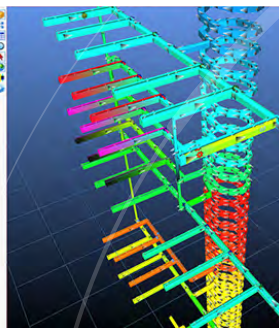
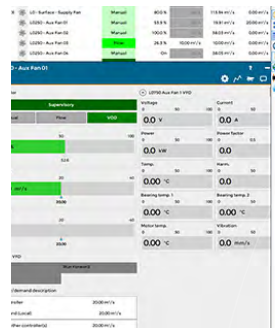


2022



ESG Review

Advancing a sustainable future



Pictured: Some of our 2022 highlights

Welcome to Howden's 2022 ESG review

Sustainability at Howden is deeply rooted in who we are as a company

and as a team. James Howden founded Howden in 1854 as a marine engineering company and it was his early inventions that enabled the steamships of his era to reduce their energy consumption by nearly 50%.

This on-going focus on sustainability is reflected in our vision of “enabling our customers’ vital processes which advance a more sustainable world”.

Quite simply, our ESG efforts are a fundamental characteristic of our brand.



About this review

This ESG (Environmental, Social and Governance) review sets out our non-financial etc sets out our non-financial performance for 2022 which ended on 31 December 2022. It covers our global business and, unless indicated otherwise, contains data reported at the global business level. We provide disclosures against SASB (Sustainability Accounting Standards Board) and, where possible, against the TCFD (Task Force on Climate-related Financial Disclosures) frameworks. We have also provided information through the Carbon Disclosure Project (CDP).

We firmly believe that it is important that we track progress on our Social and Governance initiatives. We have, therefore, incorporated relevant information related to the GRI (Global Reporting Initiative) which is aligned to our sustainability priorities as identified in our materiality assessment. Where relevant, we have also shown our contributions to the United Nations Sustainable Development Goals (SDGs).

The 2022 actual carbon emissions (total scope 1 and 2 location-based data) has been assured by ERM Certification and Verification Services Limited.

In our 2021 ESG report, we established and communicated our commitments for the future. These included:

Reducing our scope 1 and 2 carbon* footprint by

50%

by 2030 and become carbon net zero by 2035

Sending zero waste to landfill at

50%

of our operations by 2030

Reducing our mains water usage by

30%

by 2030

Increasing female representation to

40%

on our Management Committee by 2030

Increasing female representation to

35%

in senior roles by 2030

Increasing female representation to

30%

overall by 2030

Encouraging employee volunteer participation of

25%

through our community services program by 2030

In this review, we will share the progress which was made during 2022 as we worked towards achieving our longer term ambitions.

* Whenever we refer to carbon throughout this review – this relates to carbon dioxide equivalent (CO₂e) as defined by the Greenhouse Gas (GHG) Protocol.

Highlights of this review

Supporting our customers' sustainability goals



Hydrogen:
Accelerating the energy transition



Carbon Capture, Utilisation & Storage: Addressing hard-to-abate sectors

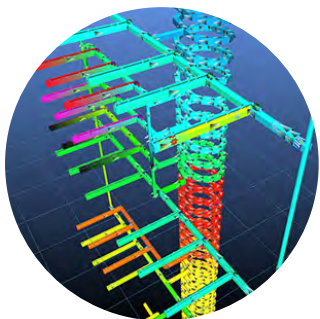


Energy Recovery:
Waste recovery solutions to aid efficiency

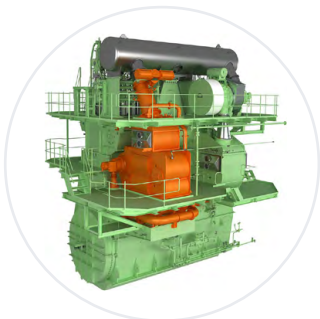


Water:
Sustainable management of wastewater

Innovation and sustainability



Ventsim™ CONTROL:
Safe, healthy and efficient mine ventilation



Exhaust Gas Recirculation:
Managing greenhouse gas emissions

Bright Futures



Making a difference
in our local communities



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- 7 Supporting the United Nations Sustainable Development Goals (SDGs)
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Share your feedback with us at
esg@howden.com



Overview

In this section:

- About Howden
- Stakeholder perspectives and materiality
- Supporting the United Nations Sustainable Development Goals (SDGs)
- ESG commitments and achievements

About Howden

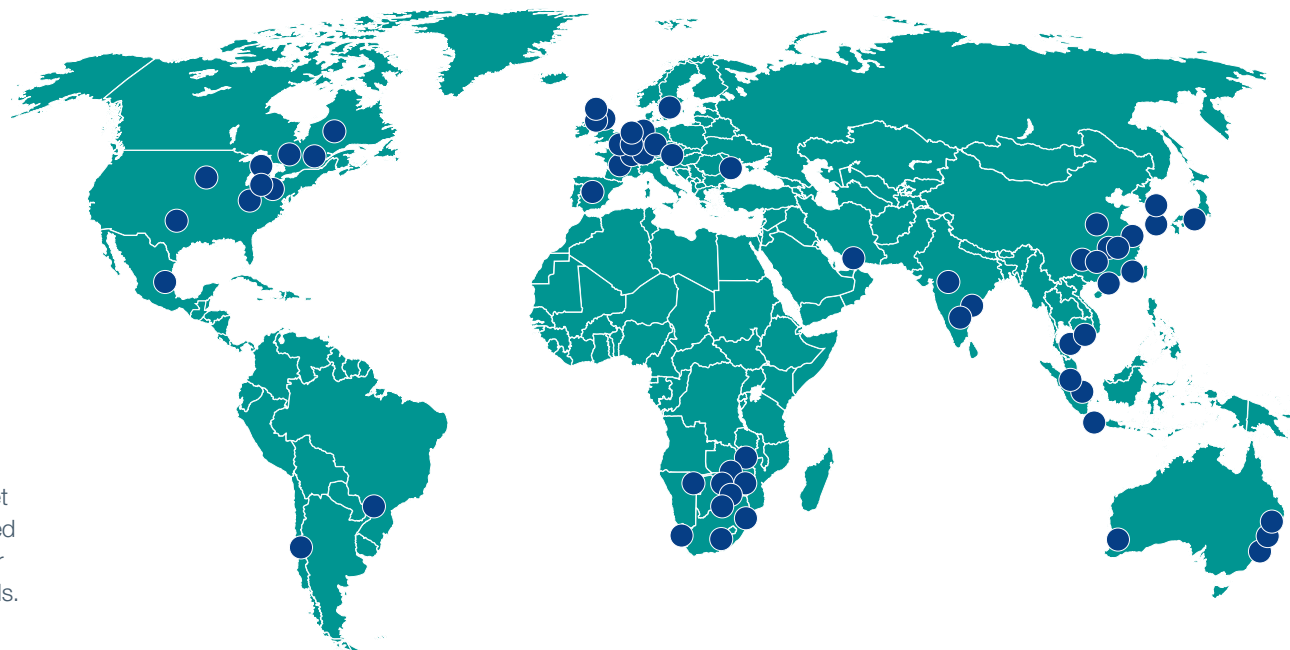
Howden is a global leader in mission-critical air and gas handling products, services and solutions.

At Howden our team designs, builds, installs and services compressors, highly engineered fans, heat exchangers and turbines. We enable our customers' vital processes while developing world-class, reliable technology for optimal performance in a safe, sustainable and cost-effective future.

Our products support core processes in a diverse range of industries from Energy and Renewables like Hydrogen, Energy Recovery and Nuclear to Infrastructure markets like Wastewater and Tunnels and Industrial markets like Cement, Chemical and Steel.

We partner with customers in Oil & Gas and Power to enable their environmental and operational efficiency, and decarbonisation and energy transition objectives. We support the Mine sector to achieve environmental, operational and safety goals.

Our products and solutions, combined with our engineering expertise and customer and market knowledge make us uniquely placed to support our customers with their complex air and gas handling needs.



With over 160 years of innovation behind us, **we specialise in engineering for the future.**



Howden's installed base of products enables the avoidance of over **245 million tonnes of CO₂ a year**. This is equivalent to removing **52 million** fossil-fuelled cars from the road in the same period.

Stakeholder perspectives and materiality

Engaging with our key stakeholders

We recognise the importance of stakeholder support to the long-term sustainability of our brand and communicate proactively, seeking the views of our key stakeholders which include employees and potential employees, customers, suppliers, investors and the communities around us.

We have open and transparent communication with employees sharing global and local strategies through a variety of communication channels and via People Leaders. Feedback is welcome at any time and formally gathered through the Howden Employee Engagement Survey which ran twice in 2022 achieving over 90% participation.

We have regular contact with our customers and as well as assessing customer satisfaction and engagement through our sales management process, over the last four years we have also tracked customer engagement through Net Promoter Scores (NPS). NPS is scored on a scale of -100 to +100 with -100 being negative and +100 being positive.

The NPS process allows us to survey customers across six stages of the customer journey and using Customer Relationship Management (CRM) and business intelligence tools we can track performance real-time. The survey is global and is translated into 11 languages.

During 2022, we received feedback from 1432 customers using this approach achieving a NPS score of 57.6. Although we value positive feedback from customers, there is real value in identifying areas for improvement and we use continuous improvement tools to act on and improve our customer experience using feedback from the survey.

Year	NPS score
2019	44.1
2020	44.0
2021	57.6
2022	57.6

Suppliers are key partners and are important to our success. Thus we continue to build mutually beneficial relationships across our supply base.

During 2022, our investors attended quarterly meetings where management of key sustainability issues and progress against sustainability targets were discussed.

In 2022, we actively committed to supporting our local communities through our Bright Futures program. During the year, 13% of our employees volunteered their time through this program (see page 39).

Identifying our most material ESG topics

We define ESG topics as those which are of importance to our key internal and external stakeholders and to the management and strategy of the business.

As part of the process we utilised to develop our ESG strategy, we undertook a materiality assessment in 2021 to establish the topics which are material to the business. This process involved extensive desktop research on potential materiality topics and was followed-up upon with employee focus groups, as well as 1-to-1 interviews with business leaders and customers. Through this process 65 topics of interest were identified. These topics were then aggregated and prioritised

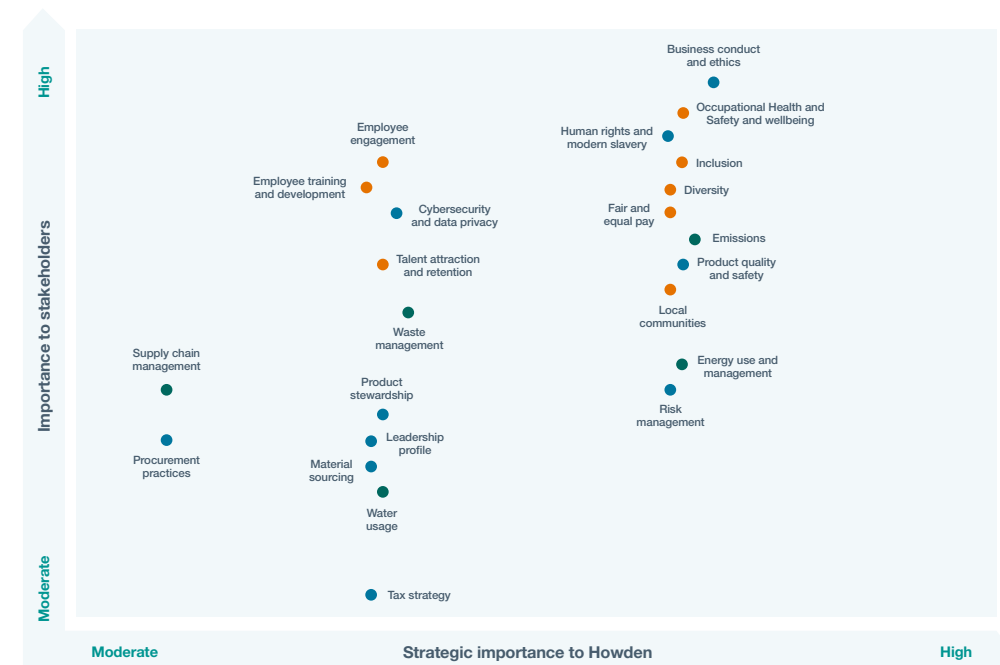
with 23 topics being identified as being material to the business.

The matrix below shows the relative ranking of each of the material topics identified, shown with the relative importance to both stakeholders and the business. These are aligned to the relevant United Nations Sustainable Development Goals (SDGs).

These material topics fed into the development of our ESG Strategy and the approach to sustainability commitments and targets.

In this review, we show the progress we have made on each of these topics in 2022.

Materiality matrix



Key: ● Environmental ● Social ● Governance

Supporting the United Nations Sustainable Development Goals (SDGs)

Our material topics support the achievement of the SDG goals as follows:

Environmental: Our commitments

Use our expertise to reduce Howden's and our customers' environmental impact



SDG 6: Clean water and sanitation

We enable our customers' efficient, sustainable management of water resources and wastewater



SDG 7: Affordable and clean energy

We support our customers' drive for environmental efficiency, reduction of emissions and switch to renewable energy



SDG 9: Industry, innovation and infrastructure

We partner with our customers' and support their energy transition to advance a more sustainable world



SDG 13: Climate action

We are committed to our business being net-zero by 2035

[Read more on page 9.](#)

Social: Our commitments

Championing diversity, fairness, and equality and having a positive impact in our local communities



SDG 3: Good health and well-being

We are committed to supporting the physical and mental wellbeing of our colleagues



SDG 4: Quality education

Through our Bright Futures program we will support access to quality education for disadvantaged and under-represented groups in our local communities



SDG 5: Gender equality

We are committed to drive greater gender balance at all levels in our business



SDG 8: Decent work and economic growth

By providing our colleagues with meaningful, valuable work and rewarding them appropriately, we will support local economic growth



SDG 12: Responsible consumption and production

We aim to reduce our Lost Time Injury Rate and Total Recordable Incident Rate each year as we strive for a zero-incident workplace

[Read more on page 25.](#)

Governance: Our commitments

Protecting our corporate reputation and promoting ethical business standards






















SDG 16: Peace, justice and strong institutions

By operating ethically as a business we demonstrate the importance of "doing the right thing".

