



Corporate
Responsibility
2020

glaston
seeing it through®

The frontrunner in glass processing

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

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

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 debate on climate change is also strongly reflected in the glass industry. This has led to rapid development in smart glass, ultra-thin glass and glass used in solar energy solutions. As our industry's innovative technology leader, we are strongly

involved in this development, and we are continually launching more advanced technology to meet the changing needs of the market.

As environmental awareness increases, demand for more energy-efficient and environmentally sus-

tainable 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.





Our segments focus on different sectors

Glaston Insulating Glass provides high technology machines for the manufacture of insulating glass, handling equipment and systems, maintenance, upgrade and modernization services, as well as spare parts. Most of the segment's personnel are located in Germany.

Glaston Heat Treatment 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. Most of the segment's personnel are located in Finland.

Glaston Automotive & Display Technologies provides glass processing machines and maintenance, upgrade and modernization services as well as spare parts for the automotive, appliance and display industries. Most of the segment's personnel are located in Switzerland.

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 machines are manufactured in the factory in Germany. In addition, the company has sales and service points in ten countries. From these locations, Glaston serves its customers, who operate in over one hundred countries. The company is domiciled in Helsinki, Finland.

In 2020, Glaston's group structure comprised three business areas:

- Glaston Insulating Glass
- Glaston Heat Treatment and
- Glaston Automotive & Emerging Technologies*

In addition, Glaston 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.

Glaston's ownership structure

Glaston Corporation's share (GLA1V) is listed on the main list of Nasdaq Helsinki Ltd. At the end of 2020, Glaston had 7,352 shareholders. At the end of the year, the company's largest share-

holders 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 (6.07%).

Impact of coronavirus year on Glaston

The COVID-19 pandemic has had a significant impact on Glaston. In spring 2020, the company took prompt action to safeguard the health and safety of its employees as well as the company's financial stability. Due to preventive measures introduced at an early stage, such as a recommendation to work remotely and strict safety guidelines, Glaston was able to maintain all production operations throughout the year, and there have

been very few cases of coronavirus infection among personnel.

The coronavirus pandemic has also had a negative impact on Glaston's customers, as a result of which the number of orders received by the company decreased and some equipment deliveries were postponed. In addition, different countries' travel restrictions and virus prevention measures as well as restrictions on customers' factory visits have adversely affected maintenance and service operations.

In order to adjust to the effects of the pandemic, the company had to introduce temporary lay-offs of its personnel. In Finland, periodical lay-offs of all personnel continued from April throughout the year. Corresponding measures, such as a reduced working

* As of 1 January 2021, Glaston Automotive & Display Technologies.

week, have been taken in Switzerland, the USA and the UK.

In order to adjust its operations to lower-than-expected demand, Glaston entered into two cooperation procedures in Finland in 2020. The cooperation procedures covered all personnel in Finland and the second set of discussions resulted in the termination of six employment relationships at the beginning of 2021. The impact on personnel was lower than estimated; at the start of the negotiations, the reduction requirement was estimated to be 20 employment relationships. In addition, the discussions identified the need for lay-offs until summer 2021, in accordance with local demand.

The pandemic and related restrictions have naturally also impacted opportunities to arrange face-to-face sales meetings and organize events. Glaston has utilized the situation as an opportunity to renew and develop sales and marketing activities, for example through digital marketing and virtual product demonstrations.

Continuous dialogue and development work

Glaston's goal is to be a reliable and responsible partner for its stakeholders. The most significant 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.

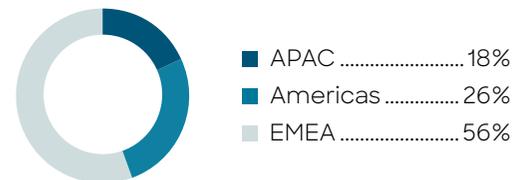
Glaston's strategic ambition is to be the industry's innovative technology leader, realizing its customers' highest ambitions in glass. To remain at the forefront of the development of glass processing products and services, Glaston invests significantly in the continuous development of its core business technology portfolio and its research and development activities. As the latest result of this work, Glaston introduced a new cup wheel technology for edge grinding of architectural glass in autumn 2020. Demand for edge-ground glass is driven particularly by stricter safety regulations and quality requirements.

Scope of the report

This corporate responsibility report describes Glaston Group's operations in 2020. The content of the report and the themes covered are based on a materiality analysis conducted in autumn 2019. The report covers the entire Group.

Key figures 2020

Net sales per region



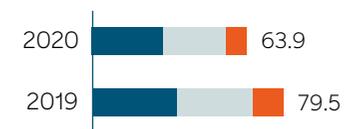
Net sales per product area



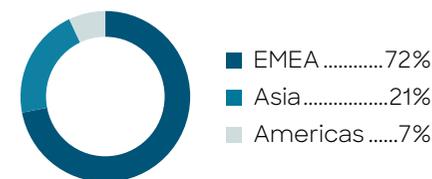
Comparable EBITA, EUR million



Order book, EUR million



Personnel per region at end of year, %



- Automotive & Emerging Technologies
- Insulating Glass Technologies
- Heat Treatment Technologies

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, versatility and intelligence have increased.

Urbanization

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.

