Environmental Declaration 2023

Sustainability for a strong future
Dear Reader,

2022 was a challenging year in many ways. The lockdowns in China, the supply chain crisis and the imposed sanctions due to the war in Europe, along with the related energy supply risks, resulted in significant challenges. Nevertheless, HEIDENHAIN saw very positive business performance for the reporting year.

Last year, HEIDENHAIN employees showed that it is possible to master such a highly volatile environment through foresight, flexibility and dedication. The solutions they found even accelerated our company’s pace toward a sustainable, climate-neutral future.

At its Traunreut site, for example, HEIDENHAIN is no longer dependent on natural gas. Heating for the main campus and the Hochreit site is now sourced from the Traunreut municipal utilities through the district heating network, which is largely powered by sustainable geothermal energy. Energy-saving programs for the entire company were also launched with great success, including a significant drop in energy consumption in the production departments.

New projects are passing further milestones on the path toward a sustainable future in the manufacturing and administration departments at HEIDENHAIN. These projects include approx. 6,000 m² of solar panels installed on buildings at the Hochreit site that will deliver approx. 750 MWh of power per year starting in the spring of 2023. Also entering operation are 20 charging stations for the electric vehicles of staff and visitors. Trash separation and trash prevention measures in our production, administration and logistics departments continue to be expanded. Meanwhile, we have been planning our new development center with sustainability in mind, based on the EG 40 building code.

HEIDENHAIN also wishes to expand the reach of sustainability beyond its own walls. Our products make it possible for our customers to have a smaller environmental impact with their machines. The latest generation of LC and RCN encoders, for example, have up to a 99% smaller CO₂ footprint. Their enhanced optics eliminate the need for energy-intensive sealing air. Other solutions, by offering intelligent process monitoring, enable a prolonged product life-cycle for the machines that use them. Meanwhile, our sensors, touch probes and vision systems increase productive time through time-saving, in-process measurement, thereby promoting energy efficiency. And the long-term availability of HEIDENHAIN replacement parts allows customers to use their machines longer.

Karl Landinger
Environmental Protection Officer

Anna Enzinger
Executive Officer, Member of the Management Board

Traunreut, 3/23/2023

Flexibility in turbulent times: Pursuing sustainability and staying economically successful
HEIDENHAIN: profile, products and sustainability

“High-tech made in Germany” is what HEIDENHAIN stands for throughout the world. For more than 125 years, the company has been a standard-setting pioneer in measurement, control and drive system technology. HEIDENHAIN products often lay the groundwork for technological advances in the most innovative global industries, including semiconductors, electronics, machine tools and production equipment automation for the factories of tomorrow.

For these applications, HEIDENHAIN develops and produces:
- Linear encoders
- Angle encoders
- Rotary encoders
- CNC controls
- Digital Shop Floor software solutions
- Touch probes and vision systems
- Signal converters
- Digital readouts
- Touch probes
- Inspection and testing devices

By continuously improving the accuracy, dynamic performance and process reliability of its products, HEIDENHAIN directly enhances the performance and efficiency of the machines, systems and processes used in these industries. This also makes companies more environmentally friendly by, among other things, significantly reducing their production scrap and compressed air needs.

The improved scanning optics of the next-generation LC and RCN encoders, for example, eliminate the need for compressed air in machine tools. This reduces the CO₂ footprint of the encoder by up to 99% throughout its service life.

Another benefit is the sustainability of HEIDENHAIN products themselves, which, unlike wear parts, are designed for the entire life cycle of a machine. And our servicing approach has long prioritized repairs and very prolonged servicing intervals. Meanwhile, the high proportion of reusable materials in our products also ensures a high recycling rate at the end of their service life.

HEIDENHAIN controls

HEIDENHAIN controls have a 35-year proven track record of daily use on milling machines, lathes, drilling machines and machining centers. From everyday machining tasks to complex HSC and five-axis operations, HEIDENHAIN controls support users with:
- Shop-friendly Klartext programming
- Helpful images
- Practical cycles
- Smart solutions for digital data management

Thanks to a standardized user interface, operators can readily switch between different HEIDENHAIN controls. The high-performance functionality of these controls ensures optimum motion control for greater accuracy, higher removal rates and more reliable processes. Process monitoring and component monitoring functions, for example, reliably protect the machine tool from damage and excessive loading, thereby significantly contributing to longer machine life cycles.

The functions of HEIDENHAIN controls also provide users with numerous ways to sustainably reduce their carbon footprint. Fast setup and a high degree of automation reduce non-productive times. Functions that increase machining efficiency optimize the output and reduce the amount of energy consumed per finished part. Complete machining capabilities shorten process chains.

HEIDENHAIN encoders

Ensuring the high quality of HEIDENHAIN encoders requires specialized production systems and measuring equipment. Measuring standards for encoders are manufactured using processes independently developed by HEIDENHAIN and on machines largely manufactured by HEIDENHAIN. The encoder production facilities include clean rooms featuring special temperature control and vibration protection measures. HEIDENHAIN has mastered the relevant core processes:
- Production of microstructures, particularly on glass or glass ceramics
- Optical, inductive and magnetic scanning principles
- Downstream processing of measured data in integrated electronics

Input-output balance

The input-output balance depicts the environmentally relevant flow of materials and energy. This provides a basis for evaluating our economic activities in terms of their impact on the environment.

