identified caravan retailers and repairers.	If the unit is powered by gas and is operated in an enclosed area—such as caravan or motorhome—carbon monoxide may spill into the vehicle and poisoning could occur resulting in serious illness, injury or death.
Certain Open-Flued Gas Heater	Director prohibition on the sale of open-flued gas heaters that do not meet amended safety requirements.	In the Director's opinion, open-flued gas heaters that lacked the additional safety requirements stipulated in amendments to prescribed standards, are likely to become, by reason of their design or construction, unsafe to use.
AMH Products Pty Ltd — Adria 612PT Slider Caravans Gas Pipe	Safety Alert published on website and social media.	The Truma Combi Hotwater and gas pipe connecting to the hot water system may not be securely mounted. Vibration and movement of the gas pipe can cause it to leak gas within the caravan.
Escea Ltd — Gas Fireplace Models DF700 and DF960	Newsletter article, direct mail out to identified heater owners, approval and auditing of remedial works.	Heat can cause hot spots and a stain or discolouration on framing materials. This may result in slow combustion of surrounding materials and possible future fire.
Brivis StarPro High Efficiency condensing gas ducted heater	Direct mail out to identified heater owners, approval and auditing of remedial works.	Flue pipe joiner has deteriorated on internal Brivis StarPro High Efficiency condensing ducted gas heaters. This resulted in condensate seepage causing rusting of the top of the heater cabinet and, in some isolated cases, may lead to water damage to the heater platform or ceiling.
Astral Pool Natural & LPG Gas Swimming Pool Heaters	Newsletter article, direct mail out to identified heater owners.	Water or moisture may enter the ignition module causing it to fail. This may result in overheating and sparking in the relays and lead to the plastic casing of the ignition module catching fire and/or create a 'false' call for heating, allowing the heater to operate when in the 'OFF' position, bridging the safety circuit and allowing the heater to operate with no water flow.
Swift Appliance Group 500 Series Cooker/Grill and Cooktops	Safety Alert published on website, newsletter and social media, approval and auditing of remedial works.	A part of the gas supply pipe may break or develop a hole. This may cause a gas leak. If the gas leaks in the presence of an ignition source this may lead to an explosion and/or fire.

Carbon Monoxide

A carbon monoxide awareness program continues to be a priority of the Director and the program is consistent with the national strategy for exposure to carbon monoxide.

A significant safety focus has resulted from fatal incidents in Victoria from exposure to carbon monoxide emitted from an open-flued gas heater. To ensure the ongoing safety of the Tasmanian public, the Director prohibited the sale of open-flued gas heaters that do not meet contemporary safety standards. Subsequent auditing found all retailers were offering heaters that were compliant with the Director's prohibition.

This also resulted in considerable education and auditing activities targeting gas-fitters on the safety testing of open-flued gas heaters they install and service. Education has been delivered through statewide training sessions in partnership with Master Plumbers Association Tasmania and implementation of minimum heater service compliance standards.

To quantify the public risk posed by installed open-flued heaters and the implementation of gas appliance servicing standards by gas-fitters, the Director conducts an annual statewide open-flued heater testing program involving a variety of heater brands, models and ages. The inspections also verified the work of as many Tasmanian gas-fitters as reasonably possible. The project to date has involved testing a total of 62 open-flued heaters. Of the 62 heaters, three were disconnected due to unsafe levels of CO spillage into living areas. In all cases, the cause of CO spillage was attributed to extensive home renovations including the installation of high air volume kitchen range hood and bathroom exhaust.

More broadly, public-focused open-flued heater safety educational programs have included warnings on the installation of air extraction systems and the safety benefits of regularly servicing appliances.

