

Addendum

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ADDENDUM 1: SCOPE AND METHODOLOGY

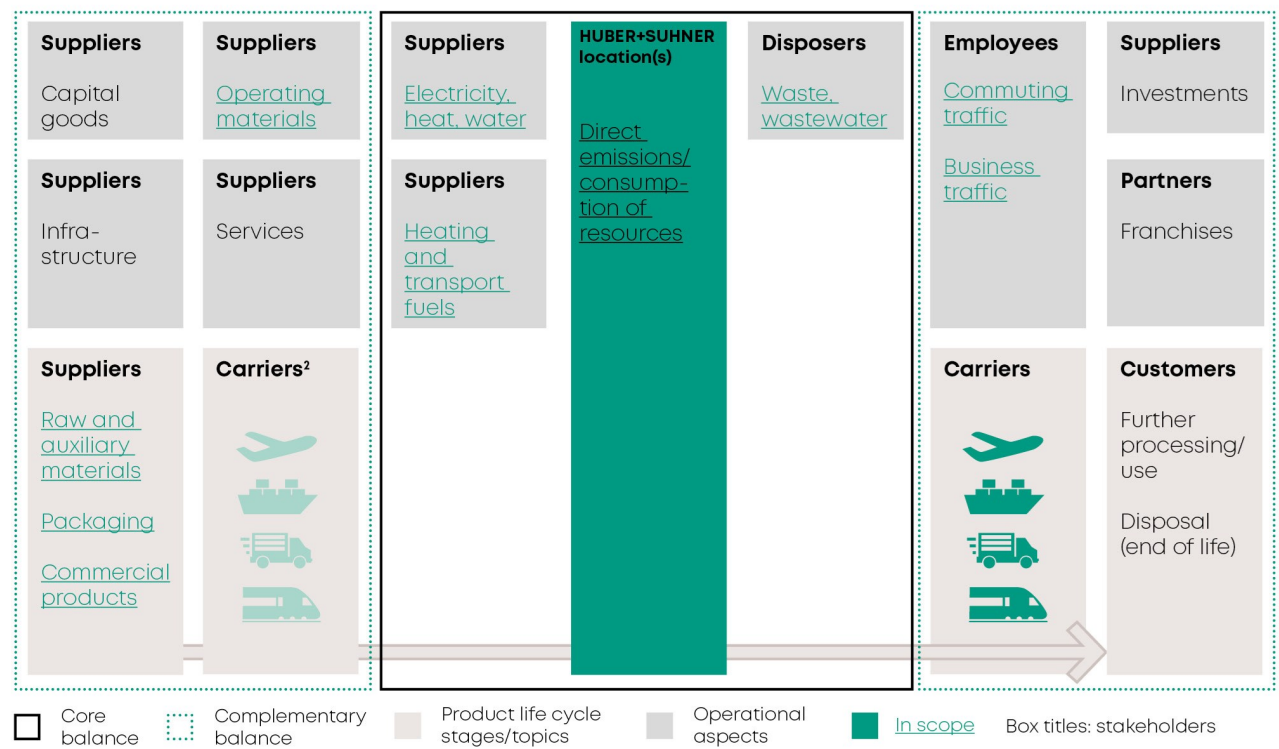
Direct emissions and the consumption of resources as well as electricity, heat, water, heating and transport fuels, and waste and wastewater (core balance) are in scope of the life cycle assessment (LCA) as are raw, auxiliary, operating and packaging materials as well as commercial goods [1], commuting and business traffic, and the transport of materials and products (complementary balance) as shown in figure 1 (see also footnote 2 in the chapter "[Climate change and greenhouse gas emissions](#)"). Materials and commercial goods are sourced from external suppliers, with the exception of certain plastic compounds, which are manufactured at the Pfäffikon compounding facility and processed at the Changzhou, Pfäffikon, and Herisau plants. The quantities processed or consumed were taken from the ERP system (purchasing data).

The use phase of our products has not been in scope since most of our products are passive components only. The disposal of our products has also not been in scope. With lifetimes ranging from 20 to 30 years it is difficult to predict the impact of the products' end-of-life treatment.

HUBER+SUHNER has delivered all relevant data to sinum AG (St. Gallen, Switzerland), which is responsible for calculating the environmental and carbon footprint. The environmental footprint evaluation is conducted according to ISO 14040. The LCIA method for the environmental footprint is the Ecological Scarcity [2]. The carbon footprint evaluation complies with the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition). Global warming potential factors aligned with the Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change have been used, as recommended by the Greenhouse Gas (GHG) Protocol and CDP; GHGs accounted for were carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), and nitrogen trifluoride (NF₃) as listed in the amended Annex A to the Kyoto Protocol. The footprints were calculated by using expert system REGIS and ecoinvent database version v3.10. Performance data shown in the [environmental performance indicator \(EPI\) table](#) follow GRI standards 301, 302, 303, 305 and 306. Intensity data always refer 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. The added value for the years 2019–2023 is displayed at the bottom of the [environmental performance indicators \(EPI\) table](#).

