Nordic Ecolabelling

Steps

2001

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Introduction

The Nordic Council of Ministers operates an environmental labelling system, the aim of which is to promote less environmentally harmful consumption. The task of the Nordic Ecolabelling Board is to develop environmental criteria for goods and services and to offer guidance to consumers.

Nordic Ecolabelling's goal is to influence technical developments and to encourage the production of goods and services that are more environmentally friendly. Nordic Ecolabelling's symbol is the Nordic Swan, a registered trademark.

A working group comprising personnel drawn from the secretariats in the Nordic countries has formulated a philosophy for ecolabelling. This environmental philosophy is intended to function as an aid for everyone working within ecolabelling; on committees, boards and technical groups. This guide, Steps, is a shortened version of the environmental philosophy and consists of two parts: a philosophical section and a strategic section.

Steps describes the work involved in ecolabelling, from the initial vision to the development of criteria. In our view it is essential to illustrate not only what ecolabelling can achieve, but also its limitations, in order to highlight the strengths of this environmental instrument. Steps also presents a number of concepts that have been developed to serve as aids to communication in the forums in which ecolabelling is debated and the criteria are adopted.

1. The philosophical foundations of ecolabelling

The Vision

The ultimate vision of Nordic Ecolabelling is sustainable development. The Brundtland Commission defined sustainable development as

Meeting the needs of the present without comprising the ability of future generations to meet their needs.

One of the main messages of the Commission was that the work on environmental issues and the work on economic growth must be viewed as two sides of the same coin. Thus sustainable development means not only development that takes account of the needs of future generations, but also requires us to share the "ecological space" of the planet more fairly between peoples and countries.

Sustainable development offers the only hope for the continuation of life on this planet as we know it today. Sustainable development cannot be achieved as long as we continue to work against the main ecological processes of the planet.

Ecolabelling makes up one strand of a wide-reaching social strategy involving numerous players which is seeking to achieve sustainable development in a variety of ways. Ecolabelling interacts with the instruments applied by government authorities in the form of legislation and regulations, taxes and duties and with the environmental efforts of voluntary organizations and individual businesses.

The road towards sustainability

At Nordic Ecolabelling our work is based on the needs of existing generations. However, the challenge for us lies in steering developments in a direction that will enable the planet to continue to meet the needs of future generations.

In a sustainable society the life cycle is closed. Recycling and re-using stored materials reduce both the extraction of materials from the earth's surface and the quantity of waste generated. The use of finite resources is reduced because renewable resources take their place. Nevertheless, a life-cycle society will not be enough to achieve sustainability. Today, 20% of the world's population uses 80% of its resources. If we are to achieve sustainable development, the Western World must become more efficient in its use of natural resources.

Four system conditions for sustainable development have been formulated on the basis of the laws of thermodynamics and knowledge about biological systems:

Nature must not be subject to systematically increasing

- Concentrations of substances extracted from the Earth's crust (system condition 1)
- Concentrations of substances produced by society (2)
- Degradation by physical means (3) and
- The husbandry of resources must be so effective and just that all human needs are met worldwide (4)

According to the factor approach environmental efficiency must be increased in such a way that the ratio between resource consumption and levels of productivity is reduced. Factor 4 means that the same output quantities are achieved using a fourth of the resources, while factor 10 means that only one tenth of the resources will be required. Efficiency must be increased by at least a factor of 4 in the short term (15 to 20 years) and by a factor of 10 in the longer term (40 to 50 years) if sustainable development is to be achieved. This will necessitate both technological development and changes in consumption patterns.

At Nordic Ecolabelling we base our planning for the future on these concepts. We look at how products need to be designed for consumption to develop in the direction of a sustainable society. Ideally, product development should be based on the idea that the product will fit into a sustainable society at the earliest possible point. Unfortunately, no products yet live up to the vision of sustainable development. However, since products and services are improving markedly in terms of their environmental properties, the potential for achieving the goal of sustainability will increase steadily.

Sometimes we deliberately allow products to contravene the philosophy outlined above in order to achieve long-term goals as quickly as possible. One generation of criteria will rarely be sufficient: numerous revisions will often be required along the way. On its own a criteria document is at best a means of achieving a part-goal. The requirements in the criteria are set with a view to achieving the greatest environmental gain possible in light of the environmental threat. If a particular activity poses an environmental threat, we attempt to trace both the local and the global causes and consequences.

How great is the geographical spread of pollutants? What type of damage is caused? What process causes the damage?

