

# SUSTAINABILITY REPORT 2023

**glaston**  
seeing it through®



# Glaston's value chain

Glaston's purpose is to build a better tomorrow through safer and more energy-efficient glass solutions. Glaston is a trailblazer in glass processing technologies and services, and glass processed with the company's machines is used in architectural glass, mobility glass, display and solar energy industries. Most of the glass produced using the company's technology is supplied to the construction industry.

Glaston sees the promotion of sustainable development as an opportunity, and the company wants to be involved in developing sustainable societies of the future. Moreover, Glaston is involved in preparing standards and policies relating to the sustainability of the glass industry regarding energy efficiency and safety, among other themes.

Suppliers of goods and services play an important role in Glaston's value chain. Glaston selects its suppliers carefully and aims for long-term good relationships with its key suppliers. This ensures that the company's partners understand and comply with the company's requirements for both processes and products. Key materials purchased for the manufacture of machines include steel structures,

electric and automation components, power centers and process blowers.

More than 90% of Glaston's purchases are from the EMEA region, and the majority of Glaston's approximately 2,000 subcontractors are located in Europe, where the company's largest assembly and production units are located.

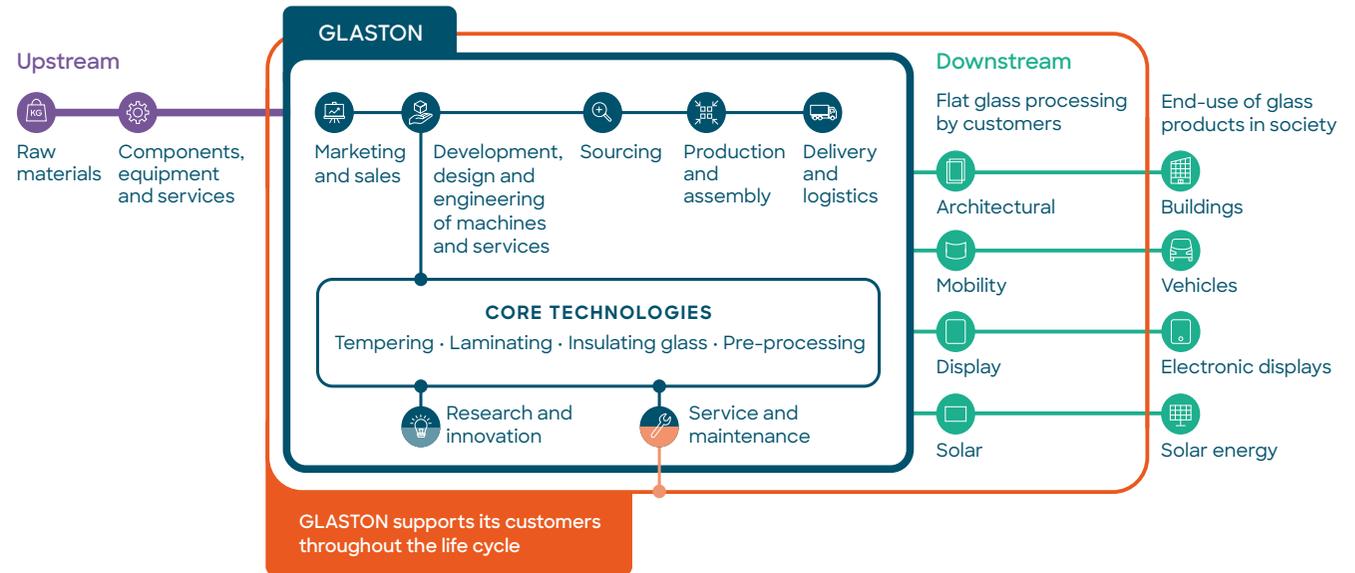
Glaston operates globally with manufacturing, services and sales offices in nine countries and customers in more than 100 countries. Glaston's plants in Finland, Switzerland and China assemble machines and in Germany

manufacture machines. Glaston has a total of 4,000 installed and operational machine lines. In accordance with its life cycle model, Glaston has actively developed its maintenance services, as regular maintenance extend the service life of machines and increase their safety.

Succeeding together with the customers is at the core of Glaston's strategy and values. The company's customers process glass for the architectural, mobility, display and solar energy markets. Glaston continuously develops its operating methods that

increase customer value and enhance the customer experience.

Glaston develops its industry in an active and diverse manner. The company promotes the development of the glass processing industry and the technologies it uses in its own operations and with its partners. Glaston is an active member of many glass industry committees and working groups in preparing standards on safety glass. In addition, Glaston engages in close cooperation with different research and educational institutions.



# The frontrunner in glass processing

Glaston's purpose is to build a better tomorrow through safer and more energy-efficient glass solutions.

Glaston is the frontrunner in glass processing industry technologies and services. Glass processed using Glaston's machines is used in the architectural glass, automotive glass, display and solar energy industries. Most of the glass produced with the company's technology is supplied to the construction industry.

In line with its vision, Glaston seeks to lead the global glass processing industry forward with innovative technologies and lifecycle solutions. The company creates value by providing technologies that enable the processing of glass into safe and energy-efficient glass solutions.

Glaston's mission is to continue to develop cutting-edge technological solutions for sustainable glass processing, while ensuring that the company's operations and value chain meet ever-increasing expectations for sustainability. These lay the founda-

tion for the sustainable and profitable growth of Glaston's business.

Demand for more energy-efficient and environmentally sustainable glass solutions is continually growing. Energy-efficient double- or triple-glazed insulating glass units and coated, low-emissivity glass processed with Glaston's technology meet the energy-saving needs of buildings.

Greater attention is being paid to the safety of buildings, and for glazing solutions this means increasing use of tempered and laminated glass. Tempering, laminating and insulating glass processes are Glaston's core expertise, and in these the company offers the most advanced technology.

The fight against climate change is also strongly impacting glass processing and this has led to rapid development of thin glass and glass used in solar energy solutions, such as solar panels. As the industry's innovative technology leader, Glaston is strongly involved in this development, and is continually launching more advanced technology to meet stricter market requirements.



# Glaston's Business Areas

## focus on different sectors

In the new organizational structure, which came into effect on 1 October 2023, Glaston has two Business Areas (BA):

### Glaston Architecture

The **Architecture** BA consists of Glaston's tempering and laminating technologies and insulating glass technologies as three business lines.

**The business lines Tempering and Laminating** offer a wide and technologically advanced range of heat treatment machines, maintenance, upgrade and modernization services, and spare parts for glass flat tempering and laminating.

Most of the personnel in the business lines focusing on tempering and laminating technologies are located in Finland.

**The Insulating Glass business line** provides high technology machines for the manufacture of insulating glass, maintenance, upgrade and modernization services, and spare parts. Most of the business line's personnel are located in Germany.

### Glaston Mobility, Display & Solar

**The Mobility, Display & Solar** BA consists of two business lines. The Pre-processing business line offers pre-processing technologies for the mobility and display glass industries as well as the related Services business, and the MDS Heat Treatment business line offers heat treatment technologies and related services for the mobility, display and solar panel glass markets.

Most of the business area's personnel are located in Switzerland.

In addition, Glaston has two new global business functions: **Automation & Innovation** and **Sourcing & Supply Chain Management**.

## Glaston as a company

Glaston is the glass processing industry's innovative technology leader, providing equipment, services and solutions to the architectural, mobility, display and solar energy industries. The company also supports new technologies integrating smart features into glass.

Glaston has production in Germany, Finland, China and Switzerland. Glaston's factories in Finland, Switzerland and China assemble machines, while in Germany machines are manufactured. In addition, the company has sales and service points in nine countries. From these locations, Glaston serves its customers, who operate in over 100 countries. The company is domiciled in Helsinki, Finland.

Glaston's corporate structure was reorganized in October 2023. The goal of the new organization is to enhance the customer experience, accelerate to execution of the strategy and improve operational efficiency. Glaston has two Business Areas (BA), Architecture and Mobility, Display & Solar, which better match customers' end-use segments. The company also has

two global business functions: Automation & Innovation and Sourcing & Supply Chain Management.

Most of the company's business is focused on the Architectural market.

Glaston also offers digital services, such as glass processing machine remote monitoring and fault analysis services, and consulting and engineering services. Personnel also work in sales of machinery and services and in Group functions.

As part of Glaston's strategic projects promoting business growth, the company has invested in the manufacturing of locally produced equipment in China. In 2023, the company launched the production of automotive glass pre-processing equipment products at the Tianjin factory, in addition to the production of previous tempering and insulating glass equipment. Glaston has also entered the market for solar panel glass technologies in China with a new flat tempering line suitable for solar panel glass processing. The first CHF Solar lines were delivered

to customers from the Tianjin factory during 2023.

Glaston Corporation's share (GLA1V) is listed on the main list of Nasdaq Helsinki Ltd. At the end of 2023, Glaston had 7,472 shareholders. At the end of the year, the company's largest shareholders were Ahlstrom Capital B.V. (26.39%), Hymy Lahtinen Oy (12.22%), Varma Mutual Pension Insurance Company (7.50%), Ilmarinen Mutual Pension Insurance Company (7.31%) and OP-Finland Small Firms Mutual Fund (6.04%).

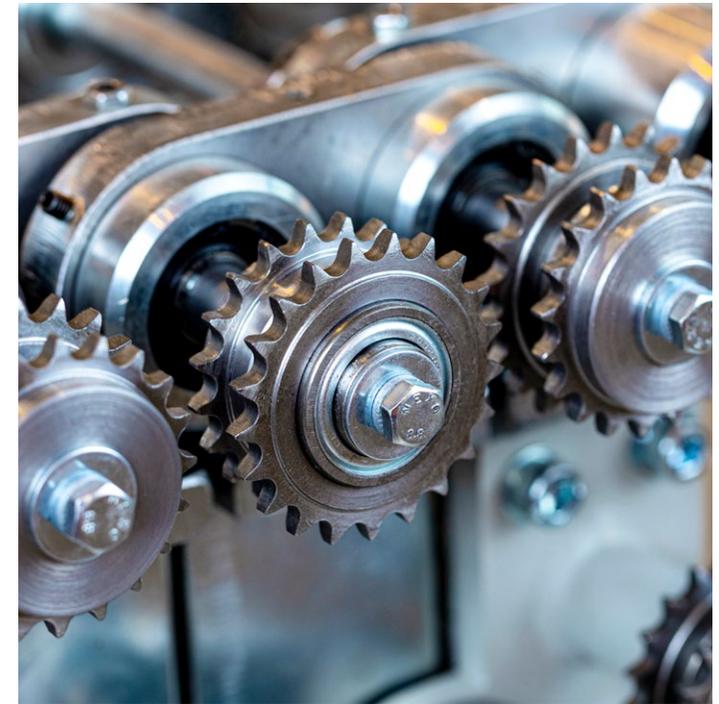
## Cornerstones of strategy

The objective of Glaston's strategy is improving growth and profitability. Growth measures defined by Glaston's business lines and the successful implementation of the strategy will be supported by Group-wide cornerstone initiatives: innovate with customers, digitalization, empowering Glastonians, sustainable operations, and mastering sourcing and manufacturing.

### Glaston's strategic cornerstone initiatives

Implementation of the strategy is supported by Group-wide cornerstone initiatives.

