

The background of the cover is a photograph of an industrial gas filling station. A worker in a high-visibility vest is operating a Toyota forklift, moving large metal gas cylinders. In the background, a large sign reads 'A-GAS'. The foreground is filled with rows of gas cylinders, some with teal caps and others with yellow caps. A large pink triangle is on the left side of the image, containing the text.

Towards
ZERO,
Together

SUSTAINABILITY REPORT 2022

A-GAS[®]
TOGETHER WE CAN

CONTENTS

INTRODUCTION	03	ENVIRONMENT	28	GOVERNANCE	55
04	An Introduction from Our CEO, Jack Govers	29	Our Approach	56	Our Governance
06	About Our Business	30	Roadmap to Net-Zero	59	Managing a Responsible Business
07	Our Story	33	Improving Efficiency Across Our Operations		
08	The A-Gas Way	35	Championing Circularity	APPENDIX	62
09	How We Are Building a Sustainable Future			63	Methodological Note
11	How A-Gas is Mitigating the Environmental Impact of Refrigerants	SOCIAL	37	67	Glossary of Terms
12	How We Create Value	38	Our Approach	69	Assurance Statement
14	Products, Services and Markets	39	Focusing on Health, Safety and Wellbeing		
16	Our External Environment	45	Attracting and Retaining Talent		
		49	Supporting People's Goals and Development		
TOWARDS ZERO, TOGETHER	18	50	Compensation and Benefits		
19	Towards Zero, Together	51	Fostering Diversity, Equity and Inclusion (DE&I)		
23	Our Contribution to the UN Sustainable Development Goals	54	Supporting Our Communities		
24	Engaging with Our Stakeholders				
26	An Interview with Ken Logan, Group Sustainability and Regulatory Director				



A row of blue refrigerant gas cylinders on a factory floor. The cylinders are arranged in a line, receding into the background. They have a blue mesh safety cover and a blue handle on top. The background is slightly blurred, showing industrial equipment and a person in a yellow safety vest.

SECTION ONE

INTRODUCTION

IN THIS SECTION

- 04 An Introduction from Our CEO, Jack Govers
- 06 About Our Business
- 07 Our Story
- 08 The A-Gas Way
- 09 How We Are Building a Sustainable Future
- 11 How A-Gas is Mitigating the Environmental Impact of Refrigerants
- 12 How We Create Value
- 14 Products, Services and Markets
- 16 Our External Environment

An Introduction from Our CEO, Jack Govers

Here at A-Gas, we are on a sustainability journey, one that is underpinned by our commitment to our purpose:

To protect and enhance the environment by effectively managing the lifecycle of refrigerants to build a sustainable future.

In a highly regulated industry, driven by the Montreal Protocol and its Kigali Amendment, A-Gas is well positioned to provide innovative solutions to enable the successful implementation of regulation in each region. As an industry, we must transition to lower Global Warming Potential (GWP) alternatives and ensure that potentially harmful legacy refrigerants are carefully managed to prevent their release into the atmosphere. The recovery and subsequent reclamation or safe destruction of used refrigerants is key to mitigate the environmental impact of products that remain critical to our everyday lives.

This is Lifecycle Refrigerant Management (LRM), and it is imperative in delivering a sustainable future for our industry.

Environmental

A-Gas is a world leader in LRM, and every single person in the A-Gas team has an important role to play. If we were to add together all the used gas that our expert teams across the globe recovered, reclaimed, repurposed or destroyed during 2022, it would total 8.6 million tons of CO2 equivalent*. This is a significant number and comparable to emission reductions achieved by taking 1.8 million cars off the road for a year or planting 123 million trees. This is why LRM is one of the most effective ways to help decarbonise our planet.

We recognise that our commitment to protect the environment must extend beyond our product and service offering and begins with our own activities and behaviours as a business and as individuals. We have pledged to become net-zero by 2035 and to reduce our existing emissions by 50 percent by 2028. This is an ambitious target, but I am confident that our global teams will deliver on our planned emission reduction projects.

*a percentage of the total carbon abatement is derived from including the GWP of all Ozone Depleting Substances (ODS) processed.





Social

What has remained key to our success over our 30-year history is our people. We are committed to keeping A-Gas a great and safe place to work, putting safety at the forefront of everything we do to protect ourselves and our colleagues at all times. Our 2022 recordable incident rate, at 1.88, was a vast improvement on the 2021 figure (3.14). We believe that every incident is preventable and continue to work to reduce accidents and injuries across our global sites.

We are focused on building the best A-Gas team we can, developing new skillsets and training our teams in new capabilities. We frequently ask our employees, formally and informally, how we can do better.

We promote diversity and equal employment opportunities throughout our global locations. We also pro-actively participate in government programs that support this, like the Broad-Based Black Economic Empowerment (BBBEE) programme in South Africa, which aims to facilitate broader participation in the economy by black people.

Together, we can.

Jack Govers, CEO

Governance

Our business activities, from the way we fill a cylinder and recover refrigerant, to the way we carry out our financial reporting and meet our auditing obligations, are governed by strict policies and procedures.

We are committed to conducting business in a way that respects and protects human rights. We endeavour to limit the risk of modern slavery and bribery and our in-house policies and dedicated training resources are designed to protect our business and our people, our supply chain network and our customers.

This year we have specifically focused on cybersecurity. With phones, computers and the internet now being part of modern life at home and in the office, it is more important than ever to ensure we prevent cyber criminals impacting our people and our business.

Please enjoy reading our first external Sustainability Report. We are proud of what we do at A-Gas, and I am confident our focus, engagement and projects will continue to support the world towards building a sustainable future.



About Our Business

Every day, people from all over the world come into contact with what we do.

As the demand for cooling and refrigeration grows, A-Gas is at the forefront of supplying and managing the refrigerants that we rely on in our daily lives; they are critical to the way we live.

By the simple act of transferring heat from one place to another, refrigerants cool and preserve food, drink, medicines, and other essential products through refrigeration and freezing. They are the lifeblood of the air conditioners and heat pumps that keep our homes and workplaces comfortable.

As global temperatures continue to rise, the demand for cooling, and therefore refrigerants, is growing worldwide and it is critical that this increased demand is met in an environmentally responsible way.

Many legacy refrigerants are ozone depleting and, due to their high Global Warming Potential (GWP), are potent greenhouse gases. Because of this ability to deplete the ozone layer and damage our climate, refrigerants are highly regulated substances.

As an industry, we must transition to lower GWP alternatives and ensure that potentially harmful legacy refrigerants are carefully managed to prevent their release into the atmosphere.

This is our business.

A-Gas is a world leader in the supply and lifecycle management of refrigerants and associated products and services. Through our market-leading recovery, reclamation and repurposing processes, we recover refrigerant gases for future reuse or safe destruction, preventing their harmful release into the atmosphere.

This is reflected in our purpose:

Protect and enhance the environment by effectively managing the lifecycle of refrigerants to build a sustainable future.



Our Story

Historically, heating, ventilation, air conditioning and refrigeration (HVACR) systems used refrigerants that were fluorinated gases (F-gases). It was discovered that two types of these gases – chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) – have a high GWP, and damage and deplete the ozone layer if they are released into the atmosphere.

To help protect the Earth's ozone layer from these types of F-gases, the Montreal Protocol was signed in 1987 to phase out nearly 100 Ozone Depleting Substances (ODS). It was the first and only treaty to be agreed upon by all 198 UN member states and is seen as one of the most successful environmental agreements of all time.



Perhaps the single most successful international environmental agreement to date has been the Montreal Protocol, in which States accepted the need to phase out the use of ozone depleting substances.

***Kofi Annan,
7th Secretary General of the United Nations***

In most, but not all cases, hydrofluorocarbon refrigerants (HFCs) became a preferred replacement for CFCs. Although they have no ozone depleting potential, like CFCs and HCFCs they have a high GWP. In 2016, the Kigali Amendment to the Montreal Protocol brought HFCs under its control. Today, HFCs are being replaced by lower GWP alternatives, such as hydrofluorolefins (HFOs) and natural refrigerants, such as hydrocarbons, ammonia and carbon dioxide.

Environmental regulation brought with it an opportunity.

In 1993, the founders of A-Gas recognised the need to support the HVACR and other industries in transitioning away from ozone depleting substances. As industries have responded and refrigerant use has changed over the years, A-Gas has continued to adapt. Our product and service offering today provides innovative solutions to enable the Montreal Protocol and its regional implementation to be successful while supporting the growth of the markets in which we operate. In doing so, our business has reduced the overall impact of refrigerants on the climate.

Although regulation has been a key driver in reducing the global climate impact of refrigerants, our industry often faces criticism because of the environmental damage that refrigerants can cause if released into the atmosphere. While the Montreal Protocol has spearheaded the move away from the manufacture of ODS and high GWP products, the historical use of these older-generation refrigerants creates a complex emissions profile, as well as a large decarbonisation opportunity for those operating within the industry.

A-Gas plays a critical role in mitigating this problem by effectively managing the lifecycle of refrigerants and increasing their circularity. We support the transition to lower GWP alternatives and recover and reclaim used refrigerants or, where no reuse is possible, destroy them to prevent their release into the atmosphere. This is known as Lifecycle Refrigerant Management (LRM). It is essential for delivering a sustainable future for our industry.

The A-Gas Way

With three decades of innovation, teamwork and growth, we have continuously invested in our products, services and technology. Today, A-Gas spans over 15 countries, across six continents and has more than 70 locations worldwide.

Our people and the unique culture we have built over the years has remained central to our success. We call this **The A-Gas Way**. Centred around our core values - Teamwork, Purpose Driven and Customer Focused, it is the why, the what and the how of the way we do business at A-Gas.

The **why** relates to our purpose:

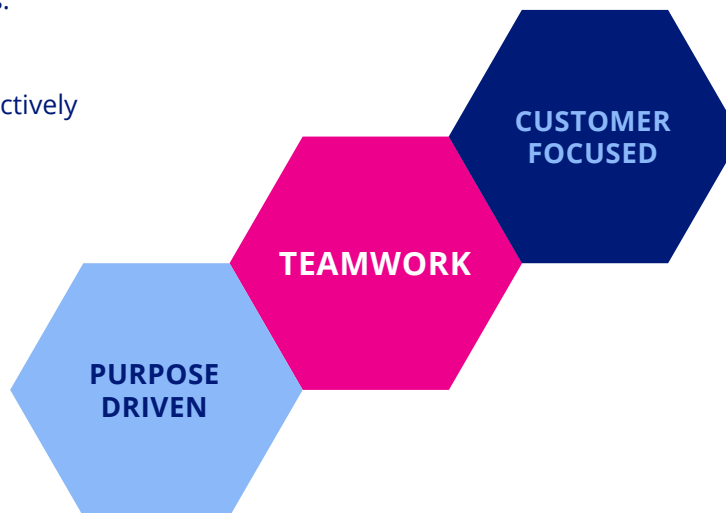
to protect and enhance the environment by effectively managing the lifecycle of refrigerants to build a sustainable future.

The **what** is our goal:

to become a safer, net-zero organisation that delivers customer growth and engagement.

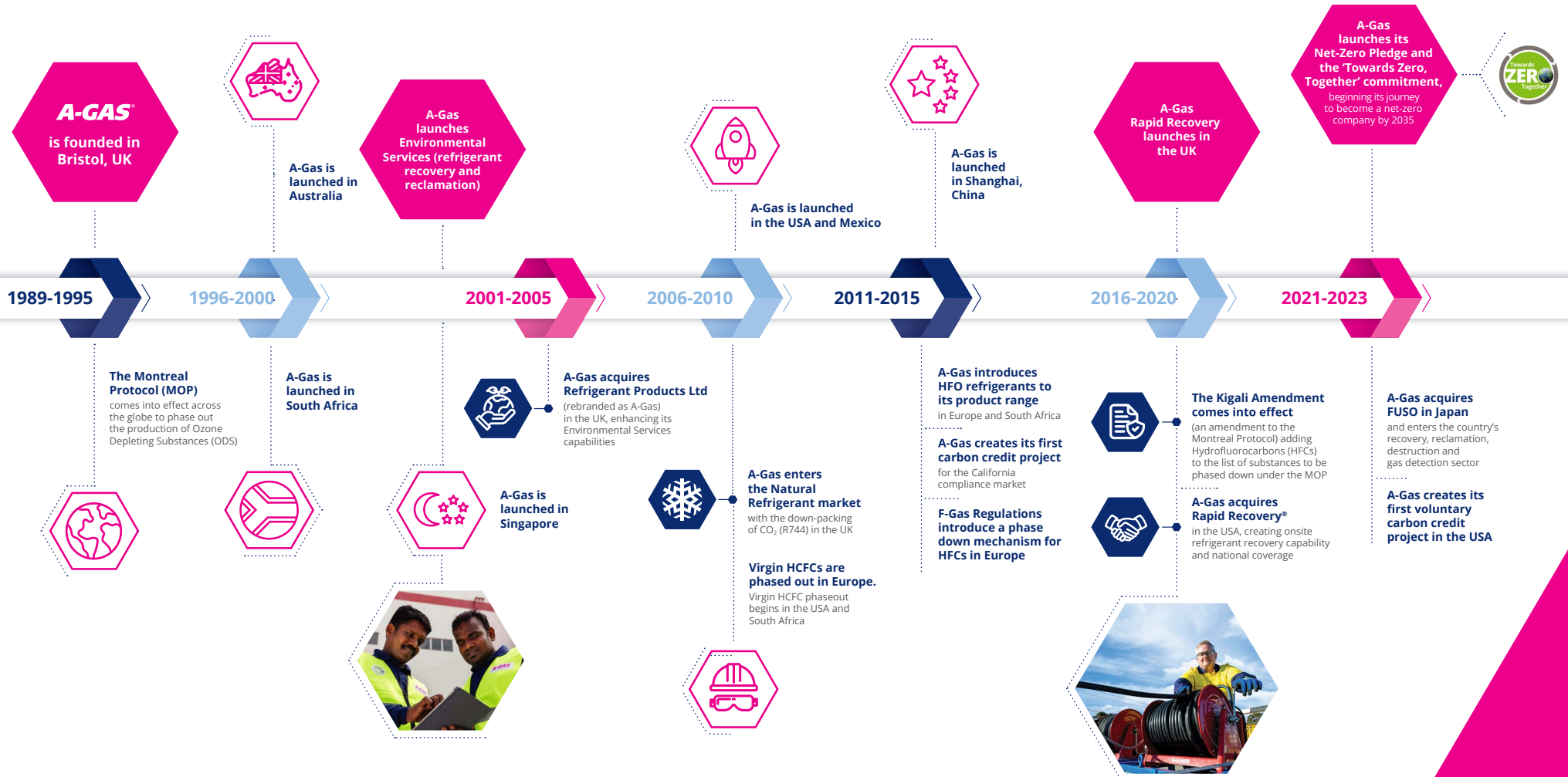
The **how** is our strategy:

