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Sustainability  
Report 2022

**glaston**  
seeing it through®



# 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, solar energy and display 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.

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 in thin glass and glass used in solar energy solutions. 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 segments focus on different sectors

## Glaston Insulating Glass

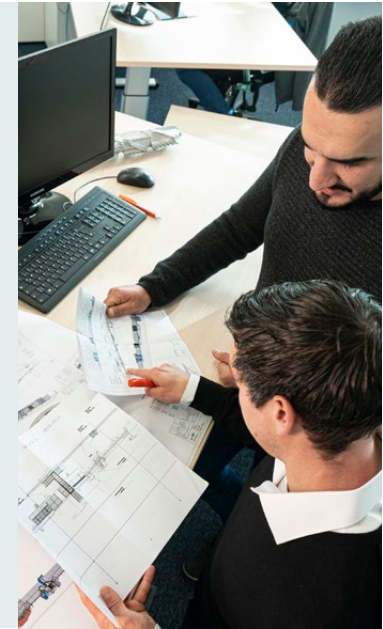
segment provides high technology machines for the manufacture of insulating glass, maintenance, upgrade and modernization services, and spare parts. The Insulating Glass segment comprises the Insulating Glass Technologies product area and maintenance services for insulating glass machines. Most of the segment's personnel are located in Germany.

## Glaston Heat Treatment segment

encompasses a wide and technologically advanced range of heat treatment machines, maintenance, upgrade and modernization services, and spare parts for glass flat tempering, bending, bending tempering and laminating. The Heat Treatment segment comprises the Heat Treatment Technologies product area and maintenance services for heat treatment machines. Most of the segment's personnel are located in Finland.

## Glaston Automotive & Display

segment provides both standardized and customized solutions for pre-processing automotive and display industry glass, as well as related maintenance, upgrade and modernization services, and spare parts. The Automotive & Display segment comprises the Automotive & Display Technologies product area and related services. Most of the segment's personnel are located in Switzerland.



## Glaston as a company

In 2019, the scope of Glaston's operations grew significantly when the company acquired the German-Swiss company Bystronic glass. The acquisition expanded Glaston's offering to insulating glass technologies in the architectural market and to pre-processing in the automotive and display markets.

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 group structure comprises three segments:

- Glaston Insulating Glass
- Glaston Heat Treatment and
- Glaston Automotive & Display

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.

The majority of the company's business is targeted at the architectural segment, in which Glaston's products provide key technologies to improve the energy efficiency and safety of buildings.

Glaston's strategic focus is to grow business in China, and the company will start production of standard automotive glass pre-processing equipment at the factory in Tianjin, from which the first orders will be delivered in 2023. In autumn 2022, a strategic step was also taken into the market of solar panel glass technologies by launching a new flat tempering line suitable for processing solar panel glass.

Due to the Russia's invasion of Ukraine in February 2022, Glaston ended its business in Russia. All work contracts, six in total, were terminated and two upgrade projects were halted and removed from the order book. In 2021, Russia accounted for less than one percent of Glaston's net sales.

Glaston Corporation's share (GLA1V) is listed on the main list of Nasdaq Helsinki Ltd. At the end of 2022, Glaston had 7,593 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 new strategy for 2021–2025 is clearly improving organic growth and profitability. Implementation of the strategy is 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. Elevate sustainability and continuous improvement: 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 non-financial strategic targets promoting sustainability:

- Customer satisfaction score (Net Promoter Score, NPS) over 40
- Group-wide safety target of zero lost time accidents (LTA, progress measured as accident frequency, LTIFR)
- Employee engagement rate above 75 (0–100)
- Glaston's CO<sub>2</sub> emissions (Scope 1+2) in relation to net sales down by 50% from the 2020 level





# Summary of progress of cornerstone initiatives

Implementation of the five cornerstone initiatives continued according to plan in 2022.

In the **“Innovate with customers to win”** initiative, steering groups for the offering development were formed and the strategic account management program progressed well. In this way, it was possible to seamlessly combine customer knowledge, product development and innovation functions, and product management.

In the **“Leading digital transformation”** initiative, development of Glaston’s digital vision and construction of the related ICT platforms continued. The goal is to develop the tools and business architecture to promote the digital transformation of the industry.

In the **“Empowering Glastonians to thrive”** project, global competence mapping and the employer brand building project were completed. In addition, investments were made in leadership, employee engagement and employee retention, to enable the strategy to advance with full force.

In the **“Elevate sustainability and continuous improvement”** initiative, a roadmap for 2021–2025 was defined. In addition, measures were taken to reduce emissions, the amount of Scope 3 emissions (value chain emissions) was calculated and the development of sustainability reporting continued. Safety at work was one of the overarching themes of the whole year. Significant positive development was made in this area compared with the previous year.

In the **“Master global sourcing and manufacturing”** initiative, sourcing practices and quality indicators were harmonized, which contributes to the development of an efficient sourcing process that supports our growth strategy.





## Continuous dialogue and development work

Glaston's goal is to be a reliable and responsible partner for its stakeholders. Stakeholders include 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 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.

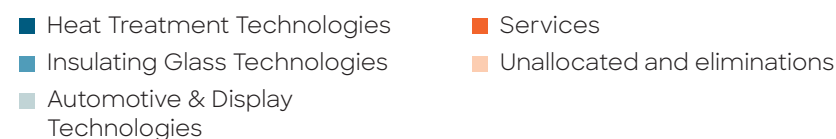
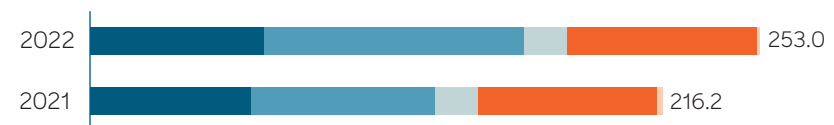
To remain at the forefront of the development of glass processing products and services, Glaston invests significantly in the continuous development of its technology portfolio and its research and development activities.

### Scope of the report

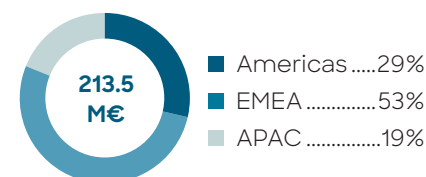
This sustainability report describes Glaston Group's operations in 2022. The content of the report and the themes covered are based on Glaston's strategy as well as a materiality assessment of sustainability. The report covers the entire Group.

# Key Figures 2022

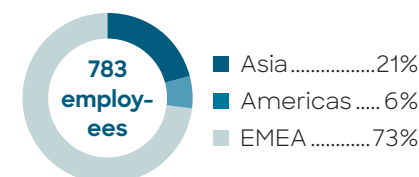
## Orders received per product area, € million



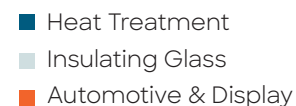
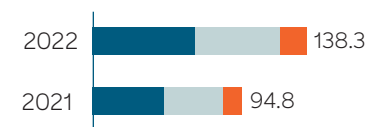
## Net sales per region, %



## Personnel per region at end of year, %



## Order book, € million



## Comparable EBITA, € million



# Megatrends supporting Glaston's 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 energy crisis has further underlined 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 products 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 glass, insulating glass and solar energy solutions.

As environmental awareness increases and construction laws and regulations become stricter, the energy-saving requirements for buildings will tighten. Insulating and energy-efficient 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 cells.

The current energy crisis, the sharp rise in energy prices and availability concerns are strongly impacting the European glass industry, which is an

energy-intensive industrial sector and traditionally dependent on natural gas. On the other hand, energy-related risks could drive demand for energy-saving and renewable energy production solutions.

## 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 a growing 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 has grown in recent years, and for Glaston safety is also a strong priority internally.

## Social responsibility

For a company to succeed in attracting skilled and motivated employees,



Glaston contributes to the construction of more energy-efficient societies

it must also assume its social responsibility and set itself ambitious goals for sustainable development. Diversity and equality are important themes in the societal debate and in ensuring the well-being of employees. In its own operations, Glaston is committed to providing a safe and good workplace for its personnel.

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



# Glaston's sustainability and its management

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's most significant environmental impacts arise from the electricity used by its products during their lifetime, and the company's product range meets the growing demand for more energy-efficient glass technologies.