Environmental threats are symptoms of system faults caused by breaches of the system conditions. One system fault can result in a variety of different environmental threats, at the same time as which an environmental threat can be based on several system faults. For example, oil production, the extraction of heavy metals and the exploitation of nuclear energy all result in breaches of the first system condition: nature must not be exposed to systematically increasing concentrations of substances extracted from the Earth's crust. Industry and consumption of goods impact upon the environment in a variety of ways and system faults will often be the result of interacting factors, a network of causes.

2. Nordic Ecolabelling's strategy

The formulation of requirements

We utilize a variety of tools in selecting the parameters applied in ecolabelling. Universally applicable methods exist for assessing whether technology and flows of materials are clean and the environmental efficiency and environmental impact of products during their life cycle. When these methods are applied in combination with the concept of sustainability and the system approach, their value increases.

The credibility and technical expertise embodied in the criteria is based on four pillars:

- Publicly available scientific knowledge and data in reports and investigations
- The expertise and assessments of a technical group
- A broad process of public comment followed by a review of the opinions received by the technical group
- A basis in and discussion by boards and committees

Extensive research is conducted into environmental technology and in our work we use the most recent research results. A product will often cause environmental impact during several stages of its life cycle. It is not always practical to impose requirements as to the environmental effects of a product in every phase of its life; instead we confine the parameters to those areas in which the greatest environmental gains can be achieved. As an aid in the development of criteria we use investigations into a wide range of product groups, materials and chemicals.

In order for ecolabelling to have the desired effect and credibility, we base the criteria development process on certain fundamental principles. Ecolabelling is a preventive measure and we often apply the **precautionary principle** in establishing the requirements in the criteria document. According to the precautionary principle, which is one of the fundamental principles of the Rio Declaration (Agenda 21), activities and chemical use should be refrained from if the environmental consequences are uncertain. Sometimes it takes many years from the first suspicion of an unwanted effect until the consequences are beyond doubt.

The consequences of global or regional environmental effects, such as the greenhouse effect or depletion of the ozone layer, can be extensive. Repairing the damage can take generations, and the costs can rise to enormous sums. Adopting a preventive approach helps to stop the occurrence of environmental problems. Preventive work and the precautionary principle both encompass the principle of substitution, which means the replacement of a harmful substance in a process with a less harmful substance.

The use of RPS as a tool in the development of criteria

The main principle underlying our adoption of ecolabelling requirements is that we base our work on the unique environmental profile of the individual product group. The requirements focus on those activities and processes that have the greatest relevance, potential and steerability (RPS) in terms of the life cycle of the product.

What is RPS?

Relevance is assessed on the basis of the environmental problems caused by the product group and the scope of such problems.
Is there an environmental problem and if so, how great is the problem?

Potential is evaluated against the background of the potential for environmental gains that exists within the product group in question, for example the distinction between existing products and technical innovations that are viewed as realistic within the near future.
Can anything be done about the environmental problem?

Steerability is a measure of the degree to which ecolabelling can affect the activity, problem or requirement.
Can the Swan Label do anything about the environmental problem?

RPS is a selection tool which we use in determining whether ecolabelling is a suitable instrument of control and whether anything can be gained by proceeding with an environmental investigation. First an assessment of RPS is performed to sift out product groups and requirements that are not suitable for the Swan Label. Only if all three RPS elements have high values will there by any point in continuing with a product group or requirement. We then attempt to describe the scope of or, if possible, assess the quantity of each individual element. What finally determines whether we give priority to a requirement or a product group will be a combined assessment of RPS, not whether each individual element is high or low. It will be sufficient for one of the parameters (RxPxC = 0) not to be fulfilled for ecolabelling not to have the required effect.

We adopt a flexible approach in formulating our ecolabelling requirements in order to avoid slowing down beneficial technological developments. The requirements must be "doable", at the same time as which they must have an environmental effect. We make comparisons on the basis of tests, available data and past test results. These comparisons apply not only to production materials, emission requirements and the like, but also to the function and quality of the product. The criteria document must have a steering effect and embody a clear long-term perspective since manufacturers often adapt their plans and investments to future requirements.

Relevance

Relevance is assessed on the basis of the environmental problems associated with the product group and the extent of the problem. Is there an environmental threat and if so, how great is the threat?

One question with which we are constantly faced is how environmental threats and environmental targets should be ranked. How do we assess whether over-fertilization of waterways is worse than the greenhouse effect? There are no scientific or logical models to help us to rank environmental threats. Even so, we are forced to prioritise. In our multidisciplinary investigations and the development of criteria we combine research results with practical testing of product groups. We prioritise requirements in accordance with the parameters that seem most appropriate when the RPS model is applied to the life cycle of the product group in question.

