

# Environment

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## Introduction environment

This section zooms in on the company’s environmental risks and impacts. Supported by facts and figures, it shows how HUBER+SUHNER works to keep its environmental impact as low as possible, while also actively managing the risks that result from changes in our natural environment. In continuously reducing our environmental impact, we pursue ambitious emissions reduction and resource efficiency targets.

### Environment - Performance 2023 at a glance



\*The -3 percentage points reflect an increase in non-recyclable waste.

y-o-y

Ernst & Young Ltd performed a limited assurance engagement on selected environmental KPIs for 2023, these are summarized in [Addendum 3: Detailed environmental performance indicators](#).

## Environmental footprint

HUBER+SUHNER regards care for the environment as an important and vital aspect of its sustainability efforts. As stated in our environmental policy, we strive to continuously improve our environmental performance. Although environmental stewardship for many years has been a priority of HUBER+SUHNER, we have intensified our efforts to improve our environmental performance over the past few years.

### Approach

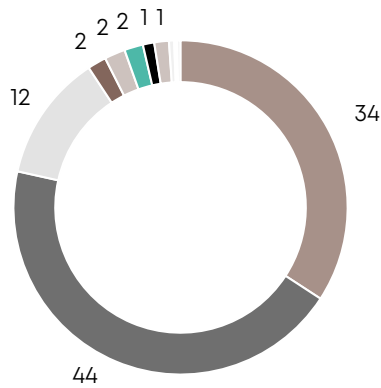
As early as 1999, the company implemented an environmental management system according to ISO 14001 and obtained certification for its sites in Switzerland. Today, two-thirds of all production sites are certified: Pfäffikon and Herisau, Switzerland; Changzhou, China; and Tczew and Krzeszowice, Poland; Warren, New Jersey, United States; and Cambridge, United Kingdom.

Since 2009, HUBER+SUHNER has used life cycle analysis (LCA) to determine its environmental performance annually on a quantitative basis and, since 2019, the significant environmental aspects as required by the ISO 14001 standard. The procedure is described in the company's environmental management processes. It is based on the LCA phases according to ISO 14040. In 2022, for the first time, all sites under the full operational control of HUBER+SUHNER AG (head office) provided at least data on energy consumption and employee commuting. The data on raw materials and commercial goods, transport of goods within the Group and to customers, as well as business travel, were taken from central systems. Based on the number of production employees and the manufacturing activities carried out, it is estimated that more than 95 % of the company's environmental impact has therefore been recorded. HUBER+SUHNER has applied an inventory analysis based on input-output models. Each production site is considered a unit into which energy and materials enter (input) and from which emissions, waste, wastewater, and products are generated (output).

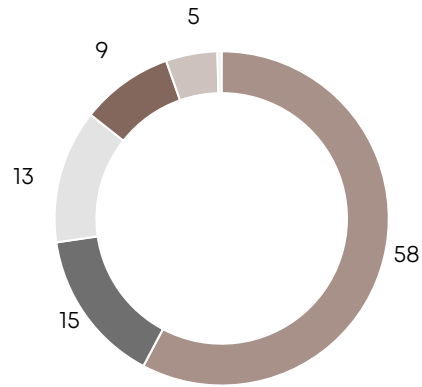
**Figure 4: Environmental impact 2023**

Figure 4 shows how the various material and energy flows contribute to the total environmental impact of HUBER+SUHNER. The total balance is our complete environmental impact. The core balance includes those material and energy flows that the company can directly influence.

**Total balance\* (in %)**



**Core balance (in %)**



- Copper
- Commercial goods
- All other materials
- Transport products
- Transport intercompany
- Paper/packaging
- Electricity
- Commuting
- Business traffic < 1 %
- Disposal < 1 %
- Fuel < 1 %
- Heating < 1 %
- Electricity
- Heating
- Disposal
- Chemicals
- Fuel
- Water < 0.4%

\*Unlike our greenhouse gas inventory, which distinguishes between different emission scopes, our environmental impact accounting delineates between a total balance and a core balance to differentiate between our operational impact and our impact across our value chain.

In 2023, the largest share of the company's environmental impact came from commercial goods which accounted for 44 %. In contrast to previous years, the extraction, processing, and transport of copper which accounted for 34 %, has only the second largest impact. The growing impact from commercial products is a result of a shift in our business mix, leading to a reduction in our own value creation.

