

# Eco-design in the framework of integrated product policy (PPI)

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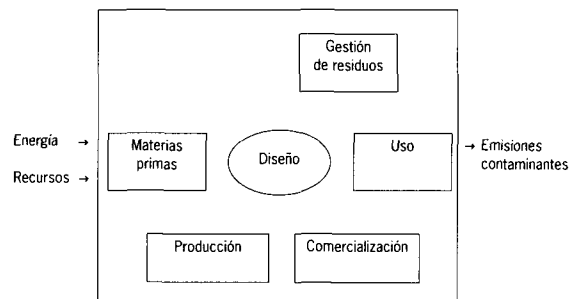
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## Summary

The constant increase of product consumption in Europe is creating global impacts on the environment that originate from the stages of its life cycle. For this reason, the European Union is trying to encourage eco-products, given that it has been detected that the main decisions on environmental effects are made in the design stage. The strategic document elaborated by the European Commission in order to favour this change is called The Green book on IPP, which aims to promote eco-design, buying green products and internalising environmental costs. The IPP will allow the policies on the improvement of environmental products to be harmonised as well as helping to put the concept of sustainable development into practise.

The constant increase of product consumption in Europe is creating global impacts on the environment in all of the stages of its life cycle owing to the excessive use of material and energy resources and the generation of toxic waste. We understand the life cycle of a product to be the set of stages a product goes through, from the cradle to the grave, from the extraction and processing of raw materials, product processing, marketing, use and final waste management. See Figure 1.

## Life cycle of a product



If everyone in the world were to consume as much as Europeans do, we would need two planets Earth, according to the ecological mark of the average consumer. This fact demonstrates just how unsustainable the current model of consumption is. Evolution towards a more sustainable society is linked to eco-products that must fulfil our needs by consuming fewer material and energy resources, generating less toxic waste in all of the life cycle stages.

If there is a generalised production and establishment of this idea, European companies will have to evolve from specific and local strategies that are mainly concerned with improving the last stage of the process (such as treatment of recycling) to strategies of a global kind, such as eco-design. This means working towards the environmental improvement of a product in the initial stages of the design of its function, choosing less damaging materials, using clean technologies in the productive processes, environmental improvements in

transportation and packaging, in its use and in final waste management.

Within the framework of the law in the European Union, it was not until 1997 that the first Community documents on integrated product policy (IPP) appeared, highlighting the fact that in order to achieve a more sustainable development, it is necessary to take heed of every stage in the life cycle of products. Finally, on the 7th of February 2001, the Green Book on IPP came out.

### **What is the Green Book on Integrated Product Policy (IPP)?**

Products in Europe, by exceeding a local framework of marketing thanks to the free market, are causing a global and regional impact on the environment. For this reason, the European Union is trying to encourage eco-products, given that it has been detected that the main decisions on environmental effects in the life cycle of products are made in the design stage, and that once it has been produced, there are very few actions of environmental improvement made on the product.

In order to speed up this process of environmental improvement on products, the EU is trying to use the IPP to get the experiments in eco-design that have been developed in leading countries to be employed throughout all the countries of the EU.

The Green Book on IPP is a strategic document elaborated by the European Commission that aims to reinforce and redirect the environmental policy relative to products by making all the actors involved participate, with the aim of reducing the environmental effects of products throughout their whole life cycle and at the same time, making them more acceptable to consumers.

The effort of the IPP focuses on the following areas:

- Promoting eco-design.
- Information on the products that respect the environment most in order to encourage green shopping and their efficient usage.
- The internalisation of the costs of global impacts on the environment in the offer «whoever globally contaminates, pays».

There are some precedents to this new strategy, such as the guidelines on containers and packaging, whereby the

responsibility of the manufacturer of containers goes beyond the production stage, becoming involved in the final stage of package waste. Other examples along this same line are the guidelines on vehicles and electronic and electrical appliances that are no longer in use.

### **Sectors implied in the environmental improvement of the life cycle of products in the framework of IPP**

According to the EU, in order to tackle support measures for the production of eco-products, it is necessary to involve every sector, from local administrations, universities, designers, environmentalists, companies, through to end consumers.

The prior objective of the Community administration is to make the process of introducing the IPP easier, rather than intervene in the traditional sense with a legal environmental deployment, by means of new guidelines for products such as those that have been elaborated by the sectors of containers and packaging, vehicles and electronics.

The IPP framework of action focuses on agreeing on a set of general objectives of environmental improvement of the product by means of previous negotiations and the incorporation of the vision of the product cycle in current legislative documents. Were there no medium-term progress in the environmental improvement of products, the EU would have to act from a legal point of view.

Local and regional administrations will make it easier to develop the market of eco-products in a way that will complement the actions of the European Commission, by means of green shopping and offering environmental information to citizens regarding a more responsible way of consuming. It must be said that the European local and regional administration has a purchasing power of more than the 12% of the European GDP. This value indicates that if shopping is environmentalised, this will force companies to increase the production and marketing of new eco-products.

