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German Industry

# Product-related climate protection strategies

Understanding and using Product Carbon Footprints  
(Summary)



**IMPRINT**

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## SUMMARY

Climate change is one of the central global challenges facing our society this century. To be able to even contain the risks to humans and their environment, average global warming must be limited to two degrees Celsius above pre-industrial levels by the end of the century. According to current knowledge, this means that, by 2050, greenhouse gas emissions in industrial countries must be reduced by at least 80% compared with the 1990 level. This in turn calls for a fundamental rethink, not least with regard to the production and consumption of goods and services<sup>1</sup>. Manufacturers and consumers are called upon to make their contribution to climate-compatible production and consumption.

To this end, it is necessary for companies to have reliable information regarding the greenhouse gas emissions associated with their products throughout their entire life cycles, true to the management maxim that one can only manage what can be measured. This information is an important basis for minimising the climate impact of product manufacture, usage and disposal.

“Product Carbon Footprints” (PCFs) provide this kind of information:

“Product Carbon Footprints describe the volume of greenhouse gas emissions generated throughout the entire life cycle of a product, given a defined type and unit of usage.”

Accordingly, the following guidelines – which were prepared jointly by the BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) and the BDI (Federation of German Industries) – pursue the following objectives:

- » To provide interested companies with support and recommendations in calculating PCFs
- » To formulate the requirements of a suitable and effective communication in product-related climate protection
- » To convey the viewpoint of the BMU and the BDI regarding CO<sub>2</sub> labels.

The guidelines are geared primarily towards companies that wish to determine and make use of Product Carbon Footprints with respect to their products. They illustrate the practical approach to calculating and using Product Carbon Footprints. Recommendations are given both for products aimed at end consumers and for products traded between companies along the value-added chain.

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<sup>1</sup> Throughout these guidelines, the term “product” will be used as a collective term for goods and services.

In recent years, many local and international initiatives have undertaken to develop and/or harmonise methods and recommendations for determining or communicating PCFs. In Germany, the BMU commissioned Öko-Institut (Institute for Applied Ecology) to conduct a systematic analysis of the need to further develop methods for determining PCFs and of the communication of PCFs and the labelling of products. In addition, a number of manufacturing and retailing companies tested the practical usability of the calculation methods – notably within the framework of the “PCF Pilot Project” – and also recorded their first experiences communicating PCFs. Many individual companies from a wide cross-section of sectors are also engaged in gauging the impact of their products on the climate and the environment.

The findings and experiences recorded in the course of this work form the basis of these BMU/BDI guidelines on Product Carbon Footprints.

In recent decades, a series of methods and tools has been developed for analysing and evaluating the environmental compatibility and sustainability of products over their entire life cycles – life cycle assessments, eco-efficiency analyses, product-related social accounting, and sustainability analyses for entire product life cycles – all of which can be used to examine the relevance of products from an overall environmental and sustainability perspective. Furthermore, these methods can already be used to determine the “climate relevance” of products over their entire life cycles. The major advantage of these methods is that products can be optimised with respect to different environmental and sustainability categories, thereby avoiding the conflicting objectives that inevitably arise when improving products.

Limiting improvements to the “greenhouse effect” impact category alone is not sufficient for optimising products in an overall sense and can, in isolated cases, even prove to be counterproductive. Decisions based on one-dimensional evaluations run the risk of bad business and political decisions. Product Carbon Footprints, for example, only take into account the greenhouse gas potential while ignoring other important aspects such as pollutants, water consumption, hazardous waste or other risks. In order to avoid distorting decisions in this way, it is necessary to carry out an extensive analysis and evaluation of products throughout their entire life cycle.

However, a closer look at the “greenhouse effect” impact category using Product Carbon Footprints showed that new methodological insights relating to the analysis of climate relevance should be taken into account. Example: when biogenic products are cultivated, what impact do changes in land utilisation have on the greenhouse gas balance? These new methodological insights are relevant for all forms of product-related environmental and sustainability evaluation throughout the life cycle of products.

**This being the case, the BMU and BDI recommend here that the new methodological insights relating to Product Carbon Footprints – and, at the same time, any other relevant environmental categories – should be taken into account. If a more comprehensive sustainability evaluation is carried out, relevant social and economic criteria should also be taken into consideration. This does not even necessarily imply that additional expenditure will be incurred. However, this approach does ensure greater reliability in carrying out evaluations and deriving recommendations for optimising products. When other environmental and sustainability criteria are taken into account, PCFs can be used to their maximum advantage.**

Determining Product Carbon Footprints can serve companies in the following ways:

- » By creating transparency in the value-added chain with regard to upstream and downstream processes and the players involved
- » By creating awareness of greenhouse gas emissions along the value-added chain and identifying stages during which emissions are particularly high
- » By identifying potential for reducing emissions
- » By giving companies the impetus to develop or enhance their own climate strategy
- » By analysing and evaluating the relevance of greenhouse gas emissions compared with other product-related environmental impacts.