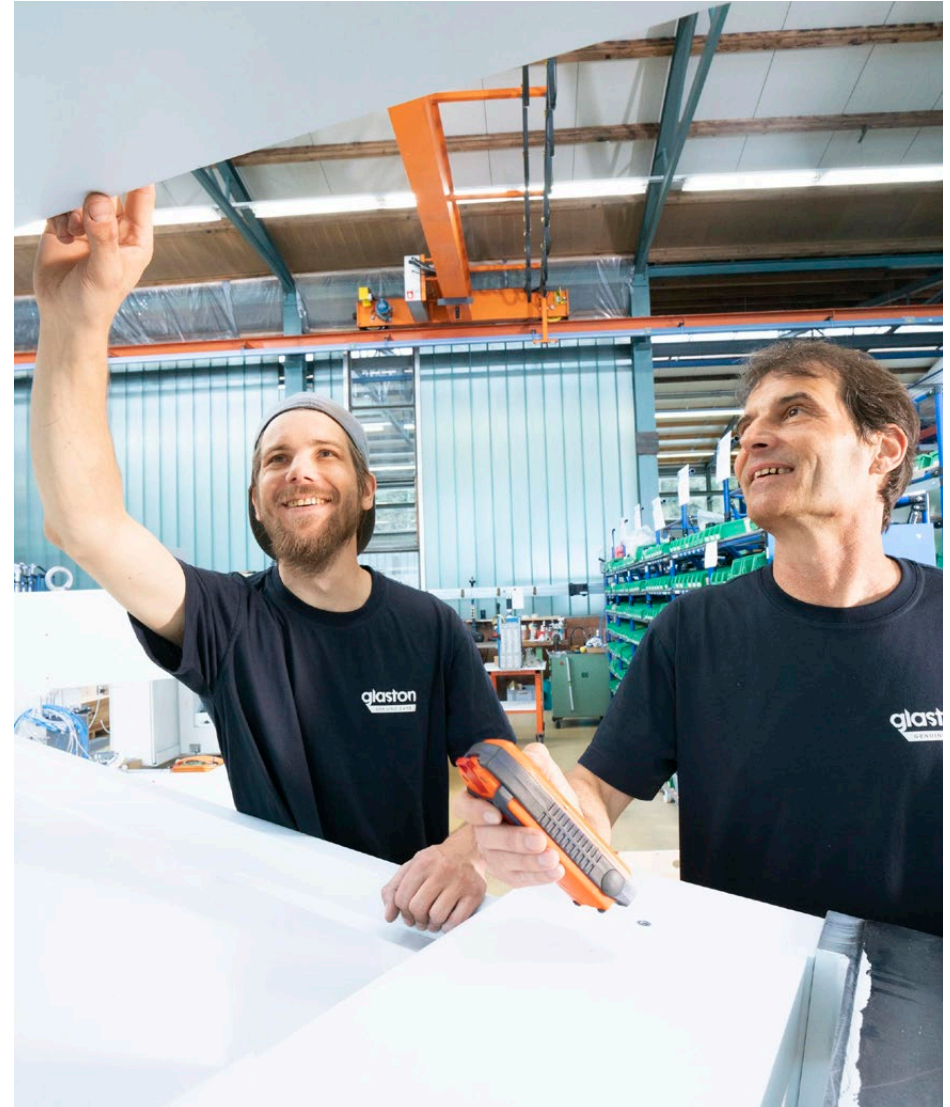
At the end of 2021, Glaston updated the material topics of sustainability to reflect the new strategy and changes in the operating environment. The assessment also took into account the views of external stakeholders and the company's own personnel.

## **Glaston's material sustainability**

### **topics are:**

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

In connection with the materiality assessment, the most significant climate and biodiversity risks related to and arising from Glaston's operations were also identified. Climate risks were mainly assessed as being medium or low. Glaston's climate risk management is reported in more detail in the financial statements, in connection with the Report of the Board of Directors.





# Material sustainability topics

## 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

## 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 matters in the supply chain

## 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

## Responsible member of society



**Sustainable tomorrow**

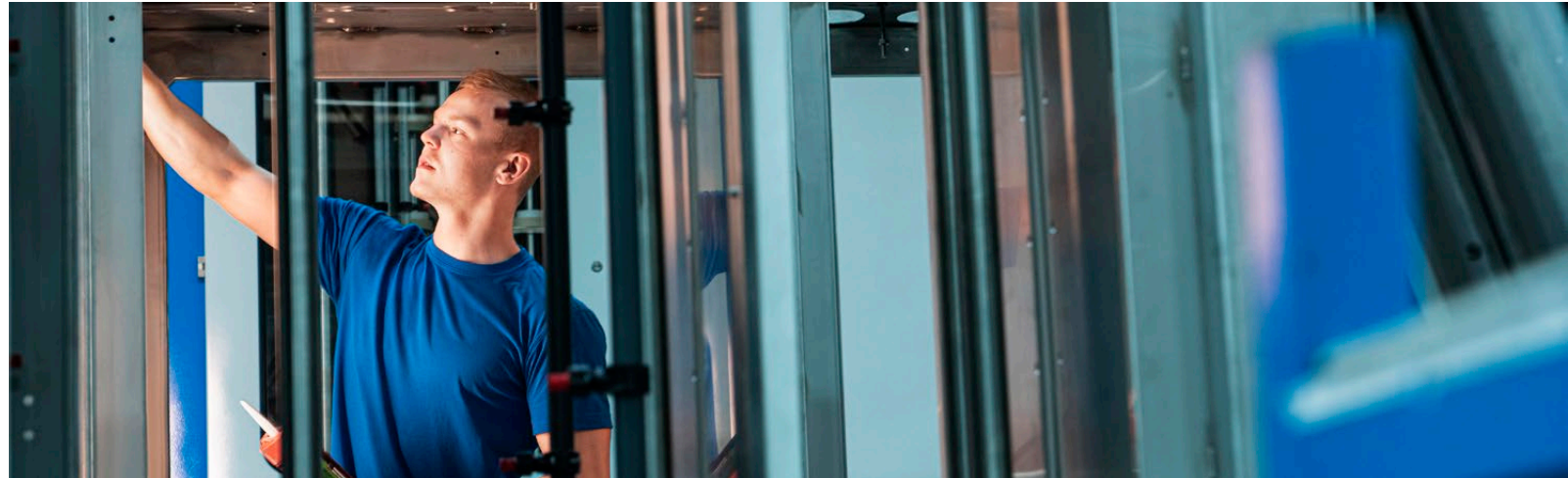
- Indirect impacts on energy-efficient cities and societies
  - Indirect energy and emission reductions
  - Indirect material reductions
- Sustainable end-product applications
- Development of the industry, research co-operation
- Contributing to the decarbonization of societies

# Managing sustainability

One of the focus areas of Glaston's strategy is sustainability. Glaston's Sustainability Working Group, which includes experts from various functions, is responsible for the systematic development, monitoring and reporting of the sustainability agenda. The working group will also develop sustainability to identify business opportunities and to meet growing regulatory requirements and stakeholder expectations. The group reports to the Executive Management Group and the Board of Directors.

During 2022, a roadmap towards the sustainability goals of Glaston's strategy period was prepared and indicators were specified. A plan and a timetable of measures were approved by the Executive Management Group and the Board of Directors. The members of the working group are responsible for the implementation of the measures according to the plan, within their own areas of responsibility and in collaboration with the functions in question.

Management of sustainability is explained in more detail in the Report of the Board of Directors, in connection with the reporting of non-financial information.



## Sustainability targets

In connection with strategy work, new Group-wide non-financial strategic targets promoting sustainability were set for 2025:

- Safety at work: zero lost time accidents (LTA, measured as accident frequency, LTIFR)
- Employee engagement rate over 75 (0-100)
- Glaston's CO<sub>2</sub> emissions (Scope 1+2) in relation to net sales down by 50% from the 2020 level
- Customer satisfaction score (Net Promoter Score, NPS) over 40

In addition to these key targets, Glaston's other sustainability targets were promoted and revised. To achieve the targets, a roadmap with measures has been prepared, which are explained in more detail for each topic in this report. The key indicators

used in measuring the targets were also specified during the year.

As part of the company's corporate responsibility work, Glaston's new financing agreement has been linked to the sustainability targets. The loan margin of the new financing agree-

ment takes into account the reduction of the company's CO<sub>2</sub> emissions and success in reaching safety at work targets annually.



## Key sustainability objectives

Topic	Indicator	Target	2022	2021	Timetable
<b>Responsible business</b>	Training of personnel in the Code of Conduct	Training coverage 100%	93%	97%	Continuous
<b>Safe workplace</b>	Accident frequency (LTIFR), number of accidents per million hours worked	Accident frequency zero	3.9%	3.3%	Continuous
	Reports of workplace harassment	No reports	One case reported	No cases reported	Continuous
	Employee engagement rate	Employee engagement rate over 75 (0-100)	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	-57%	-13%	2025
	Emissions in value chain	Calculation of Scope 3 emissions	Calculated	-	2022
<b>Responsible sourcing</b>	Suppliers' commitment to Glaston's Supplier Code of Conduct (new and current suppliers)	Commitment coverage 100%	75% of main suppliers	-	2022
<b>Responsible partner</b>	Industry's best customer experience	Customer satisfaction score (NPS) over 40	53	-	2025
	Technically advanced and material- and energy-efficient products	R&D, % of net sales	4.3%	3.8%	Continuous

# Code of Conduct guides daily choices

## **Sustainability targets:**

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

## **Key priorities for the strategy period:**

- Ensuring compliance with 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.