Other significant environmental aspects were the remaining raw, auxiliary, and process materials (12 %) [1], product transports to customers and between HUBER+SUHNER sites (4 %), paper and packaging material (2 %), electricity (1 %), and commuting (1 %).

Looking at the company's core balance, the significant environmental aspects were electricity (58 %), heating (15 %), and waste disposal (13 %), followed by direct emissions of chemicals (9 %) [2] and fuel (5 %).

[Addendum 1](#) provides further details on the scope and methodology on our life cycle impact assessment (LCIA).

[1] In particular: glass fiber, plastics, metals other than copper, refrigerants, sulphur hexafluoride, dry ice, and solvents.

[2] Losses of solvents, sulphur hexafluoride, dry ice, and refrigerants

## Objectives

Our life cycle analysis determines most environmental targets of our production, which generally relate to the top three environmental aspects of the core balance. At all sites, we aim to avoid air and water pollution and to minimise the use and disposal of toxic and hazardous chemicals. Our efforts to reduce our environmental footprint go hand in hand with our efforts to reduce our [resource use](#) and [greenhouse gas emissions](#), which are detailed in subsequent chapters.

## Progress

In 2023, we reduced both the absolute impact of our core and total balance. However, only the intensity of the company's core balance is decreasing (see Figure 5 left side), whereas the company's total impact is showing a slight increase.

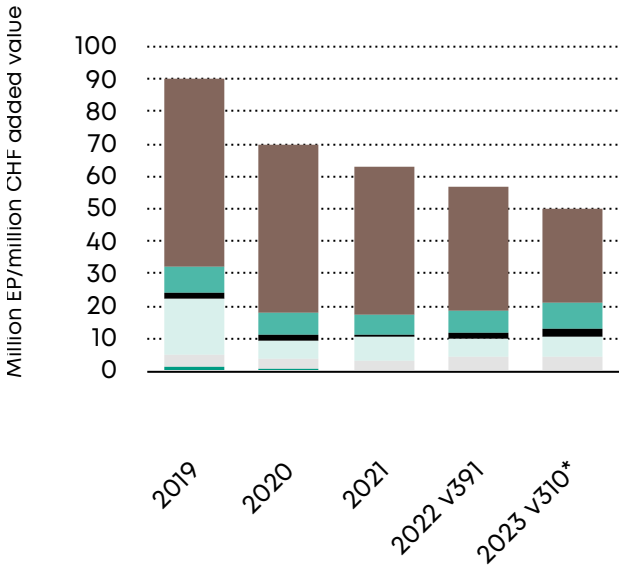
**Core balance:** Encouragingly, the downward trend in the intensity of the environmental impact (core balance) continued in 2023. It decreased by a further 10 % compared to the previous year (see Figure 5 left side). This reduction is almost exclusively due to the production and purchase of more green electricity.

**Total balance:** In 2023, there was a decrease of 5 % in the overall environmental impact compared to the previous year, as illustrated in figure 5 (right side). The transition to greener sources of electricity is not the sole factor contributing to this change; a decrease in the utilization of copper has also played a significant role. Furthermore, we have conscientiously implemented measures to reduce our environmental impact, including efforts to mitigate the impact of product transportation and packaging. The growing impact from commercial products is a result from a shift in our business mix as explained above.

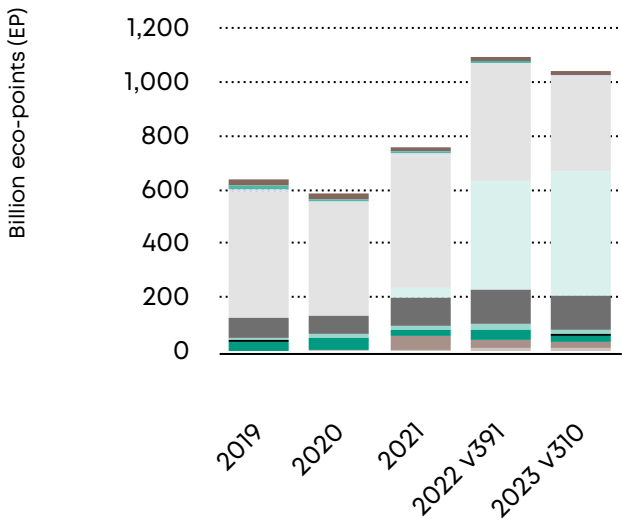
**Figure 5: Environmental impact total balance and core balance 2023**

Figure 5 illustrates that until 2022, the overall environmental impact experienced a substantial increase. This rise is primarily attributed to the expansion of the scope of collected data.