The underlying data were collected for the calendar year 2023. In cases of expected disproportionate delays in the evaluation, the data were collected for the period 1 December 2022 to 30 November 2023. HUBER+SUHNER estimates the deviation from the calendar year period to be less than $\pm 5\%$.

Figure 1: Scope of the LCA



Ernst & Young Ltd performed a limited assurance engagement on selected EPIs for 2023 ([see Addendum 4: Independent assurance report \(EY\)](#)).

[1] No supplier data were available for material transports, but they are mostly considered in secondary data (light green means of transport in figure 1).

[2] Swiss Eco-Factors 2021 according to the Ecological Scarcity Method. Methodological fundamentals and their application in Switzerland. Environmental studies no. 2121, Bern, 2021

Addendum 2: Declaration of performance scope 1+2 CO₂-eq emissions

Performance Scope 1+2. Declaration of performance in accordance with CDP Reporting (Questions C7.9, C7.9ab).

Emissions performance calculations were market-based. Compared to the previous reporting year the Scope 1+2 emissions of the HUBER+SUHNER Group decreased 19 % corresponding to 1768 t CO₂eq.

Reason	Change in emissions [t CO ₂ eq]	Direction of change	Emissions value [%]	Comments
Change in renewable energy consumption	1 661	Decreased	17.5	Purchase of renewable energy: CH: 15.97 GWh (hydro power, 2022: 12.4 GWh) CH: 0.49 GWh (biogas, 2022: 0.34 GWh) CN: 3.5 GWh (solar power, 2022: 3.0 GWh) IN: 0.6 GWh (wind power, 2022: 0.68 GWh) PL: 1.83 GWh (wind power, 2022: 0.52 GWh) DE: 0.6 GWh (hydro power, 2022: 0.52 GWh) US/MY/UK/MEX: 0.57 GWh (sun, hydro and wind power) Self-generated electricity: CN: 1.44 GWh (solar power, 2022: 1.43 GWh) CH: 0.53 GWh (solar power, 2022: 0.35 GWh) UK/DE: 0.05 GWh (solar power)
Other emissions reduction activities	151	Decreased	1.6	Various energy efficiency initiatives have been undertaken and are ongoing at all H+S sites, as optimization of control/steering mechanism, closed loop cooling system and heat recovery
Divestment	0	No change	0	No divestments.
Acquisitions	15	Increased	0.2	Acquisitions of a site in the UK.
Mergers	0	No change	0	No mergers.
Change in output	803	Decreased	8.5	Decrease of net sales by 11 %. Only production related emissions (electricity, fuel) were considered.
Change in methodology	231	Decreased	2.4	Change from ecoinvent database version v3.9.1 to version v3.10 for the background processes.
Change in boundary	0	No change	0	No change in boundary.
Change in physical operating conditions	18	Increased	0.2	The number of heating degree-days has slightly increased in Switzerland and decreased across most of the international sites.
Unidentified	0	No change	0	No unidentified changes.
Other	1 044	Increased	11	New production line not yet relevant to net sales in Poland. Request from Swiss government to transition natural gas to heating oil, where feasible. The management of SF ₆ emissions in Switzerland and China by monitoring and adapting measures is ongoing. In addition, district heating (supplied by the municipal utilities with an annually changing share of energy sources) at the Pfäffikon site in Switzerland was supplied with a higher CO ₂ emission factor. Additionally the changes of the refrigerants emissions into air are included.

Addendum 3: Detailed environmental performance indicators (2019–2023)

Ernst & Young Ltd performed a limited assurance engagement on selected EPIs marked with ✓ for 2023.

Ernst & Young Ltd also performed a limited assurance engagement on the same set of KPIs (except water) for 2022, 2021 and 2020. On all EPIs related to previous years except for the greenhouse gas emissions, no external assurance was completed.