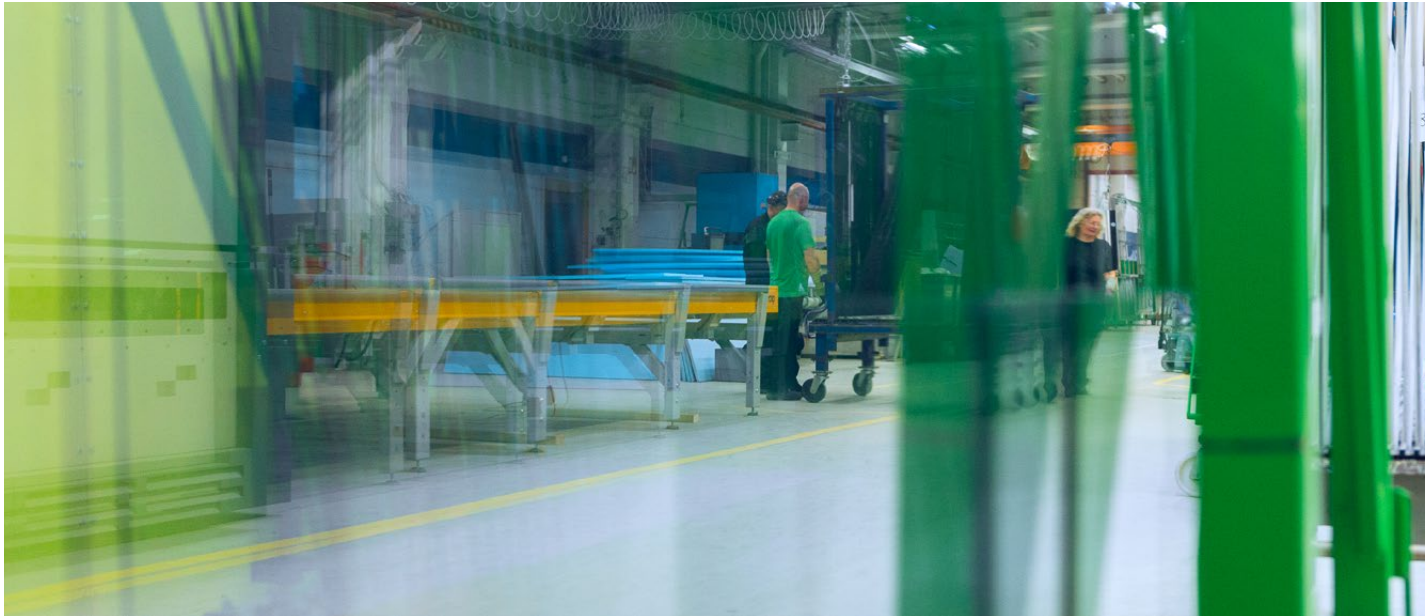
The Code of Conduct is published in Finnish, English, German and Chinese so that as many Glastonians as possible can read it in their own language. Training in the Code of Conduct is arranged for all personnel, and every Glaston employee must attend such training every two years. Training is also an integral part of the induction of new employees. At the end of 2022, 93% of the personnel had completed the training. 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.

The Code of Conduct is complemented by other Group-level policies approved by the Board of Directors, such as the anti-bribery and anti-corruption policy, and the disclosure, information security and risk man-







agement policies. In 2022, Glaston's Board of Directors approved a policy on taxation.

Glaston takes competition rules very seriously and every employee must act in accordance with them. Glaston regularly arranges training for its personnel on fair business and competition issues. The training material is always available on the company's intranet. In addition, policy briefings are regularly held for personnel working at the customer interface.

Glaston has a whistleblowing channel through which personnel can anonymously report possible

violations of the Code of Conduct or other policies. Glaston investigates all reported incidents promptly and confidentially and takes appropriate action based on the findings of the investigation.

#### **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 complemented 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. In order to focus particular attention on risks related to bribery and corruption, Glaston's Board of Directors approved the anti-bribery and anti-corruption policy in 2020.

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.

New anti-bribery and anti-corruption training will be introduced in early 2023. 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.

As a preventive measure to minimize anti-bribery and anti-corruption risks, 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, a new audit model will be developed to assess sales agents.

# 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. We have identified seven goals that also emerge from our own strategy and are most material to us. These provide a broader frame of reference for our work and support the achievement of these goals in our own activities.

Glaston's responsibility theme

UN Sustainable Development Goals

Implementation in Glaston

<b>Responsible operations</b>	<div data-bbox="817 427 891 502"> </div> <b>Goal 3:</b> Ensure healthy lives and promote well-being for all at all ages
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# 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



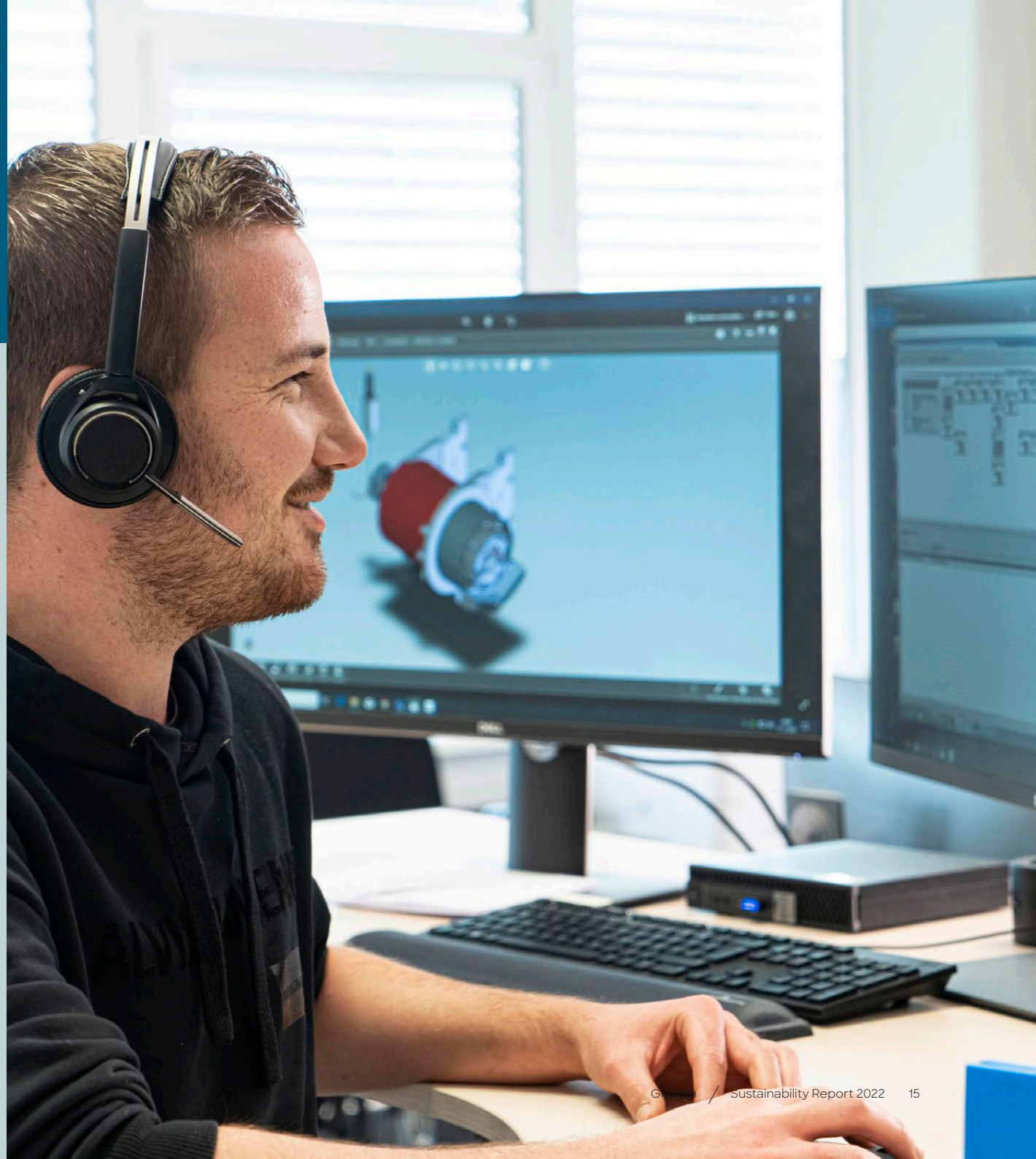
## Environment

- 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 work environment in which each Glastonian with their abilities and needs is known. We succeed together with our personnel.