[Read more on page 42.](#)

Our ESG commitments and achievements




To ensure we delivered on our material topics, we set out internal environmental, social and governance targets intended to focus the business, drive behaviour change and enable us to deliver on our ESG strategy and purpose. The table below summarises progress against these targets. More detail on the progress made with each target is included later on in this review and in the reporting appendices.

Environmental commitments		2021 Progress	2022 Progress	Trend towards commitments
	Reduce scope 1 & 2 emissions by 50% by 2030 and Carbon Net Zero by 2035 *	35,521 tonnes rebaselined for acquisitions	27,187 tonnes **	
			23% reduction	
	50% of our operations with zero waste to landfill by 2030	12% of operations with zero waste to landfill	28% of operations with zero waste to landfill	
	Reduce mains water usage by 30% across the global business by 2030	118,654,715 litres rebaselined for acquisitions	109,807,877 litres	
			7% reduction	
Social commitments		2021 Progress	2022 Progress	Trend towards commitments
	0% Lost Time Injury Rate (LTIR)	0.19	0.36	
	0% Total Recordable Injury Rate (TRIR)	0.42	0.54	
	Increase female representation on our management committee to 40% by 2030	17%	17%	
	Increase female representation to 35% in senior roles by 2030	24.5%	27.5%	
	Increase female representation to 30% overall by 2030	17.4%	17.9%	
	Increase female representation in early career hiring to 50% by 2030	30%	31% All Early Careers	
	Top 10% of Manufacturing Companies for Employee Engagement by 2030	Middle 25% of Manufacturing Companies	Top 25% of Manufacturing Companies	
	25% of our employees volunteering by 2030	N/A	80% of sites with active programs 13% employee volunteering	
Governance commitments		2021 Progress	2022 Progress	Trend towards commitments
	100% of employees completed Anti-bribery & Corruption (ABC) training (online or via toolbox talks) every year	100%	100%	

* Whenever we refer to carbon throughout this review – this relates to CO₂e as defined by the Greenhouse Gas (GHG) Protocol.

** The 27,187 tonnes CO₂e 2022 Actual Carbon emissions are the sum of Howden's Scope 1 (direct) and Scope 2 (indirect) emissions calculated using the GHG protocol location-based method. The Emissions factors used in our calculations are UK Government GHG Conversion Factors for Company Reporting (2022) V.2 except for international electricity which uses the IEA (2021) Emission factors. This data is independently assured by ERM Certification and Verification Services Limited. The full assurance statement is attached on page 47.

Key:

-  Well aligned with commitment
-  Progress made towards commitment
-  Not aligned with commitment



Environmental

In this section:

- Our environmental commitments
- Our roadmap to carbon net-zero
- Waste and water management
- Measuring our environmental impact
- Supporting our customers' sustainability goals
- Innovation and sustainability

Our environmental commitments

Using our expertise to reduce Howden's and our customers' environmental impact.

Climate change continues to be one of the greatest challenges that this world faces. We are committed to achieving carbon net zero and supporting our customers to achieve their sustainability objectives including their efforts to decarbonise.

Our environmental commitments

To reduce our scope 1 and 2 carbon* footprint by 11% in 2022, and by 50% by 2030 and **become carbon net-zero by 2035**

To send zero waste to landfill at 19% of our operations in 2022, and at 50% of our operations by 2030

To reduce our mains water usage by 4% in 2022, and by 30% by 2030

**Whenever we refer to carbon in this review, this relates to CO₂e as defined by the Greenhouse Gas (GHG) Protocol.*



Aligned to 13.2; 13.3

Reducing our carbon footprint

We know our greatest opportunities lie in supporting our customers' decarbonisation efforts, however, we also have a commitment as a responsible business to reduce our own carbon footprint. In 2020, we established our own scope 1 and 2 emissions benchmark at 28,135 tonnes in absolute terms in line with the GHG Protocol Corporate Accounting and Reporting Standard. We re-based this in 2021 to 35,493 to allow for the impact of seven strategic acquisitions during the intervening period.

A carbon footprint of 35,493 is relatively low for the industrial sector, largely due to the fact that we are not intense energy users nor heavy producers of Green House Gases (GHG) from our own industrial processes. In addition, just under 50% of our business is derived from aftermarket services which has a lower carbon footprint than new product manufacturing.

At the end of 2022, our footprint was **27,187** which was a decrease of 23% in absolute terms on 2021.

Year	Carbon Footprint	Rebaselined Carbon Footprint	% of previous year	CO ₂ Tonnes per \$M Revenue
2020	28,135	N/A	N/A	20.1
2021	28,695	35,493	2% increase (against original footprint)	19.1 (against original footprint)
2022	N/A	27,187	23% decrease	15.1



Our roadmap to carbon net-zero:

Progress in 2022

In 2021, we put in place a detailed roadmap in order to achieve our carbon net-zero commitments in 2022 and beyond. Our main source of greenhouse gases is from the use of energy, both gas and electricity, to power our facilities. **We identified three main levers to reduce this energy use:**

1 Switching energy supply from fossil fuel based to carbon free

In 2022, our total energy consumed was 396,759 gigajoules. 91,279 gigajoules of this total was from grid electricity from non-renewable sources. Changing the supply of our sites' electrical power from fossil fuel based to carbon free renewables will enable us to reduce our carbon footprint.

In 2021, we began this process in Europe and the Americas and continued this in 2022 with seven sites around the world converting to renewable sources.

By switching to a carbon free electricity supply at these seven sites, we eliminated a total of 4,510 tonnes from our carbon footprint in 2022.

By taking these actions, we reduced our energy consumption of non-renewable grid electricity by 34,543 gigajoules in 2022.

In the Americas for example; our Connersville site switched from fossil fuel based electricity to a carbon free supply **which eliminated 3,099 tonnes of CO₂ from our carbon footprint in 2022.**

Our Fairfield site also switched to renewable sources and **607 tonnes of CO₂ was removed from our carbon footprint.**



2 Installation of renewable energies at our sites

Our intention is to install renewables at our key sites as an alternative to existing fossil fuel based energy. In 2021, we completed a significant solar power installation at our Weihai manufacturing site in China. This came into full operation in 2022 and now supplies enough power to avoid approximately 1376 tonnes per annum of carbon from our previous fossil fuel supply.



3 Energy audits

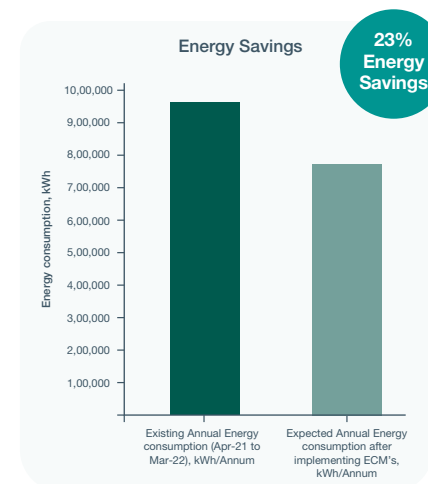
Energy audits are a key tool for us to drive efficiency gains from power usage. Audits typically yield around a 3% reduction in power use each year with a corresponding drop in carbon footprint.

In 2022, we continued the implementation of a full energy audit programme with the addition of our key sites in India.

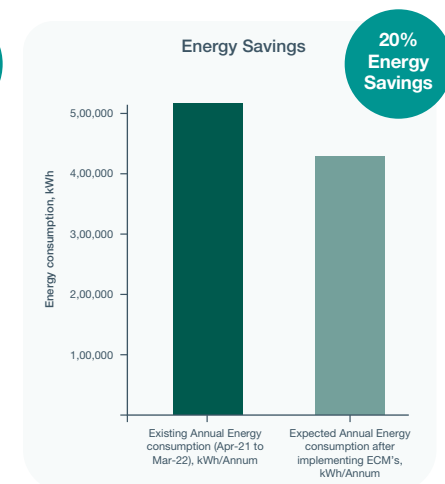
Energy Audit Reports: Impact after implementing recommendations

The energy savings below are possible as a result of the recommended energy conservation measures proposed as a result of the audit.

Howden India, Chennai



Howden India, Hosur



Waste and water management

Waste reduction

Our Waste Management Standard (part of our Environmental, Health and Safety Policies and Standards) drives individual site programmes to eliminate waste where possible and identify solutions to avoid land fill to enable us to reach the zero-landfill status.

We actively manage our waste and currently send relatively little to landfill (less than 9% overall). We avoid landfill for over 91% of our waste and we are focusing on increasing this number further. In 2021, 12% of our operations were currently zero-landfill sites and by introducing a locally led waste management programme, we increased this number to 28% in 2022.



Aligned to 12.5

Mains water use reduction

We are not a heavy mains water user of water within the business or manufacturing processes, as we do not have industrial wet / washing processes. Despite this, we reduced our mains water usage by 7% in 2022.

Most of our improvements in this in 2022 were targeted at three main areas:

- **Greater efficiencies in “domestic” water use**
- **Investment in closed loop systems for hydraulic pressure testing where we capture, test water and filter**
- **Using sustainable water sources that do not rely on the public mains network**

For example, at our Prague site, the balancing machine cooling system is closed loop and therefore, only requires an infrequent top up of water. This supports with both the site and the global water efficiency targets.



Aligned to 12.2

Measuring our environmental impact

Measuring our environmental impact

In 2021, we focused on putting in place robust processes to collect, collate and verify our environmental data at a site, business, regional and global level. This allowed us to report our environmental progress more fully in 2022.

As with all of our ESG data, in 2022 our environmental data was collated as part of our standard reporting process and recorded quarterly to enable us to track progress and make interventions if required.

Carbon Disclosure Project

In 2022, we made our second submission to the Carbon Disclosure Project receiving a score of B, up from C in 2021 when we made our initial submission.

ISO 14001 certification: Environmental Health and Safety (EH&S)

Our EH&S performance is measured through our EH&S Standards approach. You can read more about our EH&S standards in our 2021 ESG Report. In addition to these core requirements, at the end of 2022, 62% of our manufacturing sites were externally accredited to ISO 14001 for environment.

Membership of organisations

Since 2021, Howden has been a corporate member of the Institute of Environmental Management and Assessment (IEMA), the leading environmental professional membership body with over 16,000 members in more than 115 countries around the world.

This membership recognises that we are part of a community dedicating ourselves to improving the world around us. We also gain access to resources to help us improve our environmental performance and network with other businesses with similar aspirations and issues. This membership will assist in keeping us at the forefront of developments in environmental management.



Measuring our environmental impact continued

Product stewardship

In line with our corporate and sustainability strategy, we continue to have a focus on prioritising the continued development of products and solutions that support our customers' sustainability agenda. In particular, we have projects that deliver decarbonisation, emissions reduction, energy recovery and renewables. Howden believe this is where we have the greatest opportunity to have a positive impact on the environment.

During 2022, we embedded a new process to ensure that we can accurately quantify the sustainability criteria of each of our new products as part of our product disclosure.

We also calculated that globally, Howden's installed base of products enables the avoidance of over 245 million tonnes of CO₂ a year. Equivalent to removing 52 million fossil-fuelled cars from the road in the same period.

Our aftermarket services provide spare parts, servicing and retrofit to prolong the life of customers' installed assets whilst maintaining operational and environmental efficiency.

This enables many customers to operate Howden's products **for over twice** their original design life.

Assessing our Scope 4 carbon impact

Our 'Scope 4' carbon footprint defines the impact our products have when in use. During 2022, we calculated the carbon impact of 75% of our product range in revenue terms.

Based on this data we have calculated that globally, Howden's installed base of products enables avoidance of 245 million tonnes of CO₂ a year, equivalent to removing 52 million fossil-fuelled cars from the road over the same period.

Our environmental heroes

In our Howden Annual Awards, we recognise the individuals and teams that make a significant difference to our business.

The Best Environmental Improvement award recognises the ways in which we are adapting and improving our processes internally to ensure we are contributing to advancing a more sustainable world.

In 2022, the Best Environmental Improvement Award went to Howden's team in Weihai, China for their focus in achieving a reduction of almost 10% in real terms on gas consumption.

The team installed an environmental monitoring system within the factory which captured data on temperature and humidity levels in multiple locations across the site to ensure efficient operation of air handling units and fans. In addition, they installed alarms with a preset timer on the factory doors to ensure that they were never open for longer than required. Their thoroughness extended to testing the most efficient and effective fans to heat the factory to appropriate levels. Through the teams attention to detail and focus, they made significant reductions in both gas consumption and power usage.



Supporting our customers' sustainability goals

Throughout our history, our products, expertise and application knowledge have been used to support our customers achieve their environmental, efficiency and safety requirements.

Sustainability is deeply rooted in who we are and our brand. James Howden founded Howden in 1854 as a marine engineering business and it was his inventions that enabled the steamships of his era to reduce their energy consumption by nearly 50%.

Our compressors, blowers, steam turbines, rotary heat exchangers, fans and digital solutions all have vital roles to play in helping companies avoid emissions, increase efficiencies, switch to greener renewable fuels, preserve scarce resources and reduce waste. This extensive product portfolio, alongside our deep expertise in air and gas handling, means that our approach is relevant to a large and diverse range of industries.

In this section of the review, we illustrate the role that our products and services played in 2022 to support our customers' sustainability efforts.

Supporting our customer commitments

We enable our customers' efficient, sustainable management of water resources and wastewater



We support our customers' drive for environmental efficiency, reduction of emissions and switch to renewable energy



We partner with our customers and support their energy transition to advance a more sustainable world



We enable our customers' efficient, sustainable management of wastewater



Aligned to
6.1; 6.2; 6.3; 6.4

Water covers 70% of our planet but of the 3% that is fresh water, only 1% is accessible.

