



**STULZ**

CLIMATE. CUSTOMIZED.



# SUSTAINABILITY REPORT 2022

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# We are STULZ

Founded in **1947**, today **STULZ is a leading company in the field of air conditioning.**

## Our core competencies

- Development, production, installation, start-up, servicing and maintenance of precision air conditioning units, chillers, air handling systems and micro data centers, plus direct liquid-to-chip cooling for IT, data centers, medical technology, telecommunications systems and industry
- Sale and maintenance of comfort air conditioning systems and humidifiers, including water treatment for humidifying systems

## 11 production sites worldwide

For example: Germany, the U.S., China, Brazil, Spain, Italy, India and the UK

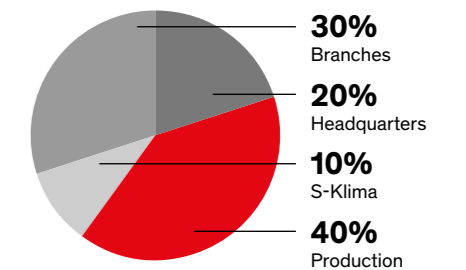
To achieve this, we work with an exclusive sales and service network in more than **140 countries.**

## Workers

approx. **8,000** STULZ Group worldwide

Comprising: approx. **3,500** STULZ Air Technology worldwide

Comprising: **857** STULZ Klimatechnik Deutschland (STULZ GmbH)  
Comprising:



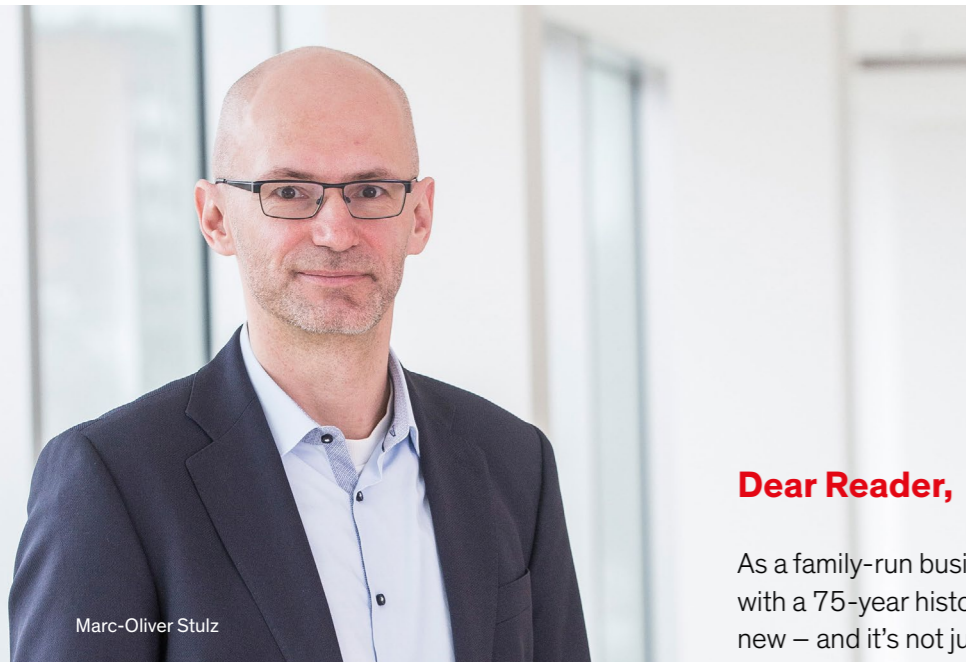
## Sales volume

approx. **1,500 million €** STULZ Group worldwide

Comprising: approx. **700 million €** STULZ Air Technology worldwide

Comprising: approx. **273 million €** STULZ Klimatechnik Deutschland (STULZ GmbH)

# Letter from the Management



Marc-Oliver Stulz

**Dear Reader,**

As a family-run business for air conditioning technology with a 75-year history, for us sustainability is nothing new – and it's not just a trendy topic. For a long time our products have been making an effective contribution to major objectives such as economic development, digitalization and decarbonization.

But for us, too, it's time to take an honest look at our situation: how do we fare if we examine sustainability in all its aspects? Do we satisfy the requirements for reporting, transparency in our supply chain, and proof of our products' energy efficiency? How can we prepare our global organization – under the motto **“ONE STULZ. ONE SOURCE.”** – for the tasks to come? Our customers, suppliers and other stakeholders also want more transparency regarding these aspects.

This, our first report, covers STULZ GmbH and its air conditioning business in Germany. In future, we will extend our reporting to cover all other production sites and also the entire Group. We shed light on our activities and challenges based on existing examples and concrete figures. We do this using four fields of action that we have defined as key priorities:



- **“Sustainable Products”** describes how our portfolio addresses different aspects of sustainability. Keywords are energy efficiency, heat pumps, and our handling of refrigerants, for example.
- **“Resource Efficient Production”** talks about how we deal with energy, emissions, water and waste, for example, at the Hamburg site.
- **“Responsible Supply Chain”** sets out the basic ethics and compliance principles we have established and discusses the future of sustainability in our supply chains.
- **“Good Employer”** contains facts, figures and data documenting how we live up to our responsibilities for our workers.



We are convinced that with the above approach, we have laid solid foundations for actively shaping our impact on the economy, the environment and people. We have purposefully refrained from making any big promises in this report, and it's still early days for concrete objectives and many of the figures. We will therefore set out our contribution to sustainable development in more detail over the coming years. We are committed to this path and would be delighted if you continue to accompany us on this journey.

Kind regards,

**Jürgen Stulz**      **Marc-Oliver Stulz**

# About STULZ

## The complete range of air conditioning technology

For over 50 years, we have been supplying products, solutions and services for air conditioning – with our commitment to precision, efficiency and reliability. The STULZ portfolio extends from traditional room and high-density air conditioning to chillers and air handling systems all the way to humidifying systems and micro data centers. In addition, we are exclusive sales partners in Germany for air conditioning systems from Mitsubishi Heavy Industries. Comprehensive services and our own monitoring software further enhance our portfolio and help our customers to deploy made-to-measure air conditioning solutions in the best possible way for their needs.

STULZ is a pioneer for cooling solutions, mission-critical applications and data centers. By virtue of quality, efficiency and sustainability, the company delivers optimum solutions for every requirement in precision and comfort air conditioning. Leading enterprises in industry, telecoms, banks and retail rely on our product promise.

**With 23 subsidiaries, including 11 production sites and 12 sales companies on all continents, and a major partner network, STULZ has a presence in over 140 countries around the world. This Sustainability Report focuses on our air conditioning business in Germany (STULZ GmbH).**

### Progress based on tradition

STULZ has evolved from an innovative family-run business into a modern global player. Company founder Albert Stulz paved the way for our enterprise with his Electro AS GmbH Hamburg back in 1947. Just six years later, the company's own air conditioning unit was launched onto the market – a comfort air conditioning system that cooled and dehumidified the room.

The air conditioning system division has been consistently expanded since 1965. When the data center sector started to boom in the 1970s, STULZ was ready and waiting on the market with air conditioning solutions and direct liquid cooling for mainframes. In 1977, we introduced precision air conditioning units with a modular design – a groundbreaking innovation that further strengthened our international reputation as a specialist for efficient air conditioning. In the 1980s, units with Free Cooling were developed. These offer the greatest energy saving potential for data centers, especially in cold and moderate climate zones.

**Today, STULZ leads the world market with Direct and Indirect Free Cooling solutions.**



## Innovative products and solutions

STULZ stands for ultimate quality air conditioning. Thanks to our global network and all-embracing portfolio strategy, today we are in a position to satisfy all requirements in the field of precision air conditioning. And this is in perfect keeping with our slogan: **“ONE STULZ. ONE SOURCE”.**

Precision air conditioning is deployed in data centers, in particular, but also in laboratories, museums and medical technology. Our units are helping to bring about global digitalization. At the same time, it's more and more important for our customers to handle increasing data volumes with minimal environmental impact.

In order to remain competitive in a dynamic market, it's vital that STULZ develops new ideas and puts them into practice in future-oriented products and solutions. We consistently invest in research and development, so that we can produce state-of-the-art technologies and control systems that minimize our carbon footprint.

The energy efficiency of our units has always been a defining feature of our products, which we intend to develop further in the years to come. Topics such as the use of environment-friendly refrigerants, efficient waste heat recovery, the use of liquid cooling and alternative energy will become even more important in future. **Our objective is the data center of the future, in which technological progress and sustainability go hand in hand.**



Our **CyberAir** products are one of our flagships. These units are exceptionally flexible and boast highly efficient air conduction. When combined with Indirect Dynamic or Direct Free Cooling, they offer our customers significant energy-saving potential during their use.



As an exclusive sales partner for air conditioning systems from **Mitsubishi Heavy Industries** in Germany, we are in a position to offer products that ensure an optimum climate in small commercial buildings or households. Our multifunctional units (for cooling and heating) have excellent energy efficiency and therefore low energy consumption.

# Managing Sustainability

## In-company organization

Our advances in sustainability are the result of the joint efforts of many players. Workers from various departments were actively involved in compiling our first Sustainability Report. During this process, we organized our structures formally for the first time. The team was led by Environmental and Product Management working in tandem on behalf of the Executive Management. The team is made up of people from various departments, such as Marketing, Purchasing, HR, plus other colleagues, for example from S-Klima and the branches.

We have surveyed our activities and data in the company, recorded good practices and identified shortcomings. We have now laid the foundations for a structured approach to sustainability management. In the long term, we want to gradually incorporate sustainability throughout the organization and have defined the most important future tasks in order to achieve this.

In future, sustainability at STULZ will continue to be organized by our Sustainability Team. The proven structure defined in the Sustainability Report project, with representatives from various levels and departments, is to be retained. The Steering Committee, with members from Executive Management, Quality Management and Product Management, takes strategic decisions, acts as the link to Executive Management, and is responsible for communicating critical concerns and approving the Sustainability Report, for example. The project team, which comprises staff from Environmental and Product Management and various involved divisions, is in charge of implementation and recording internal and external requirements.

### Sustainability Team

#### ■ Steering Committee

Executive Management, Quality and Product Management

#### ■ Project Management

Environmental and Product Management

Further departments, such as Marketing, provide support for ideas and opportunities for implementation. Specialist responsibility for the various topics lies with the respective divisions (e.g., Design and Development, HR, Purchasing). The STULZ Executive Management has central responsibility for our sustainability management. It will also be responsible for further tasks in future, such as the setting of targets and the fulfillment of regulatory requirements. The Sustainability Team holds weekly meetings with members of the Steering Committee. The Steering Committee and the Project Team meet three or four times a year.