## **Sustainability targets:**

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

## **Key priorities for the strategy period:**

- 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 2022, the number of Glaston personnel developed moderately and in accordance with the strategy, and there were 783 (750) Glaston employees at the end of the year. At the end of 2022, Glaston had operations in nine countries, of which the three largest, by employee numbers, were Germany, Finland and China. Employee turnover in 2022 was 6.0% in Germany, 7.8% in Finland and 7.7% in Switzerland. Most employment relationships are permanent. The average age of personnel is 44.5 years.

Of Glaston's personnel, 85% are men and 15% are women. At the end of 2022, there were five men and two women on Glaston's Board of Directors, and three of the nine members of the company's Executive Management Group were women.

### Together, towards success

Empowering Glaston people to thrive is one of the cornerstone initiatives of our strategy. Important factors in achieving success are leadership development, a work culture that values equality and diversity, encouraging Glaston employees to further develop their competence, supporting various career paths, remunera-

## We listen, and we know each other

*Empowering Glaston people to thrive* is one of the cornerstone initiatives of Glaston's strategy. What does this mean in practice, **SVP People & Culture Hannele Anonen?**

We are constantly developing Glaston's organizational culture. It is important to us that every Glastonian is in a role where they can harness and develop their expertise. At the same time, we make every effort to ensure that we have sufficient competence for current and, moreover, future tasks in our organization.

At the beginning of 2022, we asked our personnel how they perceived Glaston as an employer. The answers enable us to better understand our strengths and where we can improve. We really want to listen, not just ask. The experiences shared by Glaston's employees therefore serve as an important starting point in developing a common organizational culture, and we have already taken action with regard to identified development targets.

We have begun to systematically map the future factors that we need to secure our success. At the same time, we are positively challenging ourselves to identify younger talent who we can help grow into strategic roles.

We also want to hear and better understand the individual needs of Glaston employees so that we can offer properly targeted measures to support the success of our personnel and customers. Our goal is to enable a culture where every Glastonian can shine.



“

As part of building a common culture, I consider it extremely important that we listen carefully and get to know each other even better.”

tion that is incentivizing, 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. We have put these leadership principles, launched in 2021, into practice by organizing training for supervisors in which competence has been deepened and leadership experiences have been shared.

With the aid of the leadership principles, we are building common ways of working and even stronger internal processes. We also want to know ourselves and each other better, and we have implemented team and personal assessments that help us to better recognize our differences and utilize our strengths. By identifying the models and strengths of their own and their team's work personality, our supervisors are also able to more effectively empower their teams to succeed.

### Employer worthy of employee engagement

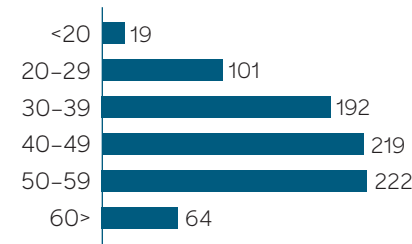
Engaged employees play an important role in achieving strategic goals. One of the Group-wide non-financial targets is to raise the employee engagement rate to over 75 (on a scale of 0–100) by

2025. In early 2022, an employer image survey was launched to start measuring the current level of employee engagement. The purpose of the survey was to ensure that present and future employer communication is based on the internal voice of Glaston employees. Supported by the survey findings, we ascertained our employees' views of Glaston as an employer and identified factors that can be used to develop issues meaningful to Glaston employees.

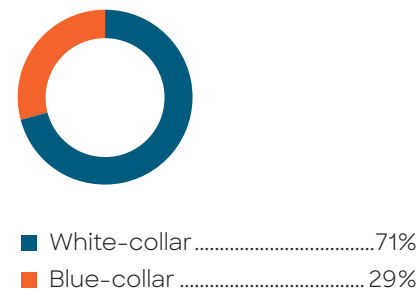
At the end of 2022, we conducted a revised One Glaston survey, with which we measured Glastonians' engagement with the company. Some 71% of our personnel responded to the survey, which was a comprehensive sample and an excellent improvement on the previous year. The results showed an engagement rate of 70 (on a scale of 0–100), which is a good starting point. Personnel stated they were particularly satisfied with the meaningfulness of their work and our inclusive culture as well as cooperation with colleagues. There is still room for development in mutual communication and the giving of feedback.

The One Glaston survey functions as part of the development of a culture of continuous discussion and feedback. With the aid of a survey, we monitor

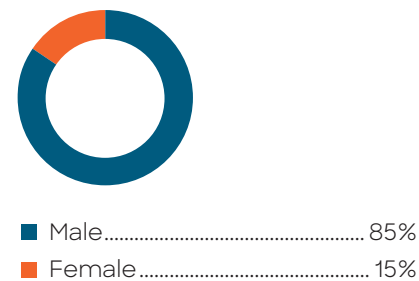
Employee age distribution (FTE)



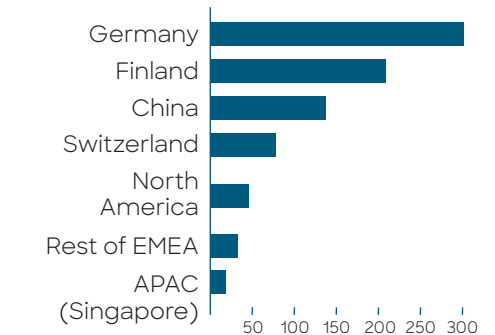
Employees by type of employment



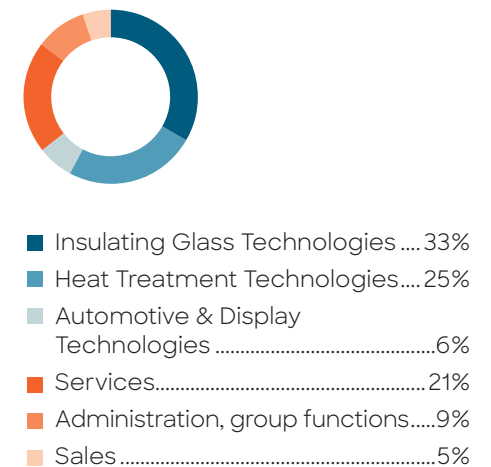
Gender distribution



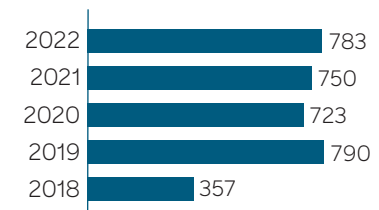
Employees by country or region (FTE)



Personnel per function



Employees at end of year



our success in matters important to Glaston employees, as well as coping at work and job satisfaction. The annual survey also enables us to monitor the development of issues raised in employee feedback.

### Deep dive into employees' potential

The average age of Glaston employees, around 45 years, reveals that our organization has a lot of valuable expertise accumulated through experience. Recognition of Glastonians' competencies and skills plays an important role in achieving our strategic goals. We have therefore turned our attention to identifying younger and less experienced employees who we can support and encourage to grow into various strategic roles.

During 2022, we launched the People Deep Dive discussion processes, in which business managers and local HR business partners participated, in addition to Glaston's CEO and SVP, People & Culture. The goal of the People Deep Dive processes is to better identify both the organization's capabilities and the kind of resources the implementation of Glaston's strategy requires. Based on them, plans will be created on how to increase, develop and engage the necessary expertise.

With the aid of the Deep Dive

discussions, we also wish to identify rising talents and future experts in key roles and to ensure the continuity of our business. Based on the identified competence needs, we have initiated local development measures, training and recruitment.

### Skills development and growing in roles

Expert personnel are the foundation of Glaston's success, and through the new strategy we have begun to identify more systematically the competencies and skills as well as the skills development needs of each Glastonian. In addition, we have discussed in more detail which areas of expertise are important in the various job roles, in order to be able to provide even better targeted training to our personnel in the future. We have also introduced an internal tool that enables our personnel's expertise and knowledge to be accessed more efficiently.

We organize personnel training in accordance with local needs, and we offer training opportunities and continuous skills development through work assignments. Our industry is demanding, and through years of work many Glastonians have grown into top experts in their field.

Thanks to Glaston's internal eSkills



online learning platform, training is flexibly available online. The eSkills platform provides training related to products, processes and operating practices. Code of Conduct training is also provided through the platform.

We are developing the eSkills platform, and the goal is to offer during 2023 many more training opportunities and content on different themes. We will also develop the online learning experience based on feedback provided by our colleagues.

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. Our common leadership principles are an integral part of the personal development plans of all Glaston supervisors.