**Intensity of the environmental impact (core balance)**



**Environmental impact (total balance)**



- Water
- Chemicals
- Disposal
- Fuel
- Heating
- Electricity

- Commuting
- Transport intercompany
- Transport products
- Business traffic
- Paper/packaging
- All other materials
- Commercial goods
- Copper
- Disposal
- Fuel
- Heating
- Electricity

\* We updated the 2023 background data using v310 of the ecoinvent data, released at the end of 2023.

**Planned actions**

As mentioned above, our efforts to reduce our environmental footprint are aligned with our efforts to reduce our [resource use](#) and [greenhouse gas emissions](#). While we describe these in more detail in the following chapters, our ambitions for 2024 include minimising our resource use by, for example, building on advanced analytics to reduce our operational scrap, further reducing our emissions by implementing our transition plan, and limiting the use of plastics in packaging.

## Resource use

Resource efficiency, with its monetary and ecological aspects, is a material sustainability topic for HUBER+SUHNER. At the same time, resource efficiency is gaining increasing relevance as we see a growing number of supply chain disruptions, rising material and energy prices, and volatility in global demand, in particular for some of the metals used in our products. As stated in our environmental policy, we strive to continuously improve our environmental performance and make the most efficient use possible of raw and auxiliary materials, energy, and water.

### Approach

As part of the company's environmental management, the production sites have targets to improve their resource efficiency. Based on these targets we continuously monitor:

- The intensity of energy consumption
- The intensity of waste not sent to recycling
- The intensity of water withdrawal
- Material consumption

### Objectives

As of 2022, we introduced three new global reduction targets to monitor resource efficiency as part of our environmental management. These targets include the intensity of total energy consumption; the intensity of waste sent to landfill or incineration; and the total water withdrawal. In 2023, HUBER+SUHNER's added value reached CHF 386.7 million. This value, calculated from profit before tax and depreciation plus personnel costs, minus other financial results, serves as the denominator for intensity.

### Progress

As shown below, in 2023, our focus on resource efficiency yielded results, showing reductions in the intensity of our water consumption. We were also able to maintain a stable energy consumption, despite the ramp-up of new energy-intensive production.

**Table 2: Resource use performance 2023**

KPI	2021	2022	2023	Difference 2022/2023	Difference 2021/2023	Target 2030
Intensity of energy consumption [MWh/million CHF]	131	136	136	0.3	(4)	15 % reduction from 2021 base year
Intensity of waste sent to landfill or incineration [kg/million CHF]	3 632	3 346	3 739	12	3	25 % reduction from 2021 base year
Intensity of total water withdrawal [m3/million CHF]	2 349	2 203	1 751	(21)	(25)	20 % reduction from 2021 base year

**Energy:** Despite our efforts to reduce energy consumption, as shown below, the intensity of our energy usage remained stable despite implementing several energy-saving initiatives. The main reason behind this is our continuous

ramp-up of our production capacity for radar antennas to be used in advanced driver assistance systems (ADAS). Contributors to the reduction in energy intensity, despite the growing demand from the antenna production, were:

- Reduction in heat loss through a roof replacement at the production site in Tczew, Poland
- Reduction in energy consumption by using heat recovery
- Optimised energy use and continue building on advanced analytics to better monitor energy saving measures

**Waste:** Our goal to decrease the intensity of non-recyclable waste faced challenges due to the relocation within Pfäffikon, Switzerland, resulting in increased construction waste. We are confident that our efforts to continuously integrate the five Rs of waste management (refuse, reduce, reuse, repurpose, recycle) into our waste management will put us back on track with our targets. In parallel, we are working towards consuming fewer resources in our production processes to reduce both recyclable and non-recyclable waste.

Hazardous waste is another focus area. The goal here is to generate as little as possible. Compared to the previous year, the amount of hazardous waste was reduced by 2 %. HUBER+SUHNER works exclusively with licensed waste handlers to ensure that hazardous waste is treated with state-of-the-art technology and that recyclable material is directed into the right channels.