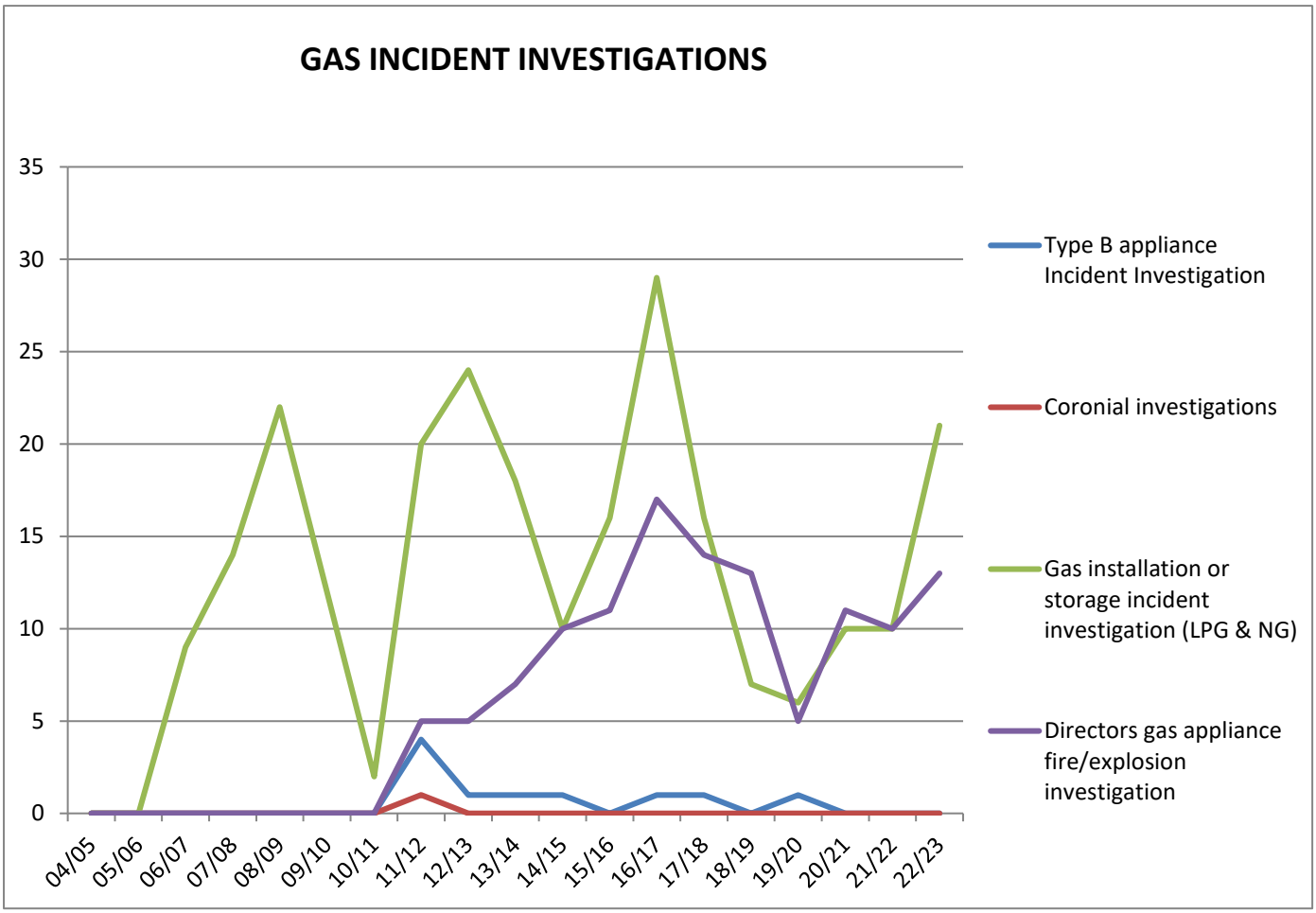
Gas Installation and Appliance Incidents

GSS continued to respond to an increasing number of gas storage, installation and appliance incidents in the reporting period. This increase is a direct result of stakeholder engagement and the subsequent increase in incident notifications to the Director's Office. Despite this increase, GSS is aware of a single incident that involved hospitalisation of a person with non-life-threatening injuries. The Director remains confident that this risk-based intervention program is providing for cooperative industry and consumer safety initiatives.

LP Gas storage and appliance incidents remain the predominant cause of incidents, resulting in 61 investigations. In contrast, natural gas installations only accounted for three incidents. These Tasmanian statistics are consistent with national trends showing a disproportionate number of incidents involving LP Gas storage and appliances compared to other forms of gas installations. This has compelled national gas safety regulators to investigate the replacement of the current POL connection between gas cylinders and appliances. Following considerable industry and stakeholder engagement, the transition to the safer leisure cylinder connection (LCC27 or Type 27 valve) commenced on 1 April 2021. Encouragingly, the Director has not investigated a single incident involving the new LCC27 valve.

The continued collection and maintenance of reliable local and national incident data allows the Director to identify trends in incident root cause. This provides the Director's Office with the evidence to deliver appropriately targeted program strategies in respect of leisure type gas appliances, open-flued heaters and carbon monoxide safety, including management of Australian Standards development and public and gas-fitter educational programs.

Figure 5


GAS INCIDENT INVESTIGATIONS
35
30
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09/10
10/11
11/12
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17/18
18/19
19/20
20/21
21/22
22/23
Type B appliance Incident Investigation
Coronial investigations
Gas installation or storage incident investigation (LPG & NG)
Directors gas appliance fire/explosion investigation

SECTION 5: Office of the Director of Gas Safety Programs/Achievements

The Director has accomplished all reactive programs and has essentially completed the implementation of the gas safety legislation restructure, including the development of valuable and accountable regulatory models to meet public safety expectations.

