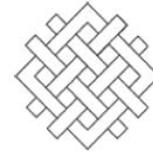




World Business Council for
Sustainable Development



WORLD
RESOURCES
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The Greenhouse Gas Protocol Initiative

the foundation for sound and sustainable climate strategies

Product Accounting & Reporting Standard

DRAFT FOR STAKEHOLDER REVIEW

NOVEMBER 2010

EXECUTIVE SUMMARY

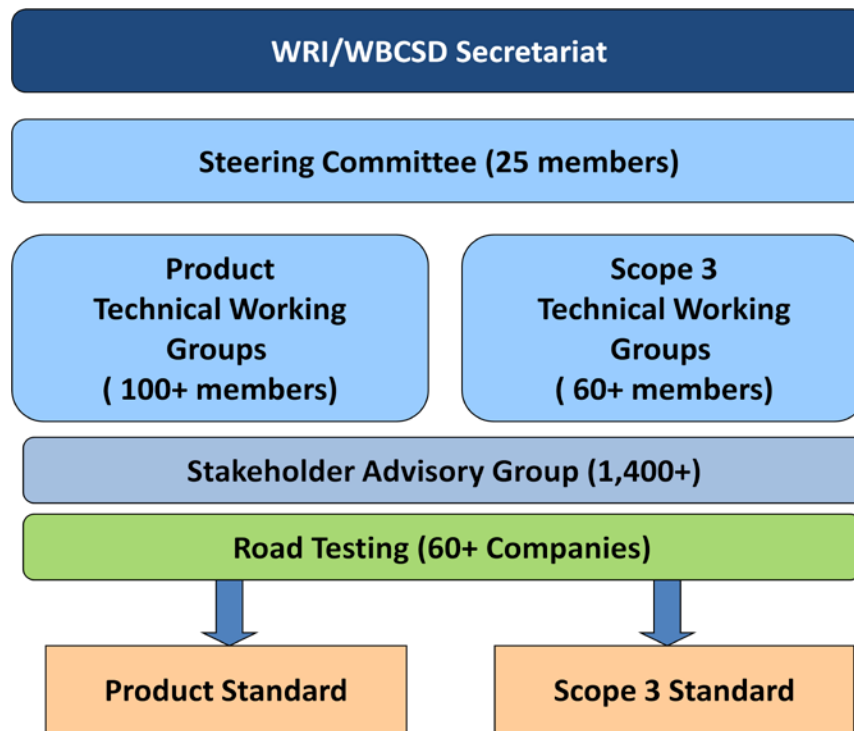
Standard Development Process

The GHG Protocol Initiative follows a broad, inclusive multi-stakeholder process to develop greenhouse gas accounting and reporting standards with participation from businesses, government agencies, nongovernmental organizations, and academic institutions from around the world.

This second draft of the *Product Standard* was developed between November 2009 and October 2010. Revisions from the first draft are based on input from more than 350 stakeholder workshop participants and written comments from 63 organizations. Detailed feedback was also provided by more than 40 companies that road tested the standard from January through June 2010. WRI and WBCSD revised the standard with expert advice from the Steering Committee and Technical Working Groups. Consultants were used to draft sections of the standard where additional expertise was needed.

The next steps to complete the Product Accounting and Reporting Standard include:

- Circulate this second draft for a 30 day public comment period
- Revise the second draft based on feedback received
- Finalize text of the standard by Winter 2010/2011
- Publish the final standard in Spring 2011



Goal of the Product Standard (Chapter 2)

The GHG Protocol Product Greenhouse Gas Accounting and Reporting Standard (referred to as the *Product Standard*) provides requirements and guidance for companies and other organizations to prepare and publicly report an inventory of emissions associated with a product. The primary goal of this standard is to support companies to reduce these emissions by making informed choices about the products they design, manufacture, sell, purchase or use. In the context of this standard, public reporting refers to providing emissions-related information for a product, in accordance with the reporting requirements specified under the standard, by making it available in the public domain.

This standard provides a general framework to support GHG quantification and reporting for many different types of products. It is not intended to support mandatory GHG reporting as mandatory reporting programs have their own set of rules and regulations. However, organizations may use the guidance provided in this standard to develop their own policies and programs.

This standard is not intended to support the accounting of GHG emission offsets or claims of carbon neutrality. This standard focuses on emissions generated during a product's life cycle and does not address avoided emissions or actions taken to compensate for released emissions.