### Diverse and inclusive work community

The diversity and equality of personnel is important for Glaston's success. Glaston is a global company and its



## The diversity and inclusion of personnel is important for Glaston's success.

personnel have diverse backgrounds and cultures, which we view as our strength. Glaston operates in the technical field, where the gender distribution has traditionally been strongly male-dominated. We seek to actively enrich the diversity of our work community, both in terms of the gender of personnel and other individual background factors.

Our diversity plan, prepared for 2023–2025, states as an objective the creation of a diverse and inclusive work environment for employees of different background and gender, to enable Glaston and Glastonians to succeed.

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. We are developing our operating practices and processes

to better take into account possible unconscious biases associated with them. For us, participation also means that we know each other as well as the skills and strengths of employees well. This way we can better involve people in different projects and roles in which they can succeed.

Discrimination or harassment of any kind is not permitted in Glaston; all reported incidents are investigated and, if deemed to be well-founded, the necessary action taken. In 2022, one suspected incident of workplace harassment was reported, which, based on an investigation, led to the dismissal of the employee in question.

### Workplace in which to thrive and feel good

We work hard to ensure that we are an attractive employer where personnel can thrive, feel good and develop. The attractiveness of the glass industry and Glaston can also be promoted amongst women by increasing awareness of interesting work roles and opportunities for influence and career development.

We have developed our communication as well as our recruitment channel, with the aim of presenting

both our personnel and interesting job vacancies more widely. Through internal recruitment communication, we are also seeking to develop our personnel's mobility and career paths from one position to another.

We have celebrated the long careers of many Glastonians, which demonstrates to us the engagement of our personnel and the deep expertise accumulated over the years. Employment relationships at Glaston are long, averaging 14.5 years in 2022.

With the shift to teleworking and hybrid working, we have sought to ensure our 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.

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

### Continuous development of safety culture

Occupational safety is high on our agenda and we have set a Group-wide occupational safety target of zero lost time accidents. In order to develop a safety culture, safety standards as well as the reporting of accidents and near misses have been developed and harmonized throughout the Group. Through improved reporting, we are also able to react better than before to the resourcing of personnel during absences.

Alongside reporting and standards, a safety culture is also built on common safety awareness, anticipation, and the identification of near-miss situations. Listening and learning from others are therefore vital in developing a safe work culture. In 2022, there were six accidents, after which an open discussion took place on what happened and on the various measures that may help prevent similar accidents in the future.

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 development measures are agreed upon.

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

Glaston's employees also work on customers' premises in product installation, maintenance and familiarization 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.

Our target is zero accidents at work. We did not achieve this target; in 2022, there was a total of six lost-time accidents at work or on a business trip, and the accident frequency was 3.9 (3.3 in 2021). The most typical accidents are hand injuries, such as cuts and various sprains.

## Lessons and experiences from Safety Week

Glaston's first global Safety Week was held in May. The week was opened by our CEO, **Anders Dahlblom**, who emphasized the importance of a safe work environment both on our own premises and when working at customers' locations.

During the Safety Week, we got the opportunity to hear and learn about the safety and health work of our colleagues around the world. We watched fire and evacuation exercise videos, learned about ergonomic office work, and our Chinese colleagues shared a report on their first aid training. We also discussed an accident that had happened previously as well as measures that could prevent similar accidents in the future.

Various presentations reminded participants of, among other things, the importance of checking work equipment and materials, the use of safety devices and safety instructions, and a checklist to review before starting work. We also learned about the improved safety features of our own products.

SVP People & Culture **Hannele Anonen** reminded us that a safe work culture also means a sense of mental safety – that everyone considers themselves to be heard and seen as part of the work community. In addition, she emphasized the importance of a good balance between work and family life.

The first Safety Week was highly educational and thought-provoking. In the words of Anders, our CEO, safety is about caring, awareness and thinking before acting.



# Energy efficiency as an opportunity

## Sustainability targets:

- Glaston's CO<sub>2</sub> emissions (Scope 1+2) in relation to net sales down by 50% from the 2020 level

## Key priorities for the strategy period:

- Drive down Scope 1 & 2 CO<sub>2</sub> emissions
- Calculate Scope 3 emissions and set new targets
- Build roadmap for reducing Scope 3 emissions
- Evaluate the Science Based Targets initiative

Glaston views the promotion of sustainable development as a business opportunity, and the company is involved in creating industry standards and practices in relation to sustainability, such as for energy efficiency and safety.

In glass industry sustainability issues, there is an emphasis on the energy efficiency of glass manufacturing and further processing, as glass

production processes consume a lot of energy. The energy crisis, the sharp rise in energy prices and availability concerns have strongly impacted the European glass industry, which is an energy-intensive industrial sector and traditionally dependent on natural gas. On the other hand, energy-related risks could drive demand for energy-saving and renewable energy production solutions.

Glaston's largest customer segment is the architectural and construction industry. In parallel with the energy crisis, programs promoting carbon neutrality, as well as stricter legislation and new standards, are supporting the use and development of more energy-efficient solutions. Safety and quality regulations in construction are also becoming stricter in many of Glaston's market areas.

Glass will play a key role in achieving the energy efficiency targets for buildings in both new and renovation construction. For example, 75% of the EU's building stock is energy inefficient\*, and heating and cooling of buildings account for half of final energy consumption in the EU.

## Energy saving with insulating glass

The architectural and construction industry is Glaston's largest customer segment. The positive climate impact of the glass installed in buildings is therefore highly important from Glaston's perspective.

Loss through windows accounts for 25–30% of the energy used for heating and cooling buildings. The energy-saving potential is enormous, because in the EU area, for example, most of the glazing of buildings is less energy-efficient.

If, for example, the glazing of buildings in Europe were replaced by energy-efficient alternatives, the energy consumption and carbon dioxide emissions of buildings would be approximately 30% lower by 2030\*.

The goal of the Renovation Wave Strategy, published by the European Commission in 2020, is to at least double the number of renovations by 2030 and to ensure that they lead to better energy and resource efficiency. The goal applies to around 35 million buildings.

The project will be a significant driver of growth for Glaston's business, as coated double and triple insulating energy-saving glass produced with Glaston's technologies are key solutions in energy saving for windows and glass façades.



\* Source: Glass for Europe/ Potential impact of high-performance glazing on energy and CO<sub>2</sub> savings in Europe, TNO, 2019

\* Directive of the European Parliament and of the Council on energy efficiency, 2021



Improving the insulation of buildings is therefore of great importance. The technologies developed by Glaston enable the production of more energy-efficient glass structures.

## Energy-efficient technology

The most significant environmental impacts of Glaston's operations are mainly associated with the use of the machines sold, particularly the electricity consumption of heat treatment machines. Through automation and continuous technological development, it is now possible to efficiently optimize the electricity consumption of machines in both heating and cooling. The new technology is also available as upgrade products for old production lines.

The development of energy- and material-efficiency is ongoing work, and Glaston's product development has long focused on improving the energy efficiency of its machines. The company has managed to reduce significantly the energy consumption of its most significant products. For example, in the tempering process of coated energy-saving glass, energy consumption has been reduced by around 30% over the last decade. Particularly in heat treatment

technologies, the savings in heating brought by circulating air convection in tempering and the enhanced control of blowers used in cooling have played a significant role in improving energy efficiency per square metre of tempered glass. The electricity consumption of glass pre-processing machines as well as machines used in manufacturing insulating glass units can be impacted, for example, by various product options that improve the energy efficiency of production lines.

In product development, Glaston harnesses new technology and the opportunities created by digitalization through, among other things, utilizing data received from machines. With the aid of automation, cloud services and the industrial internet, the company helps its customers to use their machines as efficiently as possible. A real-time quality measurement system detects deviations in the quality of processed glass immediately, thereby minimizing material waste.

## Glaston's impacts on the environment

In its own activities, Glaston's most significant environmental impacts arise from energy consumption and related emissions as well as from waste and

transportation. In the use of machines, the main environmental aspect is the energy consumption of the machines, which we are actively reducing through product development, innovation and customer guidance and advice.

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.

On its premises, Glaston conducts regular energy audits, and is constantly improving the energy-efficiency of its properties. For example in Tampere, Finland, oil consumption and resultant emissions were significantly reduced when heat pumps were installed, replacing oil as a heating source.

Transport of machines to customers is handled by forwarding companies using the shortest routes by land or sea. Transport of smaller and urgent spare parts is also handled by air freight.

