

Product Environmental Footprint Pilot Guidance

Guidance for the implementation of the EU Product Environmental Footprint (PEF) during the Environmental Footprint (EF) pilot phase

Contents

Preface	6
List of acronyms	7
1. Context for the creation of this Guidance document	8
1.1. Definition and purpose of PEFCR	8
1.2. Terms and definitions	9
1.3. Rationale	11
1.3.1 Purpose and Scope of this Guidance document	12
1.3.2. Relationship to other Standards or Guidance documents.....	12
1.3.3. Intended Audience.....	13
1.4. Revision of the Guidance	13
2. Preparation for PEFCR development	13
2.1. Organisational structure of EF pilot phase	13
2.1.1. EF Pilot Steering Committee (SC).....	14
2.1.2. EF Technical Advisory Board (TAB)	14
2.1.3. Technical Secretariat.....	15
2.1.4. EF Technical helpdesk	16
2.1.5. EF virtual consultation Forum	16
2.2. Stakeholders involved in PEFCR development	16

2.3. Scope of the PEFCR	17
2.4. Modularity in PEFCRs	17
2.5. Steps to carry out before the creation of a new PEFCR.....	18
2.6. The process of creating a PEFCR	19
2.6.1. Timing of the process.....	19
2.6.2. Consultation process.....	20
2.6.3. Representativeness of a PEFCR.....	21
2.7. Conditions to close a pilot.....	21
3. Required elements of a PEFCR.....	22
3.1. Structure of the PEFCR.....	22
3.2. Procedure for the development of a PEFCR	22
3.3. Product scope and classification	22
3.3.1. Stepwise development of PEFCRs.....	25
3.4. Definition of the "representative product"	26
3.4.1. Documents to be drafted before the 1 st physical consultation	28
3.5. PEF Screening	29
3.5.1 Screening report	30
3.6. Draft PEFCR	30
3.7. End of Life (EoL) formula.....	31
3.8. Data quality requirements.....	31
3.9. Secondary data	32
3.10. Data confidentiality management	32
3.11. Documents to be submitted to the 1st virtual consultation	32
3.12. PEFCR supporting studies	33
3.12.1. Identification of the most relevant Impact Categories.....	34
3.12.2. Normalisation and weighting.....	34
3.12.3 Documents to be drafted before the 2 nd consultation	35

3.13. Confirmation of the benchmark and definition of classes of environmental performance....	35
3.14. Disclosure & Communication.....	35
3.14.1. PEF external communication report	36
3.14.2. PEF performance tracking report.....	36
3.14.3. PEF declaration	37
3.14.4. PEF label	37
3.15. Verification of the PEF profile	37
3.15.1 Competences of the verifier	39
3.16. Time validity of the PEFCR	39
4. PEFCR Review	40
4.1. Reviewer qualifications	40
4.2. Procedure for review	40
4.3. Review criteria	40
4.4. Review report.....	40
4.5. Addressing reviewer comments	41
4.6. Documents to be drafted before the 2 nd consultation	41
ANNEXES	42
Annex A – Normalization factors	42
Annex B – PEFCR Template	44
B.1 Introduction	45
B.1 General information about the PEFCR.....	45
B.1.1 Technical Secretariat.....	45
B.1.2 Consultation and stakeholders	45
B.1.3 Date of publication and expiration	45
B.1.4. Geographic region.....	46
B.1.5 Language(s) of PEFCR.....	46
B.2 Methodological inputs and compliance	46

B.3 PEF CR review and background information	46
B.3.1 PEF CR review panel	46
B.3.2 Review requirements for the PEF CR document	46
B.3.3 Reasoning for development of PEF CR	46
B.3.4 Conformance with the PEF CR Guidance	46
B.4 PEF CR scope	46
B.4.1 Unit of analysis	46
B.4.2 Representative product(s)	47
B.4.3 Product classification (NACE/CPA)	47
B.4.4 System boundaries – life-cycle stages and processes	47
B.4.5 Selection of the EF impact categories indicators	47
B.4.6 Additional environmental information	48
B.4.7 Assumptions/limitations	48
B.5 Resource use and emission profile	48
B.5.1 Screening step	48
B.5.2 Data quality requirements	48
B.5.3 Requirements regarding foreground specific data collection	48
B.5.4 Requirements regarding background generic data and data gaps	49
B.5.5 Data gaps	49
B.5.6 Use stage	49
B.5.7 Logistics	49
B.5.8 End-of-life stage	50
B.5.9 Requirements for multifunctional products and multiproduct processes allocation	50
B.6 Benchmark and classes of environmental performance	50
B.7 Interpretation	50
B.8 Reporting, Disclosure and Communication	50
B.8.1 PEF external communication report	51

B.8.2 PEF performance tracking report	51
B.8.3 PEF Declaration	51
B.8.4 PEF label	51
B.9 Verification	51
B.10 Reference literature	51
B.11 Supporting information for the PEFCR	52
B.12 List of annexes	52
Annex I – Representative product	52
Annex II – Supporting studies	52
Annex III – Benchmark and classes of environmental performance	53
Annex IV – Upstream scenarios (optional)	53
Annex V – Downstream scenarios (optional).....	53
Annex VI – Normalisation factors	53
Annex VII – Weighting factors.....	53
Annex VIII – Foreground data	53
Annex IX – Background data	53
Annex X – EOL formulas	53
Annex XI – Background information on methodological choices taken during the development of the PEFCR.....	54
Annex C – Register of changes	55

Preface

This guidance document (henceforward, the Guidance) shall only be used in the context of the Environmental Footprint (EF) pilot phase (hence after: EF pilot phase) that the European Commission will carry out starting from 2013. This document provides guidance on different steps of the Product Environmental Footprint (PEF) pilot phase, like the development of Product Environmental Footprint Category Rules (PEFCRs), requirements related to the communication of the information gathered through the pilot in B2B and B2C transactions, requirements on the review of the category rules, and verification of the information provided.

The content of this Guidance will be periodically revised during the EF pilot phase to reflect the experiences and lessons learnt.

All participants of the PEF pilot phase shall strictly follow this document. Each form of communication referring to the results of the PEF pilot phase shall always cite the version of the PEF Guide and the Guidance it conforms with.

Please cite this document as European Commission, 2014, *Environmental Footprint Pilot Guidance document*, - Guidance for the implementation of the EU Product Environmental Footprint (PEF) during the Environmental Footprint (EF) pilot phase, v. 4.0, May 2014.

For any technical question related to the content of this guidance, please refer to the functional mailbox env-environmental-footprint@ec.europa.eu

Disclaimer

The European Commission accepts no responsibility whatsoever nature to third parties to whom this Guidance, or any part thereof, is made known. Any such party relies on the Guidance at their own risk.

List of acronyms

Acronym	Expansion
B2B	Business to Business
B2C	Business to Consumers
BOM	Bill of materials
BREF	Best Available Techniques Reference Document
CF	Characterisation Factor
CPA	Statistical Classification of Products by Activity
EF	Environmental Footprint
ELCD	European Life Cycle Database
EMAS	Environmental Management and Audit Scheme
EoL	End of Life
EPD	Environmental Product Declaration
FRT	Sustainable Consumption and Production Food Round Table
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
ILCD	International Reference Life Cycle Data System
ISO	International Standard Organisation
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
MS	Member State
NACE	Nomenclature Générale des Activités Economiques dans les Communautés Européennes
NGO	Non-Governmental Organisation
OEF	Organisation Environmental Footprint
OEF SR	Organisation Environmental Footprint Sectorial Rule
PAS	Publicly Available Specification
PCF	Product Carbon Footprint
PCR	Product Category Rule
PEF	Product Environmental Footprint
PEF CR	Product Environmental Footprint Category Rule
RP	Representative Product
SC	Steering Committee
SME	Small and Medium Enterprise
TAB	Technical Advisory Board
WRI	World Resource Institute

1. Context for the creation of this Guidance document

1.1. Definition and purpose of PEFCR

Product Environmental Footprint Category Rules (PEFCRs) provide specific guidance for calculating and reporting products' life cycle environmental impacts.

Rules analogous to PEFCRs exist in standards for other types of life cycle-based product claims, such as ISO 14025:2006 (type III environmental declarations). PEFCRs were named differently in order to prevent confusion with other analogous rules and uniquely identify rules for the PEF Guide.

Existing life cycle-based standards do not provide sufficient specificity to ensure that the same assumptions, measurements and calculations are made to support comparable environmental claims across products delivering the same function. In order to address that limitation, the use of PEFCRs will play an important role in increasing the reproducibility, relevance, and consistency of PEF studies (and therefore comparability between PEF calculations within the same product category¹). The PEFCR helps directing the focus to the most important parameters of the PEF study, thus also reducing time, efforts and costs. PEFCRs should be developed and written in a format that persons with a technical background but without pre-knowledge in environmental footprints can understand it and use it to conduct a PEF study. Acronyms and technical jargons should be avoided as much as possible. Technical concepts (i.e., allocation rules, substitution, etc) should be clearly explained with practical examples to avoid as much as possible different possible interpretations by final users. In principle non-LCA practitioners should be able to understand and follow the PEFCR.

PEFCRs shall be developed according to the PEF Guide². PEFCRs shall aim to focus PEF studies on those aspects and parameters that are most relevant in determining the environmental performance of a given product. A PEFCR shall further specify requirements made in the general PEF Guide and shall add new requirements where the PEF Guide provides several choices or where the PEF Guide was not covering sufficiently the particularity of life cycle of a specific product category.

The compliance to a PEFCR developed according to the requirements included in this Guidance is a mandatory condition for all studies carried out in the framework of the EU PEF/OEF Pilot phase launched by the Commission in 2013 as announced in the Communication “Building the Single Market for Green Products”³. In order to guarantee this condition and support the work of the Technical Secretariats of the various pilots the Commission, supported by the Environmental Footprint Helpdesk, will systematically perform technical checks on the documents produced at various stages of the process (see also 2.7 – conditions to stop a pilot) and will provide feedback to the piloters to give them the opportunity to re-adjust their work.

¹ A product category is a group of products that can fulfil equivalent functions (ISO 14025:2006).

² Recommendation 2013/179/EU on The use of common methods to measure and communicate the life cycle environmental performance of products and organisations

³ COM (2013) 196

Moreover, the compliance to the requirements included in this Guidance shall also be mandatory whenever the results of a PEF study are intended to be used for comparisons or comparative assertions to be disclosed to the public⁴.

For the pilots related to food, feed, and drinks (2nd call for pilots), the ENVIFOOD Protocol⁵ shall be used as complementary guidance to the requirements in the PEF/OEF guides and the present guidance. In case of conflicting requirements between the PEF/OEF guides and the ENVIFOOD Protocol, the first prevails over the second. However, where relevant and appropriate, each Technical Secretariat is invited to consider the possibility to also test the requirements in the ENVIFOOD Protocol in addition to the PEF/OEF guides and use the results as part of a sensitivity analysis.

Terminology: shall, should and may

This Guidance uses precise terminology to indicate the requirements, the recommendations and options that could be chosen when developing a PEFCR.

The term “shall” is used to indicate what is required in order for a PEFCR to be in conformance with this PEFCR Guidance.

The term “should” is used to indicate a recommendation rather than a requirement. Any deviation from a “should” requirement has to be justified when developing the PEFCR and made transparent.

The term “may” is used to indicate an option that is permissible. Whenever options are available, the PEFCR shall include adequate argumentation to justify the chosen option.

1.2. Terms and definitions

For all terms used in this Guidance and not defined below, please refer to the most updated version of the Product Environmental Footprint (PEF) Guide, ISO 14025:2006, ISO 14040-44:2006, and the ENVIFOOD Protocol.

Benchmark – A standard or point of reference against which any comparison can be made. In the context of the Environmental Footprint pilot phase, the term ‘benchmark’ refers to the average environmental performance of the reference product (see definition below) sold in the EU market. A benchmark may eventually be used, if appropriate, in the context of communicating environmental performance of a product belonging to the same category.

Best Available Techniques Reference Document – documents that have been drawn as part of the exchange of information carried out in the framework of Article 13(1) of the Industrial Emissions Directive (IED). They give information on a specific industrial/agricultural sector in the EU, on the techniques and processes used in this sector, current emission and

⁴ As ISO does not define the concept of comparison (but only comparative assertion), it is important to capture the difference among the two: a comparison would compare product A versus B along the results of the investigated e.g. 10 impact categories, and compare impact category versus impact category without stating whether product A and B are equivalent or one of them is overall better or worse. A comparative assertion would come up with the results that overall product A is better than, worse than or equivalent to product B.

⁵ Available at: http://www.food-scp.eu/files/ENVIFOOD_Protocol_Vers_1.0.pdf

consumption levels, techniques to consider in the determination of the best available techniques (BAT) and emerging techniques.

Business to Business (B2B) – Describes transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer.