Inadequate sanitation is a problem for 2.4 billion people—they are exposed to diseases, such as cholera and typhoid fever, and other water-borne illnesses. In 2018, the World Economic Forum identified water as one of the top five global risks of highest potential impact over the next 10 years. Many of the top global risks are increasingly connected to water – from climate-related impacts and extreme weather events, to pollution and food crises. Faced with such challenges, the treatment of wastewater has a vital role to play in the sustainable management of water and public health.

In emerging markets, urbanisation and a greater focus on public health and water quality is driving investment in new wastewater treatment plants. In more developed markets, ageing infrastructure and increased focus on upgrading and energy efficiency are the main drivers for plant investment.

Our role in wastewater treatment in 2022

Howden has been involved in wastewater treatment for over 50 years and provides a range of products that are very specific to the needs of these plants. Our products help treat wastewater used by over 750 million people.

Wastewater treatment requires the movement of large volumes of air at low pressure in the aeration process. Our products provide a reliable source of air for this key process. This process can also account for over 50% of the power used in a plant so efficient products are an absolute requirement.

Howden offers one of the broadest range of aeration solutions for wastewater treatment. Our centrifugal and rotary blowers pump oxygen into water basins to aid the digestion of sewage by bacteria, while our digital platform, Howden Uptime provides real-time analytics of the blowers and associated equipment to ensure optimum efficiency and minimise unplanned downtime.

Tuas Water Reclamation Plant, Singapore

The TUAS WRP is Singapore's first energy self-sufficient integrated water and solid waste treatment facility. In 2022, Howden was selected to provide 24 turbo compressors with aftermarket services to support a number of processes at the plant including biosorption, bioreactor and the membrane bioreactor.

Harnessing the synergies of the water-energy-waste cycle, the Tuas WRP will co-digest food waste and used water, boosting the production of biogas by 40% compared to the treatment of used water sludge alone. The energy recovered from combusting biogas will improve the plant's thermal efficiency as well as generate electricity for the plant's operations. The excess electricity generated will be exported to the local grid to provide power for up to 30,000 four-room apartments in the local vicinity.

City of Cape Town, South Africa

Cape Town is South Africa's second most populous city after Johannesburg, providing water and sanitation services to over 4.7 million people. The city is growing rapidly as more people migrate into the area which is placing additional pressure on wastewater management services.

The city is responsible for 18 wastewater plants with a total of 22 Howden SG turbo blowers and 57 positive displacement blowers in operation. The latter is a mixture of Howden and non-Howden equipment.

In 2022, Howden was awarded a long-term service agreement to provide maintenance services on all 22 blowers. The agreement covers full maintenance from mechanical and electrical, to control and instrumentation as well as spare parts and call-outs. We have a key role to play in ensuring that the city has an efficient, cost-effective and reliable aeration system in place to support a sustainable future.

You can read more about the solutions we offer to our wastewater customers on our [website](#).



URAI series



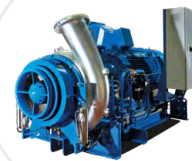
Rotary blower package



EasyAir™ Turbo



KA series



SG series



Power Mizer blowers



Howden Uptime

Supporting our customers' drive for environmental efficiency, reduction of emissions and renewable energy sources

One of the main causes of global greenhouse gases is the release of carbon emissions from burning fossil fuels.

At Howden, we offer universal solutions that will enable the reduction in emissions and support our customers' efforts to meet the targets that will tackle one of the biggest challenges that humanity currently faces: climate change.

The following solutions are equally applicable to a wide range of industries looking for ways to reduce their environmental impact:

- Energy recovery for more efficient energy usage including capturing otherwise wasted energy source and therefore reducing emissions
- Hydrogen as an alternative cleaner energy source
- Carbon capture and utilisation for industries where there are fewer alternatives for reductions or as part of their overall emissions control plan

In this section of the review we will show how our **energy recovery, hydrogen, and carbon capture and utilisation applications** supported our customers in 2022.



Aligned to
7.2; 7.3; 7.4



Aligned to
9.4; 9.5



Energy recovery

Globally, one third of energy consumption is attributable to the industrial sector and it is estimated that up to 50% of that energy is ultimately wasted as heat. Unlike material waste, waste heat is much more difficult to assess.

During 2022, with rising energy prices, gas shortages and concerns on the security of current energy supplies, waste heat recovery became an even more attractive option for customers to reduce their energy usage through energy recovery systems.

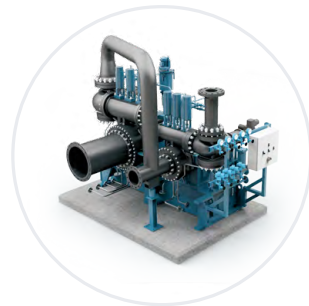
At Howden, our steam turbines offer waste heat recovery solutions that support our customers in their energy management and transition across a vast range of critical processes.

How does waste heat recovery work?

Customers can generate sustainability benefits from waste heat recovery in a number of ways including:

- **Burning waste fuel in a boiler, generating steam and using the steam to produce electricity. This approach is used in industries such as sawmills, papermills and chemicals.**
- **Use waste heat to produce steam via a heat recovery steam generator to generate electricity. This approach is common in the metallurgy, chemical and cement industries for example.**
- **Reduce steam pressure by using a steam turbine (to backpressure or vacuum) and generating electricity this way. This approach is common to all industries.**

Howden products involved in energy recovery



Multi-stage
steam turbines



Single-stage
steam turbines

Parteks Paper, Turkey

Parteks Paper Industry Inc. produces paper, linings, corrugated cardboard and tissue paper exporting to more than 50 countries in the world. To maintain continuous operations, the company were looking for a steam turbine they could rely on. Howden's Kuhnle, Kopp & Kausch twin steam turbine was selected to optimise the steam supply to the process and produce electricity to bring cost and energy efficiencies into their critical process.

Enabled by Howden Uptime, our digital monitoring solution, the steam turbine's performance will be monitored to optimise its performance and production up-time. The turbine will generate significant energy savings with the estimated payback period of less than one year.

Our steam turbines can be used to reduce and control steam pressure in an industrial setting and to generate electricity from previously wasted sources of energy. For example, in a sawmill application, by installing a steam turbine, customers can harvest renewable energy as a by-product of their sawmill waste to help power the plant bringing cost savings as well as environmental savings by reducing CO₂ emissions.

In this setting, our steam turbines can deliver 200,000 MWh of green renewable electricity per year from sawmill waste, saving 66,000 tonnes of CO₂ in the same period.

Find out more about energy recovery solutions on our [website](#).



Hydrogen: Accelerating the energy transition

Hydrogen offers an alternative, cleaner energy source, containing more energy per unit of weight than fossil fuels and can be used as a fuel, as energy storage, to generate electricity, or as a chemical feedstock.

Hydrogen is playing an important role in decarbonising a range of sectors, supporting a cleaner environment and improving energy security.

Over the past year, we have seen an increase in momentum around the world in the number of hydrogen projects and policies, such as the Inflation Reduction Act in the U.S. and the Hydrogen Bank launched by the European Union that are supporting the adoption. With diverse applications, hydrogen is already widely used in some industries including hard-abating sectors such as steel, power generation and mobility. For example, in 2022 we saw the establishment of pilot green steel plants.

This included Hybrit, a customer of Howden, who has successfully produced 'green' steel without using coal in a recent trial before full commercial production begins in 2026.

By supporting projects such as those opposite, we will support the necessary scaling up of renewable hydrogen production, leading to reduced cost of renewable hydrogen per kg, which has been a key challenge for the sector to date.

Howden's role in supporting our customers

We have provided hydrogen compression solutions for over 100 years to a variety of end customer segments. We are supporting customers across production, to storage, distribution and end use in sectors such as transportation, iron and steel, chemical and renewables sectors.

Our hydrogen compression technology contributes to reducing carbon emissions, supporting our customers' sustainability goals and increasing energy performance. We have engineered solutions to address our customers' challenges worldwide. In 2022, we continued to challenge, invest, innovate and transform industries through our market-driven research and development program.

During 2022, we supported an increasing number of renewable hydrogen projects around the world with our sales increasing 84% over 2021.

H₂

Atura Power, Canada

Atura Power's green hydrogen production plant, a state-of-the-art facility powered by renewable hydroelectricity, will use a 20MW electrolyzer to produce hydrogen at Niagara Falls, Ontario.

We are providing five hydrogen diaphragm compressors for the plant to support this process and establish the facility as a prominent low-carbon hydrogen hub for heavy-duty trucking, municipal mobility, and heavy industrial consumers in Ontario.

European Energy, Denmark

European Energy is working with Maersk to build the world's first container vessel operating on carbon neutral fuel.

This project marks the beginning of CO₂-neutral shipping at a large-scale and is a significant step towards ocean vessels and the maritime industry using 100% renewable energy. This vessel will deliver pure (green) hydrogen as feedstock to e-methanol production which in turn will fuel maritime transportation.

European Energy is set to deliver 200,000-300,000 tons of e-methanol to Maersk annually by 2025. Howden is providing the hydrogen compression solution to support this ground-breaking development.

INOVYN, UK

INOVYN, a subsidiary of INEOS, is already Europe's largest operator of electrolysis technology used to make clean hydrogen. Its Runcorn site can power over 1,000 buses or 2,000 trucks with low-carbon fuel. Harnessing Howden's state-of-the-art compressor technology, INOVYN can now supply compressed fuel-cell quality hydrogen to the transport and industrial sectors. With Howden's support, INOVYN will be able to tap into the emerging hydrogen fuel-cell market in the UK and boost its revenue from co-produced hydrogen, realising the business' mission to support the UK's net-zero carbon emissions.

Shell, Holland

Shell's Holland Hydrogen 1 facility in Rotterdam will be Europe's largest renewable hydrogen plant. The 200MW plant will be powered using renewable energy from the offshore wind farm Hollandse Kust (noord) and is expected to produce up to 60,000 kilograms per day of hydrogen. Howden will supply two reciprocating compressors, enabled with Howden Uptime to ensure real-time analysis of the compressors operating performance.



Hydrogen: Accelerating the energy transition continued

Howden products for the hydrogen market

Howden's reliable hydrogen compressors are at the heart of a number of industry-leading projects around the world. Our complete range of compressors can be used in hydrogen compression depending on the requirements of the customer's particular situation and the desired outcome.

Howden's compressors are designed with the highest levels of safety and enabled with Howden Uptime to increase the reliability, efficiency and availability of process critical assets.



Reciprocating compressor



Diaphragm compressor



Hybrid compressor



Screw compressor

Collaboration and growth

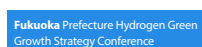
Howden is an active member in some of the world's important global and regional hydrogen associations. As a developing sector, collaboration is key and we work with our customers, suppliers and other industry experts to develop and grow the market.

To that end, Howden has signed a number of Memorandums of Understanding including with Raven SR from the U.S in 2022. We are working

with Raven SR to develop a standardised design for a hydrogen compressor aligned to Raven's standard plant sizes to enhance project efficiency, implementation and expenditure of developing the waste-to-hydrogen infrastructure worldwide.

We also joined industry leading hydrogen associations and initiatives where we can help to shape the future of the industry.

Hydrogen Council



Our membership list includes:

- Hydrogen Council
- Hydrogen Europe
- European Clean Hydrogen Alliance
- Australia Hydrogen Council
- California Hydrogen Business Council
- Fuel Cell and Hydrogen Energy Association
- Korea Hydrogen Industry Association
- Scottish Hydrogen & Fuel Cell Association
- H2 Chile
- China Hydrogen Alliance
- Fukuoka Prefecture Hydrogen Green Growth Strategy Conference
- Japan Hydrogen Association
- Taiwan Hydrogen and Fuel Cell Partnership

Howden has an active role in these organisations and initiatives. For example, the GreenSkills4H2 initiative was created by Hydrogen Europe and co-funded by the Erasmus+ Programme, to design and roll out

a roadmap of competences required for H₂ in the next four years. Howden is a consortium member of GreenSkills4H2 and represents engineering and compression activities and insight on this initiative.

For more information on our hydrogen Solutions, visit our [website](#).

Awards

Howden's hydrogen compression solutions and experts are proudly supporting industry-leading projects.

Our contribution towards the energy transition through its hydrogen compression was recognised in 2022 as follows:

- The Hydrogen Future Awards "Hydrogen Rising Star Company of the Year"
- The Hydrogen Future Awards "Hydrogen Transport of the Year"
- Hydrogen Impact Investment Awards "Individual Achievement of the Year: Salah Mahdy"



Carbon Capture, Utilisation & Storage (CCUS)

Carbon capture, utilisation and storage has been identified as a key technology in addressing emissions in hard-to-abate sectors and according to the International Energy Agency (IEA) could account for a reduction of 20% of the global greenhouse gas emissions required to achieve net-zero scenarios.

This technology was initially developed in the 1970s and currently, approximately 40M tonnes of CO₂ are being captured each year around the globe. One of the challenges of the technology will be the capacity of carbon capture required, with 100 times the current levels of carbon capture needed to keep global warming below 1.5°C.

Howden's experience is unique having participated in eight large-scale CCUS projects in the past 15 years, in addition to research and development programs.

This includes projects in China, USA, Japan, Sweden and Brazil.