**Water:** The year 2023 saw an encouraging 21 % reduction in water withdrawal intensity (y-o-y). An important driver behind the reduction was our relocation within Pfäffikon, which facilitated a more efficient use of cooling water. Additionally, we reduced our consumption through advanced monitoring and the installation of tap water proximity sensors.

**Material consumption:** Copper consumption decreased by 9 % compared to the previous year. Plastic consumption has decreased by 22 % in the same period. At the same time, we continued to reduce plastics from our packaging. While changes in our business mix, with a growing focus on the procurement of commercial goods, play a role in this, additional contributors to the reduction in material consumption were:

- Reduction of the reject rate for plastic material consumption through two green belt projects
- Initiating the replacement of protective plastic foils (evaFlex) for spools from plastic to cardboard

See detailed data on energy, water, materials consumption and waste in the [environmental performance indicators table](#).

## Planned actions

To further increase our resource efficiency, we are constantly exploring ways to reduce our energy, material, and waste consumption. In this context, promoting the use of renewable materials is becoming increasingly important. Key actions for the year 2024 will include:

- Further minimising the use of single plastics and maximising the recyclable content in our primary and secondary packaging whenever we identify high-performing alternatives
- Further reducing operational scrap by continuing to improve our business intelligence around scrap production, including new metrics and objectives
- Reducing the use of colour granulate by switching to micro granulate
- Continuing to create a sustainable value proposition by taking into consideration the environmental impact of our products throughout their life cycles



## Story from Switzerland

### Separating and recycling metals in our antenna production

Not only do rising global demand and supply chain disruptions affect the prices of the metals we purchase, but the large part of our environmental footprint comes from the metals in our production. Among other things, this impact is significant in our antenna production for ADAS.



Deflector with metal coating

Together with a German recycling company, we have explored different ways of separating and recycling these metals in an effort to reduce our material consumption. We were able to successfully separate and recycle different metals from the deflector plates that were used in production and to recycle leftover pure metals from the coating process. Separating and recycling these pure metals is economical and reduces our environmental and carbon impact.

## Climate change and greenhouse gas emissions

Climate change and greenhouse gas (GHG) emissions are among the three focus topics of the company's sustainability strategy. HUBER+SUHNER in 2018 also set targets validated by the Science Based Targets initiative (SBTi) for its scope 1+2 emissions. We will submit new targets for validation in 2024. Our climate transition makes us more resilient to climate-related risks, specifically growing regulation to phase out fossil fuels and curb emissions. Nonetheless, we believe that physical and transition-related climate risks have a potentially large impact on our company, and we manage them within our standard risk management framework (see Chapter [risk management](#)).

