



CARBON ASSESSMENT REPORT

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CARBON ASSESSMENT REPORT

FOR

SMS TECHNOLOGY

2024





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Nomenclature

Nomenclature	Description
GHG	Greenhouse Gases, gases that trap heat in our atmosphere. GHG include Carbon dioxide, methane, nitrous oxides, and fluorinated gases.
Embodied Carbon	The total GHG emissions generated to produce a product; It includes those from extraction, manufacture, processing, transportation, and assembly in every component.
Carbon Equivalent	The effect on global warming of a greenhouse gas (GHG) relative to that of CO ₂ .
Zero Carbon	The absence of GHG emissions
Greenhouse Gas Protocol	The GHG Protocol Corporate Accounting and Reporting Standard which provides requirements and guidance to prepare a corporate-level GHG emissions inventory.
Net Zero Carbon (NZC)	The sum effect of combining actions to reduce GHG emissions with actions to off-set them.
Carbon Offsetting	A reduction in emissions of GHG to compensate for unavoidable emissions.
Global Warming Potential (GWP)	The heat adsorbed by any GHG as a multiple of the equivalent in carbon dioxide.
IPCC	The Intergovernmental Panel on Climate Change. It provides regular scientific assessment on climate change to policy makers.
AR6	The sixth assessment report of the IPCC. The most recent assessment report is 2021.
t CO ₂ e	Notation for tonnes of carbon dioxide equivalent emissions.
kg CO ₂ e	Notation for kilograms of carbon dioxide equivalent emissions.
ICE	The Inventory of Carbon and Energy.
Scope 1	Direct GHG emissions are those that occur from sources that are owned or controlled by the company such as emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc., emissions from chemical production in owned or controlled process equipment.
Scope 2	Indirect GHG emissions account for GHG emissions from the generation of imported energy such as purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.
Scope 3	Other indirect GHG emissions. The GHG Protocol Corporate Accounting and Reporting Standard defines Scope 3 as an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services. BS EN ISO 14064 separates out Scope 3 emissions into categories 3 to 6 covering indirect emissions from transportation, products used, use of products from the business and other sources respectively.

Executive Summary

SMS Technology would like to report on the carbon emissions for the assessment year between 23rd November 2023 and 22nd November 2024. Quantifying their business carbon emissions puts SMS Technology in a position to demonstrate sustainability and environmental responsibility to their customers and the wider public. It allows SMS Technology to show how a measurable change can be made to climate change emissions and facilitate the achievement of Net-Zero Carbon (NZC). SMS Technology and Tunley Environmental have collaborated to identify emission sources and collect data.

Tunley Environmental has conducted an independent assessment to quantify carbon emissions due to business activities conducted by SMS Technology and their contractors, based on the data provided by SMS Technology. The evaluation herein reported includes two components of emission quantifications for:

- The company's business activities in 2023-2024. This first component evaluates carbon emissions from their emissions in Scopes 1, 2 and 3,
- A roadmap to Net-Zero Carbon (NZC) based on data of the quantification year and previous baseline year data. This will act as a guidance for SMS Technology to minimise their carbon footprint resulting from their business activities.

This assessment demonstrates SMS Technology's commitment to showing how carbon emissions can be reduced. It also provides SMS Technology and its customers with a clear evaluation of carbon emissions associated with these business practices and aligns with SMS Technology's ambition for achieving carbon neutrality.

Total carbon emissions in tonnes of carbon dioxide equivalents (t CO₂e per annum) are **10 t CO₂e (Figure 1)**.

