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# Workshop report – Nordic Environmental Footprint LCA workshop 2017-02-23

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This report has been reviewed and approved in accordance with IVL's audited and approved management system.

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# Summary

A workshop to discuss unsolved LCA issues in the Product Environmental Footprint (PEF) method was held in Stockholm, Sweden on February 23<sup>rd</sup>, 2017. The workshop was a LCA specialist workshop for discussion of selected LCA issues in the PEF method and if possible to suggest ways forward. Workshop discussions and findings will be reported back to the Technical Advisory Board group (TAB) in March 2017. 100 people from many different countries, companies and organisations participated.

The focus was on the following topics:

- Product segment structure (granularity)
- Impact assessment methods
- Weighting (valuation)
- Use of methods for different applications

A lot of things were discussed and expressed during the day. The workshop featured diverse opinions, highlighting that further work is needed on all these issues.

# 1 Introduction

The European Commission presented the Product and Organisation Environmental Footprint (PEF and OEF) in May 2013. A pilot phase is currently ongoing and expected to finalize in the end of 2017.

On February 23<sup>rd</sup>, 2017, the Nordic Environmental Footprint Group (NEF-group) – a network under the Nordic Council of Ministers, Swedish Life Cycle Centre and IVL Swedish Environmental Research Institute organised a workshop to discuss unsolved LCA issues in the PEF method, focusing on:

- Product segment structure (granularity)
- Impact assessment methods
- Weighting (valuation)
- Use of methods for different applications

The workshop was held in Stockholm, Sweden, and had a total of 100 participants from many different countries. See Annex A for the agenda. Presentations are available via <http://www.nordic-pef.org/activities.html>.

This report documents the workshop results and does not reflect the position of NEF. It will be communicated to the Steering Committee and Technical Advisory Board as input to the PEF/OEF pilot process.

## 2 Workshop topics

### 2.1 Product segment structure (granularity of scope)

#### 2.1.1 Problem description

This topic was discussed in a parallel session featuring a presentation by Bo Weidema from 2-0 LCA consultants followed by an introduction by Kristian Jelse from EPD International. This topic relates to:

- What products can be compared, i.e. belong to the same product category and PEFCR, use the same functional unit and have a common benchmark?
- What should be the procedure to decide the granularity of scope?
- What experiences may be gained from other systems, such as ISO-based type III environmental declarations (EPD)?
- How can the definition of functional unit be done to incentivize improvements of product's environmental performance over the value chain?

## 2.1.2 Workshop discussion

In the presentations and following discussions, the below topics were raised:

- Is there no perfect procedure to determine the granularity of scope? If so, the procedure must be made in order to take in stakeholder feedback and expectations (both producers and users of the information), as well as consider feasibility.
- The procedure presented by Bo Weidema is intended as a complementary guide to the PEF guide. A three step procedure as a continuation of one described in a report from 2004.
- Competition law may provide guidance on how to identify market segments. This is used e.g. for merger between two companies. 40-50 years of literature exist for this topic. This has however another purpose: does it match the reasoning and expectations of a normal customer?
- The most discussed example was food items. Meat and fish are niche markets from the supply side as supply substitution is not possible between meat and fish. The question of having a single PEFCR for food was raised, possibly with sub-standards to define additional requirements for further product category segmentation.
- The functionality of food to provide satiety (i.e. the state of being satiated) was discussed. Food also serves other purposes: pleasure, social interaction, etc. The unit for sales of meat is per kg or per cutting.
- Bo Weidema raised the point that PEFCRs may not be necessary at all. In his view, a functional unit may be defined without having PEFCRs if a strict procedure exists. The problem is that ISO 14040/14044 is not followed. This was contradicted by stating that PEFCRs are about more than functional unit. Michele Galatola from the European Commission expressed disappointment that the procedure was theoretical and not directly usable to further development of the existing PEF framework.
- The question of intermediate product was raised. This can be solved by the same procedure, and is described with the case of upper materials of shoes in the report by Bo Weidema.
- If the purpose of PEF is to support active consumer choices, meats and vegetables should be comparable. On a more abstract level, the choice between longer commuting distances (and resulting environmental impact) and fewer m<sup>2</sup> of home at a centrally-located apartment should also be possible to communicate.
- In practice, in reality not everyone is an LCA expert, including SMEs.
- For business-to-business communication, quantitative information may be given to provide guidance that is relevant in business-to-consumer communication. Examples were given for detergents and paints where user behaviour is important.
- The question was raised regarding how shelf life was included in the procedure. This was added.

