

Environmental management

Eco-audits

Eco-audits are scientific methods used to help ascertain and evaluate the effects on the environment of products, services or businesses.

Eco-auditing, also known as life cycle analysis, can feature the following characteristics:

- **Comprehensive:**
The whole life cycle is taken into account. Every stage is considered, from the acquisition of raw materials to the different stages of processing and refinement, to the necessary transport, to the use and possible re-use or disposal.
- **Thorough:**
As far as possible, all emissions that occur are analysed, as well as the need for resources such as fossil fuels, and the use of water or land.
- **Informative:**
The effects on human health, resources and the environment are calculated on the basis of scientific methods. This includes the following effects:
 - Greenhouse effect: climate change through the emission of gases such as CO₂, methane or HFCs.
 - Toxicity: negative effect on human health caused by harmful emissions.
 - Acidification: damage to plants and animals through acidic emissions such as nitrogen oxides from furnaces and traffic.
 - Build-up of ozone: build-up of summer smog caused by e.g. the emission of solvents.
 - Land resources: negative effect on habitable areas caused by the use of land for settlements, roads or the agriculture industry.

- Need for energy resources: the use of non-renewable energy resources such as oil, gas and uranium.
- An aid to decision-making
The evaluation stage allows the various effects to be weighted in accordance with the current environmental impact and the problems associated with it, and the values of these to society. This in turn allows the effects on the environment to be described in terms of a parameter.

Assigning a parameter to the eco-auditing results allows them to be considered as part of the decision-making process of a sustainable management system and to compare and contrast them with values for economic and social factors. The result is verified using various methods in order to ensure an accurate evaluation.

Eco-audits are now generally accepted as being the most comprehensive and reliable instruments for judging impact on the environment. This is thanks to both the ISO standard in which the process is described, and to the use of internationally recognized data and evaluation methods. This ensures a high standard can be reached.

Eco-audits are used mostly to:

- identify ecological weak points
- determine the potential for optimization
- evaluate available options.

Thus they form the basis for decisions on strategic development of environmentally friendly products, services or processes, such as in environmental

management systems. Furthermore, the results can be used in communication and education.

Very different methods are used in Swiss Post's environmental management. For ease of communication, and unless otherwise necessary, the following three methods only are stated:

- Greenhouse effect (global warming)
- Environmental impact points (EIP)
- Eco Indicator 99

It is to be noted that the greenhouse effect only amounts to a part of the other two methods: these are much more comprehensive. The greenhouse effect is listed because of its current relevance.

Climate change (Global warming potential)

The biggest influence on our climate is that of CO₂ emissions, caused mostly by the burning of fossil fuels. But a variety of other gases contribute to climate change, such as methane, nitrous oxide or hydrocarbons (haloalkanes, CFCs). Some of these have a much greater effect per kilo and, as a result, *the emitted volumes* of these gases are weighed and stated as *CO₂ equivalents*. This corresponds to *the volume of CO₂ emissions that would cause the same effect*.

Environmental impact points (EIP)

This method is also known as the method of ecological shortage, as the different effects on people, the environment and resources are assessed, among other factors, *based on the existing burden*. This takes into account that the environment can withstand a certain amount of damage and can regenerate itself to a point, but beyond this, problems can arise. Swiss federal environmental targets and any problems associated with the effects also feed into the evaluation.

The method of ecological shortage is described in detail in the magazine of the Swiss Agency for the Environment, Forests and Landscape (BUWAL), No. 297.

Eco Indicator 99

The Eco Indicator 99 method was developed in the Netherlands and is widely accepted across Europe. It calculates damage to the following:

- human health
- the environment and ecosystems
- resources.

The levels of damage to these areas are then weighted relative to one another.

A comparison of the two methods shows that EIPs tend to attach relatively high importance to air emissions, whereas the Eco Indicator rates the consumption of energy resources as highly problematic.

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