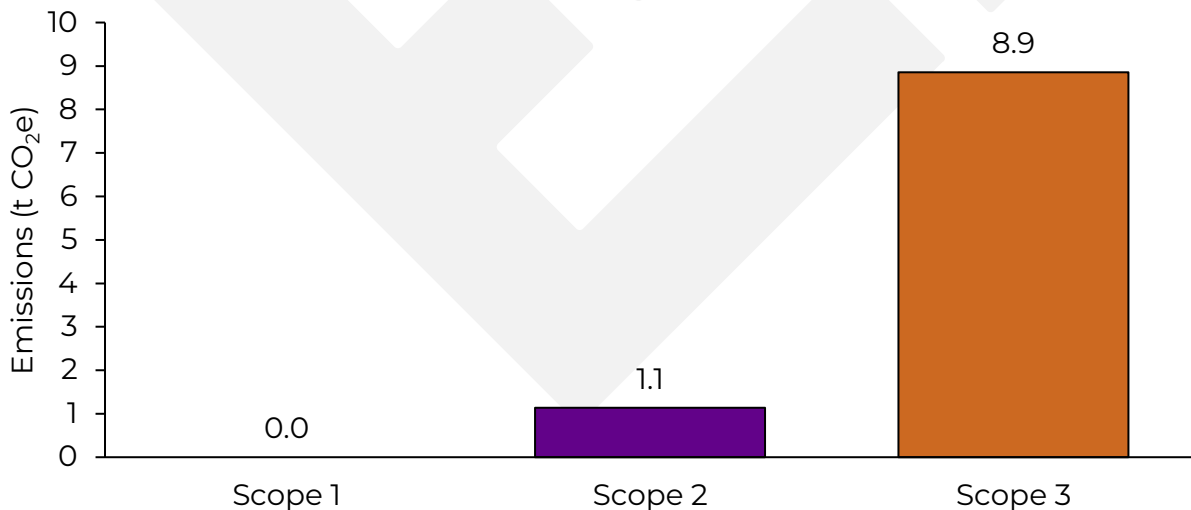


Figure 1. SMS Technology's greenhouse gas emissions for Scopes 1, 2 and 3.

Tunley Environmental recommend taking steps to reduce emissions and become NZC by switching to renewable electricity, using EVs for commuting. By implementing these reduction initiatives, SMS Technology shall be able to reduce their emissions by 2.4 t CO₂e (25%) by 2026.