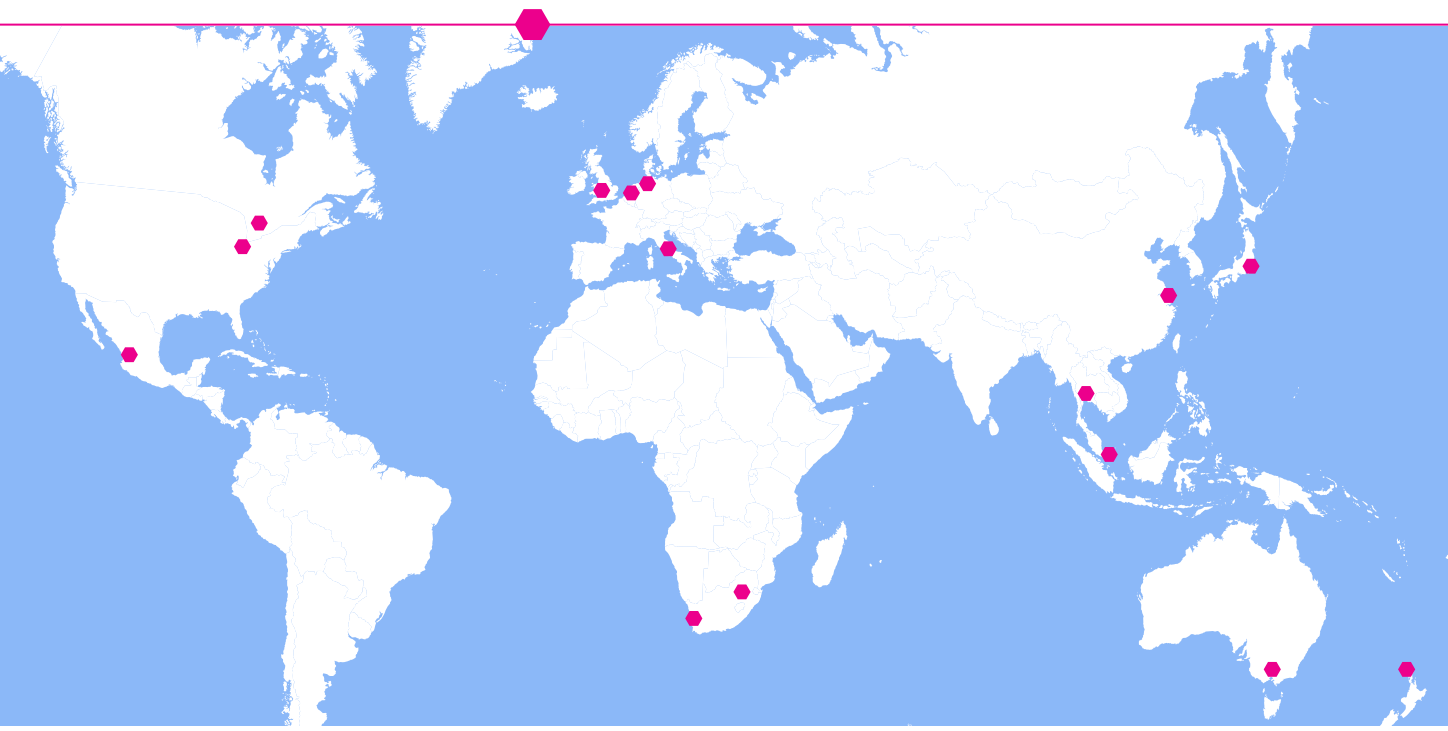
Getting, processing and selling refrigerants and services to our customers.



How We Are Building a Sustainable Future

For 30 years, A-Gas has continued to grow and evolve worldwide.





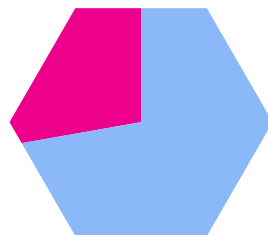
A-Gas' countries of operation and global headquarters:

- Australia
- Canada
- China
- Germany
- Italy
- Japan
- Mexico
- Netherlands
- New Zealand
- Singapore
- South Africa (Cape Town and Johannesburg)
- Thailand
- USA

United Kingdom (*operating site and additional global head office location*)



840+
global employees



**A-Gas employee
breakdown**

A-Gas employee breakdown:

As of 31st December 2022:

- **72.3% male**
- **27.7% female**

(this was 73.7% male / 26.3% female as of 31st March 2022)

at a time when our overall workforce grew by 3%.

How A-Gas is Mitigating the Environmental Impact of Refrigerants

Throughout its history, A-Gas has invested in its people, processes, and technology to recover and reclaim refrigerants for reuse or safe destruction. The result of this is that today, we have successfully recovered thousands of tonnes of refrigerants that may otherwise have been released into the atmosphere.

Leaders in Lifecycle Refrigerant Management (LRM)

A-Gas is a global enabler of Lifecycle Refrigerant Management¹. We are dedicated to the recovery and subsequent reclamation or destruction of used refrigerants.

Managing the lifecycle of refrigerants is an effective way to mitigate their environmental impact. LRM aims to ensure that:

“no kilogram or pound of refrigerant, once produced, is released into the atmosphere!”

1. LRM: The 90 Billion Ton Opportunity - EIA US

A-Gas' LRM activities include:

- ◊ **Recovery, reclamation and destruction of used refrigerants.** We recover and reclaim used gases to minimise the amount of virgin product being created and, at the same time, prevent their release to atmosphere. Where the future reuse of a refrigerant is no longer possible, A-Gas provides customers and partners with a United Nations-approved destruction technology. Recovery and reclamation are the circular economy in action at A-Gas. Read more about how we enable the circularity of refrigerants [here](#).
- ◊ **Supplying lower GWP gases and reclaimed refrigerants.** As part of LRM, we supply lower global warming gases and reclaimed refrigerants to enable the transition away from ODS and high GWP virgin refrigerants.

We recognise that a commitment to protecting the environment extends beyond our product and service offering. It must also include our own activities and behaviours as a business and as individuals.

Towards Zero, Together

To support our journey towards net-zero, A-Gas teams globally are focused on our Towards Zero, Together commitment. This encompasses our dedication to staying safe, reducing all possible emissions and preventing refrigerant leaking into the atmosphere. Learn more about Towards Zero, Together [here](#).

Roadmap to Net-Zero

As part of Towards Zero, Together, we are committed to reducing our Greenhouse Gas (GHG) emissions. A-Gas has pledged to become net-zero by 2035, with a 50 percent reduction by 2028. Our Roadmap to Net-Zero is our internal commitment and emissions reduction plan, implemented across our global operations. Read more about our Roadmap to Net-Zero [here](#).



How We Create Value

A-Gas is committed to embracing circular economy principles, which are the driving force behind our value chain. By safely recovering, reclaiming and repurposing refrigerants that are already in use, we reuse existing resources rather than disposing of products or creating new materials.

Supply and Use

Our worldwide locations feature custom technology that has been designed to safely and efficiently “down-pack” refrigerants into usable cylinder sizes. Our long-standing partnership with global suppliers ensures we offer a wide range of refrigerants to our customers.

Our state-of-the-art reclamation and separation facilities re-process used refrigerant for future reuse or destruction. With every kilogram or pound of refrigerant that we recover, reclaim and reuse, we prevent the release of ODS and high GWP refrigerants into the atmosphere. At the same time, we save GHG emissions that would be created by manufacturing virgin products.

We distribute reclaimed and virgin refrigerant in a variety of bulk vessels, cylinders, and drums, for use or onward sale.

Key relationships and partners

- Approved suppliers of virgin refrigerants, with whom we have had excellent long-standing relationships.
- Customers: Original Equipment Manufacturers (OEMs), wholesale partners, installation and service contractors and end users of refrigerants.

Recovery

When customers and contractors maintain, decommission or retrofit systems, it is essential the refrigerant is safely recovered and not released into atmosphere. We recover used refrigerants in bulk quantities or with recovery cylinders. Our Rapid Recovery®, Rapid Exchange® and Refri-Claim® services make the process easy and efficient.

Key relationships and partners

- Customers: Original Equipment Manufacturers (OEMs), wholesale partners, installation and service contractors and end users of refrigerants.
- Waste management companies and other consolidators.





Reclaim

Utilising specialist technology, designed and built by A-Gas, we process used refrigerants, removing oil and non-condensable materials. Where different refrigerant types are mixed, we use our custom-built separation equipment to return it to a reusable product in line with the AHRI 700 standards, ensuring it meets the same quality criteria as virgin refrigerant.

Key relationships and partners

- Customers: Original Equipment Manufacturers (OEMs), wholesale partners, installation and service contractors and end users of refrigerants.
- Waste management companies and other consolidators.

Destroy

When refrigerants cannot be reused or customers need them to be destroyed, we offer safe destruction via our proprietary PyroPlas® plasma arc technology or approved partners. A-Gas PyroPlas is a United Nations-approved, Technical Economic Assessment Panel (TEAP)-certified technology that delivers the industry's highest guaranteed destruction efficiency of 99.9999 percent.

Key relationships and partners

- Customers: Original Equipment Manufacturers (OEMs), wholesale partners, installation and service contractors and end users of refrigerants.
- Non-Governmental Organisations (NGOs).
- Waste management companies and other consolidators.

Opportunities and Risks within Our Circular Value Chain

According to [Project Drawdown](#), the management and destruction of refrigerants already in use is one of the biggest opportunities to prevent climate change. Effective refrigerant management could save the equivalent of 57 gigatonnes of carbon dioxide emissions between 2020 and 2050.

It is estimated that only 25 percent of refrigerants in use are being recovered today². This presents a significant opportunity for LRM to mitigate the release of refrigerants into the atmosphere and help reduce climate change.

This low recovery rate also presents a risk. Refrigerants will only be reused if they are recovered and reclaimed for future reuse. Without products being returned for re-processing, the circular value chain cannot be sustained.

To continue driving the circular value chain, A-Gas is committed to enabling LRM around the world.

2. A-Gas own estimated figures



Products, Services and Markets

A-Gas is continuously focusing on how its products, services and expertise can protect the environment.

Products

Refrigerants. A-Gas is the leading supplier of refrigerants to the heating, ventilation, air conditioning and refrigeration industries. Our extensive refrigerant offering varies across the globe in line with regional legislation and includes reclaimed refrigerant and lower GWP alternatives.

Industrial special products. Our industrial and speciality gases are used in a wide variety of applications and industries. Our service gas range includes leak detection, pressure-testing and brazing products.

Performance chemicals. A-Gas' range of performance chemicals includes blowing agents that can be used across many different applications, and secondary heat transfer fluids for use in indirect cooling applications.

Fire protection and halon. Over 25 years after virgin halon gas manufacture was banned, the use of reclaimed halon is still required for aircraft engine safety, where its unique ability to suppress fire at high altitude is vital. We work internationally to recover used halon. It is then reclaimed for "essential use" applications.

Services

Destruction and disposal. When a refrigerant can no longer be reused, A-Gas offers a safe and approved destruction service.

Laboratory and analytical. To help resolve operational problems and as part of preventive maintenance programmes, we offer services to analyse the quality of refrigerants and related materials in cooling systems. Our custom-built laboratories play a key role in ensuring our reclaimed products meet the AHRI 700 standard.

Refrigerant recovery. A-Gas Rapid Recovery® provides high-speed refrigerant recovery to a range of industries. Our recovery services extend to include Rapid Exchange® and Refri-Claim® to enable the efficient recovery and handling of used refrigerants.

Leak monitoring. We offer products and services to identify refrigerant leaks, as well as supply leak detection equipment.

Fire protection and halon-related services. We supply, recover, reclaim, store and manage fire suppressant and halon-related products.

Product management. A-Gas offers tailored product management solutions, including product analysis, buyback, recovery and carbon credits to suit customer requirements.



Markets

Refrigeration. Our lifecycle management approach supports every aspect of the refrigerant lifecycle, from supply to recovery and end-of-life services.

Air conditioning and heat pumps. We supply refrigerants required for domestic, residential, commercial and industrial air conditioning. We are also a leading supplier to major heat pump manufacturers, supporting a technology that is helping to decarbonise domestic and commercial heating.

Industrial and process cooling. As well as refrigerants, we offer technical advice on retrofits and compliance to the process cooling industry.

Automotive and transport. Our lifecycle refrigerant management approach supports both first fill (when a vehicle's cooling system is charged for the first time) and aftermarket needs in the mobile air conditioning and refrigeration markets.

Marine. We supply a full range of refrigerants and service gases for marine air conditioning and refrigeration, plus facilities for refrigerants reclaimed from the industry.

Mining. A-Gas supplies the refrigerants used in the mining industry refrigeration and air conditioning systems, as well as complementary recovery and reclamation services.

Aviation. A-Gas offers a wide range of speciality products and services to the aviation industry, including the supply of reclaimed halon for permitted essential uses.

Insulation. Our blowing agents are used in high quality insulation foams that help the building industry meet increasingly stringent energy and safety standards.

Medical. We offer end-of-life management for metered dose inhalers and other medical system gases.



Our External Environment

How Regulatory Trends Impact Our Business

A-Gas operates within heavily regulated markets. As legislation is adopted in countries around the globe, the type and make-up of refrigerants change at varying rates.

The 1987 Montreal Protocol and its 2016 Kigali Amendment have moved the industry away from ODS and high GWP refrigerants. The AIM Act in the USA and the F-Gas Regulations in the UK and Europe are examples of how this global regulation has been adopted at a regional level.

These environmental regulations are a key driver in the success of A-Gas worldwide. Although the regulatory timeline and its implementation is different around the world, the direction of travel is the same. A-Gas is well positioned to apply learnings from varying regulatory cycles to facilitate the transition.

As the global emphasis on meeting climate targets becomes increasingly urgent, we anticipate that the recovery, reclamation and reuse of refrigerants, along with a stronger focus on reducing any associated emissions, will come to the forefront as being a key part of the climate solution.





Other External Trends That Impact Our Business

Net-Zero Commitments

As more companies continue to set net-zero targets, the landscape grows more complex and is subject to higher levels of scrutiny and consumer scepticism. Through its LRM offerings, A-Gas helps companies on their journey to net-zero. A-Gas has embarked on its own journey, developing a Roadmap to Net-Zero, using GHG emission reduction projects as the key levers.