1. Innovate with customers to win: strengthening Glaston's technology leadership by seamless integration of customer understanding with faster innovation and development work.
2. Leading digital transformation: building the tools and infrastructure across all Glaston operations to lead the industry's digital transformation.
3. Empowering Glastonians to thrive: is essential in building the desired corporate culture. Leadership development and the leveraging of common leadership principles will play a key role in implementing the strategy and embedding it into everyday working life.
4. Sustainable operations: will enable long-term success by building a stronger culture of continuous improvement and systematically progressing the sustainability agenda.
5. Master global sourcing and manufacturing: will enable operational efficiency and growth through more harmonized sourcing and manufacturing processes.



### The strategy is supported by medium-term (3-5 years) targets promoting sustainability:

- Customer satisfaction score (Net Promoter Score, NPS) over 40
- Safety at work target of zero lost time accidents (LTA, progress measured as accident frequency, LTIFR)
- Employee engagement rate over 75 (0-100)
- Glaston's CO<sub>2</sub> emissions from own operations (Scope 1 + 2) 50% down from 2022 level and value chain (Scope 3) CO<sub>2</sub> emissions intensity down by 58% per m<sup>2</sup> of sold glass processing capacity by 2032.



## In 2023, implementation of the five cornerstone initiatives proceeded well according to plan.

The **'Innovate with customers to win'** initiative developed and harmonized processes and prioritization at the Group level to ensure the products market-fit based on customer needs. In addition, the harmonization of sales tools and processes and the development of strategic customer account management continued.

The **'Lead digital transformation'** initiative continued the implementation of Glaston's digital vision by completing several ICT projects. New ICT activities were surveyed, and prioritization was harmonized. Next, the development projects for 2024 will be prioritized.

The **'Empower Glastonians to thrive'** initiative focused on committing employees, among other things, which translated into lower personnel turnover. In addition, investments were made in identifying Glaston employees' skills and talent. A training program aimed at the sales organization was completed during the year.

The **'Elevate sustainability'** initiative continued the implementation of the sustainability roadmap prepared the previous year. Measures to reduce emissions continued, and the company set new Science Based Targets-aligned emissions reduction targets. In order to prepare for future reporting requirements, Glaston conducted a Double Materiality Assessment as introduced as part of EU's Corporate Sustainability Reporting Directive (CSRD) effective from 2024.

In order to accelerate the **'Master global sourcing & manufacturing'** initiative, the new Sourcing & Supply Chain Management business function was established in connection with the organizational change, developing and harmonizing tools and reporting further to facilitate efficient sourcing, among other things. In addition, the sourcing practices and quality indicators for purchases will be harmonized. In China, strengthening local sourcing continues.

## Continuous dialogue and development work

One of Glaston's strategic cornerstone initiatives is *Innovate with customers to win*, which focuses on strengthening the company's technology leadership by seamless integration of customer understanding with faster innovation and development work.

To remain at the forefront of the development of glass processing equipment and services, Glaston invests significantly in the continuous development of its technology portfolio and its research and development activities.

Glaston's goal is to be a reliable and responsible partner for its stakeholders. The stakeholders are current and potential customers and employees, shareholders and investors, suppliers and subcontractors, the media, public authorities and local communities as well as research institutes and higher education institutions. Glaston engages in continuous dialogue with its stakeholders on topics of current interest and to fulfill stakeholders' expectations.

One of Glaston's key sustainability themes is Responsible member of society, and the company is actively

and diversely involved in developing its industry. For example, the Glass Performance Days (GPD) event, organized by Glaston, brings together glass industry actors to discuss and share knowledge on new innovations and trends. After a four-year break due to the coronavirus pandemic, the GPD was held again in Tampere in June 2023.

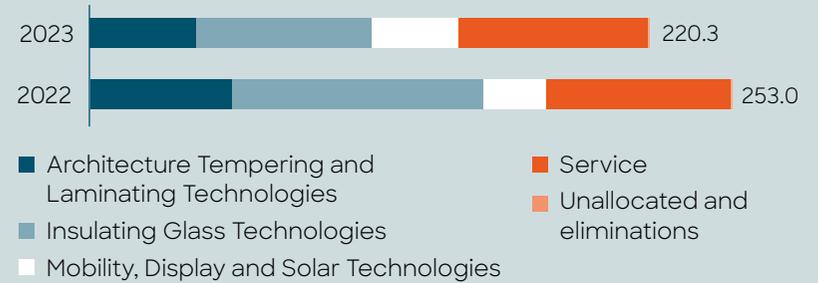
In 2023, Glaston determined, through interviews conducted in connection with a materiality assessment, the views and expectations of customers, suppliers, shareholders and Glaston's supervisors with regard to the company's sustainability. In addition, an internal survey also identified the most important sustainability issues for the company's personnel. The views of the various stakeholders guide the focus of the company's sustainability work and future sustainability reporting.

### Scope of the report

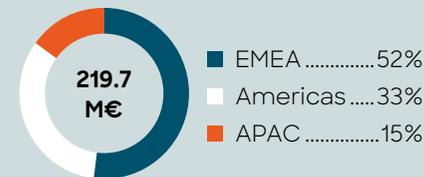
This sustainability report describes Glaston Group's operations in 2023. The content of the report and the themes covered are based on Glaston's strategy as well as a materiality assessment of sustainability. The report covers the entire Group.

# Key Figures 2023

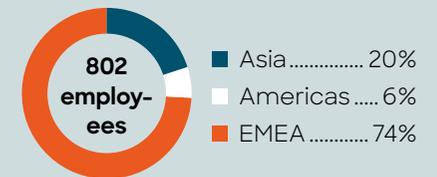
Received orders by product area, € million



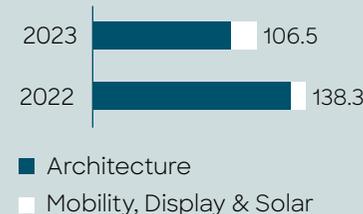
Net sales per region, %



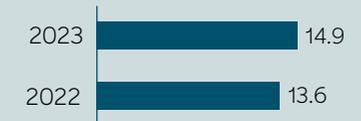
Personnel per region at end of year, %



Order book, € million



Comparable EBITA, € million



# Megatrends supporting sustainable business

Glaston's business and product development are particularly affected by the megatrends of urbanization and growing environmental awareness. With the growing use of glass, expectations for its energy efficiency, safety and versatility have increased. The development of energy prices and the tightening of building requirements further underline the importance of energy efficiency.

## Urbanization and megacities

Urbanization is one of the world's most powerful forces of change. The UN has estimated that by 2050 nearly 70% of the world's population will live in cities and, particularly in developing countries, megacities of over 10 million inhabitants will arise. Through urbanization, the need for new construction will grow, and the existing building stock, too, will be developed, which will increase demand for glass.

Glaston contributes to the construction of more energy-efficient societies by offering its customers a wide range of machines and services that enable them to manufacture more energy-efficient glass products.

## Climate change and energy efficiency

The use of glass in buildings has increased significantly; well-designed glass usage can reduce the energy consumption of buildings, improve their sound insulation and at the same time increase interior brightness. People's preferences are also increasing the use of glass as a building material. This development will drive growing demand for energy-saving and insulating glass.

The rise in energy prices and availability concerns have impacted the European glass industry, which is an energy-intensive industrial sector traditionally dependent on natural gas. On the other hand, energy-related risks may drive demand for energy-efficient solutions and, for exam-

ple, energy produced by solar panels.

As environmental awareness increases and construction laws and regulations become stricter, the energy-saving requirements for buildings will tighten. Insulating and energy-saving glass will be increasingly used to achieve these goals. Utilization of solar energy in buildings is also on the increase, resulting in growing demand for the glass needed in solar panels.

## Safety and healthiness

Greater attention is being paid to the safety of buildings. Due to tightening safety regulations, more and more safety glass is being used, which has meant increased demand for tempered and laminated glass, which help protect people from injury as they are significantly stronger than regular glass and do not pose a risk in the event of breakage.

In addition, the abundant natural light made possible by large glass surfaces has been shown to be an important factor in improving the well-being of residents and employees.

The importance of a safe and healthy life and working environment

Safety is an important focus area for Glaston.

has grown and for Glaston safety is also a strong priority internally. Occupational health and safety is a potentially significant human rights issue, and related risks are proactively identified and prevented.

## Social responsibility

For a company to succeed in attracting skilled and motivated employees, it must also assume its social responsibility and set itself ambitious sustainability goals. Diversity and equality are important themes in the societal debate and in ensuring the well-being of employees. Glaston works actively to provide a safe and good workplace for its personnel.

Transparency of operations and traceability of supply chains are also increasingly important themes, not only in terms of risk management, but also in the assessments of finance providers and investors.

# Glaston's sustainability and its management

Glaston's purpose is to build a better tomorrow through safer, smarter, and more energy-efficient glass solutions.

Glaston is committed to providing a safe and good workplace for its employees, being a responsible partner to its customers, utilizing resources efficiently, and reducing the environmental impacts of its production processes.

Glaston recognizes its responsibility for environmental and climate impacts throughout its value chain, and the company's goal is to actively anticipate and prevent potential environmental risks. Glaston's solutions, product development and maintenance services covering the entire life cycle of machines meet the growing demand for more energy-efficient, more environmentally sustainable and safer glass solutions.

As the technology leader in the glass industry, Glaston's operations are built on talented people and their ability to innovate new products as well as serve and attract customers

worldwide. The commitment of its employees is therefore an essential and strategic goal for Glaston. The company wishes to offer Glastonians a safe and engaging working environment where they can continuously develop their skills.

This reporting for 2023 is based on the topics identified as material at the end of 2021, which have been updated to reflect Glaston's strategy and changes in the operating environment.

## **Glaston's material sustainability topics are:**

- responsible own activities (human resources, environment, responsible business)
- responsible sourcing,
- responsible partner and
- responsible member of society.

## **Double Materiality Assessment reinforces Glaston's direction**

As part of Glaston's preparation for reporting under the EU's Corporate Sustainability Reporting Directive (CSRD), the company conducted a Double Materiality Assessment in 2023.

The assessment identified the key sustainability themes that could have a financial impact on Glaston as well as the most significant sustainability impacts of Glaston's operations on its external or internal personnel.

The most relevant themes identified were climate change and issues concerning Glaston's own personnel, such as safety at work, workload and well-being, diversity, equality and inclusion.

Other themes identified as important were responsible business, circular economy, human rights and safety of value-chain employees, safety of customers and end users, and biodiversity and ecosystems.

In connection with the assessment, a number of customers, suppliers, shareholders, and Glaston supervisors were interviewed about their views and expectations regarding the company's sustainability. In addition, an internal survey comprehensively identified the most important responsibility themes in the opinion of personnel. More than 200 Glastonians answered the survey.

Glaston's Board of Directors has approved the results of the assessment and the company will use them in its preparations for future reporting requirements.

# Managing sustainability

One of the focus areas of Glaston's strategy is sustainability. To demonstrate this, the strategy has set four targets addressing sustainability. The work towards the set sustainability targets is steered by a roadmap, approved by the Executive Leadership Team and the Board of Directors, which includes a plan and a timetable of measures.

The Sustainability Policy, approved by Glaston's Board of Directors in autumn 2023, describes the principles and priorities related to the management and leadership of the Group's sustainability and defines the responsibilities for different functions. The most important responsibilities are described in the attached table.

