

Environmental Footprint

An introduction to the initiative of the European Commission

The overall aim of this document is to give an introduction to the European Commission initiative Environmental Footprint.

This material has been produced within the project Environmental Footprint in Sweden – increased competence and communication, managed within the Swedish Life Cycle Center and funded by Vinnova, Sweden's innovation agency.

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SWEDISH LIFE CYCLE CENTER

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Introduction

Requirements and expectations for making products' environmental footprints visible are increasing

When the European Commission sets and drives the development of the Environmental Footprint methods, the purpose is to improve the environmental performance of products and services in the European market through a combination of market pressure and policy instruments.



s part of the Single Market for Green Products initiative, the European Commission has launched the Product Environmental Footprint (PEF) and Organisational Environmental Footprint (OEF) methods to

ensure quality and increase transparency of environmental information and to facilitate comparisons between the environmental performance of products, services and organisations.

PEF is the Environmental Footprint of products and services, while OEF is the Environmental Footprint of entire organisations*. PEF and OEF are considered to be the most ambitious application of life cycle assessment (LCA) for reduced environmental impact related to production and consumption within the EU, with implications for all environmental work throughout the EU, from energy efficiency and fossil-free transition to bioeconomy, circular economy and use of scarce resources, for business, government and

* The Swedish translation of Environmental Footprint (EF) is Miljöavtryck.

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the public sector. Expectations of PEF and OEF as a means of promoting sustainable production and consumption are high, although much development remains. The European Commission Circular Economy Action Plan, published on March 11, 2020, highlights Environmental Footprints as particularly important related to the extension of the Ecodesign Directive to also include nonenergy products and the verification of green products claims.

Source: Swedish Life Cycle Center newspost "Krav och förväntningar på att synliggöra produkters miljöavtryck ökar" published December 9, 2020.

Abbreviations

- CEAP Circular Economy Action Plan
 - CR Category Rule
 - EF Environmental Footprint
 - EPD Environmental Product Declaration
 - LCA Life Cycle Assessment
 - OEF Organisation Environmental Footprint
- OEFSR Organisation Environmental Footprint Sector Rule
 - PEF Product Environmental Footprint
- PEFCR Product Environmental Footprint Category Rule
 - SC Steering Committee
 - SR Sector Rule
- SMGP Single Market for Green Products
 - TAB Technical Advisory Board

Background

he "Environmental Footprint" was first mentioned in the Sustainable Consumption and Production Action Plan in 2008, aimed to increase market uptake of resource efficient products.

In April 2013, the European Commission, in its communication Single Market for Green Products (SMGP), stated that too many ecolabels were available, creating mistrust and confusion on the common market. There is a need for common methods for measuring and communicating the environmental performance of products and organisations from a life cycle perspective. Two methods were established to measure environmental performance throughout the lifecycle: the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF). The European Commission recommended their use by Member States, companies and others.

The Single Market for Green Products also announced a three-year pilot phase (which became five years) to develop product- and sector-specific rules. The pilot phase was monitored by a Technical Advisory Board (TAB) and a Steering Committee (SC). In 2019, the pilot phase turned into a transition phase when the TAB remains.

ightarrow Source: Single Market for Green Products Initiative

The Environmental Footprint process of the European Commission, from the Single Market from Green Products initiative in 2013 until today and ahead.



What is the purpose of Environmental Footprint?

- Facilitate better information on the environmental performance of products and organisations
- Improve the availability of clear, reliable and comparable information of the environmental performance of products and organisations to all relevant stakeholders, including players along the entire supply chain
- Provide robust and sufficient methods also for policy development

ightarrow Source: Single Market for Green Products Initiative

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What's in it for me?

In-house applications:

- Optimisation of process along the life cycle of a product
- Identification of environmental hotspots
- Support for product design to minimize environmental impacts along the life cycle
- Environmental performance improvement and tracking
- Support environmental management

External application (business to business (B2B), business to consumer (B2C)):

- Responding to customers and consumer demands
- Co-operation along supply chains to optimise the product life cycle
- Marketing
- Participating in 3rd party schemes related to environmental claims or giving visibility to products by communicating their life cycle environmental performance

Source: PEF – General training.
European Commission Training on May 27, 2021.
By Sphera, maki Consulting



Policy

The European Commission Circular Economy Action Plan (CEAP) mentions the Environmental Footprint (EF) method as part of the review of the Ecodesign Directive as well as for substantiating green claims. Policy development is currently (October 2021) in progress. The proposal from the Commission regarding Green Claims and the proposal for the Sustainable Products Initative is scheduled for Q4 2021.