Increasing Demand for Lower GWP Refrigerants

As countries and regions implement agreements like the US AIM Act and the EU's F-Gas regulation, the demand for lower GWP alternatives and LRM solutions will rise.

A-Gas has a vital role to play here, facilitating both the supply of lower GWP alternatives and ensuring legacy refrigerants are safely recovered for reuse or destruction. Our LRM approach is a circular economy solution that enables us to align business growth with decarbonisation and sustainability.

The Responsible Use of Verified Carbon Credits

As the global shift towards net-zero continues to accelerate, demand for decarbonisation solutions is growing. This includes the responsible use of verified carbon credits to help offset emissions that cannot be reduced.

As a producer of high-quality, verified carbon credits, derived from used refrigerants, A-Gas can support all companies on their decarbonisation journeys. We undertake our projects in accordance with methodologies and verifications under internationally recognised registries, such as the Verified Carbon Standard (VERRA), Climate Action Reserve (CAR) and the American Carbon Registry (ACR).

Increasing Circularity

As circular economy principles become more widely adopted, the reuse of valuable resources, such as refrigerants, can form part of an organisations' supply chain strategy. A-Gas is at the forefront of this change.





SECTION TWO

Towards **ZERO,** Together

IN THIS SECTION

-
- 19 Towards Zero, Together

 - 23 Our Contribution to the UN Sustainable Development Goals

 - 24 Engaging with Our Stakeholders

 - 26 An Interview with Ken Logan, Group Sustainability and Regulatory Director

Towards Zero, Together

Our Towards Zero, Together commitment operates worldwide. Targeting Zero is the standard we aim to meet; it encompasses our dedication to staying safe, reducing all possible emissions and preventing refrigerant leaking into the atmosphere.

Our Towards Zero, Together commitment has a dual focus. In addition to our internal dedication, it externally serves as a catalyst, helping to drive the broader industry transition to net-zero.

Our recovery, reclamation and repurposing capabilities provide solutions for those looking to manage the lifecycle of refrigerants responsibly. Our carbon credit offering supports customers and end users on their decarbonisation journey, helping to mitigate emissions that cannot be reduced.

Towards Zero, Together embodies our internal commitment to “Target Zero” in every aspect of our global operations.

Our approach comprises three components:



1. Zero Harm

We strive for Zero Harm in all that we do, so that we can all go home after work in the same condition as we arrived.



2. Zero Leaks

We are committed to targeting Zero Leaks into the atmosphere to protect each other and the environment we all share.



3. Zero Emissions

We strive to achieve a net-zero GHG emissions footprint across the entire A-Gas Group.

Read more about our 2022 Towards Zero, Together initiatives [here](#).



The A-Gas Net-Zero Pledge

To reduce the environmental impact of the GHG emissions generated from our own activities, A-Gas has pledged to become net-zero by 2035 and reduce GHG emissions by 50 percent by 2028 (using our 2020 Scope 1 and Scope 2 GHG emissions footprint as a baseline). This ambitious target brings our emission reductions ahead of those mandated by the Science-Based Targets initiative (SBTi).

Identifying Our Emissions

In 2020, we conducted a footprint activity to help identify and calculate our Scope 1 and Scope 2 GHG emissions. This is now an annual activity.

What the activity focused on:

The activity was aimed at establishing a baseline of our GHG emissions profile as a Group, including total Scope 1 GHG emissions (process emissions: leaks, filling losses, evacuation losses, analysis and sampling losses, purging losses; stationary and mobile combustion; fugitive emissions) and total Scope 2 GHG emissions (location based - purchased electricity).

Once we had obtained the baseline, we then established our interim target of reducing it by 50 percent by 2028 and achieving our net-zero pledge – to be net-zero by 2035.

What the activity showed us:

The activity showed us that, together with accidental leaks, the processing of refrigerants currently contribute to most of our Scope 1 GHG emissions.

As a result of the activity, we gained better visibility of our Group-wide process emissions profile. We identified four key operational and leak management areas that will enable us to drive the baseline down and set us on the right track to achieving our net-zero pledge.

We have developed our dedicated Roadmap to Net-Zero to reduce our own emissions. The GHG emissions footprint activity will be carried out annually, with all data being independently verified by a third-party assurance process.

Read more about our Roadmap to Net-Zero [here](#).



Our Sustainability Approach

Sustainability is embedded into our overall corporate strategy and is a focus area for each part of our business.

Our sustainability approach is informed by ongoing engagement with cross functional A-Gas teams across the globe, including external consultants.

We began our GHG emissions footprint exercise in 2020 and this has continued to evolve each year thereafter.

We have invested in resources across our global teams, who are focused on driving our net-zero pledge. During 2022, we appointed a dedicated Group Sustainability Compliance Manager. This position is crucial in supporting our global teams, identifying opportunities, driving initiatives and moving the business forward, with sustainability sitting at the core of our purpose and future.

We began building an international carbon team with a dedicated Global Carbon Director. The team is responsible for sourcing used refrigerants from around the world that are ozone depleting substances, developing carbon projects and creating verified carbon credits.

As we continue on our sustainability journey we are committed to our ambitious net-zero target. We will endeavour to resource accordingly and train our teams to deliver on our purpose and goals.

Our Sustainability Focus Areas

Our sustainability approach focuses on:

Lifecycle Refrigerant Management (LRM)

- to support the industry in its transition to lower GWP alternatives, while at the same time, recovering, reclaiming, repurposing or destroying used refrigerants.

Active measurement, management and reduction of our own carbon footprint

- we recognise that a commitment to protecting the environment extends beyond our product and service offering and must begin with our own activities and behaviours.

Engagement and education (internal and external)

- helping companies and people to understand that LRM provides one of the biggest decarbonisation opportunities to lower global GHG emissions.

Key Performance Indicators (KPIs)



Zero Harm

Safety has always been at the heart of everything we do, and Zero Harm is the standard we aim to achieve when it comes to employee health and safety.

Our Injury Frequency Rate (IFR) for 2022 was below the threshold set (1.88 actual against an upper limit threshold of 2.60). For 2023, we have a threshold of 2.30. It is imperative that we continue to work to reduce accidents and injuries across our global sites.



Zero Leaks

We are committed to targeting Zero Leaks into the atmosphere to protect each other and the environment we all share.

In 2022, our threshold of 7000mt was exceeded due to three exceptional events. This resulted in a total leak calculation of 22,957mt. For 2023, we have a global threshold of 12,500mt.



Zero Emissions

We pledge to be a net-zero organisation by 2035, with an emission reduction of 50 percent by 2028.

2020 emissions baseline = 315,110*mt CO₂e.
2028 50% target = 157,555mt CO₂e.
2035 = **net-zero**.

**a percentage of the total GHG emissions footprint is derived from including the GWP of all Ozone Depleting Substances processed.*

Our Highlights for the Year

In 2022, we abated over 8.6 million mt of carbon dioxide equivalent* – 15 percent more than 2021. This could be expressed as the equivalent of taking more than 1.8 million vehicles off the road for a year or planting over 123 million trees**.

**a percentage of the total carbon abatement is derived from including the GWP of all Ozone Depleting Substances processed.*

***The EPA Greenhouse Gas Equivalencies Calculator was used to calculate our CO₂ equivalent contributions above.*

Employee Engagement

In 2022, our annual Global Pulse Survey generated an 80 percent response rate.

Employee Health and Safety

Our 2022 Injury Frequency Rate fell to 1.88, which is well below our threshold of 2.60.

In 2022 we abated over

8.6 million
mt of carbon dioxide equivalent

equivalent to
1.8 million
vehicles off the road for a year



Our Contribution to the UN Sustainable Development Goals

The UN Sustainable Development Goals (SDGs) comprise of 17 goals and 169 targets backed up by 247 indicators, 92 of which are environmentally focused. Signed by 193 countries, they were adopted as part of the 2030 Agenda for Sustainable Development.

The work we do at A-Gas contributes to several SDGs. We have provided an overview of the primary SDGs and relevant sub-targets we contribute towards:

Our aim to “Build a Sustainable Future” is centred around mitigating the damage refrigerants can cause to the atmosphere, with the priority SDGs shown being integrated into our overall sustainability approach.



SDG 9: Industry, Innovation and Infrastructure

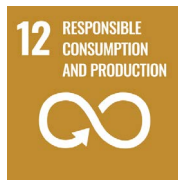
SDG Target 9.2 – Indicator 9.2.1 and 9.2.2 – we provide sustainable industrial employment opportunities within the communities where we recover and reclaim refrigerants and similar products.

SDG Target 9.4 – Indicator 9.4.1 – our products and processes (reclamation and destruction) lead to direct, verifiable GHG emission reductions.



SDG 11: Sustainable Cities and Communities

SDG Target 11.6 – Indicator 11.6.1 – A-Gas is focused on the circular economy through recovery and reclamation, which directly leads to less waste processing in waste management facilities and a reduction in carbon dioxide equivalent emissions that would otherwise occur.



SDG 12: Responsible Consumption and Production

SDG Target 12.4 – Indicator 12.4.1 – A-Gas contributes to the active implementation of, and adherence to, multiple global agreements such as the Montreal Protocol (and its Kigali Amendment). In countries where A-Gas operates, direct GHG emission reduction activity contributes to the adherence to Nationally Determined Contributions (NDCs) under the Paris Agreement.

SDG Target 12.5 – Indicator 12.5.1 – A-Gas operations are focused on circular economy principles, which are directly applicable to this target.



SDG 13: Climate Action

SDG Target 13.2 – Indicator 13.2.1 and 13.2.2 – A-Gas operations contribute to the achievement of country-level Nationally Determined Contributions (NDCs) and reduce GHG emissions in locations where gas is recovered, reclaimed gas is consumed, and/or where gas is destroyed to avoid future release into the atmosphere.

Engaging with Our Stakeholders

Our key stakeholder groups and methods of engagement are detailed below:

Key stakeholder groups

Overview of engagement mechanisms in 2022

Investors

- Regular Board meetings
- Quarterly questionnaire completed by major shareholders
- Submission of Board information packs, which include safety, financial, operational and sustainability performance

Employees

- Internal communications with employees
- Face-to-face employee meetings
- Regular conversations between managers and employees
- Annual Global Pulse Surveys

Customers

- Close collaboration between Key Account Managers and customers
- Customer surveys
- Support at customer events and international events (including Open-Ended Working Group (OEWG), Meeting of the Parties to the Montreal Protocol, UN Climate Change Conference of the Parties)

Suppliers

- Key account management
- Ensuring sourcing of materials efficiently, utilising our global scale and relationships

NGOs and Governments

- Attendance at events
- National and international dialogue



Key Stakeholder Engagement Activities in 2022

The Meeting of the Parties (MOP) Conference is held annually and is designed to support the implementation of the Montreal Protocol. In 2022, A-Gas participated in the meeting to continue to raise awareness of refrigerant management options in countries where there are few, if any, offerings available.

In addition, A-Gas attended the 2021 UN Climate Change Conference of the Parties Summit (COP26) in Glasgow, in partnership with NatWest Bank. We promoted our LRM solutions, focused on transitioning to lower GWP refrigerants, while at the same time increasing the amount of refrigerants we recover for reclamation or repurposing.

Our internal engagement and understanding around sustainability have continued to evolve. We have developed our internal communications strategy, created dedicated resource platforms, which includes a Sustainability Hub on our internal intranet, and offered webinars and training opportunities for our global teams. Meanwhile, an Environmental Suggestion Box encourages employees to share their ideas for sustainability improvements.

Our Group Sustainability Compliance Manager undertakes visits to A-Gas sites to facilitate collaboration and engagement on sustainability initiatives and GHG emission reduction projects, while promoting the message of how we have established our GHG emissions footprint and net-zero pledge.

The past year also saw the development of a GHG emissions calculator from our internal Business Systems team. With the need to make emissions data gathering and scrutiny easier, the global team have been working to automate our process for calculating A-Gas' GHG emissions footprint. This tool is scheduled for release to the business in 2023.

Sustainability is a key agenda item in our monthly Board meetings, supported by an informative sustainability dashboard. This platform shows monthly leaks by region, including tCO₂e impact by gas type, and the amount of refrigerant abated from reclamation and destruction activities.



An Interview with Ken Logan, Group Sustainability and Regulatory Director

How has A-Gas been leading the way through your Towards Zero, Together commitment? What were the key achievements that stood out for you in 2022?

Towards Zero, Together began life as a safety initiative. Today, it has grown to be much more than that. It encompasses our dedication to achieving Zero Emissions, Zero Leaks and Zero Harm in everything we do.

As we continue on our ambitious journey to reach net-zero by 2035, we have continued to focus on what we can do as a business and as individuals to reduce our GHG emissions.

We have dedicated resources across our global teams, who are focused on driving our net-zero pledge forward. As part of this, we appointed a long-standing A-Gas employee as our Group Sustainability Compliance Manager, and I moved into the position of Group Sustainability and Regulatory Director. Both roles are imperative for supporting our global

teams, identifying opportunities and progressing initiatives.

During 2022, we visited various A-Gas locations to help our global teams understand why sustainability is important and how can they contribute. Sustainability performance now forms part of many people's overall remuneration packages and further highlights the significance of sustainability to A-Gas.

We also worked hard to further embed Towards Zero, Together within our global teams, using measures such as visual aids, for example posters and infographics, to regular communications on our Intranet platform.

This report is a key milestone for sustainability at A-Gas. As our first external Sustainability Report, it marks the start of an important journey, and we are all excited to improve and refine our sustainability performance over the coming years.

Refrigerants are harmful greenhouse gases that significantly impact climate change if they are released into the atmosphere. What key actions is A-Gas taking to mitigate this and build a more sustainable future for the industry?

Refrigerants are manageable if they are recovered and reclaimed for reuse or are safely destroyed (where reuse is not possible) when equipment is maintained or comes to the end of its working life. This is what we do at A-Gas – we recover and reclaim used gases, closing the loop and enabling circularity.

The key to successfully reducing greenhouse gas emissions from refrigerants is to enable circularity everywhere. Emissions are a global issue and Lifecycle Refrigerant Management (LRM) is a transferable solution to prevent refrigerants being released into the atmosphere.



A-Gas has pledged to become a net-zero company by 2035. What have been some of your key learnings and challenges so far?

In short, it takes longer than you think. It requires a combination of resources, new thought processes and ways of working, with everybody working together to achieve the desired result.

Gathering the required data takes time and is a task that is easy to underestimate. Implementing appropriate systems and procedures, especially where existing methods are not suitable to capture the data, adds cost and complexity. We also had to ensure we had the right resources in place, which included finding people to capture and manage the data. You are only in a position to manage your data when you have got to the point of measuring it.

