Basic Concepts on Ecodesign

UNIT 11: Environmental Product Declaration. Communication

Funded by the Erasmus+ Programme of the European Union

Ecoinnovation Skills for European Designers, Project number: 562573-EPP-1-2015-1-SI-EPPKA2-SSA.

Objectives

- Know what an Environmental Product Declaration is and its main characteristics and minimum content.
- Know what a Product Category Rule is and its use.

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11.1 What is an Environmental Product Declaration?

BY DEFINITION

Is a standardised document or report which provides quantified and verifiable data on the environmental performance of a product, material or service.

"An Environmental Product Declaration is a document which displays the results of a Life Cycle Assessment"

Type III environmental declaration objectives:

- To provide data based on the LCA and additional data of environmental aspects of a product. It allows to assess environmental impacts along the entire LCA of a product.
- To help buyers and users to compare products with actual data: facilitate objective, comparable and credible communication of the environmental performance of products.
- To promote environmental performance improvement.

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11.1 What is an Environmental Product Declaration?

APPLICABLE STANDARD TO ISSUE AN EPD

- ISO 14025:2006. Environmental labels and declarations. Type III environmental declarations. Principles and procedures. Includes the required standards for LCA:
  - ISO 14040:2006. Environmental Management. Life Cycle Assessment. Principles and framework.
  - ISO 14044:2006. Environmental Management. Life Cycle Assessment. Requirements and guidelines.
- Initiative "Product Environmental Footprint Guide & Pilots" 2013-2016, from the European Commission Joint Research Centre.

  Establishes a common methodology at a European level for the calculation and communication of the Product Environmental Footprint (PEF).

  In the framework of this initiative, concrete rules that affect different groups of products are developed and piloted (PEFCR, Product Environmental Footprint Category Rules).
- There is also a possibility for creating sectoral EPD.

  Show average data of a product extracted from the organisations data. Disadvantage: sectoral EPDs are worse rated than specific EPDs from a certain product.

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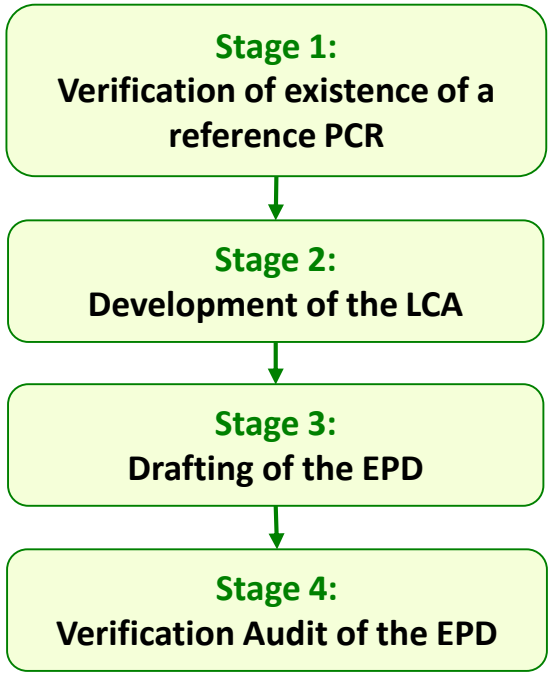
11.2 Development and Verification of an EPD

Stages for the development and verification of an EPD



Standards applied for the development of an EPD:

- For the LCA: ISO 14040 and 14044 and what is described in the standard ISO 14025 for the development of an EPD.
- Additionally, specific requirements established in the referenced PCR for this group of proudcts will be applied.

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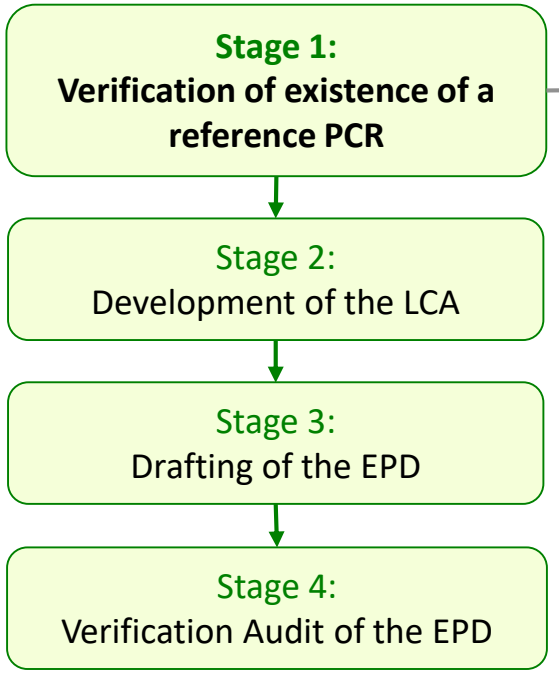
11.2 Development and Verification of an EPD
11.2.1Stage 1. Verification of Existence of a Reference PCR

Stages for the development and verification of an EPD



PCR "Product Category Rules":
Are documents that gather minimum necessary data to include in the LCA study, the impact methodology in use and the EPD content.