## Sustainability governance structure

<b>General Meeting of Shareholders</b>	<ul style="list-style-type: none"> <li>• The Annual General Meeting approves the annual sustainability reporting as part of the financial statements and appoints an assurance provider for the sustainability report.</li> </ul>
<b>Board of Directors</b>	<ul style="list-style-type: none"> <li>• decides on the sustainability strategy as part of the Group's business strategy, including the setting of targets addressing sustainability</li> <li>• assesses the results of the sustainability work at least once a year</li> <li>• approves the annual sustainability reporting and is responsible for ensuring that reporting is adequately monitored</li> <li>• decides on the target setting of short- and long-term incentives and whether they include sustainability-related metrics</li> <li>• approves all sustainability-related policies and the result of the Double Materiality Assessment.</li> </ul>
<b>Committees of the Board of Directors</b>	<ul style="list-style-type: none"> <li>• The Audit Committee is responsible for overseeing and evaluating sustainability reporting, the effectiveness of internal control, and risk management of the reporting process. The committee also reviews all policies related to sustainability before they are approved by the Board of Directors.</li> <li>• The People and Remuneration Committee prepares the principles of the company's remuneration model for approval by the Board of Directors.</li> </ul>
<b>Chief Executive Officer</b>	<ul style="list-style-type: none"> <li>• has overall responsibility for the implementation of the sustainability agenda as part of the execution of the strategy</li> <li>• is responsible for setting up an appropriate organization for sustainability work and ensuring the necessary resources and expertise are in place</li> <li>• is responsible for the appropriate implementation of sustainability reporting</li> <li>• approves the annual sustainability report.</li> </ul>
<b>Executive Leadership Team</b>	<ul style="list-style-type: none"> <li>• is responsible for integrating sustainability impacts, risks and opportunities into the business strategy</li> <li>• assesses and approves strategic direction, materiality assessment, target setting and performance, and risk assessments in sustainability matters</li> <li>• monitor the results of sustainability work at least every six months</li> <li>• approves sustainability guidelines and decides on policies to be sent to the Board of Directors for approval</li> </ul>

<b>Chief Financial Officer &amp; Sustainability Function</b>	<ul style="list-style-type: none"> <li>the CFO is responsible for sustainability matters at Executive Leadership Team level and leads the Group's Sustainability Function</li> <li>the CFO oversees sustainability reporting, and the Finance organization is responsible for analyzing and managing risks related to the reporting process</li> <li>the head of the Sustainability Function steers the operational sustainability work</li> <li>the Sustainability Function, in cooperation with the business areas and functions, is responsible for Group-level environmental and climate change matters.</li> </ul>
<b>Sustainability Working Group</b>	<ul style="list-style-type: none"> <li>coordinates sustainability work and is responsible for the systematic development and monitoring of the sustainability agenda as well as reporting to the Executive Leadership Team and the Board of Directors</li> <li>prepares targets and policies for decision-making by the Executive Leadership Team and the Board of Directors</li> <li>is responsible for regular materiality assessment and sustainability risk assessment.</li> </ul>
<b>Business areas, functions and companies</b>	<ul style="list-style-type: none"> <li>are responsible for the practical implementation of sustainability work as well as measuring and reporting results.</li> </ul>



As part of the company's commitment to sustainable and responsible business practices, Glaston joined the UN Global Compact in spring 2023.

Glaston is also committed to setting company-wide science-based emissions reduction targets. The targets were submitted to the Science-Based Targets initiative (SBTi) for evaluation and validation in late 2023. The emissions reduction targets support the goal of the Paris Agreement to limit global warming to 1.5°C.

By continuously and purposefully improving its operations, Glaston aims both to promote the sustainability of its own operations and help its

customers and the entire architecture value chain achieve the global Sustainable Development Goals.

### Sustainability targets

Glaston's sustainability work is guided by Group-wide strategic targets promoting sustainability:

- Safety at work: zero lost time accidents (LTA, measured as accident frequency, LTIFR) by 2025
- Employee engagement rate over 75 (0-100) by 2025
- Glaston's CO<sub>2</sub> emissions from own operations (Scope 1 + 2) 50% down from 2022 level and value chain

(Scope 3) CO<sub>2</sub> emissions intensity down by 58% per m<sup>2</sup> of sold glass processing capacity by 2032

- Customer satisfaction score Net Promoter Score, (NPS) over 40 by 2025

In February 2024, Glaston adjusted the timeframe for achieving the strategic targets from 2025 to the medium term (3-5 years). In 2022, Glaston achieved its emissions target for Scope 1 & 2 and the target was updated in 2023. In addition to these key targets, Glaston has set other targets for its sustainability work, which are explained in more detail for each topic in this report.

The Sustainability Policy describes the principles and priorities related to the management and leadership of sustainability.

As part of the company's corporate responsibility work, Glaston's financing agreement, signed in 2022, has been linked to the sustainability targets. The loan margin of the financing agreement takes into account the reduction of the company's CO<sub>2</sub> emissions and success in reaching safety at work targets annually.

## Key responsibility objectives \*)

Topic	Indicator	Target	Achieved 2023	Achieved 2022	Timetable
<b>Responsible business</b>	Training of personnel in the Code of Conduct	Training coverage 100%	98%	93%	Continuous
<b>Safe workplace</b>	Accident frequency (LTIFR), number of accidents per million hours worked	Accident frequency zero	6.3	3.9	Continuous
	Reports of workplace harassment	No harassment cases	3 cases reported	1 case reported	Continuous
	Employee engagement rate	Employee engagement rate over 75 (0-100)	70	70	2025
<b>Impacts on the environment</b>	CO <sub>2</sub> emissions in own operations	CO <sub>2</sub> emissions (Scope 1+2) in relation to net sales down by 50% from the 2020 level**)	-61%	-57%, target achieved	2025
	Emissions in value chain	Calculate emissions and set target for emissions reduction	322,644 t CO <sub>2</sub> e target set and submitted to SBTi for validation	684,150 t CO <sub>2</sub> e	2032
<b>Responsible sourcing</b>	Suppliers' commitment to Glaston's Code of Conduct (new and current suppliers)	Commitment coverage 100%	74% of main suppliers	75% of main suppliers	2025
<b>Responsible partner</b>	Industry's best customer experience	Customer satisfaction score (NPS) over 40	62	53	2025
	Technologically advanced and material- and energy-efficient products	R&D, % of net sales	4.2%	4.3%	Continuous

\*) In February 2024, Glaston adjusted the timeframe for reaching the strategic targets from 2025 to the medium term (3-5 years).

\*\*\*) A new emissions reduction target covering the entire value chain was set in 2023.

# An ethical and sustainable approach

## Sustainability targets:

- Coverage of Code of Conduct training (personnel) 100%

## Key strategic priorities:

- Ensuring compliance with the Code of Conduct
- Anti-corruption policy training
- Fair business and competition training
- Creating audit model for agents
- Audit of agents

Glaston's day-to-day activities are guided by the Code of Conduct, which is approved by the Board of Directors. The Code of Conduct provides all Glaston personnel with guidelines on acting in an ethically sustainable way in the workplace, in interaction with various partners, customers and suppliers, and also as a responsible actor in society. The Code of Conduct includes, among other things, a commitment to respect human rights, and strictly prohibits any form of harassment.

The Code of Conduct is published in Finnish, English, German and Chinese so that as many Glastonians as possible can read it in their own language. Training in the Code of Conduct is arranged for all personnel, and every Glaston employee must attend such training every two years. Training is also an integral part of the induction of new employees.

Training was organized once again in 2023, and at the end of the year, 98% of personnel had completed it. The objective of the training is not only to familiarize Glaston's personnel with the Code of Conduct but also to support and strengthen Glaston's common ethical approach and to identify and address any problem areas.

Glaston has also published a separate code of conduct for its suppliers (Glaston Supplier Code of Conduct), to which it requires suppliers to commit. The Glaston Supplier Code of Conduct is published in Finnish, English, German and Chinese.

Glaston has a whistleblowing channel through which both personnel and external stakeholders can anonymously report any potential and perceived violations of the Code of





Conduct or other responsibility policies. In 2023, four notifications were made, of which three were classified after investigation as infringements.

Glaston investigates all reported incidents promptly and confidentially and takes appropriate action based on the findings of the investigation.

The whistleblowing channel has been moved to a new system, which is easier to use and offers more language options. In connection with the introduction of the new system, personnel were reminded and instructed on how to use the channel.

## Sustainability Policy clarifies the division of responsibilities

At the end of 2023, Glaston's Board of Directors approved the company's new Sustainability Policy. The policy outlines the operating practices, roles and responsibilities for the company's sustainability management, clarifying and strengthening the division of responsibilities between the Board of Directors, the CEO and the Executive Leadership Team, the Sustainability Working Group and business operations. In addition, the policy sets out how sustainability targets are set and reported on.

The Sustainability Policy and Code of Conduct are complemented by other policies and guidelines that guide a sustainable approach:

- Glaston's Supplier Code of Conduct
- People Policy
- Environment and Climate Change Policy
- Human Rights Policy
- Anti-Corruption and Anti-Bribery Policy
- Sourcing Guidelines
- Safety and Occupational Health Policy,
- Information Security Policy and
- Taxation Policy.

In 2023, the Board of Directors approved Glaston's new Environment and Climate Change Policy and People Policy, which define the company's commitment to systematic reduction of environmental loading and fair working practices.

Glaston is committed to the principle of equal opportunities, and no discrimination or harassment of any kind is permitted. The People Policy helps create a working environment in which all of the company's employees can flourish and develop.

## Developing Glaston's understanding of human rights

Glaston is committed to respecting human and labor rights as defined in internationally recognized principles, such as the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises.

The Human Rights Policy, approved by Glaston's Board of Directors, describes the Group's key risks and impacts related to human rights as well as the measures to assess, prevent and mitigate these risks and negative impacts.

The Human Rights Policy addresses, for example, the right of everyone working in Glaston's value chain to health and safety at work, good working conditions, a living wage and equal and non-discriminatory treatment.

In autumn 2023, Glaston carried out a human rights risk assessment in collaboration with an external expert. Occupational safety risks, both in Glaston's own operations and in the production of its customers, were identified as serious in terms of their potential impact. In addition, risks were identified in relation to supply chain working conditions and to equal and non-discriminatory treatment in the company's own operations.

The study also defined key measures for managing identified human rights risks and assessed and developed Glaston's current human rights due diligence process.

Glaston's human rights due diligence process systematically identifies, assesses and prioritizes adverse human rights impacts of business activities. Glaston strives to prevent and mitigate these impacts and take the necessary measures to correct them.

Risks and impacts related to human rights are assessed using various risk assessments. Glaston has processes

in place to assess and mitigate risks related to occupational safety, supplier performance and employee engagement. These processes are also being constantly developed to assess human rights impacts. The goal is, in the future, to include consideration of human rights impacts in the selection, evaluation and inspection processes for Glaston's suppliers.

The company recognizes the need for learning with regard to human rights and is continuously developing its understanding of the impacts of its activities. Cooperation with partners is crucial for enabling Glaston to promote human rights throughout the value chain. The company's representatives engage in dialogue with various stakeholders through, for example, supplier visits, employee surveys, customer satisfaction surveys and interviews, investor dialogue and safety surveys.

## Combating bribery and corruption throughout the value chain

Glaston has its own operating locations in nine countries, and from these Glaston serves its customers in over 100 countries. In addition, the company's own operations are comple-

mented by a global agent network. Glaston recognizes that there is a possible risk of corruption and fraud in the company's operating regions and countries.

In its everyday activities, Glaston is committed to combating bribery and corruption. Glaston's anti-bribery and anti-corruption policy clearly outlines the company's practices and increases Glaston employees' awareness of the risk of corrupt payments, unequivocally prohibits the payment and receipt of bribes, and ensures that the company conducts business honestly, in compliance with anti-corruption laws, rules and regulations.