Business to Consumers (B2C) – Describes transactions between business and consumers, such as between retailers and consumers. According to ISO 14025:2006, a consumer is defined as “an individual member of the general public purchasing or using goods, property or services for private purposes”.

Comparative assertion – environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function (adapted from ISO 14025:2006).

Comparison – A comparison, not including a comparative assertion, (graphic or otherwise) of two or more products based on the results of a PEF study, and supporting PEFCRs.

Environmental aspect – element of an organisation’s activities, products or services that can interact with the environment (ISO 14025:2006).

Green claim – Any form of communication regarding a product’s environmental performance, such as reports, labels, environmental product declarations (EPDs), and press releases. Herein claims refer exclusively to those based on a life cycle assessment, or LCA-based claims, such as an EPD, PCF or PEF. Related terms referred to as product claims include environmental claims or claims.

Organisation Environmental Footprint Sector Rules (OEFSRs) – Sector-specific, life-cycle-based rules that complement general methodological guidance for OEF studies by providing further specification at the level of a specific sector. OEFSRs help to shift the focus of the OEF study towards those aspects and parameters that matter the most, and hence contribute to increased relevance, reproducibility and consistency. OEFSRs are, defined primarily with reference to the activities characteristic of the sector, as represented in a typical Product Portfolio.

PEFCR Supporting study – the PEF supporting study done on the basis of the final draft PEFCR. It is used to confirm the decisions taken in the draft PEFCR before the final PEFCR is released.

PEF Profile – the quantified results of a PEF study. It includes the quantification of the impacts for the most relevant impact categories and the additional environmental information considered necessary to be reported.

PEF screening – a preliminary study carried out on the representative product(s) and intended to identify the most relevant life cycle stages, processes, impact categories, data quality needs, to derive the preliminary indication about the definition of the benchmark for the product category/sub-categories in scope, and any other major requirement to be part of the final PEFCR.

Product category – Group of products (including services) that can fulfil equivalent functions (ISO 14025:2006).

Product Category Rules (PCR) – Set of specific rules, requirements and guidelines for developing Type III environmental declarations for one or more product categories (ISO 14025:2006).

Product Environmental Footprint Category Rules (PEFCRs) – Product category-specific, life-cycle-based rules that complement general methodological guidance for PEF studies by providing further specification at the level of a specific product category. PEFCRs help to shift the focus of the PEF study towards those aspects and parameters that matter the most, and hence contribute to increased relevance, reproducibility and consistency of the results by reducing costs versus a study based on the comprehensive requirements of the PEF guide.

Representative product (model) - The “representative product” may or may not be a real product that one can buy on the EU market. Especially when the market is made up of different technologies, the “representative product” can be a virtual (non-existing) product built, for example, from the average EU sales-weighted characteristics of all technologies around. A PEFCR may include more than one representative product if appropriate.

Type III environmental declaration – An environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information (ISO 14025:2006). The predetermined parameters are based on the ISO 14040 series of standards, which is made up of ISO 14040 and ISO 14044.

1.3. Rationale

The Product Environmental Footprint (PEF) is a Life Cycle Assessment (LCA) based method to quantify the relevant environmental impacts of products (goods and services) and organisations. They build on existing approaches and international standards⁶, even if using LCA for organisation-level assessment represents a relatively novel approach.

One important feature of the PEF method is that it sets the basis for comparability of the results. However, comparability is only possible if the results are based on the same Product Environmental Footprint Category Rules (PEFCR) (see explanation below).

In recent years, the increasing demand for LCA based product declarations, such as Environmental Product Declarations have generated a need for rules for making declarations on products within the same category. These rules are defined as Product Category Rules (PCRs) in ISO 14025, Product Rules in the GHG Protocol Product Life Cycle Accounting and Reporting Standard and Supplementary Requirements in PAS 2050. Other standards such as BP X30 (France), SMRS (Sustainability Consortium), TS 0100 (Japan), and the technical specification ISO/TS 14067:2013 also require the use of PCRs for making comparative product declarations⁷.

All these initiatives indicate the growing demand for such information from both public and private actors, but also represent a problem as too often those PCRs are "similar but different" limiting their applicability to make informed comparisons between products belonging to the same product category.

⁶ Analysis of Existing Environmental Footprint Methodologies for Products and Organizations: Recommendations, Rationale, and Alignment, JRC, 2011, <http://ec.europa.eu/environment/eussd/pdf/Deliverable.pdf>

⁷ Ingwersen, W. and V. Subramanian, Eds. (2013). Guidance for Product Category Rule Development, version 1.0, The Product Category Rule Guidance Development Initiative Retrieved from <http://www.pcrguidance.org/>.

Nowadays the objective of making the different methods, data requirements and supporting tools to converge is shared by many experts of the LCA scientific community. This PEFCR Guidance represents a contribution towards this goal. It has been written trying to be as much as possible in line with similar major standards and initiatives.

By having a unique set of requirements for developing PEFCRs at European level the overall methodological landscape related to this important element can be greatly simplified and made more consistent.

1.3.1 Purpose and Scope of this Guidance document

This Guidance is only to be used in the framework of the EF pilot phase that the Commission launched in 2013. The objectives of the EF pilot phase are the following:

- Set up and test the process for the development of PEFCRs for a number of product categories;
- Set up a cost-effective verification system, in particular with reference to embedded impacts and traceability of information;
- Test different communication vehicles covering both B2B and B2C;
- Support the advancement and alignment of existing LCA-based product claim standards;
- Facilitate the involvement of all stakeholders interested in the development process.

1.3.2. Relationship to other Standards or Guidance documents

This PEFCR Guidance includes several elements taken from other relevant documents such as:

- PEF Guide, Annex to Commission Recommendation 2013/179/EU on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (April 2013) and available at <http://ec.europa.eu/environment/eussd/smgp/index.htm>
- Guidance for Product Category Rule Development⁷
- ISO 14025:2006 - Environmental labels and declarations – Type III environmental declarations – Principles and procedures (ISO)
- BP X30-323-0:2011 - Principes généraux pour l'affichage environnemental des produits de grande consommation (AFNOR, France)
- Greenhouse Gas Product Accounting and Reporting Standard (GHG Protocol, 2011)
- PAS 2050 - Specification for the assessment of the life cycle greenhouse gas emissions of goods and services (BSI, 2011)
- Technical Specification ISO/TS 14067:2013 Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and communication
- ISO 14020:2000 Environmental labels and declarations – General principles
- ISO 14021:1999 Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling)
- ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework

- ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines
- ISO 14050:2006 Environmental management — vocabulary
- ISO 17024:2003 Conformity assessment – General requirements for bodies operating certification of persons.

1.3.3. Intended Audience

The intended audience of this Guidance document includes all stakeholders participating in the developments of PEFCRs within the framework of the EF pilot phase launched by the Commission in 2013.

1.4. Revision of the Guidance

This document will be periodically revised during the EF pilot phase. Once the pilots are concluded and based on the lessons learnt, a final version of this Guidance will be published.

2. Preparation for PEFCR development

On top of the PEF guide, a PEFCR may not always be needed for PEF studies. Depending on the kind of application the use of a PEFCR could be optional, recommended or mandatory. Table 1 provides, only as an illustrative example, some cases of applications where a PEFCR could or could not be requested (the table is not to be considered exhaustive). The cases described are only indicative and applicable exclusively in the context of the EU PEF pilot phase.

Table 1: Scenarios that do and do not necessitate the use of PEFCRs

Application	Use of a PEFCR		
	Optional “May”	Recommended “Should”	Mandatory “Shall”
In-house: product improvement	✓		
B2B or B2C green claim <u>without</u> comparisons or comparative assertions		✓	
B2B or B2C green claim <u>with</u> comparisons or comparative assertions			✓
Any PEF study declared to be in compliance with the PEF Guide	✓		

2.1. Organisational structure of EF pilot phase

The participation to the EF pilot phase is a *pro bono* activity carried out by all stakeholders interested in a specific product category or sector. In order to organise and coordinate the work in the best way possible the following structure is considered to be necessary:

- A Steering Committee (SC)
- A Technical Advisory Board (TAB)

- A Technical Secretariat (TS)
- An EF technical helpdesk
- An EF virtual consultation Forum
(<https://webgate.ec.europa.eu/fpfis/wikis/display/EUENVFP/EU+Environmental+Footprint+Pilot+Phase>)

2.1.1. EF Pilot Steering Committee (SC)

For the whole duration of the EF pilot phase a Steering Committee is set up.

The composition of the Steering Committee and its rules for procedure are available at: <https://webgate.ec.europa.eu/fpfis/wikis/display/EUENVFP/Steering+Committee+workspace+of+Environmental+Footprint+Pilot>

The Commission chairs the meetings and is responsible for all activities related to its organisation and management.

The role of the Steering Committee is:

- a) Approve, improve or reject the scope and the definition of the representative product/organisation for each PEFCR/ OEFSR developed within the EF pilot phase, taking into consideration the opinion expressed by the Technical Advisory Board on these documents;
- b) Monitor the progress in each PEFCR/ OEFSR pilot;
- c) Exchange information about challenges and lessons learnt in each pilot;
- d) Approve the draft PEFCRs (based on the results of the screening);
- e) Decide on verification requirements for the EF pilot phase;
- f) Approve the final PEFCR;
- g) To contribute, review, comment on the development of the "footprint weighting method" as developed by JRC-IES;
- h) Solve any conflicts that might arise during the implementation of the environmental footprint pilot exercise

When the decision of the Steering Committee might have an impact on the general requirements included in the PEF or OEF Guides, these changes shall be preventively agreed with the Commission.

2.1.2. EF Technical Advisory Board (TAB)

Each member of the EF Pilot Steering Committee may appoint up to 1 expert to be member of the Technical Advisory Board to the Steering Committee. The Commission chairs the meetings and is responsible for all activities related to its organisation and management.

The role of the Technical Advisory Board member is (non-exhaustive list) to:

- a) Provide support to the Steering Committee members that have appointed them on the scope of the product category or sector for each PEFCR developed within the EF pilot phase;

- b) Check and advise the Steering Committee members on consistency of approaches among different PEF pilot category rules, including but not limited to how to identify the representative product/organisation and how to develop benchmarks;
- c) Provide technical advice to the Steering Committee members about draft PEFCRs (based on the results of the screening);
- d) Provide technical advice to the Steering Committee members in case of issues related to the implementation of PEF requirements;
- e) Provide support to the Steering Committee members on decision related to review and verification;
- f) Express an opinion to the Steering Committee members on the final PEFCR before approval.

Furthermore, the TAB expresses its opinion and input to the Commission on technical issues that are of cross-cutting relevance to several EF pilots.

2.1.3. Technical Secretariat

For each pilot there shall be a Technical Secretariat. The Technical Secretariat is responsible for the following activities:

- a) Overall drafting of the PEFCR proposal;
- b) Preparing, maintaining and communicating all instructions related to the PEFCR development process;
- c) Facilitating harmonisation with existing PCRs;
- d) Organising the physical consultation meetings, including preparation of the agenda, sending the invitation, drafting supporting documents, taking minutes during the meetings;
- e) Organising the consultation periods according to the rules and timing specified in 2.5.1. This task includes the drafting of the PEFCR chapters, collection and analysis of the comments received, and the drafting of the document analysis how the comments have been addressed;
- f) Supporting the management of the EF consultation Forum. This activity includes tasks such as the drafting of publicly available explanatory materials related to their EF pilot category rules activities and the publication of the names of the organizations (not individual names) involved as stakeholders in the PEFCR development process;
- g) Ensuring that the PEF screening is performed, the representative model developed and all the PEF calculations necessary run as requested in this Guidance;
- h) Periodically updating in the EF virtual consultation Forum a list of all the documents consulted during the PEFCR development process;
- i) Ensuring the selection of and appointment of competent independent PEFCR review panel members.

During the EU PEF Pilot study the role of Technical Secretariat may be played by a single company, an industrial association, an NGO, a Member State, or a national or an international Institution (e.g. the Commission), a university or research institute. The preferable option would be that the Technical Secretariat is constituted by a mix of the previously mentioned organisations.

The Technical Secretariat shall appoint a chair and will identify a Product Category Coordinator. The chair shall coordinate the different tasks of the Technical Secretariat and chair the physical consultation meetings, whilst the Product Category Coordinator represents the Technical Secretariat in the Steering Committee.

2.1.4. EF Technical helpdesk

For the whole duration of the EF pilot phase the Commission has made an external technical helpdesk available. The role of this helpdesk is to:

- Support the Commission in the revision of any document released by the Technical Secretariats (e.g. the representative product model, draft PEFCR, etc),
- support the activities of each category rule/sectoral rule pilot providing technical assistance related to the application of the PEF/OEF Guide,
- provide explanations and support on specific steps of the PEFCR/OEFSR development process,
- provide specific training sessions during the EF pilot phase,
- manage the virtual consultation Forum,
- act as data manager (including signing non-disclosure agreements with the companies participating in the pilot phase).