## 2.2 Impact assessment

### 2.2.1 Problem description

This topic was discussed in a parallel session featuring three presentations made by Tomas Rydberg, IVL Swedish Environmental Research Institute (IVL). In the two first presentations Tomas described two different models for assessment of toxicity, namely USEtox and ProScale. The presentation of USEtox was based on presentation material from Michael Hauschild, DTU, who

unfortunately had to cancel his participation in the last minute. The two presentations led to several questions and discussions, mostly related to alternative possibilities about the details of the model and questions regarding clarification about the models. Furthermore Tomas Rydberg also briefly presented “Environmental footprint – update of life cycle impact assessment methods; FINAL for TAB”.

The discussions focused primary on the following aspects:

- How can impact of e.g. toxicity and resources be assessed?
- How to deal with different level of uncertainties between different impact categories?
- Which Impact Assessment models for EF are appropriate?

## 2.2.2 Workshop discussion

In the beginning of the session the 22 participants were asked “*To what extent do you currently think the following models for Impact Assessment for EF are appropriate?*” in order to get an insight in the knowledge composition and the opinion of the group regarding the sufficiency of the models for impacts assessment for EF. Quite many participants expressed their need for a presentation of assessment methods and therefore Tomas Rydberg put a bigger focus on the first part and the discussion part was shorter.

The discussion following Tomas Rydberg’s presentation primarily concerned the following aspects:

- **Number of categories and simplification.** Important to make the number of categories as low as possible in order to make PEF easier to communicate. Furthermore, in order to enable a broad use it should be considered how models and assessments can be made as simple as possible.
- **Ionising radiation.** The method is seen as sufficient but the question is if it is important as an indicator? Even if the ionising radiation shows high values the actual impacts from it is not important compared to other categories and emissions. Hence, does the inclusion of this indicator only make things more complicated?
- **Ozone depletion.** The materials/products emitting ozone depleting substances are not allowed in the EU anymore which makes this category unnecessary. However, some products are only exclusively produced outside Europe, such as technical equipment, so there can still be an issue with ozone depletion in the supply chain.
- **Assessment of chemicals.** There are about 100 000 of chemicals in the society, it is probably impossible to assess every single one. There is probably a need to simplify this.
- **Differences between different product categories.** There is often a difference in the importance of different impact categories between different product categories. This is important to consider when including or excluding impact categories.
- **Environmental problems in the future.** By looking at the history we can see that environmental problems come and go. One current example that might be more and more important is plastics in the sea, how can this be included? Hence, it is important to have the opportunity to include new impact categories if necessary.

Finally it can be concluded that discussion was only getting started when the session ended and there is plenty of need for further discussion in the future.

## 2.3 Weighting

### 2.3.1 Problem description

This topic was discussed in a parallel session featuring a presentation by Rana Pant from the European Commission Joint Research Center (JRC). This presentation started with Rana Pant showing what JRC has done in terms of evaluating the existing environmental footprint methods and the whole range of existing weighting methods. It was decided to go for a so called “panel based” approach on the weighting. Furthermore JRC has ongoing processes on addressing different kinds of stakeholders: questionnaires to the general public, out of 6 member states; 2) questionnaires to LCA experts; and 3) webinar sessions to LCIA experts.