No direct or indirect payments can be made, nor can the company's funds be conveyed directly or indirectly to any party to gain an improper advantage. In addition, the company's personnel are instructed to avoid conflicts of interest and to refuse all improper payments and benefits.

Anti-bribery and anti-corruption training has been updated, and the revised training will be rolled out Group-wide in early 2024. Training is organized particularly for the company's management and sales organization as well as for other individuals whose working duties involve an increased risk of corruption.

## Glaston is committed to respecting human and labor rights.

As a preventive measure to minimize the risk of bribery and corruption, all agent agreements related to Glaston's sales are concluded centrally. Particular attention is paid to commissions paid, which should be at a reasonable level. During 2023, work began on the development of a new audit model for the evaluation of sales agents was launched.

Glaston takes competition rules very seriously and every employee must act in accordance with them. Glaston regularly organizes training for its personnel on fair business and fair competition issues. The training material has been revised towards the end of 2023 and will be rolled out during 2024. The online training is always available on the company's intranet. In addition, policy briefings are regularly held for personnel working at the customer interface.

# UN Sustainable Development Goals

Glaston supports the United Nations Sustainable Development Goals (SDGs), which will guide the sustainable development actions of member states, companies and other organizations up to 2030. Glaston has identified seven goals that also emerge from its own strategy and are most material to the company. These provide a broader frame of reference for Glaston's work, and the company supports the achievement of these goals in its own activities.

Glaston's responsibility theme

Responsible operations	UN Sustainable Development Goals	Implementation in Glaston
Responsible member of society	 <p><b>Goal 3</b> Ensure healthy lives and promote well-being for all at all ages</p>  <p><b>Goal 4</b> Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	<ul style="list-style-type: none"> <li>systematic development of occupational health and safety</li> <li>minimizing health risks: e.g. in Finland, enhanced health checks for the over 50-year-olds, hobby sessions and exercise benefits</li> <li>eSkills online learning system for all personnel</li> <li>summer work, diploma work and trainee positions for young people</li> <li>Ahlström Collective Impact cooperation with UNICEF Finland</li> </ul>
Responsible partner	 <p><b>Goal 7</b> Ensure access to affordable, reliable, sustainable and modern energy for all</p>  <p><b>Goal 11</b> Make cities and human settlements inclusive, safe, resilient and sustainable</p>  <p><b>Goal 9</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>  <p><b>Goal 12</b> Ensure sustainable consumption and production patterns</p>  <p><b>Goal 17</b> Revitalize the Global Partnership for Sustainable Development</p>	<ul style="list-style-type: none"> <li>reducing the harmful environmental impact of cities with new glass technologies</li> <li>providing engineering and consulting services for the production of energy glass windows as well as for solar energy applications</li> <li>enabling the introduction of resource-efficient and clean technologies and production processes</li> <li>participating in the development of society by paying taxes, wages and dividends</li> <li>efficient use of energy and materials and minimizing materials and other waste</li> <li>glass processing machine energy-efficiency at heart of product development, long life cycle, high utilization rate and optimizing production efficiency and quality through automation</li> <li>proactive and regular maintenance by utilizing cloud services and opportunities offered by IoT</li> <li>Ahlström Collective Impact cooperation with UNICEF Finland</li> </ul>

# Responsible own activities



## Human resources

- Health & safety and risk prevention
- Competencies and skills, development and training
- Diversity and inclusion
- Equality, anti-discrimination, anti-harassment
- Good leadership



## Environment

- Climate impact oversight and scenarios
- Risks and opportunities related to tightening emissions regulation



## Responsible business

- Financial responsibility ensuring competitiveness and profitability
- Anti-corruption and fair competition practices
- Responsible sales



# We empower our employees to thrive

Professional, healthy and committed personnel are the foundation of Glaston's success. We ensure the continuous development of the skills of personnel by providing an inspiring and appreciative work environment in which each Glastonian with their abilities and needs is recognized. We succeed together with our personnel.

## **Sustainability targets:**

- Employee engagement rate over 75 (0-100)
- No workplace harassment
- Accident frequency zero

## **Key strategic priorities:**

- We are an equal employer that values diversity
- Our management culture strengthens success together
- We encourage skills development
- We enable career advancement
- We attend to well-being and safety at work



## Glaston's personnel

During 2023, the number of Glaston personnel developed moderately and in accordance with the strategy, and there were 802 (783) Glaston employees at the end of the year. At the end of 2023, Glaston had operations in nine countries, of which the three largest, by employee numbers, were Germany, Finland and China. In 2023, employee turnover was 8.8%. In Germany, employee turnover was 8.2%, in Finland 3.9% and in Switzerland 13.1%. Most employment relationships are permanent and the average age of personnel is 44.3 years.

Of Glaston's personnel, 84% are men and 16% are women. At the end of 2023, there were five men and two women on Glaston's Board of Directors, and three of the nine members of the company's Executive Leadership Team were women.

### Together, towards success

Glaston's HR work is guided by the new People Policy, approved by the Board of Directors at the end of 2023, which sets out the company's principles with regard to, among other things, diversity, equality and inclusion. The policy helps Glaston create a working environment in which all of the company's employees can flourish and develop.

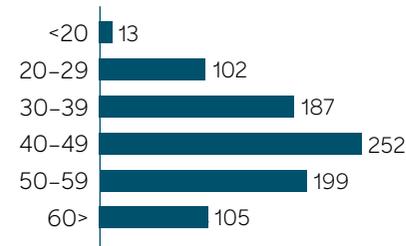
Empowering Glaston people to thrive is one of the strategic cornerstone initiatives. Important factors in achieving success are played by leadership development, a work culture that values equality and diversity, encouraging Glaston employees to further develop their competence, supporting various career paths, and attending to well-being and safety at work.

The common leadership principles are the basic pillars of Glaston's management, which spell out what good leadership at Glaston looks like and what is expected from supervisors. The company supports supervisors to deepen their competence and leadership skills through a variety of methods.

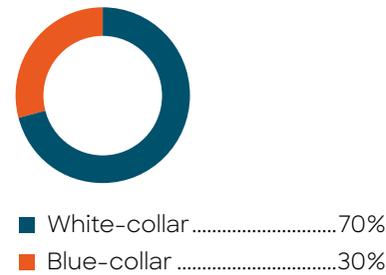
Glaston's operating culture is constantly being developed. It is important to the company that every Glastonian is in a role where they can harness and develop their expertise.

As an employer, Glaston also wants to hear and better understand the individual needs of Glaston employees so that the company can offer properly targeted measures to support the success of its personnel and customers. The company's goal is to enable a culture where every Glastonian can shine.

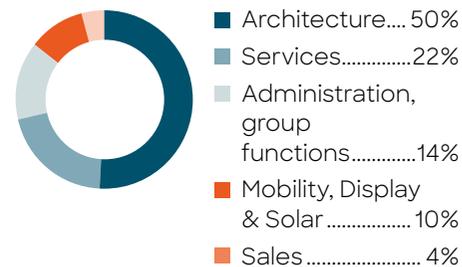
### Employee age distribution



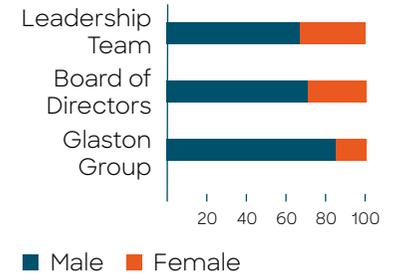
### Employees by type of employment, %



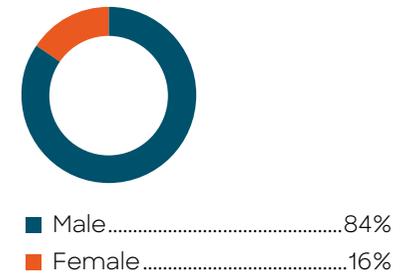
### Personnel per function



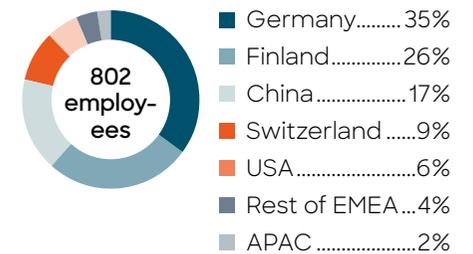
### Gender distribution in Glaston, %



### Gender distribution, %



### Personnel at end of year (FTE), %





### Employer worthy of employee engagement

Glaston works hard to ensure that the company is an attractive employer where personnel can thrive, feel good and develop. Engaged employees play an important role in achieving strategic goals. One of the Group-wide strategic targets is to raise the employee engagement rate to over 75 (on a scale of 0-100).

The company conducts an annual personnel survey to measure Glastonians' engagement with the company. The 2023 results showed an engagement rate of 70 (0-100), which is a good outcome.

Glaston's personnel stated that they were particularly satisfied with the diversity of the work commu-

nity, cooperation with colleagues, the meaningfulness of the work and the inclusive culture. Issues related to managing one's own health, stress and work load as well as mutual communication and the giving of feedback were identified as particular areas for development.

The personnel survey functions as part of the development of a culture of continuous discussion and feedback. With the aid of the survey, the company monitors its success in matters important to Glaston employees, as well as coping at work and job satisfaction. The annual survey also enables the company to monitor the development of issues raised in employee feedback.

The company has celebrated the

long careers of many Glastonians, which demonstrates to Glaston the engagement of its personnel. Employment relationships at Glaston are long, averaging 10.8 years in 2023. The company also seeks to promote its personnel's mobility and career paths from one position to another.

### Skills development and growing in roles

Expert staff are the foundation of Glaston's success, and the average age of Glaston employees, around 44 years, is a good indication that the organization has a wealth of valuable skills built up through experience.

Recognition of Glastonians' competencies and skills also plays an important role in achieving strategic goals. For this reason, the company has begun to identify more systematically the competencies and skills as well as the competence development needs of each Glastonian. The company has also turned its attention to identifying less experienced Glaston employees who can be supported and encouraged to grow into various strategic roles. In this way, Glaston will ensure the continuity of its business.

Glaston regularly conducts People Deep Dive discussion processes, aimed at better identifying both the organization's capabilities and the

kind of resources the implementation of Glaston's strategy requires. Based on them, plans are created on how to increase, develop and engage the necessary expertise. Based on the identified competence needs, local development measures, training and recruitment have been initiated.

Thanks to Glaston's internal eSkills online learning platform, training is flexibly available. In addition to training, the company offers continuous skills development through work assignments. Glaston's industry is demanding, and through years of work many Glastonians have grown into top experts in their field.

Each year, a performance appraisal is conducted with all employees in which they discuss with their supervisor current issues as well as their goals and development needs. Based on the appraisal, personal goals and a development plan are drawn up for each employee.

All Glaston personnel are covered by a performance bonus scheme based on the company's financial performance. In addition, the company rewards, through the Glaston Way awards, good work performance that supports the achievement of the strategic goals.

## Well-being at work

Glaston is a global company and its personnel have diverse backgrounds and cultures, which the company views as a strength. Glaston operates in the technical field, where the gender distribution has traditionally been strongly male-dominated. The company seeks to actively enrich the diversity of its work community, both in terms of the gender of personnel and other individual background factors.

