

VOLUNTARY TOOLS OF THE ENVIRONMENTAL ORIENTED PRODUCT POLICY

Miroslav RUSKO

doc. RNDr. Miroslav Rusko, PhD., Slovak University of Technology in Bratislava, Faculty
of Materials Science and Technology in Trnava, Institute of Safety, Environment and Quality,
Paulínska 16, 917 24 Trnava, Slovak Republic
e-mail: miroslav.rusko@stuba.sk

Abstract

Environmentally oriented product policy is in general determined by the relationships between its aims – subjects – objects - tools. It is based on the integrated approach to the product life cycle, which anticipates an enormous amount of information. It has to solve the questions of the international trade as well as the rules of the International Trade Organization. New forms of preventive environmental strategies and especially Green Marketing are being introduced helping to solve environmental problems and environmental motivation of producers. Many producers face great attention of the public regarding their approach to the environment. Despite the fact that the customers buy products fairly prudently and their behaviour is markedly affected by prices, a particular part of the population prefers the products that do not burden the environment. This brings about a situation, in which the producers within their mutual competition and in relation to customers are enforced to behave responsibly.

Key words

environment, product, policy, ecolabelling, Life-Cycle Assessment, ecodesign, marketing

INTRODUCTION

The analysis of different ways of the environmental protection in 80's of the last century suggests that the most effective and the most economic ways of the environmental protection are based on prevention, then a research and a liquidation of causes, which evoke the contamination of the environment. The application of this preventive strategy for the production processes conducted to the formation of the cleaner production. Since the production processes are to a certain extent defined by the character of produced product, the centre of environmental policy coverage moved from the production processes to the next

cause of the environment devaluation, and it began to formulate so-called environmentally oriented product policy.

ENVIRONMENTALLY ORIENTED PRODUCT POLICY

The objective of the environmentally oriented product policy is a reduction of the potential environmental impact of products to a level, which will be acceptable from the point of view of sustainable development. It means:

- highest possible raw material exploitation,
- energy consumption minimization,
- achievement of such product quality, which will allow for prolongation of the life span of product, its increased usefulness, waste emission reduction to an acceptable level,
- environmental risk minimization linked to the product disposal after reaching its life span.

The policy is focused on the product itself, produced activity or a service offered, however, not only in their final appearance (e.g. as finalized product), but during all life cycle phases, i.e. projection, composition decision, production phase, usage and the final phase – disposal. Subjects of this process comprise high number of stakeholders – market members: producers, distributors, trade, consumers, but also the state.

Ecodesign, environmental labelling of the products, life cycle assessment and green marketing are important tools of the environmentally oriented policy and environmental management.

The importance of the ecodesign, LCA and environmental labelling of products in the international community dramatically increased by their incorporation into the international series of ISO 14000 Standards. These standards are voluntary; they were elaborated and implemented consensually. They precondition not only future development, but also quality increase of the environmental labelling programmes to a high extent.

Ecodesign, ecolabelling, LCA and green marketing are voluntary regulative tools of environmental policy. Term of a voluntary tool indicates that its use is not ordered by the legislation and that it depends only on enterprise if it decides for the application of some of these tools or not.

Since the public environmental awareness keeps growing, the market should not accept the products without the minimization of negative impacts to the environment in the phase of development, production and disposal. The term of a regulative tool of environmental policy means that the tool's application prevents to certain release of negative impact of new product on the environment.

ECOLABELLING

"Ecolabelling" is a voluntary method of environmental performance certification and labelling that is practised around the world. An "ecolabel" is a label which identifies overall, proven environmental preference of a product or service within a specific product/service category. There are different classifications of label.

In contrast to "green" symbols or claim statements developed by manufacturers and service providers, the most credible labels are based on life cycle considerations; they are awarded by an impartial third-party in relation to certain products or services that are independently determined to meet transparent environmental leadership criteria (12).

The ISO 14020 series of standards provides businesses with a globally recognized and credible set of international benchmarks against which they can prepare their environmental labelling, which is increasingly used on products and in advertising, in response to consumer demands. With the relentless focus on climate change and health, consumers are becoming more interested in less tangible product attributes such as the ethical and environmental aspects of a product's production and supply. In response to this, manufacturers often voluntarily choose to provide information concerning the environmental aspects of their products on labelling and in advertising.

At the start of its work, the ISO subcommittee responsible for the development classified different types of labelling by type number. The two main types already in existence were:

- The "classic" ecolabelling schemes, which award a mark or a logo based on the fulfilment of a set of criteria – these were identified as Type I environmental labelling
- Claims which were made by manufacturers and businesses, and could be seen as being "self-declared" – these were identified as Type II self-declared environmental claims (11).