### 2.3.2 Workshop discussion

From the general discussion with the participants in the parallel session, the following topics were raised:

- It was almost fully consensus among the participants that at least some kind of weighting is necessary to enable decision making. This raised an interesting debate about the presence of weighting in the everyday life. Rana and others exemplified that every decision making is based on some kind of weighting, even if this is done by personal values.
- Moreover Rana Pant pointed out the consequences of not taking the weighting approach: one can measure, benchmark as many impact categories one wish, but how to communicate it in a comprehensible way to the general public? Weighting. It really supports decision making.
- During his initial presentation Rana Pant reported that monetization methods were excluded as a choice to be further investigated in the pilot. He explained that finding one’s way to the monetary values, for example €/kg of substance emitted, is of great uncertainty, and this uncertainty would be piled up with the uncertainty already existent in the weighting methodology. Besides there are many different approaches within monetization.
- It was raised that everyone did not agree with the exclusion of monetization from the pilot study given that this subject has been given more and more attention by for example the creation of a ISO standard (14008) that might solve problems on different approaches from monetization methods. Therefore monetization is mature and is less uncertain than other weighting methods.
- One other discussion point was regarding uncertainties and how to take it into account in PEF. Rana explained that there is no quantitatively way of dealing with uncertainties in PEF, besides dealing with it in the inventory level (data quality). Qualitatively uncertainty is dealt with by assessing the level of recommendation of a given impact assessment level.
- It was discussed about the limitation of the questioned universe of “only” 6 member state countries. How is it possible to take into account the other state members? Shouldn’t the weighting process be different depending on who does the weighting and what the objectives are? Rana explained that whatever comes out of the PEF pilot is “only” an input,



a suggestion on supporting the European Commission on policy making. By this, the 6 state members are representative. However Rana agreed that with “only” six countries, granularity and details might be lost, but on the other hand it is not possible to have country specific weighting sets and combine it with the whole market in question.

- There was questioning about the needed interval of updating the weighting scores. How to make sure these are up-to-date? According to Rana weighting is not more subject to updating than inventory data or impact assessment methods. Balance has to be taken between updating and providing a stable environment. Updating every year is out of question.
- Transparency was another approached topic. Even though PEF might be communicated by a single indicator after weighting, all relevant background data will be made available and possible to track back by those interested.

## 2.4 Application of PEF results

### 2.4.1 Problem description

The application of PEF results was discussed in the plenary after a presentation by Sascha Nissen, A.I.S.E. and with a panel discussion including Sascha Nissen, Karen Dahl Jensen, Nordic Ecolabelling and Joakim Thornéus, Swedish National Agency for Public Procurement. The session was moderated by Ellen Riise, SCA Hygiene Products. This topic relates to:

- How will the methods be used for different applications?
- How PEF will enable life cycle thinking based decisions?

### 2.4.2 Workshop discussion

In the presentations, panel discussion and questions from the audience, the following topics were raised:

- Detergent industry has experience with LCA, and supported the objective to reduce the overall environmental footprint. Positive with harmonised methodology, and the screening has given overall similar results as previous LCA studies. Learning from other sectors and stakeholders has been useful. Removing the communication chapter from PEFCR is problematic. How should then the user of the PEFCR know how to use/communicate the results?
- The current setup has low potential for product differentiation and robustness is a potential problem. It has to be possible to use in practice. Will it be used? Internal use, but perhaps not for individual formulations (too many variations). May be a basis for different schemes, if it is aligned, robust and innovation-friendly. To be determined in the coming years.
- In the communication vehicles test, it was found that the “environmental label” approach was best. “This product fulfils high environmental standards” with no details, figures or quantified data. The issue was raised whether PEF generating even more schemes rather than less, e.g. with national initiatives.