One example of policy making which makes use of Product Environmental Footprint (PEF) is the proposal for a common Battery regulation, which would substitute the current Battery Directive. The proposal includes mandatory declaration of carbon footprint, calculated according to the EF method.

Within the framework of the current Ecodesign Directive the European Commisson has proposed requirements on carbon footprint declarations of photovoltaic units, referring to the EF method and the Product Environmental Footprint Category Rules (PEFCR) for photovoltaic modules. Read more about PEFCRs on page 13.

The Swedish generational goal

An increased proportion of environmentally adapted products and services is also necessary to achieve the Swedish generational goal, which states that the consumption patterns of goods and services should cause as little negative environmental and health impact as possible.

 \longrightarrow Source: Swedish EPA, The Generational goal

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The overall goal of Swedish environmental policy is to hand over to the next generation a society in which the major environmental problems have been solved, without increasing environmental and health problems outside Sweden's borders."

What is Environmental Footprint?

The Environmental Footprint methods, Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF), were developed to put the same environmental requirements and rules for the whole European market. These methods are based on Life Cycle Assessment and the ISO standards 14040:2006* and 14044:2006**. Both PEF and OEF are annexed to the Recommendation on the use of common methods for measuring and communicating the life cycle environmental performance of products and organisations of the European Commission.

PEF and OEF calculates the environmental performance and takes into consideration the environmental impacts throughout the entire value chain, from the extraction/growing of resources to the end of life of the product (PEF) or the product portfolio of an organisation (OEF).

*Environmental management Life cycle assessment – Principles and framework **Environmental management Life cycle assessment – Requirements and guidelines

Source: Product Environmental Footprint Guide and Organisation Environmental Footprint Guide

Product Environmental Footprint

"PEF is a multi-criteria measure of the environmental performance of a good or service throughout its life cycle. PEF information is produced for the overarching purpose of seeking to reduce the environmental impacts of goods and services taking into account supply chain* activities (from extraction of raw materials, through production and use, to final waste management)."

 \longrightarrow Source: Product Environmental Footprint Guide

Organisation Environmental Footprint

"OEF is a multi-criteria measure of the environmental performance of a goods/ services-providing organisation from a life cycle perspective. OEF studies are produced for the overarching purpose of seeking to reduce the environmental impacts associated with organisational activities, taking into account supply chain* activities (from extraction of raw materials, through production and use, to final waste management)."

* Supply chain is often referred to as "value chain" in literature. However, the term "supply chain" was preferred here in order to avoid the economic connotation of "value chain".





Life Cycle Assessment

"The advantage of this life cycle approach is that it takes a holistic view at the product and at the value chain and avoids possible burden shifting to other life cycle stages. It moreover helps identifying "hotspots" – elements in the life cycle that contribute most to the environmental impact. Thus, organisations can intervene in a strategic way, e.g., through the design of their products to make sure that the hotspots are reduced, obtaining both higher environmental benefit and possibility for higher cost savings."

Source: European Commission Q&A (Questions related to the pilots)



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Environmental Product Declarations

Environmental Product Declarations (EPD) is an independently verified and registered document that communicates transparent and comparable information about the life cycle environmental impact of products and services. EPDs are based on LCA but are not part of the Environmental Footprint framework by the European Commission. There are a great number of similarities between the two frameworks but also some differences. EPDs are also based on ISO 14040 and 14044 and furthermore on ISO 14025, so called type III environmental declaration. EPDs are used voluntarily in many sectors and are especially frequent in the building sector where the additional standard EN 15804 is used.

Category Rules & Sector Rules

To increase the reproducibility, consistency, and relevance of Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) studies, category rules (CR) and sector rules (SR) are needed. These will guide users to focus on the most important environmental parameters for each CR or SR.

Product Environmental Footprint Category Rule (PEFCR):

Consistent and specific set of rules to calculate the relevant environmental information of products belonging to the product category in scope.