Input-output statement (per thousand EUR of gross value added)

<table>
<thead>
<tr>
<th></th>
<th>Input Energy in kWh</th>
<th>Water in dm³</th>
<th>Output Wastewater in dm³</th>
<th>Waste in kg</th>
<th>CO₂ equivalents in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>195</td>
<td>453</td>
<td>328</td>
<td>8.5</td>
<td>62.2</td>
</tr>
<tr>
<td>2021</td>
<td>228</td>
<td>603</td>
<td>356</td>
<td>6.4</td>
<td>4.5</td>
</tr>
<tr>
<td>2022</td>
<td>151</td>
<td>321</td>
<td>228</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>2023</td>
<td>110</td>
<td>238</td>
<td>165</td>
<td>5.1</td>
<td></td>
</tr>
</tbody>
</table>

The specific input-output balance was considerably improved.
The HEIDENHAIN headquarters is closely enmeshed R&D, production, logistics and administration activities are all concentrated in close proximity to each other. This ensures short distances and fast processes for immediately responding to the needs and wishes of international customers in high-tech industries, including semiconductors, electronics or mechanical engineering.

Production methods

The exceptionally high accuracy and quality standards of HEIDENHAIN products require special production facilities, including processes and machines developed in part by HEIDENHAIN itself. The main production processes are as follows:

- Basic machining and processing of metal and glass
- Production of precision optical graduations
- Assembly of printed circuit boards
- Final assembly of components and devices

Environmentally relevant processes

A small proportion of the production processes take place in facilities requiring approval in accordance with the German Federal Immission Control Act and the Water Resources Act:

- Generation of electricity and heat in the gas-powered combined heat and power plant with centralized furnaces for peak usage and emergency redundancy
- Reintroduction of waste water from glass processing

Further environmental legal requirements apply to systems that deal with water-polluting substances and to emissions containing highly volatile solvents:

- Handling, storage and transport of hazardous materials and waste
- Galvanic and chemical surface processing of optical-quality glass and steel carriers, with pH neutralization of the waste rinse water

The efficiency of the Hochreit site was improved in 2022 thanks to the significant increase in production volumes.

The campus in numbers

- Total area: 307,000 m²
- Approx. 71% surfaced
- Approx. 17% natural
- Approx. 12% semi-natural
- 4,150 employees
- EUR 638 million Gross value added in 2022
- 4,882 t overall output 2022 (total weight of all products sold, with packaging)

Hochreit campus

The HEIDENHAIN headquarters was originally concentrated on its campus in the middle of Traunreut. Today, it is supported by a site in Hochreit, located approximately 1 km from the main campus. Along with its metal and glass production facilities, it has housed the new logistics center since 2020.
The company’s occupational safety and environmental protection guidelines are the basis for ensuring staff health and safety, as well as environmental protection.

Occupational safety and environmental protection are important parts of our corporate policy. Yet even despite our best efforts, we know that our actions are not without impact on the safety and health of our employees and the environment.

The Management Board has appointed an officer responsible for introducing and implementing our safety and environmental protection policy. This person is responsible for ensuring compliance at all levels of the company.

The company's occupational safety and environmental protection policy is the basis for ensuring compliance at all levels of the company.

HEIDENHAIN uses an environmental protection management system to implement its core corporate policy guidelines in the form of practical measures.

In order to ensure the focused implementation of environmental protection management at HEIDENHAIN, the context of the company was determined based on stakeholder requirements. The resulting environmental factors are the basis for environmental protection goals and specific measures for continuous improvement. Within this context, any legal requirements must be fully met.

Organizational structure and process landscape

An environmental protection officer appointed by the Management Board monitors the company’s compliance with its occupational safety and environmental protection policy. The environmental protection officer is supported by officers for emission control, water protection, waste and hazardous materials. The company officers monitor all environmentally relevant legal changes, evaluate them and inform any affected areas of the company in order to ensure continuous improvement and compliance with the legal requirements. No violations of environmental regulations are known to have occurred during the reporting period.

Document management for the environmental management system is performed on an electronic knowledge platform. The process landscape of the environmental management system consists of overarching process descriptions supplemented by department-specific work and operating instructions.

We act in accordance with the following labor and environmental guidelines:

1. HEIDENHAIN shall protect and preserve the environment as essential for the existence of current and future generations.
2. HEIDENHAIN shall comply with all applicable environmental protection laws.
3. HEIDENHAIN shall comply with the environmental provisions and standards that affect its operations, act in an environmentally conscious manner at all of its sites and handle natural resources responsibly.
4. HEIDENHAIN shall strive to develop and use new products and production technology in order to optimize raw material requirements, reduce detrimental effects on the environment and eliminate risks to its employees.
5. HEIDENHAIN shall ensure that its safety systems and organizational measures are always at the current state of the art.
6. HEIDENHAIN shall inspect, monitor and evaluate its corporate activities for their effect on the environment and on the safety of its employees, ensuring the implementation of occupational safety and environmental protection policy through a certified environmental protection management system.
7. HEIDENHAIN expects its employees to actively contribute to the protection of the environment.
8. HEIDENHAIN shall train and inform its employees in order to promote safety and sensitivity to environmental matters, both inside and outside the company.
9. HEIDENHAIN shall endeavor to ensure the seamless flow of information to public authorities in the context of a cooperative working relationship.
10. HEIDENHAIN shall inform its business partners and the public regarding the safety and environmental aspects of the company and its products.