Energy-efficiency and environmental awareness

The use of glass in buildings has increased significantly; well-designed use of glass 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, smart insulating glass units 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. In addition, various smart glass applications that improve energy performance, for example, are being developed for buildings. Utilization of solar energy in buildings is also on the increase, resulting in growing demand for the glass needed in solar cells.

Safety

Greater attention is also 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 tem-

pered 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.

Trends in the automotive industry

In the automotive industry, requirements for the properties of glass are constantly increasing. In vehicles, the relative proportion of glass is on the rise, and large, panoramic windshields, in particular, are making their way on to the market. Head-up windshield displays and interactive windshields present new opportunities for glass processing. As the proportion of glass grows, however, there is a trend towards minimizing the weight of glass, with the thinness of glass playing a key role. In general, the size, coating and bendability requirements for glass are increasing and the need for highly processed glass is growing.

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

Glaston's responsibility and its management

In 2019, Glaston reviewed the most material aspects of its responsibility in collaboration with the company's main external stakeholders and its own personnel. Based on this, the key aspects of responsibility were identified, with the most material themes being:

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

Responsible own activities



Human resources

- Health & safety and risk prevention
- Competencies and skills, development and trainings
- Equality, anti-discrimination, anti-harassment
- Anti-corruption and fair competition practices
- Responsible sales



Environment

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



Responsible business

- Financial responsibility ensuring competitiveness and profitability

Responsible partner



Customer

- User experience and customer satisfaction



Products & Services

- Machine quality, reliability and longevity, life-cycle management
- Machine safety and advising customers in operating the machines
- Data safety and security
- Energy / material efficiency and sustainability of the machines and products
- End-product quality, safety and recyclability

Responsible sourcing



Suppliers

- Supplier requirements, assessments and audit
- Human rights and work place safety within the supply chain
- Anti-corruption in supply chain and sourcing

Responsible member of the 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

Corporate responsibility management

At the end of 2019, the company's Executive Management Group approved Glaston's corporate responsibility agenda, which is built on the key themes. In addition, the most important indicators of responsibility were identified.

Due to the coronavirus pandemic, the development of Group-wide corporate responsibility work has been partially delayed. Some of the responsibility agenda themes as well as data collection are still at the development stage, and the aim is for them to be reported more comprehensively in subsequent reports. In 2021, the development of corporate responsibility work will continue with the implementation of the responsibility agenda and the development of goal setting.

An additional objective is to set up a corporate responsibility task force comprising experts from various functions to promote Glaston's responsibility agenda within their own organizations. In addition, company-wide uniform processes and tools will be created for corporate responsibility work.

Glaston is committed to doing business in a responsible and sustainable way. Glaston's day-to-day activities are guided by the Code of Conduct, which was updated and approved during 2020.

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, disclosure, information security and risk management policies. Group-level guidelines are complemented by local occupational health and safety policies. Occupational safety is managed and developed in the company's various units in accordance with local legislation.

Glaston continually develops the quality, reliability and energy-efficiency of its products. At Glaston's assembly and production units, the company operates in accordance with the ISO 9001 quality management system. In Finland, Glaston manages environmental issues in accordance with the ISO 14001 environmental management system.

Corporate responsibility and its management are the responsibility of Glaston's President & CEO and Executive Management Group, and they report on this to the Board of Directors (information on the members of the Board of Directors and the Executive Management Group can be found on Glaston's website www.glaston.net/governance/).

Responsibility-related measures and communications are coordinated by Glaston's Communications and Marketing Unit.

Key responsibility objectives

Topic	Indicator	Objective	Outcome	Timetable
Responsible business	Training of personnel in the Code of Conduct	Training coverage 100%	Training will begin in early 2021 and will become part of the induction of new employees	Continuous
Safe workplace	Number of accidents	No accidents	14 accidents at work, 1 on a business trip	Continuous
	Reports of workplace harassment	No reports	No reports made in 2020	Continuous
Impacts on the environment	Energy consumption in production units	Decreasing energy consumption, %	Baseline determined in 2020	Setting of savings target for 2021
	Energy efficiency of glass processing machines	Loading rate and productivity, +10%	Continuous product development	by 2030
Responsible sourcing	Responsible sourcing training	Training coverage 100%	Supplier Code of Conduct was published in 2020	Continuous
Responsible partner	Industry's best customer experience			Setting of objective in 2021

Code of Conduct updated

Glaston's Code of Conduct was updated in 2020. The updated Code of Conduct provides all Glaston personnel with further guidelines on acting ethically and responsibly in the workplace, in interaction with various partners, customers and suppliers and 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.

Training in the updated Code of Conduct will be arranged for all personnel in early 2021. The objective of the training is not only to familiarize Glaston's personnel with the updated guidelines, but also to support and strengthen Glaston's common ethical approach and to identify and address any problem areas. Training in ethical principles will also continue to be an integral part of the induction of new employees, and the goal is that all Glaston personnel will attend such training every two years. The Code of Conduct is published in Finnish, English, German, Chinese and Russian so that as many employees as possible can read it in their own language.

During the year, Glaston also pub-

lished a separate code of conduct for its suppliers (Glaston Supplier Code of Conduct), which will be part of the company's purchase agreements in the future. Training in the Supplier Code of Conduct will be provided to Glaston personnel whose duties involve supplier relations. The Glaston Supplier Code of Conduct is published in Finnish, English, German and Chinese.