The Works Council, which has 13 members (five women and eight men) represents the interests of all our workers, in accordance with the German Works Constitution Act. Its most important role is to monitor compliance with legislation, collective bargaining agreements and works agreements. It organizes working committees and is engaged in legal issues, anti-discrimination, equality, collective bargaining and social benefits, and environmental concerns. It is in close contact with the employer, with the aim of implementing measures that serve both the company and the workforce. Furthermore, the Works Council examines how its concerns can be aligned with the topic of sustainability.



## Our stakeholders

Our stakeholders were identified as part of our ISO certification process (ISO 14001). These groups have special significance for STULZ's business activities. Our stakeholders include customers, workers, suppliers and the general public.

During our regular audits, we document and examine their expectations and concerns. We incorporate our stakeholders' concerns when we identify and update our core topics, making sure that they influence our decision-making processes. There are currently no vulnerable groups or groups in need of protection among our stakeholders.

### Our stakeholders' expectations

Our **customers**, including many large internationally active companies, are demanding greater transparency as regards our efforts toward sustainability. They want long-lasting, energy-efficient products and reliable services. Customers also expect STULZ to align with political framework conditions regarding climate protection and the supply chain, for example.

Our **suppliers** play an essential role, for stable, reliable supply chains are vital to our success. Reliability and partnership are valuable assets that should characterize our relationships.

**Workers** expect STULZ to be an attractive employer, opportunities for progression, and high standards of occupational health and safety. Other requirements are a secure job, independent working and reliable, transparent communication.

The **general public** covers various institutions and individuals, for example at our sites and in our business environment. Their expectations are extremely diverse and multifaceted. Here at STULZ, we want to act reliably, with commitment and integrity.

### Communication with our stakeholders

Our first Sustainability Report lays down the foundations for regularly and transparently updating the various stakeholders on our commitment. In addition, we use other channels and formats to address people and organizations that have an interest in our company's development.



On our homepage, we provide environmentally relevant information on our product pages – about energy efficiency, for instance. We want to encourage customers to make informed decisions and help to promote awareness of sustainability in our industry. → [STULZ: PRODUCTS](#)

On social media, we explain technological matters and keep readers informed about the latest developments in our products and services. Here, transparency, innovation and approachability are extremely important to us. The opinions and expectations of customers, users and others are incorporated in our product innovations.

Our departments regularly conduct dialogs during industry events or through surveys.

### Comprehensive implementation

STULZ has undertaken, at the highest level, to act responsibly and sustainably, and to treat people and the environment with the greatest care. We attach particular importance to respect for human rights, and are committed to complying with internationally recognized standards such as the ILO core labor standards and the OECD principles.

We have set out clear ethical standards and behavioral guidelines in our Code of Conduct. High quality standards have been defined for our products in terms of safety, data protection, the protection of health and safety and of our environment. Our fundamental obligations are enshrined in guidelines, including security and data protection management, in our works agreement on corporate conduct, in our Code of Conduct, and in our quality and environmental policy. These obligations have been approved by our entire Executive Management and are shared with our workforce and our stakeholders via our intranet and the relevant officers.

Through regular due diligence of our voluntary commitments, we ensure that our business activities and supply chains conform to high ethical, social and ecological standards. The systematic monitoring and prevention of potential risks, such as human rights violations, environmental pollution, corruption and other negative impacts is also a future task for our company.

Risk management, environmental and energy management, quality management and occupational health and safety management are an established part of our everyday practice. Moreover, we have introduced a whistleblower system, which gives our workers the opportunity to report concerns anonymously, in order to effectively identify and tackle potential problems or violations of our guidelines and standards.

In addition to our obligations and company standards, we are committed to membership of relevant organizations in our sector. By doing this, we want to forge ahead with changes and advances in our industry, develop innovative solutions, and do our bit to get the air conditioning industry on track toward sustainability. As examples, we are a member of the FGK, the SDIA and the bwp.



**The FGK (Fachverband Gebäude-Klima e. V.) is a leading industrial association for air conditioning and indoor air quality in Germany. It advocates the interests of our industry with market partners, politicians, standardization institutes and the scientific community.**



**STULZ is also a member of the Sustainable Data Infrastructure Alliance (SDIA), an esteemed European platform for sustainability in the digital infrastructure sector. The SDIA is working on drawing up the roadmap for sustainable digital infrastructures up to 2030, and offers its members the opportunity to get actively involved in shaping this sector. Practical challenges are mastered by innovation labs.**



**Since September 2022, we have been a member of the bwp (Bundesverband Wärmepumpe e. V.). This German federal association is committed to establishing heat pumps as an efficient renewable air conditioning solution.**

### Core topics

The identification of our core topics forms the basis for informed reporting and effective sustainability management at STULZ. These topics are strategic priorities for the company. In this first report, we worked with a specialist consultancy and the Sustainability Team to set out and internally assess the core topics for STULZ GmbH.

Based on analyses by the Sustainability Team, the status quo was documented and an environmental analysis conducted. During this process, we also identified the requirements that STULZ must fulfill in terms of sustainability. The dynamic market environment, in particular (customers, suppliers, competitors, regulatory requirements) delivered valuable information on STULZ's impact on the environment and social aspects. From this overall analysis, we then established our core topics – in close consultation with Executive Management – from which four topics were prioritized as focus areas. These in turn cover various specific aspects.

#### Four core topics with selected specific aspects

■ **SUSTAINABLE PRODUCTS**  
e.g., energy efficiency, quality and safety, circular economy

■ **RESOURCE EFFICIENT PRODUCTION**  
e.g., energy consumption, emissions, logistics

■ **RESPONSIBLE SUPPLY CHAIN**  
e.g., supply chain management, human rights, compliance

■ **GOOD EMPLOYER**  
e.g., occupational health and safety, training, modern work environment

**These core topics form the basis for the continuous further development of our sustainability management. For future requirements from the Corporate Sustainability Reporting Directive (CSRD), we will conduct a double materiality assessment before compiling our mandatory report.**

# Sustainable Products



## Our products and brands

From development, manufacture, installation and start-up to the servicing and maintenance of equipment, STULZ covers a broad spectrum in the value chain. And we deliver this spectrum for our entire portfolio of precision air conditioning units, chillers, air handling systems, micro data centers, traditional room cooling, High Density Cooling, container modules and software for mission-critical cooling. We deploy the STULZ brand for our own products. On top of that, our S-Klima brand, which is also part of STULZ GmbH, offers third-party products, such as items from Mitsubishi Heavy Industries.

This extensive product portfolio enables us to serve a broad customer base in various industries, and to accompany them throughout the entire product life cycle. A committed team of service employees reliably takes care of our precision and comfort air conditioning units with maintenance, servicing and customer service during their life cycle.

The customers' points of contact are largely responsible for air conditioned systems and applications in their company and work in roles such as planning, technical or IT management, projectmanagement and processing.

Under our motto **"ONE STULZ. ONE SOURCE."** our products and solutions are deployed in IT, data centers, medical technology, telecommunications systems and industrial cooling. These customers use business-critical air conditioning across one or more regions. Our sales are solely to B2B customers, including certified specialist firms in refrigeration, air conditioning and heating. At S-Klima, refrigeration and air conditioning companies are our most important customer groups.

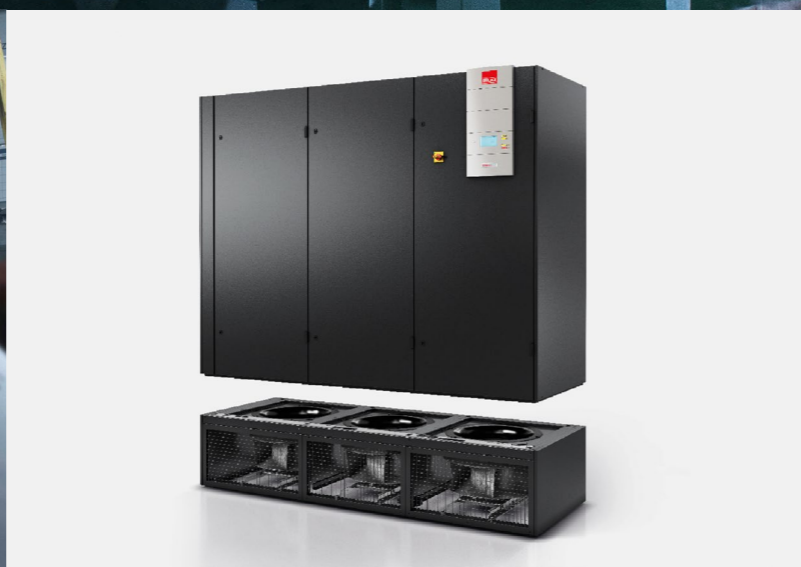
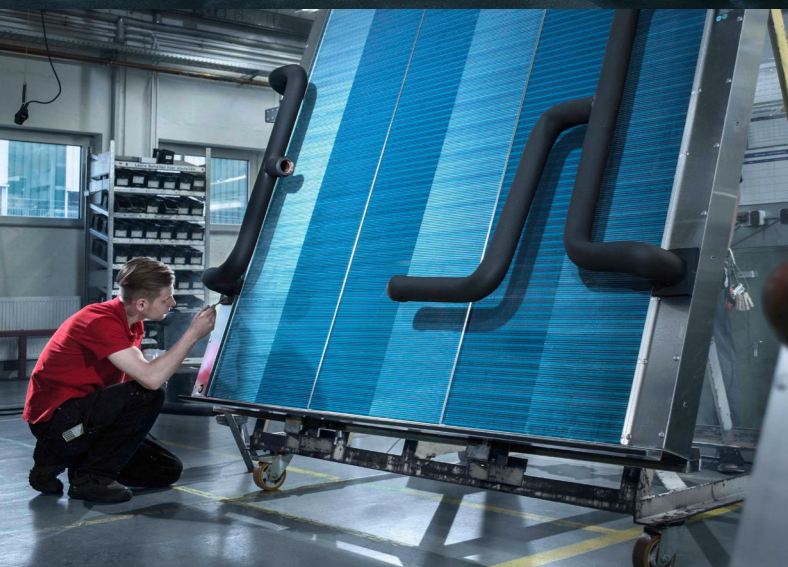
Ten branches offer a diverse range of services for our products and for the **S-Klima retail sector throughout Germany with comfort air conditioning units. This way, we can cover the entire bandwidth of refrigeration, air conditioning and air handling and, with our specialist partners, we are also in a position to offer facility management. The "Cyber-Hub Service" monitoring and service software we developed ourselves provides our qualified engineers with comprehensive assistance in performing these services for our customers.**



