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DEVELOPING SCIENTIFICALLY-SOUND PRODUCT ENVIRONMENTAL FOOTPRINT CATEGORY RULES: DEVELOPMENT OPTIONS, CHALLENGES AND IMPLICATIONS

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ABSTRACT

The Environmental Footprint (EF), launched by the European Commission's Joint Research Centre in cooperation with Directorate-General for the Environment, provides general guidance for comprehensive, scientifically-sound and consistent environmental assessment of products and organisations. The aim of the EF is to ensure science-based decision support for industry and policy making. To make the general-level rules of the EF more relevant and applicable to specific product categories and sectors, the EF guides provide requirements to develop the so called PEF Category Rules (PEFCRs) and OEF Sector Rules (OEF SRs). PEFCRs and OEF SRs are seen as corner stones for consistent and robust assessments instrumental to specific environmental communication forms, namely business-to-business (B2B) and business-to-consumer (B2C) intended to be used for comparisons. The focus of this paper is on the key challenges in developing PEFCRs.

INTRODUCTION AND BACKGROUND

The European Commission's "Roadmap to a Resource Efficient Europe" (European Commission 2011) proposes ways to increase resource productivity and to decouple economic growth from both resource use and environmental impacts, taking a life-cycle perspective. One of its objectives is to: *Establish a common methodological approach to enable Member States and the private sector to assess, display and benchmark the environmental performance of products, services and companies based on a comprehensive assessment of environmental impacts over the life-cycle ('environmental footprint')* (European Commission 2011).

The Environmental Footprint (EF), launched by the European Commission's Joint Research Centre in close cooperation with Directorate-General for the Environment, provides specific guidance for comprehensive, scientifically-sound and consistent environmental assessment of products and organisations. The EF rules are reported in two guidance documents:

- the Product Environmental Footprint (PEF) Guide, applicable to any goods and services,

- the Organisation Environmental Footprint (OEF) Guide, applicable to any organisations.

The PEF and OEF Guides were recently published as annexes of the recommendation linked to the Communication “*Building the Single Market for Green Products - Facilitating better information on the environmental performance of products and organisations*” (European Commission, 2013b)

To make the general-level EF rules even more relevant and applicable to specific product categories and sectors the EF guides provide requirements to develop so called PEF Category Rules (PEFCRs) and OEF Sectoral Rules (OEFSRs). PEFCRs and OEFSRs are seen as crucial especially for consistent and robust business-to-business (B2B) and business-to-consumer (B2C) communication intended to be used for comparisons.

The focus of this paper is on the PEFCRs. This paper highlights the key challenges in the process to develop PEFCRs and takes into account amongst other recent developments led by the US EPA (Ingwersen & Subramanian, 2013) in this area.

MATERIALS AND METHODS

PEFCR shall specify the following model parameters¹ (European Commission, 2013a);

- system boundaries and related processes/activities to be included;
- downstream scenarios;
- use-stage scenarios and associated time span for the use stage;
- transport, distribution and storage scenarios;
- end-of-life scenarios.

Based on the requirement in the PEF Guide, the PEFCR shall 1) specify for which processes specific data shall be collected; 2) specify the requirements for the collection of specific data, and 3) define the data collection requirements for each site for:

- Target stage(s) and the data collection coverage;
- Location of data collection (domestically, internationally, specific factories, and so on);
- Term of data collection (year, season, month, and so on);
- When the location or term of data collection must be limited to a certain range, provide a justification for this and show that the collected data will serve as sufficient samples.

Regarding reporting of environmental impact, the PEFCRs shall identify the most relevant EF impact categories and justify any exclusion of the default EF impact categories and also identify additional environmental information, if any (European Commission, 2013a).

When preparing new PEFCR, both relevant sector-specific guidance documents and PCR from similar schemes already in place are to be taken into account, such as;

- The ENVIFOOD Protocol by the European Food Sustainable Consumption and Production (SCP) Round Table (Bligny et al., 2012)

¹ This list is not exhaustive.



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- European Standard EN 15804: 2012 - Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products (EN 15804, 2012)
- Supplementary requirement (for horticultural products and for seafood) to the PAS2050 (PAS 2050-1, 2012; PAS 2050-2, 2012)
- GEDNets PCRs for Environmental Product Declaration (EPD) (GEDnet, 2012) and the PCR library (2012) (Related to (ISO 14025, 2006))
- Parts of the Repository of good practice in France (c.f. (AFNOR BP X 30-323, 2011))

In addition, the European Commission is part of the Product Category Rule Guidance Development Initiative, a collaborative work for developing guidance for PCR development, an open initiative with public ownership and global validity, although initiated in the USA. (W. Ingwersen & Subramanian, 2013). Where PCR and other sectorial guidance exist, both relevant sector-specific guidance documents and PCR from similar schemes already in place are to be taken into account.

Another important pillar of the coming PEFCR development will be the open process with stakeholders involvement.

RESULTS

A first step to be taken is to define how the product categories and related sectors should be defined. Also Ingwersen and Stevenson (2012) acknowledge the difficulties of defining product group and use the example of two detergent product, liquid and powder, both able to clean textiles, but which are produced in different supply chain.

The product categories can be defined based on e.g.: a) Material characteristics or specific product, such as product category “plastic”, “steel”, “glass”, “bottle of drinking water”, “personal car”, “plane”, b) A specific function, such as “beverage container”, “transport of 1 person over 1 km”, “transport of 1 tonne over 1 km”, “1 liter of drinking water at consumer”, and c) A specific need, such as “housing”, “eating”, “transport”

The main aim of developing PEFCRs is to enable citizens to make informed choices by comparing the environmental performance of products fulfilling the same function. The definition of the product category should therefore take into account that comparability needs are to be ensured between e.g. different material producers like plastic, steel, aluminum which all produce beverage containers. This calls for a functional approach (where the function or functional unit of the product/organization) is essential. A too close (small) category definition would result in a very large number of PEFCR/OEFSRs, in its extreme renders the category / sector rules unimportant. At the same time, the boundaries must ensure that different products capable of fulfilling the same need(s) can be compared against each other and therefore belong to the same category.

According to the PEF Guide, the product shall be encoded and defined using the Classification of Products by Activity (CPA) scheme (Eurostat, 2013). A first approach to define product categories would therefore be to investigate if the CPA scheme has a structure, i.e. detecting where comparable products belong to the same group in the CPA scheme. Unfortunately, this is not always the case. For example, a cup made of plastic and a cup made of ceramic belongs to different CPA codes. Therefore, a combination of different CPA codes in one product category may be necessary.



CONCLUSIONS

PEFCRs aim at simplifying the conducting of PEF studies. When developing PEFCRs, the appropriate scope of product categories needs to be sufficiently broad in order to enable meaningful comparisons of products providing the same function on the one side. On the other side, the scope of product categories should remain focused enough to be manageable from a process point. Different approaches can be used, namely: a need-based approach, a functional approach and a material-based approach. Each of these has pros and cons which need to be taken into account in the open stakeholder process to develop PEFCR. An example of a very wide product group is the food products. The ENVIFOOD protocol of the European Food Sustainable Consumption and Production (SCP) Round Table was developed to be in line with the PEF Guide and can serve as a starting point to develop PEFCRs for food and drink products. Currently, the European Food SCP Round Table working group 1 is discussing how to best define product categories and related PEFCRs below the level of the ENVIFOOD Protocol as well as the PEF guide.

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