## Reducing emissions from own operations

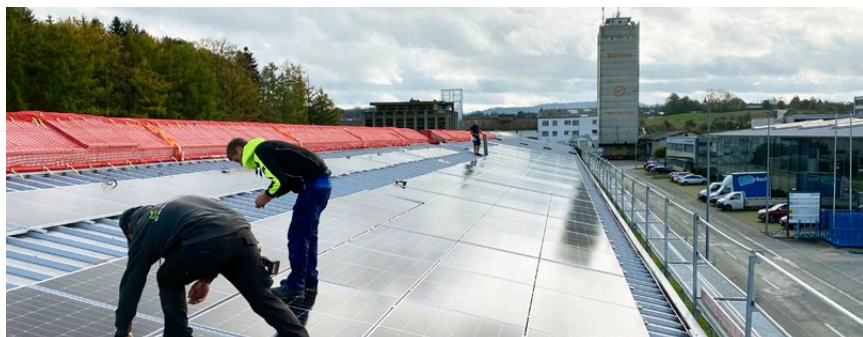
Emissions from Glaston's own operations totaled 1,491 tCO<sub>2</sub> in 2022 (2,608 tCO<sub>2</sub> in 2021), of which fuels and natural gas (Scope 1) account for around 41%

and electricity and district heat (Scope 2) for around 59%.

Scope 2 emissions, from purchased energy, declined significantly when, from the beginning of 2022, the Tampere, Finland and Neuhausen, Germany factories switched to using electricity produced from renewable energy. In the Swiss production unit in Bützberg, where renewable energy has been the main source of electricity for a long time, it was also decided to renew the heating distribution system. This significantly reduces consumption of natural gas. In addition, a solar power system was installed in Bützberg. In Neuhausen, charging points for electric cars were installed in the parking area of the premises. In Germany and Finland, hybrid and electric vehicles are offered as company cars.

One of the Glaston Group's four non-financial targets is to halve the intensity of CO<sub>2</sub> emissions from the company's own operations by 2025. A brisk start was made along the path towards the target, particularly through the switch to electricity produced from renewable energy. Relative to net sales, Glaston's Scope 1 and 2 emissions (7.0 tCO<sub>2</sub> /EUR million) have decreased by 57% compared to the baseline in 2020 (16.3 tCO<sub>2</sub> /EUR million).

The goal of emission reductions will be refined during 2023.



## Solar power in Bützberg

In Bützberg, Switzerland, we invested in our own solar power system. Nearly 400 solar panels, with a total capacity of more than 150 kWp, were installed on the roof of the factory in autumn 2022.

The solar panels have produced energy for the production plant's own use since November, and from the beginning of December electricity has also been fed into the grid.

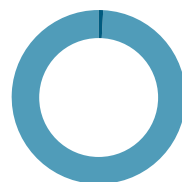
### Scope 3 emissions calculated for the first time

Scope 3 emissions arising from Glaston's value chain were calculated for the first time during 2022. The calculation, based on 2021 data, showed that the majority, around 99%, of all emissions associated with Glaston's activities arise in the company's value chain. The most significant sources of emissions are the electricity con-

sumption of machines manufactured by Glaston and the procurement of materials and components required for their manufacture.

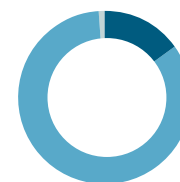
The results obtained form the basis for future work, and they can be used to identify the measures by which emission reductions will best be achieved. The aim is also to constantly improve the accuracy and validity of emission calculations.

### Estimated breakdown of Glaston's greenhouse gas emissions 2021



■ Scope 1 + 2 .....	1%
■ Scope 3 .....	99%

### Scope 3 emissions by category 2021



■ Purchased goods and services ..	15%
■ Use of sold products .....	84%
■ Other categories .....	1%

### Energy consumption (MWh)

	2022	2021	2020
Fuel oil, diesel and natural gas	2,852	3,349	3,179
Purchased electricity and heat	6,523	6,746	7,949
<b>Total</b>	<b>9,375</b>	<b>10,095</b>	<b>11,128</b>

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

	2022	2021	2020
Scope 1 (Fuel oil, diesel and natural gas) <sup>1</sup>	605	708	678
Scope 2 (Purchased electricity, heat and cooling) <sup>1,2</sup>	886	1,900	2,099
<b>Scope 1 &amp; 2 total</b>	<b>1,491</b>	<b>2,608</b>	<b>2,777</b>
Scope 3 (value chain)	tba	287,348	-

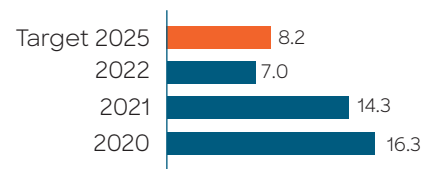
<sup>1</sup> tCO<sub>2</sub>

<sup>2</sup> Calculation mainly based on actual energy consumption; consumption of individual premises is based on an estimate

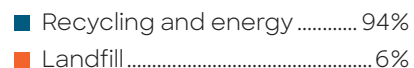
## Recycling of packaging materials and waste

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. Glaston's operations give rise to a lot of packaging materials, and they are sorted and either recycled or used as energy waste. In 2022, the total amount of waste decreased by around 10%.

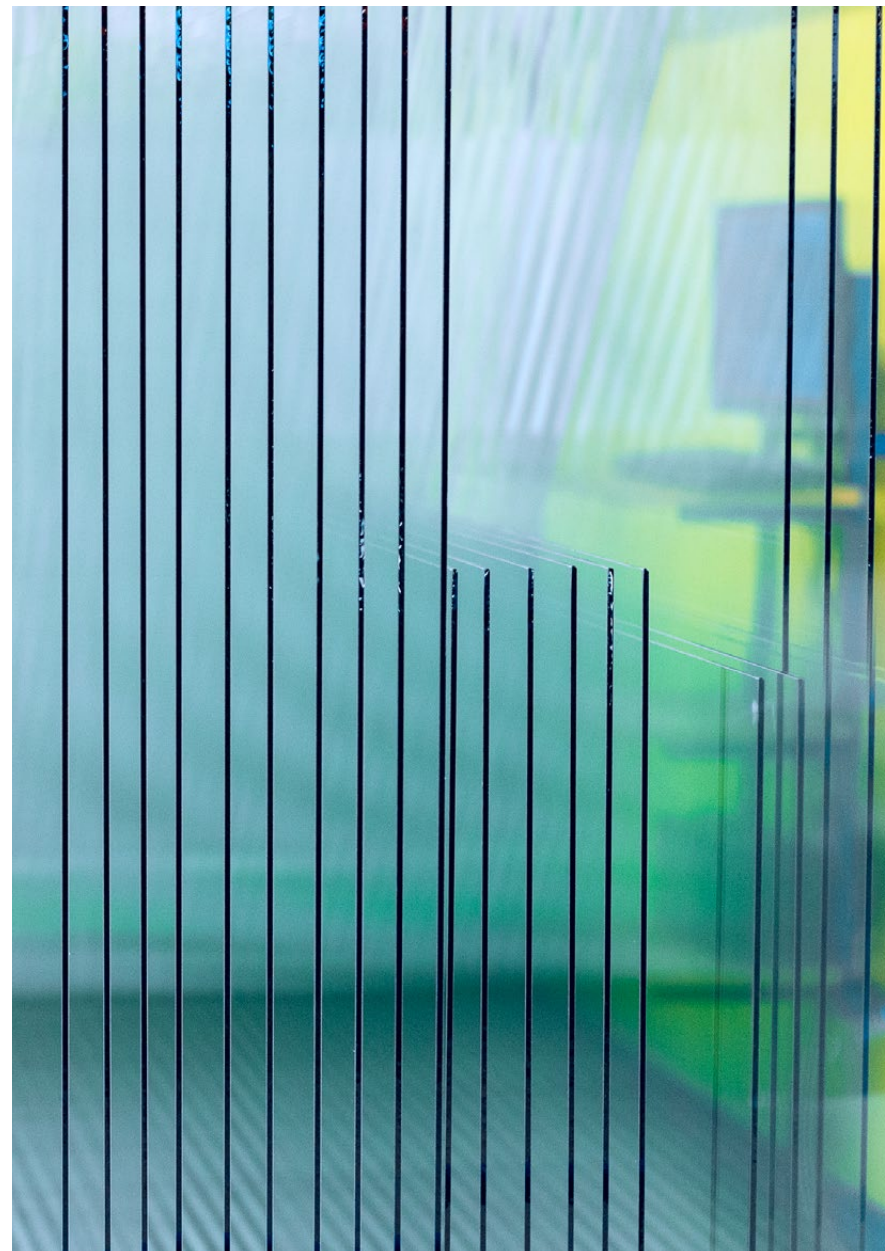
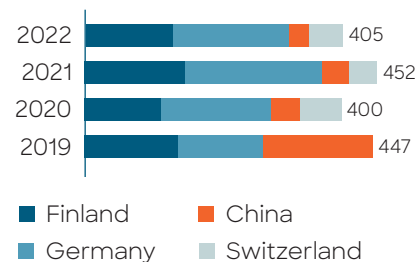
## Greenhouse gas emissions to net sales (tCO<sub>2</sub>)/EUR million)