EPIs		2019	2020	2021	2022	2023	Difference 2022/2023	Difference 2019/2023	GRI
Energy ✓									302-1
Total Energy	MWh	53 376	48 180	54 540	57 296	52 865	(8%)	(1%)	
renewable	%	13%	21%	26%	38%	52%	+14	+40	
Purchased electricity	MWh	40 676	37 186	42 296	43 264	38 925	(10%)	(4%)	
renewable	%	12%	24%	29%	40%	59%	+20	+47	
Purchased heat	MWh	3 334	2 831	3 324	3 211	3 238	+1%	(3%)	
renewable	%	n/m	n/m	n/m	n/m	61%	n/m	n/m	
Self-generated electricity	MWh	76	78	66	1 780	2 022	+14%	+2 567%	
renewable	%	100%	100%	100%	100%	100%	+0	+0	
Total fuel	MWh	9 290	8 084	8 854	9 042	8 680	(4%)	(7%)	
renewable	%	2%	3%	2%	6%	6%	+1	+4	
Natural gas	MWh	5 805	5 236	5 564	5 471	3 271	(40%)	(44%)	
Biogas	%	n/m	n/m	n/m	6%	15%	+9	n/m	
Heating oil	MWh	1 181	1 327	1 637	1 847	3 663	+98%	+210%	
Diesel	MWh	1 520	972	1 022	1 368	1 462	+7%	(4%)	
Petrol	MWh	558	332	455	177	222	+25%	(60%)	
Ethanol	MWh	18	n/m	n/m	n/m	n/m			
Wood	MWh	208	217	177	178	62	(65%)	(70%)	
Water ✓									303-3
Total water	m ³	1 127 378	915 933	979 079	925 796	677 027	(27%)	(40%)	
Tap water	m ³	81 521	64 299	70 498	72 420	70 207	(3%)	(14%)	
other water (PL, CH)	m ³	104 269	87 654	99 614	64 786	55 990	(14%)	(46%)	
lake water (CH)	m ³	941 588	763 980	808 967	788 590	550 830	(30%)	(41%)	
Materials* ✓									301-1
Total materials	t	17 517	17 374	21 544	27 783	26 865	(3%)	+53%	
renewable (cardboard and wood)	%	13%	18%	16%	11%	11%	+0	(3)	
VOC	kg	14 542	15 563	13 846	17 056	15 505	(9%)	+7%	
SF6	kg	36	27	46	14	14	(3%)	(62%)	
Refrigerant	kg	334	264	305	611	377	(38%)	+13%	
Copper	t	8 360	7 569	8 715	8 159	7 404	(9%)	(11%)	
Plastics	t	5 134	4 860	6 179	5 489	4 278	(22%)	(17%)	
Glass fibre**	t	37	23	239	223	146	(34%)	+293%	
Packaging	t	3 266	4 200	4 377	5 157	4 013	(22%)	+23%	
renewable (cardboard and wood)	%	72%	76%	77%	57%	72%	+15	+0	

EPIs		2019	2020	2021	2022	2023	Difference 2022/2023	Difference 2019/2023	GRI
Waste ✓									306-3
Total	t	4 604	3 941	5 285	4 449	4 221	(5%)	(8%)	
Municipal waste (incineration)	t	205	175	198	156	164	+5%	(20%)	
Municipal waste (landfill)	t	234	170	189	194	197	+2%	(16%)	
Inert waste (landfill CH)	t	11	2	5	0.3	7.9	+2 435%	(31%)	
Hazardous waste	t	487	450	474	424	416	(2%)	(14%)	
Waste (energy recovery)	t	665	576	648	632	661	+5%	(1%)	
Recycling	t	3 001	2 568	3 772	3 043	2 775	(9%)	(8%)	
Business travel***									
Total****	Mio. km	16	1.8	2.0	9.0	13.9	+55%	(12%)	
Car (expenses, rented)	%	10%	33%	23%	3%	8%	+4	(3)	
Aircraft	%	90%	67%	77%	96%	86%	(9)	(3)	
Product transport*****									
Total	Mio. tkm	90	76	94	101	67	(34%)	(25%)	
Trucks	%	32%	30%	31%	35%	34%	(1)	+1	
Sea freight	%	57%	56%	27%	41%	44%	+3	(13)	
Air freight	%	11%	13%	32%	21%	23%	+1	+11	
Rail freight	%	n/m	1%	11%	3%	0%	(3)	+0	
GHG emissions (CO₂eq) ✓									305-1,2,3
Scope 1	tCO ₂ eq	3 523	2 802	3 692	3 572	3 638	+2%	+3%	
Scope 2	tCO ₂ eq	10 735	8 401	7 824	5 931	4 097	(31%)	(62%)	
Scope 3	tCO ₂ eq	58 635	84 296	121 878	182 454	189 920	+4%	+224%	
Environmental impact									
Core balance	Mio. EP	34 456	24 484	26 710	23 598	19 510	(17%)	(43%)	
Total balance	Mio. EP	625 576	576 288	769 979	1 094 431	1 042 072	(5%)	+67%	
References									
Added value	Mio. CHF	386	352	417	420	387	(8%)	+0%	

* Breakdown only shows production-relevant raw material plus packaging material and does not add up to 100 %.

** Glass fiber plus aramid yarn, 2020 excluding Brazil

*** Business travel is included based on the transaction date, rather than the travel date. This differs from the approach used in 2022.

Breakdown excludes 6% train travel because of its limited environmental impact globally.