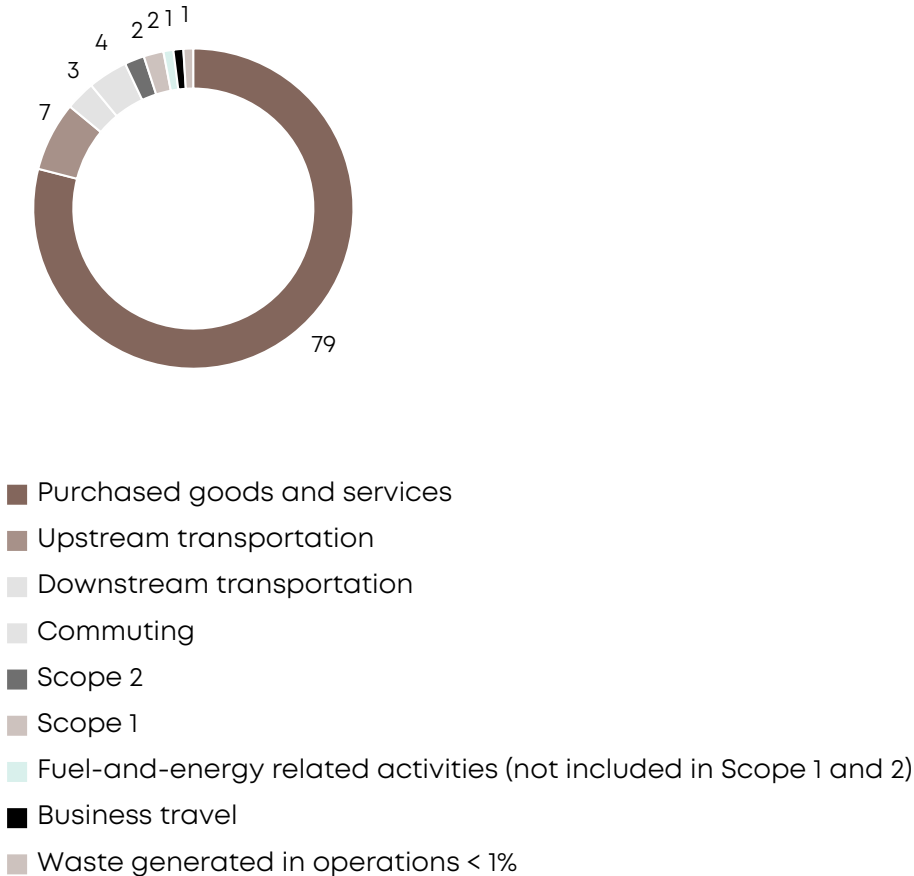
### Approach

HUBER+SUHNER for many years has determined its carbon footprint in all three scopes. To curb our emissions in line with our climate targets, we drafted a transition plan in 2023 that outlines our planned actions to minimize our GHG emissions. It builds on the following elements:

- Replacement of the remaining fossil-based heating systems with low-carbon alternatives
- Increase in renewable electricity supply to 100 % by 2030
- Installation of rooftop photovoltaic (PV) panels, where feasible
- Decarbonization of our fleet by switching to electric vehicles
- Increase in energy efficiency through various initiatives
- Reduction in material consumed, where feasible
- Engagement with suppliers on their climate strategies
- Reduction of business travel, where possible
- Optimised logistics flow and promotion of a "regional for regional" model

**Figure 6: Carbon footprint – 2023 Scope 3 categories according to GHG protocol (in %)**

Figure 6 shows that the main contributors are purchased goods and services, accounting for 79 % of our carbon footprint. Direct emissions (scope 1) and emissions from purchased energy (scope 2) together account for only 4 % of our carbon footprint.



## Objectives

In 2016, HUBER+SUHNER committed to achieving a science-based GHG reduction target in scope 1+2 [1] by 2025. This target was validated by experts from the Science Based Targets initiative (SBTi). It was initially designed to support limiting global warming to 2° C. In 2019, the CO2 reduction target was adapted to the more stringent criteria for limiting global warming to 1.5° C. The target of the HUBER+SUHNER Group is to reduce its scope 1 and 2 GHG emissions 50 % per added value [2] by 2025 from a 2015 base year. In scope 3 [3], HUBER+SUHNER has defined a voluntary, non-validated reduction target committing to reduce its scope 3 GHG emissions per added value 30 % by 2025 from a 2015 base year. With the target period coming to an end in 2025, we will submit new targets, aligned with the SBTi requirements, in 2024.

[1] Scope 1 emissions come from emission sources within the company, such as its heating systems or vehicles. Scope 2 emissions result from the generation of energy that is sourced from outside the company. These are mainly electricity and heat from energy services.

[2] Intensity data in this case refers to the added value generated as a measure of the economic performance. The added value has been calculated from profit before tax and depreciation plus personnel costs minus other financial results.

[3] Scope 3 emissions are emissions caused by the company's activities but not under its control. The following GHG emission sources (including extraction, production and transport to the HUBER+SUHNER sites) were accounted for; purchased goods and services: raw, auxiliary, operating and packaging materials, commercial goods (as far as reliable data were available), water; fuel-and-energy-related activities (not included in scope 1 and 2) like heating and transport fuels, and electricity

production; waste generated in operations: waste, wastewater; business traffic; downstream transport and distribution: transports between the sites and transports of finished products to customers; commuting traffic.

## Progress

In 2023, we've stayed on track with our scope 1+2 SBTi target, cutting our emissions intensity by almost half two years ahead of time (see figure 7).