Inclusion, i.e. participation in the work community, being seen and heard, and the fact that everyone can feel safe and express their own thoughts, is an important component in ensuring the well-being of Glaston employees. Glaston considers it important to develop operating practices and processes to better take into account possible unconscious biases in them. For Glaston, inclusion also means both that we know each other and Glastonians' skills and strengths well. This way, the company can better involve people in different projects and roles in which they can succeed.

In Glaston, equality is important, and no discrimination or harassment of any kind is permitted. All reported cases of discrimination and harassment are investigated and appropriate action is taken where necessary. In 2023, three incidents were reported.

With the shift to remote and hybrid working, Glaston has paid particular attention to employees' coping in work and physical condition. For example, in Finland, Glaston offers its personnel the opportunity to develop mental well-being, joint hobby sessions and exercise benefits as well as the option of using a company bicycle.

## Safety on the agenda every day

Occupational safety is high on Glaston's agenda, and zero accidents leading to absence has been set as the Group-wide occupational safety target. In order to create a safety culture, safety standards as well as the reporting of accidents and near misses have been harmonized throughout the Group. Through improved reporting, the company is also able to react better than before to the resourcing of personnel during absences.

Alongside reporting and operating principles, a safe work culture is also built on common safety awareness, anticipation, and learning from near-miss situations. A safe work culture also means a sense of mental safety, namely that everyone considers themselves to be heard and seen as part of the work community.

The work to develop a safety culture is continuous, and during 2023 it included, for example, safety training at all operating locations. Communication of safety issues is also tightly integrated into the Group's internal channels.

In April, the Group-wide Safety Week was held for the second time, during which a large number of safety-related activities were organized, such as fire drills and chemical management training at different operating locations. In addition, during the week, presentations were made of safety-improving projects implemented at various operating locations, and lessons learned for promoting occupational safety and health were shared.

Reporting of near-miss situations is encouraged, and a new reporting tool has been introduced to streamline the reporting of situations and incidents. Indeed, Glastonians' safety awareness has constantly improved and more near-miss situations were reported than before.

## Safety management

The development and management of safety at Glaston is the responsibility of a steering group consisting of representatives of different functions and locations that closely monitors the development of indicators that

measure occupational safety. The day-to-day management and development of occupational safety is the responsibility of the company's various units, and occupational safety issues are discussed in local occupational safety committees. Occupational safety reviews are conducted every three months and, based on them, necessary measures are agreed upon.

At all of Glaston's assembly and production units, fire and evacuation exercises and occupational safety training are organized regularly. Attention is also paid to the ergonomics of work.

Glaston's employees also work on customers' premises in product installation, maintenance and training tasks. Particularly when working on premises other than Glaston's own, it is important to be able to build a safe work environment even before starting work, in order to minimize possible risks and avoid accidents.

Glaston's target is zero accidents at work. This target has still not been reached; in 2023, there was a total of 10 lost-time accidents at work or on a business trip (six in 2022), and the accident frequency was 6.3 (3.9 in 2022). The most typical accidents are hand injuries, such as cuts and various sprains.

# Sustainable business as an opportunity

## Sustainability targets:

- Glaston's CO<sub>2</sub> emissions from own operations (Scope 1 + 2) 50% down from 2022 level and value chain (Scope 3) CO<sub>2</sub> emissions intensity down by 58% per m<sup>2</sup> of sold glass processing capacity

## Key strategic priorities:

- Drive down Scope 1 & 2 CO<sub>2</sub> emissions
- Evaluation of Scope 3 Science-Based Targets
- Reducing Scope 3 emissions

Glaston views the promotion of sustainable development as an opportunity, and the company wants to be involved in developing the sustainable societies of the future. In addition, Glaston is involved in creating industry standards and practices in relation to sustainability, such as for energy efficiency and safety.

Glaston's environmental work is driven by the environmental and climate change policy approved by

the Board of Directors, which defines a commitment to systematic reduction of environmental loading. Glaston recognizes its responsibility for environmental and climate impacts throughout the company's value chain and proactively seeks to prevent and mitigate potential environmental impacts and risks arising from its operations.

To support sustainable consumption, Glaston focuses on developing and delivering sustainable, upgradeable and energy-efficient products. Glaston also offers its customers maintenance and modernization services that can extend the life cycle of the machines considerably.

In glass industry sustainability issues, there is an emphasis on the energy consumption of glass manufacturing and further processing and the emissions it generates. Glass production processes consume a lot of energy, and in Europe, for example, the glass industry is dependent on natural gas. In addition to energy efficiency, Glaston encourages the glass industry to improve glass recycling as an important means of reducing the carbon footprint of production.

Most of the glass processed on Glaston's machines ends up in construction. The technologies developed by Glaston enable the production of energy-efficient insulating glass, which has a significant positive climate impact. In addition, tempered or heat-strengthened glass is a significant component in solar panels, which enable emission-free electricity production.

## Energy-efficient technology

The most significant environmental and climate-change impacts of Glaston's operations are associated with the use of machines sold, particularly the electricity consumption of tempering machines. The tempering process, in which the glass is heated to +600°C and then cooled back down to room temperature, requires a lot of electricity. Glaston's product development has long focused on improving the energy efficiency of machines, and in the tempering process of coated energy-saving glass, for example, electricity consumption has been clearly reduced.

Through automation and continuous technological development, it is possible to efficiently optimize the electricity consumption of machines in both heating and cooling. Old production lines can also be updated with new technologies and innovations.

In product development, Glaston focuses on the automation of core processes, tempering, laminating and the production of insulating glass. Automation brings significant benefits in terms of production efficiency and quality, and reduces the amount of glass waste in production. Automation also optimizes energy consumption by making processes more efficient. For example, the energy used in cooling the tempering process can be reduced by up to 50% by optimizing the use of the loading area. Automation also results in better safety, as minimizing manual actions ensures a safer working environment for all personnel. Glaston Autopilot is a model example of how automation changes glass tempering through intelligent automation. Glaston Autopilot reduces the need for machine operator input by providing process control without parameters. It automatically sets all

the necessary parameters based on the positioning of the glass sheet on the line, allowing the operator to simply monitor the process.

## Environmental impact management and continuous improvement

Glaston's own operations, which mainly consist of the assembly of glass processing machinery, do not pose a significant risk of air, water or soil pollution. In the company's activities, Glaston's most significant environmental impacts arise from energy consumption and related emissions.

At Glaston's assembly and production units, the company operates in accordance with the ISO 9001 quality management system. In Finland, Glaston manages and controls environmental issues linked to production in accordance with a certified ISO 14001 environmental management system. Glaston's Executive Leadership Team and Board of Directors monitor the development of the Group's environmental indicators annually. In addition, the company's premises undergo regular energy audits, and the energy efficiency and low emission levels of properties are constantly being developed.

For example, nearly 800 solar panels, with a total capacity of more than 300 kWp, have already been installed on the roof of the Bützberg production plant in Switzerland. The panels produce energy for the production plant's own use, and some electricity is also fed into the grid.

Glaston's properties are not located in biodiversity-sensitive areas. The company is, however, committed to monitoring any significant changes

## The goal: to reduce emissions throughout the value chain

"Promoting sustainability and the green transition is part of our strategy: we offer a comprehensive range of machines and services for the production of heat-treated glass, the manufacturing of insulating glass, and the processing of automotive and display glass applications. Our product portfolio also includes technologies for the production of solar cell glass.

For us, it is important to reduce the emissions caused by our operations, a significant proportion of which is generated in our value chain. In particular, the heat treatment processes involved in the further processing of glass requires a lot of electricity. In the tempering process, for example, glass is heated to high temperature and then rapidly cooled. Tempered safety glass is commonly used in construction, vehicles and solar panels.

In 2022, our absolute Scope 3 emissions increased by 192% compared to the previous year, mainly due to the imputed electricity consumption of equipment sold for large production volumes in solar panel glass production in Southeast Asia. In 2023 absolute emissions decreased by 53% compared with the previous year. It is expected that we will continue to see significant fluctuation in our absolute emissions in the coming years. The fluctuation in the amount of emissions largely comes down to the type of machines our customers order from us and the availability of zero-emission energy in different market areas. For this reason, we have set our value chain emissions reduction target in ratio to sold glass processing capacity.

Glaston has been working for decades to reduce the electricity consumption of its products, and achieving further improvements is no longer easy. We are already a frontrunner in the energy efficiency of glass processing equipment, and in order to achieve the emission targets we have set, we must further improve the energy efficiency of our equipment. The means available include developing energy-saving innovations as well as more holistic solutions to support our customers in achieving their emissions reduction goals," says **Marko Mökkönen**, Director, Sustainability.



affecting biodiversity and ecosystems and to taking proactive remedial action. Biodiversity can also be supported through small actions. For example, in Bützberg in 2023, in connection with the installation of new charging stations, a flower meadow was planted to replace a former lawn, thus supporting local biodiversity.

### Reducing emissions from own operations

One of Glaston's four strategic targets has been to halve the CO<sub>2</sub> emissions intensity (emissions in relation to net sales) of the company's own operations by 2025. This target was already achieved in 2022 through investments made in energy efficiency and use of renewable energy as well as the shift to using emission-free energy. In Switzerland, for example, a new heat distribution system will significantly reduce natural gas consumption.

The achieved target was the first step in Glaston's climate work and the bar has been raised again. At the end of 2023, the company committed to setting science-based emissions reduction targets. Glaston is committed to halving its absolute Scope 1 and Scope 2 emissions by 2032 compared with the baseline year 2022. This target is in line with limiting global warming to 1.5°C.

In order to achieve the emissions reduction targets for its own operations, Glaston intends to phase out the use of natural gas and other fossil energy sources and to continue to increase significantly the proportion of renewable energy. In 2023, of emissions from Glaston's own operations, fuels and natural gas (Scope 1) accounted for around 45% and electricity and district heat (Scope 2) for around 55%.

### Responsibility for emissions throughout the value chain

Scope 1 and 2 emissions from Glaston's own operations represent a small fraction of Glaston's total emissions. The majority, around 99%, of all emissions associated with Glaston's activities arise in the company's value chain (Scope 3). The most significant sources of emissions are the electricity consumed during the life cycle of the machines manufactured by Glaston (81%) and emissions arising from purchased products and services (17%).

A very important element of Glaston's science-based climate targets is to reduce the energy consumption and thereby the in-use emissions of the machines the company manufactures. The continuously operating

## Science-based emissions targets

Glaston is committed to setting company-wide science-based emissions reduction targets. In accordance with the Paris Agreement, the science-based targets are aimed at limiting global warming to 1.5°C.

Glaston's emission reduction targets by 2032:

- Scope 1 (direct emissions) -50% of 2022 level, absolute emissions
- Scope 2 (purchased energy emissions) -50% of 2022 level, absolute emissions
- Scope 3 (value chain emissions) -58% emission intensity (tCO<sub>2</sub>e/m<sup>2</sup> of sold glass processing capacity)

The Scope 3 targets have been submitted to the Science-Based Targets initiative (SBTi) for validation. The final emission reduction target is expected to be published in autumn 2024.

The SBTi is a collaboration of the World Resources Institute (WRI), the World Wildlife Fund (WWF), the UN Global Compact and CDP. The companies committed to the initiative set for their operations science-based emissions reduction targets based on the emissions reduction targets of the Paris Agreement, that support measures to limit global warming to 1.5°C.

tempering lines used for high-volume production consume significantly more electricity than lower-volume lines. Continuously operating machines, on the other hand, are more energy efficient.