On the basis of the applicable environmental threat we compile environmental objectives for the individual product groups. If two alternative products have harmful effects that cannot be compared scientifically, we select the best product on the basis of other criteria. We give preference to the alternative with the greatest scope for improvement in terms of sustainability. In order to prevent the shifting of environmental problems to other parts of the world or to other phases of the life cycle of the product, complete solutions must be demanded, and we must always maintain in our mind's eye the vision of the sustainable society.

The life cycle concept is one of the cornerstones of our criteria development process. We assess the environmental aspects of the entire life cycle of a product, from raw material extraction to disposal. The criteria are developed on the basis of the information available on the various phases of the life cycle. The availability of detailed information determines how precise an evaluation can be. A comprehensive life cycle investigation is time-consuming and costly and a qualitative assessment will often be sufficient. Life cycle testing ensures that environmental impact is not merely shifted to a different location.

Traditional life cycle analysis (LCA) is not the only tool used in ecolabelling. An LCA does not, for example, take account of social and ethical aspects and it will frequently be too narrow in its focus, since, generally, an LCA does not include a durability assessment. When investigating the potential dynamic of a technological development (see below: Potential) we take account of changes that are technically and financially doable.

One of our methods is to ask and seek a specific answer to what a product would look like in a sustainable society.

Questions illustrating the purpose of the assessment of relevance:

Is the environmental impact relevant in relation to our vision and our environmental goals?

Does the environmental impact make a significant contribution to the resolution of known environmental problems?

Does the product or use of the product break the system conditions?

Has account been taken of the environmental impact of the product throughout its whole life cycle?

Are resources used efficiently?

Could the adoption of requirements initiate a dynamic development in the direction of an environmentally friendly product?

Does society view the environmental effects as important?

Potential

Potential from the perspective of a dynamic development that will permit environmental gains within a certain product group. Comparisons are made with, for example, existing products or with technical innovations that might be realized within the near future. Can we do anything about the environmental problem?

At Nordic Ecolabelling we use a variety of means in selecting the most significant parameters for how a product should be designed and manufactured in a sustainable society. For progress to be achieved with a positive and voluntary ecolabelling system we must rely on technology and methods that are well advanced in environmental terms. These pioneers within environmental technology might either be new innovations or the result of a long and slow development. To be able to set the requirements at the appropriate level we need to be aware of the scope for technical development within the individual product group.

This also makes it easier for us to give notice of coming criteria during the revision process.

During the criteria development process we identify potential with the aid of technical groups. These groups provide a natural point of contact with the industry in question and help us to produce documents that can be applied in practice. During the preliminary study and criteria development stages the secretariat group and experts chart the environmental impact of the product group. The potentials of the main environmental parameters of the product group in question are then considered.

When forming the technical group we attempt to achieve a balance between the interests of the environment, consumers and manufacturers. The industry experts should represent a variety of companies and have a positive attitude towards ecolabelling.

Questions that reveal the purpose of assessing potential:

Is a reduction in environmental impact possible?

Is it possible to switch to less environmentally harmful substances?

Can the environmental problem be solved without new problems arising in other phases of the life cycle?

Can a satisfactory and flexible process of improvement be created?

Steerability

Steerability is a measure of the extent to which the activity, problem or requirement can be influenced by ecolabelling. Can the Swan Label do anything about the environmental problem?

The voluntary nature of ecolabelling means that we can impose environmental requirements that are stricter than those imposed by the authorities in laws and regulations. Even so, environmental requirements must not be so strict that they deter manufacturers from applying for a licence to display the label. On the other hand, strict requirements increase the credibility of the label in the eyes of consumers. Relaxed criteria requirements make it easier for manufacturers to secure a licence, but if the level of requirements is too low, consumers lose confidence in the system. The long-term effect of this is that manufacturers will no longer apply for a Swan Label for their products.

The principle of gradual improvement is embodied in the Swan Label scheme in that we regularly assess and revise the criteria with the objective of achieving our vision of sustainable development.

The term Steerability applies both to consumers and to manufacturers (licence-holders). For steerability to impact upon the consumer, he or she must be in a situation of choice where the Swan Label influences him or her to choose a certain product. At the same time, steerability represents an expression of the extent to which manufacturers are able to control their production (choice and documentation of subcontractors, processes, raw materials etc.) and thereby document fulfilment of the requirements of the criteria without affecting the price and quality of the product.