The following programs are mandated under the *Gas Safety Act 2019*.

Table 6: Operation and maintenance of administrative systems primary outputs

Industry Segment	Business Management System	Output	Reason
Management	Reporting and statistical collation	Report on activities of the Director	Legislative requirement *Gas Safety Act 2019*
	Time allocation data collation for gas licensee activity	Time records	Recovery of reasonable cost pursuant to *Gas Safety Act 2019*
	Communicate with national gas regulators	Maintenance of technical and evolving standards	Safe gas infrastructure, installations and appliances
	Policy development	Monitoring, review and improvement of legislation and prescribed standards	Maintain contemporary regulation in an ever evolving industry
Business administration and appliance programs	Business document control	Administer the document and publications register	Maintenance of document and publications standards
	Web development and management	Review and update the gas website	Quality control of public documents
	Communications management system	Internal delivery of relevant and timely publications	Identify safety, training and educational needs and stakeholder expectations
	Gas appliance (Type A) safety management	Identify and implement unsafe gas appliance notifications	Consumer safety
	Gas appliance approval (Type A) program	Conduct safety approval procedures for appliances and establish national alliances	Consumer safety
	Gas External Authority approval	Ensure competent organisations are approved to examine gas appliance safety	Consumer safety
	Accident and incident investigation program	Respond to accidents and incidents on gas transmission, distribution and installations that pose a risk to supply and public safety	Community safety Gas emergency response
	Undertake commercial sensitivity assessment of gas	Deliver timely Freedom of Information requests	Preserve information confidentiality

Industry Segment	Business Management System	Output	Reason
	infrastructure information records		
	Gas safety management plan (GSMP) acceptances	Ensure adequate GSMP for large or high-risk installations	Safety and reliability of installations
Gas-fitter (including automotive) administration	Gas-fitter installations notification database	Gas-fitter certification data	Verify gas-fitter certifications of gas installations
	Gas installations Acceptance program	Deliver 3 regional installation technical compliance programs	Consumer safety
	Gas appliance design and installation acceptance (Type B)	Deliver 3 regional Type B appliance technical compliance programs	Consumer safety
	Gas-fitter education and management of CPD opportunities	Deliver targeted training and accept external CPD training	Legislative requirement *Occupational Licensing Act 2005*, Consumer safety
	Gas-fitter Licence applications	Verify and endorse gas-fitter licence applications	Legislative requirement *Occupational Licensing Act 2005*, Consumer safety
Gas Transmission and Distribution	Gas Licensee network approval program	Review proposed network submissions	Ensure construction standards compliance
	Gas Licensee network integrity monitoring	Review of safety cases	Ensure acceptable levels of public risk and supply integrity
	Installation disconnections and reconnection procedures	Deliver timely disconnection orders	Control unsafe or non-compliant gas installations
Gas Storage and Conditioning	Gas Storage Systems	Design acceptance and supplier/stakeholder management project	Target supplier compliance in existing and new gas storage products
	Gas Storage Systems safety management and emergency response planning	Approval of GSMP	Consumer and public safety enhancement

Regional Delivery of Programs

The Director continually improves programs to meet the expectations and safety outcomes of industry and the public in line with CBOS strategic principles. Programs that have substantially reduced regulatory and public risk include:

- education of gas-fitters on the requirements for revised standard/s, certification and notification framework for automotive gas-fitting installation

- open-flued heater flue testing program
- enhanced audit templates to deliver inspection efficiencies and increased data scrutiny
- increased enforcement activity including utilisation of monetary penalties
- targeted catering/food van safety program
- use of compliance data to target and align regulatory activities with demonstrated risks.

To ensure transparency in the delivery of these programs, the Director published a dedicated gas industry enforcement policy as part of the broader CBOS compliance and enforcement strategy.

The Director remains hopeful that the replacement of the current, manual-based administration system with a contemporary software-based safety compliance, inspection and audit management system will facilitate efficiencies for both CBOS and industry, and will enhance compliance activities.