Environmental management

The company’s context

HEIDENHAIN uses an environmental protection management system to implement its core corporate policy guidelines in the form of practical measures.

In order to ensure the focused implementation of environmental protection management at HEIDENHAIN, the context of the company was determined based on stakeholder requirements. The resulting environmental factors are the basis for environmental protection goals and specific measures for continuous improvement. Within this context, any legal requirements must be fully met.

Organizational structure and process landscape

An environmental protection officer appointed by the Management Board monitors the company’s compliance with its occupational safety and environmental protection policy. The environmental protection officer is supported by officers for emission control, water protection, waste and hazardous materials. The company officers monitor all environmentally relevant legal changes, evaluate them and inform any affected areas of the company in order to ensure continuous improvement and compliance with the legal requirements. No violations of environmental regulations are known to have occurred during the reporting period.

Document management for the environmental management system is performed on an electronic knowledge platform. The process landscape of the environmental management system consists of overarching process descriptions supplemented by department-specific work and operating instructions.

We act in accordance with the following labor and environmental guidelines:

1. HEIDENHAIN shall protect and preserve the environment as essential for the existence of current and future generations.
2. HEIDENHAIN shall comply with all applicable environmental protection laws.
3. HEIDENHAIN shall comply with the environmental provisions and standards that affect its operations, act in an environmentally conscious manner at all of its sites and handle natural resources responsibly.
4. HEIDENHAIN shall strive to develop and use new products and production technology in order to optimize raw material requirements, reduce detrimental effects on the environment and eliminate risks to its employees.
5. HEIDENHAIN shall ensure that its safety systems and organizational measures are always at the current state of the art.
6. HEIDENHAIN shall inspect, monitor and evaluate its corporate activities for their effect on the environment and on the safety of its employees, ensuring the implementation of occupational safety and environmental protection policy through a certified environmental protection management system.
7. HEIDENHAIN expects its employees to actively contribute to the protection of the environment.
8. HEIDENHAIN shall train and inform its employees in order to promote safety and sensitivity to environmental matters, both inside and outside the company.
9. HEIDENHAIN shall endeavor to ensure the seamless flow of information to public authorities in the context of a cooperative working relationship.
10. HEIDENHAIN shall inform its business partners and the public regarding the safety and environmental aspects of the company and its products.

Environmental audits

Ascertainment of environmental impact

The environmental impact is ascertained through consideration of the environmentally relevant corporate processes. HEIDENHAIN analyzes these effects under the aspects of auxiliary materials and supplies, waste, energy, emissions and water. For every aspect, energy and material consumption are measured and the use of environmentally relevant systems are examined. The results are expressed as metrics. The corporate processes are evaluated for both normal operating procedure and for potentially occurring operational disturbances. We are aware that the consumption of resources and the disposal of waste cause air and soil pollution; that harmful emissions contribute to air pollution, summer smog and the greenhouse effect; that the consumption of energy and water accelerates the scarcity of resources; and that wastewater contaminants contribute significantly to soil and water pollution.

Key metrics

Our environmental protection goals are defined and evaluated based on metrics. Key metrics are gathered as part of determining the environmental effects of environmentally relevant processes. In order to ensure continuous improvement, the extent to which the defined environmental goals are reached is determined through the periodic review of metrics and their trends.

Environmental audits provide periodic and systematic evaluation of environmental performance, as well as compliance with the relevant environmental regulations. All activities of the company therefore undergo a full evaluation at defined intervals of at least three years. The content of the environmental audit is documented in a summary. This summary then supports the Management Board in reviewing the suitability, reasonableness and effectiveness of an environmental management system.

The environmental audit is supplemented by periodic, department-specific internal occupational safety and environmental audits. The audits are performed by trained auditors, the relevant managerial staff, the works council and the company physician.

Any discovered deviations are documented and resolved through corrective measures within the required time.

The environmental audit therefore ensures that the current environmental management system complies with the company’s environmental policy.
Environmental impact

Energy

Due to the natural gas shortage and the resulting lack of reliable supply, and due to sustainability reasons, HEIDENHAIN changed its heating strategy in 2022. We now rely primarily on climate-friendly district heating. In the future, more self-produced, renewable electrical energy will be used at this site.

Heating

The company’s heating needs are primarily covered by district heating from the Traunreut municipal utilities. This district heating is generated mainly from renewable energy sources, primarily geothermal energy and biomass.

The company’s own gas-powered combined heat and power plant, as well as the already existing heating systems, will be operated only for peak demand in winter or as a backup in the event of an emergency. The already existing heating systems can be operated on either natural gas or heating oil depending on the supply situation.