2.1.5. EF virtual consultation Forum

A dedicated website has been created and it will be maintained during the whole duration of the Environmental Footprint (EF) pilot phase. It is available at: <https://webgate.ec.europa.eu/fpfis/wikis/display/EUENVFP/EU+Environmental+Footprint+Pilot+Phase>.

The EF virtual consultation Forum is the location where all documents related to the PEF/OEF pilot category rules/sectoral rules are stored, where each consultation step is carried out, where the periodic communication on the pilots' advancements are taking place. A separate working space is available for each OEFSR and PEFCR pilot.

The virtual consultation Forum is managed by the Commission with the active involvement of the EF Technical Helpdesk and each Technical Secretariat.

2.2. Stakeholders involved in PEFCR development

The process of developing PEFCRs shall be open and transparent and shall include an open consultative format with relevant stakeholders.

The stakeholders should be involved following a supply chain approach. The relevant stakeholders for PEFCR may include, but are not limited to, material suppliers, manufacturers, trade associations, purchasers, users, consumers, government representatives,

non-governmental organizations (NGOs), public agencies and, when relevant, independent parties and certification bodies.

2.3. Scope of the PEFCR

The primary objective of a PEFCR is to fix a consistent set of rules to calculate and communicate the relevant environmental information of products within the same category. An equally important objective is to enable comparisons and comparative assertions in all cases when this is considered feasible, relevant and appropriate.

The granularity of the scope, the number of representative products chosen, the approach to identify the benchmarks are key decisions that shall be identified and justified in an extensive and transparent way in the PEFCR document (see chapter 3 for more info on the content of a PEFCR).

Meaningful comparisons can only be made when products are capable of fulfilling the same function (as expressed in the unit of analysis). Therefore, the scope of a PEFCR needs to be defined based on the function-based approach. This approach also enables to link the product category with the CPA/NACE codes and is in line with the definition of a product category by ISO 14025:2006 (i.e. a group of products that can fulfil equivalent functions)⁸. However, intermediate products can fulfil multiple functions, therefore a more traditional, material-based approach might be the best choice there.

Pilot testers are advised to define an as broad as possible scope for the PEFCR, including all products that are capable of fulfilling the same function. A too narrow (small) product category definition would result in a very large number of PEFCRs, diminishing the usefulness of the developed PEFCRs. In its extreme, it could lead to meaningless PEFCRs.

2.4. Modularity in PEFCRs

The decision on how wide or narrow the scope of a PEFCR should be is a mix of a political and technical decision.

The first issue that should be clarified is if the product in focus is a final product (meaning something that is bought and used as it is, without requesting any further significant processing, like drinks, paints, apparel, etc.) or an intermediate product (e.g. paper pulp, some construction products). This difference is important because it entails further methodological differences at a later stage. For example whilst for a final product it is allowed to focus the communication of the environmental performance only on the most relevant impacts, processes and life cycle stages, this is not possible for intermediate products, as such cut-offs would introduce important biases in the assessment of any further products using the intermediate one.

In case of intermediate products the PEFCR becomes a “module” to be used when developing PEFCRs for products further down that supply chain. This is equally applicable if the intermediate product can be used in different supply chains (e.g., metal sheets). The development of “modules” is essential to keep the number of PEFCRs to a manageable number. Moreover, they allow for a higher level of consistency among different supply

⁸ However, first the scope of the product category shall be defined and only after in the PEFCR it has to be listed which are corresponding CPA codes.

chains that are using such modules as part of their life cycle assessment. The possibility to build such modules should always be considered also for final products, especially for those products that share part of the production chain till a certain moment and then differentiate due to different functions (e.g. detergents).

2.5. Steps to carry out before the creation of a new PEFCR

There are many existing PCRs for several product categories. Before starting the development of a new PEFCR, the Technical Secretariat shall carry out a thorough search to identify if PCRs⁹ for the same product category have been developed¹⁰.

If no PCRs for the product category of interest are found suitable to be used as basis for the PEFCR, the Technical Secretariat shall move forward to develop its own PEFCR “from scratch”. However, when the Technical Secretariat finds that a PCR exists for the same or overlapping product category in one or more other program(s), the Technical Secretariat shall perform an analysis identifying the consistency of the existing PCR(s) against the criteria set in this Guidance and in the PEF Guide. Existing PCRs need to be evaluated only up to the point where a decision can be made whether they should be used as a basis for the development of a PEFCR or not. Only those PCRs identified as suitable basis for a PEFCR need to be evaluated further with the necessary detail.

If, based on the results of this analysis, the existing PCR is completely in line with the PEF requirements, the existing PCR shall be used as PEFCR for the same product category, complementing it with any additional elements as appropriate (e.g. additional environmental information). If there are a number of deviations, then the Technical Secretariat shall document the major differences in a report to be uploaded in the EF virtual consultation Forum. The PEFCR development process will then adapt the existing PCR(s) and make the PCR(s) fully consistent with the PEF requirements and the requirements of this Guidance document¹¹.

In particular, this alignment process needs to occur across the following principle elements: (1) data alignment, (2) the PEF and additional requirements for the generation of the PEFCR; and (3) PEFCR-related procedures.

(1) *Data alignment.* Data needs to fulfil common quantified quality requirements according to the PEF Guide. This is both valid for primary data (rules on data collection) and secondary data. Whenever possible, specific datasets (or databases fulfilling the quality requirements) shall be used. The specificities related to geographical areas, time representativeness, and technologies shall also be acknowledged and dealt with in the PEFCRs.

(2) *Rule alignment.* All rules for the existing PCRs shall be consistent with the PEF Guidance, for example specification of the unit of analysis, scope of the study, resource use and emissions profile, any allocation rules, impact assessment, and rules for additional information.

(3) *Procedural alignment.* Requirements for PCR creation and review shall be equivalent, if not identical, to PEFCR requirements.

⁹ The term “PCR” used here comprise any set of specific rules or guidelines for a product category. It is not limited to the PCRs following the ISO 14025.

¹⁰ For example a PCR repository exists at <http://pcr-library.edf.org/tw/index.asp>

¹¹ The adapted PEFCR should reference the original PCR and program.

When a PCR exists for a product category in one or more other program(s), the other program operator(s) shall be contacted and invited by the Technical Secretariat to join the PEFCR development process.

2.6. The process of creating a PEFCR

The development of a PEFCR shall be based on an open and transparent consultation process involving all interested stakeholders. Reasonable efforts should be made to achieve a consensus throughout the process (ISO 14020:2000).

The inclusion of a virtual consultation and involvement process aids in ensuring that the opportunity exists for any and all stakeholders to contribute actively to the PEFCR development process or to provide comments regarding the PEFCR being developed, thus creating a development process which takes into account all relevant expertise with the utmost transparency.

2.6.1. Timing of the process

All reasonable efforts shall be made to limit the duration of a PEFCR development to 24 months maximum (including the PEFCR review), after some preliminary work has been done. In Table 2 the reference timing is reported for the development of a new PEFCR. While 2 physical meetings and 2 web-based consultation steps seem to be indispensable, each Technical Secretariat shall organise its own working agenda in a way to remain as much as possible in line with the timing reported in Table 2. Any major deviation from it should be discussed and agreed in the EF Pilot Steering Committee.

Table 2. Reference timing for the development of a PEFCR.

Activity	TS	Stakeholders	SC	Reference Timing ¹²
Analysis of existing PCRs and scope definition + draft definition of representative product	X			Preliminary work
1 st physical consultation (scope, draft definition of representative product)	X			Month 3
Written feedback on 1 st consultation document		X		Month 3-4 (2 weeks before and after 1 st stakeholder consultation meeting)
Analysis and feedback of results for 1 st physical consultation	X			Month 4-5
<i>Approval of scope and representative product definition</i>			X	
PEF Screening (impact assessment, interpretation and conclusion, report)	X			Month 5-8
<i>Sending draft PEF screening to EC and helpdesk for technical checks</i>				Month 9
Draft PEFCRs based on PEF screening	X			Month 10
1 st virtual consultation (results PEF screening and draft PEFCRs, additional environmental information)	X			Month 11
Written feedback on 1 st draft PEFCR		X		Month 11-12 (2 weeks before and after 1 st stakeholder consultation meeting)
Analysis and feedback of comments from 1 st virtual consultation	X			Month 12-13
Second draft of the PEFCR	X			Month 13

¹² Unless otherwise mentioned the term “month” refers to the end of the month.

<i>Approval of draft PEFCR (based on the results of the screening)</i>			X	
PEFCR supporting studies	X			Month 15-18*
2 nd consultation (final PEFCR, benchmark, verification, and classes of performance where appropriate and relevant)**	X	X		Month 19-20
Analysis of and feedback on comments from the 2 nd consultation	X			Month 21
<i>Review of the final PEFCR by external reviewers</i>				Month 22-23
Analysis of comments from the Review, and Feedback on Review comments	X			Month 24
Revising final PEFCR + summary of all feedback	X			Month 25
<i>Approval of final PEFCR</i>			X	
Release of the final PEFCR				Month 27

* The official start of the pilots from the first wave (non-food related) is beginning of November, 2013, of those from the second wave (food, feed and drink related) beginning of June 2014. The reference timing considers 3 PEFCR supporting studies. If more studies are conducted, the reference timing might be changed consequently.

** This consultation shall be run both online and physically. The documents shall be available online at least 4 weeks before the physical consultation date and the possibility to comment shall be available for 2 weeks after the meeting.

2.6.2. Consultation process

The Commission published the list of all PEFCRs under development¹³.

Each Technical Secretariat shall identify and invite all the relevant stakeholders to participate in the PEFCR development by a virtual consultation process, and shall ensure that the role of the different stakeholders in the process is made clear and open to enable their participation.

Each Technical Secretariat shall create and maintain a log of those stakeholders that have been communicated with and responded to. A virtual consultation procedure shall be prepared in such a manner as to support the usage of an internet-based participatory process making use of the EF virtual consultation Forum.

An open internet-based consultation via the EF virtual consultation Forum serves the role of broadening the participation of stakeholders from different parts of the world. The use of the EF virtual consultation Forum also has the advantage that it facilitates participation from interested parties having difficulties to attend meetings, e.g. NGOs, SMEs, stakeholders from non-EU or developing countries and environmental groups.

Two public physical meetings shall be organised, one at the beginning of the PEFCR process (mainly to discuss the PEFCR scope) and one at the end of the process (mainly to discuss the final PEFCR).

Interested parties shall be given adequate time for review and access the details and sources of information used. The consultation process shall also ensure that interested parties who provide comments, will receive consideration of, and response to, their comments. In particular the Technical Secretariat should, at the end of each consultation period and in any case before opening the final consultation step, produce and make public in the EF virtual consultation Forum, a document describing the major comments received and how they have been addressed.

Virtual consultation and comment of completed draft PEFCR shall include at a minimum a 30-calendar day open time period for comments to be submitted.

¹³ This information is available at: http://ec.europa.eu/environment/eussd/smgp/product_footprint.htm

2.6.3. Representativeness of a PEFCR

A PEFCR is considered to be representative of a specific product category when all the following conditions are met:

- 1) The Technical Secretariat in charge of a specific product category has invited to contribute to the PEFCR development process all the major competitors, or their representatives (i.e. via industry associations) covering for at least 75% of the EU market (in terms of yearly turnover or production). All companies contributing to more than 10% to the EU market (in terms of yearly turnover or production) have been invited.
- 2) The industry stakeholders (producers/importers, either as single companies and/or as business associations) participating to the whole process cover at least 51% of the EU market (in terms of yearly turnover or production). The participation of stakeholders will be judged on the basis of their inputs to the process and/or participation to meetings. The 51% target has to be achieved by the end of the pilot phase. This means that it is not a requirement for the Technical Secretariats themselves to fulfil.
- 3) The Technical secretariat has invited and involved in the PEFCR development process a wide range of stakeholders, with particular reference to SMEs, consumers' and environmental associations.

2.7. Conditions to close a pilot

A pilot can be closed due to one of the following circumstances:

- a) It becomes evident during the process that the representativeness conditions (see 2.6.3) will not be achievable. In this case the decision to stop the pilot is taken by the Commission without further consultation with the Steering Committee.
- b) In case relevant deviations from the methodological mandatory requirements foreseen in the PEF Guide or the most updated version of the EF pilot Guidance document are identified by the Commission and not solved through a bilateral dialogue with the relevant pilots. In this case the Commission can propose to the Steering Committee to stop the work of the pilot till the requirements are met. Under no circumstances a delay can justify a postponement of the overall pilot deadline (December 2016).

3. Required elements of a PEFCR

3.1. Structure of the PEFCR

The PEFCR should follow the structure suggested in Annex B to this guidance. Any deviation from such structure shall be adequately justified.

3.2. Procedure for the development of a PEFCR

There are a number of steps that shall be followed when preparing a PEFCR. Whilst the way to perform each step is under the technical responsibility of each Technical Secretariat, all steps shall be part of at least one consultation step with the relevant stakeholders.