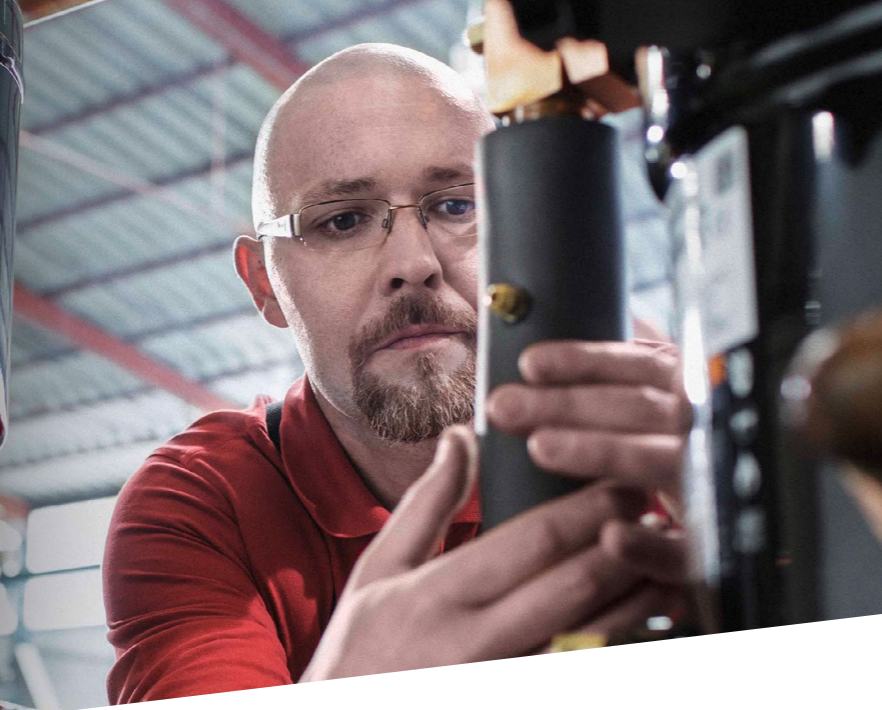
**STULZ is a world leader in energy-efficient temperature and humidity management technology. As specialists in data centers and telecoms facilities, STULZ offers precise air conditioning units for use 24/7, 365 days a year.**



**S-Klima is the exclusive retailer of premium air conditioning systems from Mitsubishi Heavy Industries in Germany, and offers its own supplementary products and STULZ humidifying systems. The S-Klima brand offers comfort air conditioning units that deliver demand-based air conditioning in indoor spaces where people live and work. Highly effective heat pumps further expand the product portfolio. Thanks to reversible air-to-air heat pump technology, the connected air conditioning units can provide cooling in summer and heating in winter.**



**AT STULZ, QUALITY ISN'T JUST A WORD, IT'S A CONVICTION. WE STAND FOR GERMAN ENGINEERING AND FAMILY TRADITION. WE OFFER HIGH-QUALITY, DURABLE AND HIGHLY EFFICIENT PRODUCTS AND ACCOMPANY OUR CUSTOMERS THROUGHOUT THE PRODUCT'S LIFE CYCLE.**



### High quality and safety standards

Products from STULZ and S-Klima satisfy the highest quality standards and are subject to relevant European regulations such as the Machinery Directive. In this respect, we meticulously monitor the product certificates provided by our suppliers, to make sure that requirements – such as those stipulated by REACH or RoHS regulations – are complied with. With the CE marking, we declare our compliance with safety and quality standards according to European standards and directives.

To satisfy the exacting requirements facing our products, we operate a quality management system as part of our integrated management system. This defines the processes in conformity with the requirements of ISO 9001:2015, which includes supplier management, design verification, and inspections during production. The necessary certifications are also obtained. What's more, STULZ has its own Test Center at the Hamburg site, where we can simulate all the different climatic conditions. Extensive product and function tests are performed here before a market launch.

When developing our units, we aim to achieve a service life of 10 to 15 years. However, some of our equipment has been running reliably for up to 20 years. Our constructions are designed for continuous operation 24/7, and take into account the requirements of the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) for efficient data center operation. They are service friendly, with simple replacement of wearing parts. In individual cases, equipment can easily be converted to suit changed operating conditions. In addition, the option of remote monitoring helps to ensure safe and reliable operation and dispenses with the need for the physical deployment of a service engineer.

**The high quality of our products is achieved by working shoulder to shoulder with our suppliers. When selecting our suppliers, we look for ISO certification for quality management and, ideally, for environmental management as well.**

Our principle supplier for S-Klima, Mitsubishi Heavy Industries, ascribes great importance to sustainability and is progressive and transparent in this area. To the global website of Mitsubishi Heavy Industries:  
→ [mhi.com/sustainability](https://mhi.com/sustainability)

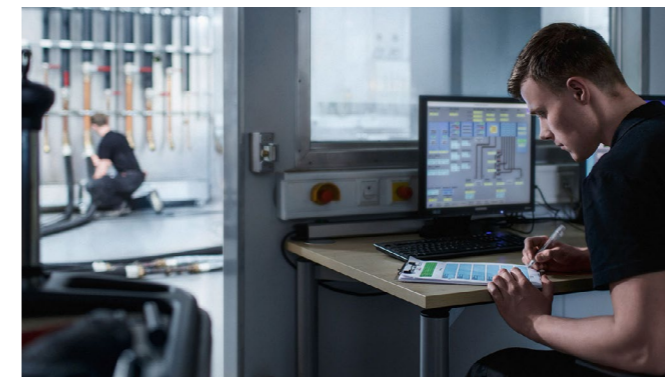
**STULZ GmbH has a certificate that attests not just to the high quality of our units, but also their energy efficiency. In acquiring this seal of approval, we have also committed ourselves to providing spare parts for all our equipment for at least ten years after discontinuation of the product.**



### Sustainability: key priorities for our products

All the products and solutions we sell – whether produced in-house or under the S-Klima brand – are in line with central industry-specific regulations. Chief among these are the CE Declaration of Conformity, the Energy Efficiency Directive, the Ecodesign Directive and the F-Gas and REACH Regulations.

Directives on the leak tightness of refrigerant circuits were also adopted as part of the Kyoto Protocol and Paris Agreement on climate change. We comply with these directives consistently and as a matter of necessity. Our units bear a special marking as proof that they have passed the leak test.



**Our industry can make a significant contribution to the achievement of environmental and climate goals, and here at STULZ we want to be actively on board.** We are working to bring technological progress and sustainability into harmony, so that our products achieve resource efficiency, reduced operating costs and a lower carbon footprint. We are passionately committed to developing and using advanced air conditioning technologies for data centers.

There are currently no institutions or standards that independently test the efficiency of equipment for data centers. Therefore, it's not possible to directly compare the energy efficiency of air conditioning units on the market, for example. In close cooperation with our customers, we examine and define the most efficient operating ranges for their applications. With an integrated control system, the design conditions and energy efficiency values are adapted to ensure that the customer's various operating points are within our products' best and most efficient performance range.

In some areas, we are already helping the market to move along with the energy transition: for example, some heat pumps and air conditioning units from the S-Klima range have proven performance indicators (Seasonal Coefficient of Performance, SCoP), which meet the stringent criteria for government funding for installation in private households.

With the Eurovent certification of our products from Mitsubishi Heavy Industries, an independent test laboratory confirmed the technical data and efficiency values of these units.

We are and will be focusing on three key areas as regards the sustainability of our products:

- **Energy efficiency**
- **Low GWP and natural refrigerants**
- **Circular economy**





## ENERGY EFFICIENCY

We are committed to high energy efficiency for our products. With precision air conditioning units, the most important levers for optimum energy consumption are:

- maximized heat exchanger surface areas
- filter surface areas
- optimized air conduction
- carefully coordinated components.

In our S-Klima line, energy efficiency is achieved, in particular, by the use of energy-efficient air conditioning systems and humidifiers, heat pumps and cooling solutions, as well as suitable monitoring.

During their use, too, energy-efficient products should run on an environmentally friendly energy mix. We tell our customers about the advantages of using renewable energy. The first projects using energy supplied directly from wind turbines and solar panels have already been successfully implemented with customers, and we are currently working on a standardized solution. What's more, we are also developing products and system solutions for efficient waste heat recovery, in order to significantly reduce CO<sub>2</sub> emissions.

We use inverter technology for all products from Mitsubishi Heavy Industries, without exception. The "HyperInverter" label designates units that have been specially trimmed for energy efficiency. And here are two more examples of how we help to save energy: the Q-ton CO<sub>2</sub> heat pump, and Free Cooling for greater energy efficiency.

### Q-ton CO<sub>2</sub> heat pump for producing hot water



We are committed to the use of energy-efficient heat pumps, particularly air-to-air and air-to-water models, as these technologies are assuming a decisive role in the energy transition, both in Germany and throughout the EU. Here, we are no longer focusing purely on cooling applications, but are turning our attention to the use of heat pumps for heating.

Our Q-ton CO<sub>2</sub> heat pump slashes annual CO<sub>2</sub> emissions by 74% compared with electrical heating systems, and by 48% compared with gas boilers. With the natural refrigerant R744 (CO<sub>2</sub>), these air-to-water heat pumps are an eco-friendly alternative to conventional heating systems in existing buildings. Their Coefficient of Performance (CoP) of 4.3 is proof of maximum efficiency with natural refrigerant. With a Global Warming Potential (GWP) of 1 and an Ozone Depletion Potential (ODP) of 0, the Q-ton CO<sub>2</sub> heat pump is especially environmentally friendly and virtually exempt from the provisions of the F-Gas Regulation.

→ Q-ton CO<sub>2</sub> heat pump for producing hot water: lower emissions, more energy efficiency.



### Energy efficiency with Free Cooling

We are committed to delivering energy-efficient solutions such as Free Cooling to cool our customers' infrastructure, because this way we minimize their carbon footprint and also effectively lower their operating costs.

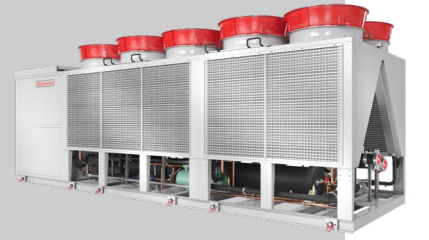
With Free Cooling, cold is obtained from natural cold air instead of using mechanical methods (compressors). And high-efficiency air conduction is also key: by designing the surface areas of heat exchangers and filters to be as large as possible, we achieve maximum energy efficiency values and can therefore exploit existing efficiency potential to the max.

The GESIS data center in Cologne is an excellent example: here, a concept with Free Cooling using STULZ CyberAir 2 and MiniSpace units is paying off. This is Germany's largest infrastructure institute for social sciences, and in it our highly efficient air conditioning technology achieves these impressive figures:

- 4,700 hours a year compressor-free operation
- 100,000 kWh of energy savings a year
- CO<sub>2</sub> emissions are down by approx. 60 tons a year compared with conventional DX direct evaporation systems for a 75 m<sup>2</sup> data center

## Energy-efficient air conditioning systems and humidifiers

Our **CyberCool 2** chiller boasts optimum energy efficiency and reliability, especially in complex liquid cooling systems. It is tailor-made for industrial plants and data centers and, thanks to Free Cooling, delivers an outstanding performance with exceptionally low total operating costs. It also keeps noise emissions to a minimum. The **CyberCool 2 ze** version uses eco-friendly R1234ze refrigerant, which has a lower GWP.