Table 7: Summary of Achievements

Activity	Function	Safety Outcome
Gas Distribution and Storage		
Audit implementation of risk reduction measures and infrastructure management plans	Ongoing pipeline integrity and public safety	Reduce levels of public risk and enhance reliability
Review network formal safety assessments and safety management systems	Ensure ongoing contemporary, safe and compliant system design	Maintain infrastructure safety and control public risk
Contribute to the development of appropriate safety standards	Contributing members of Australian standards committees for gas networks, and gas storage	Protection of public through contemporary compliance standards
Tasmanian gas supply emergency management	Tasmanian Jurisdictional Contact Officers under national (NGERAC) planning frameworks. Stakeholder engagement and development of stakeholder obligations	Enhance Tasmanian natural gas supply emergency planning
Investigated uncontrolled gas release incidents on gas infrastructure including successful prosecution for excavating in the vicinity of gas infrastructure without permission	Identify causation of incidents, review operational standards and instigate regulatory actions	Prevent recurrence of uncontrolled gas incidents, and ensure acceptable levels of public risk
Reviewed network reliability, integrity, operational management, public safety and condition survey	Ensure compliance, adequacy, currency, accuracy and reliability of operational records	Maintain supply safety and control public risk

Activity	Function	Safety Outcome
Reviewed development of gas licensee operations pipeline integrity management plans	Ensure compliance and adequate management of gas infrastructure through documented policies and procedures	Maintain supply safety and control public risk
Compliance audit program for LNG gas pipeline facilities	Ensure compliance of emergency response and planning	Maintain infrastructure safety and control public risk
Gas-fitter Licensing and Gas Worker Accreditation		
Collaboration with stakeholders to identify required training and skills development for CPD	Ensure comprehensive standards for training	Ensure that competent persons undertake all forms of gas-fitting work
Developed and delivered targeted training to wider gas-fitting industry	Maintain gas-fitter competency around topical technical issues	Ensure gas installation compliance and standards providing adequate level of consumer safety
Investigated non-compliant gas installation work standards and resultant safety issues	Issue gas-fitter defects, infringement, consumer disconnect and rectification notices	Ensure gas installation safety standards for consumers
Provided advice and conducted investigations	Ensure compliant gas-fitting and licensing standards	Ensure safe gas-fitting and licensing standards
Gas Appliances and Installations		
Contribute to the development of appropriate safety standards	Contributing members of Australian standards committees for gas installations and Type B appliances	Protection of public through contemporary compliance standards
Investigated uncontrolled gas incidents on in situ and portable gas appliances	Identify causation of incidents and review technical standards	Prevent reoccurrence, produce education materials, web information and implement product withdrawal standards
Collaborated with national gas technical regulators on gas appliance safety concerns and initiated actions in respect of appliance certification bodies, suppliers and consumers	Minimise the likelihood of death or injury from exposure to unsafe gas appliances	Protection of consumers
Implemented open-flued heater and carbon monoxide education and audit programs	Minimise the likelihood of death or injury from exposure to carbon monoxide	Prevent reoccurrence and provide education
Continued to research, review and adopt relevant technical standards and codes for gas appliances	Develop, in conjunction with GTRC, appliance certification scheme rules	Ensure a consistent and robust national appliance certification scheme that effectively delivers safety outcomes for ever increasing imported products

Activity	Function	Safety Outcome
Continued to engage with proponents and develop and implement gas safety management planning for LNG, CNG, biogas storage and utilisation	Ensure gas storage systems installations achieve acceptable levels of risk control and emergency preparedness	Manage consequences and inherent risks
Gas Technical Standards and Working Groups		
Participate and contribute to national and state hydrogen development and regulatory working groups	Ensure evolving non-conventional gas developments achieve acceptable levels of risk control	Set nationally consistent contemporary design, installation, commissioning and operational specifications
Tasmanian gas supply emergency management including development of network gas quality excursion protocols	Tasmanian Jurisdictional Contact Officers under national (NGERAC) planning frameworks. Stakeholder engagement and development of stakeholder obligations	Tasmanian gas supply emergency management including development of network gas quality excursion protocols
Participated in development of Australian safety standards	Ensure evolving gas appliance, installation, infrastructure and non-conventional gas developments achieve acceptable levels of risk control	Set contemporary design, installation, commissioning and operational specifications
Stakeholder Relations		
Facilitated stakeholder meetings for the management of buried infrastructure	Development of safe work procedures for work adjacent to buried infrastructure	Ensure worker safety, recording and quality of location information
Continued to facilitate gas licensee meetings for the management of safe gas infrastructure	Maintain adequacy of management communications	Ensure safety and reliability of Tasmanian NG supplies
Contributed to national Gas Technical Regulator Committee programs	Harmonise gas product and legislative outcomes to national standards	Maximise safety and economic outcomes to gas consumers
Communications and Education Management		
Provided industry specific training presentations including regional forums and open-flued heater adverse flow training	Provide targeted guidance in respect of ground works adjacent to buried gas infrastructure, and gas-fitting work standards	Manage public risk by ensuring relevant industry stakeholders are aware of their obligations and safety expectations
Administered a gas specific internet site and gas safety publications	Facilitate stakeholder and consumer access to gas technical standards and safety information	Provide timely delivery of industry communications products
Contribute content for Connections trade and consumer magazines, and social media	Improve stakeholder and end user education on gas safety	Enhance gas education policy and expand audience