Glaston's annual Scope 3 emissions are significantly affected by the type of glass processing solutions that customers purchase. Glaston supplies its

customers with different machines in different years, which is why absolute Scope 3 emissions fluctuate from year to year. It is also to be assumed that, as the number of new machines sold increase, the company's absolute Scope 3 emissions will also increase.

In order for the reduction of emissions caused by new glass processing machines to be achievable in a

relevant way, Glaston has committed to reduce the intensity of its Scope 3 emissions by 58% per m2 of sold glass processing capacity by 2032.

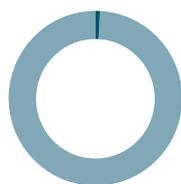
To achieve the Scope 3 intensity target, Glaston will further improve the energy efficiency of products sold, support its customers in their emissions reduction initiatives and reduce emissions in other parts of the value chain.

Logistics account for a minor proportion of Glaston's total emissions. Transport of manufactured machines to customers is handled by forwarding companies using land or sea transports. Transport of smaller and urgent spare parts is also handled by air freight.

### Recycling of packaging materials and waste

The primary aim is to prevent the generation of waste. The goal is to minimize the amount of waste, and particularly the amount that ends up other than in final disposal. The packaging waste generated in Glaston's operations is sorted and either recycled or used in energy production. In 2023, the total amount of waste decreased. However, the relative amount of landfill waste increased due to the increased production volume of the Chinese factory.

### Glaston's greenhouse gas emissions 2023



■ Scope 1 + 2 ..... 0.4%  
 ■ Scope 3 ..... 99.6%

### Scope 3 emissions by category 2023



■ Purchased goods and services..17%  
 ■ Use of sold products.....81%  
 ■ Other categories.....2%

### Energy consumption (MWh)

	2023	2022
Fuel oil, diesel and natural gas	3,711	2,852
Purchased electricity and heat	5,972	6,523
<b>Total</b>	<b>9,683</b>	<b>9,375</b>

### Greenhouse gas emissions (tCO<sub>2</sub>e)

	2023	2022	2021	2020
Scope 1	552	605	708	678
Scope 2	686	886	1,900	2,099
Scope 3*)	322,644	684,150	287,348	
<b>Total</b>	<b>323,883</b>	<b>685,641</b>	<b>289,956</b>	<b>2,777</b>

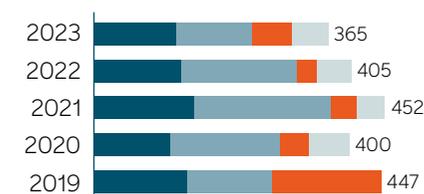
\*) Scope 3 emissions calculated since 2021

### Waste disposal 2023



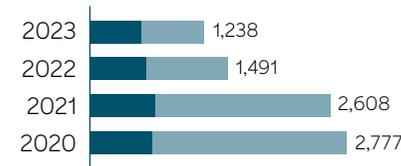
■ Recycling and energy ..... 87%  
 ■ Landfill ..... 13%

### Waste by manufacturing unit, tonnes



■ Finland ■ China  
 ■ Germany ■ Switzerland

### Development of Scope 1 & 2 emissions



■ Scope 1 ■ Scope 2

# Responsible business

## Generating economic value added

Sustainable value creation requires motivated and healthy employees, competitive products and solutions as well as satisfied customers and responsible partners. Sustainable operations facilitate Glaston's ability to fulfill its financial obligations towards its key stakeholders.

Personnel salaries, payments to goods and service providers, social taxes, and potential dividends and returns of capital to shareholders are Glaston's most important obligations, as are the means to create economic value added.

In 2023, Glaston Group's net sales totaled EUR 219.7 million, of which service operations accounted for 35%. Glaston acquired materials, products and services totaling EUR 140 million. Glaston had an average of 804 employees in 2023. Salaries and bonuses to personnel totaled EUR 57.8 million and pension expenses EUR 4.9 million. The company's investments in product development totaled EUR 3.8 million.

## Value added generated and distributed

### Value added generated

Customers

Net sales

2023

2022

219,708

213,520

Other operating income

2,488

3,583

### Value added distributed

Suppliers

Purchased goods, materials and services

139,509

138,047

Employees

Salaries, bonuses and social expenses

57,853

54,673

Employees

Pensions paid

4,869

4,163

Financiers

Financial expenses

854

2,189

Owners

Dividend/return of capital

3,372

2,529

Public sector

Taxes

1,140

707

Business development

R&D, investments

6,896

7,654

Personnel, average

804

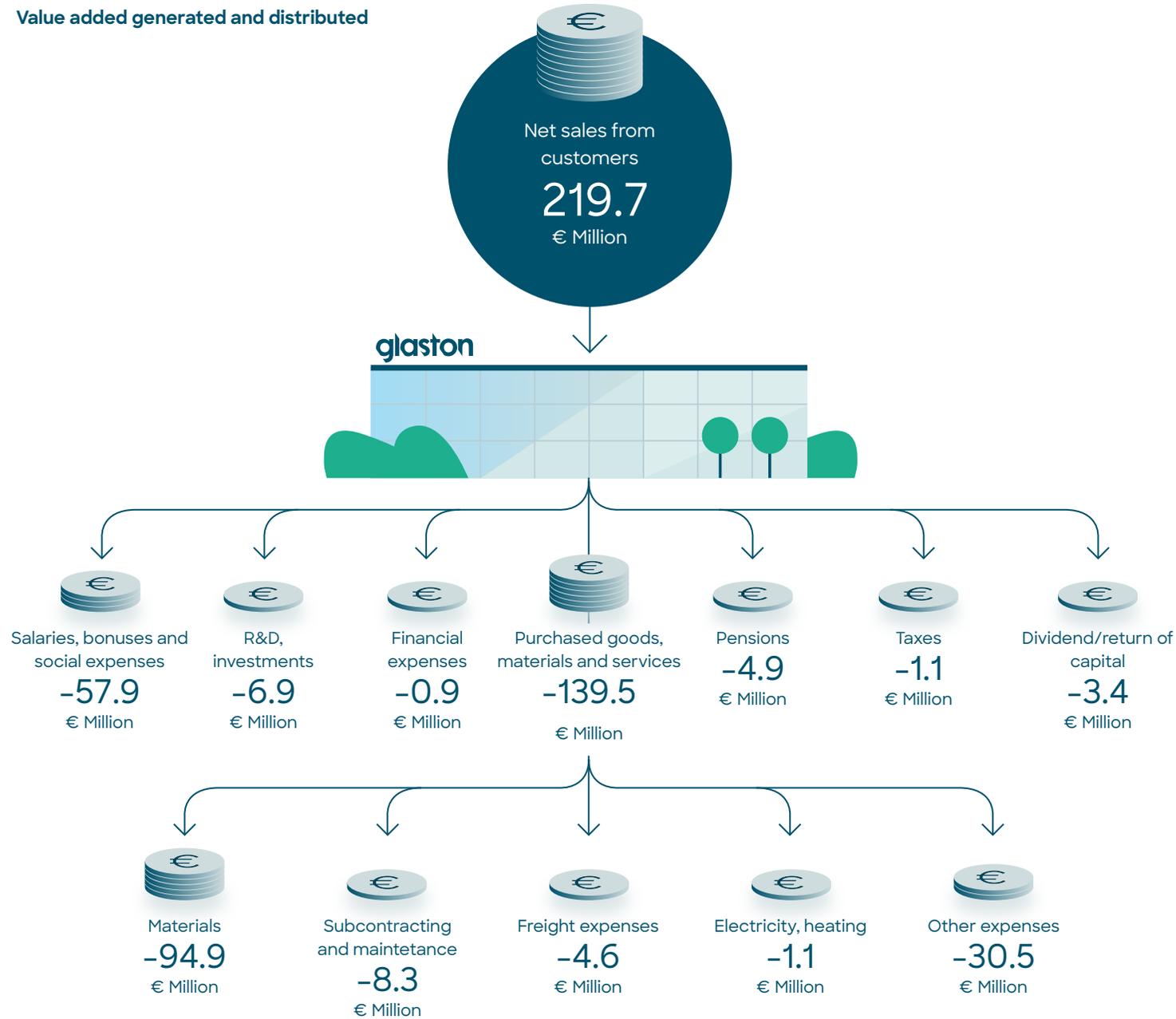
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## Tax policy

The tax policy approved by Glaston's Board of Directors sets out the company's tax strategy and forms the general framework for Glaston's tax administration, internal responsibilities and risk management as well as key measures and audits. The principles of the tax policy also apply to Glaston's external service providers.

Glaston does not engage in aggressive tax planning nor artificial transactions or structures whose purpose is to produce tax advantages. Glaston Group companies are located solely for business reasons. Responsible tax planning and the utilization of legal tax advantages and incentives are, however, acceptable when related to commercial activities.

Value added generated and distributed

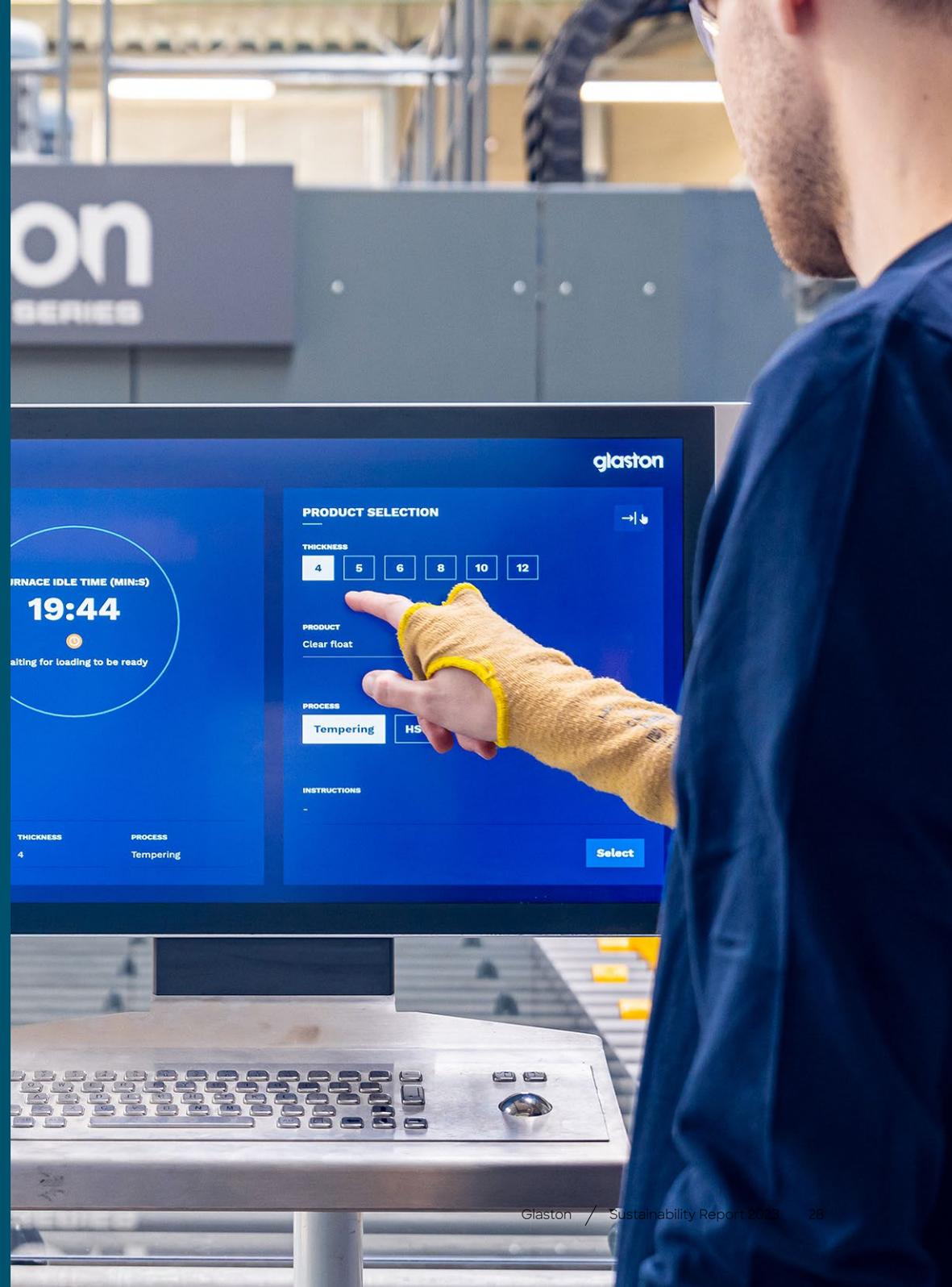


# Responsible sourcing



## Suppliers

- Supplier requirements, assessments and audits
- Human rights and workplace safety in the supply chain
- Anti-corruption in the supply chain and sourcing
- Environmental issues in the supply chain