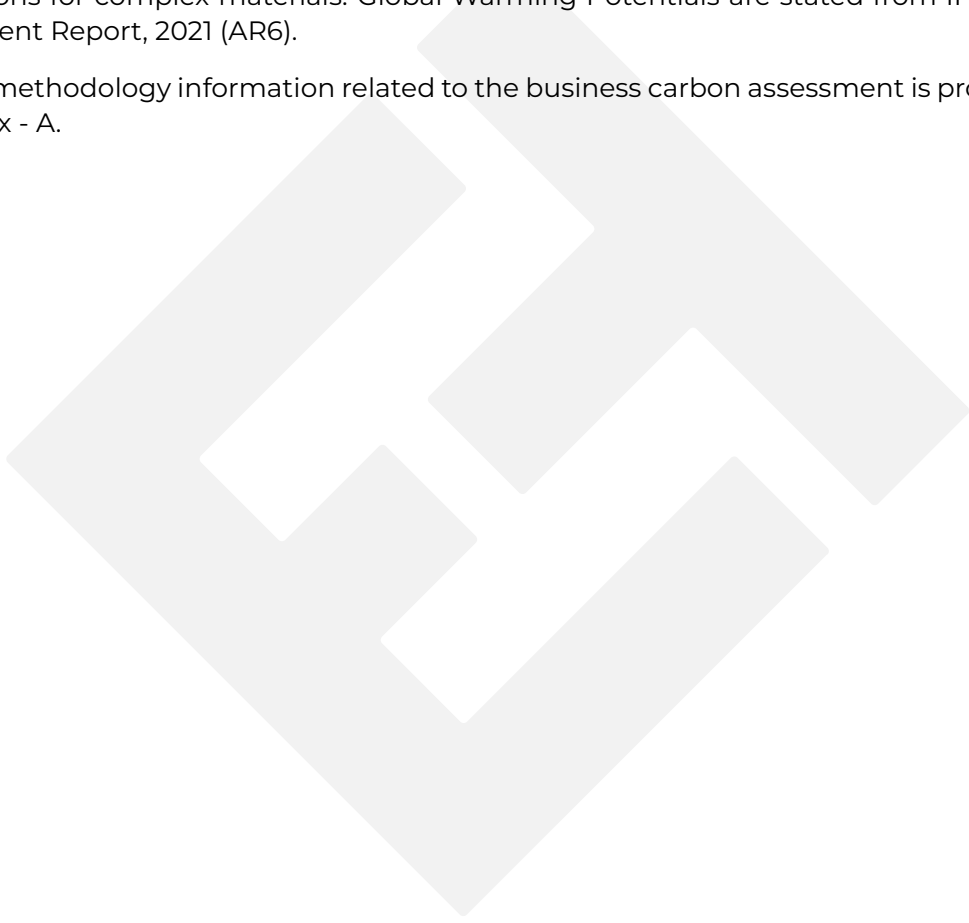


Methodology and Quantification Standards

Tunley Environmental calculated SMS Technology's carbon footprint for the 2023/24 financial year in accordance with the international standard BS EN ISO 14064-1, a similar methodology to following that of the [World Resources Institute GHG Protocol - A Corporate Accounting and Reporting Standard, Revised Edition](#) (the GHG Protocol). An operational control approach was taken, ensuring everything in the operational control of SMS Technology is accounted for in the carbon footprint.

Carbon equivalent data conversions have been calculated in accordance with greenhouse gas reporting: 2024 published by the [UK Government Department for Business, Energy and Industrial Strategy and the UK Department for Environmental Food and Rural Affairs](#) (DEFRA). Hereafter, this database is referred to as DEFRA. Additionally, academic sources as well as the Inventory of Carbon and Energy has provided carbon equivalent data conversions for complex materials. Global Warming Potentials are stated from IPCC Sixth Assessment Report, 2021 (AR6).

Further methodology information related to the business carbon assessment is provided in Appendix - A.



Introduction

Climate change poses a significant challenge to the environment, necessitating mitigation measures at international, national, and local levels. It impacts businesses, natural systems, and communities. This is caused by global warming, as a result of an increase in greenhouse gas (GHG) emissions, known as carbon emissions.

Tunley Environmental conducted this assessment using the standard protocols stated above and data provided by SMS Technology for their business activities, based on data between 23rd November 2023 and 22nd November 2024.

This assessment is based on data categorised into three scopes, as defined by the Greenhouse Gas Protocol (Figure 2). For each year, the assessment provides detailed quantification of GHG emissions due to:

- i) Scope 1: Direct emissions such as those arising from gas heating and consumption of diesel/petrol.
- ii) Scope 2: Indirect emissions from purchased electricity.
- iii) Scope 3: Other indirect emissions from employees' commuting, working from home, usage/treatment of water, purchased of clothes.

Appreciating the importance of determining major contributors to the emissions, Tunley Environmental provides detailed analysis and discussion on the major contributors to emissions; this will support SMS Technology's customers with their decision-making processes to reduce their carbon emissions. Where information and data were limited, we made reasonable assumptions based on our expertise and external sources of data.