Use of the Standard for Product Comparison

The *Product Standard* enables performance tracking of a product over time. For product labeling, performance claims by third parties, consumer decision making, business decision making and other types of product comparison, additional specifications are needed. Comparative assertions are not supported by the GHG Protocol Product Standard. (See appendix A for more guidance on additional specifications needed for comparison).

Standard Terminology

The following chapters outline the requirements and guidance for completing a GHG inventory. The term “*shall*” is used in this standard to indicate what is required in order for a GHG inventory to be in conformance with the *GHG Protocol Product Life Cycle Standard*. The term “*should*” is used to indicate a recommendation, but not a requirement. The term “*may*” is used to indicate an option that is permissible or allowable. Within the guidance sections, “needs”, “can”, or “cannot” are sometimes used to provide guidance on implementing a requirement or to indicate when an action is or is not possible. The phrase “required to” is used in guidance sections to refer to requirements.

Establishing the Scope of a Product Inventory (Chapter 6)

Establishing the scope of a product GHG inventory includes three important steps: choosing a product, defining the unit of analysis, and identifying the reference flow. The requirements and guidance for establishing the scope of a product inventory are detailed below.

Requirements

A GHG inventory performed in conformance with the *Product Standard* shall abide by the life cycle and attributional approaches of product life cycle GHG accounting (see Chapter 5 for definitions of the life cycle and attributional approaches).

To establish the scope of the GHG inventory, companies shall identify the studied product, and then define the unit of analysis and reference flow.

The unit of analysis shall be the same in future inventories to enable the company to make comparisons and track performance over time.

For all final products, the unit of analysis shall be defined as a functional unit, which is the quantified performance of the studied product.

For intermediate products where the eventual function is unknown the unit of analysis shall be defined as the reference flow.

Companies shall disclose the studied product, unit of analysis, and reference flow in the inventory report.

Attributional Approach- Accounting for the GHG impacts of a product over its life cycle, making use of historical, fact-based, and measurable data and including all processes that are identified to be attributable to the studied product's life cycle.(ILCD, 2010)

Studied Product – the product for which the GHG inventory is performed

Functional Unit – The quantified performance of the studied product

Service Life – the amount of time needed for a product to fulfill the function defined in the unit of analysis

Reference Flow – the amount of studied product needed to fulfill the function defined in the unit of analysis

Intermediate Products – goods that are used as inputs to the production of other goods or services and require further processing, transformation, or inclusion in another product before use by the end consumer.

Final Product – goods and services that are consumed by the end user in their current form, without further processing, transformation, or inclusion in another product.

Boundary Setting (Chapter 7)

During boundary setting, companies identify the processes along the life cycle where data are needed to calculate the GHG impact of the studied product.

Requirements

All attributable processes shall be included in the boundary of the product GHG inventory. Attributable processes shall be disclosed in the inventory report in the form of a process map, mapped through the product's life cycle.

Any exclusion of attributable processes in the inventory results shall be disclosed and justified in the inventory report.

Any non-attributable processes included in the boundary shall be disclosed in the inventory report.

Companies shall disclose the life cycle stage definitions and descriptions in the inventory report.

The boundary for final products shall include the complete life cycle, from material acquisition through end-of-life (i.e., from cradle-to-grave). The boundary of a cradle-to-gate assessment shall not include product use or end-of-life processes in the inventory results. Companies shall disclose and justify when a cradle-to-gate boundary is used in the inventory report.

Attributable Processes – Processes that are directly connected to the studied product and its ability to perform its function by material and energy flows

Life Cycle – Consecutive and interlinked stages, beginning with the extraction of natural resources and ending when the product's material components are returned to nature

Time Boundary – The period of time when attributable processes occur during the product's life cycle

Cradle-to-Gate – An assessment that includes part of the product's life cycle, including material acquisition through the production of the studied product and excluding the use or end-of-life stages