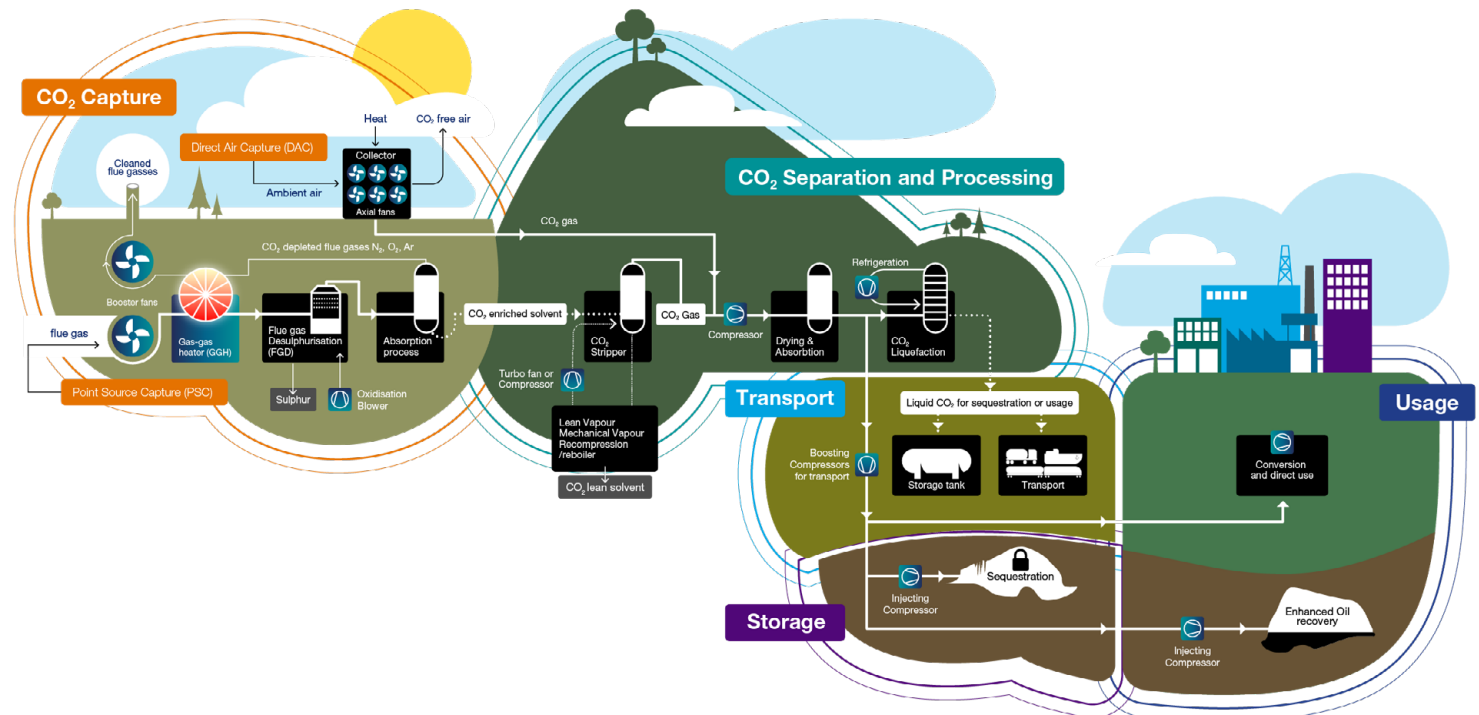
How does carbon capture work?

The process works by capturing CO₂ at industrial installations, or directly from the atmosphere, compressing it to transport it and then storing it safely deep underground. There are a variety of ways to capture CO₂ from industrial processes, including Point Source Capture (PSC) and Direct Air Capture (DAC).

PSC works by capturing CO₂ before it is released into the atmosphere, which is particularly relevant for large-scale industrial facilities which rely on fossil fuels. This includes facilities such as power plants, cement production facilities and chemical plants where no alternative fuel source is currently available. Capture at source allows these industries to continue to operate

without releasing significant levels of CO₂.

DAC captures CO₂ direct from the atmosphere using axial fans to draw the air and then trap the CO₂. Once captured, the CO₂ is safely stored or transported for use in other industrial processes such as biofuels, food and beverage, pharmaceuticals and refrigeration.



Carbon Capture, Utilisation & Storage (CCUS) continued

The focus in 2022

Given the increasing importance of CCUS as a means to help our customers achieve their sustainability objectives; during 2022, we created a specialist team to build on our experience and expertise to further develop our customer proposition led by a member of our Management Committee, Camille Levy.

During 2022, we worked with new technology providers as well as our existing customer base across the entire CCUS value chain to bring reliable, affordable solutions in CO₂ capture, compression and usage. Whereas, most CCUS projects are still at project development phase, we expect this technology to become a cornerstone of many of our customers' decarbonisation efforts. For example, in 2022, Howden won orders for DAC fans for a customer in the Netherlands and an order in the U.S. to support the testing of technologies to support the management of captured CO₂.

"Carbon Capture and Storage is a must to enable emissions reductions from hard-to-abate sectors and from our installed base of products.

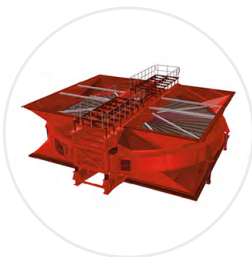
A critical challenge is to deploy the technology at scale, and to drive the cost of capture down to enable large-scale deployment. Howden's extensive experience in fans, rotary heaters and compressors positions us as partner of choice for customers looking at deploying innovative capture technologies."

- **Camille Levy**, CCUS Leader for Howden

Howden products involved in CCUS



Booster fans



Gas gas heaters



Axial fans



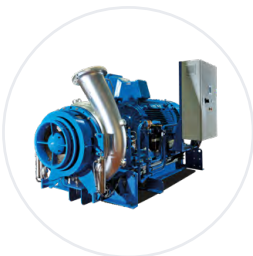
Screw compressor



Reciprocating compressor



Centrifugal compressor



Blower

For more information on CCUS, visit our [website](#).

Supporting the development of clean energy solutions



Aligned to 7.2

With technology advances, renewable energy solutions are increasingly becoming cheaper, more reliable, accessible and efficient. Changing the way we produce and consume energy is key to combating climate change. During 2022, our products and services made significant contributions in the drive for scalable clean energy solutions. Here are some examples:

Redstone Concentrated Solar Project, South Africa

The Redstone Concentrated Solar Project (CSP) is the largest renewable energy project in South Africa, producing 480,000 megawatts of renewable energy each year. The plant's twelve-hour thermal storage system will power 200,000 homes without natural gas or oil backup, saving around 440 metric tonnes of carbon dioxide emissions annually.

Howden will supply 16 sets of cooling fan packages to Redstone, customising the diameter of the fans as well as the profiles and arrangement of the blades to the facility's specific requirements. The fans will manage exhaust vapour produced from the project's steam turbines. This partnership with Redstone CSP is based on the strength of the efficiency,

reliability and low-noise operation of our cooling fans for the stable generation of solar power. They make Howden ideally placed to support Redstone CSP to realise its ambitious goal to deliver renewable electricity across South Africa without fossil fuel emissions.



Ningbo Energy Group, Biomass power plant, China

The Ningbo Energy Group, a market leader in thermal power and thermal renewable projects in China, is building the first biomass power plant in Hainan province. The plant will operate on energy generated by 250,000 tons of agricultural and forestry waste per year. The plant will generate about 246m KWh of energy per year and as a biomass power plant, it will emit fewer pollutant gases than an equivalent fossil fuel plant. Howden provided three centrifugal fans to the plant which will lower overall power consumption, improving energy savings and help to further reduce emissions.

The plant will provide heat and steam to the local industrial park and it is expected that the collection, storage and transportation of

the agricultural and forestry waste will drive economic development in the surrounding areas. The plant ash produced will also be used by agricultural companies and farmers as potash fertiliser, protecting the environment and helping with the development of the circular economy.



Supporting the development of clean energy solutions continued



Aligned to 7.2

International Nuclear Fusion Research (ITER) project, France

ITER is an ambitious energy project to build the world's largest tokamak. A tokamak is a magnetic fusion device designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy. A collaboration between 35 nations, the experimental project aims to advance fusion science in order to develop fusion power plants in the future.

During 2022, Howden was commissioned to supply a diaphragm compressor package for the tokamak to compress pure and dry Nitrogen to fill and maintain pressure in the Nitrogen Storage Tank that is feeding the Drying System.

This is not the first time that Howden has supported this ground-breaking development. In 2020, we provided an oil free screw compressor system to aid the development of the Cooling Water System, one of the most challenging aspects of the project due to the complexity of the system interfaces.

Although the tokamak itself is experimental technology, Howden's experience across energy applications, including the nuclear sector, provided the necessary expertise to deliver a technically efficient and reliable product for the project. If successful, the ITER project could lead the way in the application allowing for the development of fusion power plants and play a significant role in the energy transition.



Innovation and sustainability

Every community needs a fit-for-purpose infrastructure and the industries in place to support both that infrastructure and the communities themselves.

Much of our infrastructure and many of our industries are upgrading or need to upgrade to enable them to meet the sustainability challenges we face. In many cases, this can be achieved through efficiency or process upgrades but in order to achieve a step-change in performance, innovation is key. During 2022, we worked with our customers to introduce a number of sustainable innovations to help them achieve their ESG goals.



Aligned to 9.4

Ventsim™ CONTROL

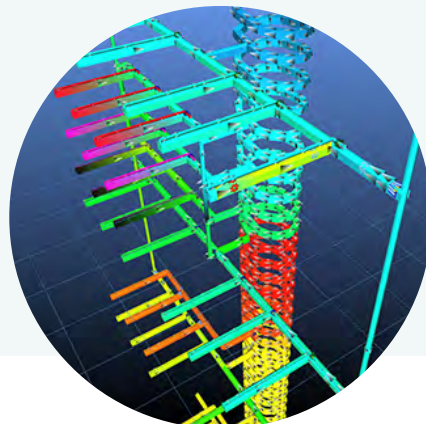
A safe, healthy and efficient mine ventilation

Ventsim is our state-of-the-art ventilation optimisation system. It supports a safe working environment as well as reducing a mine's energy consumption and CO₂ emissions contributing towards a mine's environmental and operational goals.

Ventsim CONTROL combines ventilation modelling of the mine with a flexible control system and advanced control strategies for monitoring, control and optimisation of underground mine ventilation. The remote and autonomous control of ventilation devices allows operators to view underground mine conditions in real-time as well as the ability to act quickly to suit their conditions.

During 2022, a number of customers installed this solution to optimise their ventilation, manage their costs and help them meet their environment targets.

In a first for the Australian mining sector, Agnico Eagle installed Ventsim CONTROL at their Fosterville Gold Mine in Victoria allowing the mine to fully optimise its ventilation and directly contribute to Australia's 2030 emission reduction targets. The success of the implementation and the level of energy savings meant that the system paid for itself within six months.



Exhaust Gas Recirculation

Helping the marine sector manage greenhouse gas emissions

Innovation driven by customer need often accelerates the development of unique solutions that have a significant market potential as well as meeting sustainability goals.

Since 2017, we have supplied Exhaust Gas Recirculation (EGR) blowers to the marine market. In 2021, a customer who was looking for a solution to manage the emission of nitrate oxides (forms of greenhouse gases) from a new type of gas-powered large ship engine. Such a solution did not exist at that stage.

Working closely with the customer and using our market and engineering expertise the team quickly developed a solution, adapting a current blower to launch the new EGR Blower in 2022.

This product removes 80% of nitrate oxide emissions produced by this type of marine engine and critically enables the sector to meet new regulatory requirements to control greenhouse gases.

During 2022, we sold over 160 units worth €17m to a variety of customers including the largest marine engine builder in the world.





Social

In this section:

- Health and Safety
- Wellbeing and engagement
- Diversity and Inclusion
- Talent attraction and retention
- Employee development and recognition
- Supporting local communities

Championing diversity, fairness and equality and having a positive impact in our local communities

By championing diversity, fairness and equality of opportunity, we are determined to build a positive and enduring legacy in the communities where we live and work. The success of our employees and our local communities ultimately strengthens our business and advances a more sustainable world for all.

In 2021, we created the foundations of our Social Program. Based on extensive employee, stakeholder and business feedback, we put in place a program which builds on our culture and expertise and our core value of “We do the right thing”.

During 2022, we focused on embedding this program into our business and day-to-day processes.

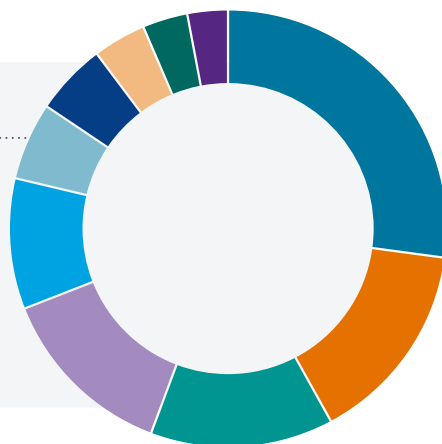
Our commitment to our colleagues, customers and communities’ Health & Safety remained our priority and underpinned all that we did. We continued to focus on achieving a zero-incident culture.

Alongside this we also made progress in our Diversity and Inclusion, employee wellbeing and our community commitments through our Bright Futures program. We continued to focus on employee engagement, talent attraction, development and training.

In this section of the ESG review, you can read more about the progress we made during the year in each of these areas as we worked towards achieving our ambitions.

Top 10 countries by employee numbers

● China (1265)	● France (360)
● USA (872)	● Netherlands (279)
● Germany (781)	● Belgium (174)
● UK (753)	● India (172)
● South Africa (447)	● Mexico (156)



Priorities of Social pillar



Wellbeing



Diversity and Inclusion



Bright Futures



Talent attraction and development



Employee training and development



Employee engagement



Fair and equal pay



Health and Safety

Employee Health and Safety

The health and safety of our employees is an absolute priority of Howden as we focus on creating a zero-incident culture. Our intention for health and safety is encapsulated in our program: **Safe Home Howden** which brings all health and safety initiatives together under one unifying banner.

The premise behind the program and our vision is simple; we want our employees and others working on behalf of Howden to return home each day safe and well whether they work in our offices, our factories or on our customer sites.