# Fair and honest business

## Sustainability targets:

- Main suppliers' commitment to Glaston's Supplier Code of Conduct 100%

## Key strategic priorities:

- Defining supplier audit model, and the launch of audits
- Supplier Code of Conduct implementation
- Scope 3 reduction actions towards suppliers

## Developing sustainable sourcing

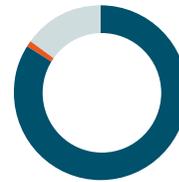
In its Code of Conduct, Glaston undertakes to promote fair competition, act fairly towards its suppliers, service providers and subcontractors, and respect human rights in all of its activities. The company's Policy for Human Rights addresses, for example, the right of everyone working in Glaston's value chain to health and safety, good working conditions, a living wage and equal and non-discriminatory treatment.

Suppliers of goods and services play an important role in Glaston's value chain. Most of Glaston's approximately 2,000 active subcontractors operate in Europe, where the company's largest assembly and production units are located. Glaston's factories in Finland, Switzerland and China assemble machines, while its factory in Germany manufactures machines.

Over 90% of Glaston's purchases come from the EMEA area, with the remainder coming from, among other places, Asia and the USA. The most significant materials purchased for machine manufacturing include steel structures, electrical and automation components, power centers and process blowers.

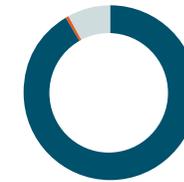
Supply chain disruptions related to the availability of raw materials and components impact Glaston's business to some extent. One of Glaston's strategic cornerstone initiatives is Master global sourcing and manufacturing, the objective of which is to improve operational efficiency through more harmonized sourcing and manufacturing processes. In this work, an important element is respon-

Suppliers per region, %



EMEA	84%
Americas	1%
Asia	15%

Purchases per region, %



EMEA	92%
Americas	0.4%
Asia	8%





sible sourcing, which includes, among other things, supplier requirements and audits as well as safeguarding human rights and workplace safety. In addition, anti-corruption in the supply chain and sourcing is systematically developed.

Glaston requires its suppliers to commit to the company's Supplier Code of Conduct. The Glaston Supplier Code of Conduct is published in Finnish, English, German and Chinese and is available on the company's website. The Supplier Code of Conduct has been incorporated into purchase agreements, so in the future all Glaston suppliers will be required to commit to it. By the end of 2023, 74% of main suppliers had committed to the Code of Conduct.

Glaston has processes in place to assess and manage risks related to supplier performance. These processes are also being constantly developed to assess human rights impacts. For example, Glaston's supplier audit model has been developed and, in addition to quality, price and security of supply, the audits take into consideration the sustainability of suppliers and due diligence assessment related to human rights.

Development of the supplier audit model continued in 2023 and will be rolled out in 2024. The functioning of the model will be monitored and, if necessary, further developed. The aim of the revision is to take sustainability better into account and to harmonize the supplier audit method used in all

Glaston's operating countries as well as the documentation of data.

Glaston selects its suppliers carefully, and seeks long-term, good relationships with its most important suppliers. In this way, the company ensures that its partners understand and comply with its requirements, in relation to both processes and products. Glaston accepts as its suppliers only companies that are not subject to sanctions of any kind and have not committed any regulatory offences.

#### **Fair business starts with own activities**

Glaston is committed to combating bribery and corruption, which can occur in both sourcing and sales. Glaston's anti-bribery and anti-corruption policy clearly sets out the

company's approach and increases employees' awareness of the risk of corrupt payments, unequivocally prohibits the payment and receipt of bribes, and ensures that the company conducts business in accordance with fair ground rules.

Glaston takes competition rules very seriously and every employee must act in accordance with them. Glaston complies internationally with EU competition legislation, while also taking into account all stricter local rules. Any violations or suspicions of improper activity or payments can be reported anonymously via Glaston's whistleblowing channel.

Glaston regularly arranges training for its personnel on fair business and competition issues. In addition, the training materials are always available on the company's intranet.

In 2023, anti-bribery and anti-corruption training was updated, and the revised training will be rolled out Group-wide in 2024. Training is arranged particularly for the company's management and sales organization as well as for other individuals whose working duties involve an increased risk of corruption.

# Responsible partner



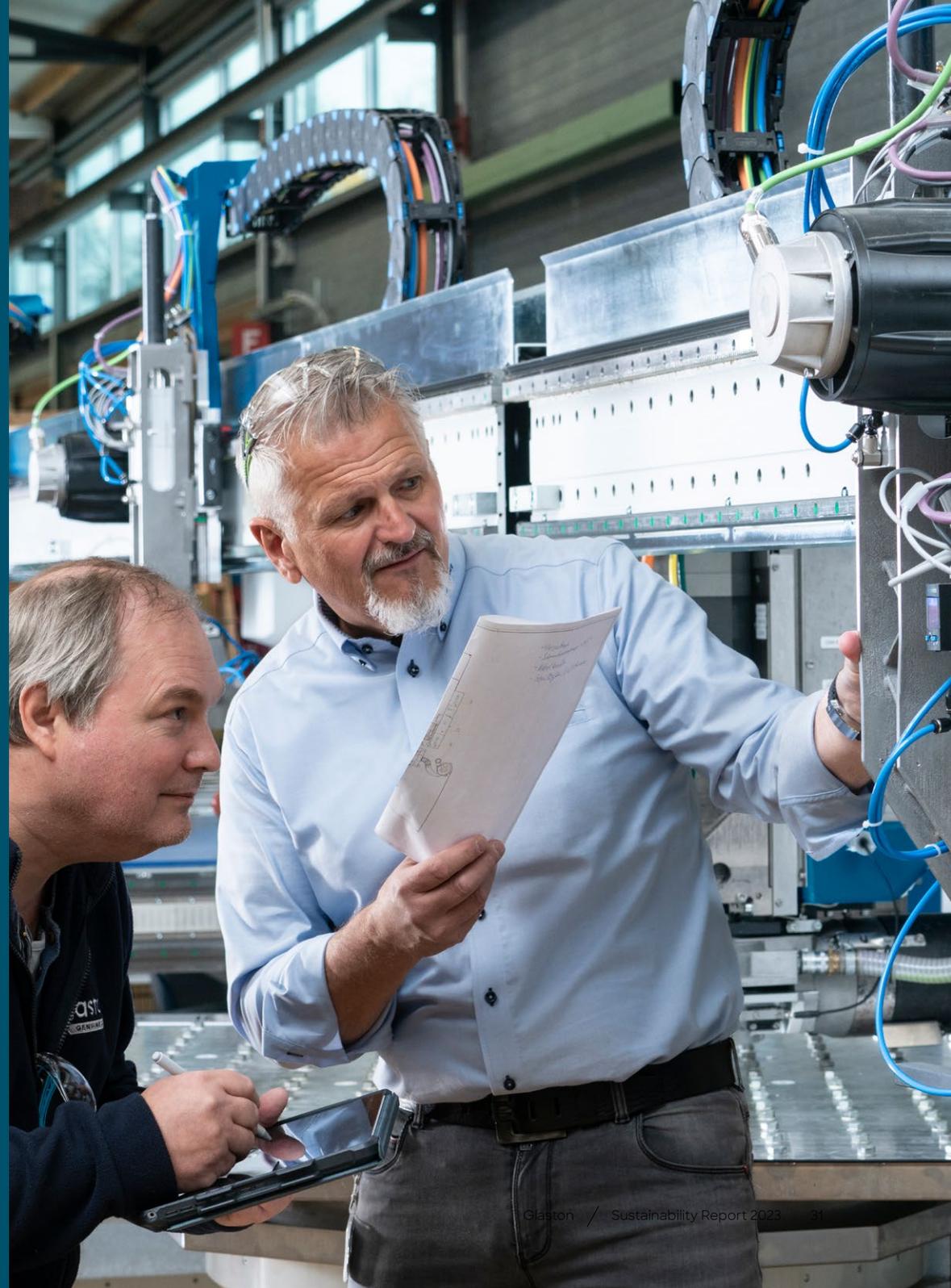
## Customer

- User experience and customer satisfaction



## Products & Services

- Machine quality, reliability and longevity, life-cycle management
- Safe operation of machines and user training for customers
- Digitalization and automation
- Information security
- Energy and material efficiency targeting circular economy
- End product quality, safety and recyclability



# Market's best customer experience

## Sustainability targets:

- Industry's best customer experience, NPS over 40

## Key strategic priorities:

- Business strategy: product development & customer experience, digitalization & automation
- Sustainability integrated into offering development
- Machine energy and material efficiency targeting circular economy
- LCA and circularity assessment of selected products

At the heart of Glaston's strategy and values is success with its customers. The company is constantly developing its operating practices, which increase the value received by customers and improve the customer experience.

One of Glaston's strategic cornerstone initiatives is Innovate with customers to win, which focuses on understanding customers' needs and

its seamless integration with our innovation and development work.

