

Sustainability – environmental footprints

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Sustainability

Regulatory

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A new regulation for the environmental footprint of mass market products distributed in France is currently being implemented following the indications of the Grenelle II law. This

effort launched in 2008 will be tested in the second semester of 2011. Within this regulatory framework, companies will be requested to provide a quantified assessment of environmental performances of products over the whole life cycle of the product and covering several impact categories such as resource depletion, greenhouse gas (GHG) emissions etc. France is the first country to experience such a regulation on this scale.

Two years ago, the French parliament was voting on a group of laws designed to better address and manage environmental problems. A text concerning the environmental footprint of a mass market product in a life cycle thinking perspective was proposed by the environmental ministry. Even if such a regulation was advancing gradually by the European Commission – with the integrated product policy and Ecodesign directive for example – such an ambitious project at a member state level represents something of a breakthrough decision.

The ADEME and the AFNOR was mandated by the Government to implement the strategy in order to make the law fully applicable by 1 January 2011. The ADEME organised the work with 15 working groups covering most of the industrial and services sector (agrofoods, textiles, detergents etc). Each working group proposed environmental assessment methods per category of product (eg shampoo). In addition, one working group is in charge of developing the methodology with a platform in charge of the overall validation of all the transversal methodological documents. Companies, life cycle assessment (LCA) experts and NGOs were invited to join working groups on a voluntary and self-funding basis. After a year, several hundred people were participating in this effort and developing the general and sector methods for assessing mass market products.

While the basic methodological approach is issued directly from LCA, most of the companies involved considered LCA too complex and proposed a simplified methodology. So beyond the main requirements of the ADEME – 1. the assessment shall be based on LCA perspective, and 2. the results must express several environmental criteria – the working groups had to manage the whole methodology developments. After two years of discussion, a transversal method – BPX 30-323 – is finalised on a consensus basis. This document will be the French norm for the environmental footprint of products.

While some working groups have not yet produced their sector method, the WG4b, which is in charge of beauty and care products, has produced a draft for impact assessment of rinsable products. This method was validated in March 2011 and will now be applied for shampoos and liquid soaps. The document specifies, for example, the functional unit (FU) which is to be assessed (8g of shampoo), the condition for considering the use phase (temperature and amount of water), and the impact categories: carbon footprint, water footprint and ecotoxicity footprint.

With the overall purpose of using a simplified method for LCA, the method written by the working group explains how to calculate the environmental footprint even for non-experts in LCA. Thus all companies, including small ones, should be able to calculate their product footprint without major expense. The simplification is reflected in the choice of environmental indicators. The carbon footprint can be assessed even if the LCA of the product has not been achieved. The water footprint is addressed along with the water consumption and the ecotoxicity footprint is calculated using the USEtox model. While the carbon footprint is well known and can be performed with different environmental accounting software, calculation of water consumption and the ecotoxicity footprint needs further explanation.

Water footprint

The water footprint typically covers three dimensions: quantity, scarcity and quality of water. Due to a lack of consensus in calculating the water footprint, the choice was made to approximate the water footprint with the water consumption. Despite this simplification, it is still not that easy to define which type of water use should be included in the assessment. Indeed performing an LCA on a product demonstrates that water is used for many purposes, from several sources and in numerous locations in a product system. As an example, LCA commonly lists water from rivers, lakes, sea or underground, but tap water can also be used in the system which is from the sources above. Furthermore water can be used for electricity production with turbines, for cooling systems, for cleaning etc, and the water is then emitted in different environmental compartments; it can be evaporated, transported or re-emitted at the same location.

In the environmental databases of production processes, about 24 water types/use are commonly reported and about five different emission locations can be considered. In this complex system, each company calculating its footprint will have to define its own methodologies. Considering the current ongoing work of the different groups working on the water footprint, customers are being advised to respect three basic rules in the water consumption calculation:

- Rule 1: To account in the consumed water all the water taken from rivers, the ground and lakes through direct and indirect processes (eg tap water is indirectly coming from lake, river or ground and these uptakes should be added up over the direct water uptake). Marine water and rain water should not be included
- Rule 2: In addition to this amount of water, all the water re-emitted in the same watershed should be discounted from the previous figure

- Rule 3: Negative accounting of impact should not be considered (eg uptake of rain water re-emitted after use is not discounted negatively)

Ecotoxicity footprint

The ecotoxicity footprint is more complex to address because research is still ongoing on this issue. Nevertheless this impact category is crucial for the environmental footprint of products that can be directly emitted in water, such as shampoos or detergents, and for products likely to emit large amounts of hazardous substances in water during the production process. For those products, the ADEME has identified USETox as the most suitable model for assessing aquatic ecotoxicity in LCA.

Applying USETox is promising in terms of results interpretation, but the number of substances covered is still limited (between 1,000 and 3,000 substances) and adding new substances requires expertise and time. On this basis, CYCLECO proposed to the ADEME the provision of support for producers and manufacturers of cosmetics or detergents, and thus the involvement of large and small companies in the inclusion of new substances in the USEtox database. Exchanges with companies will enable both the development of a priority list of compounds and the collection of available environmental data. Characterisation factors of each substance will therefore be provided in order to facilitate the calculation of the ecotoxicity footprint of each product.

In parallel with the footprint calculation, efforts in environmental communication are being made in order to define the appropriate means of communication for the footprint values. The experimentation phase of the environmental footprint regulation will compare information via internet or directly on the product. It will also compare different units for expressing environmental burdens for each indicator. As part of the process the 168 companies involved in this phase are exchanging information with the French environment ministry in order to define the best format for selection at the end of the experimentation phase.

Learnings from this project are two-fold. On the one hand recent studies on consumer perception have highlighted the need for consumers to have reliable information enabling product comparison. However questions remain concerning the information format and the complexity of the system to avoid consumer misinterpretation. On the other hand the large number of public and private stakeholders in the project and the broad coverage of industry sectors has delayed and weakened the project. Methodology guidelines are not yet available for all sectors and all products covered, and some companies participating in the experimentation process had problems calculating the footprint of their products.

But despite these limitations, environmental labelling in France has taken a step forward in terms of the communication. This initiative is likely to improve the coherence of the environmental information reported to consumers and should stimulate the development of low footprint products.

Similar efforts are being made globally. The European Commission is currently selecting a limited number of companies as candidates for experiencing environmental footprints in Europe. Efforts are also under discussion in the US and Japan.

Even if products are issued from global product systems, the existing standardised methods for environmental assessment of products and the existing processes database make these assessments feasible. Implementation on a large scale is very recent and the future will show us how far consumers are considering environmental information and then whether these efforts are likely to accelerate a market shift in favour of environmentally friendly products.

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