In its everyday activities, Glaston is committed to combating bribery and corruption. In late 2020, Glaston's Board of Directors approved the Group's anti-bribery and anti-corruption policy. The purpose of this written policy is to increase Glaston employees' awareness of the risk of corrupt payments, to unequivocally prohibit the payment or receiving of bribes, and to ensure that the company conducts business honestly, in accordance with ethical standards and in compliance with anti-corruption laws, rules and regulations.



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 responsibility theme	UN Sustainable Development Goals	Implementation in Glaston
Responsible operations	 Goal 3: Ensure healthy lives and promote well-being for all at all ages  Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<ul style="list-style-type: none"> occupational health care in all operating countries according to local needs and requirements minimizing health risks: e.g. in Finland enhanced health checks for the over 50-year-olds, hobby sessions and exercise benefits, strict safety guidelines and remote-work recommendation in order to prevent spread of corona virus eSkills online learning system for all personnel summer work, diploma work and trainee positions for young people
Responsible member of society	 Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all  Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	<ul style="list-style-type: none"> reducing the harmful environmental impact of cities with new glass technology, such as smart glass providing engineering and consulting services for the production of smart glass and energy glass windows and solar energy applications GlastonAir™ air flotation technology for glass tempering meets the needs of solar panels and solar cells enabling the introduction of resource-efficient, clean and environmentally friendly technologies and processes participating in the development of society by paying taxes, wages and dividends
Responsible partner	 Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation  Goal 12: Ensure sustainable consumption and production patterns  Goal 17: Revitalize the global partnership for sustainable development	<ul style="list-style-type: none"> efficient use of energy and materials and minimizing waste and material waste ISO 9001 quality management system and ISO 14001 environmental management system glass processing machine energy-efficiency at heart of product development, long life cycle, high utilization rate and real-time quality control iLook proactive and regular maintenance by utilizing cloud services and opportunities offered by IOT Ahlström Collective Impact collaboration with UNICEF

NET IMPACT CALCULATED

Largest impacts under examination

In order to better understand the effects caused and induced by Glaston's business on the environment, people and society, we studied the company's net impacts in collaboration with the Finnish Upright Project.

Net impacts are a matter of measuring the most significant positive and negative effects of a company's core business and linking them together: what resources the company uses and what it achieves with them. The essential aspect of the study is the net sum of impacts, i.e. how much value the company creates relative to the costs and drawbacks it causes.

The model developed by the Upright Project is based on artificial intelligence modeling that utilizes machine learning, in which information from millions of scientific articles is combined into a commensurate calculation of the company's operations, products and services.

The results show that Glaston's main impact is its positive social

impact through jobs and the payment of taxes. In addition, the company's excellence in glass processing technologies also facilitates socially beneficial product development. In the study, the value chain for the whole glass processing chain was evaluated and environmental impact arise particularly due to waste glass. On the other hand, Glaston has a positive impact on reducing greenhouse gas emissions through the customers manufacturing their insulated glass with Glaston's technology. Laminated glass processed with Glaston's technology is also safe for users, as it does not cause injury in the event of breakage.

Impact	Negative	Score	Positive
Environment	-0.9	-0.3	+0.5
Health	-0.4	-0.2	+0.2
Society	-0.4	+2.5	+2.5
Knowledge	-1.0	-0.5	+0.5

Net score **+1.5**

Nasdaq Helsinki net score **+1.5**

Responsible own activities

Expert and healthy personnel – the foundation for success

Responsible employer

Professional, committed and healthy personnel are the foundation of Glaston's success. Glaston is committed to continuously evolving the skills of its personnel and providing its personnel with an inspiring work environment where they have the opportunity to learn and develop. In accordance with our operating principles, we respect and promote the equality and diversity of personnel. All Glaston employees are treated fairly and equally, and all forms of harassment and discrimination are strictly prohibited.

In 2020, the number of Glaston personnel declined by 8%, and there were 723 (790) Glaston employees at the end of the year. The reduction in the number of employees was due to, among other things, the restructuring of operations in China, the redundancies following the cooperation procedure undertaken at the end of 2019, and the elimination of overlapping operations following the acquisition of Bystronic glass.

In order to adjust to the lower demand due to the coronavirus pandemic, Glaston

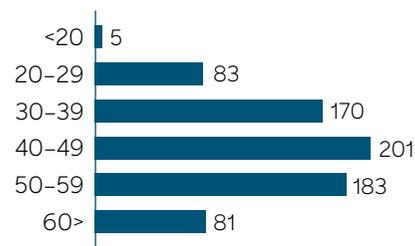
implemented temporary lay-offs of personnel in Finland, Switzerland, the USA and the UK. In Switzerland, the reduced working hours introduced in 2019 were continued in the autumn, and measures were taken in other units according to the level of demand.

Due to the continuing low market activity in South America, Glaston initiated a scale-down of the operations of its subsidiary in Brazil at the end of 2020. Operations ceased on 1 February 2021. The operations in Brazil employed 9 people.

