Webasto Group

Product Carbon Footprint – Supplier Guideline

Public

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Reference Documents

Date	Version	Description
February 2019	-	DIN EN ISO 14067:2018
September 2011	1	Product Life Cycle Accounting and Reporting Standard (Greenhouse Gas Protocol Product Standard)
August 2024	3.0	Catena-X Product Carbon Footprint Rulebook
February 2024	2.1	TfS PCF Guideline
18 July 2024	Current consolidated version: 18/07/2024	EU-Battery Regulation 2023/1542" Art. 7 and Annex II European Union Document 32023R1542
2023	Ares (2024) 3131389 (Draft delegated regulation) Ares (2024) 3131389 (Draft delegated regulation)	Commission Delegated Regulation supplementing Regulation (EU) 2023/1542 of the European Parliament and of the Council by establishing the methodology for the calculation and verification of the carbon footprint of electric vehicle batteries (Act Ref. Ares (2024)3131389 - 29/04/2024 including Annex and updates) European Union Document Ares(2024)3131389

Abstract

The “Product Carbon Footprint (PCF) - Supplier Guideline” provides comprehensive guidance and serves as a technical guide for Webasto´s business partners on calculating and reporting the carbon footprint of their products. The document is based on the standards ISO 14067:2018, the Catena-X PCF Rulebook, the Greenhouse Gas Protocol Product Standard and the EU Battery Regulation. The main objectives are to ensure data quality and availability, to apply a consistent ISO-compliant methodology, to create transparency about emission sources along the supply chain, and to provide understandable information about PCFs for stakeholders.

The process of PCF reporting to Webasto is managed via the SAP Ariba supplier portal (WeBuy) and involves several steps. First, part information and PCF status are recorded. This is followed by the entry of PCF values and relevant data sources, as well as the description of the applied product system limits and data sources used. In addition, information on component level like procured parts and raw materials, including origin, transportation mode and weight, as well as information on manufacturing processes is recorded.

Suppliers shall fulfill certain requirements when reporting PCFs to Webasto.

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1. Introduction

1.1 Definitions

The definitions are based on ISO norms (ISO 14040/44 and ISO 14067:2018), the Catena-X Product Carbon Footprint Rulebook, the GHG Product Life Cycle Accounting and Reporting Standard, and the EU Battery Regulation.

Catena-X	Catena-X is the first collaborative and open data ecosystem specifically designed for the automotive industry. Its goal is to connect all stakeholders along the automotive value chain (from manufacturers to suppliers and service providers) by enabling standardized, interoperable, and data-sovereign collaboration.
Catena-X Product Carbon Footprint (PCF) Rulebook	Defines a methodological framework to assess the carbon footprint of automotive products.
Corporate Carbon Footprint (CCF)	The Corporate Carbon Footprint refers to the total amount of greenhouse gas (GHG) emissions that are directly (Scope 1) and indirectly (Scope 2 & 3) caused by a company's activities over a specific period. While the CCF provides a comprehensive view of a company's total emissions, the PCF focuses on the emissions of individual products. Both metrics are complementary and essential for a holistic approach to sustainability.
CO2 equivalents (CO2e)	Relevant calculated emissions include other greenhouse gases apart from just carbon dioxide (CO2), such as methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3), which are converted into CO2 equivalents (CO2e).
Cradle-to-gate	A Life Cycle Assessment (LCA) approach that evaluates the environmental impact of a product from raw material extraction (cradle) to its departure from the manufacturing facility (gate).
Cradle-to-grave (entire life cycle)	Covers emissions across all stages of a product's life cycle: raw material extraction, manufacturing, transportation, storage, usage, and disposal.
EU Battery Regulation	Regulation (EU) 2023/1542, ensuring that batteries sold in the EU are sustainable and circular across their life cycle, from production to recycling.

Gate-to-Gate	Used in Life Cycle Assessment (LCA) to evaluate the environmental impact of a product's manufacturing process within the factory. This approach focuses exclusively on processes occurring inside the manufacturing facility, from the arrival of raw materials to the dispatch of the finished product.
Greenhouse gas (GHG)	Gases that contribute to the greenhouse effect by trapping heat in the Earth's atmosphere. These emissions are primarily caused by human activities, particularly the burning of fossil fuels for energy production and transportation.
GHG inventory	A comprehensive list of emission sources and their associated greenhouse gas (GHG) emissions, quantified using standardized methods.
GHG Protocol Product Standard	A comprehensive framework designed to help companies measure and report the greenhouse gas (GHG) emissions associated with the entire lifecycle of their products.
ISO 14040/44	International standards that define the principles and framework for conducting Life Cycle Assessments (LCA). These standards are used to evaluate the potential environmental impacts of a product system throughout its entire lifecycle.
ISO 14067	An international standard that specifies the principles, requirements, and guidelines for quantifying and reporting the product's carbon footprint. This standard is designed to align with other international standards on Life Cycle Assessment (LCA), such as ISO 14040 and ISO 14044.
Life Cycle Assessment (LCA)	A systematic method for evaluating the environmental impacts of a product, process, or service over its entire lifecycle.
Primary data share (PDS)	Refers to the exchange of original, unprocessed data between Webasto and the supply chain. Primary data is typically collected directly from the source, such as sensors, machines, or other operational systems, and is shared in its raw form.
Product Carbon Footprint (PCF)	Measures the total GHG emissions associated with a product throughout its entire life cycle. ISO 14067 also uses the synonym Carbon Footprint of a Product (CFP).
Scope 1 emissions	Direct greenhouse gas (GHG) emissions from sources owned or controlled by an organization, such as fuel combustion, process emissions, and fugitive emissions.

Scope 2 emissions	Indirect greenhouse gas (GHG) emissions associated with the purchase of electricity, steam, heat, or cooling. These emissions occur at the facility where the energy is generated but are recorded in an organization's GHG inventory because they result from the organization's energy consumption.
Scope 3 emissions downstream	Indirect greenhouse gas (GHG) emissions that occur after a product leaves the control of the reporting company. These emissions are associated with the use and disposal of the company's products and services by customers.
Scope 3 emissions upstream	Indirect greenhouse gas (GHG) emissions that occur in the supply chain before a product reaches the reporting company. These emissions are associated with the production and delivery of goods and services that the company purchases and utilizes.
Sub-supplier	Also referred to as tier-n suppliers, these entities provide materials or components to Webasto's direct suppliers.
Together for Sustainability (TfS) Guideline	The "Together for Sustainability" (TfS) PCF guideline is based on several relevant ISO standards, including ISO 140671, and is applied in the chemical industry to calculate and report PCFs.