Our **CyberAir 3PRO** series is the result of over 30 years of our project experience here at STULZ. It was specially developed for uninterrupted operation in data centers. In this context, the design conditions were repeatedly adapted in line with ASHRAE recommendations, because these focus on reliability and efficiency. This way, our customers can optimize their running costs. The STULZ control system guarantees maximum precision, reliability and energy efficiency. The system therefore offers an ideal performance with a minimal carbon footprint. State-of-the-art cooling technology, flexibility and simple transport, installation, servicing and maintenance ensure that it satisfies our customers' individual requirements.



The **UltraSonic** humidifier generates an extremely fine mist that's easily absorbed by the ambient air. By further developing this technology for more than 40 years, today it achieves an energy consumption of 60 W per 1 kg/h of humidifier capacity. This makes it approximately 93% more effective than conventional steam humidifiers. As extremely durable components have been installed and the steam cylinders don't need replacing, operation is resource efficient.



With the **CompTrol** control system, we enable optimum control of our comfort air conditioning systems throughout the year. This solution records and documents operating temperatures. With the addition of the "automatic temperature control" function, the energy efficiency of the entire air conditioning system can be enhanced. Thanks to energy monitoring, customers can keep an eye on the energy consumption and energy efficiency of our air conditioning systems.



**OUR CONTINUAL FOCUS ON FURTHER DEVELOPING OUR COOLING SOLUTIONS REFLECTS OUR COMMITMENT TO SUSTAINABILITY AND INNOVATION.**

## LOW GWP AND NATURAL REFRIGERANTS

Refrigerants are an essential element in almost all our products, as air conditioning units and cooling system cannot be operated without them. As a manufacturer, we are completely dependent on what refrigerants and cooling components are available on the market. This demands close monitoring of the latest developments in the market and in legislation such as the F-Gas Regulation, so that we can adapt our products accordingly. We also work with our component suppliers to achieve this.

Low GWP refrigerants are better for the environment due to their lower greenhouse effect. But they also have adverse characteristics, such as high flammability (propane) or toxicity (ammonia). Therefore, their use in customers' systems entails complex safety measures. Moreover, they are still considerably less efficient in refrigerant circuits. And that's why many customers still demand traditional refrigerants. Despite their disadvantages, we assume that the market will shift toward natural refrigerants in future. There are more and more incentives in the market, for example through the F-Gas Regulation, which are making low GWP refrigerants much cheaper.

In light of ongoing discussions about the F-Gas Regulation, we see it as our mission to forge ahead with the development of units with natural refrigerants as possible future alternatives. Their actual use will depend on component availability, the balance between safety and efficiency, and customer acceptance.

CyberAir ASD  
with low GWP  
refrigerant  
R513a



**For our S-Klima products, the CO<sub>2</sub> equivalent emissions are reported on the EU's F-Gas Portal. Our products are sold exclusively to certified specialist firms in the refrigeration and air conditioning sector.**

Many popular chemical refrigerants have Refrigerant Safety Classification. This means that they are highly efficient and optimized for use in our product portfolio. But at the same time, they have a high GWP, meaning that they contribute to global warming. It is our responsibility to minimize the use of refrigerants with a negative impact on the climate, while gradually transitioning to refrigerants with a lower greenhouse effect.

We are already taking concrete action to achieve these objectives:

- The transition to eco-friendlier refrigerants with a low GWP – these are generally natural refrigerants – is one way our industry can progress. We are already using environment-friendly refrigerants such as R1234ze and R513a (hydrofluoroolefins).
- In S-Klima products, the natural refrigerant R744 (CO<sub>2</sub>) is also used.
- We also plan to use R290 (propane) in future. The advantage of propane is its exceptionally low GWP of 3. Moreover, its excellent thermodynamic properties enable high energy efficiency. It is suitable for mixing with numerous oils, further boosting its flexibility. Its high flammability is a disadvantage, however.
- In addition, we are reducing the consumption of refrigerants by careful handling during production and through the creation of closed systems.

## CIRCULAR ECONOMY

The circular economy is set to become a major focal point for our industry, too, over the next few decades – tying in with efforts in the European Union to close loops by 2050, which we are keeping a close eye on.

We are also currently targeting our efforts at various aspects of the circular economy, to fit in with the different requirements of our individual business units.

For example, we already comprehensively cover recycling aspects in our use of packaging. The plastic films and wooden pallets we use are fully recyclable. Furthermore, we have established recycling and reuse loops for various materials in our production (see pages 24–25).

We are currently in the planning stages of a recovery scheme, in collaboration with a German partner from the electricals sector. With this system, we aim to refurbish fans and recycle refrigerant, steel and copper. We will increasingly work together with partners in future on these complex interdisciplinary issues.

We have not yet set up any take-back schemes for our products. However, numerous registrations guarantee our compliance with German legislation on electrical waste and packaging. We are therefore also involved in the circular system through regulatory requirements. Take-back is carried out by specialist companies.



# Resource Efficient Production



## The strategic importance of environmental protection

In our Quality and Environmental Policy, which is an integral part of our corporate strategy, we emphasize the special significance of environmental protection for our own business activities. A core aspect is our voluntary commitment to develop and sell innovative, energy-efficient, high-quality and environmentally compatible products, commodities and services. In STULZ GmbH's policy statement on safety, health, protection of the environment and data protection, we flag up the importance of environmental protection for our corporate objectives.

In our Code of Conduct, we describe the importance of environmental protection and have compiled specific guidelines for workers and expectations for customers and suppliers. For example, workers are obligated to adhere to environmental protection provisions and avoid infringements. As for our customers and suppliers, we expect them to follow the relevant domestic and international laws and declare their CE conformity by evidencing their compliance with the required technical standards. Moreover, environmental protection requirements are anchored in our terms of purchase, including stipulations on the use of eco-friendly packaging materials.

At our Hamburg plant, STULZ engineers, designs and assembles maximum precision air conditioning units with a huge and diverse range of products and optional extras. Our engineers specify every detail of each individual component and define the assembly process in depth. Based on this information, our suppliers manufacture suitable sheet metal components. Our highly qualified staff fabricate the refrigerant circuits from copper pipes in our Pipe Shop on digitally controlled CNC bending machines. For the installation of electrical components, our qualified engineers are assisted by a production line with augmented reality. Following the pre-fabrication of these assemblies, the air conditioning units are completed on the assembly lines and the craftsmanship and quality of critical production steps are tested. Finally, every unit undergoes an electrical test and final inspection. Non-standard versions are additionally put through a technical test run, to enter default settings and check safety chains.

## Our environmental management

We ensure compliance with principles and requirements through our integrated quality and environmental management system. In our production, we focus on the following environmental aspects:

- Diligent energy consumption and energy saving
- Reduction of greenhouses gases
- Efficient water use
- Waste prevention, reduction and reuse
- Careful handling of hazardous materials
- Resource efficient logistics

All this is organized by means of an environmental management system certified to ISO 14001 and is controlled from our company headquarters. In our instruction manual, "Integriertes Managementsystem" (Integrated management system), we have defined instructions, guidelines and action plans, and monitor their implementation through internal and external audits. In this context, regular quality, energy, environmental and social compliance audits are carried out at our Hamburg production site.

**The STULZ GmbH production facility in Hamburg has ISO 14001 certification for our environmental management system. For implementing and further developing this system, we have appointed an Environmental Management Officer, who acts as a central point of contact for the entire organization.**



We comprehensively assess our environmental performance in an annual environmental and quality management review. We analyze the key performance indicators and action taken, present the results of audits and evaluate the risks and use of resources, any non-conformities and corrective action taken. As part of our continuous improvement process, we incorporate feedback from customers and other stakeholders and any changes in our own environmental factors in our decision-making processes. We set ourselves annual targets, which we back up with measures and responsibilities and monitor in the following year's review.

The instruction manual for our integrated management system is binding for the Technical division at our Hamburg production site. It describes the structures of quality and environmental management and its primary and secondary processes in depth. It incorporates standards ISO 9001:2015 and ISO 14001:2015 in the High Level Structure (HLS).

COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV  
ISO 9001 • ISO 14001



We use an internal tool at the Hamburg production site for the comprehensive analysis of our own impact on the environment. This enables us to draw up target/actual comparisons for energy consumption, emissions (Scope 1-2), use of resources, waste and wastewater for the individual work divisions. This list also includes special activities such as delivery vehicles, the use of forklift trucks, and hazardous materials used.

As part of our statutory obligations, we also disseminate information about energy use, goods and services for environmental protection, and climate-impacting substances (F-Gas). Under the terms of our WEEE (Waste Electrical and Electronic Equipment) certification in accordance with Directive 2012/19/EU, we provide in-depth data on the volumes circulated by our equipment.

## Diligent energy consumption and energy saving

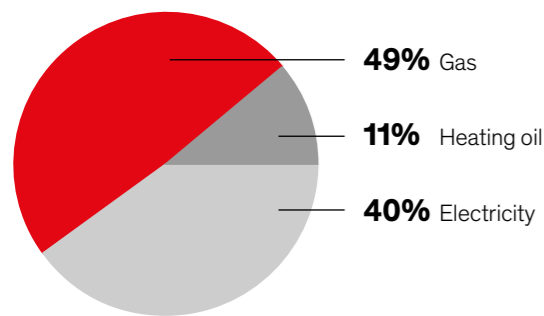
Production at STULZ GmbH entails final assembly, whereby outsourced components are assembled to create high-quality air conditioning units. We monitor the consumption of electricity, gas and heating oil using our in-house developed CyberHub ECO DC energy monitoring software. In the year under review, total energy consumption at the Hamburg site was 4,457,147 kWh.

Our current focus is aimed at energy efficiency at the Hamburg production site. In our branches, we have only a limited influence on the energy infrastructure, as we do not own the properties in question. Moreover, the impact there is comparatively insignificant, because these sites are purely offices.

### Energy consumption at the Hamburg site

**4,457,147 kWh**

Comprising approx.



Hamburg site: Headquarters, Production, S-Klima

We have adopted an action plan with energy saving measures. This will be put into practice both in production and in our offices and branches. These measures include rules of behavior for the use of electronic devices, the use of lighting, heating and cooling systems, and monitoring our own energy consumption in various areas.

To save energy and use it with care, we have already put the following measures into practice in production and management:

- Changing all lighting throughout the company to LEDs
- Switching to modern heating systems, Q-ton CO<sub>2</sub> heat pump (see page 16)
- Use of non-residential thermostats in stairwells and washrooms
- Constant heating temperature set to 19–20 °C in winter 2022
- Use of heat recovery systems to reuse waste heat for our own test benches and data centers
- Installing micro switches in vacuum cleaner systems, so that they only run when needed
- Adapting and optimizing indoor spaces to reduce heating needs in production and therefore counter energy losses
- Training and raising awareness among workers as regards office heating
- Software-aided central planning of service vehicle deployment, to reduce distances and therefore save fuel.