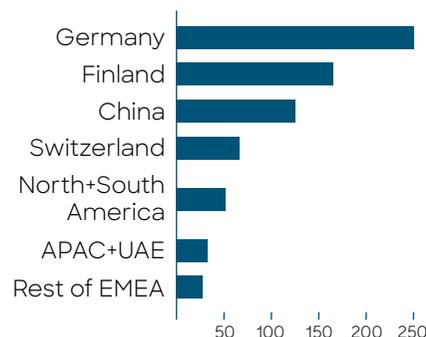
At the end of 2020, Glaston had operations in 10 countries, of which the three largest, by employee numbers, were Germany, Finland and China. Employee turnover is at normal levels (in Germany 10%, Finland 8% and Switzerland 9%) and most employment relationships are permanent. The average age of personnel is 44 years.

Of Glaston's personnel, 83% are men and 17% are women. Women account for 15% of supervisory staff. At the end of 2020, there were seven men and one woman on Glaston's Board of Directors, and two of the members of the company's Executive Management Group were women.

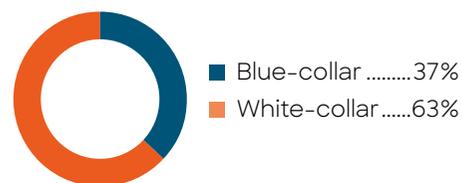
Employee age distribution



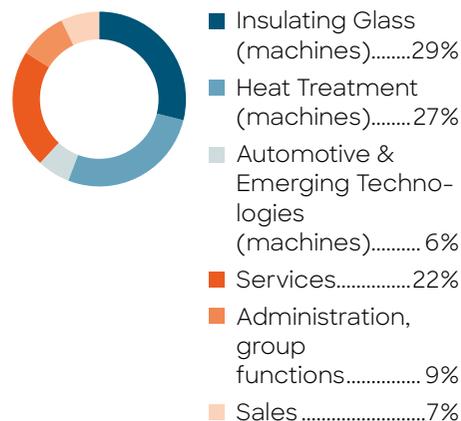
Employees by country or region (FTE)



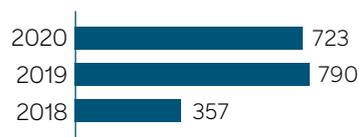
Employees by type of employment



Personnel per function



Employees at end of year



Safeguarding employee safety and wellbeing

In spring 2020, as the coronavirus pandemic spread, Glaston initiated immediate measures to safeguard the health and safety of personnel as well

as the continuity of operations. The safety of those working in production was ensured by, for example, prohibiting visits to production facilities. All of Glaston's installation supervisors were rapidly recalled from work sites.

Due to preventive measures introduced at an early stage, such as a recommendation to work remotely and strict safety guidelines, we were able to maintain all production operations throughout the year, and there have been very few cases of coronavirus infection among personnel.

During the pandemic, Glaston's goal has been for machine installations to be handled as far as possible in compliance with the instructions of the authorities of the country of origin and destination, and taking into account the local infection situation and safety. In addition to face masks and other protective equipment, installation areas have been isolated as necessary, and care taken to keep contacts to a minimum.

Operational and safety instructions for personnel were revised during the year according to the prevailing situation and recommendations.

In the exceptional circumstances, we continue to attend to the health, working capacity and safety of our personnel in many ways, and we actively monitor occupational safety. Our target is zero accidents at work. We did not achieve this target; in 2020 there were a total of 14 accidents at work and one on a business trip. The most typical accidents are hand inju-

ries, such as cuts and various sprains.

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

Occupational safety training is regularly arranged in all of Glaston's assembly and production units. In Germany, supervisors also organize annual safety exercises for their teams.

We support the wellbeing of our employees and encourage them to exercise. In Finland, Glaston offers joint activity opportunities and exercise benefits. In Germany, personnel have the option of using a company bicycle. With the shift to remote working, we sought to ensure our employees' coping in work and physical condition. To promote this, a break-time exercise app was introduced to remind personnel to move and stretch also in the middle of the working day.

Towards a common corporate culture

With the major acquisition of Bystronic glass, Glaston's employee numbers more than doubled in 2019. Work to find a common operating approach began immediately, activities such as sales and service points were merged, and the basis for a common digital product platform was created.

In 2020, work continued through the One Glaston program. The launch of the program was postponed to the end of the year due to coronavirus.

Creating a common corporate culture and identity requires long-term work. Glaston's values were renewed after the acquisition, and during 2020 the company held internal discussions on common values and their significance for employees' own work. The views of personnel were examined in the One Glaston Survey, conducted in November. Work to identify and develop common operating practices will also continue in 2021. Working as a united team and organization with clear goals and priorities will increasingly benefit the company and the customers in the future.

Continuous skills development

In Glaston, personnel training is mainly organized internally and according to local needs. 2020 saw the continua-

tion of sales training. Another area of focus was training of supervisors in Finland, Germany and Switzerland. In addition, product and safety training was provided to sales, service and production personnel.

Thanks to Glaston's internal eSkills online learning platform, training is flexibly available online, and all of our personnel can develop their skills independently. The eSkills platform provides training related to products, processes and operating practices, and Code of Conduct training is also available with the platform.

Each year, performance appraisals are conducted within Glaston and all employees are covered by the appraisal process. In the performance appraisals, targets are jointly agreed for the coming year and an evaluation is made of performance during the previous year and of the achievement of targets set for the previous year. Particular attention is paid to the planning of each person's own skills development.