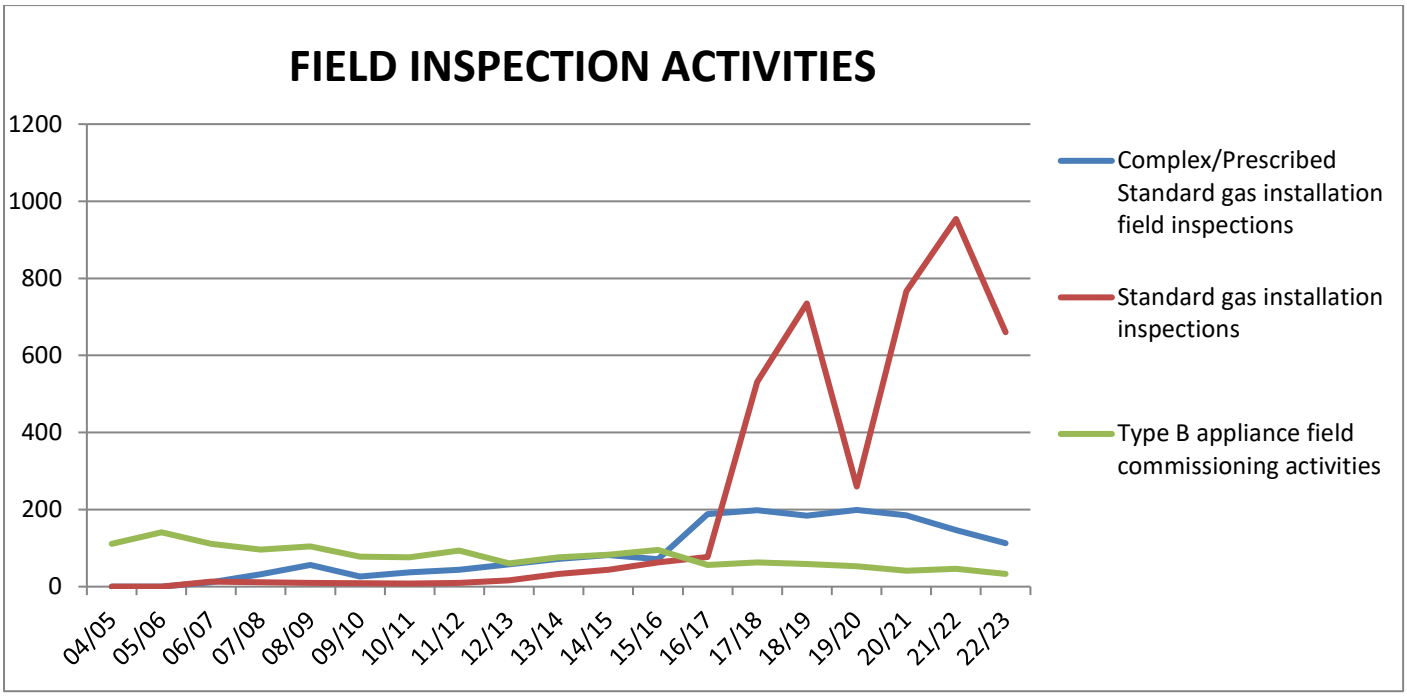
Activity	Function	Safety Outcome
Issued Guidance Notes following investigations	Provide stakeholder advice	Enhance safety of civil and gas workers
Business Administration		
Administered, reviewed and identified opportunity for business management improvement	Continue development of risk based business unit models	Efficiently administer all business processes
Review of document standards for web viewing	Improve industry efficiencies	Enhance timely delivery of services
Continued targeted training of staff	Ensure adequacy of regional safety and technical coverage thus improving output in line with industry and community expectations	Ensure acceptable staff knowledge and enhance timely delivery of services
Policy Development		
Review of Act and Regulations	Ensure adequate and improved regulatory requirements to facilitate safe outcomes in an evolving industry	Provide consistent and contemporary gas safety framework

Inspection Program

Demand for complex, prescribed standard gas installation and Type B appliance inspections remained comparatively stable for the reporting period. To ensure appropriate management of resources, the Director's Office examines the inherent risk of individual installations and appliances to enhance field-based inspection programs. This resulted in an increased focus on inspection activities involving mobile food and catering vans, and open-flued gas heaters.

GSS intensified its proactive regional standard gas installation inspection schedule following program limitations resulting from COVID-19. Targeted recruitment has also ensured a dedicated statewide role for the management of standard gas installations, substantially reducing the regulatory and public risk posed by historical constraints.