Although we will look to have our total Scope 1 and Scope 2 GHG emissions audited on an annual basis, we have learnt that it is an evolving process; we get more accurate and granular with our measurements every year. We are excited to publish our results in this Sustainability Report and, as we enter 2024, we will incorporate the work that we have been carrying out on Scope 3 GHG emissions.

What are A-Gas' main priorities in relation to sustainability for 2023 and beyond?

We have three long-term priorities. The first is to enable LRM, which increases circularity within the industry. The second is to support customers and end users as they transition to refrigerants with a lower global warming potential.

These first two elements present a significant opportunity – to prevent the **90 billion tonnes of GHG emissions** that could be produced by fluorocarbon refrigerants that are already in use or still to be sold if they are released into the atmosphere.

Our third priority is to look inward and focus on reducing our own GHG emissions. This year, we have used our measurements to identify the areas where we can achieve the biggest GHG emission improvements and turned them into Process Emission Reduction Projects. Together, with efforts to improve efficiency across our operations, these projects have become our comprehensive Roadmap to Net-Zero.

Read more about our Roadmap to Net-Zero and Process Emission Reduction Projects [here](#).

Case study

A-Gas Supports Leading Original Equipment Manufacturer (OEM) with the Circular Use of Refrigerants

A market-leading air conditioning OEM has selected A-Gas as its partner of choice to help fast track its refrigerant recovery and reclamation process.

A-Gas Rapid Recovery enables the OEM to offer a dedicated on-site recovery service to its installer base, supporting the recovery and removal of refrigerants from job site locations. We also supply the OEM's European manufacturing facilities with reclaimed refrigerants, reducing the need for virgin gas to be produced and used.

The partnership supports a circular economy for refrigerants, illustrating what the industry can achieve when it works together.

Read the full case study [here](#).





SECTION THREE

ENVIRONMENT

IN THIS SECTION

- 29 Our Approach
- 30 Roadmap to Net-Zero
- 33 Improving Efficiency Across Our Operations
- 35 Championing Circularity

Our Approach

A-Gas was founded in the UK in 1993 as the global refrigerants industry was changing; the phase out of ozone depleting substances, like CFCs, began the shift towards less environmentally harmful refrigerants.

Today, we are driven by our purpose to **effectively manage the lifecycle of refrigerants to build a sustainable future.**

We recognise that fluorocarbon refrigerants are an environmental problem if they are not handled correctly. The responsible management of them is the solution.

Our commitment to protect the environment must start with our own activities as a business.

Currently, our most significant environmental impacts come from the GHG emissions generated by our operational processes.

We are dedicated to continuously improving our processes to reduce our own GHG emissions globally through emission reduction targets, site-specific waste reduction targets, Key Performance Indicators (KPIs) for leaks, and independently verified ISO certifications.



Roadmap to Net-Zero

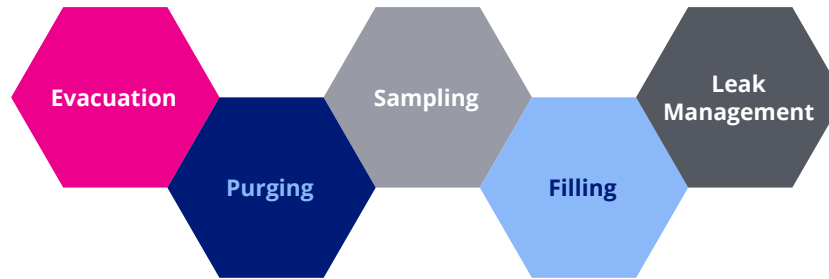
A-Gas is committed to having an industry-leading net-zero target: we have pledged to become net-zero by 2035 and reduce emissions by 50 percent by 2028 (using our 2020 Scope 1 and Scope 2 GHG emissions footprint as a baseline).

In 2022, our day-to-day operational processes, together with accidental leaks, contributed to the vast majority of our global GHG emissions footprint.

To meet our ambitious net-zero target, A-Gas developed a Roadmap to Net-Zero in 2022, with active involvement from Executive Board members, majority shareholders, financial institutions and our global teams. The roadmap, which draws on insights from our annual GHG emissions footprint activity, identifies where our GHG emissions come from and how we can reduce them.

To support the roadmap, we regularly track, measure and reduce process emissions to continuously improve and create best practices that can be shared with our global teams.

In 2020, we identified five areas where we could make emission reductions:



As a result, we now have a number of Process Emission Reduction Projects in place to target these areas.



Process emissions	Where/how they occur	% contribution to A-Gas global GHG emissions footprint	How the projects contribute to achieving net-zero
Evacuation losses	We regularly remove refrigerants from vessels. After most of the refrigerants are removed, a small amount remains as a vapour. Traditional recovery methods mean this vapour gets released to the atmosphere. Recovering the vapour instead of releasing it is crucial to reducing A-Gas' process emissions.	While the amount released from each vessel is small, collectively it accounts for a significant amount of A-Gas' process emissions. Evacuation losses account for approximately 31% of the Group's GHG emissions footprint.	These projects focus on optimising the performance and operation of the evacuation recovery process. By improving our evacuation processes we expect to reduce GHG emissions to ~44% of the 2020 baseline figure by 2028.
Purging losses	When we receive recovered refrigerants, they often contain contaminants, such as nitrogen, a non-condensable gas. Purging losses happen during the removal of these contaminants.	Purging losses are directly linked to the amount of refrigerants we process; the more gas we recover, the more our purging emissions increase. Purging losses currently account for 37% of the Group's GHG emissions footprint, making them the biggest contributor across our global operations.	These projects focus on identifying and implementing a best practice design for our purging rigs that reduce GHG emissions during the removal of non-condensable gas. By improving purging processes, we expect to reduce GHG emissions to ~12% of the 2020 baseline figure.
Sampling losses	Sampling losses occur when refrigerants or fire protection gases are released into the atmosphere during the sampling, analysis or testing of products.	As a Group, we test thousands of samples every year. In 2020, sampling losses accounted for 13% of the Group's GHG emissions footprint.	Our teams are focused on developing best-practice laboratory techniques, designed to capture & reduce GHG emissions without compromising analytical results. By using improved sampling and laboratory processes, we expect to reduce GHG emissions to ~51% of the 2020 baseline figure.
Filling losses	Filling losses are emissions that occur during each refrigerant "fill cycle" when the filling lines and hoses are disconnected from a cylinder.	Filling losses account for approximately 3% of the Group's GHG emissions footprint.	We aim to develop a zero-emissions fill station that will be used across our A-Gas sites worldwide. By improving our filling processes, we expect to reduce GHG emissions to ~87% of the 2020 baseline figure.
Leak management	Accidental leaks are completely unexpected and can happen when events, such as operator error or equipment malfunction, occur. Leaks are therefore more complicated to reduce.	Leaks account for approximately 13% of Group's GHG emissions footprint.	Our global teams will continue to develop best practices, standards, inspections and processes, with the aim of reducing leaks. These best practices will be deployed to all our regions through Engineering Governance Standards, site visits and audits. We have implemented a project to reduce the potential for accidental leaks to occur in processes, equipment and designs. Through improved leak management, we expect to reduce GHG emissions to ~23% of the 2020 baseline figure.

By 2028, we anticipate that the delivery of these projects will contribute to a GHG emissions reduction in line with our 50 percent target. As we approach 2028, we will continually review the Process Emission Reduction Projects to identify what is working well and what needs to be improved.

2021 and 2022 GHG Emissions Footprint*

There were no structural changes made to the 2020 baseline arising from undertaking the 2022 GHG emissions footprint calculations.

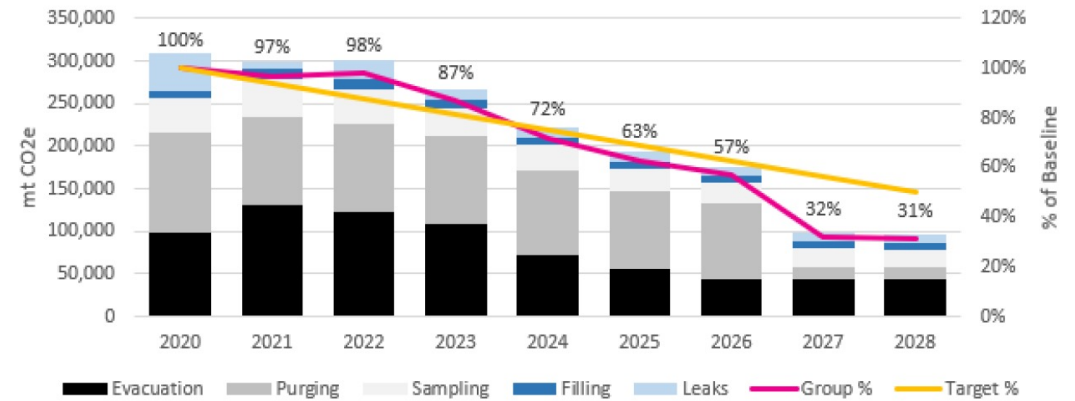
2022 Scope 1 and Scope 2 data has been independently assured by DNV.

**a percentage of the total GHG emissions footprint is derived from including the GWP of all Ozone Depleting Substances processed.*

SCOPE	2021	2022	% of footprint
Total Scope 1 GHG emissions (process emissions: leaks, filling losses, evacuation losses, analysis and sampling losses, purging losses; stationary and mobile combustion; fugitive emissions)	300,793 mt CO2e	318,308 mt CO2e	99%
Total Scope 2 GHG emissions - location based (purchased electricity)	3,731 mt CO2e	4,043 mt CO2e	1%
Total	304,524 mt CO2e	322,351 mt CO2e	100%

Process Emissions - Emission Reductions

Following the successful delivery of our Process Emission Reduction Projects and a focus on leak management, we anticipate that our 2028 emission level will be below our 50% reduction target.



Improving Efficiency Across Our Operations

Key Internal Initiatives

We are committed to driving environmental improvements that will help us on our journey to net-zero. We have dedicated resources across our global teams, who are focused on progressing our net-zero pledge. We encourage all employees to generate ideas and implement initiatives at a local level. Several initiatives have been developed by our regional teams to improve their onsite operations, including:

ISO Certification

The ISO standards that we subscribe to specify the requirements for:

- 1. Quality management** to help us work more efficiently and reduce product non-conformity.
- 2. Environmental management** to identify and reduce our environmental impacts. In 2022, eight A-Gas locations were certified to ISO 14001. Locations in the USA and Italy are on track to obtain ISO 14001 certification by the end of 2023.
- 3. Health and safety** to help reduce accidents in the workplace.

Adopting these standards through implementation of our management systems, will enhance our performance. This enables us to achieve our intended outcomes, providing value for the environment, our organisation and interested parties.

As we acquire new businesses, we plan to transition them to these management systems over time.

Business Excellence

As a Group, we strive for excellence in our key business processes, which include developing our best practices, simplifying what we do, and increasing our productivity. Throughout 2022, we researched how to successfully implement Business Excellence (also known as Operational Excellence or Lean Transformation), evaluating potential partners and developing a deployment strategy. As a result, we have implemented a dedicated Business Excellence task force to deliver this programme.

The Business Excellence programme is an investment in our people and our culture as we work together, learning new skills, using new tools, and creating success. The implementation of this programme is expected to have a significant positive impact on our SQE performance, while continuing to drive circularity across our global sites.

Improving Efficiency Across Our Operations

SQE Thresholds

Our thresholds for Safety, Quality and Environment were aligned with our Towards Zero, Together commitment in 2022, with the aim of improving SQE efficiency. View further details about the thresholds [here](#).

Minimising Refrigerant Losses

During 2022, approximately 75 percent of environmental incidents across the Group occurred from refrigerant emissions as a result of accidental losses.

This included pressure relief valves discharging, cylinder thread and flange leaks, along with pump breakdowns. Other incidents were attributed to oil, fuel and solvent-type spills.

We are continuously reducing the impact of environmental incidents when they occur and use root cause analysis to determine the cause and implement corrective and preventative actions.

We have installed refrigerant gas detection systems at our key sites to monitor and detect refrigerant leakage.

Many A-Gas locations store and/or process gases that are flammable and can cause asphyxiation. We have installed gas detection devices on-site that comprise wearable detectors carried by operators or fixed location detectors.

Case study:

Reducing Operational Leak Potential at Our Facilities in the USA

- Additional fixed piping to reduce the use of hoses and connection points, therefore reducing leak potential during operations.
- Installation of an emergency shut-off controller at a tank storage area to shut equipment off immediately if a leak is observed.
- Transfer pumps and carts updated with automatic shut-offs.
- Improved material-handling equipment to reduce impacts that result in releases.



Championing Circularity

Given the global warming potential of refrigerant gases, and the regulations that restrict the supply of some refrigerants, an alternative to the traditional linear make > use > dispose approach is essential.

This model, which has dominated for the past 50 years, assumes an infinite supply of raw materials, and does not take the environmental externalities of waste, such as atmospheric pollution, into account.

Collecting and reusing waste materials is both economically and environmentally efficient. A “circular” model focuses on reusing what we already have rather than sourcing and producing new materials.

A-Gas is leading the way towards improved circularity of refrigerants by supporting our industry to achieve Lifecycle Refrigerant Management (LRM), a circular economy solution on the journey towards net-zero.

Its primary focus is to ensure no refrigerants are released into the atmosphere once they are produced. LRM also saves emissions relating to the manufacture of virgin product and facilitates a more gradual transition to lower GWP refrigerants.

LRM demonstrates the circular economy principles that are currently in practice and concentrates on recovering, reclaiming and reusing existing refrigerants. In 2022, through our recovery, reclamation and destruction activities, it is estimated that we abated **over 8.6 million mt of CO₂e***. This can be expressed as the equivalent of taking more than 1.8 million cars off the road or planting more than 123 million trees**.

View more information on our value chain and how we embed circularity throughout [here](#).

Our continual investment and commitment to LRM puts A-Gas at the forefront of our industry.

8.6m
mt CO₂e*
abated in 2022



**a percentage of the total carbon abatement is derived from including the GWP of all Ozone Depleting Substances processed.*

***The EPA Greenhouse Gas Equivalencies Calculator was used to calculate these CO₂ equivalent contributions.*

Footnote/disclaimer: The greenhouse gas abatement reflects the climate impact of our work. We do not claim the associated emission reductions against our own internal net-zero target.

Circular Economy Partnerships

Our use of circular economy principles is informed by partners chosen for their contribution, involvement and collaboration opportunities. We will maintain and grow these relationships and look to extend our partnerships as we continue on our journey.

Ellen MacArthur Foundation – a non-profit organisation that encourages the development of circular economy principles within organisations and across industries. It has provided our teams with opportunities to learn, connect with others and explore the challenges we face as a business, an industry and a planet.