**** Excluding km own vehicles (included in fuels).

*****2021 including transport (intercompany)

Environmental impact: all figures 2019 - 2021 calculated using ecoinvent database version v38, 2022 v391, 2023 v310

GHG emissions: values according to published GHG Inventories. Used ecoinvent database versions: 2019 v36, 2020 v371, 2021 v38, 2022 v391; based on IPCC2013 (2019 -2021) and IPCC2021 for 2022 and 2023.

Scope 1

Too low a value for Pfäffikon heating oil. Detected during data collection 2020 but not adjusted. Difference: +440 MWh resp. +120 t CO₂eq

Scope 3

Packaging data CH: in 2020 also newly collected for 2019 but not adjusted. Difference: +2000 t CO₂eq

Adjustments (as shown below) lead to significant increase in Scope 3 compared to previous year. However, the difference between the recalculated 2019 to 2020 total is < -1% despite the expansion of the corporate standard (see below). - ecoinvent v371 remodeled the metal sector strongly increasing the CO2 footprint of copper. - Expansion of the corporate standard and data collection (i.e. commuting and packaging data). As part of the expansion of Scope 3, data on commercial products, product use and EoL (end of life of products) will be included in the company model in the medium term. Furthermore, the existing data collection/quality will be continuously improved wherever possible.

In 2021, the system boundaries were expanded to include, for the first time, part of the commercial products purchased. The quality and the granularity of the collected goods transport data (transport to customers and within the production network) have been significantly improved. The same applies to metal and polymer data. In 2022 raw material and commercial goods data from new central data source, so the modelling could be extended and the data granularity and quality was further improved.



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To the management of
HUBER+SUHNER AG, Herisau

Zurich, 28 February 2024

Independent Assurance Report on selected sustainability disclosures

We have been engaged to perform a limited assurance engagement (the engagement) on the selected metrics disclosed in HUBER+SUHNER AG's (the Company's) Annual Report 2023 (the report) for the reporting period from 01 January 2023 to 31 December 2023. These selected metrics are marked with a "✓" (hereafter «the KPIs») in:

- ▶ Table in Addendum 3 on detailed env. Performance indicators on pages 188-190.
- ▶ Social performance indicators in the sub-chapters "Our own workforce" on pages 153 and 154 and "Occupational health and safety" on page 163.

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the report, and accordingly, we do not express a conclusion on this information.



Applicable criteria

The Company defined as applicable criteria (applicable criteria):

- ▶ Selected Global Reporting Initiative Sustainability Reporting Standards (GRI Standards).

A summary of the standards is presented on the GRI homepage. We believe that these criteria are a suitable basis for our limited assurance engagement.



Responsibility of the Management

The Management of HUBER+SUHNER AG is responsible for the selection of the applicable criteria and for the preparation and presentation, in all material respects, of the disclosed KPIs in accordance with the applicable criteria. This responsibility includes the design, implementation, and maintenance of internal control relevant to the preparation of the KPIs that are free from material misstatement, whether due to fraud or error.



Independence and quality control

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) of the International Ethics Standards Board for Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.



Our firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.



Our responsibility

Our responsibility is to express a conclusion on the above mentioned KPIs based on the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 Assurance Engagements Other than Audits or Reviews of Historical Financial Information. This standard requires that we plan and perform this engagement to obtain limited assurance about whether the KPIs in the report are free from material misstatement, whether due to fraud or error.



Summary of work performed

Based on risk and materiality considerations we have undertaken procedures to obtain sufficient evidence. The procedures selected depend on the practitioner's judgment.

This includes the assessment of the risks of material misstatements in the above mentioned KPIs. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in scope than, for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Although we considered the effectiveness of management's internal control when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal control. Our procedures did not include testing control or performing procedures relating to checking aggregation or calculation of data within IT systems.

The Greenhouse Gas (GHG) quantification process is subject to scientific uncertainty, which arises because of incomplete scientific knowledge about the measurement of GHGs. Additionally, GHG procedures are subject to estimation (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

Our limited assurance procedures included, amongst others, the following work:

- ▶ Assessment of the suitability of the underlying criteria and their consistent application
- ▶ Interviews with relevant personnel to understand the business and reporting processes, including the sustainability strategy, principles and management
- ▶ Interviews with the Company's key personnel to understand the sustainability reporting systems during the reporting period, including the processes for collecting, collating and reporting the KPIs
- ▶ Checking that the calculation criteria have been correctly applied in accordance with the methodologies outlined in the applicable criteria
- ▶ Analytical procedures to support the review of the data
- ▶ Identifying and testing assumptions supporting calculations



- ▶ Testing, on a sample basis, underlying source information to check the accuracy of the data

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Conclusion



Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the KPIs for the reporting period from 01 January 2023 to 31 December 2023 have not been prepared, in all material respects, in accordance with the applicable criteria.

Ernst & Young Ltd



Mark Veser
(Qualified Signature)
Executive in charge



Kim Bischof
(Qualified Signature)
Manager