You can find out more about our approach to Health and Safety in our **2021 ESG Report**.

Our Health and Safety objectives are to:

Have zero incidents or injuries

Reduce our serious near-misses

Health and Safety management systems

We have ten global health and safety policies covering our primary risks that ensure a consistent control of risk across all of our locations and supporting standards that provide a clear route for continual improvement and excellence in environment, health and safety.

In addition to our Environment, Health & Safety (EH&S) standards, we have in place safety certifications according to industry specific requirements.

In 2021, 52% of our sites were certified to ISO 45001.

In 2022, this number increased to 60%.



EH&S culture and behaviour

In 2022, we completed the roll out of our Think Safe initiative to more than 90% of our operations, where we outlined to our colleagues the key life-saving behaviours that we need to encourage, support, observe and coach in each other to continue to build our zero-incident culture. This initiative is a highly interactive, engaging approach to educating and informing employees about key health and safety behaviours. In these face-to-face sessions, we focus on the specific Mind States that underpin certain behaviours or actions that occur immediately before safety incidents occur.

During the first half of 2022, our safety performance slipped as we experienced a higher than average number of Lost Time Injuries.

We reacted quickly and at the beginning of May we held a Global Safety Stand-down event with employees across all of our operations. We used this as an opportunity to reflect and refocus our efforts, especially in areas where injuries did unfortunately occur.

We treated this as a critical opportunity for improvement so that we could take the actions necessary to prevent similar incidents from ever occurring again and in turn reinforce our commitment to get to a zero-incident culture.



Employee Health and Safety continued

Our safety performance

We use a combination of proactive indicators and reactive measures to assess our health and safety performance.

Our proactive measures include our global audit program results, visible felt leadership (VFL) behaviours, hazard and near miss ratios by employee headcount. This creates an EH&S Scorecard for each site to both track and manage EH&S performance as well as give routes for continual improvement.

Our key reactive measures include our Lost Time Injury Rate (LTIR) and Total Recordable Incident Rate (TRIR). In 2022, our LTIR was 0.36 a rise from 0.19 in 2021, whilst our TRIR rose from 0.42 to 0.54 in 2022. This increase was driven largely by the performance of recent acquisitions that were integrated into the company – with the underlying

TRIR performance remaining largely flat at 0.45 for the year 2022.

The Occupational Safety and Health Administration TRIR average for Howden's Industrial sector is 2.90 whilst the top performing benchmark is set at 1.0.

In 2022, we used the EH&S scorecard to provide an overview of health and safety performance and to both track and drive progress globally. The scorecard uses both the above proactive and lagging measures to assess site performance.

As well as the Howden Employee Engagement Survey we also actively seek regular feedback from employees on our safety culture through the KPS Safety perception survey. This survey showed an increase from 84% to 90% indicating ongoing improvement in safety culture and behaviours.

Global Audit Program

Our sites conduct annual audits to verify they are compliant with the EH&S Policies and Standards. In addition, we operate an annual audit verification process to confirm our sites self-audit. The audit verification program provides a detailed analysis of how our sites are performing against our EH&S standards and also enables the identification and sharing of best practice. During 2022, we completed verification audits at 42 sites.

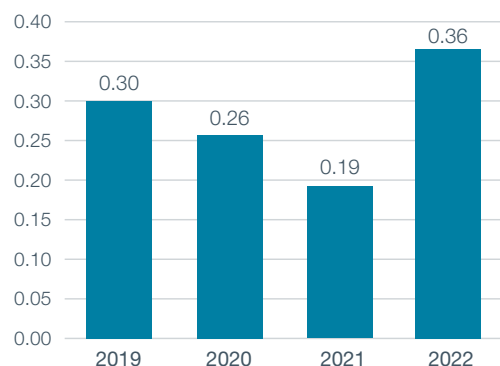
COVID-19

In 2022, COVID-19 continued to be an ongoing threat in some countries. We therefore, continued with the global measures instigated in 2020 with country and site leaders reviewing the approach as impacted by local circumstances.



Aligned to 12.6

LTIR (Lost Time Injury Rate)



TRIR (Total Recordable Injury Rate)



Recognising our health and safety heroes

Best improvement in health and safety



Each year, at our annual Howden Awards, we recognise the individuals and teams in the business that have made a significant contribution to our business over the prior year.

In 2022, our Compressors and Turbine business in Howden Africa won the award for Best Improvement in health and safety.

As a new acquisition transitioning into the Howden business, the team successfully completed their first year in Howden with a zero-incident safety record whilst making a

significant improvement in their scorecard performance. Following a safety audit, they were certified with ISO 9001 (quality) & ISO 14001 (environment) & ISO 45001 (health and safety), whilst the energy team achieved ISO 50001 (energy management).

The team has shown an outstanding improvement in health and safety this year by demonstrating a pragmatic approach to delivering projects as safely as possible every time.



Individual Contribution to health and safety



In 2022, there was no shortage of nominations for individuals across our global business working diligently every day to keep our customers, colleagues, and themselves safe. Rubbesh Kummar from our Chennai site in India was the 2022 winner due to his exemplary performance in advancing health and safety improvements.

He led major Kaizens looking at solutions that would eliminate physical risk to operators, as well as process risks and ergonomics hazards across the site.



He took personal responsibility for leading the Chennai Hazard Observation program and actively engaged the site safety committee to ensure continual improvements were applied.

Wellbeing and engagement

Employee wellbeing

Our approach to employee wellbeing, as with the wider Health and Safety agenda, is reflected in our value “We do the right thing.”

We see wellbeing as centred on an employees' mental, physical, social, workplace and societal state which enables them to be comfortable, healthy and happy. We recognise that improving wellbeing is a key factor in improving employee engagement and therefore, business performance, which is why we have identified wellbeing as a priority for our social program.

We have established a network of wellbeing champions around the world. These champions play a leading role in promoting wellbeing locally - organising local wellbeing initiatives and ensuring that global initiatives are relevant and applicable at a local level.

During 2022, we held our first Global Wellbeing Week in which we held a number of both global and local events and activities to increase awareness of wellbeing and promote healthy choices. These activities included seminars led by experts in subjects like psychological wellbeing and maintaining a healthy lifestyle, and panel discussions on mental health and wellbeing led by the leadership team.

Local activities ranged from group work-out sessions, to hiking and smoothie-making workshops.

Following the success of the Global Wellbeing Week, we worked with our wellbeing partner, WellSpace to launch our personalised wellbeing service to employees globally.

Through WellSpace, we were able to provide a unique smartphone application with content and support for mental health, physical health, nutrition and sleep quality in a range of languages.

Employees can download the app and based on information shared anonymously by employees, WellSpace will highlight relevant topics and offers daily wellbeing tips, guidance and advice. There is also an option for individual employees to track and monitor their own personal lifestyle behaviours, set up personal activity challenges and join group challenges with other colleagues who have also signed up. 15% of employees have downloaded the WellSpace app since launch.



Employee wellbeing initiatives and awareness

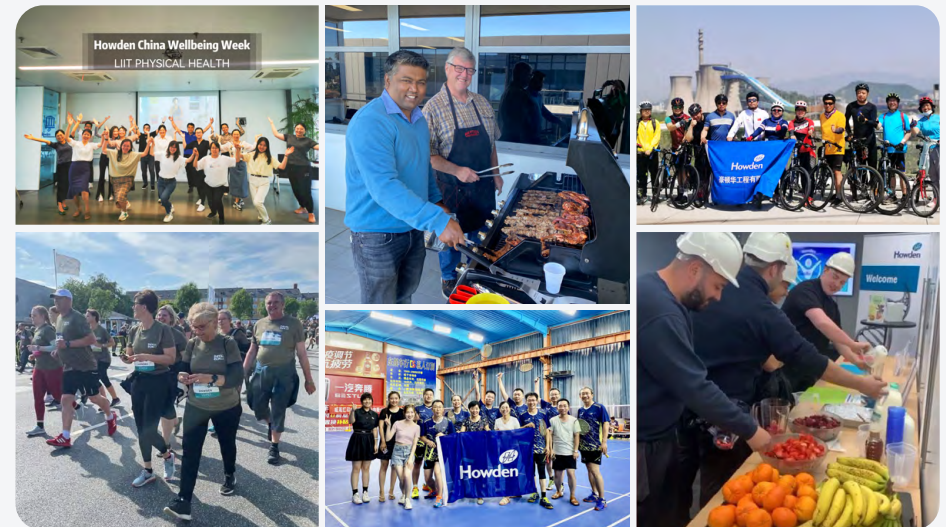
In 2022, we also focused on supporting employee wellbeing through initiatives like “21 Days of Kindness and Compassion” where we shared ideas on how to be kind to yourself and others. The kindness checklist, shared via the employee wellbeing app, provided an inclusive list of ideas and suggestions to help people feel good.

In addition to increasing employee awareness of the importance of health and wellbeing, we encourage all of our people managers to discuss with their teams the importance of physical and mental wellbeing.

During 2022, we held a number of different seminars for employees, exploring topics such as:

- Understanding psychological wellbeing
- Accountability for maintaining healthy habits
- Good work and mental health
- Physical exercise and personal health

Our wellbeing initiatives in 2022 received positive feedback from our employees increasing our eNPS score from eNPS-12 in 2021 to eNPS+13 in 2022. On physical health, our score improved from eNPS-2 to eNPS+18, which places Howden in the top 25% of manufacturing companies.



Aligned to 3.4



Wellbeing and engagement continued

Employee engagement

Employee engagement is extremely important to Howden. We believe engagement is based on three elements: Employees understanding the strategy, knowing how their role supports strategy execution and that they work in an environment where they feel energised and motivated to make the strategy a reality.

In 2022, we measured employee engagement twice (April and September) through our Howden Employee Engagement Survey. The survey ensures we receive continuous feedback and promotes ongoing listening and dialogue between people leaders and their teams on things that matter to them. The survey was available in 17 languages and we received feedback from 90% of employees.

Employee experience is measured through Net Promoter Scores enabling us to track performance in key areas like employee engagement, perception of safety culture and wellbeing. An eNPS score can range from -100 to 100, the higher the score the more positive the feeling. Alongside the various scores, our employees shared 52,117 comments during 2022 giving us additional insight into key topics.

For more information on eNPS, please [click here](#).

At the end of 2022, we maintained our engagement score at eNPS 33 which puts us in the top 25% of manufacturing companies according to our survey partner Peakon.

Survey date	eNPS score
September 2020	21
April 2021	28
September 2021	33
April 2022	33
September 2022	33



After each survey closed, all managers with more than five direct reports saw their team's feedback, whilst respecting the anonymity of the responses. Managers then discussed this feedback with their team and agreed an action plan based on what is important to the team.

Our eNPS 33 engagement score puts us in the **top 25%** of manufacturing companies.

Employee communication and engagement

Good communication is vital to build employee engagement. In 2022, we used a variety of employee communication channels to build employee alignment around our purpose, corporate strategy and objectives and secure employee feedback. This includes our company intranet, social platform, company magazine, global townhalls, CEO roundtables and executive led communications.

Alongside our Howden Employee Engagement Survey, our feedback channels like yammer and Q&A sessions enable employees to ask questions and share their thoughts on key subjects.

Recognising the importance of the senior leaders in sharing the strategic narrative, we have our annual Howden Leadership Conference to ensure all global leaders are aligned on our strategy, initiatives and actions for the year ahead to enable dissemination of a consistent narrative.

In 2022, we held a virtual global conference using cutting-edge technology to enable delegate participation and involvement real-time. 100% of delegates agreed that we had achieved our objectives of understanding the direction of the business and their role in making our vision a reality and they feel confident about the future, motivated and inspired to deliver the strategy.

Monthly global people manager meetings ensure that timely information and actions are shared with all of our people managers.



Diversity and Inclusion

At Howden, we define Diversity as being focused on the individual and the elements that make them unique whether grounded in gender, age, race, disability, religion, cultural background or sexual orientation.

Inclusion for our business means creating a working environment and culture where people feel welcome, valued and they belong. All individuals are treated fairly and respectfully, have equal access to opportunities to progress and can contribute fully to the organisation's success.

We recognise the importance of encouraging an inclusive and diverse workforce and the value of differing perspectives in helping to solve the complex

problems that our customers face and providing the best solutions possible.

During 2022, we actively reviewed decisions around performance, talent and remuneration to ensure fairness and our Management Committee considered diversity as part of our talent and succession reviews.

Gender Diversity

Engineering, and mechanical engineering in particular, has traditionally been a male dominated field and as such, there has been a long-standing issue with gender diversity in the sector. Howden is no different in this area. In 2022, 17% of our Management Committee were women, 27.5% of our senior leaders

and 17.9% of employees generally were women compared to 17.0%, 24.5% and 17.4% in 2021 respectively.

When looking at employees generally, in 2022, 28.3% of our office based employees compared to 26.6% in 2021 and 2.7% of our technical factory employees are female compared to 1.7% in 2021. The former is a key talent pipeline for senior roles in the organisation.

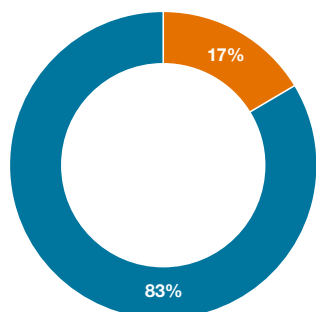
Early on in our diversity and inclusion journey we realised that although we must nurture diversity in the broadest sense, given the scale of the challenge we faced and the significant benefits derived from tackling gender diversity we determined that gender diversity would be our first global priority.