1.2 Purpose of Document

This document serves as technical guidance to assist our business partners in calculating and reporting Product Carbon Footprints (PCFs) to Webasto. Ensuring consistency and comparability in Product Carbon Footprint (ISO 14067 uses the synonym Carbon Footprint of a Product - CFP) calculations can be challenging due to variations in methodologies and assumptions. This document is based on the ISO standard "ISO 14067:2018", the "Catena-X Product Carbon Footprint Rulebook", the "Greenhouse Gas Protocol Product Standard", and the EU Battery Regulation. We request that our suppliers adhere to the requirements outlined in this guideline.

The document aims to:

1. **Ensure data quality and availability**: Guarantee data accuracy, completeness, and comparability by using primary data and, when necessary, recognized secondary data sources.
2. **Achieve methodological consistency**: Apply a consistent, ISO-compliant methodology accepted by the GHG Protocol to standardize PCF calculations.
3. **Create transparency**: Provide clarity on emission sources along the supply chain through the analysis of procurement and logistics data.

4. **Stakeholder communication**: Provide clear, understandable information about PCFs to promote awareness and engagement in sustainability initiatives.

5. **Continuous improvement**: Establish a process for continuous improvement, regularly reviewing and updating PCF calculation methods to reflect the latest scientific findings and best practices and to improve data quality.

1.3 Scope of Document

This document serves as a reference for suppliers on the methodology and process used to calculate and report Product Carbon Footprints (PCFs) to Webasto. The scope of PCF calculation and reporting is either cradle-to-outbound-gate Tier 1 Supplier or cradle-to-inbound-gate Webasto, with differentiation based on transportation conditions (distribution). If the supplier is responsible for transportation to Webasto, the emissions associated with this transport must be included in the PCF calculation. The product system covered includes all product-related greenhouse gas (GHG) emissions from procured parts at sub-suppliers, raw material extraction, supplier manufacturing processes, and, if applicable, distribution to Webasto. For the PCF calculation / reporting, physical data is required or exchanged, not monetary units.
A graphical representation of the scope and related product system is provided in Figure 1.

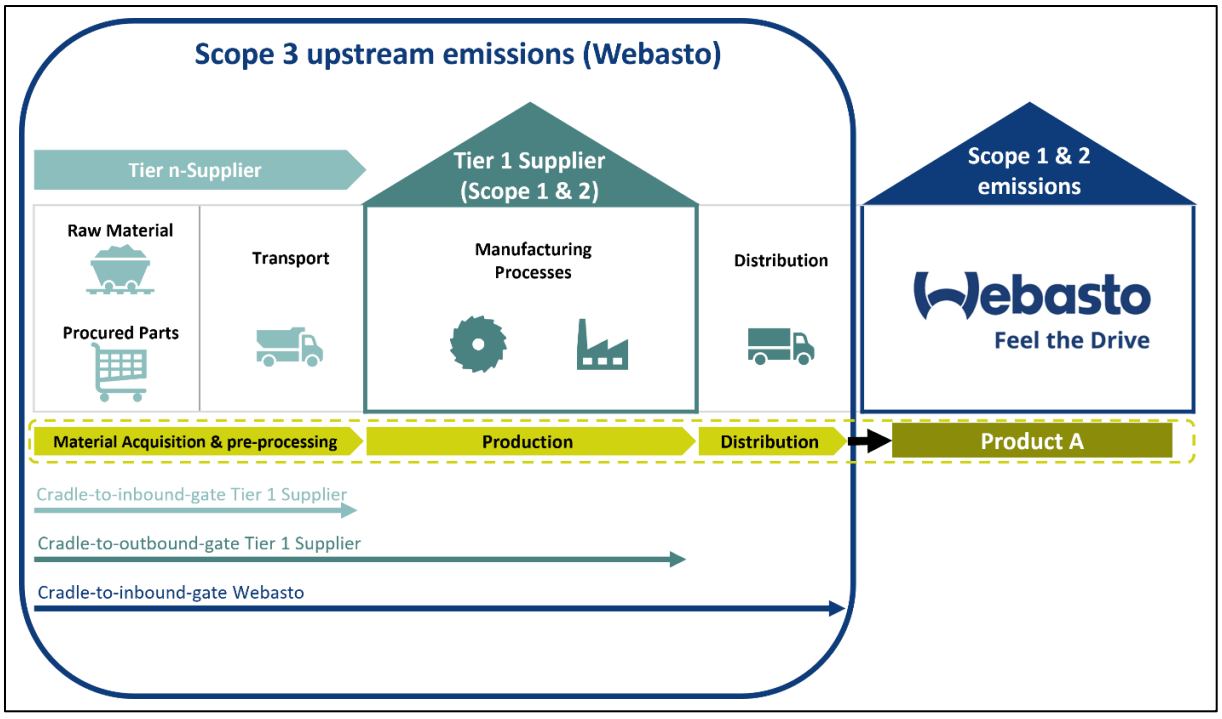

Figure 1: Scope of Supplier PCF Guideline (according to GHG Protocol Product Standard v1, page 7)

Procured Parts & Transport

Procured parts refer to semi-finished or finished goods sourced from sub-suppliers (e.g., rivet nuts, blind rivets, self-clinching inserts, clinch nuts, fabrics, nets, electrical components, anodizing, e-coating). The PCF of procured parts should be obtained from the respective sub-suppliers. Additionally, the transportation of these procured parts to the supplier's factory should also be considered in the calculation.

Raw Material & Transport

Raw material refers to the unprocessed substances required to produce finished parts in the manufacturing plant of Webasto Tier 1 suppliers (e.g., steel, aluminum, copper, float glass, ink, plastic resins). The transportation of raw materials to the supplier's factory should also be taken into account in the calculation.

Manufacturing Processes

The processing of incoming goods in production areas to create the final product, including operations such as stamping, extruding, injection molding, over molding, e-coating, assembling, milling, sawing, and turning.

Distribution to Webasto

If the supplier is responsible for transportation to Webasto, they must include these emissions in their PCF calculation.

2. Existing PCF Calculation Standards and Methods

There are various sector-specific methods for calculating a Product Carbon Footprint. PCFs reported to Webasto must meet certain requirements.

Suppliers delivering parts for battery systems must comply with the EU Battery Regulation when calculating the PCF.

The automotive industry commonly uses the Catena-X PCF Rulebook, a methodological framework designed to standardize and improve the calculation and exchange of PCFs along the supply chain. This framework is based on ISO standards.

Other PCF calculation methods based on cross-sectoral standards are also acceptable (see Figure 2). For example, the TfS Guideline, widely used in the chemical industry, aligns with ISO 14067, ISO 14040/44, and the Greenhouse Gas Protocol Product Standard.

The Greenhouse Gas Protocol Product Standard is also a key guideline for calculating and reporting the PCF. It builds on the framework and requirements established in ISO 14040/44. Figure 2 illustrates the requirements for PCFs reported to Webasto.