**The greatest benefit of Product Carbon Footprints is that they can demonstrate how the greenhouse gas emissions of products and services are reduced along the entire product life cycle.**

An internationally binding ISO standard (ISO 14067) for Product Carbon Footprints and (standard-like) internationally harmonised guidelines (Greenhouse Gas Product Protocol) are currently in preparation. Efforts to develop a standard international methodology have been welcomed, although no final product will be forthcoming before early 2011.

This means that those wishing to take action are hampered by the current lack of an internationally binding methodology for determining Product Carbon Footprints. Particularly during this period, however, many companies will be examining the “climate relevance” of products. For this period, BMU is issuing recommendations relating to methodology, in addition to the life cycle assessment standards of ISO 14040 ff.<sup>2</sup>, which

<sup>2</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Environment Agency, Institute of Applied Ecology: Memorandum Product Carbon Footprint, Berlin 2009 – Positions for Determining and Communicating Product Carbon Footprints for Standardising and Harmonising International Methodology, [www.bmu.de](http://www.bmu.de).

are also channelled into the international standardisation processes. The Public Available Specification 2050 (PAS 2050), which was published as the national guidelines in Great Britain in 2008, is not deemed to be adequate for determining PCFs effectively in all cases.

Particularly at a time when no international standard exists as yet, it is of the utmost importance to document the methodology and data used transparently in order to allow observers to determine the reliability and credibility of the results. This is particularly true in cases where companies wish to publish their PCFs. In such cases, it is recommended that a “critical review” also be conducted in keeping with the requirements for preparing a life cycle assessment.

The use of Product Carbon Footprints as a basis for labelling products – particularly when expressed as a figure – is the subject of a very controversial international debate. Some countries such as Great Britain, Japan, South Korea and Thailand have already tested such labels on a voluntary basis or have already launched such a system. The possibility of obliging companies to display PCF labels on their products is being discussed. Although the notion of displaying CO<sub>2</sub> values on products and CO<sub>2</sub> labels may initially seem like an attractive and advantageous means of informing consumers, the BMU and BDI have concluded – based on past information and experience – that quantifying PCFs on product packaging does not constitute a beneficial or reliable instrument for consumer communication.

The reasons for this conclusion are as follows:

- » The methodological challenges that have not been clarified in full
- » The variances relating to assumptions, data and results that are typical of life cycle-related studies
- » And above all: the lack of a mandatory standard method for determining Product Carbon Footprints.

For these reasons, it is not feasible for a labelling system comparing the quantified CO<sub>2</sub> emissions of different products to be implemented in the foreseeable future in a way that would be compatible with competition law. This applies in particular for food products, which are currently the main focus of the CO<sub>2</sub> label discussion, but also for other consumer goods.

In practice, CO<sub>2</sub> values and CO<sub>2</sub> labels do not mean much to consumers

- » Because consumers have no standard of comparison
- » Because the information given does not suggest any course of action for the all-important usage stage
- » Because the significance of other environmental aspects remains unclear

- » And because there is growing confusion on account of the large number of environmental labels in existence.

For this reason, the concept of CO<sub>2</sub> labels is also rejected by European consumer associations<sup>3</sup>.

Once studies have shown that PCFs offer a reliable indication of the environmental compatibility of a product group, a preferable approach would be to integrate them in environmental quality seals or other recognised environmental labels (Type 1 according to ISO 14024) instead. Rather than introducing new CO<sub>2</sub> labels with limited relevance, the focus should be shifted onto a consumer-friendly communication upgrading existing environmental labels such as the “Blue Angel” (*Blauer Engel*) and other prominent labels. The product groups covered by the Blue Angel environmental label are currently being expanded, meaning that there will be criteria for awarding a “Climate Angel” (*Klimaengel*) for the 100 most important product groups from a climate perspective.

Leaving aside the notion of product labels, Product Carbon Footprints are seen as having potential as a reliable basis for effective product communication *vis-à-vis* corporate partners and end consumers. Particularly when other sustainability criteria relating to products are also determined and analysed, PCFs can serve as a basis for conveying messages to consumers which could make a significant positive contribution to climate-compatible consumption. A prime example of this can be seen in recommendations regarding the sustainable washing of clothes and dishes which were derived jointly by manufacturers, consumer organisations, environmental organisations and the Federal Environment Agency and which have been communicated effectively in the past.<sup>4</sup>

In this connection, the BMU and BDI advocate working on credible communication forms beyond product labelling which raise awareness of climate relevance in consumption and which help to harness reduction potential among product users. In doing so, they urge interested companies to take part in initiatives in which corporate partners – but above all company stakeholder groups in the areas of environmental and consumer protection – are involved early on in order to increase acceptance, credibility and effectiveness.

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<sup>3</sup> ANEC, BEUC, ECOS, EEB: Joint Position – Sizing Up Product Carbon Footprinting, Brussels 2009.

<sup>4</sup> More information on the initiative for promoting sustainable washing can be found at [www.forum-waschen.de](http://www.forum-waschen.de).