More detailed information in subsection 11.3 of this unit.

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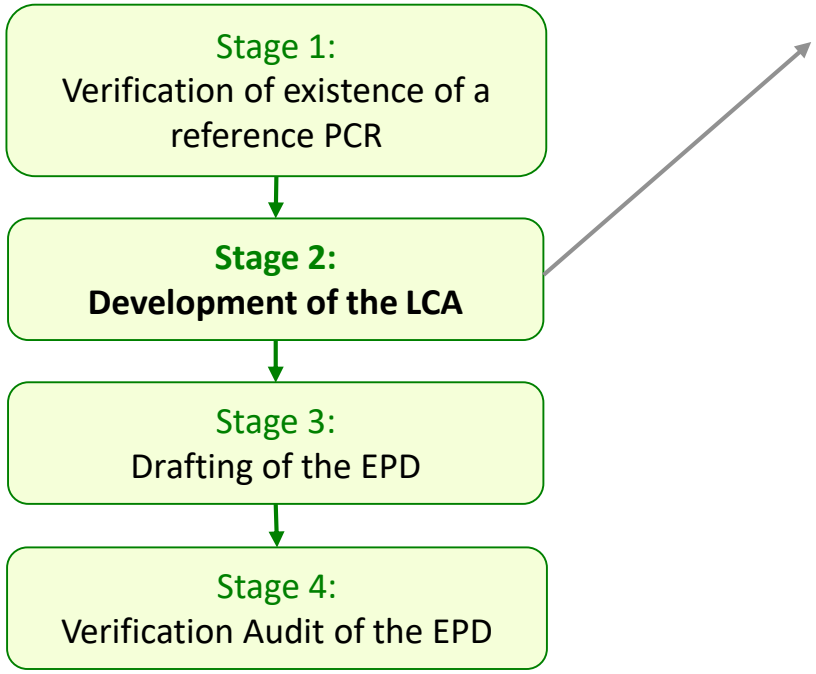
11.2 Development and Verification of an EPD
11.2.2 Stage 2. Development of the LCA

Stages for the development and verification of an EPD



Stages of the LCA:

1. Goal and scope definition

Definition of objectives, scope, system boundaries and functional unit of the LCA study.

2. Inventory analysis

Elaboration of the inventory of the system's life cycle.

3. Environmental impact assessment

The inventory is translated into indicators of envirnomental impact.

4. Interpretation

Interpretation of results and drafting of the LCA report.

More detailed in Unit 4 of this course.

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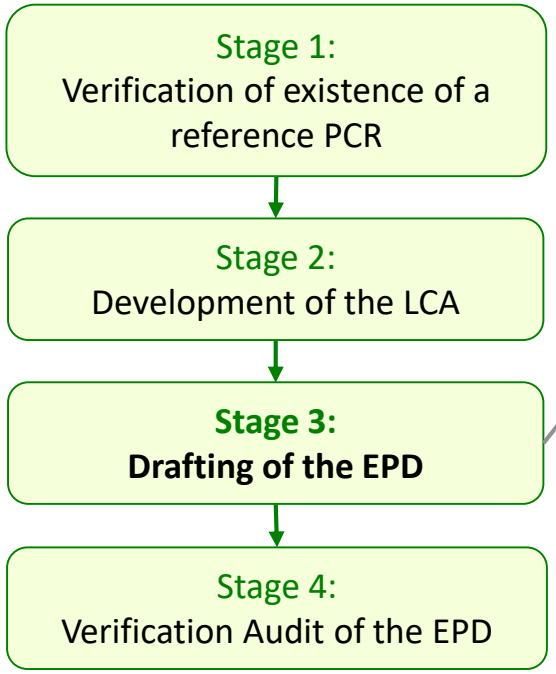
11.2 Development and Verification of an EPD
11.2.3 Stage 3. Drafting of the EPD

Stages for the development and verification of an EPD



In the standard ISO 14025 EPDs have a specific format and include a series of parameters according to PCR.