## Waste disposal 2022



## Waste by country, tonnes





# Responsible business

## Generating economic value added

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

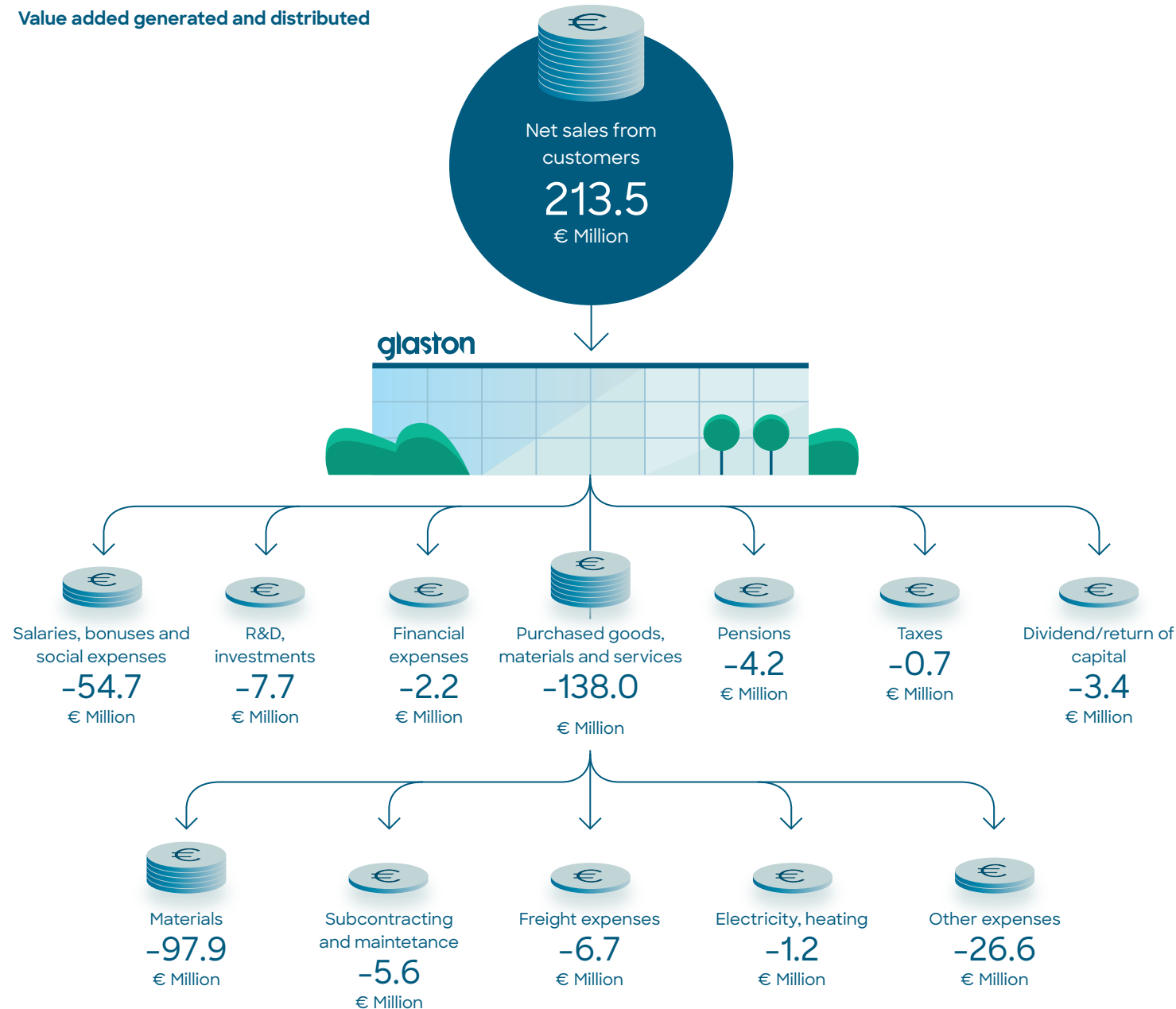
Personnel salaries, payments to goods and service providers, social taxes, and potential dividends and returns of capital to shareholders are Glaston's most important obligations, as are the means to create economic value added.

In 2022, Glaston Group's net sales totaled EUR 213.5 million, of which service operations accounted for 36%. Glaston acquired materials, products and services totaling EUR 138.0 million. Glaston had an average of 775 employees in 2022. Salaries and bonuses paid to personnel totaled EUR 54.7 million and pension expenses EUR 4.2 million. The company's investments in tangible and intangible assets totaled EUR 7.7 million.

## Value added generated and distributed (EUR million)

		2022	2021	2020
<b>Value added generated</b>				
Customers	Net sales	213.5	182.7	170.1
	Other operating income	3.6	4.3	2.3
<b>Value added distributed</b>				
Suppliers	Purchased goods, materials and services	138.0	116.1	94.8
Employees	Salaries, bonuses and social expenses	54.7	48.6	44.9
Employees	Pensions paid	4.2	3.6	3.2
Financiers	Financial expenses	2.2	1.7	2.3
Owners	Dividend/return of capital	3.4	2.5	1.7
Public sector	Taxes	0.7	1	0.9
Business development	R&D, investments	7.7	6.5	5.8

## Value added generated and distributed



## New tax policy

In December 2022, Glaston's Board of Directors approved the company's new tax policy, which 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 a tax advantage. 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.

# 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 Code of Conduct 100%

## Key priorities for the strategy period:

- Define supplier audit model and start 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.

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.

Most, around 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 prices and availability of raw materials and components, as well as the availability and costs of logistics, adversely impacted Glaston's business during 2022.

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 responsible sourcing, which includes, among other things, supplier requirements and audits as well as safeguarding human rights and work-





place safety. In addition, anti-corruption in the supply chain and sourcing is systematically developed.

In 2020, Glaston published a separate code of conduct for its suppliers (Glaston Supplier Code of Conduct), to which the company requires its suppliers to commit. 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 was implemented in 2022, and during the year approximately 75% of main suppliers committed to it. The Code of Conduct has been incorporated into purchase agreements, so in the future all Glaston suppliers will be required to commit to it.

Major suppliers are regularly audited by Glaston's quality and purchasing organizations, and all new suppliers undergo an audit process prior to being approved. Glaston's supplier audit model was developed during 2022. As a new element in audits, the responsibility of suppliers and due diligence assessment related to human rights are also taken into account, in addition to quality, price and security of supply.

The revised audit model will be introduced in 2023, and the effectiveness of the model will be monitored and, if necessary, further developed. The aim of the revision is not only to take responsibility better into account, but also 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**

In its everyday 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 our 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.

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, separate anti-bribery and anti-corruption training will be launched, and targeted at employees whose working tasks are closely associated with the topic.

Any violations or suspicions of improper activity or payments can be reported anonymously via Glaston's whistleblowing channel.



# 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 priorities for the strategy period:

- Business strategy: product offering 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. We are constantly developing our 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

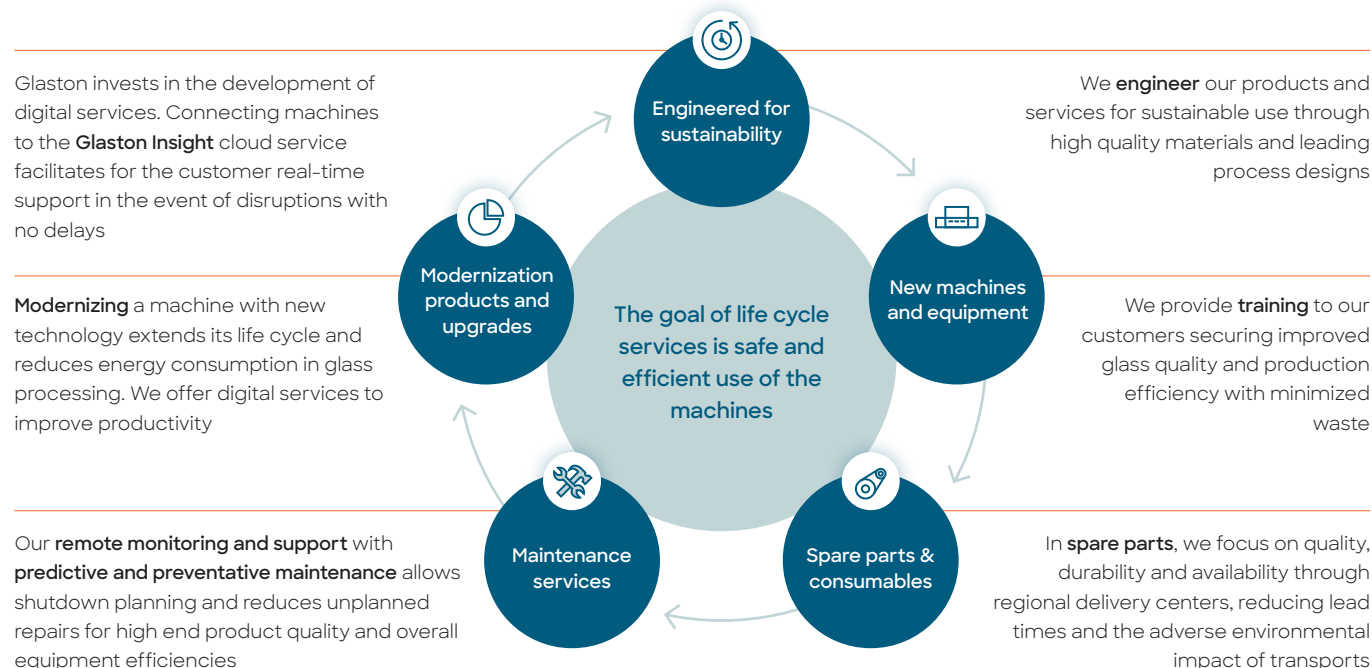
its seamless integration with our innovation and development work.