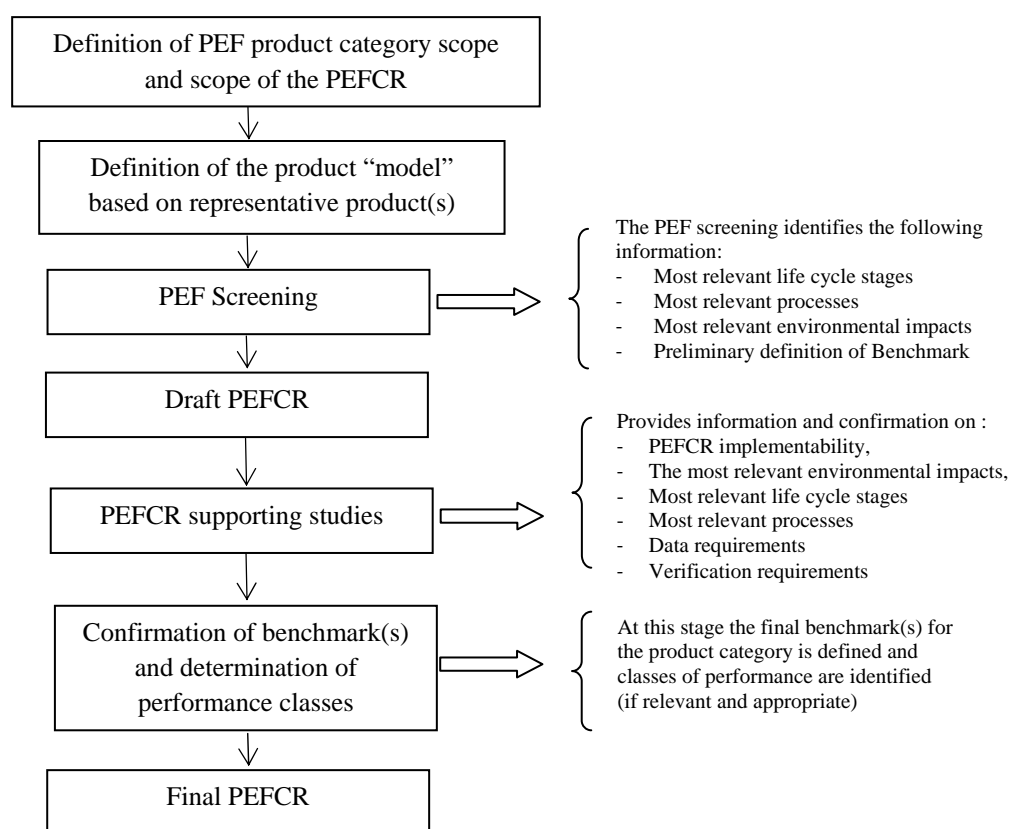


Figure 1. Steps to be followed for the development of PEFCRs.

One PEF screening and at least one PEFCR supporting study shall be performed per each sub-category included in the PEFCR.

3.3. Product scope and classification

By similarity with what is stated in ISO 14025, a PEFCR shall include a product category definition and description. This should include a description of the product(s), the function of the product(s), unless it concerns intermediate product(s), and a description of the technical performance, the use and EoL stage of the product(s) if known (see section 3). It is important

to be as specific as possible when defining a product category to ensure comparability of results. As recommended in ISO 14044, if additional functions of any of the systems or if some products that fulfil the same function are not taken into account in the comparison of the unit of analysis, then these omissions shall be explained and documented.

The PEFCR shall clearly state the product category for which the PEFCRs apply by using descriptive language. Once the scope has been finalised the corresponding relevant CPA/NACE codes shall be listed. Products that are not covered by the PEFCR shall be clearly listed (as a clarification when products are similar). In some cases, accessory products that are typically sold together are not covered by the PEFCR. This should also be stated.

Products having similar functions and applications should be grouped under one product category. However, within a single PEFCR sub-categories of products/applications can be identified. For example, it could be appropriate to develop a PEFCR on batteries (wide scope) which then could include a number of sub-categories linked to the different types of applications (batteries for cars, batteries for mobile phones, batteries for computers, etc).

The basis for assigning a group of products to a product category shall be that the same unit of analysis shall be applied across all the products that are to be categorized under one product category. A declared unit, for example, mass (kilogram), volume (cubic meter), should be applied for intermediate products, where a unit of analysis cannot be assigned due to the fact that the whole life cycle of the product is either not accounted for or cannot be stated (i.e. cradle-to-gate).

Technical Secretariat shall choose one of the following options:

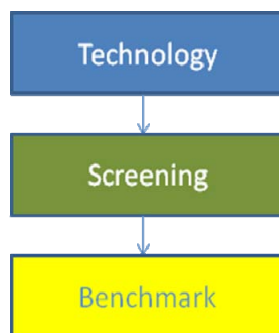
- A. The scope is limited, there is a single main application/function and all products/technologies covered are very similar (e.g. liquid laundry detergents, packed water) – see box 1.
- B. The scope is wide, there is a single main function but different applications/technologies/materials (e.g. batteries, dairy products) – see box 2;
- C. The scope is relatively narrow, there is a single main function, but alternative technologies/materials delivering the same function are available (e.g. hot & cold water pipe systems, paints) – see box 3;

The most relevant options shall be clearly indicated and justified in the scope section of the PEFCR template. The proposed scope shall be discussed and agreed by the end of the first consultation phase.

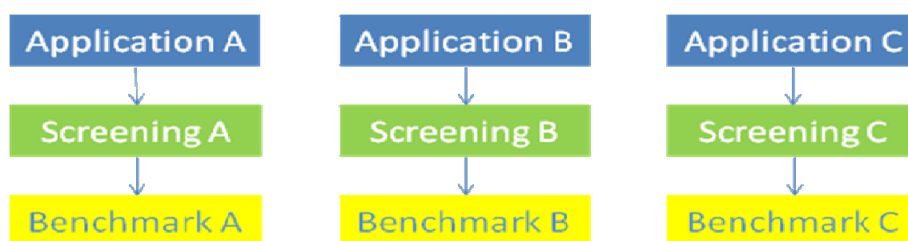
Once the scope has been clearly identified the Technical Secretariat shall decide if more than one sub-category is needed and if the unit of analysis shall be refined for the subcategories. If a single unit of analysis is used, the benchmark (and classes of performance if relevant and appropriate) is chosen at the unit of analysis level (see box 3). In case the PEFCR includes sub-categories with appropriate unit of analysis, then the benchmark (and classes of performance if relevant and appropriate) can only be defined at the sub-category level (see box 2). In case there are no sub-categories then the situation is more straightforward (see box 1).

Box 1 – PEFCR including more one single product category.

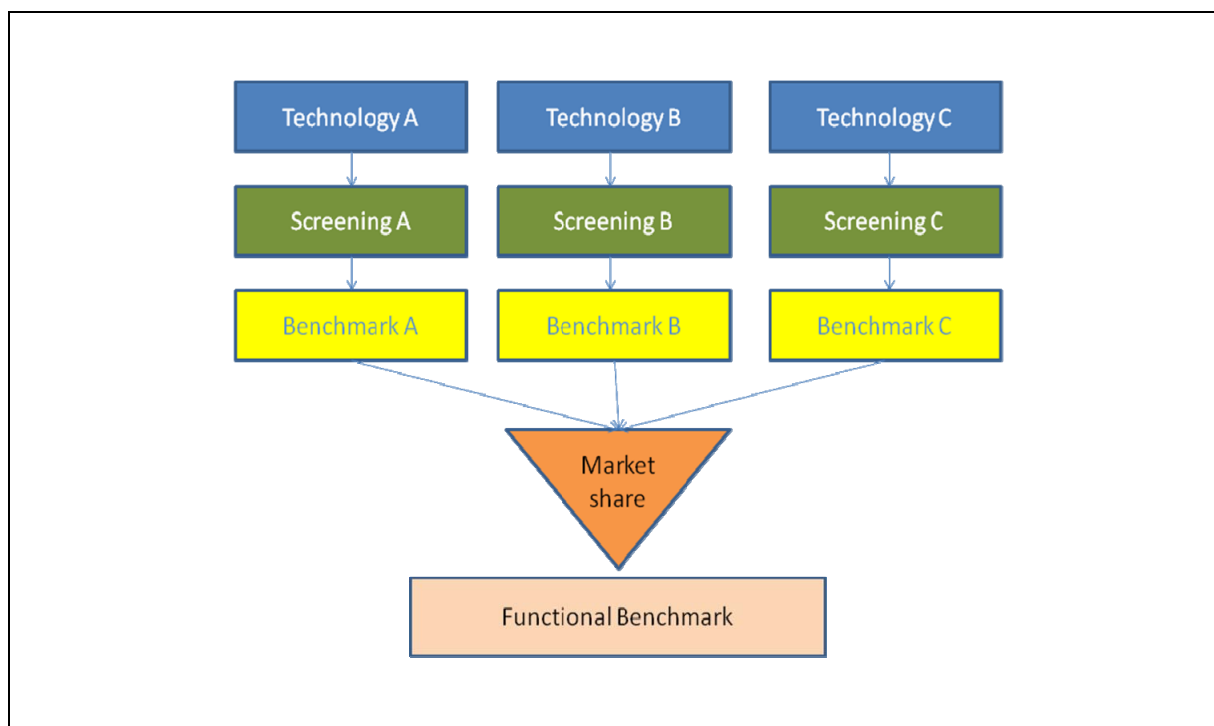
When the scope is narrow and or the technologies delivering the function are all very similar, then it is possible to use a single benchmark of the product category. In the context of the on-going EF pilot phase this is for example the case of “liquid laundry detergents”.

**Box 2 – PEFCR including more sub-categories for different applications.**

When the scope of a PEFCR is wide it could be preferable to identify sub-categories based on different applications. In the context of the on-going EF pilot phase this is, for example, the case of “battery” products, which all provide electricity but for very distinct applications varying from electro-bicycles to mobile phones. The screening shall be carried out on each technology option. The results of the screening identify the hot spots (in terms of life cycle stages, process, impacts) and provide the first element to identify the benchmark. In such cases the benchmark shall be fixed with reference each subcategory/application.

**Box 3 – PEFCR including more sub-categories but the same function/application.**

There are product categories where it is possible to identify the same function delivered by very different products/technologies. In the context of the on-going EF pilot phase this is for example the case of “hot & cold water pipe systems”. The screening shall be carried out on each technology option. The results of the screening identify the hotspots (in terms of life cycle stages, process, and impacts) and provide the first element to identify the benchmark. In such cases the benchmark shall be fixed with reference to the unit of analysis (same function performed by each technology). In addition, the Technical Secretariat can also decide to define a benchmark for each technology as part of the PEFCR.



3.3.1. Stepwise development of PEFCRs

The advantage of developing PEFCRs including a stepwise approach is to split the discussion on the detailed functional approach from the discussion on general methodological rules (that can be done with a high level functional approach and thus a larger scope).

Practically speaking, for the development of a PEFCR, four main tasks shall be carried out:

Task number	Task description	Scope
1	Complete general and informative chapters that have a limited influence on the environmental footprint (EF) calculation itself. With reference to the PEFCR template provided in Annex B to this Guidance, these chapters shall include: B.1 General information about the PEFCR B.2 Methodological inputs and compliance (except the product category definition) B.3 PEFCR review and background information B.9 Verification	This can be done with a large scope without considering the unit of analysis and benchmarking/comparison issues.
2	Define general methodological rules like allocation, land use change, etc. As much as possible those rules shall be the ones defined in the PEF guide but some further specifications may be needed in the PEFCR.	This can be done after having identified the unit of analysis but without considering benchmarking/comparison issues.
3	Carry out a PEF screening to identify the most relevant life cycle stages, the most relevant processes, and the most relevant life cycle impact	This should be done and reported at the sub-category level but within the same

	categories.	PEFCR. Another PEFCR shall only be considered when the delivered function or applications are totally different.
4	<p>Based on the results of the screening, define the requirements regarding data quality assessment and the collection of generic data and data gaps. This is one of the main issues to be solved in the PEFCR in order to simplify and harmonize the PEF approach.</p> <p>On top of the guidance on data quality assessment scoring, the PEFCR shall clearly identify :</p> <ul style="list-style-type: none"> · Primary/site-specific data that shall be collected specifically by each company. Primary/site-specific data are significant regarding each environmental indicator and accessible for companies. · Semi-specific data for which default values are proposed but company can replace it by better ones if they have it. Semi-specific data are significant regarding each environmental indicator but not easily accessible for companies. Semi-specific data can be replaced by specific data when available. Semi-specific data should be based on a worst case scenario. · Secondary/generic data for which sources shall be defined or default data provided. 	<p>This should be done and reported at the sub-category level but within the same PEFCR.</p> <p>In case semi-specific data are provided by companies they shall fulfil the same quality requirements as those reported in the PEFCR. Moreover the company shall release the authorisation to use those values for future revisions of the PEFCR.</p>
5	<ul style="list-style-type: none"> · Define all requirements needed for the benchmark, communication and comparison issues: unit of analysis and reference flow, EF impact categories indicators, use stage scenarios and End of Life. 	<p>This could be done either at the sub-category level or at the more general scope level.</p>

3.4. Definition of the "representative product"

Once the scope of the PEFCR has been agreed, the Technical Secretariat shall develop a "model" of the representative product existing in the EU market and belonging to the product category at hand.