### Scope 1+2: emissions in our own operations

The company is still fully on track regarding its target in scope 1+2 (see figure 7). The GHG emissions in scope 1+2 decreased to 7,735 t CO<sub>2</sub>-eq in 2023 (absolute reduction of 19 % y-o-y). Most notably this reduction can be attributed to:

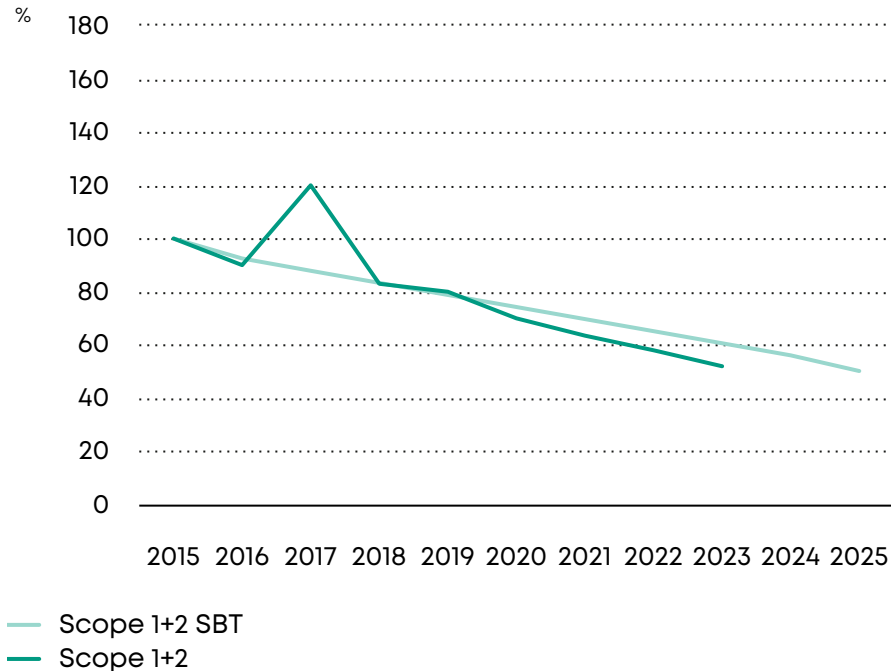
- An increase in the share of purchased electrical energy consumed worldwide from renewable sources (hydro, wind, and solar power plants) from around 12 % in 2019 to 59 % in 2023 as planned [4]
- More self-generation of renewable electricity through rooftop PV panels, where we generated an additional 242 MWh in Herisau, Bicester, Gurgaon, and Tczew in 2023
- Various energy efficiency initiatives, including replacement of obsolete machinery, optimisation of control mechanisms, closed cooling systems, and heat recovery
- Reduced refrigerant losses by 38 % from 2022 in 2023
- Advanced monitoring to keep our sulphur hexafluoride (SF<sub>6</sub>) leakage to a low level
- Replacing dry ice blasting with water blasting to reduce emissions in our serial production of radar antennas at our Herisau site

Due to the impending energy scarcity in early 2023, the Swiss government requested that companies, where feasible, transition their heating fuel from gas to oil. The change to oil as heating fuel led to increased heating emissions during the 2022/2023 heating period, ultimately contributing to a 2 % y-o-y rise in scope 1 emissions.

[4] When it comes to energy attribute certificates, HUBER+SUHNER makes sure that they come from power plants in the country where the electricity is consumed.

### Figure 7: Science-based target in scope 1+2 and actual performance

Figure 7 shows the development of total GHG emissions during the past eight years and our consistent progress in reducing our scope 1+2 emissions.



### Scope 3: emissions in our value chain

Until 2022, our GHG emissions in scope 3 increased significantly. This can be explained by changes in our data collection method and the inclusion of purchased commercial goods, which were important steps towards reliable and realistic scope 3 data. In 2023, we expanded our data collection to encompass approximately 95 % of our scope 3 emissions, in accordance with SBTi requirements. In addition to changes in our business mix, with a growing procurement of commercial goods. This resulted in further increase in the intensity of our scope 3 emissions by 13 % y-o-y (using v391 of the ecoinvent data).