Following on from this first Sustainability Report, we have undertaken to set tangible goals for our use of renewable energy. We will therefore examine buildings to check the feasibility of solar panels, re-align our entire heating strategy toward new technologies, and gradually replace existing systems. In our production, 14.7% of our electricity currently comes from renewable energy with proof of origin. In the long term, we aim to minimize our use of fossil fuels such as oil and gas.



## Reducing greenhouses gases

We measure Scope 1 and Scope 2 greenhouse gas emissions using relevant emission factors based on our recorded energy consumption figures. In the year under review, CO<sub>2</sub> emissions due to energy consumption amounted to 1,610 tons in total, comprising 1,028 tons of CO<sub>2</sub> from electricity (63.8%), 436 tons of CO<sub>2</sub> from gas (27.1%) and 146 tons of CO<sub>2</sub> from heating oil (9.1%).

**Our CO<sub>2</sub> emissions (Scope 1–2) per unit produced have fallen by roughly 31% since 2019.**

We draw up a refrigerant balance sheet to assess the climate impact of the refrigerants used. To do this, we analyze the effects of different refrigerants on global warming, using the GWP figure as a basis. We pass the data obtained over to the relevant government agencies and report the CO<sub>2</sub> equivalents put into circulation on the EU's F-Gas Portal.

Where refrigerants are concerned, we are heavily dependent on our customers' wishes, as they specify which refrigerant is to be used in their orders. We are committed to more eco-friendly refrigerants and advise customers on the use of low GWP refrigerants (see page 18).

In our own production, we focus on reducing energy by optimizing our infrastructure to cut emissions. We are also taking the following steps, among others:

- We are gradually converting our service fleet to vehicles with lower consumption. The service fleet is made up of diesel vehicles, as we currently don't have any alternatives with an adequate permitted payload and the necessary range. We are optimizing service deployments using a vehicle monitoring system, thereby achieving shorter distances and travel times to the site of deployment. In the medium term, we want to switch to electric vehicles for the sales organization, to reduce CO<sub>2</sub> emissions. With this in mind, we are already working on expanding our vehicle charging infrastructure.
- With the branches, we are pushing ahead with the digitalization of service processes. This includes our service app and the CyberHub online service portal. With these tools, up-to-date information is digitally available at all times, and we can handle service orders in a resource efficient manner.
- We increasingly use digital working methods. Since the beginning of the Covid pandemic, we have considerably reduced the number of business trips. And even now, after the pandemic, we have managed to keep the number of journeys low. We have achieved this by using digital meetings, which have dramatically increased in number. As part of this trend, we have also introduced a flexible desk sharing concept. This has enabled us to reduce the number of commutes to and from work at STULZ GmbH.

## Efficient water use

In the year under review, water use at the Hamburg site was around 2,800 m<sup>3</sup>, which equates to far less than half a cubic meter per unit produced.

**To produce one unit, far less than ½ m<sup>3</sup> of water is needed.**

We don't use any ground or surface water for any purpose whatsoever. In order to minimize our water consumption, we have introduced the following measures:

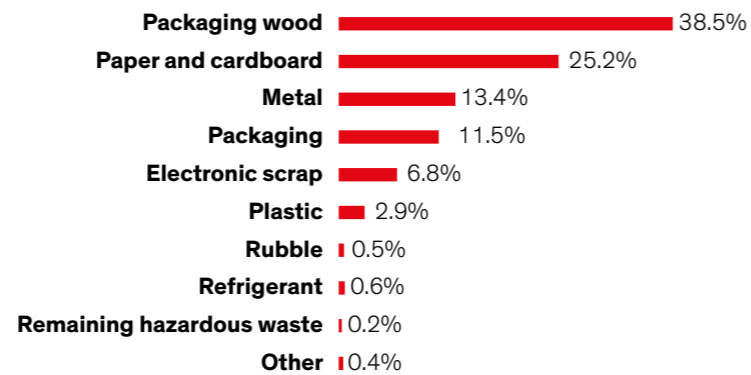
- To conserve resources in production, we are committed to efficient water use through closed circuits and multiple use. Extensive heat recovery systems enable cooling water to be used multiple times. We also rely on this approach in our test bench technology.
- We monitor our own water consumption through regular analyses of our water bills. As we rent the buildings of our branches, we have no direct influence on the water supply and infrastructure there.
- Our service organization advises customers with inefficient systems on potential optimizations concerning water consumption, for example by replacing entire systems or, whenever possible, individual components.
- Every worker is encouraged to save water wherever possible. This includes reporting leaks in washrooms, for example.

## Waste prevention, reduction and reuse

For us, the main activity that causes waste is packaging waste that we receive from the upstream value chain, e.g., paper and cardboard and packaging wood. Waste is also produced by work carried out in production and in the offices. Waste management is the responsibility of our Waste Management Officer. In the year under review, the total volume of waste at the Hamburg site was around 547 tons. 70% of this was sorted and 30% was mixed waste. Our aim is to continually reduce the amount of waste. Through various measures, we have already reduced the amount of paper and cardboard waste by 25% on the previous year.

### Waste volume at the Hamburg site in 2022

**547 tons**



**85% of our waste is recycled.**

**We have registered all the relevant brands sold by STULZ GmbH in accordance with the German Packaging Act and the Waste Electrical and Electronic Equipment Act.**

For waste prevention, separation, treatment and recycling/reuse, we have initiated measures that include the following:

- We separate waste such as paper, wood, recyclables (e.g., scrap metal) and residual waste in an orderly manner in our production. We have all suitable materials recycled.
- With our chipper, we can shred discarded wood so that it is compressed in the transport container. This reduces the number of journeys to and from the site many times over.
- We use reusable pallets, packaging materials and transport containers wherever possible. We use individual metal/wooden pallets and cardboard boxes for transport between suppliers and STULZ GmbH, for example.
- We vacuum refrigerant out of air conditioning units in an automated process. We always have refrigerant recycled.
- We have hazardous waste disposed of by a specialist waste disposal service in accordance with the waste code and legal provisions.
- We avoid waste through digital workplace practices. This has already helped us generate less paper waste.

Our packaging guideline comprehensively regulates our handling of packaging. It contains instructions on the kind of transport packaging to be used and the filling of packaging. We use this to stipulate optimum capacity utilization by our suppliers.

We discuss the use of reusable and returnable packaging and the resulting return loop individually with our suppliers.

We process non-reusable cardboard packaging using a cardboard shredder to create filling material for our shipping cartons.

Our in-house products are packaged in plastic film and/or wooden crates. This ensures maximum safety during transport with resource efficient use of packaging materials.



## Careful handling of hazardous materials

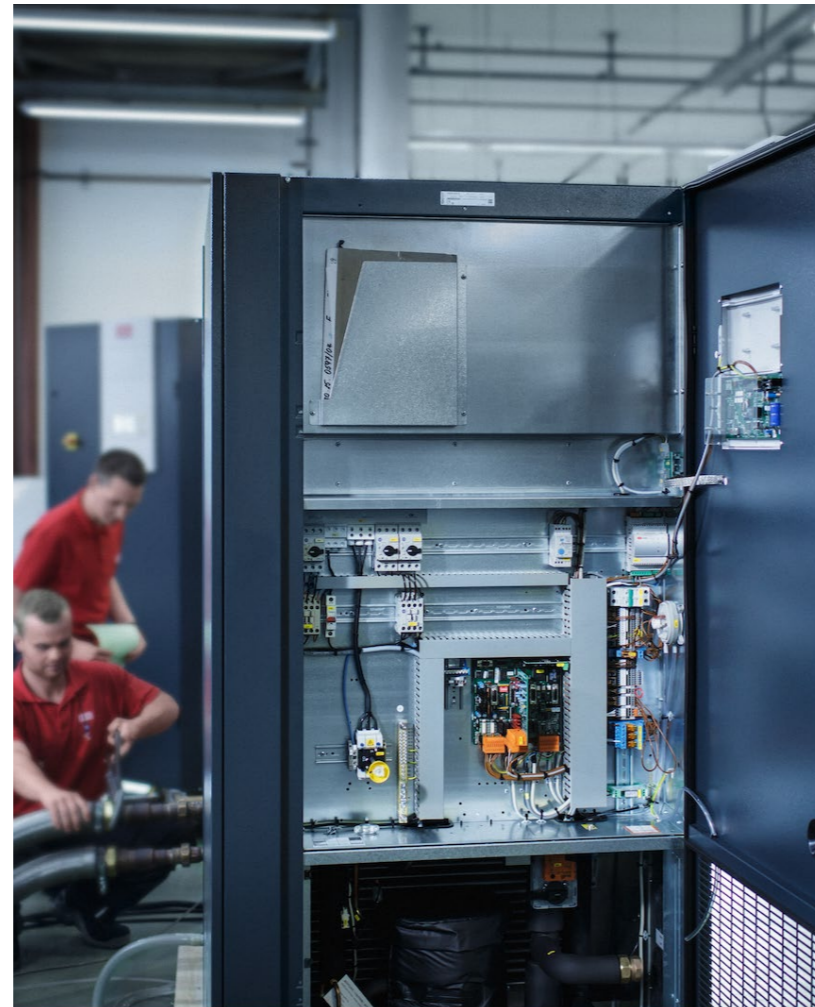
In order to satisfy the requirements of the F-Gas Regulation and prevent the unwanted escape of fluids, gases and other substances, we perform leak tests in production on every unit we produce. These computer-aided tests are carried out by qualified staff, approved electronically and then documented.

All hazardous materials used in production are subject to the provisions of the RoHS and/or REACH Directive. We keep the use of hazardous materials to a minimum and already incorporate this as a factor in our purchasing, wherever possible. In the year under review, the purchased volume of hazardous materials was 42,590 kg for gases and 3,150 kg for operating fluids. In total, 186 different hazardous materials were used in the year under review, including oils, refrigerants, lubricants, nitrogen, oxygen, acetylene and greenhouse gases. Adhesives, cleaners and gases accounted for the largest proportion of hazardous materials.

Our hazardous substances register offers a detailed overview of hazardous materials. These are categorized by division to enable the clear allocation of responsibility, while in-depth information on classification, hazard group and other aspects enables risks to be quickly detected and safety measures taken. The register is continually updated in line with new requirements and product modifications.

We illustrate the environmental impacts of these hazardous materials in the document “Bewertungen und Auswirkungen auf die Umwelt” (Assessments and impacts on the environment). Environmental relevance in standard and emergency operation is evaluated and monitored using a scale. In addition, we have set up a hazardous substance management system, headed by our Hazardous Substances Officer. This person compiles risk assessments and work instructions in line with the German Hazardous Substances Ordinance, and these are centrally available on the intranet. We check at fixed intervals that these are up to date and adapt them when necessary. Risk management also includes regular training sessions for users and officers. We carry out regular substitution checks on hazardous substances in our production, to reduce the potential hazards.