Rewarding good work

As a rule, all of Glaston's personnel are covered by an annual bonus scheme and, in addition, the reward scheme also includes the Glaston Way awards. The annual bonus is based on Glas-

Working as a unified team and organization with clear goals and priorities will increasingly benefit the company and the customers.

ton's financial performance, and the Glaston Way monetary awards are based on good work performance supporting the achievement of strategic goals in line with the company's values. Since 2014, the company has had a share-based incentive scheme for the Group's key personnel. The scheme is linked to the company's financial performance.

Anti-corruption policy and responsible sales

Glaston has its own operating locations in 10 countries, and from these we serve our customers in over 100 countries. The company's own operations are complemented by a global agent network. Glaston recognizes that there is a potential risk of corruption and fraud in the company's fields and countries of operation.

In its everyday activities, Glaston is committed to combating bribery and corruption. Responsible sales and anti-corruption work are important

issues for Glaston, and the company ensures that the principles described in the Code of Conduct are implemented in practice.

Glaston's activities are guided by our Code of Conduct, which specifies how the company conducts its business ethically and responsibly. In late 2020, Glaston's Board of Directors approved the Group's anti-bribery and anti-corruption policy. The purpose of the policy is to increase Glaston employees' awareness of the risk of corruption and conflicts of interest, to unequivocally prohibit the payment of bribes, and to ensure that the company conducts business honestly, in accordance with our Code of Conduct and in compliance with anti-corruption laws, rules and regulations.

Training will be provided in the content of the new anti-bribery and anti-corruption policy to those whose working tasks are closely related to the issue. Training will begin during 2021.

Sustainable development as an opportunity

Promoting sustainable development has become a global norm, and discussions on measures to combat climate change are also under way in the glass industry. Glaston views the promotion of sustainable development as a business opportunity and, as a frontrunner in its field, the company is involved in creating corporate responsibility standards and practices for the industry.

Glaston's largest customer segment is the architectural and construction industry. New energy standards, stricter legislation and international programs such as the EU's Green Deal and campaigns such as Renovate Europe, for example, are supporting the development of environmentally aware and energy-efficient solutions.

Energy efficiency of buildings has a key role

The energy efficiency of buildings has a key role in combating climate change. In the EU, for example, buildings account for 40%* of total energy consumption, and 36% of carbon dioxide emissions. The greatest potential for reducing energy consumption lies

in the renovation of existing buildings.

The goal of the Renovation Wave Strategy, published by the European Commission in October 2020, is to at least double the number of renovations over the next decade and to ensure that they lead to better energy and resource efficiency.

According to the Commission, 35 million buildings could be renovated by 2030. The project will be a significant driver of growth for Glaston's business, as double and triple insulating glass and coated low-emissivity glass produced with Glaston's technology are key solutions for improving the energy efficiency of windows.

If, for example, windows of buildings in the EU were replaced by energy-efficient window units by 2030, the energy consumption and carbon dioxide emissions of buildings would be approximately 30% lower than today**.

The glass processing industry has actively developed types of glass that can be used effectively to optimize the need for heating and cooling in buildings and thereby reduce energy consumption. Of these, energy-saving glass causes heat radiation to be largely reflected back indoors, while solar protection glass reduces the transmission of solar energy and thus reduces the need for cooling. In

addition, double or triple insulating glass units further improve the energy efficiency of windows. Large glass surfaces also facilitate the utilization of daylight in buildings, reducing the need for artificial lighting.

As environmental awareness grows, demand for solar energy and smart glass is growing. In addition to solar panels and cells, new applications of the future may include solar panels integrated into façades or windows to provide energy for buildings. In smart glass applications, windows that react to fluctuations in light or temperature, for example, improve the energy performance of buildings. Glaston is participating strongly in this development, providing engineering and consulting services for the production of smart glass and energy glass windows as well as for solar energy applications.

Impact on the environment

Glaston continuously strives to reduce the environmental impacts arising from its activities, use of machines on customers' premises, and its end products. Glaston's most significant environmental impacts in its own activities come mainly from energy consumption, waste and transportation. In the use of machines, the main environmental aspect is the energy

consumption of the machines.

Glaston continually develops the quality, reliability and energy-efficiency of its products. At Glaston's assembly and production units, the company operates in accordance with the ISO 9001 quality management system. In Finland, Glaston manages environmental issues in accordance with the ISO 14001 environmental management system.

On its premises, Glaston conducts regular energy audits, and is constantly improving the energy-efficiency of its properties. The measures undertaken are also assessed from an environmental impact perspective. For example, oil consumption and resultant emissions were significantly reduced when heat pumps were installed, replacing oil as a heating source. In addition, the energy use in production facilities is being made more efficient by renewing and replacing lighting with LEDs. In Germany, the compressed air system is inspected annually for possible leaks, thereby preventing unnecessary carbon dioxide emissions. In Switzerland, the company only uses electricity produced from renewable energy.

During 2020, we studied and calculated for the first time Group-wide energy consumption and greenhouse gas emissions (Scope 1 and 2). Of the Group's greenhouse gas emissions, over 80% arise in Finland, Germany and China.