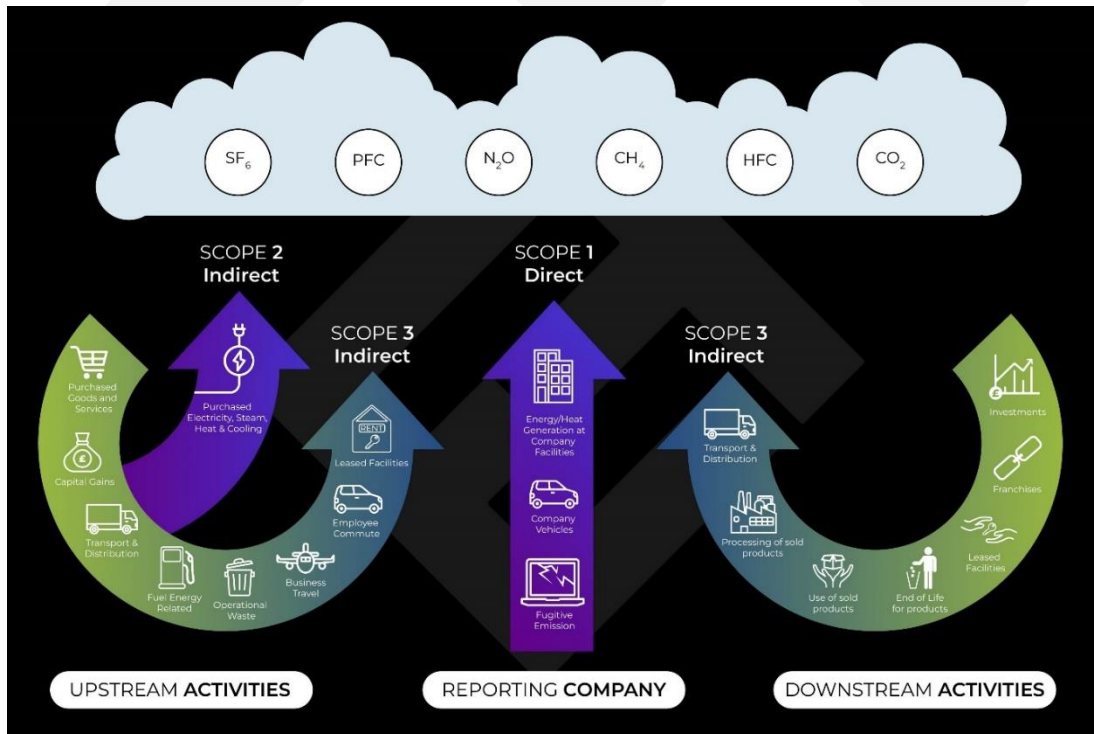


Figure 2. An overview of the GHG Protocol scopes and emissions across an entire value chain.

Emission Data

Scope 1 was not applicable as SMS Techno (Table 1). The total Scope 2 emissions were 1.1 t CO₂e (11.4%), based on location-based electricity emission factor. Remaining emissions were quantified at 8.9% of the total footprint, this was from indirect emissions categorised in Scope 3. In total, the carbon footprint in the assessment year was calculated to be 10 t CO₂e. Considering market-based electricity emission factor, total emissions were 9.5 t CO₂e.

Table 1. Quantified annual emissions for SMS Technology categorised according to The Greenhouse Gas Protocol Scopes.

Scope	Emissions (t CO ₂ e)	Percentage
Scope 1	-	0.0%
Scope 2	1.1	11.4%
Scope 3	8.9	88.6%
Total (using location-based electricity emission factor)	10.0	
Total (using market-based electricity emission factor)	9.5	

GHG Emissions Categories

Table 2 and Figure 3 provide the emissions for SMS Technology in the reporting year. The largest emissions category quantified 8.6 t CO₂e. The second highest source of emissions was 1.1% t CO₂e.

Table 2. Emission data for SMS Technology's business operations from 23rd November 2023 and 22nd November 2024 categorised according to The Greenhouse Gas Protocol.

Scope	Category	Emissions (t CO ₂ e)	Percentage
S2.2	Purchased electricity	1.1	11.4%
S3.1	Purchased goods and services	0.3	2.5%
S3.5	Waste generated in operations	0.02	0.2%
S3.7	Employee commuting	8.6	85.8%
Total (t CO₂e)		10	

Figure 3. Graphical representation for the quantified emission categories (GHG Protocol).

SMS Technology's Organisational and Operational Boundary

In setting an organisational boundary SMS Technology are able to identify if equity share, financial control, or operational control are the most appropriate for greenhouse gas quantification. In this instance operational control was identified as the most appropriate for Client2. Therefore, the operational boundaries of the assessment clearly outlining the inclusions is provided alongside the organisational boundary (Figure 4).

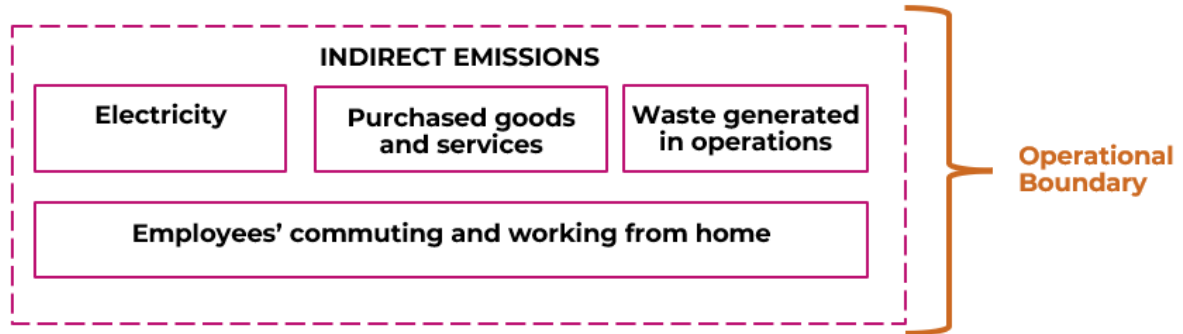


Figure 4. Organisational and operational boundary for SMS Technology.