Electricity

Our electrical energy needs, which must also compensate for the significantly reduced operation of the combined heat and power plant, are covered entirely by green electricity obtained from renewable, environmentally friendly sources. However, we do not wish to rely solely on green-energy certifications, which is why, in the future, our site will generate more climate-friendly electricity on its own.

Renewable energy

Of our entire energy consumption of 70.3 GWh in 2022, approximately 54.5 GWh came from renewable sources. The proportion of renewable energy was therefore approximately 77% across all sources used.

Limiting energy needs

HEIDENHAIN strives to reduce energy consumption and improve energy efficiency in new buildings and through energy rehabilitation in already existing buildings.

New buildings

For new buildings, the energy-efficient operation of the building is taken into consideration as early as the planning stage. In particular, the structural thermal insulation of the building envelope, as well as the energy efficiency of the building services technology for heating, ventilation, air conditioning and lighting, must meet strict legal requirements for energy conservation in buildings.

Thanks to the use of environmentally friendly and state-of-the-art technologies, such as heat recovery for air-conditioning systems, a reduction in the environmental impact was achieved for various new production buildings.

Energy rehabilitation for existing buildings

For the improvement of energy efficiency in existing buildings, care is taken that buildings and building services systems undergo energy rehabilitation as needed, subject to economic considerations. The objective is to ensure the economical and, as a result, environmentally friendly operation of already existing buildings.

Energy monitoring

An extensive energy monitoring system that transparently tracks the energy consumption of all buildings is continually under expansion. Through continuous monitoring of the consumption rates, negative trends are easier to monitor and specific weaknesses can be identified. The energy monitoring system thereby contributes to energy consumption optimization.

The gas-powered combined heat and power plant will be used only for peak demand in winter or as a backup in the event of an emergency.

Energy consumption

Overall in GWh

<table>
<thead>
<tr>
<th>Year</th>
<th>Thermal energy</th>
<th>Electrical energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>76.6</td>
<td>53.6</td>
</tr>
<tr>
<td>2020</td>
<td>70.3</td>
<td>52.8</td>
</tr>
<tr>
<td>2021</td>
<td>72.7</td>
<td>58.9</td>
</tr>
<tr>
<td>2022</td>
<td>71.0</td>
<td>52.5</td>
</tr>
</tbody>
</table>

Per thousand EUR of gross value added in kWh

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>kWh</td>
<td>196</td>
<td>228</td>
<td>151</td>
<td>110</td>
</tr>
</tbody>
</table>
Environmental impact

Water and soil

Fresh water

Approx. 152,000 m³ of fresh water was used in 2022. This fresh water is primarily needed for climate control in production and assembly departments, and for cleaning processes during the manufacture of graduations. Our fresh water is sourced entirely from the public mains of the Traunreut waterworks.

Wastewater

Water types and quantities

Approximately 105,000 m³ of production wastewater and sanitary sewage were produced in 2022. The amount of sanitary sewage is calculated based on an annual average consumption rate of approximately 8 cubic meters per employee. This calculation is based on the average full-time equivalent during the reporting period.

The difference between freshwater consumption and wastewater production is due to evaporation from cooling towers and air humidifiers.

Pretreatment of wastewater

Before being discharged into the public sewage system, a portion of the produced wastewater is pretreated with the following equipment:

- Grease separators
- A light liquid separator
- Flow neutralization systems

The continuous-flow neutralization system treats and monitors rinse water from the company’s own cafeteria at the main plant and the Hochreit campus. The light liquid separator treats the wastewater containing mineral oil from the company’s own car wash stations. The separator systems are operated in accordance with legal requirements.

Two flow neutralization systems are used for wastewater from the production area. They treat and monitor the pH of minimally contaminated rinse water from the production of graduations.

Reintroduction into the water cycle

For many years, rainwater from new buildings has been returned to natural circulation via soakaway pits.

Wastewater pollutant load

The pollutant load from the Graduation Production department (E90 and A40) is checked annually by an accredited measuring body. The results are considerably below the prescribed limits of the municipal damage statute. Both the organic load and the nitrogen and phosphorus load exhibit significantly smaller concentration levels than those found in household raw effluent. Other water-polluting substances, such as heavy metals, were likewise found at only very low concentrations. As a result, this wastewater exhibits good biodegradability.

The processing of glass and glass ceramics produces waste water. Releasing this waste water into the public sewage system requires permission in accordance with the German Federal Water Resources Act. The minimum requirements for introducing this wastewater are based on Appendix 41 of the German Federal Waste Water Ordinance and are defined in the relevant notice of approval. The pollutant loads are periodically checked at two wastewater collection sites (E92 and H14) by an accredited measuring body and are below the officially prescribed wastewater limits.

Self-monitoring

Within the scope of self-monitoring in accordance with the German Federal Water Resources Act, the company’s own sewer system is periodically inspected. Any occurring deficiencies are promptly resolved.

Soil protection

In the interest of protecting soil and water from hazardous pollution, sites once suspected of contamination were examined for hazardous substances in accordance with the requirements of the German Federal Soil Protection Act. The company grounds are now free of areas suspected of contamination.