* source: Renovate Europe ** source: Glass for Europe

Energy consumption (MWh)

	2019	2020
Fuel oil, diesel and natural gas	3,460	3,179
Purchased electricity and heat	7,891	7,949
Total	11,352	11,127

Green gas emissions (tCO₂)

	2019	2020
Scope 1 (Fuel oil, diesel and natural gas)	732	678
Scope 2 (Purchased electricity, heat and cooling) *	2,098	2,099
Total	2,830	2,777

* Energy consumption estimated for Russia and Helsinki, Finland

In its waste management, Glaston's goal is to keep environmental loading as low as possible, which in turn correlates positively with waste costs. A conscious effort is made to prevent the generation of waste, and sorting and recycling of generated waste is arranged taking into account the activities of each operating location and local recycling opportunities. The goal is to minimize the amount of waste in general, and particularly the amount that ends up other than in final disposal.

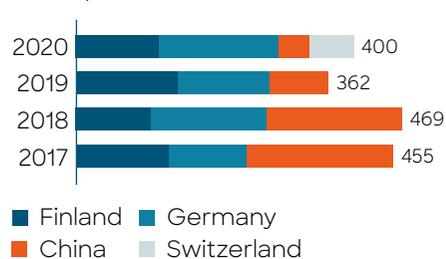
Glaston's operations give rise to a lot of packaging materials, and they are sorted and either recycled or used as energy waste. In Germany, packaging materials are recovered and

suppliers make every effort to reuse them. In China, recyclable material is sold to an external recycling company.

Waste disposal method 2020



Waste, tons



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.

Glaston's glass processing machines have fairly long operating lives. The machines are designed to withstand constant use at high utilization rates. Glaston pays special attention to the quality and durability of the materials used in its machines. Glaston's production and assembly processes and installation methods are designed to promote product quality and reliability as well as the safety of installers and customers.

Energy-efficient technology

In Glaston's operations, the most significant environmental impacts arise when customers use the machines they purchase from Glaston. The operating life of Glaston's tempering machines is fairly long, up to 20 years or more. A significant proportion of the operating costs of the machines arises from energy consumption. Glaston's product development has therefore long focused on improving the energy-efficiency of the machines. As a result of this work, we have managed to substantially reduce the energy consumption of the most

significant products in our tempering machine portfolio. For example, in the tempering process of low-emissivity glass, energy consumption has been reduced by around 30% over the last decade.

Electricity consumption in the manufacturing of glass pre-processing machines and insulating glass units is low and, as a result of product development, consumption has been reduced even further. Development has focused on, for example, conveyor control and optimization of washing machine ventilation.

In product development, Glaston utilizes new technology and the opportunities created by digitalization. With the aid of 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.

Significant energy-saving potential

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

Energy is the biggest cost item in the lifetime of buildings, and heat generation and loss through windows accounts for 25–30% of the energy used for heating and cooling buildings. New energy standards and stricter legislation are driving demand for more energy-efficient and environmentally conscious solutions in both new and renovation construction.

The energy-saving potential is enormous, because in the EU area up to 86% of buildings' glass surfaces consist of outdated and less energy-efficient single or double glazing. The glass processing industry has actively developed types of glass that can be used to optimize the need for heating and cooling in buildings and thereby reduce energy consumption.

Solar energy is growing in popularity, and strict quality requirements, for example in relation to glass thickness and curved surfaces, are being set for the glass used in solar panels and cells. In smart glass applications, windows that react to fluctuations in light or temperature, for example, improve the energy performance of buildings. Glaston provides consulting and engineering services for the production of smart glass and energy glass windows.



Responsible business

Glaston's financial responsibility is centered on maintaining the company's profitability and competitiveness, and its key objective is to ensure profitable growth.

Financial responsibility is reflected in Glaston's responsible, long-term and sound financial management. In addition, responsibility from a financial perspective means that the Group's operational and financial risks are

recognized and managed so that business targets are achieved and continuity of the company's operations is safeguarded. Glaston applies a risk management policy approved by the company's Board of Directors.

Glaston is committed to complying with local tax laws and regulations as well as the OECD Transfer Pricing Guidelines. Glaston is committed to paying direct and indirect taxes and other tax-like charges based on current laws and to report and disclose

its tax information in accordance with applicable legislation.

Generating economic value added

Sustainable value creation requires motivated employees, competitive products and solutions, and satisfied customers.

Through profitable operations, Glaston ensures that the company is able to fulfill its obligations towards its key stakeholders. Personnel salaries, payment of goods and service

providers, social taxes, and potential dividends and returns of capital for shareholders are our most important obligations, as are the means to create economic value added.

Glaston strives to ensure high quality management of its tax affairs in all countries of operation and to maintain accounting systems and controls that support tax compliance. The company operates transparently, professionally and appropriately with all tax authorities.

In 2020, Glaston Group's net sales totaled EUR 170.1 (pro forma 204,6) million, of which service operations accounted for 34%. Comparable EBITA was EUR 7.7 million. In financial year 2020, Glaston paid interest and financial expenses totaling EUR 2.3 million.

Glaston paid EUR 0.9 million in income taxes in 2020. Salaries and bonuses paid to personnel totaled EUR 44.9 million and pension expenses EUR 3.2 million. Glaston had an average of 744 employees in 2020. Glaston's investments in tangible and intangible assets totaled EUR 3.4 million.

