1. Introduction and policy background

In 2008, the European Commission (EC) adopted a Communication on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan (EC 2008). The Council of the European Union issued conclusions on the Action Plan and as part of this document it invited the Commission "taking into account Member States’ experience, to start working as soon as possible on common voluntary methodologies facilitating the future establishment of carbon audits for organisations and the calculation of the carbon footprint of products" (Council of the EU 2008).

As a first step in responding to this invitation, the EC initiated a study on Company GHG Emissions Reporting (ERM for EC 2010). The study identified over 80 company GHG reporting methods and initiatives and analysed 30 of them more in detail. It concluded that there was a failure to set minimum standards and that the major schemes lacked compatibility between each other and with policy frameworks in Europe; and that there was no comparability between company reports. It pointed out that as a consequence, companies, investors...
and policy makers may face problems when using and comparing the multiplicity of company GHG reporting methods and initiatives. 

Analysis in preparation of the Commission Communication Building the Single Market for Green Products (EC 2013) confirmed these issues for environmental reporting. It also drew the attention to the need for completeness and relevance, thus for analysis that encompasses all relevant life cycle stages and all relevant environmental impacts for a product or organisation, avoiding the risk of improving an environmental indicator while worsening another.

The EU Organisation Environmental Footprint (OEF) method was developed against this background, with the assistance of the EC’s Joint Research Centre (JRC). The method relied on features of existing methods and initiatives (JRC 2010), aimed to reflect overall environmental performance along the life cycle and was developed in a way to be compatible with the Product Environmental Footprint (PEF) method.

2. Method development: from OEF to OEFSRs

In the report a variety of methods and standards (or drafts thereof) for quantifying the environmental performance of organisations were analysed. For corporate footprinting it was established that existing methodological guidance was considerably less advanced and prescriptive than for product footprinting, and that only a few of the corporate footprint methodologies were based on a comprehensive life cycle approach. Due to the high diversity of organisations regarding size and structure, it was expected that the development of prescriptive and technically detailed life cycle based guidance for organisations would be more challenging compared to products. However, it also was seen as feasible to provide for a greater degree of methodological specificity than existing standards and approaches for organisations with the objective to increase the coverage of relevant environmental issues, consistency of methodological application and robustness of results (for more details see also Pelletier et al 2013).

The two methods were published in an EC Recommendation on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (EC 2013b).

The related EC Communication Building the Single Market for Green Products (EC 2013c) set out accompanying actions, including a three-year Environmental Footprint (EF) pilot phase.

Recently and in the context of greenhouse gas emissions, the European Court of Auditors (ECA 2014) has identified the potential benefits of a consistent and comprehensive life cycle based approach for organisations, especially regarding a harmonised approach for calculating and reporting all relevant indirect emissions of an organisation.

The main features of the OEF method are reported in Pelletier et al 2013, here only a few essential aspects of the OEF are highlighted:

- It is based on Life Cycle Assessment and provides comprehensive evaluation along the entire life cycle (from raw materials to end of life / waste management);
- It provides comprehensive coverage of potential environmental impacts (no ‘single issue’ method);
- It is designed similar to the Product Environmental Footprint, however there are also differences to be taken into account for example regarding the functional unit approach and regarding system boundaries;
- It links the impacts of an organisation to operations that are necessary to produce the product/service portfolio offered by the organisation;
- The organisational boundaries are defined so as to encompass all facilities and associated processes that are fully or partially owned and/or operated by the Organisation and that directly contribute to the provision of the Product Portfolio (“control” approach);
- The OEF boundaries are defined following general supply-chain logic. This shall include, at a minimum, site-level (direct) and upstream (indirect) activities associated with the Organisation’s Product Portfolio.

The OEF boundaries by default should follow a cradle-to-grave approach. However exclusion of downstream life cycle stages, e.g. use stage of intermediate products or products with an undeterminable fate is possible, if explicit justification is provided:

Calculating the OEF does not require that all individual products included in the product portfolio of the Organisation have to be analysed. The OEF can be calculated using aggregated data representing the flows of resources and wastes that cross the defined OEF boundaries.

The PEF and OEF methods are in principle applicable
to all products, services and organisations, therefore can only set a general framework. For becoming more specific, robust and relevant, but also for making comparisons, they require the development of the Product Environmental Footprint Category Rules (PEFCRs) and Organisation Environmental Footprint Sector Rules (OEFSRs), respectively.