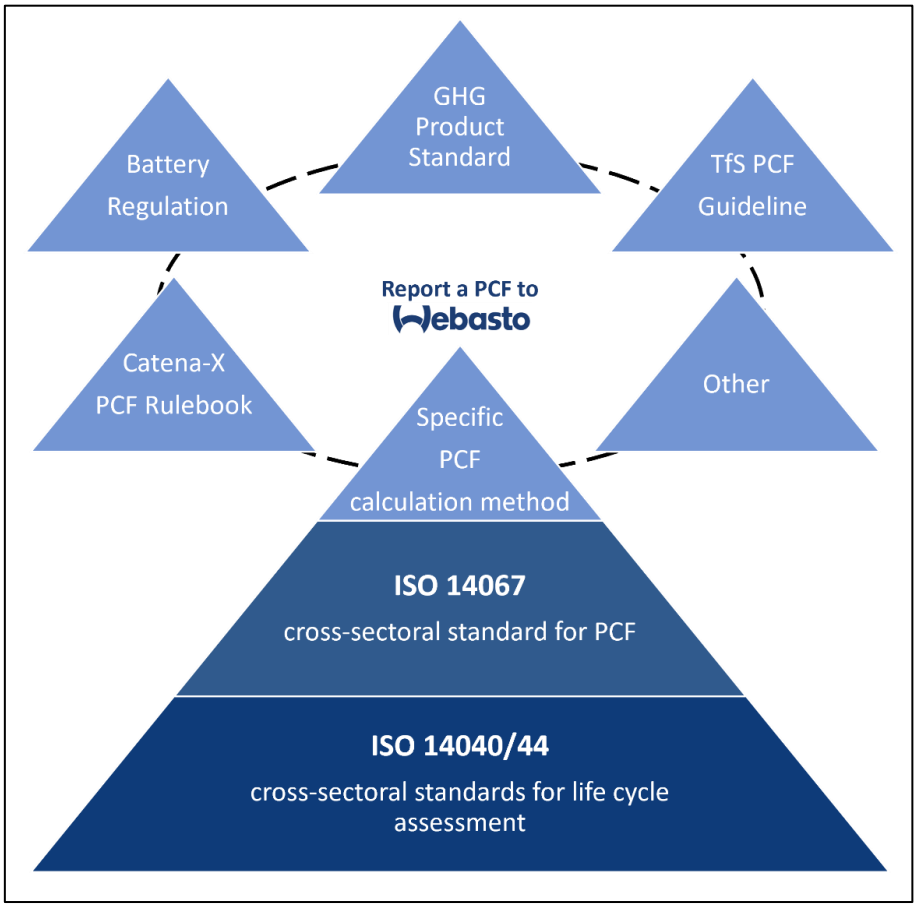

Figure 2: Standards & Methods (according to Catena-X PCF Rulebook v3.0, page 13)

2.1 Data Sources

Data availability may vary and should increase over time with increasing product maturity. Assumptions might be necessary until satisfactory data quality and quantity is achieved. The available data can in general be based on activity data (e.g., average energy demand for a 2 tons injection mold) or on impact factors (e.g., kg CO2e for 1 kg steel). In addition, a differentiation is made between primary and secondary data:

- **Primary data**: Data provided by sub-suppliers or suppliers own operations. In case the sub-supplier uses secondary data (e.g., publicly available databases or Ecoinvent database), the data is still considered “primary”.
- **Secondary data**: Data retrieved from external sources (e.g., publicly available databases or Ecoinvent database).

Whenever possible, primary data should be preferred. In addition, all data sources used, and all relevant assumptions must be clearly disclosed. The following list outlines different situations, principles, and potential data sources to consider.

Table 1: Different Situations, Principles and possible Data Sources

Situation	Principles
Process within Webasto Tier-1 supplier	Gather primary, supplier-specific activity data. Where available, gather primary, supplier-specific impact factors. Break down the data by process unit for each individual location site. • In case energy is self-generated, get primary activity and emission data • In case energy is purchased, check if energy supplier can provide primary data. Otherwise, use secondary data to select the appropriate electricity emission factor for the applicable energy mix
Process outside of Webasto Tier-1 supplier (Process at sub-supplier)	Collect **primary data** from sub-suppliers whenever possible. Ensure the consistency of sub-supplier data by comparing it against ISO 14067 requirements, the GHG Protocol Product Standard, and the Webasto PCF Guideline. If primary data is unavailable, use **secondary data** based on the following priorities: 1) Use the most recent data from database (e.g., publicly available databases or Ecoinvent database) 2) Use approximations or estimates

2.2 Primary Data Share

To increase the visibility of the proportion of primary data in PCF calculations, the primary data share (PDS) should be calculated and reported to Webasto. The primary data share (PDS) is defined as the percentage of a PCF that is derived from primary data (as defined in section 2.1 Data Sources).

Use the method described in the Catena-X PCF Rulebook (chapter 7.2.4) for calculating the PDS percentage. Figure 3 provides an example of how to calculate the PDS.