Carbon Market Institute – an independent member-based organisation that aims to accelerate the transition to net-zero. It sets out strategies for achieving net-zero and brings together participants within the carbon market.

COPA Alliance – a global network advancing solutions aimed at reducing banks of ozone depleting substances and HFCs. This alliance brings together parties that are working towards sustainable refrigerant management. Through our partnership, A-Gas has attended and supported events and participated in schematic working groups, webinars and forums.

90 Billion Ton Opportunity – A-Gas was a technical advisor for this [report](#), co-authored by the Environmental Investigation Agency, Institute for Governance and Sustainable Development and the Natural Resources Defence Council.

MOP and COP – A-Gas attends and contributes to global Montreal Protocol (MOP) and Conference of the Parties (COP) events.





SECTION FOUR

SOCIAL

IN THIS SECTION

- 38 Our Approach
- 39 Focusing on Health, Safety and Wellbeing
- 45 Attracting and Retaining Talent
- 49 Supporting People's Goals and Development
- 50 Compensation and Benefits
- 51 Fostering Diversity, Equity and Inclusion (DE&I)
- 54 Supporting Our Communities

Our Approach

With a team of over 800 people around the world, we recognise our responsibility as an employer to support the physical and mental wellbeing of our growing and diverse workforce. We have a strong health and safety culture, in which we are all dedicated to making sure A-Gas remains a great and safe place to work.

To ensure that we hire and retain talented people within a highly competitive market, we endeavour to position A-Gas as an employer of choice that provides attractive working arrangements, career development options and incentive programmes.



Focusing on Health, Safety and Wellbeing

Our Health and Safety Standards

No aspect of our daily operations is more important than the health and safety of our employees, customers and guests. We are committed to Zero Harm; operating a strong safety culture where we actively question and challenge unsafe acts and proactively make our working environment safer. Our employees are trained to think about safety before acting and to do things safely the first time.

We manage Occupational Health and Safety (OHS) risks at both Group and local level. At Group level, 13 Group Safety Governance Standards set the framework and requirements for risk assessments, reporting and operational management at all locations.

They are implemented locally and include:

- Risk Assessment Reports and Investigations
- Continuous Improvement
- Business Continuity
- Change Management
- Work Equipment
- Contractors
- Stacking and Storage
- Fall Protection
- Lone Working
- Confined Space Entry
- Mobile Plant and Vehicles

Our Group-wide frameworks also include a set of standards focusing on Engineering Governance. These standards cover elements, such as design philosophy considerations, hose management, maintenance, gas detection and relief valves, promoting consistency in approach across all sites.



Our Key Health and Safety Initiatives

We are continuously focused on improving our global health and safety reporting. We provide our teams with a variety of dashboards, including Safety, Quality and Environment (SQE), emissions, and operational reviews. These dashboards provide critical planning and reporting functionality for the day-to-day running of our regional businesses.

Our sites have site-specific Occupational Health and Safety (OHS) procedures, for example, to ensure the maintenance of chemical inventories, performance of risk assessments, appropriate labelling of vessels and the maintenance of Safety Data Sheets (SDS). Our Safety Data Sheets are generated by a third-party provider and reviewed and approved by A-Gas at a regional level. All SDS are available to end users on [our website](#).

While we have dedicated OHS roles across the business worldwide, our safety culture extends beyond this. Our global teams recognise that regardless of your role or level within the organisation, we all have a responsibility and part to play in maintaining our strong safety culture.

A-Gas uses a Process Safety Management (PSM) approach to assess and control hazards associated with the chemicals and equipment used as part of our processes around the Group. Our PSM incorporates specific procedures and management frameworks to create safe workplaces and prevent or mitigate the consequences of hazardous scenarios.

Reducing Incidents and Improving Performance through Our Safety Thresholds

Safety at all levels is always first on the agenda at A-Gas. Our safety thresholds are all aimed at ensuring we meet our goal of “people returning home in the same condition as they arrived.”

We have continuously built and protected our safety culture for over 30 years. We talk about safety and SQE at the start of every meeting, whether it is an operating review at a regional level or a Board or Executive Team meeting.

Our locations regularly offer a broad range of safety-related training and ensure new employees receive a health and safety induction from day one.

We continually assess and review safety thresholds to improve and drive accountability regionally and globally. The reason for using the terminology of “threshold” (upper limit) is that although we are targeting zero injuries and zero leaks, we understand that the accidental release of refrigerant into the atmosphere may occur at our sites. To mitigate this as much as possible, we have put in place thresholds that we endeavour to stay below. We monitor the following three SQE thresholds:

1. Safety: Recordable Injury Incident Rate.

This is a calculation of the number of recordable injuries per 200,000 man-hours worked across the company, where recordable injuries are Medically Treatable Injuries (MTI), Lost Time Injuries (LTI) and Fatal Injuries (FI).

2. Quality: Defects Per Million Units (DPMU).

We only began to measure this metric from 2022, so have set no thresholds yet. To measure quality in 2022, we reviewed actual customer complaints we received during the year.

3. Environment: CO₂e from Leaks.

This considers the weight in kilograms of refrigerant leaked to atmosphere and its related GWP to understand the impact on the environment in CO₂e terms.

Further details about the thresholds can be found below:

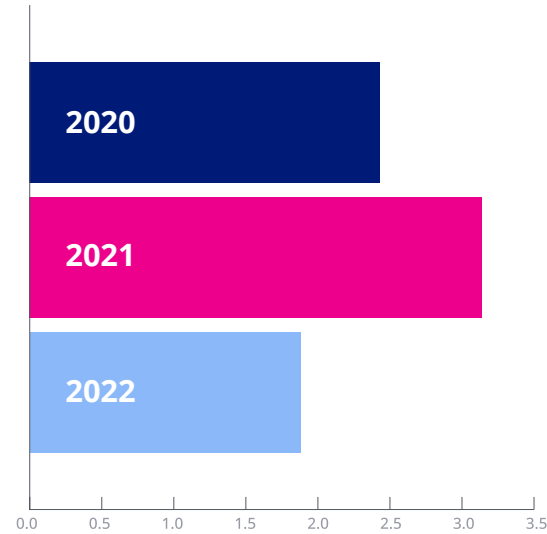
SQE	Metric	2022 threshold	2022 performance against threshold	2023 threshold	Notes on performance against thresholds
Safety	Recordable Injury Incident Rate	2.60	1.88	2.30	Our recordable injury rate tracked below our threshold in 2022.
Quality	DPMU	N/A	N/A	1,500	<p>Note: a DPMU of 1,500 equates to a failure rate of 0.15%, or conversely a success rate of 99.85% of all products shipped to customers.</p> <p>2021 internal quality complaints: 538 Customer complaints: 375</p> <p>2022 internal quality complaints: 633 Customer complaints: 529</p> <p>We had a rise in complaints between 2021 and 2022 due to our acquisitions and business growth.</p>
Environment	Leaks (mt CO2e)	7,000	22,957	12,500	We exceeded this threshold in 2022 due to significant accidental leaks at various A-Gas locations. We have increased the threshold from 2022 to 2023 to accommodate the geographic growth of our business.

Recordable Incident Rate

Our recordable incident rate is below the threshold and is improving over time.

Actual Recordable Incident Rate:

- ◆ 2020: 2.43
- ◆ 2021: 3.14
- ◆ 2022: 1.88



Regional Calculations of Injury Rate

Region	Hours Worked	Lost Time Injury (LTI) and Medical Treatment Injury (MTI)	Frequency Rate
Americas	658,908	10	3.04
Asia-Pacific	157,558	1	1.27
Australia	116,088	2	3.45
Europe	456,950	1	0.44
South Africa	101,442		0.00
Total	1,490,946	14	1.88



Risk Management through Our SQE Thresholds and Dashboards

- We measure our health and safety conduct against our SQE thresholds and use our dashboards to track our performance.
- The use of SQE alerts for serious events drives awareness and helps people to avoid repeat incidents.
- Our Business Excellence programme has a continuous focus on standardising ways of working based on best practice.
- Employees at any level of the business can submit Business Improvement Reports (BIRs) if they have a Safety, Quality or Environmental incident, concern, innovation or suggestion.
- We use Good Practice Flashes to share process improvements, strategic thinking and new ways of working that lead to a significant increase in productivity. Good Practice Flashes are internal documents used to share the learnings with others across the organisation.

Towards Zero, Together: Prioritising Health and Safety Across Our Business

A-Gas is focused on targeting zero in every aspect of our work. As well as encompassing our emissions goals, Towards Zero, Together describes our dedication to staying safe.

Throughout 2022, we have emphasised maintaining a healthy SQE culture, with a campaign focusing on one element in each quarter. Examples from the year include:

Q1. Safety – housekeeping

We encouraged everyone around the business to improve their site's housekeeping, highlighting how it is critical to maintaining good safety. Housekeeping, which involves ensuring clutter-free workplaces, is also key to delivering operational Business Excellence goals, such as efficiency and improved inventory management. The aim of the initiative was to show that everybody has a role to play in managing and improving housekeeping. We saw examples of good engagement, with employees taking the initiative to improve their workspaces whether on-site, in the office or working remotely.

Q2. Environment – emissions and leaks

During this part of the campaign, we encouraged all A-Gas employees to recap the environmental internal training module (Environmental Safety) that we launched the previous year. The initiative also included internal promotional material to ensure the topic remained front of mind, informative sessions about the footprint process and an Environmental Suggestion Box on our internal Intranet for our teams to easily submit their thoughts and comments.

Q3 – Quality focus

We emphasised how quality encompasses everything, from customer and supplier interactions to the aesthetics of our packaging and how our products perform. This initiative focused on improving internal quality checks and encouraging the sharing of best practice with Good Practice Flashes.

Q4 – SQE reporting

In Q4, we highlighted the components of SQE reporting, such as our VELMA Resolution Centre and guidelines for entering data. We provided our teams with training and encouraged them to use our internal systems.

Although these initiatives have been successful, we learnt that four campaigns in one year can be challenging for people to balance alongside their day-to-day responsibilities. We will therefore adjust our future plans accordingly.

Reporting on Health and Safety Issues

A-Gas has a wide range of systems in place globally* to report safety issues:

- **Business Improvement Reports (BIRs)** – this report is accessible to everyone via VELMA, A-Gas' custom-built data entry and reporting tool. Information reported by BIRs includes incidents involving people, the environment, assets or business reputation.
- **Provision of Work and Equipment Regulations (POWER) risk assessments** – completed by regional teams to assess the level of danger before carrying out non-routine, potentially high-risk tasks.
- **Toolbox Talks** – short team meetings to inform and educate teams, as and when required.
- **Weekly team meetings** – scheduled meetings between various departments across the regional site. Team members are encouraged to share any safety values or concerns with colleagues before a meeting starts. This is known as a 'safety contact'.
- **Weekly safety walkarounds** – to assess our operational activity and office space to identify and avoid potential safety risks.
- **Five-minute observations** – employees are encouraged to assess an area and its operator against an approved work instruction and its related risk assessment (where necessary) to ensure people are working safely and in accordance with the procedure.

**These systems or their names may vary by region*

Supporting Wellbeing Across Our Operations

A-Gas recognises that supporting the physical and mental wellbeing of our employees is important for our global teams. We offer a range of initiatives to promote and support health, safety and wellbeing. They include Mental Health First Aid support and Employee Assistance Programmes (EAP) that provide free and confidential support across a number of wellbeing topics either online or via face-to-face counselling. Our USA, UK and Australia locations offer EAPs, with the UK and Australia additionally offering support for mental health.

We support employee financial security by looking to offer annual salary increases to ensure they are fair and competitive. To support work-life balance, we offer hybrid working at all locations, where it is appropriate to the role.



Attracting and Retaining Talent

A-Gas operates in a competitive market and therefore needs to focus on attracting and retaining high-quality, diverse talent.

The global People and Culture teams have created a three-year people strategy comprising initiatives that sit under the following five key pillars:

1. Talent attraction and management - making A-Gas an employer of choice, ensuring we have the right skills, at the right time and in the right place.

2. Learning and development - ensuring our employees have access to learning and development to be successful in their current and future roles.

3. Performance, reward and recognition - driving success by recognising and rewarding exceptional performance.

4. Culture, diversity and inclusion - creating further engagement and making A-Gas a great place to work.

5. Operating model and systems - implementing efficient and effective structures, processes and systems.

We assess the success of our people initiatives with key performance measures, including employee surveys and talent acquisition targets.



In 2022, we ran a wide range of initiatives at Group and regional levels to further position A-Gas as an attractive employer for both existing and potential employees:

Flexible Working

Having introduced hybrid working to help attract and retain employees after the Coronavirus pandemic, we have maintained some of these new ways of working. A hybrid structure supports our global teams and provides more flexibility. It has also enabled us to recruit talent beyond the commuting range of a site or office.

Talent Succession Reviews

To further improve retention, we also operate a succession review programme, developing potential successors for specific roles and identifying retention risks so that we can mitigate them. This has underlined our commitment to our people's personal and professional development.

Employee Referrals

Employee referral has also been very successful for attracting new hires, with a large percentage of new employees in Australia and the USA (where we have also built a dedicated Talent Acquisition Team) now joining us via this process. Our team in the USA has emphasised the A-Gas environmental story to attract candidates, using marketing campaigns that link back to our sustainability initiatives.

Inclusive Hiring

In the UK and Europe, the LinkedIn and Indeed platforms account for around 40 percent of new hires.

To broaden the pool of potential candidates, many job descriptions no longer require candidates to have degree-level education and instead focus on other attributes, such as a positive work ethic and cultural fit. In the USA, we implemented a trial of Ciarra, a programme that puts our open vacancies on more than 600 different diversity job boards.



Focus on Working Arrangements

As a family-oriented organisation, we offer working arrangements that are aimed at supporting different requirements and lifestyles across our global teams:

Part-Time Working. All employees have the right to speak with their line manager and the People and Culture Team to discuss part-time working opportunities. Requests are assessed on a case-by-case basis, with a focus on how we can make it work for both the individual and the business.

Parental Leave. We offer statutory benefits for parental leave, maternity, adoption and paternity. In 2023, we plan to run a global project to review the support we offer our employees for various life events.

Flexible Working and Relocation. Employees can opt for hybrid working between home and their contracted office or site from their first day of employment, depending on their role, work patterns and location. This also includes the opportunity to request a secondment or permanent move to another A-Gas location across the world if there is a business need. We see this as a strong benefit of being a global company.

We welcome these requests, carefully consider any moves with the employee and support them with advice on issues, such as visas and legal requirements.