3. Pilot phase for OEFSR development

Especially for the OEF, given the diversity of businesses in terms of size and product/service portfolios, sector-specific guides were seen as necessary to provide more detailed and prescriptive guidance above and beyond that which will be possible in the OEF Guide. The ongoing pilot phase will test innovative features of PEFCRs and OEFSRs and solutions to challenges such as:

- creating common calculation rules for a product group or sector that are representative of the EU market of the product or sector;
- how to identify the most relevant environmental impacts, life cycle stages and processes for a given product group or sector (related to the product portfolio of organisations in that sector);
- test whether it is at all meaningful to compare the life cycle environmental performance of organisations and whether benchmarks can be defined;
- how to ensure the availability of high quality secondary data and establish common rules on where specific, semi-specific and where and which generic (secondary) data shall be used;
- tackle methodological issues where a common approach is needed across sectors and product groups (e.g. use and generation of electricity, transport from retailers to the homes of consumers, packaging, etc.);
- gather sufficient information to confirm or change approaches required in the PEF and OEF methods (e.g. goal and scope, system boundaries, allocation approaches including the Endo-of-Life formula, impact assessment methods including characterisation factors, etc.);
- how to obtain a simplification for the future users of the PEFCRs and OEFSRs, especially for small and medium-sized enterprises;
- how to ensure the quality and reliability of environmental footprint information whilst avoiding excessive cost or complexity of verification systems;
- how to best communicate life cycle environmental performance in a way that is clear, understandable, not misleading, reliable and useful for different target audiences, which can consist of consumers, companies, investors, public administrations and other stakeholders.

Some of the features of the pilot phase are under healthy discussion to identify the best way forward for the Life Cycle Assessment (LCA) community in its endeavour to provide better support to the policy decision making process (Finkbeiner 2014 and Galatola-Pant 2014).

The framework for conducting the pilots is set out in the pilot Guidance documents (EC 2013d). These are “live” documents that are adapted iteratively based on the experiences gathered during the pilot phase. They also contain an indicative timeline for the three-year pilot process. It is important to emphasise that there are no foregone conclusions – this is a real pilot phase. Pilots are partly exploring new paths of addressing some old open questions in the LCA community. The process itself and the governance structure also have to be seen as part of the pilots.

To gather the expertise beyond the participants to the pilots and to allow the due scrutiny of other interested stakeholders, the process foresees the consultation of stakeholders regarding milestone documents. Such documents are the definition of the scope and representative product/organisation, the first draft of the PEFCR/OEFSR based on the screening and on the final draft based on the supporting studies. The same milestone documents are also scrutinised by the governance bodies of the pilot phase, the Steering Committee (SC) and Technical Advisory Board (TAB). The SC comprises a representative each from EU Member States, the pilots, interested EC services and key stakeholder groups (environmental NGOs, EU standardisation organisations, consumer associations and organisations representing small and medium-sized enterprises). The composition of the TAB mirrors that of the SC and is comprised of experts that support the SC and the pilot phase with technical advice.

Next to the stakeholder consultations, the process foresees several instances of quality checks and reviews: the screening studies will go through a quality check before being finalised; the PEFCRs and OEFSRs are going to be scrutinised by an independent review panel; the results of the supporting studies will be subject to the test of different verification approaches; and peer review
will be carried out of the whole pilot process by independent experts.

The Environmental Footprint pilot phase is a voluntary process, implemented through two open calls for volunteers, published in May 2013 and January 2014, respectively. The calls were open to any company or organisation globally, with the condition that the products or services that are subject to the pilot are sold on EU markets. Over 280 companies and organisations participate in the 27 pilots chosen out of the 120 applications.

4. Key differences between PEFCRs and OEFSRs

PEFCRs focus the analysis on a specific product category and when applied, result in the PEF profile of a specific product. OEFSRs look at sectors defined in terms of their product portfolio, comprising all activities necessary for delivering the products and/or services of the organisation. The OEFSR has an aggregate, top-down approach: there is no need to calculate the PEF profiles of the products and services offered by an organisation in order to measure its OEF profile.

Although methodologically both PEF and OEF are based on LCA, the purpose of the analysis differs. OEFSRs identify the most relevant life cycle environmental impacts for a sector and its stakeholders, aim to help prioritise environmental management actions and support supply chain management. In terms of addressees of the resulting organisation-level information, these are typically more targeted towards investors, business partners, public administrations and other stakeholders. Potential destinations of this information could include reporting schemes, sustainability indices, investor questionnaires, sustainability reports, information to procurers on the organisation, incentives rewarding transparency or good performers, indicators within Environmental Management Systems, etc. These differ from the typical destinations of PEFCR-based information, which are the purchasers of specific products, independently of whether they are individual consumers, businesses or public buyers.

These differences will also be reflected during the communication phase of the pilots (EC 2014), expected to start between the end of 2015 and first half of 2016.

5. The OEFSR pilots

Most of the applications to participate in the pilot phase targeted the development of PEFCRs. The EC doesn’t know the exact reason behind the more limited applications for OEFSRs, however it stands clear that applying LCA at organisation level was still a novel concept with limited expertise available and less understanding of its potential uses.

There are two OEFSR pilots ongoing: one covering the retail sector and another covering copper production.