Questions illustrating the purpose of the assessment of relevance:

Is the customer able to choose less environmentally harmful products?

Can the manufacturer produce less environmentally harmful products?

Can the subcontractor supply less environmentally harmful products?

Does a requirement have the desired effect?

Are the requirements clearly formulated and easy to understand and document?

Are the system conditions clearly formulated and defined?

Are there many players on the market?

Are there players with a high profile on environmental issues?

Is the market interested in ecolabelling?

The effects of ecolabelling

Direct environmental effects are achieved where an increasing number of products attempt to fulfil the ecolabelling requirements. When we adopt the criteria, a certain proportion of the products available on the markets will generally fulfil the requirements (usually no more than 30%). Further effects are achieved when the criteria are revised, provided that manufacturers are prepared to comply with the new, stricter requirements. A precondition for calculating the environmental effects is that the criteria requirements imposed in relation to the key parameters are measurable.

Questions illustrating the purpose of the assessment of relevance:

> Are there measurable criteria requirements that can be followed up on?
>
> What do we wish to achieve in imposing this criterion?
>
> Can we evaluate the ecolabelling criteria and thereby demonstrate an environmental effect?

Ecolabelling is effective not only if more manufacturers are granted a licence, but also if those who already hold licences win a greater share of the market. When we calculate environmental effects we also take account of the market shares held by ecolabelled products. Since consumers make demands on products through the products they choose, manufacturers are forced to produce cleaner goods. If the manufacturers are highly motivated, their suppliers will be forced to comply with the required environmental measures. This in turn may mean that the products of suppliers are recommended and they have a chance of increasing their market shares. In this way the environmental requirements are spread throughout the production chain and reach beyond the product for which the ecolabelling licence was originally granted.

The environmental issues relating to production are complicated. Few consumers or purchasers have the time to find out about this network of problems. A prominent ecolabel on product groups that are important to the consumer represents a way of communicating, and guides both private and professional consumers in the direction of responsible purchases and caring for the environment.

Steps on the way

As an instrument ecolabelling differs from other tools used in the field of environmental protection. The Swan Label ecolabelling scheme is a voluntary system, in which the basic rule is that the requirements imposed must be at least as strict as the relevant requirements imposed by the authorities.

Our goal is to promote the development of environmentally friendly products and services with the aid of the Swan Label. Each Swan Label on the supermarket shelf helps the consumer to choose one of the least environmentally harmful product options. By increasing knowledge about the global processes which control life on earth and by a common effort it is within our grasp to achieve the vision of sustainable development over the longer term. Each criteria document developed by Nordic Ecolabelling represents a small step along this road.

Environmental threat	**Long-term environmental objective of Swan labelled products**
Climate change	A significant reduction in emissions of greenhouse gases that may cause an increase in the temperature of the earth.
Depletion of the ozone layer	A significant reduction in ozone depleting chemicals that may cause increased ultra-violet radiation
Acidification	A significant reduction in emissions of substances that may cause for example acid rain (for example sulphur and nitric oxides) primarily through cleaner technology, secondarily through the treatment of emissions.
Local air pollution and noise	A significant reduction in emissions of air pollutants and in noise levels that impact upon the local environment.
Ground level ozone formation	A significant reduction in emissions of chemicals that lead to photochemical ozone formation causing harm to for example human health and vegetation.
Water pollution and over-fertilization	A significant reduction in emissions of fertilizers and chemicals that lead to poorer water quality and lack of oxygen.
Emissions of eco-toxins and heavy metals	A significant reduction in chemicals and heavy metals that may build up in the eco system or have an acute toxic effect.
Emission of substances harmful to health	A significant reduction in types of chemicals that may effect human health.
Accumulations of waste and unsorted waste	Minimizing waste generation, increased use of recyclable and readily degradable materials.
The spread of organisms to environments in which they do not belong	Preventing foreign organisms from causing damage to the natural eco system (the precautionary principle).
Reduced biodiversity	Preventing the death of species and the reduction in the genetic resources of the planet.
Radioactive radiation	Preventing and substituting radiation processes that may harm the genetic code of organisms (the precautionary principle).
Excessive use of land and water	Saving living space for the natural eco-system or for use for other activities.
Over-extraction of scarce resources and non-renewable scarce raw materials	A significant reduction in the use of fossil non-renewable raw materials and rare raw materials that are not returned to the natural cycle.
The use of dangerous technology	A significant reduction in the use of technology that may cause environmental catastrophes, for example in the form of explosions (the precautionary principle).