Objectives:

Fix consistent and specific set of rules to calculate relevant environmental information of products in a certain product category. Enable comparisons and comparative assertions among products in the same product category.

Organisation Environmental Footprint Sector Rule (OEFSR):

Consistent and specific set of rules to calculate the relevant environmental information of the organisations belonging to the sector in scope.

Objectives:

Fix consistent and specific set of rules to calculate relevant environmental information of organisations in a certain sector. Enable comparisons and comparative assertions between organisations or of one organisation over time.

Source: How to develop a PEFCR/OEFSR?
European Commission Training on September 1, 2019.
By Sphera, maki Consulting

What has Environmental Footprint resulted in?

So far, the road has been long and anything but straightforward, but a deeper understanding of the life cycle perspective and especially LCA methodology has been built up and new collaborations have been created. The process has so far resulted in:

- Increased knowledge and understanding about products from a life cycle perspective
- Increased harmonization on methodology issues
- Increased and new collaboration within and between sectors and with other stakeholder groups
- Increased knowledge about and focus on the life cycle perspective
- Increased life cycle-based information and increased transparency



Foto: Oscar Mattsson/Chalmers

Environmental Footprint in Sweden

Swedish Life Cycle Center is running research projects to test different methodological aspects in case studies to contribute to a better understanding and improvements of the Product Environmental Footprint (PEF) methods.

In connection to the launch of the Single Market for Green Products (SMGP), the Swedish Life Cycle Center established an Environmental Footprint expert group for methodology discussions about PEF and OEF. The ambition was to follow, understand and influence the development of PEF and OEF and share experiences from working with the EF methodology and from the pilots. The expert group also aimed at giving support to the Swedish representatives in the EF Steering Committee and the EF Technical Advisory Board.

The expert group consists of life cycle professionals from universities, research institutes, industry, and government agencies. The group is now focusing on the transition phase and on participating in and contributing to the development of the methodology improvements. Another important task is to understand how the PEF and OEF methodology and coming legislations will affect the Swedish industry.

Today, Sweden has one official TAB member and four other representatives from Sweden to contribute to the development of PEF and OEF.

About Swedish Life Cycle Center

Swedish Life Cycle Center is a center of excellence for the advance of applied life cycle thinking in industry and other parts of society. The center is a joint collaboration platform for universities, industries, research institutes and government agencies for competence building and exchange of experience to move the life cycle field forward. It is hosted by Chalmers University of Technology.

More information

European Commission: Single Market for Green Products Initiative https://ec.europa.eu/environment/eussd/smgp/

About the transition phase https://ec.europa.eu/environment/eussd/smgp/ ef_transition.htm_

About the pilots https://ec.europa.eu/environment/eussd/smgp/ PEFCR_OEFSR_en.htm

European Commission Com Q&A (questions related to the pilots) https://ec.europa.eu/environment/eussd/smgp/ pdf/q_a.pdf

Review of the pilot phase https://ec.europa.eu/environment/eussd/smgp/ pdf/2017_peer_rev_finrep.pdf

Environmental Footprint trainings https://ec.europa.eu/environment/eussd/smgp/ ef_trainings.htm

European Commission contact: env-environmental-footprint@ec.europa.eu

Technical helpdesk contact: EF_Helpdesk@sphera.com

Latest version of the PEF guide https://op.europa.eu/en/publication-detail/-/ publication/42850a3f-4478-11e9-a8ed-01aa75ed71a1/language-en

Latest version of the OEF guide

https://op.europa.eu/en/publication-detail/-/ publication/42850a3f-4478-11e9-a8ed-01aa75ed71a1/language-en

Nordic Environmental Footprint:

Integrated Product Policy 2020 – A Nordic discussion paper regarding a coherent European Product Policy <u>http://norden.diva-portal.org/smash/get/</u> <u>diva2:1384958/FULLTEXT01.pdf</u>

Swedish Life Cycle Center:

Project: Environmental Footprint in Sweden – increased competence and communication <u>https://www.lifecyclecenter.se/projects/</u> environmental-footprint-in-sweden-increasedcompetence-and-communication/

Expert group https://www.lifecyclecenter.se/projects/ environmental-footprint/

About the life cycle perspective https://www.youtube.com/watch?v=x-KIbLCW04c&t=8s



We aim for credible and applied life cycle thinking globally