However, simultaneously, we have made efforts to reduce our scope 3 emissions. This effort is reflected in the fact that when comparing absolute emissions in 2023 to ecoinvent v310, we actually see a decrease by 1 % (see figure 8). While a declining material consumption significantly contributes to this reduction, we have also undertaken notable efforts to decrease emissions from transportation and packaging by implementing the following measures:

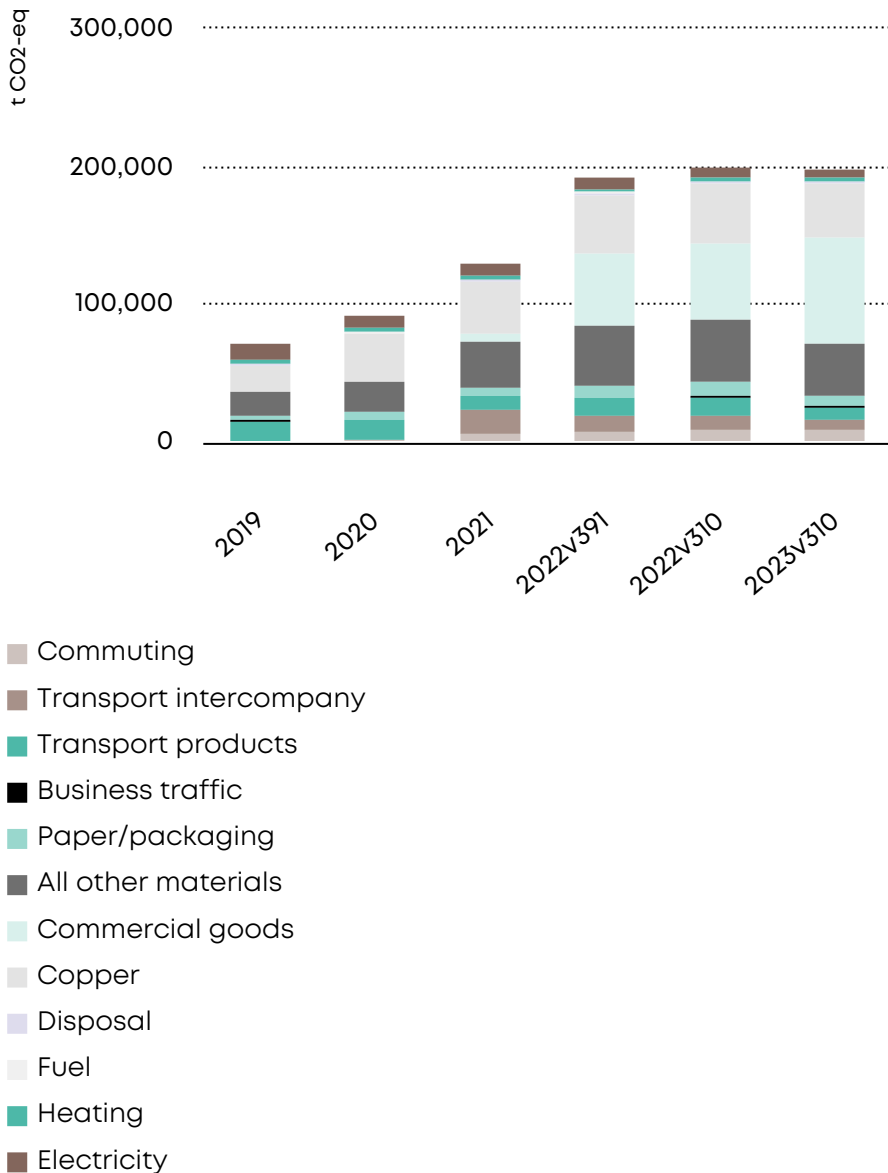
- Reducing emissions from transport by consolidating shipments and increasing the fill rate to reduce the number of shipments
- Reducing emissions from transport through production network optimisation, e.g. by focusing on a “regional for regional” model, thereby reducing the distance of shipments
- Reducing emissions from packaging by optimizing packaging and reducing the use of plastics

To further reduce emissions from our purchased goods and services, we have started integrating climate criteria into our global sourcing process. We engage with our suppliers via an established platform, where we track their efforts in gathering climate data and setting climate targets. For new suppliers, HUBER+SUHNER introduced reporting on their emissions and climate targets as additional criteria in the supplier assessment.

We annually publish our emissions through the CDP platform where we received an [A- rating](#) in 2023.

**Figure 8: Total GHG emissions 2019-2023**

Figure 8 shows the development of total GHG emissions during the past five years and reflects the consistent expansion of the system boundaries and improvement of data quality in scope 3 as well as the reduction of scope 1+2 emissions. We updated the background data for 2022 using v391 of the ecoinvent data, which was released at the end of 2023. The v310 data is provided for reference.



See detailed data on emissions in the [environmental performance indicators table](#).