Wastewater is inspected on a regular basis through self-monitoring. To date, the measured concentration levels have been significantly below the legally specified limits.

Legal and government agency wastewater limits and measurement results

<table>
<thead>
<tr>
<th>Graduation production (E90 and A40)</th>
<th>Unit</th>
<th>Limit value</th>
<th>Measurement results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons</td>
<td>mg/l</td>
<td>20</td>
<td>&lt; 19</td>
</tr>
<tr>
<td>Zinc</td>
<td>mg/l</td>
<td>5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Chromium</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Nickel</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>AOX</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glass processing (E92 and H14)</th>
<th>Unit</th>
<th>Limit value</th>
<th>Measurement results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.16</td>
</tr>
<tr>
<td>Lead</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.03</td>
</tr>
<tr>
<td>Arsenic</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.25*</td>
</tr>
<tr>
<td>Wastewater amount (E92 / H14)</td>
<td>m³/d</td>
<td>80 / 99</td>
<td>&lt; 3 / &lt; 98</td>
</tr>
</tbody>
</table>

The measurement results come from the measurement reports of an accredited measuring body. For both glass processing collection sites, the stated value is the maximum measured value.

* As part of our self-monitoring process, faulty samples caused the appearance of non-representative values for arsenic in 2022. These values are not included in the table, because there was no further threshold exceedance after we consulted with the government agency and contacted the error.

The absolute water usage and the specific water usage were considerably reduced in 2022.

Freshwater consumption / wastewater

<table>
<thead>
<tr>
<th>Overall in m³</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production wastewater</td>
<td>157,000</td>
<td>163,000</td>
<td>152,000</td>
<td>174,000</td>
</tr>
<tr>
<td>Sanitary sewage</td>
<td>48,000</td>
<td>46,000</td>
<td>47,000</td>
<td>47,000</td>
</tr>
<tr>
<td>Evaporation from cooling towers / air humidifiers</td>
<td>31,000</td>
<td>30,000</td>
<td>30,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

Per thousand EUR of gross value added in dm³:

<table>
<thead>
<tr>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater consumption</td>
<td>463</td>
<td>503</td>
<td>356</td>
</tr>
<tr>
<td>Amount of wastewater</td>
<td>328</td>
<td>396</td>
<td>321</td>
</tr>
</tbody>
</table>

The continuous-flow neutralization system treats and monitors rinse water from graduation production before it is introduced into the sewer system.

Legal and government agency wastewater limits and measurement results

<table>
<thead>
<tr>
<th>Graduation production (E90 and A40)</th>
<th>Unit</th>
<th>Limit value</th>
<th>Measurement results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons</td>
<td>mg/l</td>
<td>20</td>
<td>&lt; 19</td>
</tr>
<tr>
<td>Zinc</td>
<td>mg/l</td>
<td>5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Chromium</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Nickel</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>AOX</td>
<td>mg/l</td>
<td>1</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glass processing (E92 and H14)</th>
<th>Unit</th>
<th>Limit value</th>
<th>Measurement results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.16</td>
</tr>
<tr>
<td>Lead</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.03</td>
</tr>
<tr>
<td>Arsenic</td>
<td>mg/l</td>
<td>0.3</td>
<td>&lt; 0.25*</td>
</tr>
<tr>
<td>Wastewater amount (E92 / H14)</td>
<td>m³/d</td>
<td>80 / 99</td>
<td>&lt; 3 / &lt; 98</td>
</tr>
</tbody>
</table>

The measurement results come from the measurement reports of an accredited measuring body. For both glass processing collection sites, the stated value is the maximum measured value.

* As part of our self-monitoring process, faulty samples caused the appearance of non-representative values for arsenic in 2022. These values are not included in the table, because there was no further threshold exceedance after we consulted with the government agency and contacted the error.

The absolute water usage and the specific water usage were considerably reduced in 2022.
Environmental impact

Waste

Waste separation, waste treatment and waste disposal

Waste separation: committed to recycling raw materials

The company produces the main following types of waste:
- Metal from metalworking
- Glass from graduation production
- Waste paper from offices
- Cardboard from packaging
- Electronic waste, mainly from the electronic production department
- House-hold-like commercial waste
- Hazardous wastes, in particular solvent-water mixtures and cooling lubricants

Waste treatment

All waste is separately collected and properly recycled or disposed of in accordance with the regulations of the German Waste Management and Product Recycling Act and the Commercial Waste Ordinance, including the hazardous substances regulations.

Waste disposal

Thanks to strict waste separation, approx. 3,137 metric tons, or 96% of our waste, was sent to recycling in 2022. Most of the waste is disposed of by regional waste management companies. Hazardous waste is primarily disposed of by GSB Sonderabfall-Entsorgung Bayern.

Processing facilities chop metal chips into small pieces and withdraw moisture, thus allowing them to be economically recycled.