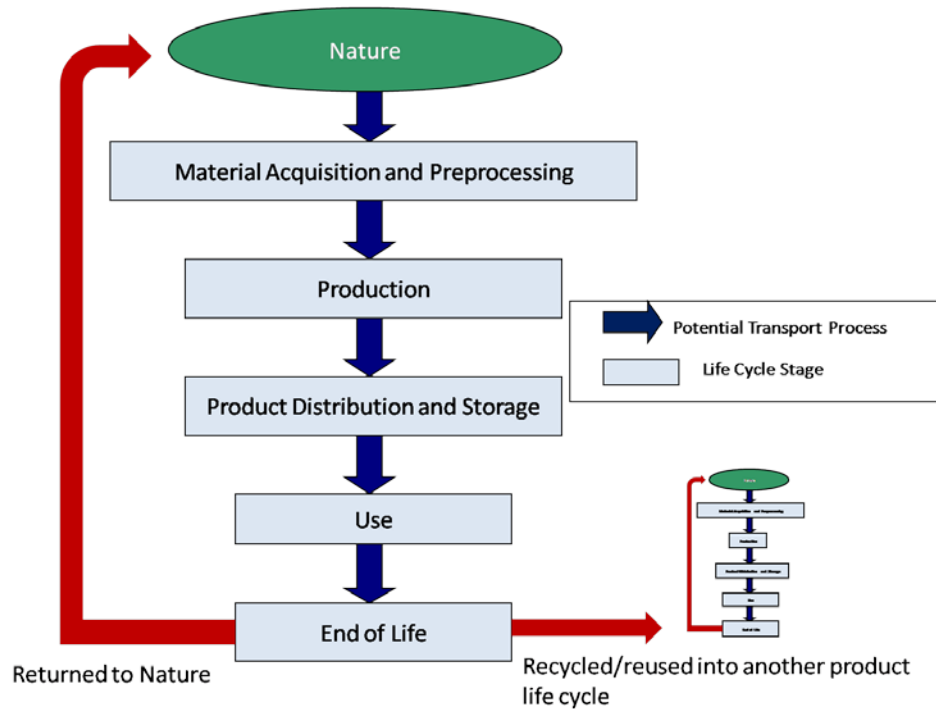
Cradle-to-Grave – An assessment that includes all of the product's life cycle, from material acquisition through end-of-life

Guidance

Defining Life Cycle Stages & Identifying Attributable Processes

Life cycle stages are useful tools for organizing processes, data collection, and inventory results. The standard identifies five general life cycle stages, which are illustrated in **Figure 7-1** and referred to throughout the standard.

¹ Examples of material and energy flows into attributable processes include the studied product's components and packaging, materials used to improve the quality of the product (e.g. fertilizers, lubricants) and energy used to move, create, or store the product.