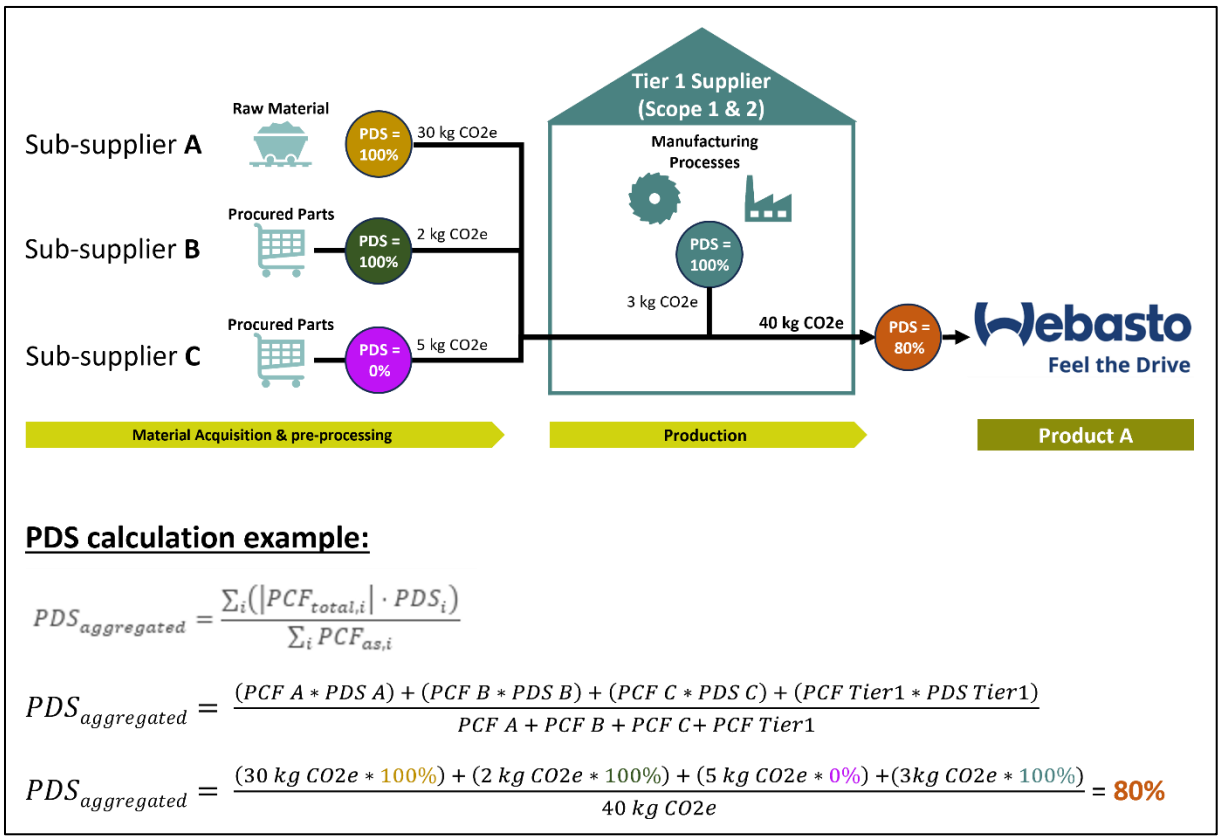

Figure 3: Primary Data Share (according to Catena-X PCF Rulebook v3.0, page 34)

If the sub-supplier has provided a PCF that was calculated using secondary data (e.g., publicly available databases or Ecoinvent database), the data is still considered “primary”. Due to this simplification, it is only possible to select 0% (PCF value not received from sub-supplier) or 100% (PCF value received from sub-supplier) PDS for procured parts in the PCF questionnaire. If approximations or estimates (regarding data sources) have been made, use the worst case (e.g., when material weight is known, but its origin is not — in this case, assume no primary data content).

2.3 System boundaries

Defining system boundaries is a crucial step in calculating the carbon footprint of a product. According to ISO 14067, the system boundaries must cover all relevant phases of a product's life cycle, from raw material extraction to production, use and disposal. This can be done either as a cradle-to-gate approach, which considers emissions until the product leaves the factory, or as a cradle-to-grave approach, which covers the entire life cycle. The choice of system boundaries influences the accuracy and comparability of carbon footprint calculations and should be based on scientifically based methods to ensure a complete and transparent picture of greenhouse gas emissions. An iterative approach allows the system boundaries to be adjusted and refined over time to further refine the calculations.

This document and the PCF query at Webasto deal with the cradle-to-gate approach. The main cradle-to-gate system boundaries have already been mentioned in section 1.3 Scope of Document:

- Cradle-to-outbound-gate Tier 1 Supplier
- Cradle-to-inbound-gate Webasto

2.4 Cut-off criteria

The cut-off criteria in ISO 14067 refer to the specification of the amount of material or energy flow, or the level of significance of GHG emissions, associated with unit processes or the product system that can be excluded from a PCF study. The PCF process aims to avoid cut-offs whenever possible, with the goal of achieving a closed mass and energy balance. Cut-off rules pertain to the exclusion of certain raw materials or processes from the PCF calculation due to practical reasons. Cut-off rules might apply in the following situations:

- When no suitable life cycle inventories are available to represent raw materials or processes, and no appropriate proxy can be found.
- The effort to gain the missing data is unreasonably high.
- Process modules, inputs, and outputs can be excluded only if their combined impact is less than 3% of the product's total carbon footprint.
- In cases where a flow is less than 3% of the cumulative mass, yet is thought to be significant, must not be cut off.
    - Cut-off criteria should not be applied when precious metals (e.g., in electronics) are used, as these materials are known to have an exceptionally high emission impact.
- In case a cut-off is applied, a percentage-based add-on onto the final PCF result shall be applied (e.g., if 1 % of the total material or energy input is cut off, 1 % of the total PCF result shall be added).

2.5 Allocation

2.5.1 Multiple output allocation

Allocation in ISO 14067:2018, chapter 6.4.6, refers to the process of assigning the GHG emissions of a multi-output process to the different products or functions it generates. This is done to ensure that the PCF accurately reflects the emissions associated with each product. The application of allocation rules can significantly impact the PCF result. Therefore, allocation should be avoided whenever possible. To better understand the allocation process, see the practical example below:
Dairy Industry: In a dairy processing plant, milk is processed into various products like cheese, butter, and yogurt. The GHG emissions from the processing plant are allocated to each product based on their economic value or mass. For instance, if cheese represents 40% of the total economic value of the products, 40% of the emissions are allocated to cheese.

Where allocation cannot be avoided, allocation methods from the following list can be applied (based on ISO 14067:2018, chapter 6.4.6.2):

1. **Physical Allocation**: Distributes emissions based on physical properties like mass or volume of the products.
2. **Economic Allocation**: Allocates emissions according to the economic value of the products.
3. **Energy Allocation**: Uses the energy content of the products to distribute emissions.

These methods help ensure that the GHG emissions are fairly and accurately assigned to each product. The applied type of allocation must be clearly documented.

2.5.2 End-of-life allocation

End-of-life allocation generally is oriented on ISO 14067:2018, chapter 6.4.6.3. The critical point is the decision how to assign impacts from primary production processes to material that is recycled and used in future product systems. For calculation and reporting of PCF to Webasto, use the 100:0 approach (“recycled content approach”).

- 100:0 approach (“recycled content approach”): This approach does not consider burdens or credits from subsequent or previous life cycles. Scrap materials (e.g., recycled metals) are considered free of burden, but no credits are given for end-of-life recycling. This approach rewards the use of secondary materials.

3. Webasto PCF Reporting Process

The PCF request is managed through Webasto´s SAP Ariba supplier portal (WeBuy). To receive and submit the PCF questionnaire to Webasto, suppliers must first be registered on SAP Ariba (WeBuy).

The overall process for submitting the PCF request is illustrated in Figure 3. The following chapters provide a more detailed description of each step in the process.