Figure 6



Technical Standards Development

Development of safety and technical standards for the Tasmanian gas industry is undertaken to meet emerging trends and technology advancements. Consultation between industry stakeholders, end users, interstate regulators and gas industry organisations is ongoing to ensure currency, relevance and completeness of Tasmanian gas standards.

GSS routinely provides technical comment and feedback to Australian Standards committees in respect of published amendments and drafts (refer Table 8).

The Director is also represented on Australian Standards committees ME-093 *Hydrogen Technologies*, AS 5601 *Gas installation* (AG-006), AS 3814 *Industrial gas appliances* (AG-001-00-05), AS 1596 *The storage and handling of LP Gas* (ME-15) and AS/NZS 4645 *Gas distribution networks* (AG-008).

Considerable resources are required to ensure appropriate input into the core standards used by gas-fitters for general gas-fitting work including caravans/boats, and the evolving hydrogen industry standards as they are developed to manage the safety of hydrogen production, utilisation, storage and handling, transportation/distribution and end-use utilisation.

Table 8: Technical Standards Development and Implementation 2021/24

Standard	Title	Revisions
AS 2885.3	Pipelines – Gas and liquid petroleum, Part 3: Operation and maintenance	Emphasis on sound integrity management planning processes rather than specific planning documentation, periodic fit for purpose assessment, improved instruction regarding external interference management, anomaly management and operational changes, management systems designed to meet safety case legislation and cracking susceptibility review requirements.
AS 4564	General-purpose natural gas	Clarification and review of oxygen/nitrogen limits to ensure mixtures of NG with hydrogen and biogas are safe for consumer consumption.

Standard	Title	Revisions
AS 5263	Gas appliances	Amendments aimed at providing additional gas appliance safety and performance assurances for manufacturers, designers, regulatory authorities, testing laboratories and similar organisations including additional open-flued gas heater safety interlocks and a new part covering small gas engines.
SA TS 5342	Technical specification for building commissioning	Provide a common framework and standardised minimum requirements for the building commissioning process and its related management activities.
AS/NZS 5601.1	Gas installations, Part 1: General installations	Considerable amendments following the identification of risks and shortcomings resulting from incident investigations, industry revolution and impetus on low carbon gases including additional requirements for the installation of multilayer consumer piping, protection of flammable materials and flue termination location.
Multiple	Standards committee ME-093	Development, consultation and publication of new standards to meet the evolving needs for the production, handling and storage, pipeline and gas distribution networks and end use utilisation, fuel cell applications and mobility applications for hydrogen.

Vehicle Gas-fitting and Stationary Engines

Until the proclamation of the *Gas Safety Act 2019*, the automotive gas-fitting industry has essentially been unregulated since the rescinding of the *Dangerous Goods (General) Regulations 1998* on 30 June 2009. Following substantial stakeholder engagement, GSS rolled out a contemporary regulatory framework during the reporting period including provisions for prescribed automotive gas-fitting work returns and compliance plates.

Despite this, and whilst the vehicle gas-fitter competency training package for LNG, CNG and LP gas vehicles delivered by TasTAFE and the occupational licensing scheme administered by Technical Regulation are operating effectively, the commercial uptake of gas as an automotive fuel continues to be slow.

On the other hand, the Director continues to accept Type B applications for stationary reciprocating and rotating engines for the generation of electricity, both as an emergency backup and primary generation. With the recent publication of a dedicated Australian compliance standard for reciprocating engines consuming less than 1000 megajoules per hour (Mj/h), and the subsequent simplification of appliance approval processes, it is expected this trend will filter into the domestic and recreational areas.

As a result of Government initiatives, including the trial of the hydrogen fuel cell electric vehicle (FCEV) in Hobart, the Director has been consulting extensively to ensure the coordination of a contemporary and nationally consistent regulatory framework to regulate this novel method of vehicle propulsion. This is expected to culminate in legislative amendments to provide the most efficient and effective regulation of the emerging H2 automotive industry.

Gas Committees and Associations

The Director remained actively involved as a member of the GTRC. Membership of this national committee provides Tasmania with current gas appliance and gas technical and safety information exchange, including products withdrawn from market, illegal sales of equipment, and audit results by interstate regulators on

appliance certifying bodies. GTRC member communications frequently result in product warnings to the Tasmanian public, gas-fitter communications and appliance safety investigations.

The Director also participates in a National Upstream Gas Infrastructure Forum. This forum is designed to be similar to the GTRC, with membership from Australian and New Zealand jurisdictional gas technical regulators, however, it has an emphasis on upstream gas infrastructure. This forum provides a significant opportunity for regulators to discuss and share issues, initiatives and data pertaining to gas infrastructure assets and safety.