Waste statistics

<table>
<thead>
<tr>
<th>Waste and recyclables in metric tons</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics</td>
<td>115</td>
<td>88</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>Glass</td>
<td>63</td>
<td>46</td>
<td>63</td>
<td>62</td>
</tr>
<tr>
<td>Commercial waste</td>
<td>247</td>
<td>213</td>
<td>284</td>
<td>243</td>
</tr>
<tr>
<td>Wood</td>
<td>194</td>
<td>116</td>
<td>148</td>
<td>154</td>
</tr>
<tr>
<td>Metal</td>
<td>1,035</td>
<td>696</td>
<td>1,142</td>
<td>1,075</td>
</tr>
<tr>
<td>Paper</td>
<td>244</td>
<td>191</td>
<td>246</td>
<td>255</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>1,021</td>
<td>832</td>
<td>985</td>
<td>1,016</td>
</tr>
<tr>
<td>Other waste</td>
<td>363</td>
<td>248</td>
<td>386</td>
<td>387</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,282</strong></td>
<td><strong>2,632</strong></td>
<td><strong>3,351</strong></td>
<td><strong>3,282</strong></td>
</tr>
</tbody>
</table>

Both the absolute and specific amount of produced waste was reduced.

<table>
<thead>
<tr>
<th>Overall in metric tons</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>3,282</td>
<td>2,632</td>
<td>3,351</td>
<td>3,282</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>2.7</td>
<td>2.7</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Metal waste</td>
<td>2.7</td>
<td>2.7</td>
<td>2.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Total waste</td>
<td>8.5</td>
<td>8.4</td>
<td>6.6</td>
<td>5.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Per thousand EUR of gross value added in kg</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous waste</td>
<td>2.7</td>
<td>2.7</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Metal waste</td>
<td>2.7</td>
<td>2.7</td>
<td>2.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Total waste</td>
<td>8.5</td>
<td>8.4</td>
<td>6.6</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Measures for waste reduction in production departments

Processing plant for metal chips

Two processing plants for metal chips are in use; one is located on the main campus in Traunreut and the other at the Hochreit facility. The metal chips produced are first chopped up by a shredding unit, and adherent emulsifiers are then removed in a centrifuge. This makes it possible to more effectively and economically recycle the metal chips with a moisture content of less than 1%. In order to avoid the transport of hazardous materials around the site, waste cooling lubricant is stored in central tanks located near the respective processing equipment.

Reduction of waste from coating processes

In the past, a protective coating was applied to the front panels of the contouring controls. Due to the increased use of stainless steel housings, these coatings are now largely not needed. The amount of waste arising from these processes has therefore been reduced.

Reduction in cooling-lubricant consumption

Through the growing use of centrifugal suction systems on encapsulated machine tools, the cooling lubricant that is carried along with the extracted emulsion and oil mists is separated and reintroduced into circulation within the given system.

Hazardous materials

The following hazardous materials arise from the company’s manufacturing processes:
- A solvent-water mixture for the surface cleaning of semi-finished and finished products
- Waste from coating processes, adhesive residue from assembly processes and soiled cellulose clothes from cleaning activities
- Diverse waste containing acids and bases from graduation production

Measures taken

The hazardous materials are filled or packed into approved transport containers and then declared and loaded in compliance with the applicable regulations. Employees involved in the transport of these materials monitor the packing and loading processes with the help of a checklist.

Training and monitoring

All of the employees involved in the transport of hazardous materials are trained and regularly instructed in accordance with their specific role. An external hazardous materials officer monitors compliance with the hazardous materials regulations.

Rotary encoders convert rotational motion into electrical signals using the photoelectric scanning principle for position ascertainment. Cooling lubricants are used during the production of the flange, which holds the components of the rotary encoder.
Emissions

Environmental impact

Environmental impact

HEIDENHAIN precision graduations have line widths ranging from 0.25 μm to 10 μm. Manufacturing these graduations (e.g., DIADUR or METALLUR) requires special capital investments in buildings, climate control and process technology.

Greenhouse gas emissions

The CO₂ equivalent takes into account the anthropogenic greenhouse gases from Scope 1 emissions sources (direct release of climate-damaging gases at the company) and Scope 2 sources (indirect release of climate-damaging gases by energy providers).

Due to the site restructuring of our heating plant, Modules 1 to 4 and the central heating plant, the results of the most recent measurement date for the combined heat and power plant were in 2022. The most recent measurement date for the boiler plant was in 2021. The measured maximum value of both boilers is stated. The officially required measurement interval is three years. The most recent measurement data for the combined heat and power plant was in 2022. The most recent measurement data for surface cleaning in the Graduation Production department was also in 2022.

Surface cleaning with organic solvents

The emission of volatile organic compounds (VOC) is due primarily to the cleaning of semi-finished and finished goods at various facilities and work areas. The primary cleaning agents used are alcohols and acetonitrile.

Solvents are chiefly used for cleaning the surfaces of semi-finished and finished products. Approximately half of our used solvents are recycled; the remainder are released into the surrounding air in the form of emissions.
Environmental impact

Material usage

Conscientious use of materials

HEIDENHAIN has unusually high production depth. The main constituents of HEIDENHAIN products are steel, aluminum, flat glass and electronic components. The production process comprises metal machining, glass processing, graduation production, electronics production and final assembly. The following essential raw materials, auxiliary materials and operating materials are used:

Steel and aluminum
Steel and aluminum are required primarily in the production of extrusions for linear encoders and of flanges for rotary and angle encoders.