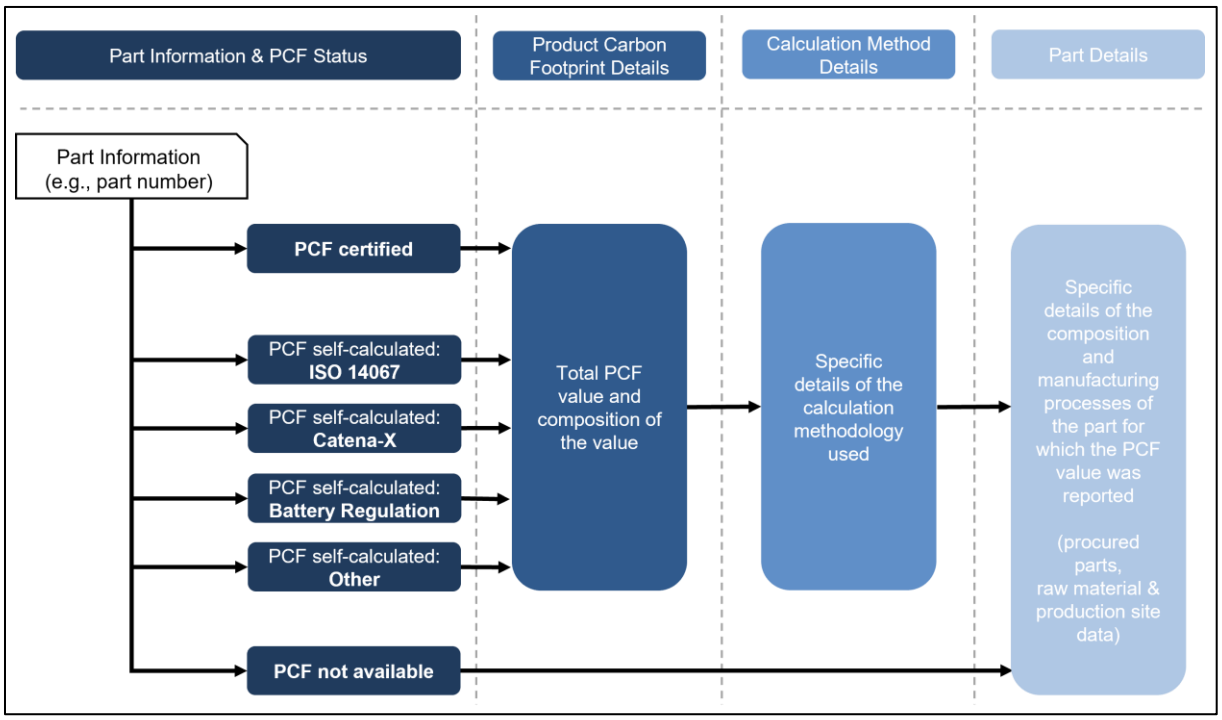

Figure 4: Process of PCF Request

3.1 Part Information & PCF Status

The first level of the PCF request generally refers to the affected part and the associated PCF status. The specific requested data with an explanation is shown in Table 2. The supplier shall adhere to the specific explanation when reporting data. Please note that **the number of the questions in this document** (for example 1.1, 1.2, 1.3, and so on) **does not correspond to the number in the query system** (SAP Ariba - WeBuy). The numbers in the system are flexible and change depending on the choices made.

Table 2: Part Details & PCF Status

	Data entry	Mandatory [M]	Explanation
1.	**Part Details**		
1.1	Enter the Webasto part number	M	Enter the Webasto part number without change level information.
1.2	Enter the change level (CL) of the part for which the PCF was calculated	M	The calculation of the PCF should always be based on the current change level. Enter the change level in the common Webasto format as stated on the drawing.
1.3	Enter the Webasto project name to which the part belongs	M	If the component is part of several projects, enter all of them.
1.4	Enter the manufacturing site where the part is produced	M	Enter city and country.
1.5	Select the terms of delivery	M	Select the Incoterm applied. This is important for the distribution of emissions.
1.6	Select whether a PCF is available for this part and indicate the level of calculation or certification	M	If a PCF is available but has not been certified by a third-party, select “PCF self-calculated” and specify the calculation method used. For battery part suppliers, it is mandatory to calculate the PCF in accordance with the EU Battery Regulation.

3.2 Product Carbon Footprint Details

The second level of the PCF request relates to information on the specific PCF value of the part specified in section 3.1 Part Information & PCF Status. In addition to the actual PCF values, the PDS and the data source are also required.

Table 3: Product Carbon Footprint Details

	Data entry	Mandatory [M]	Explanation
2	**Product Carbon Footprint Details**		
2.1	PCF total [kg CO2e per part]	M	Enter the total PCF value, using the unit kg CO2e per part. If Webasto is responsible for the transport to Webasto, the supplier should not include the outbound transport emissions in the calculation. For battery part suppliers: PCF calculation must be based on relevant battery-specific standards and norms: 1. "EU-Battery Regulation 2023/1542" Art. 7 and Annex II 2. "Commission Delegated Regulation Supplementing Regulation (EU) 2023/1542 of the European Parliament and of the Council by establishing the methodology for the calculation and verification of the carbon footprint of electric vehicle batteries" (Act Ref. Ares (2024)3131389 - 29/04/2024 including Annex and updates)
2.2	PCF total [kg CO2e per kg]	Optional	Enter the total PCF value, using the unit kg CO2e per kg part. If Webasto is responsible for the transport to Webasto, the supplier should not include the outbound transport emissions in the calculation. For battery parts suppliers: PCF calculation must be based on relevant battery-specific standards and norms: 1. "EU-Battery Regulation 2023/1542" Art. 7 and Annex II 2. "Commission Delegated Regulation Supplementing Regulation (EU) 2023/1542 of the European Parliament and of the Council by establishing the methodology for the calculation and verification of the carbon footprint of electric vehicle batteries" (Act Ref. Ares (2024)3131389 - 29/04/2024 including Annex and updates)
2.3	PCF related to material acquisition & pre-processing [kg CO2e per part]	M	Enter the PCF related to raw material acquisition and pre-processing, using the unit kg CO2e per part. For explanation use figure 1 in "Product Carbon Footprint (PCF) - Supplier Guideline" or chapter 1.6 in "Product Life Cycle Accounting and Reporting Standard".
2.4	PCF related to production [kg CO2e per part]	M	Enter the PCF related to main product production process, using unit kg CO2e per part. For explanation use figure 1 and Product Life Cycle Accounting and Reporting Standard chapter 1.6. For battery parts suppliers: The PCF of battery parts of main production processes must be calculated using company specific data. This includes active material, anode, cathode, electrolyte, cell production, formation, transport, module production and waste / scrap.
2.5	Packaging emissions included in PCF total?	M	Indicate whether the total PCF value includes emissions from packaging. If reusable packaging is used, the emissions generated during the production, use, cleaning and reuse of the packaging should be included in the calculation. The emissions are distributed over the number of use cycles to determine the average carbon footprint per use.