General content of an EPD:

-Identification and description of the organisation.
-Product description and identification.
-Programme number, programme manager address, logotype and website.
-PCR ID.
-Date of issue and period of validity.
-LCA, LCI data or information modules.
-Additional environmental data.
-Declaration content including materials and substances to declare.
-Data on the not-considered stages.
-Mention that different programmes environmental declarations may not be comparable.
-Information to locate the explanatory material.
-Information of the PCR reviewer and the PCR.
-Information of the verifier of the third party when communication goes between business and consumer.

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11.2 Development and Verification of an EPD
11.2.3 Stage 3. Drafting of the EPD

Practical example: product EPC content

Stage 3:
Drafting of the EPD

EPD STRUCTURE

Sections:

- **General information**
- **Product description**
- **Data for calculation of LCA**
- **Life Cycle stages**
- **LCA results**

"LCA RESULTS"

- Used programme to calculate the results.

"GENERAL INFORMATION"

- Name and address of the manufacturer.
- Used PCR.
- Date of issue of the declaration and period of validity: 5 years.

"LIFE CYCLE STAGES"

- Simple Flow chart of processes included in LCA.
- Flow chart of the manufacturing process.
- Description of the four stages of the product's life cycle.

"PRODUCT DESCRIPTION"

- Product description, use and technical characteristis.
- Product identification by name (including code and product).
- Product main components and/or materials description.

"DATA FOR CALCULATION OF LCA"

- Reference functional unit and mandatory stages of LCA.
- Product category rules.
- Assigned geographic coverage.
- Reference shelf life.

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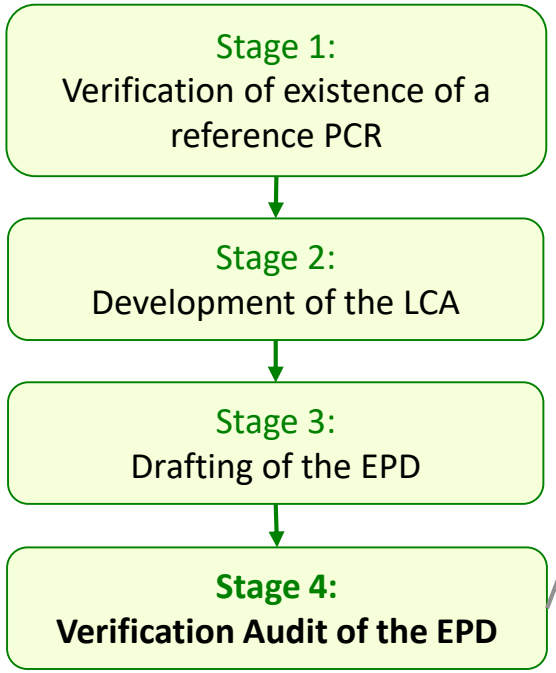
11.2 Development and Verification of an EPD
11.2.4Stage 4. Verification Audit of the EPD

Stages for the development and verification of an EPD



VERIFICATION CONSISTS OF 2 STEPS:

- DOCUMENTAL REVIEW (may be distance-performed)

  Objective: determine compliance with the reference standards and PCR requirements of the reference applicable.

  The organisation drafts a systematic summary and thorough report with LCA documents and additional data.

  (This report is confidential)

  The auditor sends a pre-verification report.

- VERIFICATION AUDIT (in situ)

  Objective: assess “in situ” the quality, traceability, veracity and reliability of the LCA and EPD data, as well as the concurrence with the requirements of the reference PCR.

  The verification of an EPD must be carried out by an independent and recognised third party. Once the audit has ended, the audit team issues a report of final verification and manages the issue of the certification of validation with the Administrator of the Programme. Certification validity: 3-5 years/update.

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11.3 Product Category Rules (PCR)
11.3.1 General Picture

WHAT ARE PRODUCT CATEGORY RULES (PCR)?

A PCR is:
A document issued by an EPD verification programme (a body), which specifies with detail how to carry out a LCA and an EPD for specific products.

"The existence of such rules (PCR) allows comparison between different products based on the established requirements".

- EPD verification programmes are created according to the requirements established by standard ISO 14025.
- To verify an EPD, a PCR applicable to the product is needed in the first place. It could be developed if there is not such a PCR (by manufacturer and interested third parties).
- When an EPD is verified, the auditor of the certification body reviews that PCR application is satisfied. LCA study and EPD are developed and drafted to fulfil the reference standard, PCR.
- After verification, an external auditor grants the use of a symbol added to the report, which works as an environmental certificate.

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11.3 Product Category Rules (PCR)
11.3.2 Developer bodies of PCR for DAP

- PCR are developed by bodies to set common rules in the market for the elaboration and drafting of EPD.
- Every verification programme provides its own PCRs.
- This kind of systems are suitable for data exchange between companies and their clientes, is very technique and detailed.