Engaging with Our Employees Globally

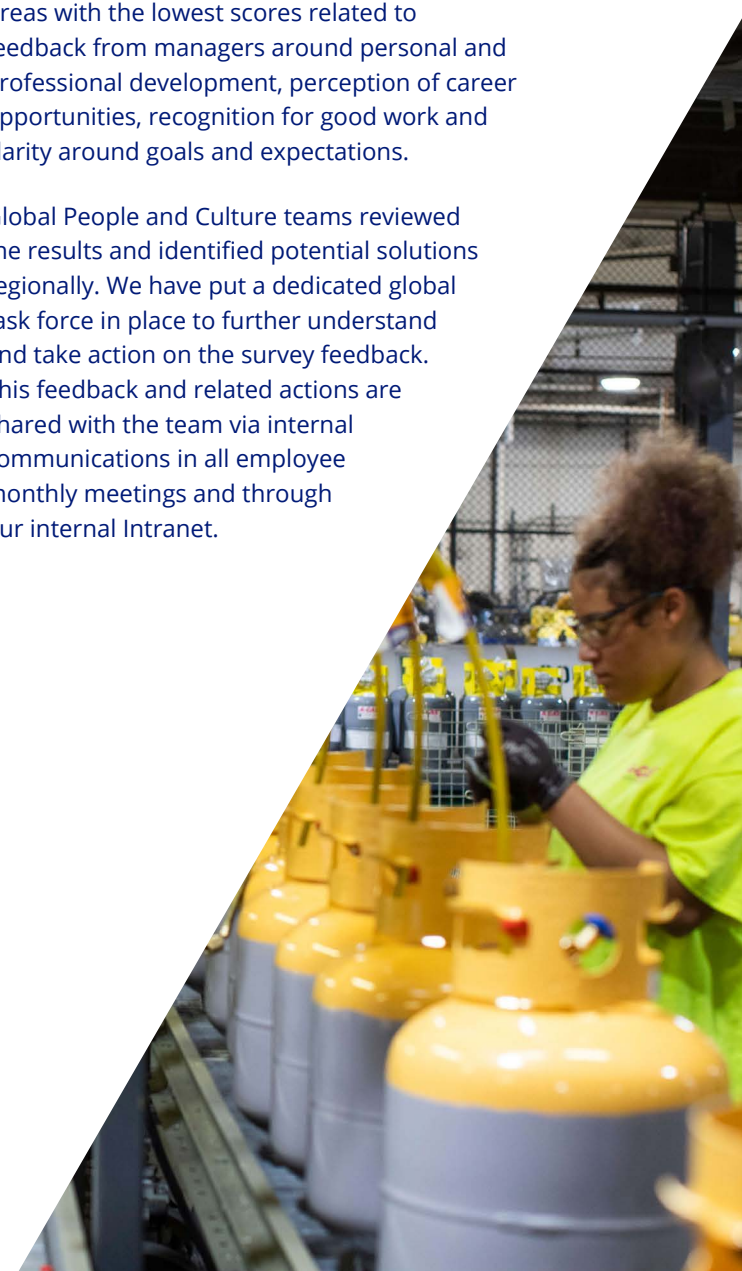
We engage with our teams through an annual employee survey that is open to all colleagues. In 2022, we carried out our third annual Global Pulse Survey, which aimed to measure employee views and opinions across the entire business.

Questions range from feedback on our culture and values, leadership commitment and messaging on our strategy, to how we are performing in key areas, such as safety and A-Gas as a place to work. Year-on-year participation rates have increased steadily, with 2022 seeing 80 percent participation across the globe compared to 73 percent in 2021.

An understanding of our global vision and The A-Gas Way, along with a sense of pride and empowerment for working at A-Gas received the highest score. We also saw strong results around safety awareness and the importance of emission reductions, as well as an understanding from our employees that they can use their strengths and expertise in their role.

Areas with the lowest scores related to feedback from managers around personal and professional development, perception of career opportunities, recognition for good work and clarity around goals and expectations.

Global People and Culture teams reviewed the results and identified potential solutions regionally. We have put a dedicated global task force in place to further understand and take action on the survey feedback. This feedback and related actions are shared with the team via internal communications in all employee monthly meetings and through our internal Intranet.



Awards For Excellence

These awards celebrate key successes from across the Group from the last 12 months.

This global programme recognises people and teams and is based on nominations from across the business, with an open nomination process throughout the year. Award winners are announced and celebrated at a worldwide virtual event in which everyone within the organisation is invited to attend.

Award categories reflect our Critical Success Factors:



Safety, Quality and Environment



People and Culture



Business Development



Business Excellence



Sustainability



Supporting People's Goals and Development

We have continued to focus on employee development, building and enhancing our training and launching initiatives to further embed our culture, the A-Gas Way.

Employee Training and Development

We use our HR system, SAP-People, to support employees' objectives, development and career progression, regardless of their role in the business. We encourage our teams to have regular performance conversations, identify goals and take every opportunity to learn. In 2022, our employees across the globe completed more than 430 SAP-Learning (LinkedIn Learning) training opportunities.

Onboarding Modules

To ensure that every new starter understands our strategy, culture, purpose and values, in 2022 our global teams created four onboarding modules:

- **Game Plan on a Page (GPOAP)**
- **The A-Gas Way**
- **Sustainability**
- **Towards Zero, Together**

The modules are designed to help line managers talk new employees through the content and have also been translated for non-English speaking regions. They are now part of the new starter induction process and are available for existing employees to refresh their knowledge and understanding.

Game Plan on a Page (GPOAP)

In 2022, we refreshed our three-year GPOAP and the supporting A-Gas Way culture guide to embed the sense of One A-Gas Team and Together, We Can. Both documents capture the strategic intent of our business in a short and succinct way. During the year, we held a series of webinars and supporting sessions with our teams across the globe on the GPOAP and fundamentals of The A-Gas Way.

Leadership Development

A-Gas recognises the importance of developing the future leaders of our organisation. For example, our European and UK teams launched their leadership development programme, which remains underway with 37 participants from the UK Management Team, European Leadership Team and other line managers. The programme covers five modules: understanding the role of a leader; conversation skills; dealing with conflicts; motivation during change; and employee development.

Regional Training

A-Gas' regional locations offer a wide range of training for employees, including leadership development, technical training, onboarding and programmes to support business excellence.

Compensation and Benefits

We continue to provide competitive salary and bonus opportunities for our teams globally, in some cases, supplementing them with cost-of-living adjustments.

To support our commitment to become One A-Gas Team globally, 2022 saw the development of a revised incentive plan and reward structure across all levels of the business.

The revised structure (to be fully implemented from January 1, 2023) will see the annual performance of all employees being measured against the performance of A-Gas (SQE and financial results), and their individual performance against personal goals and objectives. This means everybody knows the part they are playing in the A-Gas story and how their hard work is contributing to overall success.

In the Asia-Pacific (APAC) region we are moving towards standardised pay-for-performance, which will see every role in APAC benchmarked against the market. We are starting with Australia and New Zealand and will cascade it out across Asia. Singapore and Japan will review their welfare and benefits offerings. The USA already offers a pay-for-performance programme and reviews benefits annually.

Our UK operation offers healthcare benefits, including health checks for all employees, along with eye care support and flu vaccinations.

Australia offers Executive Comprehensive Medical Health assessments and may extend the scheme to other employees, depending on the feedback received from those already using the initiative.



Fostering Diversity, Equity and Inclusion (DE&I)

We actively monitor the gender diversity of our workforce. In 2022, we moved from 25 percent of our workforce being female to a 72 percent/28 percent male/female split, at a time when our overall workforce grew by three percent.

Our people vision states that we want to create the best environment to attract, develop, engage and retain high quality, diverse talent. We aim to measure where we are with DE&I across a number of activities and then develop a plan of action for how we can improve this to the desired level. We will create DE&I groups to help us define and deliver this agenda going forward.

In the USA, our business needs to comply with affirmative action, which aims to improve opportunities for groups subject to discrimination, evaluating their employee workforce each year and reviewing their strategies to attract a diverse workforce.



Global Diversity and Inclusion Metrics

Employee Diversity by Age (End of 2022)	Age Group	Total
	Under 20	1
	20s	135
	30s	269
	40s	242
	50s	151
	60s	50
	Over 60	2

Executive Diversity (End of 2022)	Male (M)	Female (F)	
	100%	0%	
	40s	50s	60s
	3	3	1
	<5 Years Service	5-20 Years Service	>20 Years Service
2	2	3	

Headcount by Gender (end of 2022)	Age Group	Gender	Total	
	Africa	M	33	
	Africa	F	21	
	Americas	M	288	
	Americas	F	101	
	Asia-Pacific	M	117	
	Asia-Pacific	F	44	
	Europe	M	139	
	Europe	F	59	
	Group	M	33	
	Group	F	8	
	Global	M	610	72.36%
	Global	F	233	27.64%
		Total:	843	

Employee Turnover and Hires by Region and Gender

	Male (M)		Female (F)		
	Count	%	Count	%	
Africa	8	72.73%	3	27.27%	11
Americas	78	83.87%	15	16.13%	93
Asia-Pacific	17	70.83%	7	29.17%	24
Europe	37	60.66%	24	39.34%	61
Group	5	71.43%	2	28.57%	7
Global	145	73.98%	51	26.02%	196

	Male (M)		Female (F)		
	Count	%	Count	%	
Africa	6	54.55%	5	45.45%	11
Americas	113	71.97%	44	28.03%	157
Asia-Pacific	33	67.35%	16	32.65%	49
Europe	30	53.57%	26	46.43%	56
Group	8	72.73%	3	27.27%	11
Global	190	66.90%	94	33.10%	284

		Male (M)		Female (F)		
		Count	%	Count	%	
2022 Turnover	Start of 2022	755	565	74.83%	190	25.17%
	End of 2022	843	610	72.36%	233	27.64%
Global Turnover		24.53%				

% Part-Time Workers	End of 2020	End of 2021	End of 2022
	5.26%	4.60%	4.63%



Supporting Our Communities

A-Gas is engaged in both local and international community support programmes. Each of our locations support local causes, and our teams are actively engaged in charity fundraising events and activities. Here are a few examples of our community involvement:

Veterans Matter

In December 2022, the A-Gas team in the USA continued their support for Veterans Matter by offering a donate and match initiative to help provide housing for homeless US veterans. Since 2019, A-Gas has raised more than \$43,500 for Veterans Matter.

Support for Ukraine in Fundraising Efforts

In recognition of the humanitarian struggle in Ukraine, A-Gas established a matching programme to support the fundraising efforts of our employees. As a team, we have donated more than £10,000 and supported the provision of an ambulance.

Supporting Schools and Colleges

We endeavour to work with schools and colleges around the world as we provide students with an introduction to life in the workplace. Our internship programmes have proved successful, with some of our team members starting their careers at A-Gas via this route.

In Singapore, the team has partnered with Temasek Polytechnic School of Engineering to enhance the competency of technicians. Read the full case study [here](#).



A photograph of a male worker in a dark blue polo shirt, a bright yellow-green high-visibility safety vest, and clear safety glasses. He is wearing black work gloves and is focused on unrolling a large roll of white material. The background shows a factory or warehouse environment with rows of large, light-colored cylindrical containers on metal racks. The lighting is bright, suggesting an indoor industrial setting.

SECTION FIVE

GOVERNANCE

IN THIS SECTION

56 Our Governance

59 Managing a Responsible Business

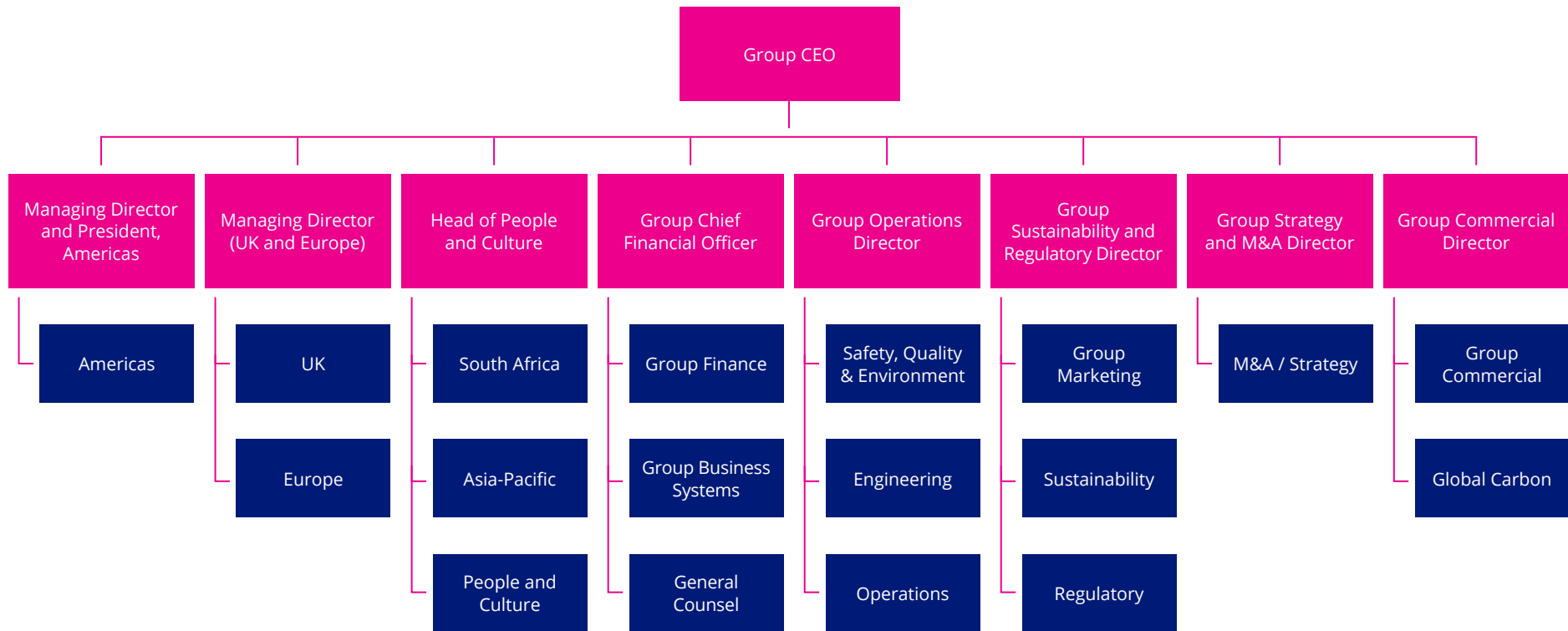
Our Governance

At A-Gas, we are committed to maintaining the highest standard of integrity and ethical business conduct across our global sites.