In addition to the Director's reactive state-based gas supply coordination role, the Director is also the Tasmanian JCO for the purposes of the NGERAC. This permitted the Director's Office to participate in a valuable national energy curtailment cyber related emergency exercise that highlighted energy interrelationships due to gas fired electricity generation.

An increasing number of national and state committees exploring and initiating the implementation of government's hydrogen ambitions are developing into a major focus for the Director for facilitating frameworks in this novel industry. These committees involve a diverse range of emerging themes including research, safety standards, regulatory frameworks and national regulatory consistency.

Table 9: Participation in committees and organisations

Committee	Member organisations	Committee purpose
Gas Technical Regulators Committee (GTRC)	All Australian states and New Zealand gas technical regulators	Harmonisation of national gas safety standards. Industry communications. Acceptance of external authority performance audit.
National Gas Emergency Response Advisory Committee (NGERAC)	Federal jurisdictions, Gas infrastructure owners, GSS, Department of State Growth	Facilitate efficient and effective communication across industry and government during major national natural gas supply shortages.
Australian Standards Committees	Numerous	Provide Tasmanian input into evolving issues and continual improvement of technical standards for public and infrastructure protection.
National Upstream Gas Infrastructure Forum	All Australian states and New Zealand gas technical regulators	Harmonisation, discuss and share issues, initiatives and data pertaining to gas infrastructure assets.
Future Fuels CRC	Majority of Australian states, universities and private enterprises	Research and develop appropriate hydrogen policy and safety standards
Tasmanian Hydrogen Regulatory Working Group	ReCFIT, EPA, Hydro, Aurora, Bell Bay Advanced Manufacturing Zone, Tas Fire Service, TasWater, Tas Irrigation	General discussion on issues for regulatory and safety frameworks supporting a hydrogen industry

Policy Development and Legislation

Following a major review of both the *Gas Pipelines Act 2000* and the *Gas Act 2000* the Gas Safety Bill and Gas Industry Bill passed both houses of Parliament and received Royal Assent on 9 and 10 April 2019 respectively. Proclamation and subsequent commencement of these Acts of Parliament and Statutory Rules occurred on 3 February 2021.

To provide industry with guidance in the event that off specification gas enters Tasmanian gas infrastructure, GSS, in consultation with all stakeholders that play a part in the Tasmanian NG supply chain, drafted and implemented an Off Specification Natural Gas Communications Protocol. The protocol provides for a collaborative framework for the management of any future off specification NG incidents with the aim of reducing the likelihood of gas supply shortages and forced gas consumer curtailment.

The Director was also instrumental in the review and remaking of the sun setting Occupational Licencing (Gas-Fitting Work) Regulations. This provided the opportunity to update regulatory frameworks to meet contemporary industry expectations and evolving gas utilisation including FCEV gas-fitting.

As a result of Government initiatives including the trial of FCEV in Hobart, GSS has identified further anomalies in current legislation that do not provide for the most efficient or effective regulation of the emerging H2 automotive industry. Whilst H2 is 'gas' for the purposes of the Act/s, the issues arise from the fact that the *Gas Safety Act 2019* and *Occupational Licencing Act 2005* refer to automotive gas fuel systems as installations feeding an internal combustion engine. The fuel cells of Hydrogen fed FCEV are not considered to be an internal combustion engine. As a result, fuel cells in every vehicle ever used in Tasmania will be classified as a Type B appliance for the purposes of the *Gas Safety Act 2019*, therefore requiring an application for acceptance and approval from the Director for every vehicle. This is not an ideal or feasible regulatory model if the H2 transport industry were to expand as the Government is advocating.

The Director continues to participate in cross administrative policy working groups providing input into regulations made under the *Gas Industry Act 2019* including new Gas Industry Regulations and reforming of the *Gas Infrastructure Planning Permit Exemption Regulations 2014*. The Gas Industry Regulations are aimed at extending the definition of gas to include renewable gases, hydrogen and biomethane.

Communications and Gas Safety Education

Development of educational information to inform stakeholders of legislative and technical matters has remained a focus during the reporting period. See Table 10 for outputs of this program.

To ensure consumers are aware of the risks associated with purchasing gas appliances and equipment on-line, the Director released comprehensive guidance material explaining how consumers can protect themselves including what to look for on safety certified gas appliances.

The Director continues to investigate opportunities to deliver online training and forums. Through GSS's engagement with TasTafe, gas appliance servicing and caravan gas-fitter upskilling training material have also been made available online for gas-fitters.