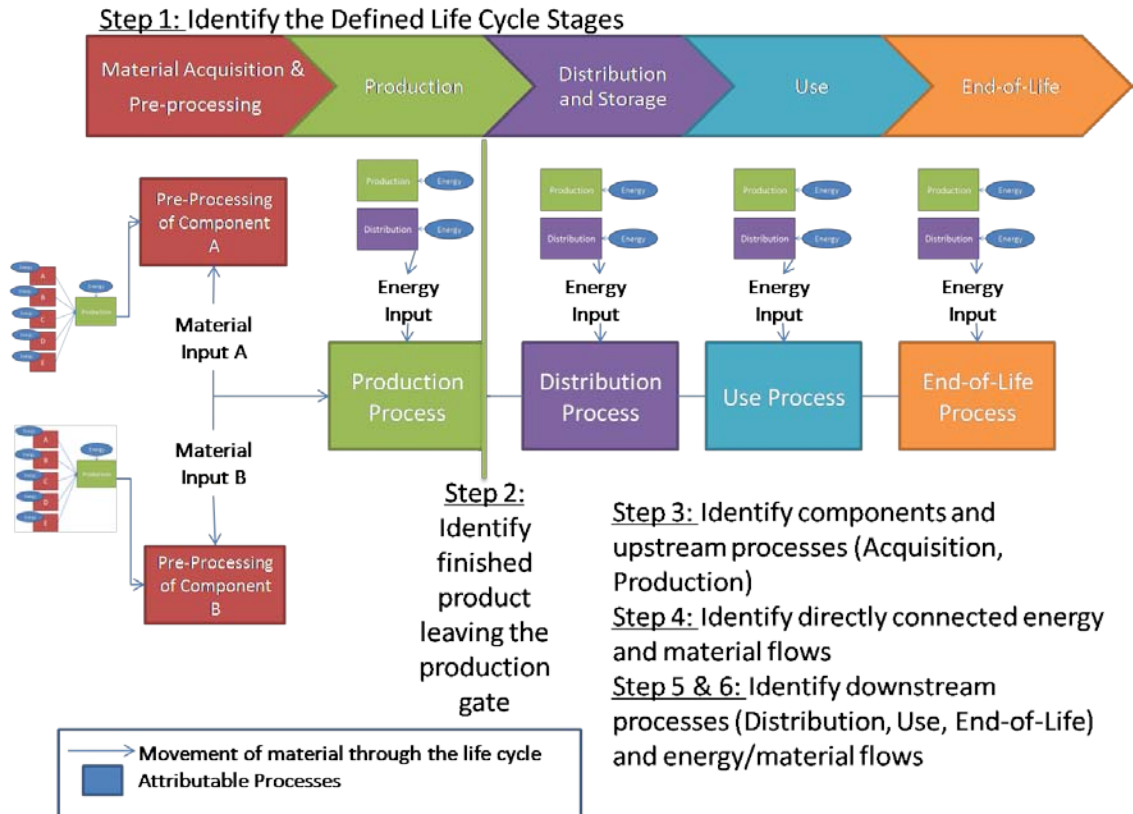


When land use impacts are attributable to a studied product, these processes are also considered in the material acquisition and preprocessing stage. Guidance on determining if land use impacts are attributable is given in Appendix B of the standard.

Companies are required to include a process map in their inventory report. If specific details about processes, material, or energy flows are considered confidential, a company may create a simplified version of the process map for the inventory report. At a minimum, the reported process map should make clear:

- The defined life cycle stages
- The generalized attributional processes in each stage
- The flow of the studied product through its life cycle

A company should create a detailed process map for internal use and assurance.



Justified Exclusions

All attributable process material and energy flows should be identified in the process map, which satisfies the requirement for boundary setting. However, the iterative nature of life cycle accounting dictates that a product's boundary may be revisited due to data collection limitations.

In this standard, material and energy inputs to an attributable process may be excluded from the inventory results if the following are true:

- A data gap exists because primary or secondary data cannot be collected
- Extrapolated and proxy data (types of secondary data) cannot be determined to fill the data gap
- An estimation determines the data are insignificant

If one or more of the previous statements are not true, a justified exclusion does not exist. Definitions of data types and guidance on filling data gaps are included in Chapter 9.

Determining Insignificance

To determine significance a company should estimate the process's emissions using data with upper limit assumptions to determine whether, in the most conservative case, the process is significant based on either:

- Mass
- Energy
- Volume

and environmental relevance criteria.

All exclusions are required to be justified and disclosed in the inventory report. This should include a description of the estimation technique used and the significance threshold defined.

Non-Attributable Processes

Attributable processes are directly connected to the studied product by material and energy flows, but other processes, materials, and energy may be indirectly connected to the studied product. These are referred to as non-attributable processes, and examples include:

- Material flows due to capital goods (e.g., machinery, trucks, infrastructure)
- Material and energy flows due to overhead operations (e.g., facility lighting)
- Material and energy flows due to corporate activities and services (e.g. research and development, administrative functions, etc.)
- Energy used to transport the product user to the retail location
- Energy used to transport employees to and from work

Companies are not required to include non-attributable processes in the inventory, but should include them if relevant.

Allocation (Chapter 8)

During boundary setting, companies may identify attributable processes that have multiple valuable products as inputs and/or outputs. In these situations, the emissions and removals data collected for the process needs to be partitioned between the studied product's life cycle and the life cycle of the other products. This portioning is referred to as allocation, and is often considered one of the more challenging issues in product life cycle accounting. Perhaps even more challenging than general allocation is allocation due to recycling, when occurs when processes need to be allocated between two different product life cycles. This chapter provides requirements and guidance to help companies choose the most appropriate method to address allocation and recycling in their product inventory.

Common Process - A process where the process outputs includes the studied product and co-product(s)

Co-Product - A product exiting the common process that has value as an input into another product's life cycle

Requirements for General Allocation

When faced with allocation, companies shall follow these principles²:

- Emissions and removals shall be allocated³ in a manner that accurately reflects the studied product and co-product(s) contributions to the common process's emissions, whether allocation is avoided or an allocation method is applied.
- When possible, companies should avoid allocation by using process subdivision, redefining the functional unit, or using system expansion (see methods below).
- If allocation is not avoided, the allocation method chosen should be based on the underlying physical relationships between the studied product and co-product(s) when possible.