As the operating environment changes, customers' requirements and expectations of Glaston increase.

Higher quality and more versatile features are continually required from customers' end products. Glaston's processing machines must be able to produce larger, more uniform and

thinner glass surfaces. Production must also be able to adapt flexibly to making different types of glass. Glaston develops technologies and solutions that meet these changing

## Customer support throughout the life cycle



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

One of Glaston's non-financial targets is related to customer satisfaction. The target is that customers' recommendation rate (Net Promoter Score, NPS) is above 40 by 2025. NPS was measured for the first time company-wide during 2022. Glaston's customer satisfaction survey is sent for delivered machine projects and it asks the customer to evaluate the success of the project and the customer's willingness to recommend Glaston. The customer recommendation rate (NPS) in 2022 was 53.

#### **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, and the company interacts closely with customers, as the machines are regularly serviced to achieve consistent performance.

Glaston's production and assembly processes and installation methods are designed to promote product reliability as well as the safety of installers

## Product development and services for energy saving

*How can we reduce energy consumption?* This is what almost all glass processors were asking in 2022. At Glaston, we help our customers save energy in numerous ways.

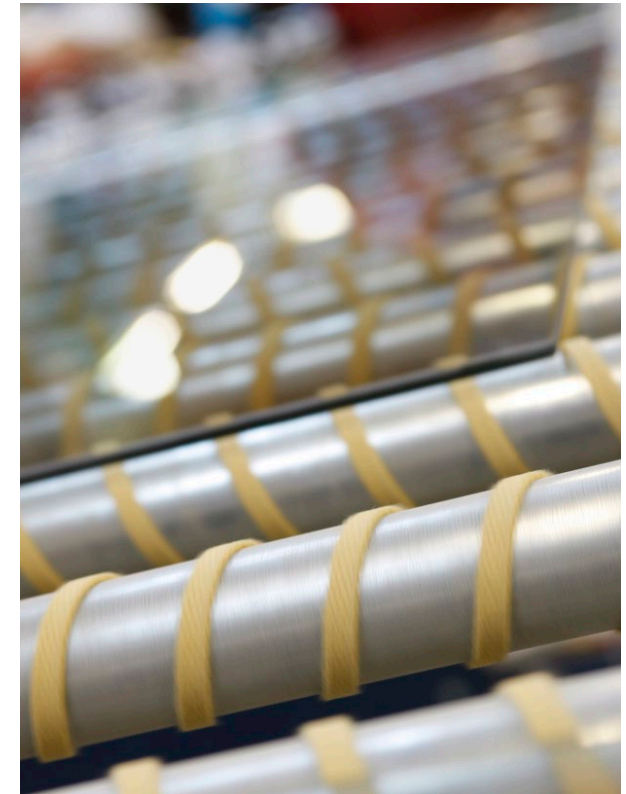
Glass tempering is one of the most important processes in a glass processing factory; it helps increase end-product safety, strength and durability. The tempering process, in which the glass is heated to +600°C and then cooled back down to room temperature, consumes a lot of electricity. The most significant energy-saving potential in a glass processing plant is therefore often to be found in the tempering line. For example, automatically adjusting flat tempering convection technology reduces waste energy. Particularly with thinner glass, new blower technology significantly reduces electricity consumption.

Modernizing older tempering lines with new technology is an effective way to reduce electricity consumption.

In laminating, Glaston's new convection-based technology delivers the most energy-efficient glass processing on the market. Many traditional technologies allow heat to escape from the furnace, which wastes energy.

Energy efficiency can also be improved with the aid of digital reporting and real-time production monitoring, allowing glass processors to see more precisely where electricity is being consumed and how they can optimize the operation of the machines.

Modernizing furnaces is also an effective way to reduce electricity consumption. Any laminating line can be modernized, regardless of the original manufacturer.



Glaston's position is particularly strong as a developer of technologically demanding products



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, describing possible risks to personnel during the various stages of use of the machine.

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. We also offer our 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.

#### **Developer of demanding products**

Glaston is the frontrunner in the glass industry, and is known for its high qual-

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

At the forefront of Glaston's product development are projects and innovations related to automation, ease of use and self-learning that facilitate the transition towards fully automated glass processing.

One of our latest innovations is the tempering process Autopilot, which is based on the same solutions that are 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, we help our customers to produce higher quality glass continuously at a higher utilization rate. New solutions include Glaston's automated stress calculation solution in the glass tempering process as well as a scanner that uses artificial intelligence to automatically detect white haze on processed glass. In addition to efficiency and reliability, optimization also improves

energy and material consumption and reduces wastage.

#### **Importance of information security and protection is growing**

As a result of the increased role of various cloud services and IoT, the importance of information security and protection has grown significantly for companies. The impact on business of potential data breaches has been recognized and Glaston pays particular attention to managing information security risks with regard to data connections between the company and its customers.

Information security practices and responsibilities are guided by Glaston's information security policy. Information security is regularly monitored and audited, and Glaston's Executive Management Group and the Board of Directors' Audit Committee regularly review information security issues as well as plans and measures to manage risks.

The company has a SOC (Security Operations Center) service, which enables continuous network monitoring. In 2022, no significant information security incidents were reported. Glaston's partners and subcontractors are also required to adhere to the company's information security guidelines.



# 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 priorities for the strategy period:

- Glass Performance Days to promote the theme of energy-efficient cities and societies and enhance industry dialogue
- Contributing to improving GHG data accuracy in glass processing
- Building thought leadership in glass related emissions
- Stakeholder analysis on their alignment with Glaston's targets
- Start-up and research co-operation

## Technology leader, developing the glass industry

Glaston is actively and diversely involved in developing its industry. We promote 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, we are able 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 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.

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

The conferences aim to disseminate the latest information among

industry actors and to promote the development of new areas of application and technological features. The GPD conferences have been organized at two-year intervals since 1992, except for 2021 when, due to the COVID-19 pandemic, the conference was not held. Over the years, the GDPs have attracted more than 16,000 glass industry professionals.

In spring 2022, Theme Park by GDP gathered the GPD audience around once a month for webinars on current glass industry topics, discussion and networking.

An important part of the GPD conferences organized in Finland is the Step Change program, which is a meeting place for startup companies and the glass industry. The goal of the Step Change program, to be organized for the third time in summer 2023, is to introduce and bring together new technologies, research teams and startups to develop the entire glass industry. The program aims to promote the commercialization and utilization of new innovations throughout the glass value chain.

## AHLSTRÖM COLLECTIVE IMPACT

# One million euros for children's future

*Glaston is participating in the Ahlström Collective Impact (ACI) responsibility initiative, which supports the realization of selected UN sustainable development goals. ACI involves collaboration between Ahlström network companies and UNICEF Finland, with the aim of improving the lives of children worldwide.*

In 2022, ACI invested EUR 770,000 in UNICEF's Global Education Program, which supports millions of children to succeed in life. This year, we also sought to support UNICEF's invaluable work in Ukraine. The companies, employees, foundations and shareholders of Ahlström Collective Impact collected nearly EUR 300,000 for the children of Ukraine.

ACI cooperation is strongly aligned with Glaston's value Together we

build the future. Providing access to education and equal opportunities is an ongoing effort that we also want to support in the future. By joining forces with the Ahlström Network companies, we can contribute to a better future for children.

In 2022, in addition to Glaston, the ACI network consisted of Antti Ahlström Perilliset, Ahlström Capital, Ahlström Invest, Ahlstrom, Destia, Detection Technology, Enics, Suominen, Avain Yhtiöt, M&J Recycling, Eva Ahlström Foundation and Walter Ahlström Foundation.



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Glaston Corporation is the glass processing industry's innovative technology leader supplying equipment, services and solutions to the architectural, automotive, 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..