In 2021, we therefore made the following commitments:

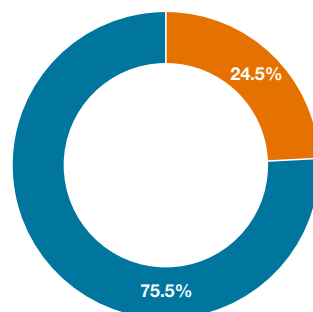
- 30% of our Management Committee will be female by 2025, 40% by 2030
- 30% of our senior leaders will be female by 2025, 35% by 2030 (our Management Committee and their direct reports)
- 20% of our total business will be female by 2025, 30% by 2030
- From 2022 50% of our apprentices will be female and 50% of our graduates will be female

2021

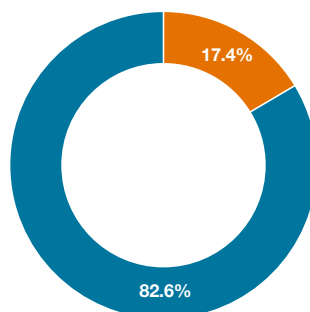
Management Committee



Senior leaders

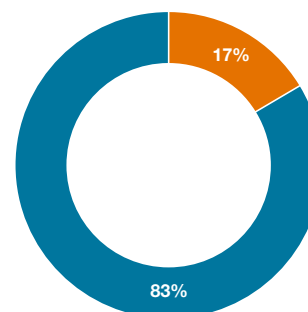


Total business

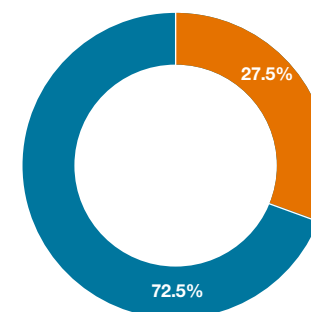


2022

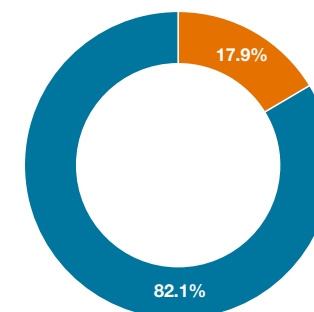
Management Committee



Senior leaders



Total business



● Female ● Male

Diversity and Inclusion continued

During 2022, our focus was on developing plans and introducing initiatives to enable us to meet those targets, largely focused on increasing awareness of diversity and inclusion in the organisation, building the talent pipeline and ensuring our recruitment processes enabled us to recruit more females into the organisation.

In partnership with a third party Diversity and Inclusion (D&I) specialist, we began to build a greater knowledge and awareness of diversity and inclusion through training and development initiatives. During the year, we developed and piloted a number of courses intended to build organisation awareness of these subjects. This included People Leader training to encourage a deeper understanding of the role they have in creating an inclusive workplace and a similar course for the Human Resource (HR) Community reinforcing the role that HR leaders have in enabling business leaders.

We also developed an inclusive leadership program for senior leaders to build their self-awareness and understanding of inclusive leadership whilst creating leadership accountability for D&I. Finally, we developed inclusion training modules suitable for all employees.

In 2022, we also established our D&I Council (with 19 members in 11 countries) to help create a more diverse and inclusive culture.

Sponsored by two members of the Management Committee, the role of the D&I Council is to:

- To act as advisors on priorities for diversity and inclusion across the business
- To challenge the organisation on progress made against the Global Diversity and Inclusion plan
- To govern and support Employee Resource Groups
- To report to the ESG Committee, Management Committee and the Board on the success of diversity and inclusion initiatives and ask for further support when additional interventions are required
- To consider and approve diversity and inclusion campaigns and initiatives for Howden

Employees were asked to apply for the Council and with the final selection of 19 members (including the two sponsors) this Council is the forum which brings together different perspectives, experiences, backgrounds, cultures and thinking to create a more diverse and inclusive workplace for everyone.

We also continued to raise the profile of diversity and inclusion with our senior leaders, our People Leaders and employees generally through a number of high profile events.

Global Diversity Awareness Month

In celebration of Global Diversity Awareness month in October in 2022, we held our first 'Howden in Harmony' week which was a proud celebration of the differences we experience from country to country. It is important that every Howden employee feels empowered to share the parts of the heritage they are proud of. By celebrating our differences during this week, our intention was to improve awareness of cultural diversity and promote a better understanding of cultural differences.

To promote and encourage involvement in the week a toolkit was provided for local implementation, supported by global communications including videos of employees sharing their own stories and experiences in "About Me".

Colleagues came together to share food and experiences in our Booysens, Sasolburg and Middelburg sites in Africa, in Australia, Spain, the UK and in Buffalo New York.



Diversity and Inclusion continued

These are just two examples of the types of activities we supported in 2022 to build awareness of the benefits of a more diverse and inclusive workplace to both employees and the business. Events like this give us the chance to have the conversations that create the opportunities to challenge each other to make the changes we need to create a more diverse and inclusive working environment.

In our hiring process, we embedded the requirement that all management level short lists should have suitably qualified diversity candidates and mandated the need for diversity to be reflected within interview panels. To increase our ability to track gender diversity in this process, we rolled-out a new questionnaire for applicants to complete and developed a reporting framework to enable us to report on progress monthly.

In 2022, the questionnaire was completed over 21,000 times. This supplemented the insight we gained through the addition of specific questions to our Howden Employee Engagement Survey in 2021, which gave us direct feedback from employees on their perception of the progress we were making in our diversity and inclusion journey.

The scores below show the progress we are making on our journey. As well as the scores, since 2020 over 6,800 comments have been received, all of which helped us frame the approach and actions to be taken throughout 2022.

Survey	Equality	D&I	Inclusiveness
September 2020	24	-	-
April 2021	31	-	-
September 2021	40	40	-
April 2022	42	40	-
September 2022	43	42	26



Pride Month

As part of Pride month in June 2022, we joined the celebrations in an important first step in our diversity and inclusion journey. Whilst we have still much to achieve in this area, it was important for us to encourage colleagues to take part in the conversation to enable us to progress.

Materials were shared to support the conversation including an online seminar on gender identity and inclusion, a glossary of terms, articles and discussions on "What it means to be an ally" and a reminder about our Anti-Harassment and Discrimination Policy.



Throughout the campaign, our intention was to show colleagues that as a modern, ethical employer, we want to nurture a working culture that encourages people to be open minded, curious and most importantly be themselves.



Diversity and Inclusion continued

Women in engineering

In 2022, our Chennai factory established a first with the creation of an assembly line where each stage of the process is operated and managed by women.

From balancing, assembly, testing, purchasing, quality and line supervision all roles are performed by experts that are very proud of their unique status as an all women team.



Aligned to
5.1; 5.5; 5.9



“This is my first job in the fabrication industry, and this was the first time in Howden Chennai that they had female employees for the assembly line. My first visit to the shop floor was very frightening and I was wondering - How do I handle this?

But my superiors supported, encouraged and motivated me and it gives me great pleasure to know that our team is setting a standard for the upcoming juniors in our line. I intend to advance to a higher level in this industry”.

Menaga Babu, Fitter Assembly Team



“The shop floor has been renovated and aligned for female employees, the atmosphere is welcoming and helps us to fulfil the targets.

I feel proud that my hard work pays out in such a way that I can see the female associates handling the line individually with complete ownership and cross-learning the process.”

Praveena.A., Trainee Manufacturing Engineering



Talent attraction and retention

As a global organisation, and despite the challenges of inflationary pressures that all companies faced in 2022, overall, we had a relatively low attrition rate of 8.9%. In countries where we faced acute inflation or attrition-related challenges, we did make some targeted interventions in pay to support our people. These measures included one-off payments and mid-cycle salary reviews.

Overall 45% of our employees have 10 or more years' service. This makes for a relatively stable, experienced workforce with the expertise and knowledge to support our customers' specific and complex needs. However, we also recognise the importance of attracting, recruiting and developing talented people to support diversity of thought and bring new ideas to the organisation.

We are passionate about attracting early career talent to our organisation as this brings new ideas, perspectives, and thinking to Howden. Importantly, this also builds our future skills, capabilities and talent pipelines, as well as being a key enabler to achieving our diversity aspirations.

We have an early careers focus through graduate and apprenticeship programs all providing development, mentoring and hands on experience, and offering a wide range of career opportunities in our organisation.

Following a review of our early career programs in 2021, in conjunction with our diversity and inclusion ambitions, we refreshed our graduate recruitment approach and program. This included expanding the entry criteria to give access to a more diverse graduate pool and refining our graduate positioning to make it more attractive to the wider talent group.

In 2022, we piloted and successfully implemented the graduate program within some of our key sites in Europe, increasing our graduate intake. Across Howden, we recruited 33 graduates with 55% being female.

Howden apprenticeship programs provide an excellent grounding for those wishing to pursue a career in engineering and manufacturing. They offer an educational and practical pathway, gaining hands-on experience and skills across a range of departments, as well as relevant qualifications.

We are committed to developing relationships with local schools to encourage young people to explore engineering as a career option and to promote STEM careers.

In September 2022, Howden in Scotland signed a national partnership with PRIMARY ENGINEER® to bring engineering into classrooms across Scotland, as well as hosting a variety of onsite events and activities to engage young people in engineering and the opportunities within the sector. This initiative creates an important link between local schools and industry partners.

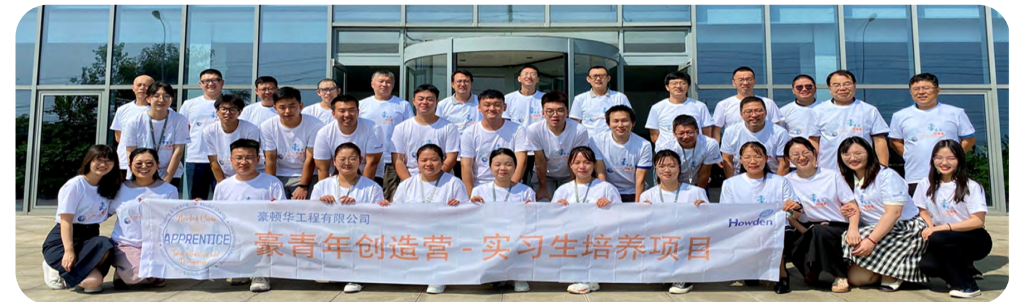
As part of our overall talent attraction and retention strategy, we also began initial work to review our employer value proposition and employer branding, which included gathering feedback and insights from our employees and people leaders. We refreshed

our external careers page and advertising, as well as enhancing our recruitment tools and systems to enable access to a wider reach of diverse talent.

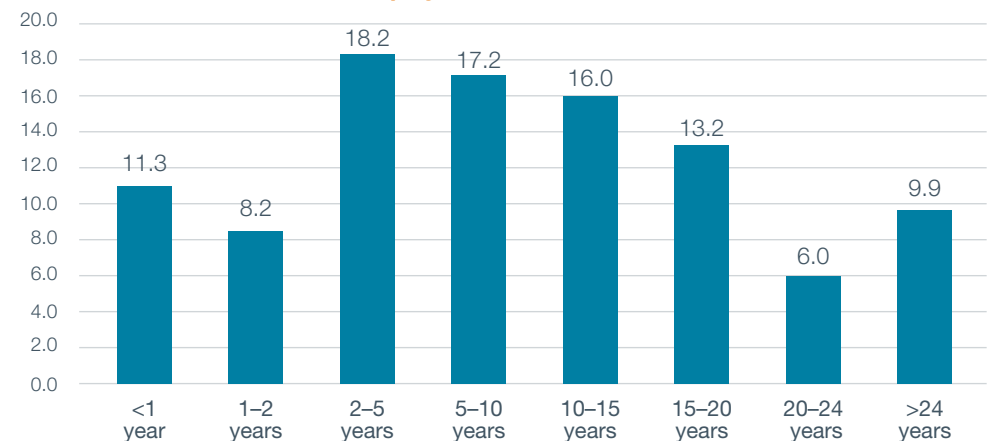
We continued to develop and nurture our internal talent. In 2022, local talent reviews were conducted bi-annually and followed by Global Talk Talent sessions chaired by the Chief Executive and Chief HR Officer.

Our initial focus was on strengthening the succession pipeline for our top three leadership levels and building internal succession.

We also held a High Potential Development Program (ACE) for fast track succession, with 20 delegates taking part in 2022. This program will give us a further opportunity to achieve our diversity and inclusion objectives in the future.



Employee service tenure



Employee development and recognition

Training and development

We are focused on ensuring that Howden's employees have the right skills and experience to deliver our corporate strategy.

We made good progress in 2022 strengthening our internal training capability and increased our Employee Engagement Survey eNPS scores on Personal Growth by 9 points. We bolstered our learning infrastructure by implementing Workday Learning and appointing over 40 learning leads across the business globally to identify and co-ordinate learning activities for their business areas, significantly improving how we manage learning at Howden.

The introduction of Workday Learning in 2021 has increased the availability of e-learning resources in the business. The addition of learning materials covering topics such as: compliance, products, performance and manager training resulted in over 74% of employees completing courses in the new virtual environment within a month of launch. By the end of 2022, we had 17,077 course enrolments.

Furthermore, over 280 managers, equivalent to 31% of this population, completed our wellbeing training. Over 115 employees completed training on mental health awareness and the online multi-language learning resources through Skillssoft Percipio were accessed over 13,000 times in 2022.

Total reward

Howden is committed to offering our employees a market competitive total reward package that is aligned to our values and linked to the performance of the company and the individual.

For details of our approach to reward please see our [2021 ESG report](#).

Alongside our reward package, we recognise the performance of our people through a variety of recognition schemes including our High Five program and the Howden Annual Awards. Our Howden Awards congratulates individuals and teams that have made a significant contribution in areas such as Environment, Health and Safety, Living our Values, financial performance and aftermarket service.

Fair pay

We are committed to paying our people fairly and in 2022, we matured our approach in this area by establishing our Fair Pay Policy. The Policy is available to all of our people through our intranet and sets out our approach to setting pay, reviewing pay and communicating pay.

It outlines our commitments in terms of market competitiveness, internal equity, governance and the link between performance and pay.