At least one representative product (RP) has to be defined for each PEFCR as it forms the basis for the modelling of the PEF screening.

When within a product category several different applications are supported, several RPs may need to be identified. An example for different applications is batteries, which can be used e.g. for electric bikes, laptops and further different applications.

Also, when a product category is made up of various technologies which all deliver the same function, several RPs may be needed to ensure that the PEFCR will cover the data collection specific for all these technologies and to allow the identification of relevant life cycle stages and hotspots for each technology used.

In summary, the RP as the basis of the PEF screening study aims at:

- 1) Identifying relevant life cycle stages and processes;
 1. Identifying hotspots;
 - 2) Identifying relevant impact categories;
 - 3) Facilitating the comparison between products that fall within the same RP;
 - 4) Facilitating the development of benchmarks.

The representative product is the basis of the PEF screening which provides insight into the relevant life cycle stages, processes and impact categories of the product category (including the identification of processes for which primary data are requested).

In order to use the screening step to identify the hotspots, the “model” of the representative product shall cover all potential technologies/materials that fulfil the scope in order to perform relevant sensitivity analysis. Lack of available data and low market shares shall not be used as an argument for exclusions.

The representative product also contributes to the definition of the benchmark for the product category (meaning that products within the same product category that serve the same function shall be comparable to each other).

There are two options for defining the representative product:

1. It could be a **virtual** (non-existing) product. This is probably the best option when the market is made up of different technologies/materials and there is sufficient market and technical information available. The virtual product could be calculated based on average sales-weighted characteristics of all existing technologies/materials covered by the scope of the PEFCR. In addition to the sales-weighted average, other weighting sets can be explored in the pilot phase, for example weighted average based on mass (ton of material) or weighted average based on product units (pieces);
2. It could be a **real** product. This is probably the best option when the market is made up of different technologies, but incomplete market and/or technical information are available. A real product sold at EU market level may be chosen as representative product.

When the representative product is a virtual one, there is the risk that different technologies with very different market shares get mixed up and the ones with a relatively small market share might be overlooked. The same is valid for products made up of very different materials (e.g. 100% cotton or 100% silk t-shirts). At screening level this shall be avoided as relevant hotspots might not be retained.

The Technical Secretariat shall provide information about all the steps taken to define the “representative product” model and report the information gathered taking the most appropriate measure to preserve the confidentiality of data (if this is required).

When defining the “representative product” model, the Technical Secretariat should include the following elements to the extent possible:

- Bill of materials (BOM) or if more suitable, ingredients;
- A flow diagram (system boundaries) covering the entire life cycle¹⁴;
- Assumptions related to transportation systems;
- Assumptions related to use scenario (if relevant);
- Assumptions related to End of Life scenario, including recycling and re-use as relevant.

This information, if not already produced when asking the approval of the scope and representative product to the Steering Committee, shall be in any case included in the report to be sent to the Commission describing all the modelling assumptions used for the screening (see 3.5.1).

The "representative product" shall be presented and discussed with the relevant stakeholders during the first physical consultation meeting. The model and the modelling assumptions are the basis for the screening exercise.

Box 4 - Overall recommendation regarding Representative Products (RP)

- RP should be established at a level where they enable a meaningful comparison between products delivering the same function (for B2C: enable informed consumer choice);
- RP should be established at a level where they enable an identification of hotspots, relevant life cycle stages, processes and environmental impact categories without creating a bias, e.g. by neglecting technologies or applications which play a minor role in the market;
- Different RP might need to be established within a category at sub-category level, if applications are too different;
- Variation of the BoM within the same RP shall be investigated as appropriate;
- Different RP might need to be established within a category for different technologies used;
- Different RP should be kept separate, incl. developed benchmarks (if appropriate);
- If appropriate, an aggregation to a higher level can be conducted at a later stage.

3.4.1. Documents to be drafted before the 1st physical consultation

Below are summed up the documents to be drafted by the Technical Secretariat before the 1st physical consultation:

- Compiled overview of existing PCRs
- Overview report highlighting possible core conflicts between existing PCRs and PEF guides
- Description of the scope

¹⁴ The system boundary shall be defined following general supply-chain logic, including all stages from raw material extraction through processing, production, distribution, storage, use stage and end-of-life treatment of the product (i.e. cradle-to-grave). The system boundaries shall include all processes linked to the product supply chain relative to the unit of analysis.

- Description of the representative product(s)
- Description of the model for the PEF screening studies

Within two months from the 1st physical consultation the Technical Secretariat shall upload on the pilot wiki web-page a report analysing the results of the consultation (including a table addressing the main comments received and how they have been dealt with), the main decisions taken and the next steps.

3.5. PEF Screening¹⁵

The PEF screening is necessary because it helps focussing data collection activities and data quality priorities for the PEFCR supporting study. The screening shall be carried out by the Technical Secretariat based on the “representative product”.

The objective of the screening is to pre-identify the following key information:

- Most relevant life cycle stages;
- Most relevant processes;
- Preliminary indication about the most relevant life cycle impact categories
- Data quality needs;
- Preliminary indication about the definition of the benchmark for the product category/sub-categories in scope.

The Technical Secretariat is encouraged to also perform the screening study by using top-down approaches, like for example Environmentally Extended Input Output (EEIO). In such cases, or for any alternative approach for screening proposed by the Technical Secretariat, a screening study shall also be done with the baseline approach as described in the PEF Guide) and the results of the two studies shall be compared.

The method chosen for the screening should be documented and discussed with the EF Pilot Steering Committee.

The PEF screening can be based on readily available generic data (life cycle inventory databases, e.g. from commercial databases) fulfilling the data quality requirements as defined in the most updated version of the PEF Guide. In particular, for the screening step a minimum “fair” quality data rating is required for data contributing to at least 90% of the impact estimated for each EF impact category, as assessed via a qualitative expert judgement. In an iterative approach with communication and feedback from the Technical Secretariat to all the participating stakeholders, the accuracy and representativeness of the model and data shall be improved. The model can be adjusted by introducing new processes/activities to be included. Generic data used in the first round can be replaced with specific data and other more representative (specific) databases along the process.

The results of the screening should be subject to sensitivity analysis and be also part of the PEFCR review process.

¹⁵ The requirements related to the PEF screening are not fully in line with what is included in the PEF Guide. This deviation is intended and it is admissible only in the context of the EF pilot phase.

3.5.1 Screening report

Each Technical Secretariat shall send to the Commission a screening report that will be analysed with the support of the Environmental Footprint Technical Helpdesk. The objective of this check is to support the work of the Technical secretariats helping them to identify at an early stage any deviation from the requirements of included in the PEF Guide or in the most updated version of this PEF Guidance document.

The screening report shall contain following information:

- Definition of the unit of analysis and reference flow.
- Flow diagram for each life cycle stage with a clear link between all processes involved + one global system boundary diagram
- For each life cycle stage, a table with all processes involved with a clear identification of the source of the Resource Use and Emission Profile and calculation of the reference flow for each process¹⁶.
- Assumption about the use, re-use (if appropriate) and end-of-life scenario including the way the EoL formula is applied
- Treatment of any multi-functionality issues encountered in the PEF modelling activity
- Results of the sensitivity analysis with a clear identification of the minimum-maximum values used to perform it
- Results for each EF impact category with a split per life cycle stage

In case the Commission identifies any relevant issue, it will address them bilaterally with the concerned Technical Secretariat. If there are divergent opinions that cannot be reconciled, the issue will be raised at Technical Advisory Board level and, if necessary at Steering Committee level.

The detailed screening report shall be considered confidential by the Commission, thus it will be shared only with members of the Commission and with the EF Technical Helpdesk.

The decision from a Technical Secretariat not to produce such report or to produce incomplete reports would imply the application of condition b) listed in paragraph 2.7.

3.6. Draft PEFCR

Based on the results of the PEF screening and the related virtual consultation, the Technical Secretariat shall produce a draft PEFCR.

The draft PEFCR is the guiding document to carry out the PEFCR supporting studies. It shall be drafted according to the requirements included in the PEF Guide and the Template provided in Annex B to this guidance document.

¹⁶ It is important to report the average value but also the min-max situation to be used to perform a sensitivity analysis for the hot spot identification. the amount of process shall also be expressed per reference flow and the calculation shall be detailed. Example: if the weight of a 2 liter bottle is 200g and the reference flow is one liter, then the amount of process expressed per reference flow is 100g (200/2).

In the draft PEFCR all impact categories shall be included (and therefore used in the PEFCR supporting study). The draft PEFCR shall be revised based on the results of the PEFCR supporting studies. In the final PEFCR - and only for final products - the number of impact categories to be addressed may be reduced.

3.7. End of Life (EoL) formula

In the framework of the EF pilot phase, when dealing with multi-functionality of products, the use of the EoL formula provided in Annex V to the PEF method shall always be used as baseline approach.

Alternative formulas may also be tested as “additional” compared to the baseline approach. A non-exhaustive list of possible formulas to be tested is provided below:

$$1) \left(1 - \frac{R_1}{2}\right) \times E_V + \frac{R_1}{2} \times E_{recycled} + \frac{R_2}{2} \times \left(E_{recyclingEoL} - E_V^* \times \frac{Q_S}{Q_P}\right) + \frac{R_3}{2} \times (E_{ER} - LHV \times X_{ER,heat} \times E_{SE,heat} - LHV \times X_{ER,elec} \times E_{SE,elec}) + \left(1 - \frac{R_2}{2} - \frac{R_3}{2}\right) E_D - \frac{R_1}{2} \times E_D^*$$

$$2) \text{ 100:0 approach (e.g. EN 15804:2012)}$$

$$EF = (1 - R_1) \times E_V + R_1 \times E_{recycled} + R_3 \times (E_{ER} - LHV \times X_{ER,heat} \times E_{SE,heat} - LHV \times X_{ER,elec} \times E_{SE,elec}) + (1 - R_2 - R_3) \times E_D$$

$$3) \text{ 0:100 approach (e.g. BPX 30-323-0 for open loop system recycling if the raw materials market is in disequilibrium):}$$

$$EF = E_V + R_2 \times \left(E_{recyclingEoL} - E_V^* \times \frac{Q_S}{Q_P}\right) + R_3 \times (E_{ER} - LHV \times X_{ER,heat} \times E_{SE,heat} - LHV \times X_{ER,elec} \times E_{SE,elec}) + (1 - R_2 - R_3) \times E_D$$

In case alternative EoL formulas are also tested, a sensitivity analysis shall be carried out by the Technical Secretariat and the results documented and discussed during the consultation phases.

The end-of-life scenario shall be based on the real situation currently in place and not on possible improvement of the market and the treatments. Recycling rates should be defined per application, rather than per material. For recycling, substituted virgin material and efficiency of the recycling process shall be defined.

3.8. Data quality requirements

Data quality requirements shall be clearly specified in the PEFCR. Data quality requirements apply to both specific¹⁷ and generic data¹⁸.

¹⁷ Specific data refers to directly measured or collected data representative of activities at a specific facility or set of facilities. It is synonymous to “primary data”.

¹⁸ Generic data refers to data that is not directly collected, measured, or estimated, but rather sourced from a third-party life-cycle-inventory database or other source that complies with the data quality requirements of the PEF Guide.

The PEFCR may specify additional criteria for the assessment of data quality (compared to the default criteria). Moreover, the PEFCR may specify more stringent data quality requirements, if appropriate for the product category in question.

The PEFCR shall specify which data quality score should be assigned with relation to technological, time and geographical representativeness. These data quality requirements shall also be part of the PEFCR review.

3.9. Secondary data

For the PEF screenings and the PEFCR supporting studies carried out in the context of the EF pilot phase the Technical Secretariat can use any source of secondary data which is compliant with the data quality requirements set in the PEF Guide and in this implementation guidance. The final PEFCR shall provide the exact secondary data to be used in the calculation of the PEF profile to avoid differences in PEF studies stemming from the use of different secondary data.

For all final PEFCRs developed during the EF pilot phase secondary data shall be provided in one of the following form (in hierarchical order):

1. as reference to free and public LCA data compliant with PEF data quality requirements;
2. as reference to free and public LCA data that are part of the Life Cycle Data Network¹⁹;
3. as reference to free and public LCA data that are compliant with the ILCD entry level requirements;
4. as default data (provided by the Technical Secretariat).

Any deviation from the hierarchy above shall be duly justified in the final PEFCR. Any other source of secondary data shall not be used in the final PEFCR.