Distribution of economic impact

MEUR		2020	2019	2018	2017
Customers	Profits	170.1	181.0	101.1	109.7
Suppliers	Purchases, materials and services	94.8	130.9	68.8	67.6
Employees	Salaries, bonuses and other social costs	53.6	51.4	23.4	24.4
Financiers	Financial costs	2.0	2.7	0.7	0.8
Owners	Dividend/Return of capital*	1.7	-	1.2	1.9
Public sector	Taxes	1.4	0.9	0.2	0.2
Community investments	Benefications	0.0	0.0	0.0	0.0
Investments to the development of business	R&D	5.8	6.4	4.1	3.8

*Board of Directors' proposal to Annual General Meeting

MEUR	Purchases				R&D				Salaries				Taxes			
	2020	2019	2018	2017	2020	2019	2018	2017	2020	2019	2018	2017	2020	2019	2018	2017
Finland	32.9	47.8	47.3	47.6	3.3	4.3	4.0	3.6	13.0	14.9	13.1	12.8	0.0	0.0	0.0	0.2
Other EMEA	45.5	50.3	4.0	2.9	2.1	2.0	0.1	0.1	30.1	23.7	3.2	3.5	0.6	0.5	0.2	0.1
Americas	7.0	20.2	9.3	9.3	0.2	0.0	-0.2	-0.2	5.7	6.5	3.8	4.7	0.8	0.4	0.0	0.0
Asia	9.4	12.7	8.2	7.7	0.2	0.2	0.2	0.3	4.8	6.3	3.2	3.4	0.0	0.1	-0.1	0.0

Responsible sourcing



Fair and honest business

Responsible sourcing

Suppliers of goods and services play an important role in Glaston's value chain. Most of Glaston's approximately 2,700 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 the factory in Germany manufacture machines.

Of Glaston's purchases, approximately 75% come from the EMEA area, just under 20% from Asia and approximately 5% from the Americas. The most significant materials purchased for machine manufacturing include steel structures, electrical and automation components, power centers and process blowers.

Glaston is committed to responsible procurement practices. In accordance with its Code of Conduct, Glaston acts fairly towards its suppliers, service providers and subcontractors, and respects human rights in all of its activities.

During 2020, Glaston published a separate code of conduct for its suppliers (Glaston

Supplier Code of Conduct), a commitment to which will be part of the company's purchase agreements. The Glaston Supplier Code of Conduct is published in Finnish, English, German and Chinese so that as many suppliers as possible can read it in their own language

Glaston selects its suppliers carefully; the selection criteria are quality, reliability, security of supply and price. Glaston seeks close, long-term and good relationships with its most important suppliers. In this way, Glaston ensures that its partners understand and comply with our requirements, in relation to both processes and products.

In Europe, Glaston accepts as its suppliers only companies that have not violated the law and are not subject to sanctions of any kind. Glaston's quality and purchasing organizations audit the most significant suppliers regularly in order to monitor the safety and quality of supplied parts and products. In 2020, 54 suppliers were audited. All new suppliers go through an audit process before being approved. In addition, visits are made to suppliers, if necessary. Due to the coronavirus situation, physical audits could not be carried out as planned.

Fair business

In its Code of Conduct, Glaston undertakes to promote fair competition and to comply with the law in all of its activities. Furthermore, in its everyday activities, Glaston is committed to combating bribery and corruption.

The Group's anti-bribery and anti-corruption policy unequivocally prohibits the payment and receipt of bribes. The policy aims to ensure that the company's business is conducted honestly, in accordance with ethical standards and 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.

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

Purchases by supplier operating country

EUR million	2020	2019	2018	2017
Finland	33.2	49.8	42.1	44.7
Germany	26.7	37.7	3.2	0.8
Switzerland	8.5	13.3	0.1	0.0
United States	8.3	4.3	7.5	6.0
Italy	5.6	4.3	3.3	3.6
China	3.4	4.4	4.2	3.5
Others	9.0	17.2	8.5	9.0
Total	94.8	130.9	68.8	67.6

Active suppliers by operating country

	2020	2019	2018	2017
Finland	644	784	772	792
Germany	838	914	33	21
Switzerland	456	254	2	2
United States	325	181	200	225
China	246	264	112	138
Italy	22	62	211	222
Others	170	194	159	155
Total	2,701	2,653	1,489	1,555

Responsible
partner

Market's best customer experience

Together with the customer

Glaston wants to be the most customer-oriented, reliable and high-quality player in the industry, and succeeding together with its customers is at the heart of its strategy and values. By creating more customer-oriented operating practices, the company adds customer value and continually improves the customer experience. As the operating environment changes, customers' requirements for production technologies also increase.

Higher quality and more versatile features are continually required from customers' end products. Glass 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. As a glass industry frontrunner, Glaston develops technologies and solutions that meet these changing customer needs, and product development is often done in partnership with customers.

Customer support throughout the life cycle

Glass processing machines are long-term investments for their owners as, depending on the machine, they have fairly long operating lives, up to 20 years or more. The

machines are designed to withstand constant use at high utilization rates.

Glaston pays special attention to the quality and durability of the materials used in its machines. Glaston's production and assembly processes and installation methods are designed to promote product quality and reliability as well as the safety of installers and customers.

Safety in the use of Glaston machines delivered to Europe is based on the EU Machinery Directive and the EN standards mentioned therein. 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 using the machine, and measures to reduce risks as well as information on any residual risk, which must be mentioned in operating instructions and in which the user must be trained. Once the machine has been installed, tested, users have been trained, and it is in all respects ready for production, a CE plate is affixed to the machine. All Glaston machines manufactured in Europe comply with the EU Directive.