In addition, however, it was recognized that a third type was starting to emerge. It consisted of a formalized set of environmental data describing the environmental aspects of a product. These declarations were identified as Type III environmental declarations.

Several current successful programmes are used in compliance with business rules based on the principle of voluntarism, as e.g. ecolabelling, i.e. labelling of environment-friendly products and services being more inoffensive toward the environment than their substitutes. Its main aim is to support the preservation of the environment and prevention of pollution in balance with social and economic needs. The terms ecolabelling or ecolabelling system refer to a certification system ruled by a third independent party, i.e. neither by the producer nor the customer.

Germany was the first country to introduce environmental labelling after 1977. Similar systems have been gradually introduced also in other countries. In 1994, Global Ecolabelling Network (GEN) was formed. Within the wide class of environmental labelling and declarations in coincidence with products or services, there are labels with various extent of relation to environment or its compounds. They can be divided into several types (9):

- standardised in the framework of ISO/TC/207 (series of standards 14020), type I., II. or III.,
- standardised out of scope of ISO 14020,
- non-standardised,
- labelling with environmental aspects – standardised,
- labelling with environmental aspects - non-standardised.

Ecolabelling can be distinguished on the basis of trustworthiness and depth of information provided to the customer:

- Advertisement labelling. The aim is to attract attention of customers in order to gain their acceptance of the offer. The information on the protection of environment is not specific, often not verifiable and as such potentially misleading.
- Latent or indirect labelling. The aim is to inform the customer about particular properties of products as e.g. their safety, functionality, health protection, toxicity, flammability, explosiveness, loudness, exploitation of raw materials and energetic sources. These labels express compliance of properties with a particular set of requirements set up in advance, however not focused explicitly on the protection of

environment. They testify particular properties of products without directly declaring their impact on environment.

- True Ecolabelling. The aim is to provide true and verifiable information guaranteed by so-called third party on the impact of the labelled product or service on environment.

Ecolabelling is a significant compound of environmental product policies that are generally determined by relations between their targets – objects – subjects – tools (1). Ecolabelling is based on an integrated approach to life cycles of products, the fact of which assumes provision of significant information. It is focused on products or provided services, however not only on their final form of completed products, but also on individual phases of their life cycles. The subjects of this process are represented by a number of market participants, namely producers, distributors, dealers, customers including the state (8).



Fig. 3 Mark EU-Ecolabel and “Environmentálne vhodný produkt (Environment-friendly product)”

In the frame of environmental lawmaking, the European Community has accepted the Statute of European Council 880/92 of 23rd March 1992, dealing with the system of granting environmental labels. Gradually, the Committee assessed the environmental criteria of granting the environmental EC label to relevant product classes. The EC statute No. 880/92 of 23rd March 1992 was revised in 2000, namely by the Statute (EC) No. 1980/2000, resp. Regulation (EC) No. 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel.

The Government Decree No. 97/1996 approved the national programme of environmental evaluation and labelling of products in SR declared by the Ministry of Environment of SR on 15th March 1997. Within the latter programme, the label of “Environmentally Appropriate Product” (Environment-friendly Product) has been introduced. Under the conditions of the SR approximation process, the Law No. 469/2002 (as amended) has ensured the implementation of the respective European Statute.

LIFE-CYCLE ASSESSMENT

The LCA (Life-Cycle Assessment) method is one of the most important information tools for environmental policy. It is used to determine adverse environmental impacts of any system (product or service). Information that is provided by the LCA method enables both experts in ecodesign and enterprise marketing to select new products and employees of the state administration, and in the area of ecolabelling, to stipulate regulations and criteria for the support of environmentally friendly products. Last but not least, this information is significant for further scientific and technical development as it reveals the causes of harmful effects on the environment. The LCA method can then be summarily defined (according to ISO 14040)

as: compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life-cycle.

It should be emphasized that the concept of a “product life-cycle” is not identical with the concept of the “service life of a product”. The service life of a product is the period during which a product can be used for the purpose for which it was manufactured and thus constitutes only a small part of the life-cycle of a product.

When using the LCA method, it must be acknowledged that the life-cycle of a specific product can consist of various substance and material flows in each individual case (Fig. 1). A single product may have various environmental impacts depending on the specific inputs and outputs connecting its life-cycle with the environment. Differences between individual life-cycles of the same product may be caused by various reasons. These can include various production technologies, various manners of product use, different manners of its disposal after use, etc. (Fig. 2.) Recycling of a product also changes the environmental impact of its life-cycle; impact of the product life-cycle in this case does not necessarily have to be smaller. A change in the manner of distribution of a product and transport processes in general could have a considerable influence in this relation (7).