Flat glass
Flat glass is primarily required as a carrier for precision graduations.

Solvents
Solvents are chiefly used for cleaning the surfaces of semi-finished and finished products.

Cooling lubricants
Cooling lubricants are used for metalworking and glass processing in the production of graduations.

Acids and bases
Acids and bases are primarily used during the production of graduations. The surfaces of the encoder graduations are treated with galvanic and chemical processes. These substances are handled predominantly in closed systems where ambient air is monitored.

Chlorofluorocarbons
Chlorofluorocarbons are present as refrigerants in closed climatic cycles. Tiny amounts of these chemicals escape via leakage during the operation of air conditioning systems, and this loss is replaced accordingly. HEIDENHAIN endeavors to continue transitioning all of its heating, ventilation and air conditioning systems to environmentally friendly refrigerants and to reduce refrigerant loss.

Cardboard and wood
Cardboard and wood are used as highly recyclable packaging materials. Our Packaging R&D department continuously strives to increase the use of molded pulp as a substitute for plastic for a sustainable packaging cycle. We thereby intend to increase the share of recyclable packaging material.

Material efficiency
For material efficiency, the stated procurement mass and not the consumption is considered. The three main relevant raw materials considered are aluminum, steel and flat glass, which, along with electronic components, represent the primary mass-specific materials used in HEIDENHAIN products. Efficient materials usage during production significantly contributes to the good stewardship of natural resources and to the economic efficiency of production processes. We continuously strive to quantify and analyze the fundamental flow of raw materials, auxiliary materials and operating materials in order to identify viable savings potential.

Production material procurement

<table>
<thead>
<tr>
<th>Raw materials</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>828</td>
<td>984</td>
<td>1,842</td>
<td>1,580</td>
</tr>
<tr>
<td>Steel</td>
<td>514</td>
<td>405</td>
<td>1,093</td>
<td>710</td>
</tr>
<tr>
<td>Flat glass</td>
<td>226</td>
<td>184</td>
<td>342</td>
<td>291</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Raw materials used per thousand EUR of gross value added</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>2.2</td>
<td>3.2</td>
<td>3.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Steel</td>
<td>1.3</td>
<td>1.3</td>
<td>2.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Flat glass</td>
<td>0.6</td>
<td>0.6</td>
<td>0.7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Environmental impact

Occupational safety and fire protection

Occupational safety

Evaluation of working conditions
For the purpose of ensuring the health and safety of all our employees, the working conditions of all employees, including any associated exposure to hazards, are systematically evaluated on a regular basis in accordance with the German Occupational Safety and Health Act. All requirements for occupational safety, such as for plant and operational safety, are regularly reviewed through internal audits, and any necessary measures for improvement are taken.

Employee training and professional development
Because work accidents are usually caused by behavior-related errors, great emphasis is placed on employee training. Employees are regularly instructed by their supervisors about the dangers inherent to their duties and the measures required for effective risk prevention. Opportunities for further training on occupational safety are offered through an in-house training program and are attended based on the specific hazards that employees are exposed to.

Internal communication
The safety and environmental committee convenes regularly to promote internal communication between safety specialists, the company physician, the works council and representatives of the various technical divisions. The committee members discuss occupational safety and environmental protection issues, as well as jointly define required measures.

Fire protection

Fire protection for buildings
Fire protection for buildings is taken into account especially when new buildings are planned or when existing buildings undergo significant alteration. Building measures and fire protection systems such as fire alarm systems, fire extinguishing systems, and smoke and heat removal systems are defined in a separate fire protection certificate for the new property.

Technological fire protection measures
In order to ensure rapid and precise alarming in the event of a fire, a centralized fire alarm system is in place. When a fire alarm is triggered, an internal initial response group and the Plant Security team are notified by pager. Automatic fire extinguishing systems, wall hydrants and a sufficient number of portable fire extinguishers are available within company facilities. For the general availability of extinguishing water, an adequate network of hydrants is present on the company grounds.

Fire protection at the organizational level
To improve corporate fire protection at the organizational level, employees receive basic and advanced training to become fire protection assistants. It is their task on the one hand to operate a fire extinguisher in case of fire, and on the other to support supervisors and in particular the fire safety engineers in the area of preventive fire protection.

To ensure supply security for the company, the suppliers’ fire protection measures also are evaluated during supplier audits.

HEIDENHAIN Plant Security monitors safety on the company grounds and coordinates measures for the elimination of plant disturbances, such as fire alarms.
Environmental objectives

For the efficient implementation of the environmental policy defined for our company, environmental goals with specific environmental programs are developed and updated. This process is continually influenced by the results and experience gained from the annual environmental audit.

Environmental plans include measures in all areas of environmental protection at HEIDENHAIN, which are aimed at the reduction of our environmental impact as part of a continuous improvement process.

Approval of the environmental plan requires the prior approval of the Management Board. It must be possible to integrate the environmental programs into the company’s environmental policy. In this context as well, the use of the technologically best processes and methods is meant to ensure the continuous improvement of environmental protection at HEIDENHAIN.