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 a total of approximately 4,500 installed and operating machine lines, some of which are up to 40 years old or more. Glaston has over 100 different upgrade products for different models of machine. Modernizing machines with new technology, such as a new control system, a new tempering chamber or the ability to process low-emissivity glass, extends the life of the machines and reduces energy consumption in the glass processing process.

Digital services

Preventive maintenance extends the useful life of machines, while planned service intervals ensure production quality and efficiency. The MyGlaston customer portal contains all information between Glaston and the customer, such as machine service reports, technical manuals and operating instructions, and links to the Glaston Insight cloud service. Connecting machines to the cloud service enables the customer to monitor and report on production in real time, provides customer support in the event of disruptions with no delays or travel that burdens the environment, and facilitates the rollout of new machine vision-based services.

At the end of 2020, more than 180 tempering machines had been connected to the Glaston Insight service and more than four million glass processing loads had been registered. The first laminating machines were also connected to the Insight ecosystem, and test connections for insulating glass lines have been made to the cloud service.

As a result of increased cloud services and, moreover, data breaches, the importance of information security and protection in society has grown significantly. Glaston pays special attention to managing information security risks, with regard to both the company's own and its customers' data. Information security practices and responsibilities are guided by Glaston's information security policy, and information security is regularly monitored and audited. Glaston's partners and subcontractors are also required to adhere to the company's information security guidelines.

Developer of demanding products

Glaston is a frontrunner in its field, and known in the glass industry for its technology leadership and high quality. The company's position is particularly strong in developing 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. Due to the coronavirus pandemic, several product development projects had to be postponed. On the other hand, the pandemic has further underlined the importance of digital and remote services.

In 2020, Glaston continued its investments in product development and emerging glass technologies. At the forefront of product development are new digital and IoT-based products that facilitate the transition to fully automated glass processing. The latest result of this work is the cup wheel technology for the edge grinding of architectural glass, which was presented at the virtual glasstec fair in mid-October.

Glaston participated in the industrial machine-learning project MIDAS, which developed and introduced a number of artificial intelligence applications to improve the quality and control of the tempering process. Data collected in the Glaston Insight service from close to 200 tempering machines creates the basis for artificial intelligence development. For this platform, Glaston is developing new

technologies such as deep-learning neural networks to increase the automation of the tempering process and to create preventive maintenance functionalities.

By utilizing cloud services and the opportunities provided by IoT, Glaston helps its customers use their machines as efficiently as possible. As a by-product of efficiency and reliability, optimized energy consumption is also achieved.

Smart glass

Solar energy is growing in popularity, and the glass used in solar cells and panels is subject to exacting quality requirements, for example with respect to glass thickness and curved surfaces. Glaston has taken this into account in its product development, and the GlastonAir™ tempering machine developed by Glaston responds well to this need.

Emerging glass technologies and glass products providing added value, such as smart glass, are also increasingly entering the market, and the energy-saving potential of smart glass products, for example, is boosting demand for them. Glaston provides engineering and consulting services for the production of smart glass and energy glass windows as well as for solar energy applications.

Responsible corporate citizen

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.

Glaston is actively participating in international glass industry organizations:

- 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

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 ISO's (International Organization for Standardization) working groups preparing safety glass (tempered and laminated glass) standards. Via these, the company's representatives can influence the creation of industry standards and communicate through their 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 an apprenticeship program.

Glaston conducts development and engineering projects in emerging glass technologies. Companies operating in this area are typically frontrunners in their field, which means that requirements for new glass technology and its development and application in practice are very high. Through its technological expertise and extensive contact network, Glaston has achieved the status of a reliable partner for companies developing and commercializing smart glass inventions.

The GPD expert conference, organized by Glaston at two-yearly intervals, brings together all of the various stakeholders in the glass processing chain, and it is the glass industry's most prestigious event. The conference aims to gather together and disseminate the latest information among sector actors and to promote the development of new areas of application and technological features. The conference has been organized since 1992 and over the years it has attracted more than 15,000 glass industry professionals.

AHLSTRÖM COLLECTIVE IMPACT

Together we build the future

Launched in August 2020, Glaston has joined Ahlström Collective Impact (ACI), a joint responsibility initiative designed for strategic investments that support the realization of selected UN sustainable development goals. In addition to Glaston, the initiative includes Ahlstrom-Munksjö, Ahlström Capital, Antti Ahlström Perilliset, the Eva Ahlström Foundation and Destia.

ACI is a new collaboration model between the partner companies and UNICEF Finland enabling the Ahlström Network companies to join forces to achieve significant changes in global society and improve the lives of the children worldwide.

The purpose of the joint initiative is to facilitate investments that support the realization of the United Nations' Sustainable Development Goals (SDGs). In 2020, Ahlström Collective Impact focused on supporting via UNICEF the provision of COVID-19 crisis aid to children. The coronavirus pandemic will have both short- and long-term impacts on the health, well-being and development of children.

For Glaston, the ACI initiative and collaboration is an innovative way to contribute to a better tomorrow for future generations. By joining forces with the Ahlström Network companies we can really make a difference. It was also important to involve our personnel in the work. In line with our values, Together we build the future.



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