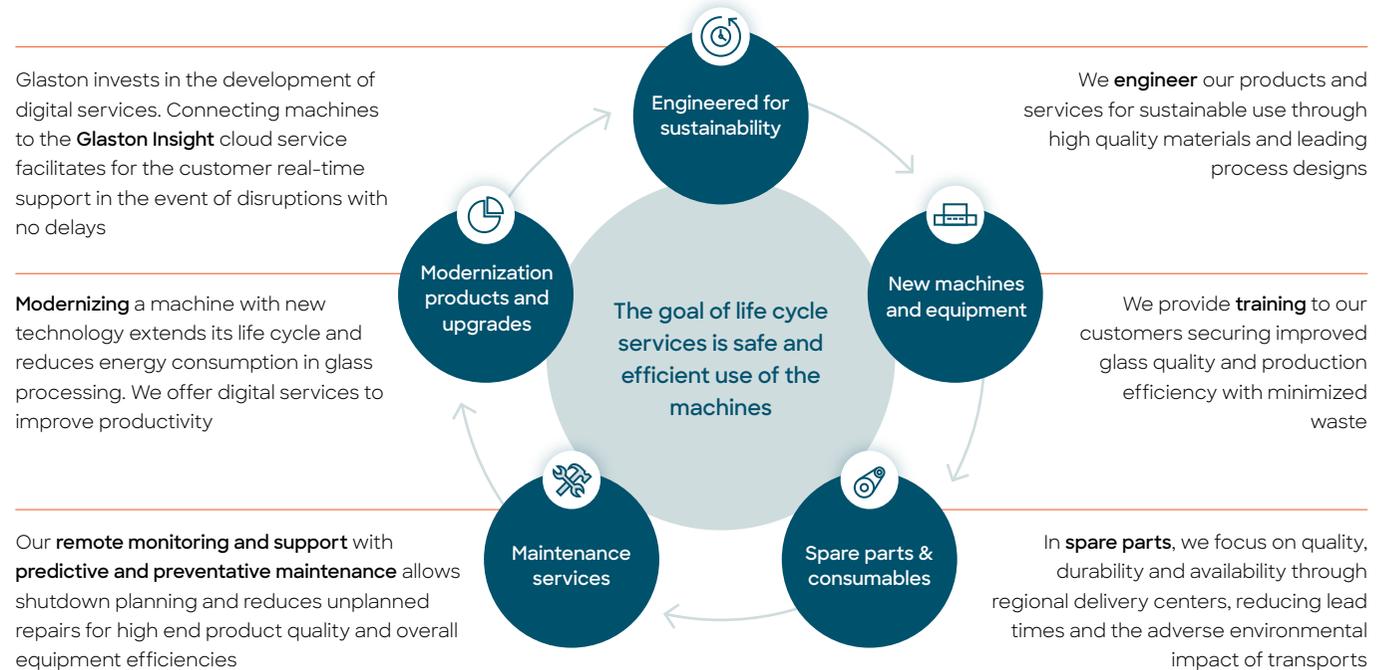
As the operating environment changes, higher quality and more versatile features are continually required from end products. Production

machines must be able to produce larger, more uniform and thinner glass surfaces, and production must also be able to adapt flexibly to making different types of glass. Glaston develops technologies and solutions that meet

these changing customer needs, and product development work is often done in partnership with customers.

One of Glaston's strategic targets is related to customer satisfaction. The target is that customers' recommen-

## Customer support throughout the life cycle



ation rate (Net Promoter Score, NPS) is above 40. Glaston's customer survey has been developed to cover a wider range of customers in different business areas and geographical regions. The customer recommendation rate (NPS) was 62 in 2023. As the number of respondents remains relatively low, the results cannot be considered fully representative. In 2024, the efforts to increase the number of responses from all customer segments and regions will continue.

#### Safe use and customer support throughout the life cycle

Glass processing machines are long-term investments for their owners as, depending on the machine, they can have decades-long operating lives. Glaston's machines are designed to withstand constant use at high utilization rates. The company interacts closely with customers, as the machines are regularly serviced to ensure consistent performance.

Glaston's production and assembly processes and installation methods are designed to promote product reliability as well as the safety of installers and customers. All Glaston machines manufactured in Europe comply with the EU Machinery Directive. The Directive requires manufacturers to carry

out, among other things, a risk analysis of the machine, including possible risks to personnel during the various stages of the machine's use.

Glaston has a total of approximately 4,000 installed and operating machine lines. In accordance with its life cycle model, Glaston has been actively developing its maintenance services, as regular service intervals increase product life and safety. Glaston has over 100 different upgrade products for different machine models. Modernizing a machine with new technology extends its operating life, improves end product quality and production process efficiency, and reduces energy consumption in glass processing.

Remote monitoring and support based on proactive and preventive maintenance enable outage planning and reduce unplanned repairs. Glaston also offers its customers training and support as well as digital services to improve productivity and glass quality. Connecting machines to the Glaston Insight cloud service enables the customer to monitor and report on production in real time, and provides rapid customer support in the event of disruptions.



## FLACHGLAS Wernberg GmbH in Germany improves overall energy management with Glaston upgrade products

**Martin Werner**, Technical Manager at FLACHGLAS Wernberg GmbH, tells about the company's latest blower inverter modernizations on two tempering lines: "Upgrades are a very good opportunity to improve energy consumption. Simply by changing the furnace or adding new components, we have achieved better process quality. We can also do something good for the environment by running our machines for longer. And most importantly, the upgrades help us save money. Our oldest Glaston tempering furnace has been producing glass for over 30 years, a good example of machine durability and quality."

## Automation will revolutionize the future of glass processing

In the glass processing industry, use of automation is still very much in its infancy and, instead of automation, the industry has relied on skilled labor to ensure high-quality products.

The automation used has mainly focused on long production series and high-capacity processing. However, automated solutions are also suitable for different production needs, and they can process glass flexibly and versatilely, even in mixed production.

Nearly every stage of glass processing can benefit from automation. For example, automated loading and unloading improves the efficiency, quality and safety of glass production. Automation can also be used to optimize the energy consumption of machines and reduce the need for manual tasks.

For example, one of our flagship products, Glaston Autopilot, is designed to automate glass tempering lines. The Autopilot automatically sets all the necessary parameters based on the position of the glass sheet, leaving the operator to simply monitor the process. Machine operators with less glass processing experience can easily manage these systems, which helps glass processors struggling with the challenges of finding a skilled workforce.

In the glass processing industry, automation offers a significant path to meeting the challenges posed by labor shortages, stricter legislation and safety regulations, and energy costs.



### Developer of demanding products

Glaston is the frontrunner in the glass industry, and is known for its high quality. The company's position is particularly strong as a developer of the most technologically demanding products. Glaston carries out product development in close cooperation with its customers and partners, such as research institutes, universities and other higher education institutions.

The main themes of Glaston's product development are projects and innovations related to glass processing and robotics that facilitate the transition towards fully automated glass processing.

One of Glaston's latest innovations is the tempering process Autopilot, which is based on the same solutions used in autonomous passenger cars. Autopilot presages a huge change for the entire glass processing industry, as it minimizes the need for machine operator input and offers process control without parameters.

Through automation, Glaston helps its customers to produce higher quality glass continuously at a higher utilization rate. In addition to quality and reliability, optimization also improves energy and material consumption and reduces wastage.

# Responsible member of society



## Sustainable tomorrow

- Indirect impacts on energy-efficient cities and societies
- Indirect energy and emission reductions
- Indirect material reductions
- Sustainable end-product applications
- Development of the industry, research cooperation
- Contributing to the decarbonization of societies



# Technology leader, developing the glass industry

## Key strategic priorities:

- Glass Performance Days to promote glass industry development
- Contributing to reducing GHG emissions in glass processing
- Start-up and research cooperation

Glaston is actively and diversely involved in developing its industry. The company promotes the development of both the industry and its technologies in our operations and with our partners. One of Glaston's five strategic cornerstone initiatives is *Lead digital transformation*, which includes building digital tools and infrastructure across all Glaston operations to lead the industry's digital transformation.

Glaston participates in the activities of the following international glass industry organizations:

- International Commission of Glass (ICG)
- NGA/GANA in the USA

- China Glass Association in China
- Verband Deutscher Maschinen- und Anlagenbau glass technology forum in Germany
- Flat glass associations in Germany and Finland, and other local flat glass associations

In addition, Glaston is an active member, authorized by the Finnish national working group, in glass industry committees of CEN (European Committee for Standardization) and in ISO's (International Organization for Standardization) working groups preparing safety glass (tempered and laminated glass) standards. Via these, Glaston is able to influence the creation of industry standards and communicate through practical experience the needs and requirements that the standards should cover.

Glaston works closely with various research institutes and higher education institutions. Key partners include VTT Technical Research Center of Finland, the University of Tampere, Business Finland, the Fraunhofer Institutes in Germany, and universities in Switzerland. The company also actively offers summer, graduate

## Through an apprenticeship into working life

As the skills gap grows, it is increasingly important to invest in training young talent. Glaston Germany has been training its own experts in industrial professions for decades. Two apprenticeship managers currently supervise a total of 21 apprenticeship students, who complete four years of electrical or mechanical engineering training.

Glaston Germany places particular emphasis on value-added training, in which young people are given their own projects at a very early stage. This takes place in the company's own apprenticeship workshop, which has a wide range of machines and tools.

Activities are based on a modern training method, which is always adapted to suit the "current generation". All apprentice students are supported in a variety of ways, from recruitment to transfer to a department. Insulating glass production plants use diverse technology, so Glaston Germany provides young people with high-quality training that is highly valued in the region.

Glaston Germany is particularly proud of the fact that many of its apprenticeship students have been among the best in their class. This encourages the company to continue to invest in young talent in the future.



## AHLSTRÖM COLLECTIVE IMPACT

# Joint support for children's future

Glaston is participating in the Ahlström Collective Impact (ACI) initiative, launched in 2020, which operates in collaboration with UNICEF Finland. By connecting the companies and foundations of the Ahlström network, the initiative enhances the impact of individual organizations, with the aim of improving the lives of children worldwide.

In 2023, ACI continued its support for UNICEF's Global Education Program. An investment of nearly EUR 800,000 went towards the program, which provides support to millions of children who need the opportunity to continue their education and develop skills to succeed in life.

ACI cooperation is strongly aligned with Glaston's value Together we build the future. Securing children's future means securing their education. More than 600 million children and young people worldwide do not reach the minimum level in reading and mathematics, even though two-thirds of them attend school.

As part of the collaboration, UNICEF Finland provided training to the staff of ACI companies and foundations on children's rights and how to take them into account in business. In addition to general orientation,



In 2023, in addition to Glaston, the ACI network consisted of Ahlström Capital, Ahlstrom, Antti Ahlström Perilliset, Ahlström Invest, Walter Ahlström Foundation, Destia, Enics, Detection Technology, M&J Recycling, Avain Yhtiöt, Suominen, and Eva Ahlström Foundation, the founder of the network.

the webinars focused on, for example, issues such as children's rights in supply chains and creating family-friendly workplaces. Glaston personnel also participated in these events.

By joining forces with the Ahlström network companies and by increasing our own understanding, Glaston can better contribute to a better future for children.

thesis and trainee job positions to talent of the future. In Germany, the company has its own apprenticeship program. In addition, Glaston's conducts development and engineering projects in new glass technologies.

## Glass Performance Days promoting development of glass industry

The Glass Performance Days (GPD) conferences, organized by Glaston, are among the glass industry's most prestigious events and bring together the entire industry, from researchers, architects and designers to glass producers, processors, equipment suppliers and end users.

After a four-year break, the GPD was held in Tampere in summer 2023. Sustainable business was on the agenda of the event, and the commitment of industry actors to a sustainable future and sustainability work was strongly on display.

The GPD conferences aim to disseminate the latest information among industry actors and to promote the development of new areas of application and technological features. A key part of the GPD conference is the Step Change program, which aims to showcase, bring together and promote new technologies, research groups and startup companies. The program aims to promote the commercialization and utilization of innovations in the glass industry by connecting startups and growth companies with established glass industry players. Glaston has been organizing GPD conferences since 1992, and they have been attended by thousands of glass professionals from around the world.



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Glaston Corporation is the glass processing industry's innovative technology leader supplying equipment, services and solutions to the architectural, mobility, solar and display industries. The company also supports the development of new technologies integrating intelligence to glass. Glaston is committed to providing its clients with both the best know-how and the latest technologies in glass processing, with the purpose of building a better tomorrow through safer, smarter, and more energy efficient glass solutions. Glaston operates globally with manufacturing, services, and sales offices in 9 countries. Glaston Corporation is a public limited liability and its shares (GLA1V) are listed on NASDAQ Helsinki Ltd. Small Cap..