Table 3 continues on the next page

2.6	Packaging emissions [kg CO2e per part]	M if 2.5 “yes”	If the total PCF value includes emissions from packaging, enter the packaging emissions here using the unit kg CO2e per part.
2.7	Outbound transport included in PCF total?	M	Indicate whether the total PCF value includes outbound transport emissions. If Webasto is responsible for the transport to Webasto, outbound transport emissions must not be included in the calculation.
2.8	Outbound transport emissions [kg CO2e per part]	M if 2.7 “yes”	If the total PCF value includes outbound transport emissions, enter these emissions here using the unit kg CO2e per part.
2.9	Primary data share (PDS) [%]	M	Enter the Primary Data Share (PDS) in percentage to show the proportion of primary data used in the calculation of the total PCF. Use the method outlined in the Catena-X PCF Rulebook (chapter 7.2.4) for calculating the PDS percentage. If the sub-supplier has provided a PCF that was calculated using secondary data (e.g., publicly available databases or Ecoinvent database), the data is still considered “primary”. If applied approximations or estimates (regarding data sources) have been made, use the worst case (e.g., when material weight is known, but its origin is not — in this case, assume no primary data content). Specify all approximations or estimates used in the calculation in the description of approximations or estimates.
2.10	Date of PCF calculation	M	Enter the date of the PCF calculation. Emissions should, by default, be reported for the most recent year (either reporting or calendar year). An annual review is required to ensure data accuracy. If the reported emissions increase by 5% or more compared to the previous reporting period, an update of the data is mandatory. If emissions increase by 5% or more, proactively contact Webasto and report the changes.
2.11	Name of secondary data source	M	Enter the name of the secondary data source used for the calculation (e.g., Ecoinvent, Gabi, Probas). Use Ecoinvent if possible.

3.3 Calculation Method Details

The third level of the PCF request relates to information on the calculation method used. Some of the questions are specific, depending on the PCF status selected in section 3.1 Part Information & PCF Status.

Table 4: Calculation Method Details

	Data entry	Mandatory [M]	Explanation
3	**Calculation Method Details**		
3.1	Is this part a battery component?	M	Indicate whether this part is a battery component. If so, the PCF must be calculated in accordance with the Battery Regulation. Additionally, the certification must confirm compliance with the Battery Regulation.
3.2	Applied system boundaries	M	Specify the system boundaries used for the PCF calculation. Option 1: Cradle-to-outbound-gate Tier 1 Supplier Option 2: Cradle-to-inbound-gate Webasto System boundaries define the scope of the product system that is included in the calculation. Chapter 6.3.4 of ISO 14067 provides guidance on system boundaries.
3.3	Applied cut-off criteria description	Optional	Specify all cut-off criteria used for the PCF calculation. Cut-off criteria specify which material or energy flows, or which emissions can be excluded from the calculation due to their minor significance or quantity. All information on emissions that were excluded (see section 3.4 Part Details → 4. Procured Parts Details, 5. Raw Material Details & 6. Production Site Data) must be listed here. Chapter 6.3.4.3 of ISO 14067 provides guidance on cut-off criteria.
3.4	Applied allocation description	Optional	Specify all allocation used for the PCF calculation. Allocation refers to the distribution of emissions across different products or processes within a product system. This is particularly important if a process produces several products or by-products. Allocation ensures that emissions are distributed fairly and consistently among the various products Chapter 6.4.6 of ISO 14067 provides guidance on allocation.
3.5	Applied approximations or estimates (regarding data sources) description	Optional	Specify all approximations or estimates used for the PCF calculation. Chapter 3.1.6.3 & 3.1.6.4 of ISO 14067 provides guidance on approximations or estimates.
3.6	Name of 3rd party verifier (PCF value)	**Mandatory if 1.6 "PCF certified"**	Enter the name of the third-party that verified this PCF value.
3.7	Date of PCF verification	**Mandatory if 1.6 "PCF certified"**	Enter the date on which the PCF was verified by the third-party. If the verification is renewed, proactively contact Webasto and report any changes.

Table 4 continues on the next page

3.8	Calculation method	**Mandatory if 1.6 "PCF certified" or "PCF self-calculated Other"**	Specify the PCF calculation method used (e.g., ISO 14067, Catena-X, Battery Regulation). If a browser link is available that refers to the calculation method used, please provide it. For battery parts suppliers, it is mandatory to calculate the PCF in accordance with the Battery Regulation.
3.9	Calculation method verified by 3rd party?	**Mandatory if 1.6 "PCF certified" or "PCF self-calculated Other"**	EIndicate whether the PCF calculation method used has been verified by a third party and whether a proven document is available. If the calculation was performed in accordance with ISO 14067, Catena-X, or the Battery Regulation, select "Yes." In these cases, providing an additional document is not required.
3.10	Name of 3rd party verifier (calculation method)	**Mandatory if 3.9 "yes"**	Enter the name of the third-party that verified the calculation method. If the calculation was carried out according to ISO 14067, Catena-X, or the Battery Regulation, refer to calculation method.
3.11	Biogenic GHG emissions [kg CO2e per part]	**Mandatory if 1.6 "PCF self-calculated Catena-X"**	Enter the emissions derived from biomass.
3.12	Fossil GHG emissions [kg CO2e per part]	**Mandatory if 1.6 "PCF self-calculated Catena-X"**	Enter the fossil-based emissions.
3.13	LU (Land Use) GHG emissions [kg CO2e per part]	Optional if 1.6 "PCF self-calculated Catena-X"	LU GHG emissions stands for Land Use Greenhouse Gas Emissions. These emissions result from activities related to land use, such as agriculture, forestry, and other land-use changes.
3.14	DLUC (Direct Land Use Change) GHG emissions [kg CO2e per part]	Optional if 1.6 "PCF self-calculated Catena-X"	DLUC GHG stands for Direct Land Use Change Greenhouse Gas Emissions. It refers to the GHG emissions resulting from the conversion of land from one use to another, such as changing forested areas to cropland. These emissions occur due to the release of carbon stored in trees and soil through processes like deforestation and tillage.
3.15	Aircraft GHG emissions [kg CO2e per part]	Optional if 1.6 "PCF self-calculated Catena-X"	Enter the GHG emissions resulting from air transport.
3.16	Exempted emissions descriptions	**Mandatory if 1.6 "PCF self-calculated Catena-X"**	Describe the excluded emissions, specifying which emissions were not included in the total PCF calculation (e.g., due to their negligible mass or impact). Similar to the description of the cut-off criteria. Calculate the emissions that are covered by the cut-off criteria and report them here.
3.17	Exempted emission [%]	**Mandatory if 1.6 "PCF self-calculated Catena-X"**	Enter the percentage of excluded emissions relative to the total PCF.
3.18	Technology (TeR)	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Select the degree to which the data reflects the actual technology(ies) used in the process. Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.