## Planned actions

To achieve further emission reductions in line with our targets, key actions in 2024 will include:

- Submitting new near- and long-term targets to the SBTi for approval
- Defining site-specific transition plans
- Stepwise introduction of electric vehicles starting in 2024
- Extending the supplier engagement program to collect primary data for purchased goods and services
- Exploring the use of low-carbon alternatives and materials in our products
- Leveraging advanced business analytics for closer energy efficiency monitoring
- Establishing further measures to consolidated shipments

## Story from Switzerland

### **Our Air Ring Packaging: a low carbon, low waste and more packaging dense alternative to wood spools**

After delivering cable products to our customers, spools are often left as waste. Currently, there are few or no collection-and-return systems that would allow us to ensure the environmentally efficient reuse and recycling of these spools. In an effort to reduce the use of spools that end up as waste, we developed an alternative: Air Ring Packaging. Instead of delivering cables on spools to our customers, we deliver shorter cables coiled in cardboard boxes certified by the Forest Stewardship Council (FSC).



Air Ring Packaging with a cable coiled in a cardboard box

In addition to ensuring that no spools end up as waste, Air Ring Packaging has several other sustainability benefits:



- **Material efficiency:** When replacing wooden spools, it reduces the use of wood
- **Circular economy:** The pallet and cardboard box can be easily disassembled, reused, or recycled at low cost to our customers
- **Lower carbon footprint:** The pallet and cardboard box not only save energy during production, but also reduce CO2 emissions due to the lower transport weight, higher packing density, and higher recycling rate

Pallet and cardboard box used for the Air Ring Packaging

We are currently providing Air Ring Packaging to two of our large Swiss customers and are evaluating where else this packaging can replace spools.



## Sustainable products

At HUBER+SUHNER, we aim for a sustainable value proposition, which takes into consideration the environmental impacts of our products. Dedicated to innovation, responsible practices and transparency, we are committed to creating products that meet global and regional standards. We have strategically developed a comprehensive approach that prioritizes transparency and embraces continuous improvements in product compliance.

### Approach

Our strategy to ensure transparency and openly share the materials and substances employed in our products builds on five key pillars:

- Tracking alterations in global and regional material compliance regulations
- Continuous improvement of product compliance process
- Responsible material selection and traceability
- Prioritising ongoing innovation in materials
- Collaborative supplier engagement

### Objectives

We aim to continuously explore and adopt safer alternatives to hazardous materials, complying with evolving regulations and restrictions (such as the European Union [EU] regulation on the registration, evaluation, authorisation and restriction of chemicals [REACH]) to ensure product safety and environmental protection. We are also committed to staying updated and adhering to international standards and regulations governing materials, ensuring compliance with laws such as the EU Restriction of Hazardous Substances (RoHS) and Waste Electrical and Electronic Equipment (WEEE) directives. In reaching this objective, we consciously invest in research and development to explore and integrate innovative, eco-friendly materials, and we collaborate with material scientists and industry partners to leverage the latest advancements in sustainable materials. Another key focus is to collaborate with suppliers to promote sustainable practices, encourage the use of eco-friendly materials, and build a mutual commitment to sustainability.

## Progress

In 2023, we introduced our latest innovation in sustainable product development: lead-free connectors.

Our commitment to environmental responsibility includes the integration of materials that align with stringent compliance standards. Our new line of lead-free SMA connectors redefines the benchmark for eco-conscious manufacturing. By eliminating lead from our products, we're not just meeting regulatory requirements; we're prioritizing our environmental responsibility.

Crafted with meticulous attention to detail, these lead-free SMA Connectors maintain the high performance and reliability our customers expect while significantly reducing the environmental impact. We've invested in research and development to ensure that these lead-free SMA Connectors do not only meet but exceed industry standards, contributing to a healthier ecosystem without compromising on quality. With our sustainable material compliance approach, we're fostering a future where innovation and responsibility go hand in hand.



Lead-free SMA Connectors

## Planned actions

In a continuous effort to reduce the environmental impact of our products, in 2024 we will:

- Provide training to both employees and suppliers on the importance of sustainable material practices
- Continuously improve internal processes based on evolving regulations and technological advancements
- Closely collaborate with suppliers to understand their challenges and constraints related to material compliance
- Explore ways to produce products with a lower CO2 footprint
- Expand the integration of lead-free technology to other product lines or series based on market demand