Strategic CO₂e Reduction Initiatives

Tunley Environmental recommend SMS Technology to implement a long-term approach on carbon reduction. GHG emissions can be reduced by 2.4 (25%) through implementing reduction strategies that focus on emission sources of significant contributions by 2026. Once the initiatives have been considered and taken, any unavoidable, remaining emissions can be removed by carbon off-setting actions (by 2027) (Figure 5). This section provides SMS Technology with GHG reduction initiatives, using market-based electricity emission factor. SMS Technology expanded in 2023-2024, employing 11 staff; in 2022-2023 their staff count was three people.

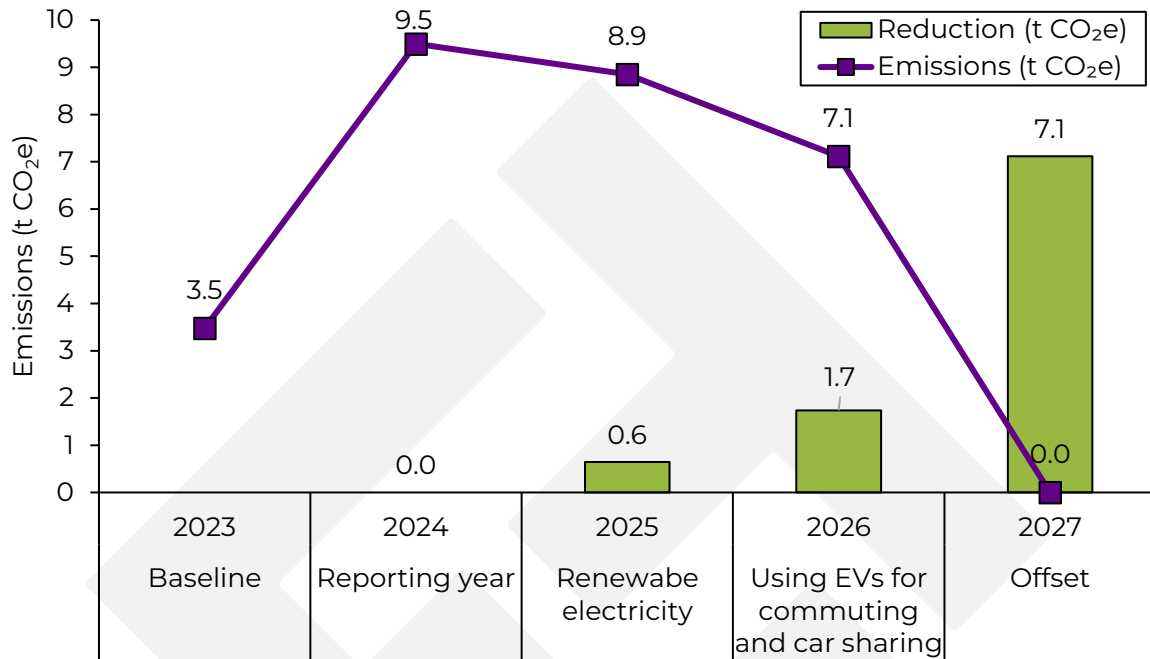


Figure 5. Roadmap to NZC for Scope 1, 2 & 3 emissions by 2027.

Switching to Renewable Electricity – 2024

SMS Technology should consider using renewable electricity. This can be achieved *via* opting for an Ofgem-certified green electricity tariff (Renewable Energy Guarantees of Origin). The best way to choose a renewable electricity tariff is by using comparison websites and assessing the renewable origin guarantee information provided. At present, most electricity suppliers offer at least one 100% renewable electricity option. Implementing a green electricity tariff will reduce emissions by 0.6 t CO₂e. This can also be achieved by installing solar panels on site.