Table 4 continues on the next page

3.19	Geography (GeR)	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Select the degree to which the data reflects the actual geographic location of the processes within the inventory boundary (e.g. country or site). Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.
3.20	Time (TiR)	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Select the degree to which the data reflect the actual time (e.g. year) or age of the process. The primary data considered: - Refers to the most recent time period, - Is not older than 3 years, - Covers at least 12 calendar months to avoid seasonal changes. Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.
3.21	Completeness (C)	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Select the degree to which the data statistically represents the process sites. Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.
3.22	Reliability (R)	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Select the degree to which the sources, data collection methods, and verification procedures used to obtain the data are dependable. Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.
3.23	DQR total	**Mandatory if 1.6 "PCF self-calculated Catena-X" or "PCF self-calculated Battery Regulation"**	Calculate the data quality rating for the total PCF by determining the arithmetic average of the five data quality indicators. Chapter 7.2.5.1 of Catena-X Product Carbon Footprint Rulebook provides guidance on data quality rating.
3.24	When is a calculated PCF value available for this part?	**Mandatory if 1.6 "PCF not available"**	Enter when a PCF value for this part can be delivered to Webasto according to the supplier company´s sustainability roadmap. If a PCF value is available before this date, please report it proactively to Webasto.

3.4 Part Details

The fourth level of the PCF request relates to physical information about the part itself. Purchased parts, specific raw materials and manufacturing processes are requested in this section.

Table 5: Procured Parts Details

	Data entry	Mandatory [M]	Explanation
4	**Procured Parts Details**		
4.1	Does the product delivered to Webasto consist of procured parts? Procured parts refer to semi-finished or finished goods sourced from sub-suppliers. List all components procured from sub-suppliers that are included in the part delivered to Webasto, covering those that cumulatively account for 97% of the PCF related to material acquisition & pre-processing. Arrange the procured parts in descending order by gross weight. If more than 10 procured parts are necessary, list the 10 most CO2 intensive procured parts here. Procured parts that are not considered shall be indicated in the cut-off description.	M	Select "yes", if the product delivered to Webasto consists of parts procured from sub-suppliers.
4.2	Procured part 1 (Description)	**Mandatory if 4.1 "yes"**	Enter the description of the procured part (e.g., screw, rivet nut, self-clinching inserts).
4.3	Material description of procured part 1	**Mandatory if 4.1 "yes"**	Specify the main material the procured part is made of (e.g., aluminum wrought alloy; tin coated copper; PP GF30).
4.4	PCF of procured part 1 [kg CO2e per part]	**Mandatory if 4.1 "yes"**	Enter the total PCF value, using the unit kg CO2e per part.
4.5	Primary data share (PDS) of PCF of procured part 1 [%]	**Mandatory if 4.1 "yes"**	Select the Primary Data Share (PDS) in percentage to show the proportion of primary data of the procured part PCF. - Option 1: If PCF of the procured part comes from the sub-supplier, select 100%. - Option 2: If PCF of the procured part has been calculated on approximations or estimates, select 0%.
4.6	Origin of procured part 1	**Mandatory if 4.1 "yes"**	Enter the origin of the procured part (e.g., Germany, China, USA). If the origin is not known, use the region of the sub-supplier. If no region is known use the continent.
4.7	Transport mode of procured part 1	**Mandatory if 4.1 "yes"**	Select the main mode of transportation (most CO2 intensive transport) used to deliver the procured part to the manufacturing plant. If specific transport modes are unknown, estimate based on the most common transport method used for similar sub-suppliers.

Table 5 continues on the next page

4.8	Net weight of procured part 1 [kg]	**Mandatory if 4.1 "yes"**	Enter the weight of the procured part in kilograms as it is contained in the part delivered to Webasto.
4.9	Quantity of this procured part 1 from sub-supplier included in the part delivered to Webasto?	**Mandatory if 4.1 "yes"**	Indicate how often this procured part is included in the part delivered to Webasto. Example: If the part delivered to Webasto contains an identically procured screw 6 times, enter the number 6 here.
4.10	Another procured part?	**Mandatory if 4.1 "yes"**	Select "yes", if the product delivered to Webasto consists of an additional part procured from sub-suppliers.
4.11	Procured Part 2 (Description)	**Mandatory if 4.10 "yes"**	see 4.2
4.12	Material description of procured part 2	**Mandatory if 4.10 "yes"**	see 4.3
4.13	PCF of procured part 2 [kg CO2e per part]	**Mandatory if 4.10 "yes"**	see 4.4
4.14	Primary data share (PDS) of PCF of procured part 2 [%]	**Mandatory if 4.10 "yes"**	see 4.5
4.15	Origin of procured part 2	**Mandatory if 4.10 "yes"**	see 4.6
4.16	Transport mode of procured part 2	**Mandatory if 4.10 "yes"**	see 4.7
	Gross weight of procured part 2 [kg]	**Mandatory if 4.10 "yes"**	see 4.8
4.17	Quantity of this procured part 2 from sub-supplier included in the part delivered to Webasto?	**Mandatory if 4.10 "yes"**	see 4.9
4.18	Another procured part?	**Mandatory if 4.10 "yes"**	see 4.10
…	Same request logic as 4.11 to 4.18	…	…

Table 6: Raw Material Details

5	**Raw Material Details**		
5.1	Description of raw material 1. Raw material refers to the unprocessed substances required to produce finished parts in the manufacturing plant of Webasto Tier 1 suppliers. List all raw materials the part is made of, covering those that cumulatively account for 97% of the PCF related to material acquisition & pre-processing. Arrange the raw materials in descending order by gross weight. If more than 10 raw materials are necessary, list the 10 most CO2 intensive materials here. Raw materials that are not considered shall be indicated in the cut-off description.	M	Enter the description of the raw material (e.g., aluminum wrought alloy; Tin coated copper; PP GF30).
5.2	Origin of raw material 1	M	Enter the origin of the raw material (e.g., Germany, China, USA). If the origin is not known, use the region of the sub-supplier. If no region is known, use the continent.