The environmental programs comply with all legal regulations and are intended to surpass them; otherwise, this is economically reasonable.

Status of environmental goals

The measures from the previous year’s environmental plan have largely been implemented and have led to improvements in the environmental impact of our products and production processes. The results from the previous year’s environmental plan highlight our efforts to sustain a continuous improvement process for the environmental impact of the Traunreut site.

We have thereby achieved a high standard, which serves as the basis for our future efforts toward even more environmentally friendly products and production processes. The qualitative and quantitative improvements made to our environmental impact are stated in the environmental data of the annual reports.

2023 environmental plan

<table>
<thead>
<tr>
<th>Objective</th>
<th>Planned measures</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate protection</td>
<td>The green electricity that has been delivered since 2021 for the Traunreut main office has been expanded to the German Corporate Group since the beginning of 2023. Through the supplementation of the electricity supply via Power Purchase Agreements (PPA), approximately 40% of our electricity needs will be obtained solely from renewable energy sources directly from the producer starting in 2024, including water power, wind power, solar power or biogas. This allows the exact source of the power to be known and ensures regional sourcing. As with electricity, the consumption of natural gas at the main campus in Traunreut and the German manufacturing subsidiaries will become climate-neutral. Through changes to the supply contracts, only CO2-compensated natural gas is to be sourced. This voluntary compensation is achieved via certified emission-reduction credits by which the amount of emissions is compensated for in the form of climate-protection projects. Through the installation of solar panels on the roofs of two corporate buildings, approximately 750 MWh of electrical energy can be generated per year for climate-friendly self-supply.</td>
<td>2024</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>We plan to gradually switch all factory traffic to electric vehicles. The first step is to replace five vehicles using conventional combustion engines with electric vehicles. In order to promote electric mobility, 20 charging stations will be set up for electric vehicles. In addition, staff will be provided with charging stations for electric bikes.</td>
<td>2023 to 2024</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>The continued process of changing the lighting systems of various corporate buildings to LED technology is expected to save around 600 MWh of electricity annually. In order to increase the energy efficiency of our building service facilities, various vacuum pumps were replaced, saving more than 50 MWh of electrical energy per year. Plans to optimize the compressed air systems have been postponed to 2023 due to material shortages.</td>
<td>2023 to 2024</td>
</tr>
</tbody>
</table>

Results from the 2022 environmental plan

<table>
<thead>
<tr>
<th>Objective</th>
<th>Results of the implemented measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate protection</td>
<td>To contribute to our own energy production, we began installing solar panels on the roof of a corporate building. These panels are expected to deliver 400 kWh of electricity per year. Due to material shortages, operation of the panels has been delayed to 2023. In order to promote the use of electric vehicles by employees, we have begun setting up 20 charging stations for electric vehicles. Due to material shortages, operation of the charging stations has been delayed to 2023.</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>Our switch to LED technology for the lighting in various corporate buildings was continued. Capacity and material shortages caused delays in implementation. In order to increase the energy efficiency of building service facilities, various vacuum pumps were replaced, saving more than 50 MWh of electrical energy per year. Plans to optimize the compressed air systems have been postponed to 2023 due to material shortages.</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>Due to various changes in the production processes for precision graduations, the specific consumption of organic solvents is expected to be reduced by 25% within three years, which will be associated with a significant reduction in VOC emissions. Thanks to the implementation of various process optimization measures, the specific consumption of organic solvents was reduced by approx. 20% in 2022.</td>
</tr>
<tr>
<td>Reduction in waste production</td>
<td>A carry-out food option was introduced for the company cafeteria in 2020. In the past, disposable food containers were used for this. They have now been replaced with washable, reusable containers. Compared with 2021, we saved approximately 100,000 disposable food containers in 2022.</td>
</tr>
</tbody>
</table>
The signing party, Dipl.-Ing. Wolfgang Brandl, EMAS environmental auditor from TÜV Süd Landesgesellschaft Österreich GmbH, with registration number AT-V-0003, accredited for group 26.5 (NACE code), hereby confirms that he has evaluated whether the company site stated in the updated Environmental Declaration of the organization

DR. JOHANNES HEIDENHAIN GmbH
Dr.-Johannes-Heidenhain-Str. 5
83301 Traunreut, Germany,

With the signing of this Declaration, it is hereby confirmed that

- the expert assessment and validation were conducted in accordance with the requirements of Regulation (EC) No 1221/2009, updated by Regulations (EU) 2017/1505 and (EU) 2018/2026,
- the result of the expert assessment and validation confirms that there is no evidence of any non-compliance with the applicable environmental regulations,

and that the data and information contained in the updated Environmental Declaration for the company location provide a reliable, plausible and truthful portrayal of all activities at the location in the area stated within the Declaration.

This Declaration is not equivalent to an EMAS registration. EMAS registration may be conducted only by a competent authority in accordance with Regulation (EC) No 1221/2009, updated by Regulation (EU) 2017/1506. This Declaration must not be used as the sole basis for informing the public.

The submission of an updated Environmental Declaration is planned for 2024.

Statement by the environmental auditor

Munich, 4/13/2023

Wolfgang Brandl
Environmental Auditor

GRI content index