

Why Undertake a Product Environmental Footprint Study for My Enterprise?

The presence of environmental regulations in the EU markets rapidly becomes more prominent. In this regard, the Product Environmental Footprint (PEF) methodology was developed to **help assess the environmental impacts of goods or services**. Introduced by the European Commission, the PEF methodology is based on Life Cycle Assessment (LCA) and aims to harmonise and **improve the information on the quality and sustainability of products** for the consumers, encouraging, thus, the consumption and production of sustainable products in the EU Single Market.

The PEF methodology defines how a producer can **calculate the environmental score of a product** by covering its entire life cycle and makes it possible to determine a wide range of environmental, health, and resource-related impacts related to a product in a single assessment. Additionally, it **provides concrete rules** that reduce freedom of interpretation and promote stringent data quality and verification requirements.



Benefits of a PEF study

Helps companies measure, calculate, and communicate the environmental footprint of their products based on reliable, verifiable, and comparable information

Potentially reduces production costs

Enables consumers to know the environmental impact of the products

Enhances reputation, customer recognition, and market rewards for responsible preparation and delivery of sustainable goods or services.

Improves the sustainability of the supply chain

Facilitates export-oriented businesses to enter the EU market

Product Environmental Category Rules (PEFCRs)

- Batteries and accumulators
- Beer
- Dairy products
- Decorative paints
- Feed for food-producing animals
- IT equipment
- Metal sheets
- Hot and cold-water piping systems
- Intermediate paper products
- Liquid laundry detergents
- Leather
- Pet food
- Pasta
- Thermal insulation
- Wine
- Packed water
- Photovoltaic electricity generation
- T-shirts
- Uninterrupted power supplies

In addition to the general PEF method, the European Commission provides **Product Environment Footprint Category Rules (PEFCR)**, so companies can benchmark their product for a specific category group.

Hence, enterprises can better understand their environmental performance and compare it to competitors.

Action implemented by:

How to Undertake a PEF Study?

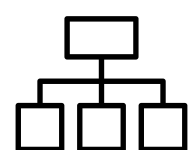


01 Identify the goal and scope of your study



- **Goal:** Intended use of your study, reasons for carrying out your study and its context, target audience, and commissioner of study.
- **Scope:** Define functional unit and reference flow, the product life cycle boundary, specify the Impact categories to be assessed, and outline the additional information to be included.

02 Draft a detailed flow diagram with all process and activities involved



- Work on further detailing the diagram by including all activities, processes and materials used in the life cycle of the product studied.
- The flow diagram is often drafted in an LCA software as it can involve hundreds of processes.

03 Identify the data needs and collect company-specific data



- Check the PEFCR for the mandatory company-specific data you shall collect.
- Evaluate each process and activity of your flow diagram with the Data Needs Matrix to know which additional company-specific data is required.
- Collect company-specific data.

04 Build the model of the product to be analyzed



- Identify the secondary data and datasets needed.
- Re-calculate the DQRs where needed.
- Model the entire product life cycle by following the modeling rules outlined in the PEF and the PEFCR.

05 Perform the impact assessment

- Calculate the environmental impacts and identify hotspots.
- Calculate the additional environmental and technical information.



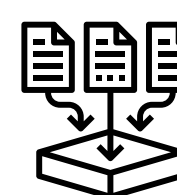
06 Check the model and assess the data quality

- Check the correctness of the model.
- Check the data quality and the use of ILCD-EL data.
- Calculate the DQR of the study.



07 Data collection iteration

- If the data quality requirements are not reached, look for better data, finetune the model and repeat step 5 and 6.



08 Fill in the PEF report template

- A few days to weeks of work, depending on how much you've been documenting throughout the process.



09 Verification and validation

- Appoint an external reviewer/verifier (or review panel).
- Organize the mandatory onsite visit.



10 Finalization

- Update the final report, including all reviewer comments
- Remove confidential information and publish the non-confidential version of the report
- Share the aggregated EF-compliant dataset of the product with the European Commission.



Pilot Projects in Georgia and Ukraine

Handicraft For Kids

Sector | Apparel

Location | Tbilisi, Georgia

Key products | Toddler Summer Dresses

Employees | 4 Woman

Main markets | Georgia, US

Key findings of the PEF study

The **most relevant impact categories** for the product are (1) Water use (34.3%), (2) Climate change (26.4%), (3) Resource use, fossils (12.5%), and (4) Particulate matter (7.76%). The **most relevant life cycle stages** for this product are (1) LCS1 Raw materials acquisition and pre-processing, (2) LCS2 Manufacturing, and (3) LCS3 Distribution. Finally, the **most relevant processes** for this product are (1) Cotton fiber, (2) Residual grid mix, and (3) Van diesel.



Climate change impact category:

44.4%

Manufacturing

32.1%

Distribution

18.9%

Raw materials acquisition and pre-processing

Resource use, fossils impact category:

76.6%

Manufacturing

23.1%

Raw materials acquisition and pre-processing

Sneco

Sector | Dairy

Location | Prime Snack LLC, Mukachevo, Zakarpattia Region, Ukraine

Key products | Gouda cheese snack

Employees | 14

Main markets | Ukraine, EU

Key findings of the PEF study

The **most relevant impact categories** for the product are (1) Climate change (32.41 %), (2) Particulate matter - 15.77 %, (3) Acidification (12.58%), and (4) Ecotoxicity, freshwater (7.72 %). The **most relevant life cycle stages** for this product are (1) LCS1 Raw materials acquisition and pre-processing (Raw milk production 71,71 %), (2) LCS4 - Packaging materials production (9,18%). The **most relevant processes** for this product are (1) Cow milk production and (2) Landfill of municipal solid waste.

Climate change impact category:

57.02%

Raw materials acquisition and pre-processing

19.94%

Waste disposal

2.92%

Transportation

Acidification impact category:

90.85%

Raw materials acquisition and pre-processing



Challenges revealed after a PEF Study?

Experience related issues



- Modeling in SimaPro due to lack of prior experience with LCA software
- Applying PEF theory due to lack of prior experience with LCA theory
- Short timelines, especially due to is a lack of prior experience.

Difficulties with respect to PEF applicability

- Data quality assessment: time-consuming
- Circular Footprint Formula: challenging concept and requires effort to model in the software
- Concept of EF compliant data: Chances of using an irrelevant database other than EF database
- Adoption of the EF impact assessment method: Chances of using other IAM other than EF method.



The PEF method could play an essential role in developing a market for green products. However, the information presented in this brochure revealed that there are still some open issues that should be dealt with to make PEF more adaptable for policy implementation.

Sources:

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