² Adapted from ISO 14044 (2006)

³ Allocation is used generally throughout this chapter to represent anytime allocation is required, even if the problem is solved by avoiding allocation.

- When physical relationships alone cannot be established or used as the basis for allocation, companies should select another allocation method that reflects other relationships between the studied product and co-product(s).
- The sum of the allocated studied product and co-product(s)'s emissions from the common process shall be equal to the common process's total emissions.
- The same allocation method shall be used to allocate emissions for all co-products from a common process.
- If a co-product does not have value as an input into another product's life cycle, the co-product is considered waste and no allocation shall be applied.

The following methods shall be used to avoid or minimize the use of allocation:

Method	Definition
Process Subdivision	Dividing the common process into sub-processes in order to eliminate the need for allocation.
Redefining the Unit of Analysis	Inclusion of the co-products (additional functions) in the functional unit.
System Expansion	Using the emissions from an alternative product that comprises the same functional unit as a co-product to estimate the emissions of the co-product and allocating the remaining emissions to the subject product and remaining co-product(s). Only applicable when companies have direct knowledge of the function and eventual use of the co-product. ⁴

The following methods shall be used to perform allocation if allocation cannot be avoided:

Method	Definition
Physical Allocation	Allocating the inputs and emissions of the system based on an underlying physical relationship between the quantity of product and co-product and the quantity of emissions generated.
Economic Allocation	Allocating the inputs and emissions to the subject product and co-product(s) based on the market value of each when they exit the process.
Other Relationships	Dividing the process emissions among the outputs using a factor based on established and justifiable relationships between the product and co-product other than physical or economic

The methods used to either perform or avoid allocation shall be disclosed and justified in the inventory report.

⁴ The system expansion method is applicable when a single alternative product is identified as the substitute to avoid arbitrary choices between potential substitute products. This requirement to know and document the use of the co-product(s) is included to maintain the attributional approach to the standard. Making co-product assumptions based on market changes is a consequential approach to product inventories and is not in conformance with the Product Standard. The data and methods used in calculating emissions from the co-product's life cycle shall be in conformance with the attributional approach and other requirements of the Product Standard.

Requirements for Recycling Allocation

When allocation is necessary due to recycling, the method used shall be disclosed and justified in the inventory report.

Companies may use either the 100/0 input method to allocate recycling processes or the 0/100 output method to avoid allocation. The 0/100 output method shall not be used when the recycled material does not maintain the same inherent properties as its virgin material input.

If neither the input nor output method is most appropriate for a given recycling situation, companies may use another method that shall be referenced, disclosed, and justified in the inventory report. The method⁵ used shall account for all recycling process impacts (by applying an allocation factor between 0 and 100 percent) and conform to the general allocation requirements of this standard.

Allocation or avoidance of allocation shall not occur if the material input or output is classified as a waste.

All data used to determine the recycling rate shall be in conformance with the data collection and quality requirements of the standard.

Recycling - When a product or material exits the life cycle of the studied product to be reused or recycled as a material input into another product's life cycle.

Recycling Processes - Processes that occur as a result of a product or material being reused or recycled as a material input into another product's life cycle. Recycling processes need to be allocated between the product life cycles.

100/0 Input Method - When 100 percent of the recycling process impacts are allocated to the recycled material input, and 0 percent is allocated to the recycled material output.

0/100 Output Method - When 100 percent of the recycling process impacts are attributed to the recycled material leaving the product's life cycle, but instead of allocating to the recycled input, a fraction of virgin material input is displaced based on the amount of recycled material output. This method is appropriate only when the recycled and virgin material have the same inherent properties.

Same Inherent Properties – When the recycled material has maintained its properties (e.g. chemical, physical) such that it can be used as a direct replacement of virgin material

⁵ The method may also follow the guidance given in ISO 14044:2006, subclause 4.3.4.3.

Collecting Data & Assessing Data Quality (Chapter 9)

Data collection can be the most resource intensive step in performing product GHG inventories, but can also have a significant impact on the inventory quality. This chapter provides requirements and guidance to help companies successfully collect and assess the quality and uncertainty of their inventory data.

Requirements

Data shall be collected for all attributable processes identified during boundary setting. Any exclusion of attributable processes shall be justified and reported in the inventory report. Primary data shall be collected for all processes under the control of the reporting company.