Car Sharing and Using EVs - 2025

SMS Technology should consider offering electric car schemes *via* salary sacrificing and/or encourage car sharing for commuting to work. In this assessment, Tunley Environmental assumed a reduction of 33% is achievable by implementing this.

Offsetting

Although the pinnacle objective of decarbonisation is to minimise emissions, the practicality of achieving this for every emission source may not always be plausible. In these instances, offsetting against the carbon emissions is necessary. Therefore, the remaining carbon emissions will have to be offset with bona fide suppliers. Consequently, Tunley recommends all offsets be purchased from OneTribe (<https://onetribeglobal.com/>). To offset

against the emission for the whole period of 9.5 t CO₂e at a cost of £18/t CO₂e would cost a sum total of £180. If these reduction opportunities were undertaken the predicted remaining 7.1 t CO₂e could be offset at a cost of £144.

Carbon Offsetting in 2024

SMS Technology purchased 10 tCO₂e of carbon credits to offset their baseline emissions of 3.5 tCO₂e (given the emission sources considered) in 2023. This year, SMS Technology purchased carbon credits of 20 t CO₂e to offset their carbon emissions in 2023-2024 (Figure 6). Their business (given the emission sources considered) is, therefore, carbon neutral.



Figure 6. Carbon retirement certificate.

Conclusion

Total GHG emissions for SMS Technology's business activities in between 23rd November 2023 and 22nd November 2024 are **10 t CO₂e**. The carbon footprint quantification presented in this report was conducted using data provided to Tunley Environmental by SMS Technology. Tunley Environmental assessed the quality of the data and collaborated with SMS Technology to continuously enhance this.

Tunley Environmental has provided SMS Technology with detailed analysis of the emissions and recommendations on approaches by which SMS Technology can reduce its carbon footprint.

Tunley Environmental Report Emission Statement

Tunley Environmental GHG emissions from completing this assessment were 0.07 kg CO₂e.

Appendix – A

Materiality Assessment & Data Categories

Below we provide all of the greenhouse gas emissions scope categories alongside data improvement recommendations (Table A1). These are related to data source and emission factor point based allocation discussed below.

Table A1. Materiality assessment.

Category	In Scope?	Justification if out of scope	Data Score Average	Data Improvement Recommendations
Stationary combustion	No	N/A		
Mobile combustion	Yes		1	Assuming EV is charged on site
Refrigerants	No	N/A		
Purchased heat	No	N/A		
Purchased electricity	Yes		1	
Purchased goods and services	Yes		4	Collect weight data of cloth items
Capital goods (e.g., assets, machinery, etc)	No	N/A		
Fuel and energy related activities not included in S1 or S2	No	N/A		
Upstream transportation and distribution	No	N/A		
Waste generated in operations	Yes		2	Collect water usage/wastewater data
Business travel	No	N/A		
Employee commuting	Yes		4	Collect more accurate data
Upstream leased assets	No	N/A		
Downstream transportation and distribution	No	N/A		
Processing of sold products	No	N/A		
Use of sold products	No	N/A		
End of life treatment of sold products	No	N/A		
Downstream leased assets	No	N/A		
Franchises	No	N/A		
Investments	No	N/A		

Data Accuracy Assessment

All the raw data provided to Tunley Environmental were broken down into accuracy levels reflective of the data sources provided (Table A2 & Table A3). This allows for inaccuracy and uncertainty to be accounted for in this assessment. Both activity data (e.g., quantities of material, usage of electricity, etc) and emission factors are scored using the same band-based system, with 1-6 corresponding to the highest & lowest levels of accuracy, respectively.

Emission factors are to be evaluated using the following five indicators:

- 1) Technological relevance.
- 2) Temporal coverage.
- 3) Geographical coverage.
- 4) Completeness.
- 5) Reliability (e.g., peer-reviewed source, reproducible, low uncertainty in the information provided).

Table A2. Accuracy bands assigned to data, description of data assignment, adjustment factor provided increase to CO₂ emission calculations.