Our 30-year success is underpinned by our transparent, open and honest interactions with customers, suppliers, employees and other key stakeholders. We believe that “doing business in the right way” is fundamental to building a long-term, sustainable business.

This outlook is promoted by our Board via a two-way communication framework, Group-wide policies and comprehensive training. However, we recognise that true success is only achieved by adopting this ethos into our company culture. In turn, our colleagues are proud to work for A-Gas. They are also proud of what our brand represents and what it means to them.





Executive Board Structure

The Group is headquartered in the UK and managed by an Executive Board that is supported by Managing Directors across each of our regions.

Ken Logan, Group Sustainability and Regulatory Director, is the executive member responsible for driving sustainability across our global business. He meets with the rest of the executives on a monthly basis to discuss our evolving sustainability strategy and reports on all sustainability matters.



Senior Executive Remuneration

Sustainability metrics are built into A-Gas' senior executive bonus programme. In addition to receiving their base salary, our senior executives participate in an annual bonus programme based on the following metrics:

70% - Group target EBITDA.

15% - Team goals and objectives, including personal objectives.

15% - Safety, Quality and Environmental (SQE) targets (weighted at 40%, 20% and 40%, respectively).

Our Approach to Risk Management

A-Gas has a broad risk management ethos that is fostered throughout the organisation by regular formal and informal communications between regional teams and the Group Executive Team. These include:

- Monthly operating reviews.
- Quarterly financial reviews (including reviewing risk).
- Weekly Executive Team meetings.

These meetings prioritise safety, quality and environmental risks and also address operational, financial, commercial and people risks. Key aspects of these reviews are communicated and discussed each month with the A-Gas Board of Executives and the appropriate actions are implemented.

Our Group Governance Standard on Risk Assessment establishes minimum requirements for managing business-related risks at all A-Gas locations using a risk matrix, where applicable. For example, from an environmental perspective, the risk matrix considers factors such as the global warming impact of the products we handle, flammability levels, and hazards posed by chemical spills.

The Health and Safety Governance Standard also establishes minimum Group requirements for a business continuity process for all A-Gas locations around the world, ensuring minimal disruption to our customers and stakeholders.

All A-Gas businesses review their conformance to various regulatory requirements and make the necessary changes to processes to achieve continual compliance. Each Managing Director is responsible for implementing all Group

Governance Standards at each A-Gas site, and for delegating responsibility, as appropriate. To ensure their own safety and the safety of those around them, employees must operate in accordance with any information, training or reasonable instruction provided.

Our risk management process establishes minimum requirements for business related risks based on identifying hazards and assessing the probability and likelihood, consequence and severity of the hazard and the undesirable outcome. Mitigating measures are employed to manage the risk.

The Company's Risk Management Framework includes four key elements:

1. Risk identification.
2. Risk assessment.
3. Risk mitigation.
4. Risk monitoring and reporting.

Managing a Responsible Business

Regulatory Compliance

A-Gas complies with all applicable laws and regulations within the countries in which it operates, including, but not limited to:

- Environmental.
- Contracting.
- Modern slavery.
- Ethics.
- Bribery.

This level of compliance requires significant data collection and the associated systems to capture it. To facilitate this, we have hired, and continue to hire, people with the specialist skills needed to analyse and evaluate our compliance data.

Implementing global regulation regionally needs specialists on the ground. Accordingly, we have either recruited dedicated regulatory experts or partnered with consultants for support within this space.

Our full-time A-Gas employees follow proposed regulations, get involved in the process with industry partners, governments and NGOs, attend meetings, forums and presentations, and actively lobby on our behalf to increase circularity and LRM. Once proposals become legislation, our Regulatory Team, alongside the country Managing Director and/or the Group and regional Commercial Team, build this into our commercial strategy.

A-Gas is continuously focused on regulation and the impact it has on our business, industry and customers, and we will continue to build global and regional resources accordingly.

Cybersecurity

To combat the ever-increasing cybersecurity risk, we continuously invest to ensure our systems are secure and robust for customers and employees. We employ state-of-the-art solutions to protect our collective data assets, including:

- Firewalls, VPNs and proxies.
- Global integrated management tools.
- Anti-virus/anti-malware (EDR).
- Integrated Cloud Email Security (ICES).
- Domain filtering (traffic routing and scrubbing).
- Link scanning and checking (safe links).
- SIEM (Security Incident and Event Management).
- Multi-Factor Authentication (MFA).

The biggest cybersecurity risk to a business is phishing. A-Gas combats this threat with a continuous phishing simulation and training campaign, along with the use of AI tools to intercept and remove phishing emails from our inboxes.

Anti-Trust

Our Global Anti-Trust Compliance Policy formalises our existing prohibitions against any anti-competitive conduct or any conduct that could be considered to be obtaining an unfair business advantage. Each employee is responsible for taking action and is encouraged to raise matters. This can be done via any senior person in the organisation, or through our Whistleblowing Hotline if they suspect improper conduct by others in the business or have concerns about the way in which the business is run.

Anti-Corruption

A-Gas has always strived to do business in the right way to uphold our reputation as a long-term, reliable and honourable business partner, acting with the utmost integrity. To this end, A-Gas has implemented an Anti-Corruption Policy.

The policy covers what is and is not acceptable when dealing with suppliers, customers and other commercial partners, as well as the obligations on individuals to report unusual and/or suspicious behaviour. This framework enables the business to meet its obligations under the various pieces of global anti-corruption and bribery legislation to which it must adhere.

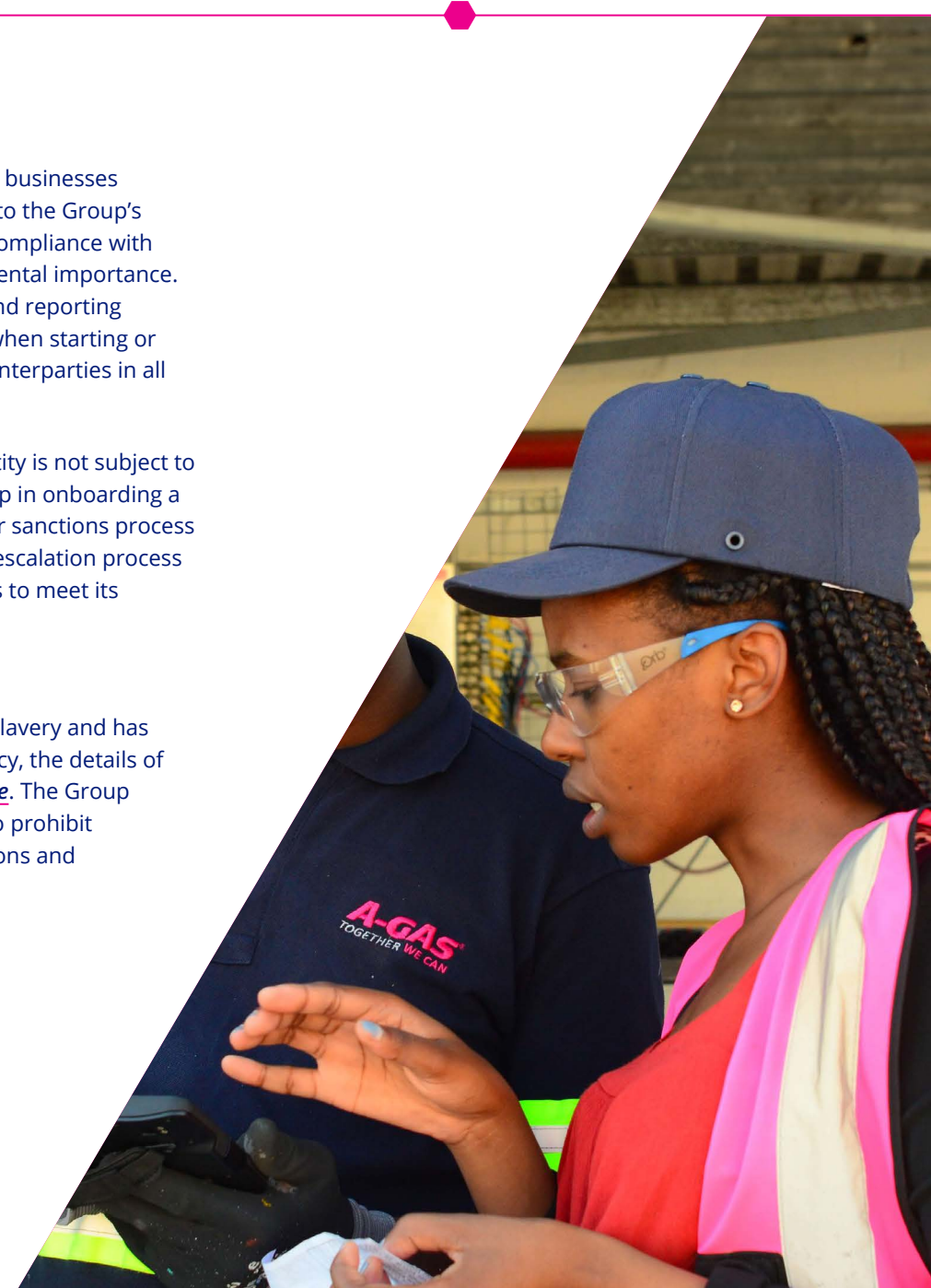
Trade Sanctions

A-Gas trades with individuals and businesses in many different countries. Due to the Group's reach and ownership structure, compliance with trade sanction rules is of fundamental importance. A-Gas has adopted a screening and reporting process for colleagues to follow when starting or continuing relationships with counterparties in all parts of the world.

Checking that an individual or entity is not subject to sanctions forms an important step in onboarding a new commercial relationship. Our sanctions process includes a regular reporting and escalation process that ensures the Group continues to meet its obligations in this area.

Anti-Slavery

A-Gas is opposed to all forms of slavery and has implemented an Anti-Slavery Policy, the details of which are available on [our website](#). The Group expects all of its counterparties to prohibit slavery and includes such provisions and obligations in its legal contracts.




Supply Chain Management

A-Gas considers responsible supply chain management in all aspects of supplier engagement throughout our procurement lifecycle. We:

- Ensure partners and suppliers adhere to relevant sustainability elements and drive initiatives in this area.
- Include sustainability considerations in our supplier onboarding process.
- Require suppliers' environmental performance to be reviewed.
- Conduct ongoing due diligence and reporting on key suppliers for political connections and sanctions.
- Request in our terms and conditions that suppliers record and have traceability of subcontracted work.

Our Global Contracting Policy formalises how we handle all contractual relationships. The Board delegates its authority in this area to “responsible individuals” who, in turn, assign responsibility to regional Managing Directors.



A photograph of a male worker in a blue jacket and safety glasses, looking down at a row of yellow gas cylinders. The background shows industrial metal structures.

SECTION SIX

APPENDIX

IN THIS SECTION

- 63 Methodological Note
- 67 Glossary of Terms
- 69 Assurance Statement

Methodological Note

Introduction

This is A-Gas' first external Sustainability Report; moving forward, we will report annually.

This Sustainability Report covers January 1, 2022 to December 31, 2022, in line with our financial reporting period. We have used 2020 as the baseline year for our pledge to be net-zero by 2035 and to achieve a 50 percent reduction in Scope 1 and Scope 2 Greenhouse Gas (GHG) emissions by 2028.

The summary below provides a high-level overview of the A-Gas approach to calculating our Scope 1 and Scope 2 GHG emissions.

Standards Used for Calculating Emissions Data

We have used the GHG Protocol Corporate Accounting and Reporting Standard to determine our Scope 1 and Scope 2 GHG emissions across all companies that have been in the A-Gas Group for 12 months or more.

Our Basis of Reporting (BoR) document sets out the high-level principles, methodologies and assumptions used by the A-Gas Group in the preparation and reporting of its GHG emissions data for the 2022 calendar year. As each of our sites have slight variations in equipment and operation, each has a unique BoR document that reflects this.

We have used the Financial Control approach to set our organisational boundaries, as defined by the GHG Protocol. A-Gas' emissions are reported in metric tonnes CO₂e (mt CO₂e) and cover:

- Total Scope 1 GHG emissions (process emissions: leaks, filling losses, evacuation losses, analysis and sampling losses, purging losses; stationary and mobile combustion; fugitive emissions).
- Total Scope 2 GHG emissions - location based (purchased electricity).
- Total Scope 3 emissions (outside of scope).

Global Warming Potential (GWP), as listed in the IPCC Fourth Assessment Report (AR4 - 100 year), has been used to calculate CO₂ equivalents.

Emissions Data Collection and Analysis

A-Gas carries out a GHG emissions footprint exercise to measure and collect emissions data across each of its entities, which includes liaising with all regions to obtain, collate and interpret data. The data-gathering and analysis involves the:

- Group Sustainability and Regulatory Director - sponsor.
- Group Financial Controller - to gather and consolidate all subsidiary data and develop the total Scope 1 and 2 GHG emissions ready for internal review and third-party validation.
- Group Sustainability Compliance Manager - to support the Group Financial Controller in the data-gathering process, to ensure subsidiaries understand the process and provide data in a timely manner and collate information for the Basis of Reporting (BoR).
- Operations Directors in the USA, UK/EU, South Africa and the APAC region - to co-ordinate the data gathering and scrutiny of data at the regional level.
- Regional Finance, Operations and Engineering teams - to gather raw data at the source and perform emission calculations.



How We Quantify GHG Emissions

Every site is responsible for owning, monitoring and measuring its emissions through internal reviews and by interrogating data that is collected by a combination of automated and manual techniques.

We began collecting emissions data in 2020. In 2022, we started developing a digital tool to capture and monitor process emissions every month. As this tool was not ready for implementation in 2022, we gathered and measured our performance using pre-existing tools and software, such as Microsoft Excel.

Each year, we refine and improve our GHG emissions footprint calculations as we get deeper into the process of measuring and then managing the effectiveness of our GHG emission-reduction projects. Our level of maturity in measuring our GHG emissions footprint is growing. Where the quality of data and accuracy can be improved retrospectively, and the change is deemed material (five percent of the Groups total GHG emissions for that particular unit of measure), we will proactively include the updated figures in subsequent reporting to our internal and external stakeholders.

Scope 1

The key Scope 1 GHG emissions sources for the A-Gas Group are:

Process emissions

- ⬡ Leaks (uncontrolled losses) – from any vessel, cylinders or equipment.
- ⬡ Filling losses – from filling heads, fill station service changes and bulk tank connections.
- ⬡ Evacuation losses – from cylinders, ISO tanks, processing equipment and recovery equipment.
- ⬡ Analysis and sampling losses – from heels, purge lines, sample cylinders and laboratory tests.
- ⬡ Purging losses – from purging equipment, cylinders, bulk and ISO tanks.