The Retail OEFSR is led by a group of organisations (Technical Secretariat, henceforward TS) comprising retailers (Carrefour SA, Colruyt Group, Kering, Office Depot, Oxylane Group and Picard), sectorial associations (French Technical Association of Trade and Retail – PERIFEM), public administrations and agencies (Environmental Agency Austria, French Environment and Energy Management Agency - ADEME, Italian National Agency for New Technologies, Energy and Sustainable Economic Development – ENEA), NGOs (Global 2000 – Friends of the Earth Austria) and an assisting and coordinating consultancy (Quantis).

The TS intends the OEFSR to cover any retail activity involving the sale of products to consumers, which includes, where relevant, the production and service provision of in-house products where the retailer has control (taking into account both financial and operational control). The functional unit examined is the retailer as product provider (i.e. taking into account, when relevant, the life cycle impacts of the products provided), over a one-year interval (TS Retail 2014).

One of the biggest challenges related to this pilot is the wide product portfolio of the retail sector. The approach taken by the TS is to define major retail trade sectors covering any product that a retailer might sell in the product portfolio to define categories (or sub-sectors) for each of these; and to select products that would represent the categories during the screening. The OEFSR would then need to establish a consistent process for defining the product portfolio and performing the analysis for retailers where the product portfolio does not match the one examined for the purposes of creating the OEFSR.

The TS is currently performing the screening based on this approach.

Although there is no formal conclusion regarding comparability between organisations in the retail sector based on the OEFSR under development, it is highly unlikely that this would be meaningful considering the
wide-ranging differences between retailers covered by it.

The copper production OEFSR is led by JRC with the participation of Aurubis, which is the largest European copper producer and the world’s largest copper recycler. Outotec, which is the global leader in minerals and metals processing technology, and PE International as members of the TS. Copper smelters and refineries can be multi-metal integrated plants, therefore the Copper OEFSR includes in its product portfolio a wide range of metals (i.e. copper, precious metals, tin, lead, tellurium, metal salts) and other products (sulphuric acid, iron silicate, anode slime).

The challenge in defining the product portfolio and appropriate system boundaries is to provide sufficient flexibility and allow the development of an OEF study for different companies (and sites within the same company) with more simple flows as well as more complex multi-metal flows. Therefore, the Copper OEFSR has a modular structure including three main modules (primary, secondary and integrated multi-metal route) and different sub-modules related to the production of different metals. This modular structure is reflected in the definition of the Representative Organisation (RO) : three ROs, one for each production route, are identified and are the basis of the OEF screening studies (TS Copper 2014).

Due to the nature of the output products (intermediate products), downstream processes and end-of-life are excluded from the scope. Products and production routes that are not common to the majority of European copper smelters and refineries are excluded from the scope, to be able to have the possibility of investigating comparability among organisations. While in a PEFCR the definition of what should be compared is more straightforward, being the assessment related to a specific function, for organisations this is a more unexplored issue due to the diversity of products in the specific product portfolio of each organisation.

One of the main challenges of the Copper pilot is related to the proper definition of system boundaries related to recycling activities and the corresponding virgin material production: copper smelters process both kinds of materials and are both at the beginning and at the end of the life-cycle of a material/ product. The formula to be applied when dealing with multifunctionality in recycling situations, provided in the Annex V of the OEF Guide (EC 2013b), requires a precise identification of these processes to be properly implemented in the assessment. Another aspect posing methodological challenges in an OEF context is not to mix approaches that would be more suitable for a PEF exercise when applying the recycling formula. Additionally, further challenges are related to the application of the end of life formula to organisations producing intermediate products, where end-of-life needs to be excluded, but recyclability aspects have to come into play at the input side of the formula.

6. Conclusion and future outlook

After the first year of the three-year pilot phase we are still relatively at the beginning of the process, where it is not yet possible to draw any final lessons or conclusions.

However, we can identify already a few points where further evaluations will have to focus and - based on what we know today - changes might be indicated, such as drawing conclusions out of a one-day workshop on different End of Life formulas and their testing in the pilots, re-evaluating a range of impact assessment categories (land use, water depletion, resource depletion, toxicity), and looking into alternatives to an equal weighting approach regarding the mid-point impact categories. In addition, the decision was taken to bring the terminology used in the EF guides back to the ISO terminology.

After the conclusion of the pilot phase at the end of 2016, the pilot process will be subject to a thorough evaluation. As part of this evaluation, independent peer reviewers are going to analyse the pilot process and assess it against possible alternative approaches tested under similar conditions and corresponding to the policy objectives set out in the EC Communication Building the Single Market for Green Products (EC 2013c), if any such approaches are proposed by stakeholders. In parallel and if necessary, the PEF and OEF methods would be revised based on the lessons learnt during the pilot phase.

The European Commission will consider whether to take any policy action for the future application of PEF (and PEFCRs) and OEF (and OEFSRs) based on the result of the pilots and their peer review and evaluation.

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