We monitor various metrics on pay and make targeted interventions where this is required. For example, 10% of our merit budget is set aside for targeted adjustments for individuals to deal with issues such as market competitiveness or internal equity.

Building leadership capability

In 2022, we introduced a new global leadership program for middle managers 'Leading People at Howden'. Designed around the Howden Values and Leadership Behaviours, the Leading People at Howden program includes three core workshops; Exploring Impact, Engage My Team and Enabling Excellence. Each workshop is accompanied by e-learning content made available through Skillssoft Percipio.

The program also includes cross-regional activities such as; peer coaching and online discussion nudges. Delivering the program through a virtual classroom environment enabled extensive interaction between people leaders based in the Americas and EMENA. To date, 54 people leaders have attended the program with another 90 places across more regions planned for 2023.



"The Leading People at Howden training had a profound impact on my understanding of leadership.

I gained a greater understanding of my own strengths and how to use them to lead my team effectively."

Leo Botha,
General Manager for Ventsim, Ontario, Canada



Aligned to 5.9



Aligned to 8.5

Employee development and recognition continued

Howden Annual Awards: Chief Executive Award

Each year, the Howden CEO award is presented to an individual or team that has made an outstanding contribution to the business.

The 2022 award was presented to the team responsible for our Cash Management program.

For the last three years, this team has focused on improving our Cash Performance, using our continuous improvement tools to identify means to generate superior cash flow performance.

Despite significant headwinds in the external market, working with the business, the team were able to reduce working capital by half with the result that Howden now operates at levels that benchmark against the best companies in the world.

To achieve this outcome, the team adopted continuous improvement processes and tools, as well as winning the hearts and minds of colleagues in all functions and regions as they educated, motivated and created alignment across Howden.

The work of this team enabled us to accelerate our investment in the business, including the acquisition of seven companies over the past two years, which in turn enabled our growth. It also elevated our reputation amongst lenders allowing us to negotiate more favourable interest rates on the markets.



Supporting our local communities: Bright Futures

We believe we have a fundamental responsibility to make a positive and sustainable contribution to the communities in which we operate.

2022 was the first full year of Bright Futures, our global community volunteering program, supporting people in disadvantaged and underrepresented communities around the world realise their full potential through education and skills development. Guided by global principles, site Bright Futures leaders and champions determine the initiatives that will make a sustainable difference to their own local communities and manage the program locally.

In 2022, 13% of Howden employees volunteered their time, skills and expertise to support those who needed it most in their local communities.

They dedicated over 5,000 volunteering hours to over 100 different Bright Futures projects and activities with a potential reach of over 100,000 people in our local communities.

Bright Futures funding

The principal driver for employee involvement in Bright Futures is volunteering as we know that volunteering increases both personal wellbeing and engagement. However, we also realise that some projects also require an initial level of investment to ensure that they deliver the maximum impact that they can. During 2022, our first full year of operation we granted \$181,327 to such projects.

In addition, employees can choose to fund-raise to support their local Bright Futures projects and Howden will match the amount raised, up to a limit of \$500 per person. In 2022, we paid out \$2,664 in matched funding.



Aligned to 4.3



Some of our 2022 community highlights

Inspiring a future in Science, Technology, Engineering and Maths (STEM) in the Australian outback

The Bright Futures team in Australia launched their Bright Future program with a project to inspire young students in the Australian outback to pursue a career in STEM.

The team, working with AREEA (Australian Resources & Energy Employer Association), travelled to schools in remote locations across Australia, speaking with over 1000 students about the possibilities of a career in the fields of science, technology, engineering and maths.

At these sessions, students had the opportunity to learn about Snap Circuits, virtual reality headsets and Edison, an educational robot that provides hands-on experience in programming and coding. Children in remote areas across Queensland, New South Wales and Western Australia would not normally be exposed to such subjects.



Bringing engineering into classrooms across Scotland

The Bright Futures team in Renfrew, Scotland have entered into a partnership with PRIMARY ENGINEER®, a not-for-profit organisation which brings engineering and engineers into primary and secondary classrooms curriculum.

This partnership plays an important role in linking schools to industry partners and encourages more pupils, particularly females, to explore Engineering and STEM careers paths.



Supporting local schools in Pune, India

The Bright Futures team in Pune supported local schools throughout 2022 in a variety of ways. For example, the team distributed much-needed supplies to children in one of the region's most remote schools situated in a rural village with poor access and infrastructure.

Government education materials had not been received in several months which meant the children lacked even basic stationery items like pencils and notebooks. The Bright Futures team led the provision of a school bag per child with text books, stationery kits and healthy snacks. The team also partnered with a local organisation, Jnana Prabodhini, to create Knowledge Boxes with educational videos and presentations for students of 50 rural schools around Pune.



The materials were stored on hard disks for schools that do not have internet access benefiting nearly 38,000 students.

Using engineering experience to support children in Fairfield, Ohio

In the Americas region, the team in Ohio collaborated with a local non-profit organisation 'May we help' who support children with additional needs who are striving to become more independent or pursue a passion.

The Bright Futures team used their engineering expertise to build 22 sensory chairs for children with autism and adapted 100 toys for children with disabilities who are unable to play using their arms and hands.



Some of our 2022 community highlights continued

Supporting local future talent in Chennai, India

The Bright Futures team in Chennai began the process of converting an old office building into a Skills Development Centre which will include a welding academy, fitter training facility, e-learning centre and a fully equipped training hall and library.

This centre will develop and empower the local community through a structured skills training program focusing on training local young people to gain technical skills. The facility will also provide training to the wider community to enhance their employability and provide the necessary skills to access the wider employment market.

The e-learning centre will provide access to the technology required to support learning and development in the community. The first batch of students will be admitted in April 2023.



Corporate Giving

As an organisation, we believe it is important “To do the right thing” and during 2022, there were several situations in our local communities where people needed additional support.

During 2022, **we made donations of \$76,000** in support of these communities.

Annual Howden Awards – Bright Futures

At the 2022 Annual Howden Awards, we presented the first award for Bright Futures, to recognise the contributions that individuals and teams are making through our Bright Futures program.

In 2022, the award went to the China Bright Futures site team who worked with local rehabilitation centres and children's educational groups to support over 100

families of children with autism, providing creative play opportunities for the children and valuable respite for their families.

In addition, the team brought over 85 young people into the factory in order to educate them about the work that Howden does and future career opportunities in engineering.





Governance

In this section:

- Compliance
- Supply chain management
- Culture, ethics and Governance

Compliance

The Howden Compliance Program

Central to our Governance approach is our Compliance Program, which has been designed to protect and promote ethical business operations. It is focused on ensuring all employees conduct themselves lawfully at all times and maintain the highest ethical standards in all aspects of their business dealings. The program also focuses on creating and maintaining a culture of compliance across the organisation.



Aligned to
16.5; 16.6; 16.C

Howden Code of Conduct

We expect all employees to read and understand our Business Code of Conduct. All employees joining Howden as part of an acquisition take part in a specific Code of Conduct walk through to ensure familiarisation with the code and their responsibilities within it.

As part of our mandatory annual Anti-bribery and Corruption training, all employees are required to read and accept the terms of our Code of Conduct.

To read our Code of Conduct please [click here](#).

Employee engagement and awareness of compliance

Alongside formal training, we undertake regular communication activities to build awareness of the importance of compliance with the business.

In 2022, building on the momentum generated through our 2021 Compliance Week, we focused on communicating monthly key themes which ensured that compliance continued to be a topic of conversation with employees. These themes included global trade compliance, with focus on Howden's Export Controls Monitored Countries ("ECMC") process, the Project Risk Review applicable to sales contracts, our Agents' and Distributors' Policy, Anti-Bribery & Corruption, data privacy, Anti-Trust & competition law, all things contracts (sales and purchase), intellectual property and the importance of its protection and our gifts and hospitality.

By continuing to discuss and share insights on these subjects, ensures that decision-making at all levels of the organisation is informed by integrity, honesty and sound judgement.

Regulation and control

We operate in regulated markets which require strict adherence to local and international regulations and proven ethical practices. We are committed to conducting all of our global operations in accordance with all applicable laws and regulations.

Our expert teams manage the compliance with these requirements and we have robust due diligence and compliance processes in place to reduce the likelihood of any form of breach impacting our business.

Ethics hotline

Employees are encouraged to report behaviours that are inconsistent with our Code of Conduct through their Line Manager, HR, the Legal Team or through our confidential EthicsPoint Hotline. Available globally in 26 languages, employees, suppliers and agents are able to raise their concerns anonymously and confidentially to EthicsPoint and be confident that their concerns will be promptly and thoroughly, fairly and independently investigated.

The availability of our EthicsPoint Hotline and website is shared regularly with employees through our compliance training, our intranet site and through on site posters.

During 2022, we received 28 reports through the hotline compared to 7 in 2021 which we attributed to the increased understanding of our compliance program, our employees standing up and being accountable for compliance and the knowledge of how to report potential breaches without fear of retaliation.



Compliance continued

Managing our agents and distributors

Agents and distributors have an important role to play in supporting Howden to serve customers around the world. Our agents are expected to comply with the same standards as employees.

Before we appoint a new agent a full due diligence process is followed using an external agency to carry out robust checks to allow us to verify the suitability of the agent prior to appointment. In addition, we ask all agents to submit a business case. The process to appoint agents is managed centrally by our Group Legal team. Once the due diligence process is complete and a business case has been approved by the Management Committee, an agreement is entered into with the agent. Our Code of Conduct is included as an Appendix to the agreement and adherence to the code forms part of the agent's contractual obligations to Howden.

Similarly, all existing agents must go through a renewal process every three years which again includes third-party due diligence checks and a business review. We currently have 334 agents in place globally which have all been verified through the due diligence process.

Anti-Bribery and Anti-Corruption

Bribery and corruption matters are covered by our Code of Conduct and we have specific standards and procedures that are reflected in our anti-corruption policy. This policy covers, among other things, the giving and receiving of gifts, meals and hospitality, dealings with government officials and the appointment of distributors and agents.

During 2022, a new Gifts & Hospitality Policy was rolled out to complement the guidance contained in the Code of Conduct and anti-corruption policy. The policy set out clear standards and behaviours required of all Howden employees to comply with Howden's expectations and all applicable Anti-Corruption laws and Howden's requirements concerning the financial limits and approval levels for giving and receiving gifts and hospitality. It also ensured that Howden employees do not exploit their position for personal benefit and reinforced our commitment to maintaining the highest standards of business and personal ethics as set out in the business Conduct of Conduct.

We expect all employees, agents, consultants and representatives, and anyone acting on Howden's behalf, to apply the same high standard in all business dealings. We have a zero tolerance for any form of bribery.

Anti-Trust

We are committed to competing fairly in the markets we operate in and have an Anti-Trust Compliance Policy and specific training modules for colleagues whose roles may expose them to competition law risk.

Trade compliance

Our Trade Compliance Policy covers export controls, import law, financial and trade sanctions as well as specific anti-boycott law compliance. The policy lays out the process to ensure transactions that involve certain countries are screened as appropriate and provides corporate oversight of the process.



100%

of employees trained in Anti-Bribery
and Anti-Corruption in 2022



Supply chain management

Supply chain management

At Howden, we work in partnership with our suppliers to build mutually beneficial relationships for our business, our suppliers and for those working for our supply chain. Our suppliers are vital to our success.

We have a reputation for doing business ethically and with integrity with our approximately 7,000 suppliers globally. We have put in place comprehensive quality assurance procedures with our supply base, which includes supplier selection and auditing, part qualification and supplier quality management and corrective actions.

Managing our suppliers

All suppliers sign up to our Supplier Code of Conduct. This covers our expectations for our suppliers from compliance with all applicable laws, including Human Rights, Anti-Bribery and Corruption and Conflict Minerals. We expect our suppliers to comply with these social, environmental and ethical standards. During 2022, we updated our Supplier Code of Conduct to reinforce our ESG commitments. The revised code includes important provisions on environment, sustainability, monitoring and compliance expectations.

During 2022, we completed the tiering and categorisation of our supply base and identified suppliers that are most critical to the performance of Howden. We actively managed our supply base to minimise supply chain disruption by identifying potential supply risks, monitoring overall supplier performance and implementing corrective actions as necessary.

We identify critical suppliers and focus our risk management efforts on those suppliers that present the greatest risk to the business. Critical suppliers are evaluated by assessing their criticality to the Howden value chain and their specific risk.

We currently have 50 critical suppliers

Conflict minerals

Our Conflict Minerals Policy sets out our commitment not to use minerals that directly or indirectly benefit armed groups in the Democratic Republic of Congo or neighbouring countries.

To view our policy please [click here](#).

Modern slavery prevention

We recognise our responsibility to ensure that slavery and human trafficking is not occurring in any part of our business or supply chain. We ask all employees to remain vigilant and report any suspicions through their Line Manager, HR manager or through our EthicsPoint Hotline. Our Supplier Code of Conduct sets out our minimum expectations for our suppliers regarding human and labour rights.

To read our 2022 Modern Slavery Act statement please [click here](#).

Our policy of political donations

Howden is a politically neutral organisation.
We have a policy of not making political donations in any part of the world. This policy is covered in our Code of Conduct.

Howden Annual Awards

Recognising good compliance

Each year as part of the Howden Annual Awards, we recognise colleagues who are Living our Values. The “We do the right thing” award is one of the most significant values awards, presented to Howden colleagues who lead by example and consistently follow through on our commitments whilst showing honesty, humility and respect.

In 2022, the award for “We do the right thing” went to the local leaders of the Bright Futures program for creating a series of initiatives around the world supporting disadvantaged and underrepresented individuals. The impact and the reach of this program has been significant. In 2022, 13% of employees volunteered in over 100 initiatives.

Read more about Bright Futures on page 38.



Culture, ethics and Governance

Business Continuity Planning

In 2022, we completed a major review of our business continuity plans globally ensuring all of our businesses and sites had robust plans in place in the event of an interruption to that business. As a result of this review, all businesses now have appropriate plans in place to ensure the effective continuation of our business.