Data shall be collected for the following GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Data collection shall include removals of GHGs from the atmosphere and emissions of GHGs to the atmosphere.

Activity data, emission factors, and/or direct emissions data shall be assessed by the data quality indicators during the data collection process. For significant processes, companies shall report a descriptive statement on the data sources, the data quality, and any efforts taken to improve data quality.

The percentage of total GHG emissions and removals quantified using the following data types shall be included in the inventory report:

- Primary data;
- Secondary process data; and
- Secondary financial data.

Primary Data – Process data from specific processes in the product’s life cycle.

Secondary Data – Data that are not from specific processes in the product’s life cycle.

Activity Data – The quantified measure of a level of activity that results in GHG emissions or removals

Emission Factors – GHG emissions per unit of activity data

Direct Emissions Data – Emissions released from a process (or removals absorbed from the atmosphere) determined through direct monitoring, stoichiometry, mass balances, or similar methods

Financial Data – Monetary measures of a process that result in GHG emissions or removals

Data Quality Indicators & Methods

All data quality assessments are based on data quality indicators; it is how these indicators are used that may vary. The five data quality indicators used to assess individual data points for processes in the product inventory.

Table 9-1: Data Quality Indicators⁶

Indicator	Explanation
Technological representativeness	Degree to which the data reflects the actual technology (ies) used in the given process. Companies should select data that are technologically specific to the given process.
Temporal representativeness	Degree to which the data reflects the actual time (e.g., year) or age of the given process. Companies should select data that are time-specific to the given process.
Geographical representativeness	Degree to which the data set reflects actual geographic location of the processes within the system boundary such as, e.g., country or site. Companies should select data that are geographically specific to the given process.
Completeness	Degree to which the data are statistically representative of the process sites. Completeness includes the percentage of locations for which the data are available and used out of the total number that relate to the given process. Completeness also addresses seasonal and other normal fluctuations in data (e.g., for food products annual/seasonal averages or average of several seasons may be appropriate to smooth out data variability due to factors such as weather conditions). Companies should select data that are complete to the given process.
Precision	Measure of the variability of the data values used to derive the data for the given process (e.g. low variance = high precision) Companies should select data that are the most precise.

⁶ Adapted from Weidema and Wesnaes (1996)

Reporting on Data Quality for Significant Processes

Companies are required to report on the data sources, data quality, and efforts to improve data quality for processes deemed significant by the reporting company. Companies need to determine which processes are significant to report the data sources, quality concerns, and quality improvement efforts. The criteria included in the screening steps (see section 9.2.3) may be helpful to identify significant processes.

Significant Process Name	Data Sources	Data Quality Concerns	Efforts to Improve Data Quality
Example: Fruit product transport from Distribution Center to Retail Store in Germany	<p>Activity Data: Average miles traveled for produce in Germany</p> <p>Source: Trucking Association.</p> <p>Emission Factor: U.K. DEFRA's Freight Transport</p>	<p>Activity data does not reflect our company's actual transport kilometer to take into account shipping efficiencies (good technology score). Emission Factor is for UK transport, not specific to Germany (poor geographic indicator score).</p>	<p>[We are working to improve our internal data collection efforts on kilometers driven. We are also working with our trade association to obtain country-specific emission factors for truck transport.]</p>

Assessing Uncertainty (Chapter 11)

Uncertainty is an important aspect of any analysis and can be crucial for properly interpreting inventory results. Additionally, documenting sources of uncertainty can assist companies in understanding the steps required to help improve the inventory quality and the level of confidence users have in the inventory results. While remaining current with leading science and practice in the area of life cycle assessment, this uncertainty guidance is intended to favor practicality and feasibility for companies with widely ranging levels of expertise.

Requirement

A qualitative statement on sources of inventory uncertainty and methodological choices shall be reported.