Table 10: Communication products

Program	New or Managed Output 2021/24	Target Audience
CBOS website	Maintained and upgrade gas safety and technical standards website	Gas consumers Gas-fitters Gas workers Gas distributors Community Rural landowners Infrastructure owners
Monthly E-newsletters	Up to date technical gas topics	Gas-fitters
Presentations	Revision of 5601.2 and LCC 27 valve roll out	Gas-fitters
	Revision of 5601.1	Gas-fitters
	Gas Safety and role of CBOS	TasTafe gas-fitting classes
Gas safety and technical publications	Guidelines setting out the frameworks and expectations around automatic mutual recognition	Interstate gas-fitters
	Gas appliance safety brochure	Consumers
	LP Gas cylinder adaptor hazard alert	Consumers
	Updated CO awareness fact sheets	Gas-fitters Installation owners
Expos and other public events	AGFEST, Lifestyle Leisure Expo, and Burnie, Hobart and Launceston agricultural shows	Gas consumers Gas-fitters Gas workers Community Rural landowners Civil Contractors RV industry
Social media (Facebook)	Provide gas appliance safety and recall information and links to public and industry	Gas-fitters Consumers
Education and upskilling	Instigation and roll out (through TasTafe) of on-line caravan and boat gas-fitting refresher training	Gas-fitters who hold the boat and caravan licence endorsement

Emergency Incident Coordination

The Director maintains management plans and internal procedures for 'onshore' emergency gas incident response. Emergency Incident Response Management plans and the staff availability roster have operated successfully to cater for an expanding use of different fuel gases and complexity in gas supply chain management. As a result, the Director of Gas Safety's incident response management program continues to enhance enforcement of real time isolation of uncontrolled gas escapes and incident recovery activities.

The NG supply industry assembled on 13 November 2023 to participate in an emergency response exercise. The Director was involved in the exercise planning and facilitation team in conjunction with ReCFIT, TGP and TGN. The objectives of the exercise were to:

- Assess the suitability of interfaces between emergency provisions of contemporary legislation and current reactive market mechanisms including effectiveness of stakeholder interactions.
- Ascertain the strength and nature of relationships between government and industry in managing a gas supply emergency in Tasmania.
- Identify gaps in existing emergency planning arrangements for a gas supply emergency in Tasmania.

The exercise was well regarded by participants and scored highly for organisation, exercise control, and benefited participants by enhancing their knowledge and emergency management relationships. As the first exercise of its type held in Tasmania for some time (around 10 years), it provided all participating organisations with valuable insights.

Responses to 58 installation and supply incidents during the reporting period and a total of 459 over 15 years of implementation has been beneficial to Tasmania Fire Service and Tasmania Police in responding to incidents and ensuring safe procedures for gas isolation and recovery.

SECTION 6: Inter-government Industry Administration

The enactment of the *Gas Safety Act 2019* and *Gas Industry Act 2019*, as expected, has preserved collaboration with the Office of the Economic Regulator which continues to ensure a smooth path for pipeline and retailer approvals and licensing.

Intergovernmental administration has been further enhanced with substantial cooperation with the Tasmania Fire Service, ReCFIT, WorkSafe Tasmania and the Office of the Coordinator General in relation to hydrogen and biogas development, implementation of occupational licensing automatic mutual recognition, expansion of existing infrastructure and emergency management. This guarantees sound intergovernmental communications and increased response capability, which provides a consistent and harmonised response from government.

SECTION 7: Conclusion

Gas infrastructure and evolving gases required substantial resourcing including the auditing of pipeline field activities and emergency preparedness, integrity studies including cathodic protection and coating surveys, and third-party encroachment incident causation analysis. The lessons learned from this analysis forms part of ongoing broader consultation across industry stakeholders and aids in the development of targeted and focused educational material.

COVID-19 initially hindered some field-based programs, however, the Director is confident that targeted intervention programs, implemented in line with the identified risk areas, continue to provide the public value, accountability, efficiencies and effectiveness expected by stakeholders. This includes the provision of robust infrastructure and integrity management planning that provides critical indirect assessment actions required to ensure the ongoing integrity of pipelines in which an integrity gauge cannot be operated (unpiggable).

Brad Wheeler
DIRECTOR of GAS SAFETY

APPENDIX 1: Glossary and Abbreviations

CBOS	Consumer, Building and Occupational Services
CNG	Compressed Natural Gas
Director	Director of Gas Safety
GSMP	Gas Safety Management Plan
GSS	Gas Standards and Safety (Unit of CBOS)
GTRC	Gas Technical Regulators Committee
JCO	Jurisdictional Contact Officer
kPa	Kilo Pascals
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MAOP	Maximum Allowable Operating Pressure
Mj/h	Mega Joules per Hour (Unit of Gas Consumption)
NGERAC	National Gas Emergency Response Advisory Committee
NG	Natural Gas
PIG	Pipeline Integrity Gauge
TGN	Tas Gas Networks
TGP	Tasmanian Gas Pipeline