Management Committee oversight and compliance auditing

During 2022, compliance matters were reviewed each quarter by the Executive Compliance Committee to ensure suitable measures were in place to mitigate against key risks, and ensure that infringements were dealt with appropriately, in line with our policies. During the year, responsibility for the management of specific ESG-related risks were delegated to the ESG Steering Group for tracking and corrective actions if required.

The Management Committee also received a monthly update on compliance matters from the General Counsel.

As part of our audit process, formal compliance audits took place in conjunction with our external auditor in order to gauge overall risks to compliance within Howden and to determine whether our internal processes and procedures were being adhered to. This compliments the auditor's review of Howden compliance policies and procedures and reports (via EthicsPoint or otherwise) and covers general fraud management, risk of bribery and corruption and helps to identify areas for improvement in our Compliance Program. During 2022, based on feedback from the audit process,

we documented our internal investigation process to ensure a consistent approach is taken globally to all compliance-related investigations.

Taxation

As at 31 December 2022, Howden had legal entities in 35 countries around the world and follows tax laws in these and all other relevant countries around the world.

The Howden Group Tax team has oversight of global tax and transfer pricing compliance, reporting and governance. Local finance teams are responsible for compliance with the tax legislation in each jurisdiction where Howden operates. The Group Head of Tax reports to the Chief Financial Officer and is responsible for implementing effective tax controls and reporting on this and other tax matters to the Management Committee on a regular basis.

Howden does not engage in aggressive tax planning and the tax profile of the business is consistent with our business operations. Howden recognises that being a responsible taxpayer contributes significantly to the communities in which we operate and we aim to operate at a low level of tax risk. Where appropriate, and as permitted by local law, Howden will take advantage of incentives and reliefs available under tax laws. Examples include super deductions available for capex spend on energy efficient equipment or research & development incentives.

The Group Tax team are currently assessing the impact of the OECD BEPS Pillar 2 initiative, which aims to implement a 15% global minimum rate of tax. As at 31 December 2022, Howden does not have operations in any country with a statutory corporate tax rate lower than 15%.

Data Privacy and Protection

The Privacy Compliance Team (PCT) are responsible for ensuring Howden is compliant with all data privacy legislation globally, including General Data Protection Regulation (GDPR). This team is led by Howden's General Counsel and meets quarterly to review any legislative changes or issues that have arisen. Our Global Privacy Program outlines how Howden manages data privacy and protection and is available to all employees on our global intranet, and has been translated into 15 languages.

In line with our policy, in 2022 we tested our data security incident response plan in a table-top exercise with the results being shared with the PCT team.

We also provided GDPR specific training to over 3,000 employees including all senior managers, HR and IT teams and all European based employees. The training is designed to provide sound principles in data protection and raise awareness of individual responsibilities.

Cyber security

In 2022, 4,847 employees took part in our online Cybersecurity training. This training, alongside articles on key security topics, has significantly enhanced the awareness of cyber security matters within the organisation.

Howden was subject to an external cyber security audit by the National Institute of Standards and Technology (NIST US Government standards). The findings of which have been incorporated into Howden's cyber security program.

During the year, Howden's VPN technology was standardised on Microsoft AlwaysOn VPN globally

and all other VPN technologies were removed, which enabled further cyber security measures to be implemented. In addition, Howden has completed 50% of the implementation of a technology solution to prevent any non-Howden equipment gaining access to the Howden network to further reduce the risk to the business.

Product safety

Howden has a strong governance process that ensures that our products are safely: delivered, constructed, commissioned and operated.

Where applicable, our products are certified to externally recognised safety standards.

This is underpinned by a strong team of technical specialists who have extensive experience with our products and their applications. A core element of our process is a multi-disciplinary technical risk assessment. This approach is applied to both new products and Engineered to Order (ETO) applications.





Appendices

In this section:

- Limited Assurance Statement
- SASB
- TCFD
- Contact us

Limited Assurance Statement

Independent Limited Assurance Statement to Howden Group Limited

ERM Certification and Verification Services Limited ("ERM CVS") was engaged by Howden Group Limited ("Howden") to provide limited assurance in relation to the selected information set out below and presented in the Howden's 2022 ESG review (the "Report").

Engagement summary	
Scope of our assurance engagement	<p>Whether the following selected disclosure, as indicated on page 8 of Howden's 2022 ESG Review are fairly presented in the Report, in all material respects, in accordance with the reporting criteria:</p> <ul style="list-style-type: none"> Total Scope 1 and Scope 2 GHG emissions (location-based) [metric tons CO₂e] <p>Our assurance engagement does not extend to information in respect of other reporting periods or to any other information included in the Report.</p>
Reporting period	1 st January 2022 - 31 st December 2022
Reporting criteria	<ul style="list-style-type: none"> WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004, as updated January 2015) Howden's Basis of Reporting (detailed on page 8 of the Report)
Assurance standard and level of assurance	<p>We performed a limited assurance engagement, in accordance with the International Standard on Assurance Engagements ISAE 3000 (Revised) 'Assurance Engagements other than Audits or Reviews of Historical Financial issued by the International Auditing and Standards Board.</p> <p>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 consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.</p>
Respective responsibilities	<p>Howden is responsible for preparing the Report and for the collection and presentation of the information within it, and for the designing, implementing and maintaining of internal controls relevant to the preparation and presentation of the selected information.</p> <p>ERM CVS' responsibility is to provide conclusions to Howden on the agreed scope based on our engagement terms with Howden, the assurance activities performed and exercising our professional judgement. We accept no responsibility, and deny any liability, to any party other than Howden for the conclusions we have reached.</p>

Our conclusion

Based on our activities, as described below, nothing has come to our attention to indicate that the selected performance data and information for the disclosures listed under 'Scope' above are not fairly presented in the Report, in all material respects, in accordance with the reporting criteria.

Our assurance activities

Considering the level of assurance and our assessment of the risk of material misstatement of the selected information a multi-disciplinary team of sustainability and assurance specialists performed a range of procedures that included, but was not restricted to, the following:

- Assessing the appropriateness of the reporting criteria for the selected information.
- Interviews with management representatives responsible for managing the selected issues.
- Interviews with relevant staff to understand and evaluate the relevant management systems and processes (including internal review and control processes) used for collecting and reporting the selected disclosures.
- A review at corporate level of a sample of qualitative and quantitative evidence supporting the reported information.
- An analytical review of the year-end data submitted by all locations included in the consolidated 2022 group data for the selected disclosures which included testing the completeness and mathematical accuracy of conversions and calculations, and consolidation in line with the stated reporting boundary.
- An in-person visit to Peterborough (UK) and two virtual visits to Connorsville, IN (USA) and Booysens (South Africa) to review local reporting processes and consistency of reported annual data with selected underlying source data for each indicator.
- Confirming conversion and emission factors and assumptions used.
- Reviewing the presentation of information relevant to the scope of our work in the Report to ensure consistency with our findings.

The limitations of our engagement

The reliability of the assured information is subject to inherent uncertainties, given the available methods for determining, calculating or estimating the underlying information. It is important to understand our assurance conclusions in this context.

Our independence, integrity and quality control

ERM CVS is an independent certification and verification body accredited by UKAS to ISO 17021:2015. Accordingly we maintain a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. Our quality management system is at least as demanding as the relevant sections of ISQM-1 and ISQM-2 (2022).

ERM CVS applies a Code of Conduct and related policies to ensure that its employees maintain integrity, objectivity, professional competence and high ethical standards in their work. Our processes are designed and implemented to ensure that the work we undertake is objective, impartial and free from bias and conflict of interest. Our certified management system covers independence and ethical requirements that are at least as demanding as the relevant sections of Parts A & B of the IESBA Code relating to assurance engagements.

The team that has undertaken this assurance engagement has extensive experience in conducting assurance on environmental, social, ethical and health and safety information, systems and processes, and provides no consultancy related services to Howden in any respect.



Gareth Manning
Partner, Corporate Assurance
London, United Kingdom

6 March 2023

ERM Certification and Verification Services Limited
www.ermcvs.com | post@ermcvs.com



SASB

With our designated industry sector, Industrial Machinery & Goods, we have disclosed to the fullest extent possible, against the requirements of this Standard in respect of 2022.

Disclosure topic	Metric	SASB code	Unit of measure	2022 results / disclosure location
Energy management	(1) Total energy consumed (2) percentage grid electricity (3) percentage renewable	RT-IG-130a.1	Quantitative / Gigajoules (GJ) Percentage (%)	(1) 396,759 GJ (2) 23% (3) 23% *46% of total GJ consumed is for electricity
Employee Health and Safety	(1) Total recordable incident rate (TRIR) (2) fatality rate (3) near miss frequency rate (NMFR)	RT-IG-320a.1	Rate	(1) 0.54 (2) 0 (3) 1.2 NM per person PA
Fuel economy and emissions in use-phase	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	RT-IG-410a.1	Gallons per 1,000 ton-miles	Not applicable <i>Howden does not manufacture medium and heavy-duty vehicles or non-road equipment</i>
	Sales-weighted fuel efficiency for non-road equipment	RT-IG-410a.2	Gallons per hour	
	Sales-weighted fuel efficiency for stationary generators	RT-IG-410a.3	Watts per gallon	
	Sales-weighted emissions of: (1) nitrogen oxides (NOx) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines	RT-IG-410a.4	Grams per kilowatt-hour	
Materials sourcing	Description of the management of risks associated with the use of critical materials	RT-IG-440a.1	Discussion and analysis / N/A	Information not available at this time
Remanufacturing design and services	Revenue from remanufactured products and remanufacturing services	RT-IG-440b.1	Quantitative / reporting currency	Not applicable to Howden's business model
Activity metrics	Number of units produced by product category	RT-IG-000.A	Quantitative / number	Information not available at this time
	Number of employees	RT-IG-410a.1	Quantitative / number	6,400

TCFD

TCFD alignment timeline

2021	2022
Reporting to TCFD-aligned questions in CDP.	Scenario planning / analysis and TCFD readiness completed to enable future business planning.

Governance

Describe the Board's oversight of climate-related risks and opportunities.	Our Executive Compliance Committee oversees the management of our climate-related risks and opportunities. The overall management structure is outlined on page 13 of our 2021 ESG Report .
Describe management's role in assessing and managing climate-related risks and opportunities.	The Executive Compliance Committee comprised of the Chief Executive, Chief Financial Officer, Chief HR Officer and General Counsel have collective responsibility for assessing and evaluating climate-related risks and opportunities and managing performance against these. A duty of care cascade is in place which details accountabilities for key environmental issues.

Strategy

Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long-term.	We have carried out a materiality assessment and identified our key risks, all of which have a direct link to Climate change. The most significant of these is greenhouse gas emissions. Others identified are Energy use and management, Supply Chain management, Water Use and Waste management. These risks are being controlled internally as described in our 2021 ESG Report . There are significant climate related opportunities linked to our products which are described below.
Describe the impact of climate-related risks and opportunities on the organisation's business, strategy, and financial planning.	Our compressors, blowers, steam turbines, rotary heat exchangers, fans and digital solutions all have vital roles to play in helping companies avoid emissions, increase efficiencies, switch to greener renewable fuels, preserve scarce resources and reduce waste. This extensive product portfolio, alongside our deep expertise in air and gas handling brings significant opportunities as the world transitions to minimise the impact of climate change and environmental regulations become stricter. We anticipate the decline in output from fossil fuel industries over time and rising material costs as low to medium impacts that will be managed within our normal business planning processes. We have described the opportunities from our main product groups in detail in our 2021 ESG Report .
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Our vision of 'enabling our customers' vital processes which advance a more sustainable world' is at the heart of our highly resilient strategy. Our diverse product range has strong opportunities associated with tackling climate change as described above. Our risk process has not identified any significant climate related risks linked to our business or our facilities. We continually assess the actual and potential impacts of climate-related risks and opportunities within our business, strategy, and financial planning processes.

TCFD table continued

Risk management

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.

Our risk management is an integrated bottom-up and top-down approach across the Group. Our risk management policy defines the process to be followed across the group to identify, assess and manage risks. Central to this is the mandated use of the Group's Risk Management and Assurance Framework for consistent, robust and timely risk identification, assessment and mitigation including our annual EHS audit process Business Continuity Framework, which specifically sets up an escalation process for high risk matters.

The impact of climate-related risks is quantified across a range of factors including financial, strategy, reputation, people and property, ability to perform services, regulation, safety, health and environment, and investors and funding. The business defines substantive financial impact or strategy impact using formal Impact Scoring Criteria, which forms part of the Risk Management and Assurance Framework. Ultimately, the KPS / Howden Board is responsible for Howden risk and internal control framework. It has set out the decision, and hence the level of risk, which can be delegated to divisional and operational company management without requiring escalation. This is articulated in a series of Group policies and delegated authority matrices, as well as the parameters within the approved Annual Risk Statement/Summary.

Metrics and targets

Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.

We report various consumption metrics relating to CO₂e, energy, waste and water – see [page 9](#) of the 2022 ESG Review.

Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

We currently disclose annual global Scope 1 and Scope 2 GHG emissions, electricity, waste to landfill and water usage – see [page 8](#) of the 2022 ESG Review. We have developed a clearer understanding of our Scope 3 carbon impact through our business travel partners as well as identified our Top 10 key and critical suppliers with respect to Scope 3. We are working with these key suppliers via both Eco-Vadis and developing a mechanism to capture their Scope 1 and 2.

Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

In 2021, we set targets to reduce our CO₂e to 11% by 2022, 25% by 2025, 50% by 2030 and achieve net zero by 2035 – see [page 8](#) of the 2022 ESG Review for progress against our targets.

Get in touch

Your feedback and suggestions for how we communicate our sustainability and ESG progress are always welcome. Get in touch with us at:

esg@howden.com





Howden

Advancing a sustainable future

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