Source of Uncertainty	Qualitative Description
Scenario Uncertainty	
Use Profile	[Describe the use profile of the product. If more than one use profile was applicable, disclose which method was used and justify the choice]
End-of-Life Profile	[Describe the end-of-life profile of the product. If more than one end-of-life profile was applicable, disclose which method was used and justify the choice]
Allocation Method (s)	[Describe any allocation problems in the inventory and which allocation method was used. If more than one allocation method was applicable, disclose which method was used and justify the choice]
Recycling Allocation Method(s)	[Disclose and reference which method was used (0/100 output method, 100/0 input method, or other method)]
Parameter Uncertainty	
Data (Single Parameter Uncertainty)	Included in Data Quality Reporting requirements instead. See Section 9.2.9
Impact Assessment	[List the source of Global Warming Potential (GWP) factors used]
Propagated Parameter Uncertainty	NA
Model Uncertainty	
Model Sources Not Included in Scenario or Parameter Uncertainty	[Describe the models, identify their published source, and identify areas where they may deviate from real world conditions]

Calculating Inventory Results (Chapter 12)

Once data has been collected, data quality has been assessed and improved as much as possible the next step is to calculate the GHG impact of the studied product. This chapter outlines key requirements, steps, and procedures involved in quantifying the GHG impact.

A 100 year global warming potential (GWP) metric shall be applied to all GHG emissions data to calculate the GHG impact in units of CO₂ equivalent (CO₂e). Companies shall reference the source and date of the GWP factors used in the inventory report.

A company shall quantify inventory results by:

- Total CO₂e per unit of analysis
- Biogenic and non-biogenic removals and emissions (when applicable)
- Land use impacts (when applicable)
- Percentage of total life cycle impacts by life cycle stage
- Percentage of primary data, secondary process data, and secondary financial data.

The following shall not be included when calculating the inventory results:

- Weighting factors for delayed emissions
- Offsets
- Avoided emissions

Definitions of these are included in the chapter.

Assurance (Chapter 13)

Requirements

The product GHG inventory shall be assured by a first or third party.

Data assurance shall be performed when possible. When data assurance is not possible model assurance shall be performed. The type of assurance shall be determined during the pre-assurance check by the assurance provider.

The assurance opinion shall be expressed in the form of either reasonable assurance or limited assurance.

Assurance providers, whether internal or external to the organization, shall be sufficiently independent of any involvement in the determination of the product GHG inventory or development of any declaration and have no conflicts of interests resulting from their position in the organization, such that they exercise objective and impartial judgment.

Reporting (Chapter 14)

Reporting is essential to ensure accountability and effective engagement with stakeholders. The purpose of the reporting chapter is to summarize the various reporting requirements specified in other chapters and to identify additional reporting considerations that together provide a credible reporting framework and enable users of reported data to make informed decisions.

Requirements

A public GHG inventory report that is in accordance with the *GHG Protocol Product Standard* shall follow the key accounting principles (Relevance, Accuracy, Completeness, Consistency, and Transparency) and include the following information.

General Inventory Information

A company shall report the following as a general introduction to the report:

- Contact information
- Product name & description
- Type of inventory i.e. final product cradle-to-grave or intermediate product cradle-to-gate inventory
- Business goals of the inventory
- Disclosure of any sector specific guidance used to influence decisions around methodology, boundary setting, allocation procedures, data use, etc.
- Inventory date and version
- For subsequent inventories, a link to previous inventory reports and description of any methodological changes
- A process map identifying both attributable and non-attributable processes (see 1.1.3)

Establishing the Scope

- Companies shall disclose the studied product, unit of analysis, and reference flow in the inventory report.

Boundary Setting

- Attributable processes shall be disclosed in the inventory report in the form of a process map
- Life cycle stages definitions and descriptions (including where recycling processes begin)
- Any exclusion of attributable processes shall be disclosed and justified in the inventory report.
- Non-attributable processes included in the boundary shall be disclosed in the inventory report.
- Companies shall disclose and justify when a cradle-to-gate boundary is used in the inventory report.
- The time boundary, which represents the period of time when attributable processes occur during the product's life cycle, shall be disclosed and justified in the inventory report (separately for each stage when applicable)
- If it is known that embedded carbon within the product is not released to the atmosphere during waste treatment, this shall be disclosed and justified in the inventory report.
- If land use change impacts are attributable, the method used to calculate and allocation those impacts shall be disclosed in the inventory report.
- If more than one use profile was applicable, disclose which method was used and justify the choice
- If more than one end-of-life profile was applicable, disclose which method was used and justify the choice

Allocation

- Companies are required to included in the inventory report a brief explanation of why the specific allocation method or method to avoid allocation and factor (as applicable) was selected over others, including why that factor offers the most accurate allocation of emissions

Recycling

- When recycling occurs in a product's life cycle that requires allocation, the method used to allocate or avoid allocation of those processes shall be disclosed and justified in the inventory report.
- If a method other than the 100/0 or 0/100 method is used, that shall be referenced, disclosed, and justified in the inventory report
- When using the 0/100 method , displaced emissions shall be reported separately when reporting inventory results by stage

Data

- Any exclusion of attributable processes shall be disclosed and justified in the inventory report (also noted under the Boundary-setting section).
- For significant attributable processes companies shall report a descriptive statement on the data sources, the data quality aspects, and any efforts taken to improve data quality.
- The percent of total GHG emissions and removals quantified using primary data, secondary process data, and secondary financial data shall be reported.
- A qualitative statement on the sources of uncertainty and methodological choices shall be reported.