External hazardous goods officers assist us with the transport of our hazardous substances. The transport vehicles are marked in accordance with regulations and are subject to special procedures.



**THIS GREATER FOCUS ON SUSTAINABILITY ASPECTS IN LOGISTICS WILL BE A FUTURE TASK THAT WE MUST TACKLE TOGETHER WITH PARTNERS.**

## Resource efficient logistics

We have specifications to control our inbound logistics, which are implemented by our suppliers. Within Germany, we collaborate with logistics companies as fixed partners, and they are in charge of our transport. S-Klima chiefly imports via container from Asia, and these logistical services are organized by an external shipping agent.

For outbound transport, we establish the framework and our customers contract suitable companies to collect their goods. For exports, too, transport is mostly governed by contracts and is carried out ex works via our customers. Wherever we have an influence, we organize transport as efficiently as possible – to avoid empty trucks, for example.

The shipping agents we contract primarily use diesel trucks. We contract an external hazardous goods officer for the handling of hazardous goods transports. An internally appointed Air Freight Safety Officer supervises compliance with the provisions of the German Federal Air Freight Agency for goods that are transported by airplane.

**In 2021, STULZ took part in the GLS KlimaProtect scheme. This initiative by our logistics partner GLS aims to achieve more eco-friendly packaging logistics.**



# Responsible Supply Chain



## Ethics and compliance

Our Code of Conduct contains clear rules on ethics and compliance for both our workers and our customers and suppliers. We expect our suppliers to comply with the applicable legislation, refrain from corruption, and adhere to export and import bans and embargoes. We have adopted a standard operating procedure (SOP), enabling us to examine business partners' compliance with legally binding sanctions lists. An Export Inspection Team is responsible for carrying out this compliance check of our business partners.

We also expect our suppliers to conform to the relevant domestic and international laws and standards governing occupational health and safety, environmental protection and data protection.

For us, it's an obligation that goes without saying that we ensure humane working conditions and compliance with internationally applicable human rights provisions all along our supply chain. Here too, we expect our suppliers to respect human rights and refrain from using child labor.

### How we ensure ethical conduct in business

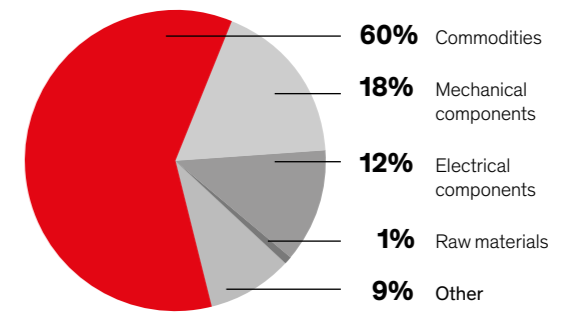
Our contract awarding process is subject to an approval procedure and – above a certain value – a dual control system. This way, we avoid anti-competitive practices. Bribery is a criminal offense and will not be tolerated. We also firmly reject corruption. Workers may only accept gifts, invitations and other benefits from third parties to a reasonable and proportionate extent, and this must not give rise to any conflicts of interest.

We collect, process and retain personal data only in accordance with data protection legislation. We have appointed a Data Protection Officer. There were no complaints relating to privacy violations or the loss of customer data during the year under review.

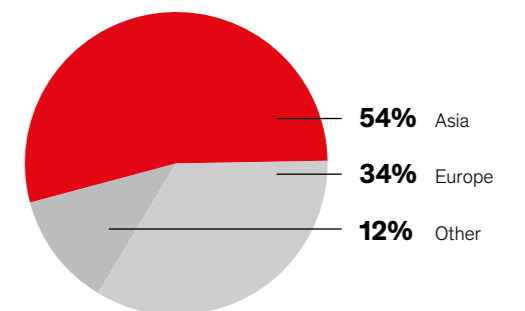
## Responsible purchasing

Our purchasing department is split into different product groups, and one purchaser has chief responsibility for each of these. For STULZ GmbH as a whole, 34% of our purchase volume comes from Europe. Nearly 40% of our purchase volume (not including S-Klima) originates from German suppliers, and a further large proportion from European sources. Therefore, our direct supply chain (Tier 1) is subject to low risk as regards social and environmental concerns. However, for individual product groups (e.g., electronic parts), issues relating to working conditions, human rights and the environment cannot currently be entirely ruled out at upstream stages of our supply chain.

### Type of purchased materials



### Origin of purchased materials



Respect for human rights is regularly checked at the Hamburg site through customer audits on social responsibility. As with many companies in our and other industries, responsible purchasing will be a matter of high priority for STULZ in the years to come.

In terms of our strategy, we are working on always establishing several suppliers for each product component, although there will always be one preferred principle supplier. Together with our suppliers, we endeavor to continuously further optimize our component use – in terms of both equipment efficiency and use and cost of materials.

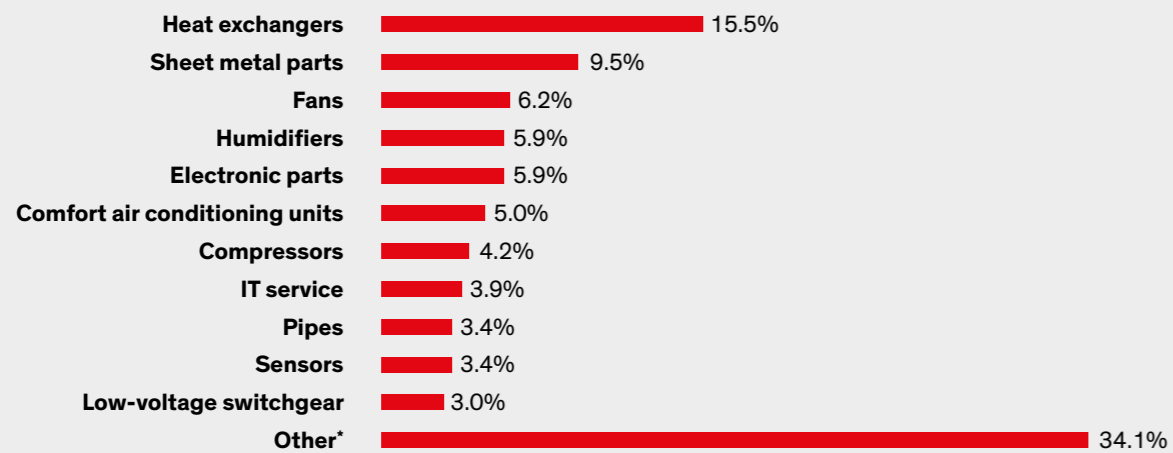
Our in-house STULZ branded products are manufactured in Germany and are made with impressively high-quality components. Their robust design guarantees high reliability, a low need for spare parts, a long service life and optimum performance under diverse conditions. We work closely with our suppliers to ensure quality and efficiency from the very beginning.

We only purchase finished components and parts. und Teile. When procuring components, we prize reliability and, to an increasing extent, sustainability factors.

Efficiency is a vital consideration in our work with our suppliers. It's extremely important to us that the products and components we purchase are produced in an energy and resource efficient manner. Together with our suppliers, we explore the possibilities for developing profitable, more sustainable solutions. With our sheet metal suppliers, for example, we have designed reusable transport packaging for large sheet metal parts.

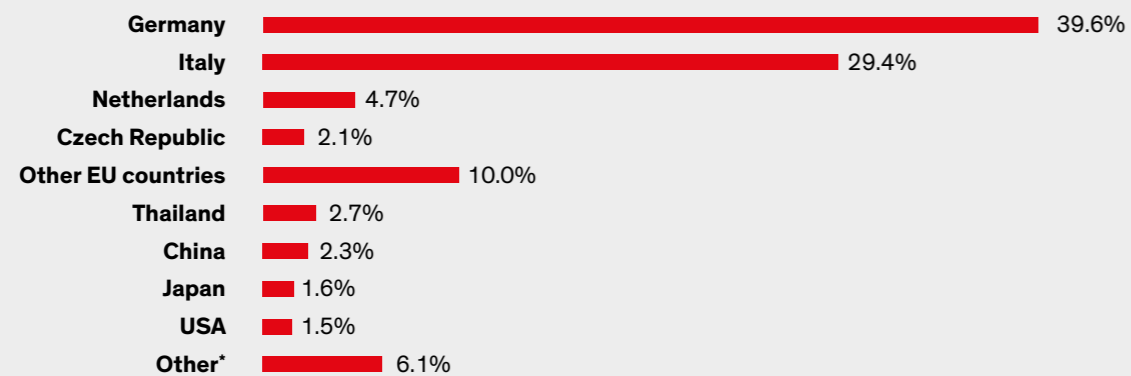


**Materials: the most important purchase groups (not including S-Klima)**



\*Other e.g., software, filters, ventilation accessories

**Origin of our purchased materials (not including S-Klima)**



\*Other e.g., Switzerland, UK

**Managing our supply chain**

We analyze and assess supplier-specific risks and also risks in the supply chain, and instigate corrective action when necessary. Increasingly, sustainability issues are factored into these assessments. At present, we do not yet examine new suppliers in terms of social and environmental criteria. We plan to purposely incorporate sustainability issues in our supplier relationships, and want to include these in both our supplier evaluation and regular talks with suppliers.

We are currently sounding out options for a holistic management system that will enable us to monitor and control our supply chain. At the same time, our purchasing department is further developing the existing risk management processes. This is intended to help us identify human rights violations and negative impacts on the environment, and avoid or minimize them.

**Approach to conflict minerals**

We are committed to ensuring that components we have purchased are free from conflict minerals. Metals such as tin, tantalum, tungsten and gold are particularly common in electronic components. The mining of these raw materials is problematic in terms of human rights and other social and environmental aspects. Our aim is to increase transparency in future as regards conflict minerals in our supply chain. Working with suppliers and other players in affected industries, we want to make our contribution to improving conditions in the supply chain.





# Good Employer

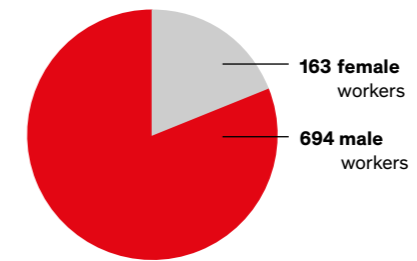
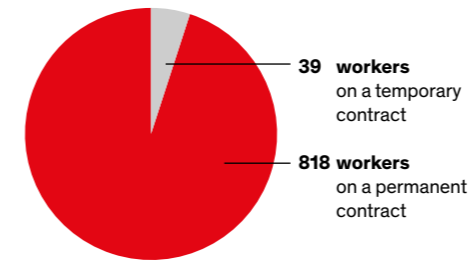


## Responsible personnel management

Our qualified and committed workers are the foundations of STULZ's success. In 2022, STULZ GmbH had a total workforce of 857. The average duration of employment with the company is 11 years.

