TOGETHER FOR SUSTAINABILITY

Guide for Responsible Data Use of Product Carbon Footprints (PCFs)

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1. Introduction

A Product Carbon Footprint (PCF) quantifies the greenhouse gas (GHG) emissions associated with a product's life cycle, or part of it. PCFs are essential for understanding and managing Scope 3 emissions, which are indirect emissions arising from a company's value chain, including suppliers upstream and customers downstream. In particular, PCFs are a key component of a company's Scope 3.1 emissions, those referring to purchased goods and services. Accurate PCF data enables credible Scope 3 GHG emissions reporting and effective decarbonisation strategies.

To help ensure data quality, comparability, reliability, and trust, it is vital to follow a common methodology for the collection, calculation, reporting, and exchange of PCF data. That is why TfS has developed a detailed methodology for the chemical industry to calculate, report, and verify a PCF, building on international standards like ISO 14067 and GHG Protocol: the TfS PCF Guideline, the TfS PCF Data Model, and the TfS PCF Verification and program certification framework.

Proper collection, calculation, and structuring of PCF data provides a solid foundation for decision-making, collaboration, and continuous improvement in emissions reduction across the value chain.

You can find the latest version of the TfS PCF methodology here:

- TfS PCF Guideline (how to calculate and report a PCFs): TfS-PCF-Guidelines.pdf
- TfS PCF Data Model (how to structure PCF data): TfS-PCF-Data-Model.pdf
- TfS+Catena-X PCF Verification and program certification framework (how to assess the quality and reliability of PCFs): PCF-verification and program certification.pdf

2. Why This Guidance Matters

Product Carbon Footprints (PCFs) are increasingly central to corporate climate strategies and regulatory disclosures, yet they carry legal, technical, and interpretive risks. PCF data should **enable collaboration on decarbonization**, as opposed to being used only for comparisons between suppliers or for corporate reporting.

Misuse of PCFs, whether through unfair supplier evaluation, breach of confidentiality, or flawed interpretation, can undermine trust, expose companies to legal risk, and contribute to failure to reduce actual greenhouse gas (GHG) emissions.

3. Your Company Received PCF Data from a Supplier – Now What?

Legal and Confidentiality Considerations

- PCFs may include sensitive operational or trade-secret information.
- Shared PCF data cannot be disclosed to other third parties without the consent of the originator of the PCF data.
- Supplier PCFs can be aggregated for corporate Scope 3 reporting and used in downstream calculations of PCFs by the customer. These new PCFs or Scope 3 emissions can be shared, while not disclosing the original supplier PCF without consent.
- PCFs should only be used within agreed contractual boundaries. Contract clauses should clarify acceptable use.
- In accordance with anti-trust law, PCFs should not be used to coordinate with competitors on pricing, supply, or market exclusion.

Responsible Use

- PCFs should be treated as **directional indicators**, not absolute rankings. Differences in allocation, databases, cut-off criteria, and data quality mean that consideration of independently derived PCFs cannot be a strict “apples to apples” comparison, even when using a common standard (e.g. ISO) or guidelines (e.g. TfS PCF Guideline).
- Better understanding of the basis of PCFs can be obtained by exploring contributing factors. Targeted questions can help identify **emission hotspots**, such as: What proportion of the footprint comes from energy, feedstocks, process technology, or methane leakage assumptions? How have emissions been reduced in these areas?
- Also consider supplier efforts with questions like: What reduction plans are in place? Are you exploring low carbon alternatives for manufacturing? Be sure to target questions to the type of supplier (e.g. manufacturer).
- Collaboration, such as sharing insights with suppliers, can support continuous improvement.
- Penalties or rewards based solely on single PCFs should be avoided.

Practical Action

- PCFs should be stored and handled with the same care as financial or trade data.
- Procurement teams should be trained to interpret PCFs responsibly and provided sustainability/LCA expert support.
- Assess the PCF using a credible methodology (i.e., ISO 14067, TfS PCF Guideline, TfS+Catena-X PCF Verification and program certification framework, PACT Guideline) or the methodology used to calculate the supplier's PCF.
- Consider asking suppliers to explain differences in their PCFs as compared to industry averages. Consult LCA experts where clarification on discrepancies may be needed.

4. Your Supplier Is Reluctant to Exchange PCF Data

Building Trust

Suppliers often hesitate to provide PCFs due to confidentiality or competitive concerns. To encourage disclosure:

- **Clarify intended use**: Assure suppliers that PCFs will support emissions reduction, not competitive disadvantage.
- **Offer support**: Share your own decarbonization goals and invite suppliers to partner in solutions.
- **Provide incentive**: Education and support to suppliers on calculating PCFs can be helpful to demonstrate collaboration and overcome barriers. Examples include Tricon's Supplier PCF Incentive Program or Lonza's Supplier Decarbonization Initiative (previously supported by Emitwise) – See Lonza's Responsible Supplier Toolkit.