3.10. Data confidentiality management

Business data, gathered during the PEFCR development, could be of confidential nature because of competitive business aspects, intellectual property rights or similar legal restrictions. Such confidential data shall not be made public under any circumstance.

The collection and management of data gathered during the process will be dealt by the EF Technical Helpdesk. Where asked by industry stakeholders, they shall sign non-disclosure data agreements. During the PEFCR development process the stakeholders shall agree in which form the data provided during the process shall be published.

3.11. Documents to be submitted to the 1st virtual consultation

The documents to be submitted to the 1st virtual consultation are:

- PEF screening report, and

¹⁹ http://eplca.jrc.ec.europa.eu/?page_id=134

- First draft PEFCR (no data sources specified)

The PEF screening report, apart from the quantification of the screening results, shall include the following information:

- description of the supply chain (processes) and scenarios (upstream, downstream, transport),
- results of the sensitivity analysis on allocation options,
- where and why generic data are to be preferred to specific data in the foreground system (if relevant),
- the environmental impact category selection process,
- additional environmental information (if needed),
- data gaps.

Within two months from the 1st virtual consultation the Technical Secretariat shall upload on the pilot wiki web-page a report analysing the results of the consultation (including a table addressing the main comments received and how they have been dealt with), the main decisions taken and the next steps.

3.12. PEFCR supporting studies

The Technical Secretariat shall encourage the participants/stakeholders to carry out at least 3 PEF studies compliant with the latest version available of the PEF Guide and with any specific requirement included in the draft PEFCR^{20,21}, comprising however all environmental impact categories and having a full coverage in terms of life cycle stages and processes. These studies are referred hereafter as PEFCR supporting studies. They shall be based on existing products as currently sold in the European market.

PEFCR supporting studies as well as PEF studies based on a PEFCR shall contain the information which life cycle stages of the product are based on data that has been developed in line with the PEFCRs and explicitly state the version of the related EF Guidance.

The goal of the PEFCR supporting studies shall clearly state that it is done as supporting evidence to the PEFCR development and the intended audience. The studies should always be done under the assumption that their result would be used to contribute to the development of a PEFCR that could support comparisons or comparative assertions intended to be disclosed to the public.

The PEFCR supporting studies will be used to test the pertinence and implementability of the draft PEFCR including, but not limited to, the identified most relevant environmental impacts, issues related to data collection and quality, verification requirements. Moreover, the uncertainty analysis carried out on the results of the PEFCR supporting studies may

²⁰ In case of conflicting requirements between the PEF Guide and this Guidance, the former prevails over the latter unless differently agreed between the Steering Committee and the Commission (on a case by case basis).

²¹ In case of conflicting requirements between the PEF Guide and this Guidance, the former prevails over the latter unless differently agreed between the Steering Committee and the Commission (on a case by case basis).

contribute to the identification of appropriate performance classes (where relevant and appropriate).

The results of the PEFCR supporting studies shall remain confidential, unless they are used for communication purposes or unless differently agreed between the company performing the study and the Commission. A report should be produced that describes the PEFCR supporting study without disclosing any confidential information. In case of confidential information, this should be reported in an annex (Confidential Report - see 8.2.4 in the PEF Guide) that only the Commission, the external auditors and the EF Helpdesk shall have access to.

The information therein shall only be used for activities related to the implementation of the EF pilot phase in the period 2013-2017 .

3.12.1. Identification of the most relevant Impact Categories

The results of the PEFCR supporting studies, in combination with the results of the screening, shall be used to define the most relevant impact categories. This selection is done based on the results of a contribution analysis and by applying the normalization and weighting factors (see 3.7.2).

For B2C communication at least the 3 most relevant impact categories shall be included. For intermediate products all the environmental categories shall be addressed. The rationale for the choice done shall be adequately justified in the final PEFCR.

For B2B communication the minimum number of relevant impact categories shall be decided based on the outcomes of the PEFCR supporting studies and any additional environmental information available, also taking into account the comments gathered during the consultation stages. In case of intermediate products, all impact categories shall be included. Any deviation from this general rule shall be adequately justified in the final PEFCR.

3.12.2. Normalisation and weighting

In the framework of the EF pilot phase the use of normalization and weighting factors is tested.

The normalization factors to be used are listed in Annex A to this Guidance.

Until there is an agreed set of European weighting factors, all impact categories shall receive the same weight (weighting factor = 1).

Alternative weighting approaches may also be tested as “additional” compared to the equal weighting one (baseline approach). In case alternative weighting systems are also tested, a sensitivity analysis should be carried out and the results documented and discussed during the consultation phases²².

²² In this context the recently released reports related to the indicator work by CML might be helpful to identify further options to address the weighting of impact categories. They are to be found on JRC website at: <http://lct.jrc.ec.europa.eu/pdf-directory/ReqNo-JRC67216-LB-NA-24985-EN-N.pdf>

3.12.3 Documents to be drafted before the 2nd consultation

The Technical Secretariat shall submit the 2nd draft of the PEFCR into the 2nd consultation (both virtual and physical). This document shall be drafted according to the template provided in Annex B, with at least the following documents completed:

- Final draft PEFCR (including benchmark, data availability and quality, verification rules, and classes of performance where appropriate and relevant);

Within two months from the 2nd consultation the Technical Secretariat shall upload on the pilot wiki web-page a report analysing the results of the physical consultation (including a table addressing the main comments received and how they have been dealt with), the main decisions taken and the next steps.

3.13. Confirmation of the benchmark and definition of classes of environmental performance

The benchmark values for the retained impact categories, preliminary defined on the basis of the screening study, can be further refined during the consultation process.

The PEFCR, building on the results of the PEFCR supporting study and the comments gathered through the consultation phases, shall describe the uncertainties common to the product category and should identify the range in which results could be seen as not being significantly different in comparisons or comparative assertions.

The identification of classes of environmental performances shall always be done, but their use by the PEFCR supporting studies within the EF pilot phase remains voluntary.

Within the framework of the EF pilot phase each Technical Secretariat should define 5 classes of environmental performance (from A to E, with A being the best performing class). The benchmark always represents class C. The definition of the remaining classes should be based taking into account the estimated spread (including uncertainty) around the benchmark results, which might differ from impact category to impact category and an estimation of the expected environmental performance for the best and worst in class products. Existing Best Available Technique Reference Documents (BREF), EU legislation and ISO type I labels are some examples of sources of information that the Technical Secretariat may use to define best and worst in class performances.

All relevant assumptions regarding the identification of the benchmark and the classes of environmental performance shall be documented, be part of the virtual consultation process and of the review process.

3.14. Disclosure & Communication

The results of a PEF study carried out in compliance with the PEF Guide or, where existing, with a specific PEFCR, are called “PEF-Profile”. Whenever a PEFCR exists for a certain product category, then its requirements shall be fulfilled if the information included in the PEF-profile is meant to be used for comparisons or comparative assertions.

The PEF-profile could be communicated in different forms, depending on the typology of communication (B2B or B2C) and the objective of the communication. For example, the

PEF-profile could be communicated through a PEF external communication report, a PEF performance tracking report, a PEF declaration or a PEF label²³.

In the context of the EF pilot phase, the PEFCRs shall also include a specific section describing the 3-4 best ways of communicating the results of a PEF-profile to different stakeholders (B2B and B2C as appropriate). The choice of these communication vehicles shall be part of the consultation process led by each Technical Secretariat.

The chosen communication vehicles shall be tested at least by the companies carrying out the PEFCR supporting studies during the last phase of the pilot phase. More details about this element of the pilot will be provided at a later stage.

3.14.1. PEF external communication report

The PEF external communication report shall include all reporting elements indicated in chapter 8 of the PEF Guide. The Technical Secretariat shall propose and justify any deviations from the default reporting requirements, and any additional and/or differentiating reporting requirements that depend on, for example, the type of applications and the type of product being assessed.

The PEFCR shall specify whether the PEF results shall be reported separately for each of the selected life cycle stages.

3.14.2. PEF performance tracking report

PEF communication may take the form of a PEF performance tracking report, which allows for the comparison of a PEF profile of a specific product over time with respect to its original or previous PEF profile.

The communication of the performance tracking report shall be based on a specific PEF study and PEFCR requirements for that product category (if existing). When communicating a change in a PEF profile to the public, the main contributions to the change shall be specified.

Communication of performance tracking may be made when they are due to:

- a) Improvements made by the reporting organization,
- b) Selection of other suppliers,
- c) Deliberate and verifiable improvements made by suppliers,
- d) Improvements in the use stage and in the end-of-life stage made by improved product design or an improved end-of-life procedure,
- e) Changes due to process improvements.

Changes due to seasonal changes²⁴ or finding better secondary data sources shall not be reported as performance changes.

The communication may be supported by a graphical representation of the processes in the life cycle of the product, which allows an understanding of the system boundary, the contribution to the PEF profile and the changes included.

²³ The different communication options are mainly based on ISO/DIS 14067.2 (October 2012)

²⁴ Seasonal changes are e.g. seasonal variation in sales of a product that can impact production rate and hence efficiency of the production plant, seasonal variation in agricultural production.

3.14.3. PEF declaration

The PEF profile can be communicated through a PEF declaration which is intended to be either publicly available or not. The PEF declaration shall be based on the PEFCR for that product category and should be supported by a specific PEF study.

The PEF declaration should include:

- a) Identification and description of the organization making the declaration,
- b) Product identification (e.g. trade name, model number, other common names of the product),
- c) Description of the function, technical performance, intended use of the product, expected service life time, etc,
- d) Characteristics of the product relevant to the specification of the delivery or unit of analysis: dimensions, mass, physical and chemical properties,
- e) Description of the final application, if it is an intermediate product,
- f) PEFCR identification,
- g) Date of publication and period of validity of the declaration,
- h) Results of the PEF calculation at least for the EF impact categories identified as relevant in the PEFCR,
- i) Additional environmental information,
- j) information about substances to be declared (content, emissions) as necessary to allow risk assessment,
- k) Information on which life cycle stages are not considered, if the declaration is not based on an PEF study covering all life cycle stages,
- l) Statement that environmental declarations from different programmes may not be comparable,
- m) Web site address where explanatory material and all supporting information related to the calculations done is available,
- n) Information about the verification.

With appropriate justification, requirement j) does not apply to proprietary information relating to materials and substances covered by intellectual property rights or similar legal restrictions. It may also not be appropriate for declarations concerning intangible products.

3.14.4. PEF label

The use of a PEF label, i.e. a label reporting the classes of performances for the most relevant environmental impact categories, may be tested in the framework of the EF pilot phase. The layout and content of the label will be discussed and agreed in the Steering Committee.

This Guidance will be revised with further specifications once any decision concerning a PEF label will be taken.

3.15. Verification of the PEF profile

The PEFCR review and the independent verification of the PEF profile (including the way it is communicated) are two separate processes (for the PEFCR review see Section 4).

The verification of the PEF profile shall be conducted before its public release. The verification may take place in several ways, for example by on-site checking, reviewing calculations, mass balance calculations, or cross-checks with other sources. Depending on the

specific application and communication option, different typology of verification may be required.

The verification is mandatory whenever the PEF profile (or part of it) is intended to be disclosed to the public intended to be used for comparisons or comparative assertions; or intended to be used as supporting evidence in any mandatory or voluntary legislation (e.g. green public procurement). In all these cases the verification shall be carried out by an external independent third party (verifier).

The verification procedure shall be transparent. The independent verifier shall generate a report documenting the verification process, while adhering to the obligations covering rules for data confidentiality. This report shall be available to any person upon request.

The objectives of the verification are:

- To assess compliance of the PEFCR supporting study and the PEF profile with the PEF Guide and the reference PEFCR;
- To verify the traceability and validity of the information/data coming from suppliers and other forms of secondary data used in the PEF calculations. This task might involve cross-check comparison of documents (e.g. invoices, bills of sale, etc.) both provided by the organisation producing the PEF profile and the suppliers. For the most relevant data it might also be required to perform on-site document checks and inspections at the place where the supplier is located.

The verification of the PEF profile shall cover the following main areas:

- The underlying data collected and used for the calculations (both primary and secondary);
- The way the LCA-based calculations have been carried out to comply with the calculation rules described in the PEF Guide and in the reference PEFCR;
- The presentation of environmental performance included in the PEF profile;
- Other additional environmental information included in the PEF profile, if any.

In verifying the underlying data of the resource use and emissions profile, the verifier shall examine that:

- The unit processes are defined as specified in the reference PEFCR;
- The source of input and output data (that is, referenced literature, vendor-supplied databases, and LCI databases) used for a unit process/module of specified unit processes are at least of the quality requested in the reference PEFCR;
- All relevant information is documented for each unit process/information module/PEFCR module, i.e. being consistent and understandable to enable an independent evaluation of the relevance of the data in accordance to the reference PEFCR. In particular the verifier should check that any additional documentation of the LCA process data (sources, correspondence, traceable references to origin, and so forth) is provided, especially if this information influenced LCA process data selection;
- The Data Quality Requirements are met.