### Staffing figures in the 2022 fiscal year

	Total	Hamburg site	S-Klima	Branches
<b>Workers</b>	<b>857</b>	<b>501</b>	<b>101</b>	<b>255</b>
Comprising: Full time	803	470	94	239
Comprising: Part time	54	31	7	16
Comprising: Salaried employees	840	485	101	254
Comprising: Workers who are not employees	17	16	-	1



We are strongly committed to promoting well-being and personal security, individual professional development, diversity, equal opportunities and a modern work environment for our staff. We are also engaged in social projects in our region. We are therefore focusing on five topics in our overarching "Good Employer" strategy:

- Occupational health and safety
- Training and career management
- Diversity, equality and inclusion
- Modern work environment
- Social engagement



## OCCUPATIONAL HEALTH AND SAFETY

The health and safety of our workers is our number one priority. We understand that we are responsible for ensuring that our workers are protected against accidents and other potential risks while they are at work. That's why we are currently developing an internal health and safety management system. Our commitment to health and safety is also reflected in numerous measures we have already introduced.



We have established occupational health and safety structures

that ensure clear organizational and operational procedures for our site in Hamburg and STULZ's other German branches. These structures cover all workers, including those who are not employees.



STULZ GmbH has an Occupational Health and Safety Committee, which is responsible

for all staff, including workers who are not employees. The Occupational Health and Safety Officers, Company Medical Officer and Works Council are members of the Occupational Health and Safety Committee. With our corporate reintegration management scheme based on the "Hamburg Model", we enable workers to find their way back into working life following long-term illness and to gradually get used to everyday working life once more. We individually prepare the process and monitor it until the measures are complete.



We collect and analyze both reportable and non-reportable data on

accidents at work, and also absence statistics. We consider an accident at work as reportable if it results in absence of more than three days; otherwise, it is classed as an injury. To reduce future accidents, we define measures to prevent the recurrence of accidents, which are implemented by line managers.

In the 2022 fiscal year, we recorded 19 reportable accidents at work, 89 injuries, and 79,428 hours of absence with continued pay.



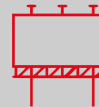
To ensure our workers' safety, we organize inspections and visits by external experts, hold

regular meetings of our committees, and make any adjustments necessary to prevent accidents at work. We conduct regular risk assessments of all workplaces, both in terms of equipment and the handling of hazardous materials. The respective heads of division and line managers are responsible for these risk assessments. These members of staff are also responsible for drawing up suitable measures to reduce and prevent potential hazards.



We invest in promoting our workers' health and, as well as supporting their physical and mental

health, also encourage a team spirit. Daily, free fresh fruit for the workforce, ergonomic workplaces and discounted screen protection glasses are part of everyday life. We encourage awareness of health aspects through regular Health Days, which we organize in collaboration with health insurance providers. We also offer a diverse range of sports groups, such as running and kickboxing, as well on-site space for sporting activities. Our Company Medical Officer assists us with inspections and information on potential improvements, for example in production.



We offer training and education schemes and courses on occupational health and safety. These

are organized into overarching and specialized topics. Overarching topics include fire safety, noise, handling defibrillators and fire extinguishers, crane operators, correct lifting and carrying, spinal health, safety in the office and safety in the workshop. Specialized topics include what to do in the event of infection, and desk sharing. We regularly train our 164 First Aiders, who are employed at the Hamburg site, at S-Klima, and in all the branches. We also train new recruits. As things stand, a good three-quarters of all workers have received health and safety training; this proportion should rise to almost 100% by the end of 2023. These yearly training sessions are held in person for factory workers and via an eLearning module for office workers.

## TRAINING AND CAREER MANAGEMENT

To ensure STULZ's long-term success, we want to secure ourselves young talent at an early stage. We offer young people a wide range of training options.

### Apprenticeships

- Industrial Electrician
- Production Mechanic
- Cooling Technology Mechatronics Engineer
- Warehouse Logistics Specialist
- Industrial Management Assistant
- Office Management Assistant
- IT Specialist

### Apprenticeship with Degree Qualification

- Industrial Management Assistant + Business Studies

### Degrees with Vocational Training

- Business Information Systems
- Business & Engineering Studies
- Business Administration
- International Management
- Mechatronics
- Air Conditioning Technology

In the 2022 fiscal year, we employed **35 apprentices and 16 students** who, with an average retention rate of **95%**, have excellent prospects for a professional future with STULZ.

### Awards for our commitment to apprenticeships

In the past, STULZ GmbH has won awards as the best company for apprenticeships in Hamburg. What's more, in 2021 the Hamburg Chamber of Commerce commended us for an outstanding performance in degrees with vocational training. For these programs, STULZ has been a partner to the hochschule 21 and other colleges and universities for many years.



We are convinced that the continuous development of our workers is the key to our joint success. For this reason, we carry out numerous career management and skill development measures.

- With the scheme we launched in 2019, **“STULZ Talent Development”**, we encourage promising young talent from our own ranks, in order to train the leaders of tomorrow. The aim of this biennial program is to prepare talent we have identified for future key positions.
- On our **eLearning platform**, our workers can make use of a broad spectrum of training courses and information videos. In addition, we promote our workers’ communication skills with individual English lessons, to give them a sure international footing in the world of business.
- Through product training courses, we make sure that our workers are always fully up to date with our latest innovations. We offer over **100 different training and education programs** in total, such as project management, data protection and information security, pressure and stress management, improving personal productivity, and courses on specific technical subjects. In 2022, 176 workers took part in these programs – which equates to nearly 21% of the workforce. We want to improve participation still further and are therefore continually improving our range of courses and access to them.

**In 2022, STULZ workers benefited from roughly 1,150 hours of training.**



**DIVERSITY, EQUALITY AND INCLUSION**

For us, the diversity of our workers and the creation of an inclusive work environment is not just ethically correct but also indispensable for our innovative spirit and competitiveness. Our team is made up of 163 female and 694 male creative thinkers from 23 different nations. Of our workers on a fixed salary, 172 are under 30, 394 are between 30 and 50, and 291 are over 50. They all share a common passion and the drive to shape STULZ’s future with commitment and ambition. The interests of all our workers without a managerial role are represented by our 13-member Works Council.

Our obligation to equality ensures that all our workers are treated fairly – regardless of gender, origin, religion, and any other characteristics. This way, we create a work environment without discrimination and actively strive for an inclusive culture. Discrimination of any kind will not be tolerated and is punished accordingly. We also strictly reject sexual harassment and bullying. Every single worker should feel respected, valued, and an integral part of our team.

- We have introduced a works agreement that promotes equal rights and aims to counter discrimination. Moreover, there are special points of contact to ensure that cases of discrimination are appropriately dealt with. Our Works Council and the Executive Management work closely together to prevent workers in our company from feeling disadvantaged in any way.
- Our disability representative on the Works Council ensures that the interests of people with disabilities are represented in the company. We employed 32 people with disabilities in our company in the 2022 fiscal year.
- Our workers receive training on topics such as diversity, discrimination and harassment. We provide relevant information on these subjects via in-house channels such as our intranet.

**MODERN WORK ENVIRONMENT**

At STULZ, we recognize the importance of the modern work environment and actively incorporate various aspects in the design of our workstations, working hours and location, and also in our methods of communication.



We support climate-friendly mobility by voluntarily contributing 40 euros to the cost of the HVV-Profi-Ticket (local transport commuter ticket) for workers at the Hamburg site. Furthermore, we provide secure bike stands and charging stations for electric vehicles in our parking lots.



We understand the importance of a harmonious work-life balance. That’s why we support flexible working time models such as flexitime and part-time models. Flexitime accounts enable people to organize their hours individually. For many years now, our late shift in Hamburg has run over a 4-day week.



We make sure that all workers have the necessary communication equipment at their disposal, to enable flexible digital working.



Our numerous methods and channels of communication encourage smooth information sharing and open dialog between workers and management. The Works Council plays a key role here, by actively covering the concerns of all workers in informative letters, meetings with the management and works and departmental meetings. Moreover, Works Council consultations and branch tours provide opportunities for individual questions and one-to-one discussion.



We offer our workers the option of a break for parental leave. Currently, a total of 32 people – 13 women and 19 men – are on parental leave. When parental leave ends, each individual worker is fully reintegrated in our company.

**Through social engagement, we want to take on social responsibility and boost our region. In our monitor donation campaign, for example, we donated used but still functioning monitors to schools in the Hamburg region.**



# Key Performance Indicators

Company	Unit	2022
Sales (approx.)	€ million	273
Sites in Germany	total	10
Workers, total	total	857
Workers, Hamburg site	total	602

Environment <sup>1</sup>	Unit	2022
<b>CO<sub>2</sub> emissions</b>		
CO <sub>2</sub> < (Scope 1 and 2), total	t	1,610
CO <sub>2</sub> emissions from energy (Scope 1), total	t	582
from gas	t	436
from heating oil	t	146
CO <sub>2</sub> emissions from electricity (Scope 2), total	t	1,028
Carbon intensity per worker at the Hamburg site (Scope 1 and 2)	t/worker	2.7
Percentage of workers at the Hamburg site covered by the environmental management system (ISO 14001)	%	100

<b>Energy</b>		
Energy consumption, total	kWh	4,457,147
Electricity	kWh	1,787,867
Gas	kWh	2,179,280
Heating oil	kWh	490,000
Energy intensity per worker at the Hamburg site	kWh/worker	7,404
Percentage of energy consumption from renewable energy (electricity)	%	14.7

<b>Water</b>		
Water withdrawal, total	m <sup>3</sup>	2,776
Water discharge, total	m <sup>3</sup>	2,776

<b>Waste and hazardous materials</b>		
Waste and hazardous materials, total	t	547
Percentage of hazardous waste	%	0.8
Percentage of non-hazardous waste	%	99.2
Percentage of recycled waste	%	85.0
Waste and hazardous materials by origin		
Packaging wood	t	212.8
Ferrous metal containers with harmful residual constituents	t	67.4
Mixed waste for reclamation	t	51.7
Cardboard boxes	t	15.5
Refrigerant	t	3.3
Other	t	196.3

Social aspects	Unit	2022
<b>Workers</b>		
Workers	total	857
Workers by age <sup>2</sup>		
Percentage of workers aged < 30	%	20
Percentage of workers aged 30–50	%	46
Percentage of workers aged > 50	%	34

Social aspects	Unit	2022
<b>Workers by gender</b>		
Percentage of female workers	%	19
Percentage of male workers	%	81
<b>Workers by business unit</b>		
Workers in production	total	501
Workers at S-Klima	total	101
Workers in the branches	total	255
Percentage of workers covered by collective bargaining agreements	%	78
Percentage of women in executive positions <sup>3</sup>	%	6
<b>Workers by nationality</b>		
Staff turnover	%	11
<b>Workers on parental leave</b>		
Percentage of workers on maternity leave	%	40.6
Percentage of workers on paternity leave	%	59.4

<b>Accidents and injuries</b>		
Reportable accidents at work	total	19
Reportable accidents at work (Hamburg plant)	total	12
of which road accidents	total	3
Reportable accidents at work (branches)	total	7
of which road accidents	total	2
<b>Injuries</b>		
Injuries (Hamburg plant, factory workers)	total	74
Injuries (Hamburg plant, office workers)	total	15

<b>Apprenticeships and training</b>		
Apprentices	total	35
Vocational degree students	total	16
Percentage of workers who are apprentices	%	4.1
Retention rate of apprentices and students	%	95
Training and education programs	total	111
Participation in training courses	total	176
Average hours of training	hours	6.5

Governance and supply chain	Unit	2022
<b>Materials</b>		
Purchase volume	t	11,600
Ferrous metal containers, total	t	3,840
Cardboard boxes, total	t	16
<b>Supply chain</b>		
Suppliers	total	1,021
Percentage of suppliers in Germany	%	92
Percentage of suppliers in Europe (excl. Germany)	%	7
Violations of environmental protection laws and directives	total	0
Confirmed cases of corruption	total	0

<sup>1</sup> Figure based on the Hamburg site: Headquarters, Production, S-Klima.