Legal Safeguards

- Confidential PCFs should remain the property of the supplier unless otherwise agreed.
- Third-party platforms (e.g. SiGREEN) or NDAs can be utilized to manage confidentiality and prevent data misuse.
- Requesting detailed activity data could imply antitrust-sensitive information sharing and should be avoided. Aggregate PCFs are generally sufficient.

5. Your Company Is Using PCF Data to Make Decisions – But Are You Really Reducing Emissions?

Avoiding Misinterpretation Pitfalls

When comparing two PCFs, not all "lower PCFs" reflect genuine decarbonization. Differences may stem from:

- **Technology**: For example, one PCF may reflect a supplier's plant using more efficient technology. When comparing to other PCFs, it is important to check if similar efficient technologies were used and how much emission reduction could be due to this factor.
- **Electricity**: A supplier may have a lower-carbon process, if it uses renewable energy or a low carbon public grid, but this benefit may only be significant if electricity is a major share of total PCF.
- **Allocation rules**: Multi-output processes or recycled content methods may change the share of emissions without any physical reduction. PCFs can look very different based on allocation decisions.
- **Methane leakage**: Excluding methane or using outdated leakage factors can artificially reduce PCFs.
- **Data mix**: No PCF is based purely on primary data. Primary data will include some secondary inputs (e.g., upstream electricity emission factors).
- **Cut-off criteria and uncertainty**: Minor exclusions or differences in LCA methods can cause large variance. When comparing two PCFs, the higher PCF can sometimes reflect more complete and accurate data.
- **Database**: Differences in secondary databases or emissions factor databases can cause large variances.

Decision-making should be focused on cases where a company's lower PCF stems from a genuine reduction, such as renewable energy, alternative materials, or electrified processes.

Best Practices for Decision-Making

- Instead of comparing supplier PCFs, focus on **decarbonization levers**. For example: renewable energy sourcing, bio-based feedstocks, process efficiency.
- Engage suppliers to understand the reasons behind PCF differences and clarify if these are due to specific decarbonization measures.
- Combine PCF review with supplier maturity assessments and engage suppliers with high emissions reduction potential.
- Evaluate PCFs to help identify opportunities for **collaborative interventions**, rather than a pass/fail metric**.** For example: energy contracts and process optimization.
- Update PCF information regularly, as decarbonization efforts are implemented, to ensure decisions are made on up-to-date information.

6. Summary of Key Principles for Fair Data Use

Legal Principles

- Respect confidentiality and trade secrets and follow confidentiality agreements to protect suppliers' sensitive information.
- Avoid anti-trust risks by using PCF data only for sustainability, not for pricing or market coordination.
- Use contract clauses to define permissible use and sharing of PCF data.

Technical Principles

- **Relevance**: Ask whether differences in PCFs are due to actual emissions reductions or methodological choices (e.g. allocation, databases, etc.)
- **Transparency**: Require disclosure of data sources, allocation rules, and treatment of methane, electricity, and recycled content, where feasible. But remember, as products move down the value chain or are mixed (e.g. chemicals in tanks), this level of detail can be lost.

- **Comparability**: Recognize that PCFs are not fully comparable across suppliers; they are most useful for directional insights. Consider consistency across the system boundaries and avoid mixing data that follows different standards.
- **Accuracy vs. Completeness**: Balance the trade-offs associated with full accuracy and completeness and document assumptions.

Practical Principles

- Educate procurement teams: they need decision frameworks, not LCA expertise.
- Prioritize engagement and collaboration over exclusion.
- Keep the end goal clear: **actual GHG reduction**.

PCF data is a **means to decarbonization**. Responsible PCF use requires balancing transparency, confidentiality, legal compliance, and technical nuance. Companies that engage suppliers constructively, while avoiding misuse or misinterpretation, will be best positioned to drive real emissions reductions across their value chains.

7. References

International Standards & Protocols

- **GHG Protocol Product Standard** – World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). *Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard*. 2011.
- **GHG Protocol Scope 3 Standard** – WRI/WBCSD. *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. 2011.
- **ISO 14040**: *Environmental management — Life cycle assessment — Principles and framework*. International Organization for Standardization, 2006.
- **ISO 14044**: *Environmental management — Life cycle assessment — Requirements and guidelines*. International Organization for Standardization, 2006.
- **ISO 14067**: *Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification*. International Organization for Standardization, 2018.

Industry Guidelines

- **Together for Sustainability (TfS)**. *PCF Guideline for the Chemical Industry*. v3.0, 2024.
- **Together for Sustainability (TfS)**. *PCF Data Model*. , v3.1, 2025.
- **Together for Sustainability (TfS) and Catena-X**. *PCF Verification and PCF Program Certification Framework, v2.0*, 2025.
- **Partnership for Carbon Transparency (PACT)** – World Business Council for Sustainable Development. *PACT Technical Specifications for PCF Interoperability*.