

Environmental impact of packaging



Establishing the precise impact of packaging.

As part of their efforts to minimize the environmental impact of their products, companies also aim to reduce the impact of packaging. They increasingly rely upon lifecycle analyses (LCAs) to quantify this impact. These analyses cover the entire spectrum of environmental impact, from raw material extraction to waste processing, including manufacturing, transport, distribution, and use. In order to be relevant, an LCA must be carried out with precision and careful thought.

prevent pack

From cradle to grave

Packaging can play a significant role in the environmental impact of a product/packaging combination. The material used, the packaging weight, and its manufacturing methods are all factors that can increase or decrease this environmental impact.

'The environmental impact of a packaging can be quantified in terms of air, water, and ground emissions, as well as in terms of a final waste product that must be eliminated,' explains Bernard De Caemel, Managing Director of Intertek-RDC. 'An LCA takes all of these aspects into account, as well as the raw material, water,

and energy consumption that is required at each stage of the lifecycle.' In addition, an LCA enables the identification of the stages at which actions can be implemented to lower repercussions on the environment.

'Other methods exist to calculate the impact of a specific packaging, but they are not as all-inclusive,' adds De Caemel. 'Indeed, they seldom cover more than a single aspect of the packaging lifecycle. As a result, they do not enable the identification of certain types of impact.'

Clear definition of goals = qualitative results

The relevance of the results of an LCA depends upon the quality of its preparation stage. The more clearly the hypotheses, target, and range are defined, the more accurate the analysis will be. It is also important to specify the rules of analysis that will be used, and the processes that will be covered. 'What is the geographical scope of the analysis? Do we want to know the current impact or the one that will occur in five years time? These are just two of the

questions that need to be considered and adequately answered before initiating the analysis itself,' pinpoints De Caemel. 'Similarly, the specific approach of the investigation will differ depending on whether the results will be used for information or comparison purposes, or whether they will be used to support decisions regarding technological choices.'

good to remember

A lifecycle analysis (LCA) is the most accurate method of calculating the environmental impact of packaging.

Clearly defining the target, hypotheses, methodology, and scope of an LCA before starting the analysis improves the accuracy of the results.

An LCA enables the quantification of the impact of a specific packaging and the accurate comparison of two different types of packaging.

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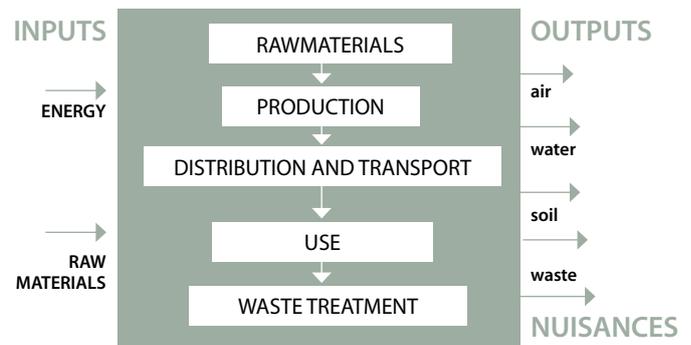
Quantifying the impact of a specific packaging

In the case of a specific packaging, an LCA identifies the stages during which the lifecycle impact is at its greatest:

Is the resource used as packaging material available in unlimited quantities and can it renew itself rapidly enough? Knowing these parameters is essential for any packaging. When packaging is made from renewable resources, it is absolutely essential that the answer to this question is positive

Is the process of transforming the (renewable) source into a product efficient? And what about its transport? The latter aspect is one of the parameters taken into account during the analysis of the logistics chain. Indeed, the raw material of a particular packaging manufactured from a renewable resource may have to come from far away.

Is the final quality of the packaging sufficient to efficiently preserve the product and minimize product waste?



Life cycle of a product or a packaging

Moreover, the end-of-life processing is another key element taken into account by an LCA. Can the packaging be re-used or recycled within existing circuits, or does it require incineration?

Compare two types of packaging

Often, an LCA is also used to compare the respective impacts of two types of packaging. 'Such an analysis enables, for instance, the comparison of refill and non-refill packages, or biopackaging (see

Feature) and conventional packaging,' observes De Caemel. 'The environmental gains related to the use of biopackaging can be quantified during the manufacturing, use, and end-of-life stages.'

For all types of companies

Many large companies already rely upon LCA to calculate the impact of their packaging. However, this is often not the case for smaller companies. That is why Fost Plus, together with Intertek-RDC, has developed a simplified LCA tool. The tool is available on www.pack4ecodesign.org.

Bernard De Caemel, Managing Director, Intertek-RDC

« The renewable and renewed aspect of a material source is a key parameter in analyzing the environmental impact of biopackaging. »

For additional information

www.intertek.com/consumer/sustainability
www.pack4ecodesign.org

Avoiding green washing

Using environmental impact analysis results can lead to false or erroneous assertions—whether intentional or not. This is called « **green washing** ». Based on its methodology, **an appropriate LCA can counter this type of abuse**. For instance, simply utilizing a renewable material is not enough to state that a packaging is green. Other factors must also be taken into account, in particular the sustainability of the resource and the speed at which it is renewed. Similarly, the results of a small scale LCA should not be used to extrapolate to a larger scale. Avoiding « **green washing** » therefore implies that the result always relates to an environmental impact analysis (whether an LCA or a partial analysis) with appropriate methodology, targets, and scope.