Inventory Results

- A company shall report inventory results by:
 - o Total CO₂e per unit of analysis
 - o Biogenic and non-biogenic removals and emissions (when applicable)
 - o Land use impacts (when applicable)
 - o Percentage for each life cycle stage: If a company cannot separate the raw material acquisition & preprocessing stage from the production stage without facing confidentiality issues, they may combine the study results for those stages only. It shall be clearly stated that confidentiality issues could not be avoided.
- Companies shall reference the source and date of the GWP metric used in the inventory report.
- To encourage the communication of results and use of inventory data from business-to-business, cradle-to-grave inventories shall also report the cradle-to-gate and gate-to-gate inventory values.
- If only a cradle-to-gate inventory is performed, a company shall also report a gate-to-gate value. Companies shall clearly define the gates around their own operations. If a company feels they cannot report the emissions

of their own operations (gate-to-gate) without jeopardizing confidentiality, a company shall clearly state this limitation in the report.

- Carbon storage: The amount of embedded carbon not returned to nature shall be reported.
- Cradle-to-gate inventories: The amount of embedded carbon in the intermediate product shall be reported
- If the use or end-of-life stage includes carbon storage, that shall be reported separately (i.e., should not be included as a credit to either stage).

Inventory Changes Over Time

- A company shall report both base inventory and current inventory results in the updated inventory report
- If the base inventory was recalculated, changes made to the inventory shall be reported
- If the base inventory was not recalculated, companies shall report the threshold used to determine that recalculation was not needed
- Companies shall report the change in inventory results as a percentage change over time between the two inventories on the unit of analysis basis.
- A company shall provide an explanation on what steps were taken to reduce emissions based on the inventory results.
- Companies shall not communicate predicted, planned or committed reductions. Reductions shall be reported retrospectively.

Assurance

- When reporting a product GHG inventory, the assurance opinion shall also be presented, including or accompanied by a clear statement identifying the type of assurance performed and whether it was performed by a First or Third Party.
- Where internal assurance providers are used, their relevant competencies and reasons for selecting them as assurance providers shall be disclosed in the product GHG inventory report or assurance statement.

Use of Results

- To avoid misuse of results, a company shall include
 - o An evaluation of the inventory describing its significance and limitations
 - o A disclaimer to the audience (reader) identifying the difficulties in comparing results and referring the reader to additional information if needed.

Setting Reduction Targets and Tracking Inventory Changes over Time (Chapter 15)

The goal of this standard is to support public reporting of product GHG inventories and help companies reduce the GHG impacts of the products they design, manufacture, sell, purchase, or use. Additionally, companies have business goals they hope to achieve by performing a product life cycle GHG inventory. The following requirements and guidance are available for companies wishing to report on their success reaching business goals by set reduction targets and track inventory changes over time.

Requirements

Companies wishing to set reduction targets and track inventory changes over time shall follow these steps:

1. Complete and report a base inventory, which shall be in done conformance with the requirements of this standard
2. Identify reduction opportunities and set a reduction target
3. Achieve reductions and account for these by performing an updated inventory
4. Recalculate the base inventory as needed when significant changes in the inventory occur, including but not limited to changes in the product's boundary, quality of data, and allocation or recycling methods. Companies shall define significant changes as those that have an impact on the inventory results and disclose those changes in the updated inventory report.
5. Complete and disclose an updated inventory report including the updated results and the base inventory results. If the base inventory was recalculated, changes made to the inventory shall be reported. If the base inventory was not recalculated, companies shall report the threshold used to determine that recalculation was not needed. Companies shall report the change inventory results as a percentage change over time between the two inventories on the unit of analysis basis.

Base inventory - a historic inventory against which a company's GHG impact is tracked over time.
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