- The relationship to the UN Sustainable Development Goals was highlighted by Ellen Riise, where a sub-goal is the provision of environmental information on products. Industry should start doing their homework and to prepare for a revision of PEF in the future. They are the ones who know their products the best.
- Karen Dahl Jensen stated that within the world of eco-labelling they hope to be able to use it although questions remain, such as communication and verification. Welcome more transparency in the information, new data sets, alignment across products. If it is successful, it could be used in criteria development – make it easier for existing eco-labelling schemes as one of their inputs. Currently use EPDs as one of many inputs to development of criteria. A problem is that you need to be an LCA expert to understand data and the lack of comparability.
- Joakim Thornéus stated that it may be useful in green public procurement (GPP), but it will take a few more years to learn how policy makers will use it. Useful for development of criteria for GPP. The topic of a supplier using secondary data winning a procurement tender was raised. Joakim Thornéus answered that this depends on how you would use the PEF results in the tender.
- A topic regarding the temporal variability of the developed benchmarks was raised. Detergent formulations change rapidly – how to ensure that the PEF benchmarks are up-to-date?
- The official status of PEF was pointed out as it has been published in the EU Official Journal. The question was asked why representatives from official adopted systems may doubt if they will use PEF in the future.
- The topic of multiple ecolabels for the same product was raised, as being the current situation, and whether there will be a “PEF seal of approval” in addition to existing ecolabels on future detergent packaging.
- The question of the expectations on whether PEF would be mandatory was raised. The panel did not know, but were trying to stay involved to be prepared. For developing countries trying to sell to the European market, using the PEFCR would be an enormous step.

# Annex A: Workshop programme

*The programme was adjusted with last minute changes as Pascale Moreau, Sustainable Apparel Coalition, was unable to join.*

09:30 – 10:00 Registration and welcome coffee

10:00 Welcome and workshop objectives Cecilia Mattsson, Swedish EPA & Chairman NEF

10:10 Status for the use of PEF method and expected need for future improvements Michele Galatola, DG Environment

11:00 – 11:20 Communication vehicles for PEF Francisco Lupianez Villanueva, Open Evidence

*11:20 – 11:40 COFFEE BREAK*

11:40 Experiences from PEF beer pilot Paul Bruijn, Heineken

12:00 Experiences from PEF Footwear pilot Pascale Moreau, Sustainable Apparel Coalition

12:20 What are the issues that remain to be solved? - Introduction to parallel sessions Bo Weidema, 2.0 LCA consultants, Rana Pant, JRC and Tomas Rydberg, IVL replaces Michael Hauschild, Technical University of Denmark

*12:30 - 13:30 LUNCH*

13:30 Parallel sessions:

I. Product segment structure (granularity)

II. Impact assessment methods

III. Weighting (valuation)

*14:40 – 15:00 COFFEE BREAK*

15:00 Presentations from parallel sessions including discussion Bo Weidema, Tomas Rydberg, Rana Pant

15:45 Use of methods for different applications including discussion about how PEF will enable life cycle thinking based decisions Sascha Nissen, A.I.S.E., Joakim Thornéus, The National Agency for Public Procurement and Karen Dahl Jensen, Nordic Ecolabelling, Ellen Riise, SCA (moderator)

16:45 - 17:00 Conclusions and wrap-up Cecilia Mattsson, SEPA and Elin Eriksson, IVL

## **PARALLEL SESSIONS, 13:30 - 14:40**

### **I. Product segment structure (granularity)**

How should the product requirements (PEFCRs) be arranged in order to enable relevant comparison and product scope? Does the PEF approach for functional unit give incentives for industry to improve the environmental performance of production and value chains?

13:30 Recap of issue, presentation of proposed guideline, experiences from EPD system Bo Weidema, 2.0 LCA consultants; Kristian Jelse, EPD International

14:00 Discussion Bo Weidema and Kristian Jelse (moderator)

### **II. Impact assessment methods**

How can impact of e.g. toxicity and resources be assessed? How to deal with different level of uncertainties between different impact categories?

13:30 Impact assessment approaches (e.g. USETOX, Proscale) Tomas Rydberg, IVL

14:00 Discussion Tomas Rydberg (moderator)

### **III. Weighting (valuation)**

How can weighting (valuation) of environmental problems be done in a science-based way that supports political goals of circular economy and resource efficiency?

13:30 Summary of JRC proposal about weighting approach and comments on the proposal Rana Pant, JRC

14:00 Discussion Elin Eriksson, IVL (moderator)



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