Table 6 continues on the next page

5.3	PCF related to raw material 1 [kg CO2e per kg material]	Optional	Enter the PCF value related to this specific material, using the unit kg CO2e per kg material, if available.
5.4	Transport mode of raw material 1	M	Select the main mode of transportation (most CO2 intensive transport) used to deliver the raw material to the manufacturing plant. If specific transport modes are unknown, estimate based on the most common transport method used for similar sub-suppliers.
5.5	Share of secondary raw material 1 [%]	M	Enter the percentage of the raw material within the product that has already been used in the manufacturing process and subsequently recovered (e.g., recycled content). If specifying the share on a product basis is not possible, provide an average value for the entire material production process. If using an average, please clearly note this in approximations or estimates description for transparency.
5.6	Gross weight of raw material 1 [kg]	M	Enter the weight of material, in kilograms, that was used before the manufacturing process (e.g., raw material delivered to the manufacturing plant). This should reflect the material weight before any processing or transformation occurs in the manufacturing stages.
5.7	Net weight of raw material 1 [kg]	M	Enter the weight of material, in kilograms, that remains after the manufacturing process. This reflects the material weight after all manufacturing steps, including shaping, cutting, or assembling.
5.8	Treatment of production waste 1	M	Production waste refers to the difference between gross weight and net weight. - Open Loop: In an open-loop system, secondary materials (such as recycled materials) from one product system are not reused within the same system or product line. The materials are typically repurposed in a different product system, potentially with altered properties or for a different use. - Closed Loop: In a closed-loop system, secondary materials are either reused within the same product system (real closed loop), or they are used in another product system without altering the inherent properties of the material. The material maintains its quality and functionality, allowing for continual reuse within similar product systems. - No production waste: No difference between gross weight and net weight.
5.9	Is part made of another raw material?	M	Select "yes" if the part is made of an additional raw material.
5.10	Description of raw material 2	**Mandatory if 5.8 "yes"**	see 5.1
5.11	Origin of raw material 2	**Mandatory if 5.8 "yes"**	see 5.2
5.12	PCF related to raw material 2 [kg CO2e per kg material]	Optional	see 5.3
5.13	Transport mode of raw material 2	**Mandatory if 5.8 "yes"**	see 5.4
5.14	Share of secondary raw material 2 [%]	**Mandatory if 5.8 "yes"**	see 5.5

Table 6 continues on the next page

5.15	Gross weight of raw material 2 [kg]	**Mandatory if 5.8 "yes"**	see 5.6
5.16	Net weight of raw material 2 [kg]	**Mandatory if 5.8 "yes"**	see 5.7
5.17	Treatment of production waste 2	**Mandatory if 5.8 "yes"**	see 5.8
5.18	Is part made of another raw material?	**Mandatory if 5.8 "yes"**	see 5.9
…	Same request logic as 5.10 to 5.18	…	…

Table 7: Production Site Details

6	**Production Site Details (Webasto Tier 1 supplier production)**		
6.1	Type of energy used in Webasto Tier 1 supplier production	M	Select the type of energy used to manufacture the part in Webasto Tier-1 supplier production. Renewable energy: Energy from non-fossil sources (e.g., wind, solar, geothermal, biomass, biogas). Non-renewable energy: Energy from fossil fuels (e.g., coal, natural gas, oil). For battery parts supplier: If the source of renewable energy is not directly physically connected to the factory, please select "national grid mix".
6.2	Share of renewable energy [%]	**Mandatory if 6.1 "renewable energy"**	Enter the percentage share of renewable energy used in the production processes of Webasto Tier-1 supplier. This should reflect the proportion of total energy consumption in the manufacturing processes that comes from renewable sources. If renewable energy is used, please upload a certificate.
6.3	Source of renewable energy	**Mandatory if 6.1 "renewable energy"**	Specify the source of renewable energy used (e.g., wind, solar, geothermal, biomass, biogas).
6.4	Scrap rate of the total production at Webasto Tier-1 supplier [%]	M	Enter the percentage of the total production that is discarded as scrap during the manufacturing processes at Webasto Tier-1 supplier. The scrap rate refers to the amount of finished or semi-finished products that are produced but later discarded due to defects, overproduction, or other factors.

Table 7 continues on the next page

6.5	Description of manufacturing process step 1. Specify all manufacturing processes that are carried out to produce the part at Webasto Tier-1 supplier, covering those that cumulatively account for 97% of the PCF related to production. Arrange the process steps in order, start with the first production process step. Process steps that take place on the same machine can be grouped if necessary. All allocations shall be indicated in allocation description. If more than 10 process steps are necessary, list the 10 most consumption-intensive steps here. Manufacturing processes that are not considered shall be indicated in the cut-off description.	M	Specify the manufacturing process used to produce the part and provide any relevant details regarding the machinery or equipment involved. If possible, provide specific machine details (e.g., type of press, molding machine, etc.) and any other process-specific information that could help clarify the steps involved in manufacturing the part.
6.6	Energy consumption within the manufacturing process step 1 related to one part [kWh]	M	Enter the energy consumption associated with the specified manufacturing process step. Provide the data in kWh per unit of production.
6.7	Gas consumption within the manufacturing process step 1 related to one part [m3]	M	Enter the gas consumption associated with the specified manufacturing process step. Provide the data in m3 per unit of production.
6.8	Another manufacturing process step carried out to produce the part at Webasto Tier-1 supplier?	M	Select "yes" if another manufacturing process step is carried out to produce the part at Webasto Tier-1 supplier.
6.9	Description of manufacturing process step 2	**Mandatory if 6.8 "yes"**	see 6.5
6.10	Energy consumption within the manufacturing process step 2 related to one part [kWh]	**Mandatory if 6.8 "yes"**	see 6.6
6.11	Gas consumption within the manufacturing process step 2 related to one part [m3]	**Mandatory if 6.8 "yes"**	see 6.7
6.12	Another manufacturing process step carried out to produce the part at Webasto Tier-1 supplier?	**Mandatory if 6.8 "yes"**	see 6.8
…	Same request logic as 6.9 to 6.12	…	…

3.5 Attachment

The fifth and final level of the PCF request offers the option of uploading relevant documents for the PCF calculation. This is generally optional, only if “PCF certified” is selected, the upload is mandatory.

Table 8: Attachment

7	Attachment		
7.1	Attachment	**Mandatory if 1.6 "PCF certified"**	If there are relevant documents for this PCF value / calculation, please attach them here. This could include data sources, certificates, or other supporting documents that ensure transparency and validity of the reported data.

4. Outlook

The importance of PCF calculation will continue to grow in the coming years. Companies and suppliers in the automotive industry and other sectors are increasingly being encouraged to record and report their greenhouse gas emissions. This is being driven by growing awareness of sustainability and climate protection.

Standardized methods such as the ISO 14067, the Catena-X PCF Rulebook, the TfS Guideline and the GHG Product Standard are expected to become more widely accepted and harmonized. These standards provide a clear framework for calculating and reporting PCFs and make it easier to compare different companies and products. Advances in digitalization and data analysis will improve the accuracy and efficiency of PCF calculation. Modern software solutions and tools enable more precise recording and evaluation of emissions data along the entire value chain.

Regulatory initiatives such as the Corporate Sustainability Reporting Directive (CSRD) and the Carbon Border Adjustment Mechanism will further tighten the requirements for reporting greenhouse gas emissions. Business partners of Webasto must be prepared to provide more comprehensive and detailed emissions data. PCF calculation is increasingly being integrated into Webasto´s strategic planning and decision-making. This makes it possible to identify and implement targeted measures to reduce emissions. Customers and business partners are placing more and more value on sustainable products and transparent emissions data. Companies that disclose their PCFs and actively work to reduce their emissions can secure competitive advantages and strengthen their market position.

This document is continuously updated based on the norms and standards on which it is based.

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