Combustion emissions

- ⬡ Mobile combustion – fuel purchased for forklifts, Rapid Recovery trucks and equipment and company-owned vehicles.
- ⬡ Stationary combustion – boilers and diesel generators.

Other emissions

- ⬡ Fugitive emissions from heating, ventilation and air conditioning equipment – that are measured by calculating the volume of the additional refrigerant used and its global warming potential (GWP).

Process emissions methodology

1. Identify all the sources of process emissions.
2. Determine the average volume loss for each activity contributing to an emission (where actual is not available), taking into account the size of loss and product properties (such as liquid and vapour densities).
3. Extract activity data per month, per product for the various process operations.
4. Apply AR4 GWP values for the products against volume loss.
5. Calculate the resulting mt CO₂e impact for the respective operation for the period.



Operational data for each of the main process emission categories comes from a variety of sources. They include our custom cylinder tracking database, Cyltrak®, Business Incident Report (BIR) register which is managed through VELMA (an application for recording and tracking Safety, Quality and Environmental (SQE) incidents) and function-specific workbooks. Where database content is not available, other methodologies of data collection were employed.

Each location calculates emissions using its own engineering estimates and assumptions for the products and operational activity at that site.

Combustion emissions methodology

We use supplier invoices showing consumption data to determine emissions associated with stationary and mobile combustion sources, such as forklifts, generators and company vehicles.

Scope 2

Periodic meter readings taken from A-Gas locations inform the amount of electricity consumption and are provided by utility suppliers. We apply emission factors, using the location-based method to convert the consumption data into GHG emissions.

Most of the electricity sourced by our locations in 2022 was from non-renewable sources, with two of our locations (Germany and the UK) purchasing their energy from renewable energy suppliers.

Emission/conversion factors

Where relevant, emission/conversion factors were applied to fuels, such as diesel, petrol, natural gas and electricity, using the latest published factors. These factors were sourced from various government authorities in each country and are listed below:

- ⬡ [UK Government Conversion Factors](#)
- ⬡ [Climate Transparency Report 2022](#)
- ⬡ [Nowtricity \(Netherlands\)](#)
- ⬡ [Canadian Government Emission Factors](#)
- ⬡ [National Greenhouse Accounts Factors \(Australia\)](#)
- ⬡ [Managed Emission Factors - New Zealand Ministry for the Environment](#)
- ⬡ [Thailand Carbon Dioxide Emission Per Electricity Generation](#)
- ⬡ [Singapore Energy Market Authority Data](#)
- ⬡ [US EPA GHG Emission Factors Hub](#)

Emissions Data Quality

Each region is responsible for ensuring its emissions data has been checked for accuracy and completeness. Further quality assurances are performed at Group level, including data integrity and reported activity checks. This also includes trend analysis and comparison with prior-year data. An independent third party performs a limited assurance verification of the location based (mt CO2e) Scope 1 and 2 GHG emissions data; this was carried out by DNV for the 2022 data.

Whenever there has been a material variance or change (five percent) in the GHG emissions data in a specific category, or a significant change in process, the site concerned is encouraged to own and run its own investigation. This should determine and explain the cause of the variance, including any corrective or preventive actions that may need to be implemented, for example, re-calculation of emissions. Where a material item is identified, a further ten percent threshold is applied to the year-on-year change of the item. Changes outside the threshold trigger further investigation and reasonable explanation from the relevant region.

Where it is found that data accuracy can be improved and the change is deemed material, we will retrospectively include the updated figures in subsequent annual reporting with an accompanying explanation for the misstatement.



Assumptions

Where a location has made assumptions unique to the nature of its operations, these assumptions are detailed in the BoR document for the specific operations and site.

Entities in Scope of this Sustainability Report

A-Gas is an international group of companies with headquarters in the UK. We have trading subsidiaries in the UK, Europe, South Africa, Australia, South-East Asia, China and the Americas. We have accounted for 100 percent of the total Scope 1 and Scope 2 GHG emissions from the operations over which we have financial control.

A-Gas locations covered in this 2022 Sustainability Report include:

- Americas (Bowling Green, Mexico, Rhome)
- Australia (Laverton, Melton)
- China (Shanghai)
- Germany (Seevetal)
- Italy (Avezzano)
- Japan
- Singapore
- South Africa (Cape Town, Johannesburg)
- Thailand (Samutsakhon)
- The Netherlands (Eygelshoven)
- United Kingdom (Portbury, Portishead, Rugby)

A-Gas acquired our operation in Punta Gorda, Florida, USA, in mid-2022. We usually start counting GHG emissions from new businesses a year after their acquisition. This allows time for integration activities, including identifying and quantifying emissions. For 2022, we considered using proxy data from our Rhome site in Texas, USA, for Punta Gorda. However, due to differences in operational activities, Rhome was not deemed to be an appropriate site to use. We will therefore re-state our Florida operations within our 2023 reporting, as per the GHG Protocol.

Our Japan business was acquired in early 2022. We were able to quantify and estimate some of our GHG emissions for this site and have therefore included them in the 2022 data.

Without established data collection systems in place, we had to exclude the bulk of their emissions in our calculations. However, where some data was available, we did use it. For example, mobile combustion for Florida, and for our sites in Japan, mobile combustion, purchased electricity and estimated limited process emissions data.

Business Growth through Acquisition

As a business that has traditionally grown via the acquisition of similar companies, it will, from time to time, be necessary to recalculate our baseline in line with this occurrence, along with any significant changes to our circular economy driven supply chain.

The proposed intensity ratio metric used to increase our initial 2020 baseline would be calculated using the new business's data for the selected starting year (taking in the full 12-month period) and each year thereafter until the business has been fully integrated into the A-Gas Group. The ratio used will be as follows:

Scope 1 and Scope 2 location based GHG emissions for the acquired business	= Total mt CO2e per mt refrigerant sold
Total virgin product and total reclaimed volumes sold by the acquired business	

Glossary of Terms

Term	Definition*
Destruction	Destruction of recovered refrigerants that cannot be reclaimed for future use to prevent them being released into the atmosphere. Refrigerants are sent to a licensed facility for processing. For example, using UN-approved, TEAP-certified technology, such as A-Gas PyroPlas®. This ensures that no, or very few, remaining Ozone Depleting Substances (ODS) or HFCs enter the atmosphere (A-Gas PyroPlas® has a 99.9999 percent destruction efficiency).
Fugitive Emissions	Emissions that have leaked out from air conditioning systems.
Global Warming Potential (GWP)	Metric that measures the extent to which a gas contributes to climate change in relation to carbon dioxide, which has a GWP of one. For illustration, the hydrofluorocarbon (HFC) refrigerant R404A has a GWP of 3,922 (based on AR4), if released into the atmosphere.
Kigali Amendment	Amendment to the Montreal Protocol (see below) that calls for a gradual reduction in the production and consumption of HFCs.
Installed Bank	All the refrigerants installed in refrigeration, air conditioning and heat pump equipment, and in stockpiles.
Lifecycle Refrigerant Management (LRM)	Circular economy solution on the journey toward net-zero. LRM's primary focus is to ensure that no refrigerant is released into the atmosphere once it is produced. It focuses on avoiding and reducing refrigerant leaks, promoting refrigerant recovery and increasing reclamation rates to mitigate unnecessary refrigerant use and emissions.
Montreal Protocol	International treaty designed to protect the ozone layer by phasing out the production of Ozone Depleting Substances, such as chlorofluorocarbons (CFCs), halons and hydrochlorofluorocarbons (HCFCs).
Net-Zero	The balance achieved when the amount of greenhouse gas produced is matched by the amount removed from the atmosphere.
Ozone Layer	Stratospheric layer that absorbs harmful wavelengths of ultra-violet (UV) radiation from the sun. Some types of UV radiation are linked to skin cancer, genetic damage and immune system suppression in living organisms, and reduced productivity in agricultural crops and the food chain. Releasing Ozone Depleting Substances into the atmosphere depletes the ozone layer, allowing a higher intensity of dangerous UV radiation to reach the Earth's surface.



Glossary of Terms

Term	Definition*
Reclaimed/Reclamation	Used refrigerants that have been recovered and processed through mechanisms, such as filtering, drying, Non-Condensable Gas (NCG) removal and potentially separation/distillation, to return it to virgin/new grade specification, such as the AHRI 700 standards. Purity and other quality parameters are then verified using the analytical methods prescribed in the standard to determine whether the reclamation process has been successful, and the refrigerants are fit for reuse.
Recovered/recovery	The removal of refrigerants from machinery, equipment, containment vessels, etc., and storage in suitable external containers without necessarily quality testing or processing the refrigerants.
Science-Based Targets Initiative (SBTi)	Targets that provide a clearly defined pathway for companies and financial institutions to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth.
Sustainable Development Goals (SDGs)	17 goals and 169 targets identified by the United Nations to end poverty, protect the planet and achieve a sustainable future.

* Definitions shared in the context of A-Gas and its operations and work.



DNV

Independent Limited Assurance Report

to the Directors of A-Gas International

A-Gas International (“A-Gas”) commissioned DNV Business Assurance Services UK Limited (“DNV”, “us” or “we”) to conduct a limited assurance engagement over Selected Information presented in the Sustainability Report 2022 (the “Report”) for the reporting year ended 31 December 2022.

Our Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information is not fairly stated and has not been prepared, in all material respects, in accordance with the Criteria.

This conclusion relates only to the Selected Information, and is to be read in the context of this Independent Limited Assurance Report, in particular the inherent limitations explained overleaf.

Our observations and areas for improvement will be raised in a separate report to A-Gas’ Management. Selected observations are provided below. These observations do not affect Our Conclusion.

- We did not identify any material errors in the data in scope. However, we found instances where the audit trail was not stored centrally, which could have delayed the assurance process. We understand that A-Gas are currently implementing a more automated approach to collating data which would reduce this risk and we recommend A-Gas consider further enhancing this process by establishing a centralised system for storing evidence.
- A-Gas disclosed a location-based Scope 2 greenhouse gas (GHG) emissions figure in the Report. It is good practice to dual report both a location and market-based Scope 2 GHG emissions figure. A-Gas should consider aligning with good practice by publishing a market-based GHG emissions figure.
- A-Gas collected and reported their Scope 1 and 2 GHG emissions data once for year-end reporting. Annual reporting can limit the ability of A-Gas to take corrective action if performance is not on target. We understand that A-Gas is moving towards monthly reporting, which should complement a more proactive approach to managing A-Gas’ GHG emissions.
- This is the first year that A-Gas sought Independent Assurance of the GHG emissions data in the Report. In future reporting cycles, A-Gas may wish to consider extending the assurance scope to other material ESG indicators, such as selected categories for Scope 3 GHG emissions and health and safety.

Selected information

The scope and boundary of our work is restricted to the metrics included within the Report for the reporting period 01 January 2022 to the 31 December 2022 (the “Selected Information”), listed below:

- Total Scope 1 GHG emissions (process emissions: leaks, filling losses, evacuation losses, analysis and sampling losses, purging losses; stationary and mobile combustion; fugitive emissions) (mt CO2e)
- Total Scope 2 GHG emissions (purchased electricity) – location based (mt CO2e)

To assess the Selected Information, which includes an assessment of the risk of material misstatement in the Report, we have used A-Gas’ Methodological Note (the “Criteria”), which can be found from page 63 within the Report.

We have not performed any work, and do not express any conclusion, on any other information that may be published in the Report or on A-Gas’ website for the current reporting period or for previous periods.



Basis of our conclusion

We are required to plan and perform our work in order to consider the risk of material misstatement of the Selected Information; our work included, but was not restricted to:

- Conducting interviews with A-Gas' management to obtain an understanding of the key processes, systems and controls in place to generate, aggregate and report the Selected Information;
- Site visit to Portbury, UK to review process and systems for preparing site level data consolidated at Group level;
- Performing limited substantive testing on a selective basis of the Selected Information to check that data had been appropriately measured, recorded, collated and reported;
- Reviewing that the evidence, measurements and their scope provided to us by A-Gas for the Selected Information is prepared in line with the Criteria;
- Assessing the appropriateness of the Criteria for the Selected Information; and
- Reading the Report and narrative accompanying the Selected Information within it, with regard to the Criteria.

DNV Business Assurance Services UK Limited
London, UK
18 December 2023

Standard and level of assurance

We performed a limited data only assurance engagement using DNV's assurance methodology VeriSustain™, which is based on our professional experience, the 'Greenhouse Protocol – A Corporate Accounting and Reporting Standard' (revised 2015) and international assurance best practice including the International Standard on Assurance Engagements (ISAE) 3000 – 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' (revised) issued by the International Auditing and Assurance Standards Board. This standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance. The engagement was carried out from June 2023 to November 2023.

DNV applies its own management standards and compliance policies for quality control, which are based on the principles enclosed within ISO IEC 17029:2019 - Conformity Assessment - General principles and requirements for validation and verification bodies, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement; and the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. We planned and performed our work to obtain the evidence we considered sufficient to provide a basis for our opinion, so that the risk of this conclusion being in error is reduced but not reduced to very low.

Our competence, independence and quality control

DNV established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. Our multi-disciplinary team consisted of professionals with a combination of environmental and sustainability assurance experience.

Inherent limitations

All assurance engagements are subject to inherent limitations as selective testing (sampling) may not detect errors, fraud or other irregularities. Non-financial data may be subject to greater inherent uncertainty than financial data, given the nature and methods used for calculating, estimating and determining such data. The selection of different, but acceptable, measurement techniques may result in different quantifications between different entities.

Our assurance relies on the premise that the data and information provided to us by A-Gas have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Limited Assurance Report.

Responsibilities of the Directors of A-Gas and DNV

The Directors of A-Gas have sole responsibility for:

- Preparing and presenting the Selected information in accordance with the Criteria;
- Designing, implementing and maintaining effective internal controls over the information and data, resulting in the preparation of the Selected Information that is free from material misstatements;
- Measuring and reporting the Selected Information based on their established Criteria; and
- Contents and statements contained within the Report and the Criteria.

Our responsibility is to plan and perform our work to obtain limited assurance about whether the Selected Information has been prepared in accordance with the Criteria and to report to A-Gas in the form of an independent limited assurance conclusion, based on the work performed and the evidence obtained. We have not been responsible for the preparation of the Report.

DNV Supply Chain and Product Assurance

DNV Business Assurance Services UK Limited is part of DNV – Supply Chain and Product Assurance, a global provider of certification, verification, assessment and training services, enabling customers and stakeholders to make critical decisions with confidence. www.dnv.co.uk/BetterAssurance

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