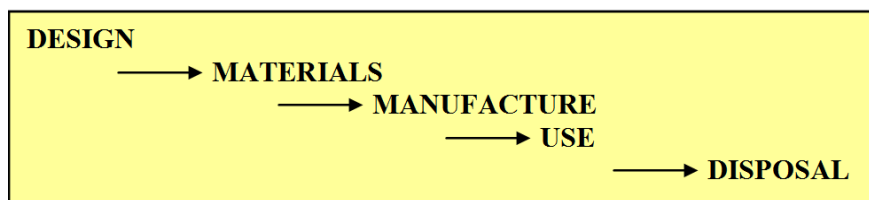


Fig. 1 Conceptual outline of the product system (adaption according to (10))

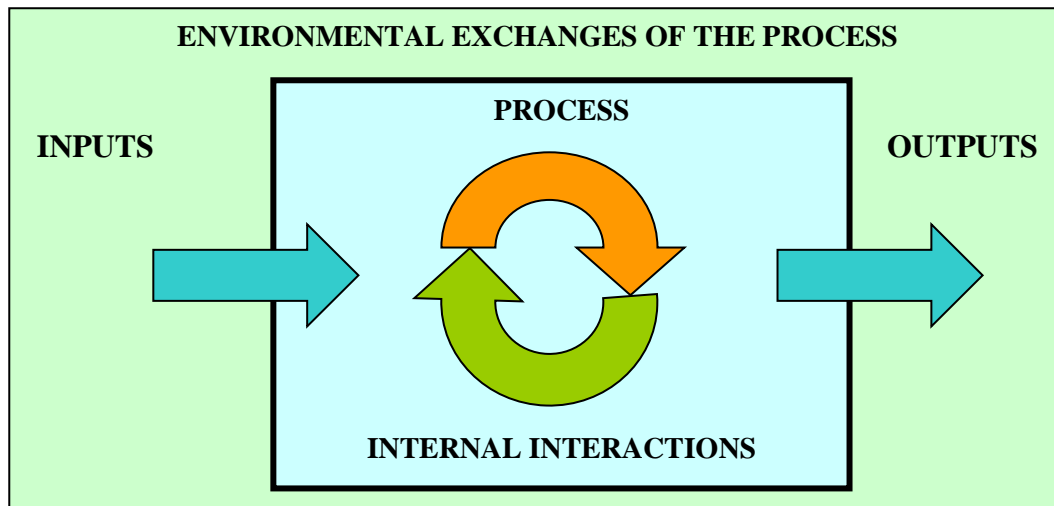


Fig. 2 The process environmental exchanges

The LCA methodology has four components:

- setting goals and scope,
- inventory analysis,
- determining the overall adverse environmental impact,
- assessment of the proposal for reducing the adverse impact.

The LCA method is an irreplaceable, analytically oriented information instrument for the integrated product policy which can be utilized in practice, in particular, in:

- decision-making concerned with development of products and processes in enterprises,
- decision-making on purchase of goods,
- ecolabelling,
- decision-making related to statutory regulations,
- support for legislative decisions.

The LCA method is an important source of information which is significant for further scientific and technical development concerned not only with reducing adverse environmental impacts, but also with achieving sustainable development.

ECODESIGN

The life cycle approach starts at the phase of eco design of a product, and it is a systematic integration of the environmental views during the whole process of development and production. The development phase comprises several steps, from market situation analysis, via innovation search and their evaluation, up to implementation. Economical analyses emphasize (4) that the product development gives up to 70 % of its final price. That means, that the following number of degrees of freedom to the resulting influence to the costs structure is relatively low for a serial production. Thus, ecodesign becomes a key issue focused on development of such parameters which will minimize or eliminate negative impacts to the environment even before its placement to the market (9).

The ecodesign is a systematic process of design and development of a product, that, apart from the classic properties such as a functionality, economicality, security, ergonomicality, technical feasibility, aestheticality and so on, accentuates the achievement of the minimal negative impact of a product on the environment namely in term of whole life cycle. The estimate of the environmental profile of a product has a significant role, it is a specification of all significant factors, by which the product affects the environment during its whole life cycle.

The ecodesign is one of the important prevention oriented voluntary regulative tools of the environmental policy. The preventive bearing of the ecodesign is given by the request for the release of negative impact of a product on the environment. (6).

Main types of the ecodesign strategies:

- the development of a completely new concept of product (dematerialization, possibility of common using, function integration, functional optimum);
- change of product construction:
 - strategy centred on the product composition (selection of the materials with the low negative impact on the environment),
 - strategy centred on the product structure (optimization of production processes, optimization of distributive systems of a product, release of a negative impact on the environment during the product using),
 - strategy centred on duty systems (optimization of product durability, optimization of the way of the product liquidation).