<sup>2</sup> Figure based on salaried employees.

<sup>3</sup> Management and authorized signatories

# GRI Content Index

This Sustainability Report was compiled with reference to the GRI Standards 2021 and GRI 1: Foundation 2021 of the Global Reporting Initiative (GRI) and applies to the 2022 fiscal year (January 1 to December 31, 2022). GRI Sector Standards do not apply. The Disclosures conform to the latest available version of the German translation of the GRI Standards, which can be downloaded here: [→ globalreporting.org/how-to-use-the-gri-standards/gri-standards-german-translations](https://globalreporting.org/how-to-use-the-gri-standards/gri-standards-german-translations)

GRI Standard	Disclosure	Page and explanation
<b>GRI 2: General Disclosures</b>		
<b>1. The organization and its reporting practices</b>		
2-1	Organizational details	3, 6–7, 43
2-2	Entities included in the organization's sustainability reporting	43
2-3	Reporting period, frequency and contact point	43
2-4	Restatements of information	This is the first report.
2-5	External assurance	An external review did not take place.
<b>2. Activities and workers</b>		
2-6	Activities, value chain and other business relationships	6–7
2-7	Employees	33, 38–39
2-8	Workers who are not employees	33, 38–39
<b>3. Governance</b>		
2-11	Chair of the highest governance body	The highest governance body is the Executive Management.
2-12	Role of the highest governance body in overseeing the management of impacts	8
2-13	Delegation of responsibility for managing impacts	8
2-14	Role of the highest governance body in sustainability reporting	8
2-16	Communication of critical concerns	8
2-17	Collective knowledge of the highest governance body	8
<b>4. Strategy, policies and practices</b>		
2-22	Statement on sustainable development strategy	4–5
2-23	Policy commitments	11
2-24	Embedding policy commitments	11, 29
2-25	Processes to remediate negative impacts	11, 20, 29, 31
2-26	Mechanisms for seeking advice and raising concerns	8, 11, 37
2-27	Compliance with laws and regulations	29, 39
2-28	Membership associations	11; by way of example
<b>5. Stakeholder engagement</b>		
2-29	Approach to stakeholder engagement	9–10
2-30	Collective bargaining agreement	39

GRI Standard	Disclosure	Page and explanation
<b>GRI 3: Material Topics 2021</b>		
<b>Material Topics 2021</b>		
3-1	Process to determine material topics	10
3-2	List of material topics	10

<b>Material Topic: Sustainable Products</b>			
GRI 3-3: Management of material topics			14–15
GRI 301: Materials 2016	Disclosure 301-1	Materials used by weight or volume	29, 30; by most important purchase group
	Disclosure 301-3	Reclaimed products and their packaging materials	19, 25; by way of example
GRI 302: Energy 2016	Disclosure 302-5	Reductions in energy requirements of products and services	16–17
GRI 416: Customer Health and Safety 2016	Disclosure 416-1	Assessment of the health and safety impacts of product and service categories	14, 20, 26
	Disclosure 416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	None known
GRI 417: Marketing and Labeling 2016	Disclosure 417-1	Requirements for product and service information and labeling	14–15
GRI 418: Customer Privacy 2016	Disclosure 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	29

<b>Material Topic: Resource Efficient Production</b>			
GRI 3-3: Management of material topics			20–21
GRI 302: Energy 2016	Disclosure 302-1	Energy consumption within the organization	22, 38
	Disclosure 302-3	Energy intensity	38
	Disclosure 302-4	Reduction of energy consumption	22; measures and objectives only
GRI 303: Water and Effluents 2018	Disclosure 303-1	Interactions with water as a shared resource	24
	Disclosure 303-3	Water withdrawal	24, 38
	Disclosure 303-4	Water discharge	24, 38
GRI 305: Emissions 2016	Disclosure 305-1	Direct (Scope 1) GHG emissions	23, 38
	Disclosure 305-2	Energy indirect (Scope 2) GHG emissions	23, 38
	Disclosure 305-4	GHG emissions intensity	38
	Disclosure 305-5	Reduction of GHG emissions	23; per unit produced
GRI 306: Waste 2020	Disclosure 306-1	Waste generation and significant waste-related impacts	24–26
	Disclosure 306-2	Management of significant waste-related impacts	24–26
	Disclosure 306-3	Waste generated	24, 38
	Disclosure 306-4	Waste diverted from disposal	24–25; without sorting

GRI Standard	Disclosure	Page and explanation
<b>Material Topic: Responsible Supply Chain</b>		
GRI 3-3: Management of material topics		29, 31
GRI 308: Supplier Environmental Assessment 2016	Disclosure 308-1	New suppliers that were screened using environmental criteria 31
GRI 412: Human Rights Assessment 2016	Disclosure 412-1	Operations that have been subject to human rights reviews or impact assessments 29
GRI 414: Supplier Social Assessment 2016	Disclosure 414-1	New suppliers that were screened using social criteria 31
<b>Material Topic: Good Employer</b>		
GRI 3-3: Management of material topics		33
GRI 401: Employment 2016	Disclosure 401-1	New employee hires and employee turnover 39
	Disclosure 401-3	Parental leave 37, 39
GRI 403: Occupational Health and Safety 2018	Disclosure 403-1	Occupational health and safety management system 34
	Disclosure 403-2	Hazard identification, risk assessment, and incident investigation 11, 34
	Disclosure 403-3	Occupational health services 34
	Disclosure 403-4	Worker participation, consultation, and communication on occupational health and safety 11
	Disclosure 403-5	Worker training on occupational health and safety 34
	Disclosure 403-6	Promotion of worker health 34
	Disclosure 403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships 34
	Disclosure 403-9	Work-related injuries 34, 39
	GRI 404: Training and Education 2016	Disclosure 404-1
GRI 405: Diversity and Equal Opportunity 2016	Disclosure 405-1	Diversity of governance bodies and employees 36, 38–39
GRI 406: Non-discrimination 2016	Disclosure 406-1	Incidents of discrimination and corrective actions taken None known

The GRI Disclosures for the material topic of "Resource Efficient Production" are based on our Hamburg site, covering the Headquarters, Production and S-Klima.

# About this Report

## Reporting period

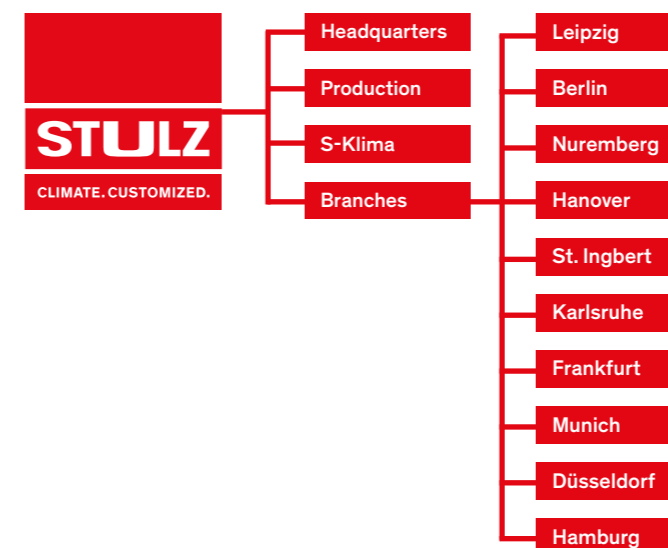
This is the first Sustainability Report by STULZ GmbH. It applies to the 2022 fiscal year (January 1, 2022 to December 31, 2022) and was published on November 17, 2023. Reporting is voluntary; no external review has taken place.

## Objectives

The aim of this Report is to transparently disclose to our stakeholders and other interested parties how STULZ manages sustainability in a comprehensive and future-oriented way. We present key areas, strategies and selected goals, actions, progress, and key performance indicators. We therefore demonstrate how STULZ deals with economic, environmental and social concerns.

## Scope of consolidation, data collection

The scope of consolidation of this Sustainability Report covers STULZ GmbH, including the Headquarters (Hamburg), Production, S-Klima, and the ten branches in Germany.



The scope of consolidation differs from the STULZ Business Report, which includes other international production companies and subsidiaries under STULZ Verwaltungs GmbH & Co. KG.

Data for this Report was collected in collaboration with the relevant departments of STULZ GmbH. The information and data on social aspects such as workers, accidents and injuries, training and education, and information on governance cover all divisions of STULZ GmbH. The supply chain covered in the Report is based on our direct suppliers. The environmental performance indicators are based on our Hamburg site, covering the Headquarters, Production and S-Klima. Unless otherwise stated, the data covers the following units:

	Head- quarters	Production	S-Klima	10 branches
Staff data and other social aspects	X	X	X	X
Environmental data	X	X	X	–
Data on the supply chain and governance	X	X	X	X

Deviations due to rounding may occur in individual cases. We report in accordance with the currently applicable Standards of the Global Reporting Initiative (GRI) (see GRI Content Index, page 40 ff.).

**Contact for questions about the Report:**  
**Mr. Ludger Ecke,**  
[sustainability@stulz.de](mailto:sustainability@stulz.de)



  
**Publisher**

STULZ GmbH – Corporate Headquarters  
Holsteiner Chaussee 283  
22457 Hamburg, Germany  
Tel. +49 40 5585 0  
sustainability@stulz.de

**Content advice, editing**

STEINBACH STRATEGIEN Hamburg

**Design, layout and typesetting**

Cash Cow Farmers Hamburg

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**Note**

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**Exclusion of liability**

All Disclosures in the Sustainability Report 2022 are based on information that was collected and processed with the greatest of care. Nevertheless, errors cannot be completely excluded. All statements relating to the future were based on assumptions and estimates made at the time of publication.

**Date**

November 2023

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