Most known EPD verification programmes

"The international EPD Consortium" (Sweden)

"The Japan Environmental Management Association for Industry-JEMAI" (Japan)

"Korean Ecoproducts institute KOEKO» and the «Korean Ministry of Environment" (Korea)

"Norwegian EPD Foundation" (Norway)

""Institute Construction and Environment (IBU) e.V" (Germany)

"Asociación francesa P.E.P., ecopassport® " (France)

"Colegi d'aparelladors, arquitectes técnics i enginyers d'edificació de Barcelona" (Spain)

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11.3 Product Category Rules (PCR)
11.3.3 Content of a PCR

The content of a PCR is usually the following:

- Scope: detailed definition of the products within the scope.
- Functional unit: definition of functional unit of a LCA study.
- Boundaries of the system under study.
- Accepted cut-off criteria.
- Details on the chosen data to include and bear in mind in each stage of a product's life cycle.
- Selection of data to apply and use, compatible and accepted data sets for the study.
- Classification of environmental impact categories for displaying the results of the study.
- Other type of parameters and scenarios (use, end-of-life) to consider in the LCA study.
- Environmental data which must be depicted in the EPD.

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11.3 Product Category Rules (PCR)
11.3.4 Development of a PCR

PCR development is carried out under internationally accepted methodology and based on an open, transparent and participatory process among:

- Firms and organisations in cooperation with other parties, as trade associations and organisations of interest.
- Bodies that collaborate with LCA/EPD experts in close collaboration with firms and profesional associations and organisations of interest.
- Firms or individual organisations in case they present the necessary internal competition or decide to hire external experts in LCA/EPD.
    - The audit team issues a “pre-verification report”.

“Every EPD verification programme provides its own PCRs"

“Content standards for these PCRs have arisen among different EPD verification programmes in order to achieve compatibility among PCR"

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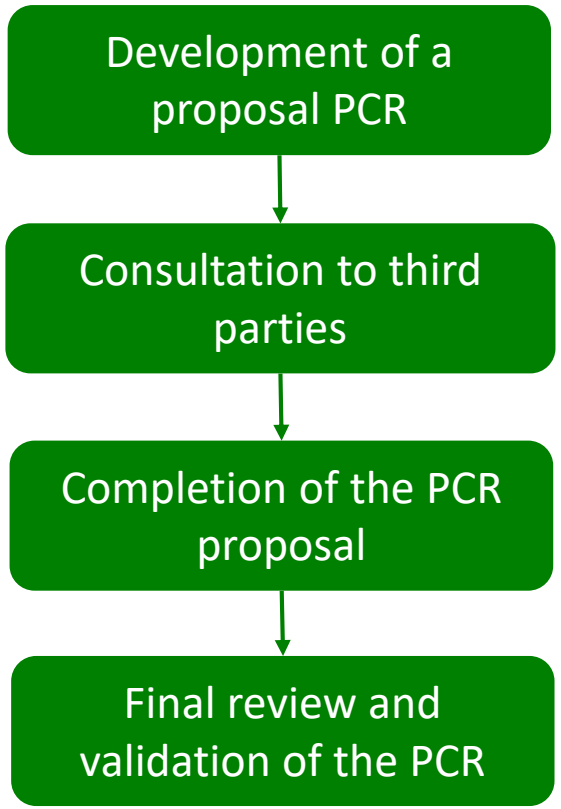
11.3 Product Category Rules (PCR)
11.3.4 Development of a PCR

STAGES FOR THE VALIDATION OF A PCR



- Development of a proposal PCR by the declared technical committee.
- Consultation to interested parties to comment or discuss the proposed requirements, thus, ensuring a wide acceptation and later introduction of the PCR. Consultation in forums, meetings, etc.
- Completion of the PCR proposal by the team moderator and issuance of a report with the most important comments received, indicating the parties involved and how the information was handled.
- Final review of the PCR and formal validation by the corresponding technical committee.

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11.3 Product Category Rules (PCR)
11.3.5 Validity of a PCR document

PCR VALIDITY PERIOD

- A PCR document is valid for a specific period of time, usually five years.

PCR UPDATE

- When the PCR has expired, the document must be updated to be used again to generate new EPD or to register an update of an existing EPD with a prolonged validity. Before issuance of the update, the interested parties are consulted.

Example:

International EPD® system

-Provides a data set for searching the available PCR documents inside the system framework, including those in a drafting stage, validated or subjected to review and update.

-Gives all interested parties the possibility to comment every development stage of the PCR during drafting –consultation and review and the update of documents.

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Thank you for your attention

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