ECOLABELLING AND GREEN MARKETING

Currently, the customers question companies under what conditions their products have been produced and whether the used raw materials and procedures are environmentally safe

and harmless to the health of workers. They demand to know as to in what way it is going to be possible to recycle the cover of the product as well as the product itself, or destruct it after its life cycle has terminated (3). Firms must respect all the Slovak and foreign legal aspects, regulations and standards coinciding either directly or indirectly with environment. Firms are able to evaluate the best as to what extent the legislature enables them to carry out their voluntary obligations. Therefore a whole number of significant companies in addition to their systems of quality management implement also environmental management systems. They are based on the implementation of elements of formation and protection of environment into their decision-making processes (2).

Prior to the implementation of new products in the market, it is very important to prepare the market itself. This process is to be carried out in coincidence with each new product. In case of ecolabelling, it is possible to use the advantage of the fact that ecolabels guarantee a minimum negative impact on environment, and therefore the behaviour of customers can indirectly affect the quality of environment, or help the customers to conceive better the offer of products with comparable properties and functionalities (5).

CONCLUSIONS

Ecodesign, LCA, ecolabelling and green marketing as a voluntary regulative tools of the environmental policy represent a significant instrument for the increase of abilities of the organization competitiveness. Their use is important for the organizations with established EMS by ISO 14001. In foreign countries, during the period of its existence, ecolabelling has entered not only the minds of customers, but also became an inevitable part of advertisements of producers and importers introducing appropriate brands of environment-friendly products into the market. Despite the fact that in the SR there was no campaign about the ecolabelling programme, it is sensible to label the products because it strengthens the feeling of the public about the environmental protection. By means of environment-friendly product labelling, the Slovak customers get guaranteed information about the products respecting the environment. The problem of successful implementation of environmental labels in Slovakia is especially the provision and availability of information about the products.

References:

1. CASCIO, J., WOODSIDE, G., MITCHELL, P. 1996. *ISO 14000 Guide*. New York.
2. HYRŠLOVÁ, J. 2004. Benefits of Environmental Management Systems in the Czech Republic. In: *Conference Akademická Dubnica 2004*. Dubnica: pp. 163 – 166. ISBN 80-227-2076-3
3. KOTOVICOVÁ, J. et al. 2003. *Clean Production*. Brno: MZLU. ISBN 80-7157-675-1
4. PFEIFFER, W. 1983. Strategisch orientiertes forschungs- und Entwicklungsmanagement Probleme und Lösungsansätze aus Sicht der Wissenschaft. In BLOHM, H. - DANERT, G. 1983. *Forschungs – und Entwicklungsmanagement*. Stuttgart. pp. 124 – 133.
5. KORAUŠ, A. 2003. Customer Relationships Management as Key Factor of Success. *Eurozpravodaj*, 2/2003. ISSN 1213-6913
6. REMTOVÁ, K. 2003. *Ecodesign*. Prague: Ministry of Environment of the Czech Republic. p. 15. ISBN 80-7212-230-4
7. REMTOVÁ, K. 2003. *LCA – Life-Cycle Assessment*. Prague: Ministry of Environment of the Czech Republic. p. 13. ISBN 80-7212-230-0
8. RUSKO, M., AMBRÓŠ, L. 2002. Ecolabelling as a Part of the Environmentally Oriented Product Policy in the Slovak Republic. In: TREBICKÝ, V. - NOVÁK J. (eds.) *Visegrad*

- Agenda 21-Transition from Centrally Planned Economy to Sustainable Society? Conference Proceedings*. Prague: 327 p., pp.272-275. ISBN 80-901914-8-7
9. RUSKO, M., BALOG, K. 2003. Ecolabelling in the Slovak Republic. In *CO-MAT-TECH 2003*. Trnava. ISBN 80-227-1949-8
 10. WENZEL, H., HAUSCHILD, M., ALTING, L. 1997. *Environmental Assessment of Products*. London: Chapman & Hall. p. 533. ISBN 0-412-80800-5
 11. Environmental labels and declarations. How ISO standards help. - ISO Central Secretariat, Genève. 2012. 25 p. ISBN 978-92-67-10586-4
 12. GEN. - [on-line] What Is Ecolabelling. - Available on - URL: http://www.globalecolabelling.net/what_is_ecolabelling/index.htm

Reviewers:

Prof. Ing. Vojtech Kollár, PhD.
doc. Ing. Richard Kuracina, PhD.