Accuracy Score	Description
1	Activity data accurately measured, fully accounted for and/or reported. Emission factor satisfies all five indicators.
2	Activity data provided directly by company/organisation; some generalisations made. Emission factor satisfies four indicators.
3	Activity data produced based on information provided by company/organisation. Emission factor satisfies three indicators.
4	Activity data assumption based on similar product/event reports by the same company/organisation. Emission factor satisfies two indicators.
5	Activity data assumption based on product/event reports by a similar company/organisation. Emission factor satisfies one indicator.
6	Activity data assumption made based only on publicly available information. Emission factor is estimated using the data available for a broader data category to which the emission source belongs, the estimated emission factor does not meet the indicators' requirements.



Table A3. Overall error score matrix for accuracy assessment.

Error Score	Action
1 - 2	Use the data, no further action required.
3 - 4	Can use the data, recommended to improve data quality by e.g., i) checking raw data with client (assessing recollection need) and ii) sourcing different emission factors or averaging several data points, required to declare this in the report.
5 - 10	Strive to improve data as a priority and only use the data when no further improvements can be made (see above)
12 - 25	Required to improve data quality (see above).
30 - 36	Do not use the data , discuss with the client and the carbon team to improve data quality and/or to assess whether the data can be used and the approach to report this.

Table A4. Actions to improve data quality and reduce uncertainty.

Error Score		Emission Factor					
		Five indicators	Four indicators	Three indicators	Two indicators	One indicator	No indicators
Data	Excellent	1	2	3	4	5	6
	Very good	2	4	6	8	10	12
	Good	3	6	9	12	15	18
	Relevant	4	8	12	16	20	24
	Acceptable	5	10	15	20	25	30
	Poor	6	12	18	24	30	36



Appendix – B

Scope 1 & 2 GHG Emissions

The following is specified in ISO14064-1 “The organization shall quantify direct GHG emissions separately for CO₂, CH₄, N₂O, NF₃, SF₆ and other appropriate GHG groups (HFCs, PFCs, etc.) in tonnes of CO₂e.”. Therefore, where possible Scope 1 and Scope 2 emissions are separated into known greenhouse gas emissions (Table A5). This enables further understanding for SMS Technology on their direct greenhouse gas emissions.

Table A5. Direct GHG emissions detailed separately for Scope 1 and Scope 2 showing CO₂, CH₄, N₂O emissions in tonnes of CO₂e.

Item	Emissions (t CO ₂ e of CO ₂)	Emissions (t CO ₂ e of CH ₄)	Emissions (t CO ₂ e of N ₂ O)
Electricity	1.126	0.005	0.007

Emission Data Report to ISO 14064-1

To encourage completeness, consistency, and readability ISO 14064-1 recommends that the GHG quantification should be reported using the full descriptive categories provided. Therefore, this is fully displayed and categorised in Table A6.

Table A6. Complete ISO14064-1 data categorisation table.

Category	Description	Emissions (t CO ₂ e)
1	Direct GHG emissions & removals in t CO₂e	
1.1	Direct emissions from stationary combustion	
1.2	Direct emissions from mobile combustion	
1.3	Direct process emissions and removals arising from industrial processes	
1.4	Direct fugitive emissions arising from release of GHGs in anthropogenic systems	
1.5	Direct emissions and removals from land use, land use change, and forestry	
2	Indirect emissions in t CO₂e	
2.1	Indirect emissions from imported electricity	1.1
2.2	Indirect emissions from imported energy	
3	Indirect GHG emissions from transportation	
3.1	Emissions from upstream transportation and distribution	
3.2	Emissions from downstream transportation and distribution	
3.3	Emissions from employee commuting & teleworking	8.6
3.4	Emissions from client and visitor transport	
3.5	Emissions from business travel	
4	Indirect GHG emissions from products used by the organisation	
4.1	Emissions from purchased goods	0.3
4.2	Emissions from capital goods	
4.3	Emissions from the disposal of solid and liquid waste	
4.4	Emissions from the use of assets	
4.5	Emissions from the use of services that are not described in the above subcategories	
5	Indirect GHG emissions associated with the use of products from the organisation	
5.1	Emissions or removals from the use stage of the product	
5.2	Emissions from downstream leased assets	
5.3	Emissions from end-of-life stage of product	
5.4	Emissions from investments	
6	Indirect GHG emissions from other sources not specified	

Approval

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D					
E					
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