In case of existence of secondary data in the LCA results which have been already verified according to rules in the PEF Guide, these shall not be subject for further verification regarding the criteria methodological consistency, completeness and uncertainty. However the appropriateness of the use of these data for the specific product needs to be verified. This verifications needs to cover the aspects of time, geographical and technological representativeness of the secondary data for the use in the specific PEF profile.

In verifying the results from the impact assessment, the verifier shall check that the calculations are made in a correct way based on the resource use and emissions profile and recommended characterisation, normalisation and weighting factors.

With regard to checking information of the resource use and emissions profile, the verifier shall make use of sample checks for the unit processes/information modules/PEFCR modules to check their conformance to original data sources. The organisation shall provide the verifier with information about the underlying data and calculations carried out upon request.

Sample checks may preferably be carried out for those unit processes/information modules/PEFCR modules having a significant influence on the resource use and emissions profile, and randomly chosen unit processes/information modules/PEFCR modules.

When a large variety of products (e.g. series of products) are subject for verification, sampling methods for the LCA study shall be used. If a specific sampling method has been developed by an organisation, this method shall be verified by a third party verifier and specified in the PEF profile.

Renewed verifications shall preferably focus on changes in the background conditions for the PEF profile that might have occurred or other types of changes with regard to the organisation's internal procedures with relevance to the declaration. When there is a variation higher than +/-10 % in one or more data reported in the PEF profile, the verification should focus on parameters and data generating the variation.

The details of the verification approaches that will be tested during the EF pilot phase will be available at a later stage. The results of the preparatory study on this issue are available²⁵.

3.15.1 Competences of the verifier

Please refer to the PEF Guide, section 9.3. During the EF pilot phase, the verifier qualifications shall be considered as indicative only.

3.16. Time validity of the PEFCR

The validity of each PEFCR should reflect the market situation, legislation and other quality aspects and it should be related to the innovation cycle for the product category covered. A validity of four years should be the standard, but deviations shall be considered and discussed during the virtual consultation stages.

²⁵ *Investigating options for different compliance systems for PEF and OEF declarations*, http://ec.europa.eu/environment/eussd/smgp/pdf/Compliance_finalreport.pdf

4. PEFCR Review

The Technical Secretariat shall set up an independent third-party panel composed of a minimum of three members (i.e., a chair and two members) for the PEFCR review. The panel should comprise of at least one LCA experts (preferably with a background on the product category under consideration and product-related environmental aspects), one representative from NGOs, and one industry expert. One member shall be selected as the chair. The panel members shall not have conflicts of interests on branded products and cannot be members of the Technical Secretariat.

4.1. Reviewer qualifications

Please refer to the PEF Guide, section 9.3. During the EF pilot phase, the reviewer qualifications shall be considered as indicative only.

4.2. Procedure for review

With the assistance of the Technical Secretariat, the PEFCR Review Panel shall meet to discuss the PEFCR and perform its review. Comments shall be generated and may be general, editorial or substantive. The general comments apply to overarching issues affecting the entire PEFCR whereas editorial and substantive comments may apply to specific sections within the PEFCR.

Within a time period agreed upon by the PEFCR Review Panel and the Technical Secretariat not to exceed 30 days, the PEFCR Review panel shall meet to generate their comments that are compiled in the Review Report.

The Review Report shall be sent to the Technical Secretariat for their review and discussion. A copy of the report shall also be sent to the PEF Pilot Steering Committee.

4.3. Review criteria

The reviewers shall investigate whether the PEFCR has been developed in accordance with the requirement provided in this Guidance and supports creation of credible and consistent PEF profiles. In addition, the following criteria shall also apply:

- The PEFCR is consistent with the guidelines provided in the PEF Guide,
- Unit of analysis, allocation and calculation rules are adequate for the product category under consideration,
- Selected LCIA indicators and additional environmental information are appropriate for the product category under consideration and the selection is done in accordance with the guidelines stated in this Guidance and the PEF Guide,
- Both LCA-based data and the additional environmental information prescribed by the PEFCR give a description of the significant environmental aspects associated with the product.

4.4. Review report

A review report should be drafted based on all the comments made by the review panel with proposal for changes.

4.5. Addressing reviewer comments

The Technical Secretariat shall review the PEFCR Review Panel's comments/proposals and develop a response for each. Using the PEFCR Review Report, the Technical Secretariat generates responses that may include:

- Acceptance of the proposal: change draft PEFCR to reflect proposal,
- Acceptance of the proposal: change draft PEFCR with modification to original proposal,
- Supporting commentary why the Technical Secretariat did not agree with the proposal,
- Return to PEFCR Review Panel with further questions on the comments/proposals.

If any comment response is not accepted by the PEFCR Review Panel, then the review panel report and the response of the Technical Secretariat shall be sent to the PEF Pilot Steering Committee and the issues resolved at that level.

4.6. Documents to be drafted before the 2nd consultation

The Technical Secretariat shall submit the final PEFCR into the 2nd consultation. This document shall be drafted according to the template provided in Annex B, including all annexes thereof.

Within two months from the 2nd consultation the Technical Secretariat shall upload on the pilot wiki web-page a report analysing the results (including a table addressing the main comments received and how they have been dealt with). This document shall be attached to the final PEFCR and sent to the Steering Committee for final approval.

ANNEXES

Annex A – Normalization factors

In the context of Life Cycle Assessment (LCA), according to ISO 14044 (ISO 2006), normalisation is an optional step of Life Cycle Impact Assessment (LCIA) which allows the practitioner expressing results after characterization using a common reference impact. This supports the comparison between alternatives using reference numerical scores. The normalisation factors express the total impact of a reference region for a certain impact category (e.g. climate change, eutrophication, etc.) in a reference year. The same applies to Environmental Footprint.

This annex provides normalisation factors (NFs) for the implementation of the EU Environmental Footprint (EC - European Commission, 2013). The calculation of normalisation factors is based on a refinement and update of the 'Resource Life Cycle indicators' dataset (EC - JRC, 2012b), used as inventory. These indicators were developed within the Life Cycle Indicators framework (EC - JRC, 2012a) in the context of the Roadmap to a resource efficient Europe, within the Flagship initiative - A resource-efficient Europe of the Europe 2020 Strategy. The aim of the Life Cycle Indicators is to monitor the environmental impacts associated with European production and consumption, as well as waste management within the EU, by including also impacts from trade (imports and exports).

The Life Cycle Indicators are based on the collection of data related to territorial emission (domestic inventory) complemented with process based LCA for representative traded goods. In fact, the indicators have been designed to provide information on the environmental impacts linked to European consumption and production. The 'apparent consumption' approach is adopted by accounting for both the domestic extractions of resources and emissions in the EU27 as well as the impacts due to international trade (both imports and exports). For the domestic inventory, the data gaps related to emissions and resource use have been overcome adopting a series of estimation strategies (details on estimation strategies are reported in EC-JRC, 2013).

Both for the domestic inventory and for those resulting from modelling the trade, the ILCD set of impact assessment methods and related characterisation factors (EC- JRC, 2011) have been applied for calculating normalisation factors. The elementary flows adopted for the calculation of the normalisation factors are also derived in particular from the Life Cycle indicators for Resources (EC - JRC, 2012b). Compared to the original report, updated data for 2010 at EU 27 level and at country level has been used.

The full report describing the main methodological steps towards the calculation of the normalisation factors will be soon available, and the link to the document will be provided in this document. The original goal of the study was to develop normalisation factors that are based on an apparent consumption approach as developed in the prototype life cycle indicators work. The impacts related to imported goods should be added and the impacts related to exported goods should be deducted from the domestic (territorial) figures for EU27. The consideration of international trade in normalisation factors would allow getting a more comprehensive picture of the actual environmental impacts due to EU production and consumption processes.

However, the study has indicated that at present the level of methodological development and data availability are deemed not sufficiently mature for the results of impacts associated with trade to be recommended for use as normalisation values in the context of Environmental

Footprint or Life Cycle Assessments. The main reasons are: i) significant variability in the results applying different methods for selection and up-scaling of products; ii) ratio import to domestic seems to be underestimated.

The recommendation for normalisation factors in the Environmental Footprint context is therefore to rely on domestic figures for 2010 as they have been identified as the more robust basis for this kind of application.

Table A.2 provides the recommended normalisation factors for the EU 27 related to domestic inventory in 2010. Per person Normalisation factors have been calculated using Eurostat data on EU 27 population in 2010 (Eurostat, 2013a).

Table A.2 Recommended Normalisation factors for EU 27 (2010) based on domestic inventory

Impact category	Unit	DOMESTIC	Normalisation Factor per Person (domestic)
Climate change	kg CO ₂ eq.	4.55E+12	9.10E+03
Ozone depletion	kg CFC-11 eq	1.08E+07	2.16E-02
Human toxicity- cancer effect	CTUh	1.84E+04	3.68E-05
Human toxicity- non cancer effect	CTUh	2.66E+05	5.32E-04
Acidification	mol H+ eq	2.36E+10	4.72E+01
Particulate matter	kg PM2.5 eq	2.41E+09	4.82E+00
Freshwater Ecotoxicity	CTUe	4.36E+12	8.71E+03
Ionizing radiations	kg U235 eq	5.64E+11	1.13E+03
Photochemical ozone formation	kg NMVOC eq	1.59E+10	3.18E+01
Terrestrial eutrophication	molc N eq	8.73E+10	1.74E+02
Freshwater eutrophication	kg P eq	7.41E+08	1.48E+00
Marine eutrophication	kg N eq	8.42E+09	1.68E+01
Land use	kg C deficit	3.15E+14	6.30E+05
Resource depletion water*	kg water eq	3.95E+10	7.89E+01
Mineral, fossil & renewable resource depletion	kg Sb eq.	5.03E+07	1.00E-01

* please notice that the PEF Guide use m³ (a factor 1000 more than the Normalisation Unit kg

Annex B – PEFCR Template

Template for Product Environmental Footprint Category Rules in the Pilot Phase

This template is mainly based on the following documents:

- Product Category Rule Template, Version 1.0, April 16, 2013²⁶ and
- Product Environmental Footprint (PEF) Guide (2013)²⁷

²⁶ accompanying the ‘Guidance for Product Category Rule Development’ Guidance for Product Category Rule Development, version 1.0. 2013. Ingwersen, W., Subramanian, V., editors. The Product Category Rule Guidance Development Initiative. <http://www.pcrguidance.org>

²⁷ European Commission (2013). "Annex II: Product Environmental Footprint (PEF) Guide to the Commission Recommendation on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (2013/179/EU)."

Product Environmental Footprint

Category Rules

[Insert product category here]

B.1 Introduction

The Product Environmental Footprint (PEF) Guide provides detailed and comprehensive technical guidance on how to conduct a PEF study. PEF studies may be used for a variety of purposes, including in-house management and participation in voluntary or mandatory programmes.

This PEFCR shall be used in parallel with the PEF Guide. Where the requirements in this PEFCR are in line with but at the same time more specific than those of the PEF Guide, such specific requirements shall be fulfilled.

The use of the present PEFCR is optional for PEF guide in-house applications, it is recommended for external applications without comparison/comparative assertions, while it is mandatory for external applications with comparisons/comparative assertions.

In the latter two application contexts, organisations are to fulfil the requirements of this PEFCR document from section B.7 to B.10.

B.1 General information about the PEFCR

B.1.1 Technical Secretariat

[List with names and affiliations of members of Technical Secretariat]

B.1.2 Consultation and stakeholders

[Cumulative description of participants and statistical figures related to each consultation. Mention the address of the web page related to the PEFCR development]

B.1.3 Date of publication and expiration

Version number:

Date of publication/revision:

Date of expiration:

[Provide the date of publication of the PEFCR and date of expiration. Write out the date (e.g., 25 June 2015) to avoid confusion of the date format]

B.1.4. Geographic region

[Identify the name of the country or countries for which the PEFCR is valid]

B.1.5 Language(s) of PEFCR

[PEFCR shall come in English. If the PEFCR is made available in other languages, then title, revision number and date of issue should be clearly indicated in the translated PEFCRs as well as the name of the translator(s) and its/their accreditation number, if possible, or name of the (public) institution providing the translation].

The original in English supersedes translated versions in case of conflicts.

B.2 Methodological inputs and compliance

[List the PEF Guide that the PEFCR is in conformance with, including year of publication or version. List compliance with other global guidances (e.g ISO 14040-44, BPX 30-323...)]

[Identify the registration/identification number (if applicable), PCR name, program operator name (if applicable), and web-link to the PCR that was referenced while creating this PEFCR]

B.3 PEFCR review and background information

B.3.1 PEFCR review panel

[Provide the name, contact information and affiliation of the chair and the other members of the review panel]

B.3.2 Review requirements for the PEFCR document

[Specify the requirements set for the critical review of this PEFCR document]

B.3.3 Reasoning for development of PEFCR

[Describe application contexts of PEFCR. Describe any attempt to harmonize PEFCR or align with existing PCRs]

B.3.4 Conformance with the PEFCR Guidance

[Summarize the conformity assessment against the ‘Guidance for the Implementation of the EU PEF during the Environmental Footprint (EF) pilot phase’].

B.4 PEFCR scope

B.4.1 Unit of analysis

[Provide Unit of analysis. Specify requirements regarding the reference flow.]

B.4.2 Representative product(s)

[Provide a short description of the representative product, by summarizing information reported in Annex I, where the steps taken to define the “representative product” shall be detailed.

In this section, specify if the representative product is a real or a virtual product.]

B.4.3 Product classification (NACE/CPA)

[Based on the product category, provide the corresponding Classification of Products by Activity (CPA) (minimum two-digit, based on the latest CPA list version available). Where multiple production routes for similar products are defined using alternative CPAs, the PEFCR shall accommodate all such CPAs. Identify the sub-categories not covered by the CPA, if any]

B.4.4 System boundaries – life-cycle stages and processes

[Specify all attributable life-cycle stages and processes that are part of the product system. (The co-products, by-products and waste streams should be clearly identified) Justify any deviation from the default cradle-to-grave approach (e.g. exclusions of life cycle stages and processes), referring to the results of the screening and approval processes for decisions taken.]

System diagram

[Provide a system diagram clearly indicating the processes that are included in the product system. Provide a second diagram indicating the organizational boundary, to highlight those activities under the control of the organization, indicate with more detail the processes that are on the interface of the investigated product system (processes that are included) and other product systems (excluded processes) or the environment]

System boundaries - upstream processes/scenarios

[Specify upstream scenarios (e.g. raw material production, raw material extraction). If necessary, a more detailed description can be provided in Annex IV (optional).

System boundaries - downstream processes/scenarios

[Specify downstream processes in terms of selected scenarios for e.g. use phase and end of life. If necessary, a more detailed description can be provided in Annex V (optional).]

B.4.5 Selection of the EF impact categories indicators

[If applicable, identify the most relevant EF impact categories for the product category in scope].

All the background information concerning the rationale for the selection of the most relevant impact categories shall be provided in Annex XI to the PEFCR.

B.4.6 Additional environmental information

[Specify which additional environmental information that shall/should be included. Reference all methods used to report additional information.]

All the background information concerning the rationale for the selection the additional environmental information shall be provided in Annex XI to the PEFCR.

B.4.7 Assumptions/limitations

[Report product category-specific limitations and define the assumptions necessary to overcome these.]

B.5 Resource use and emission profile

B.5.1 Screening step

- [i) Specify processes to be included, as well as associated data quality and review requirements;
ii) Specify for which processes specific data are required, for which the use of generic data is either permissible or required.]

B.5.2 Data quality requirements

[Provide guidance on data quality assessment scoring with respect to time, geographical and technological representativeness. Specify if there are any additional criteria for the assessment of data quality (compared to default criteria reported in the PEF Guide)]

B.5.3 Requirements regarding foreground specific data collection

[Specify:

- i) Unit processes for which primary specific data are required (e.g. foreground processes) and how they are to be collected.
ii) Define the data collection requirements for the following aspects for each site:
- Data collection coverage
 - Location of data collection (domestically, internationally, ...)
 - Term of data collection (year, season, month, ...)
 - When the location or term of data collection must be limited to a certain range, provide a justification and show that the collected data will serve as sufficient samples.]

[Provide a list of substances/elementary flows in the foreground system that shall be collected. This list shall be added as an Annex VIII;

Include one or more examples for compiling foreground data, including specifications with respect to:

- Substance lists for activities/processes included,
- Units,

- Nomenclature for elementary flows (in line with ILCD Data Network entry level requirements).]

B.5.4 Requirements regarding background generic data and data gaps

[Specify:

- i) Unit processes for which secondary generic data may be used (e.g. background processes)
- ii) Secondary generic data for each process.
- iii) Semi-specific data for which default values are proposed but company can replace it by better ones if they have it. Semi-specific data are significant regarding each environmental indicator but not easily accessible for companies. Semi-specific data can be replaced by specific data when available. Semi-specific data should be based on a worst case scenario.
- iv) Provide generic substance to replace the actual substance in the BOM based on relevant properties (e.g. physical, chemical, processing, etc).

All generic and semi-specific data shall be specified in Annex IX

B.5.5 Data gaps

[Specify:

- i) potential data gaps and guidance for filling these gaps,
- ii) Sectorial conservative default value to be used to fill the gaps]

B.5.6 Use stage

[Specify:

- The use-stage scenarios to be included in the study,
- The time span to be considered for the use stage. The lifetime shall be determined according to verifiable technical performance and should not be related to other alike parameters (e.g. if a paint can technically last 10 years, the lifetime to consider is 10 years even if the sector knows that users paint their home every other 5 years. However, for transparency reasons, a reference to scenarios that are considered to be close to real use (e.g. inform that a repaint is expected by the average user pattern every 5 years) should be made,
- The use phase scenario shall be based on the best-known average situation. In case of different user patterns, more than one scenarios should be provided.]

B.5.7 Logistics

[Specify transport, distribution and storage scenarios to be included in the study together with the underlying assumptions (e.g. distribution in central Europe, distribution in south Europe, distance to port, etc)]

B.5.8 End-of-life stage

[Specify end-of-life scenario, if part of the system boundary. Specify underlying scenario assumptions e.g. waste sorting in central Europe or waste incineration in plants of central Europe, etc]

B.5.9 Requirements for multifunctional products and multiprocess allocation

[Specify multi-functionality solutions and clearly justify with reference to the PEF multi-functionality solution hierarchy. Where subdivision is applied, specify which processes are to be sub-divided and how to subdivide the process by specifying the principles that such subdivision should adhere to. Where system expansion is used, specify which processes are added to the system. Where allocation by physical relationship is applied, specify the relevant underlying physical relationships to be considered, and establish the relevant allocation factors or rules. Where allocation by some other relationship is applied, specify this relationship and establish the relevant allocation factors or rules.]

B.6 Benchmark and classes of environmental performance

[Identify the environmental performance benchmark for the product category, based on the results of the screening on the representative product and the information gathered through the stakeholders consultation. Provide a description of the benchmark, by summarising information reported in Annex III.

Identify classes of environmental performance. Ideally, there should be 5 classes of environmental performance (from A to E, with A being the best performing class and E being the performance of the representative product, i.e. the benchmark), by taking into account the estimated spread (including uncertainty) around the benchmark results, which might differ from impact category to impact category.

BREF, EU legislation and ISO type I labels are example of sources of information that may be used to define best and worst performance.

B.7 Interpretation

[Describe the hot-spots and the most relevant impact categories of the product category. Describe uncertainties common to the product category. The range in which results could be seen as not being significantly different in comparisons or comparative assertions shall be identified. Provide an assessment on whether this PEFCR can be used for comparing performances of similar products.]

B.8 Reporting, Disclosure and Communication

[Specify and describe the 3-4 best ways of communicating the results of a PEF-profile for this product category to different stakeholders (B2B and B2C as appropriate)]

B.8.1 PEF external communication report

In case a PEF external communication report is listed among the communication options, the PEFCR shall:

- i) Specify and justify any deviations from the default reporting requirements presented in chapter 8 of the PEF Guide, as well as specify and justify any additional reporting requirements and/or differentiate reporting requirements depending on, for example, the type of applications of the PEF study and the type of product being assessed.
- ii) Specify whether the PEF results shall be reported separately for each of the selected life cycle stages.]
- iii) Specify the format for reporting any additional environmental information.]

B.8.2 PEF performance tracking report

In case a PEF performance tracking report is listed among the communication options, the PEFCR shall:

[Specify and describe the requirements for a PEF performance tracking report, allowing for the comparison of a PEF profile of a specific product over time with respect to its original or previous PEF profile]

B.8.3 PEF Declaration

In case a PEF declaration is listed among the communication options, the PEFCR shall specify and describe the requirements, as listed in chapter 3.10.3 of this guidance].

B.8.4 PEF label

In case a PEF label is listed among the communication options, the PEFCR shall specify and describe the requirements for the use of the label, its content and its layout.

B.9 Verification

[Specify the requirements for verification to be used, depending on the intended application and communication vehicles used].

B.10 Reference literature

[Provide references]

B.11 Supporting information for the PEFCR

Open stakeholder consultations

[A link to a web-page]

PEFCR Review Report

Additional requirements in standards not covered in PEFCR

[If a PEFCR is designed to be compliant with more than one standard, list requirements for any claim that intends to be compliant with these standards]

Cases of deviations from the default approach

[Where deviations from the default approach (as given in the PEF or in this PEFCR) is made, justification, results, interpretation and recommendation to the European Commission and the PEF-practitioner should be included.]

B.12 List of annexes

Annex I – Representative product

Report describing the *representative product*. Document all the steps taken to define the model.

The following elements shall be included:

- Specify if it is a real or a virtual product
- Description of the product and of sub-products (where applicable)
- Bill of materials (BOM) if appropriate
- System boundary diagram covering the entire life cycle. This shall include, at a minimum, foreground (direct) and upstream (indirect) activities associated with the product. The PEF boundaries shall by default include all supply-chain stages from raw material acquisition through processing, production, distribution, storage, use and EoL treatment of the product. All processes within the defined PEF boundaries shall be considered. Explicit justification shall be provided if downstream (indirect) activities are excluded
- Assumptions related to transportation scenario
- Assumptions related to use scenario (if relevant)
- Assumptions related to End of Life (if relevant)

Annex II – Supporting studies

Reports, without disclosing any confidential information²⁸, describing the at least 3 PEF supporting studies that shall be carried out in compliance with the latest version of the PEF guide and with the included draft PEFCR.

²⁸ Confidential information can be dealt with in a separate way in line with chapter 8.2.4 in the PEF guide
Fourth element: Confidential Report: “The Confidential Report is an optional reporting element that shall contain all those data (including raw data) and information that are confidential or proprietary and cannot be made externally available. It shall be made available confidentially to the critical reviewers.”

They shall be based on existing, real products. The studies should always be done under the assumption that its result would be used for a PEFCR that could support comparisons or comparative assertions intended to be disclosed to the public.

The report on the supporting studies will be used to:

- Test the draft PEFCR
- Check the relevance of the identified the most relevant environmental impacts
- Check the relevance of the environmental performance benchmarks
- Check the relevance of the classes of environmental performance related to the specific product category in scope of the PEFCR (if feasible)

Annex III – Benchmark and classes of environmental performance

Document all the steps taken to define the benchmark, as a result of the 2nd consultation.

Document all the steps taken to define the classes of environmental performance, as a result of the 2nd consultation.

Annex IV – Upstream scenarios (optional)

Report describing upstream scenarios and processes as a result of the 1st virtual consultation.

Annex V – Downstream scenarios (optional)

Report describing downstream scenarios and processes as a result of the 1st virtual consultation.

Annex VI – Normalisation factors

List normalisation factors to be used in the PEFCR pilot phase

Annex VII – Weighting factors

List alternative weighting approaches tested as “additional” compared to the baseline approach (i.e. all impact categories shall receive the same weight in the baseline approach).

Annex VIII – Foreground data

Including a list of mandatory substances/elementary flows in the foreground system to be collected.

Annex IX – Background data

List of generic and semi-specific data that shall be used in the PEFCR

Annex X – EOL formulas

List of alternative formulas tested as “additional” compared to the baseline approach specified in the PEF Guide (if appropriate).

Report of the sensitivity analysis carried out by the Technical Secretariat.

Annex XI – Background information on methodological choices taken during the development of the PEFCR

Provide detailed information about the justification for methodological decisions taken (e.g. selection of impact categories, additional environmental information, etc)

Annex C – Register of changes

Date of change: 26/05/2014

The list of major changes in version 3.4 compared to the previous version of the same Guidance (v. 3.4) are listed below:

- A definition of benchmark in the context of the EF pilot phase has been introduced;
- Clarification on the role of the Technical Advisory Board (TAB) and the EF Technical Helpdesk;
- Important changes in the scope of PEFCR (granularity of scope, number of representative products, etc);
- Clearer instructions on how to define the representative product(s);
- Stepwise approach to the development of PEFCRs;
- Changes in Table 2 (reference timing);
- A technical check on the PEF screening results done by the EC has been added at Month 9 and a description of the screening report is provided;
- Intermediate approval of the draft PEFCR (based on the screening report) by the SC with possibility to ask for a reconsideration of the scope and/or representative product(s);
- The 2nd physical and 2nd virtual consultations have been merged into a single one;
- The requirements copied from the PEF Guide have been deleted in order to avoid repetition and make the document slimmer;
- Requirements regarding the competences of the verifier and reviewer qualifications were set to indicative only;
- Normalisation factors have been released in Annex A;
- Annex B (PEFCR template) has been adapted to some new/modified requirements in the Guidance;
- The conditions to stop a pilot have been clarified.