Universities working on design and environment will play an important role in this strategy. Eco-design will be an innovative element within the LIFE and 6th EU Programme of Action on the subject of the environment programmes. These programmes will offer a good opportunity for the departments of environment and design of these centres, in collaboration with other companies to elaborate R&D projects and provide

solutions which will help to reduce the consumption of resources and energy and minimising toxic waste.

Another one of the key factors in this process will be the consumers who, given that they will have access to more information and environmental transparency regarding products, will be able to choose them using environmental criteria (durability, quality, and so on). This change towards understandable, pertinent and credible information will be possible thanks to the deployment of eco-labels (labels of type I, II and III, according to ISO) as well as an improvement in the technical specifications of the manufacturer or consuming organisms as how to reduce impact on the environment in the stage of usage.

Finally, it must be pointed out that if companies were not integrated into this strategy, thanks to a new ecological vision of products based on innovation and economic growth, this policy would not be possible. The interest companies show in ecological design cannot be avoided from a business point of view (reduction in costs, improving a brand's image, new markets thanks to green shopping on the part of administration, anticipating the regulation measures and enjoy grants in R&D in the field of eco-design). In Spain, small and medium-sized businesses will play an important part in this change towards eco-products, by being able to gain access to more information on impacts and the environmental actions of improvements of components and products.

### **Instruments and actions for the environmental improvement of products**

In order to be able to carry out this new strategy, the EU will rely on a set of instruments and actions directed towards favouring a gradual increase of the environmental quality of products and services that are based on the following ideas:

- Eco-design. Stimulating companies and designers.
- Green demand. More consumer information.
- Supply. Fairer prices by *internalising real costs* associated with the impacts on the environment in the life cycle of products.

The EU's instruments to favour the introduction of the IPP are:

- Economic instruments to make the marketing of eco-products easier.

- Responsibility of the manufacturer regarding the global impacts products have on the environment.
- Environmental identification of eco-products. Eco-labelling.
- Environmental declaration of businesses.
- Public contracts and environmental criteria.
- Environmental information concerning products.
- Guidelines on eco-design.
- Regulations regarding eco-design.
- New legislative vision to make the design of eco-products easier.
- Product panels. Workshops of experts in the fields of environment and design.
- Research, management and environmental accounting aids.

### **Eco-design, the key element of the IPP**

The IPP instruments associate a set of actions directed towards design, supply and demand. Of these actions, the ones that directly affect designers are:

- Developing and spreading environmental tools that are easily applied in order to assess the impacts caused during the life cycle of products.
- Promoting the elaboration, spreading and application of the guidelines to ecological design.
- Making sure rules on ecological design are carried out.
- Making sure the innovation of eco-products is a fundamental part of Community programmes of research and development.

### **Information and environmental tools for designers**

So that eco-design can become a reality, designers must have tools and objective and quantitative information on the potential impacts on the environment associated to the life cycle of products and components.

These must be easily accessible. To make this possible, we must create an environmental database on materials and processes agreed by consensus and with a computer medium that will allow us to examine the impacts of an eco-product quickly. Some examples along this line are the Life Cycle Analysis (LCA) which is simple and easy to use for designers and businesses; environmental profiles of products and components, environmental management tools

of the information flow on LCA and environmental indicators.

### Guidelines of ecological design

According to the IPP, one way of making it easier to introduce businesses to the concept of life cycle is by establishing a set of general guidelines on ecological design available. The Commission aims to promote them, help to elaborate, spread and apply them. The strategies of eco-design in these guidelines aim to:

- Improve the concept of the product.
- Choose material of lesser impact.
- Reduce impacts on production processes.
- Reduce impacts on the environment associated with transport and packaging.
- Achieve environmental improvements in the stages of product usage.
- Minimise the impact on the final management of product waste.

By integrating these strategies of environmental prevention in the design process, we will have to bear in mind the complexity and diversity of products. The Commission would like designers to incorporate concepts such as design for clean production, design for recycling, design to broaden the functions of products, durability, simplicity, design to reduce toxic materials and design for the use of renewable energies.

### Eco-design regulations

Currently, the EU is product regulations, which up until now were directed towards certifying that a product was «adequate for use» and «safe for users», are aiming for the concept of «environmental quality» to be systematically associated with European product regulations.

In order to provide these environmental product regulations, the IPP states that a set of regulations reached by consensus must be elaborated on relevant products so as to protect the environment. The experience in regulations, such as ISO 14.000 which focuses on environmental management, indicate that companies are generally disposed to integrate them, as long as these new environmental considerations in design and

manufacturing will not jeopardise their competitive position in a substantial way.

### Research and innovation in eco-design

The Commission is considering helping companies to incorporate ecological aspects in their strategic approaches and in the design of products by means of incentives. This vision will be integrated in the new VI research programme. An example of this change the EU's LIFE programme anticipates the subject of environmental improvement of products to be one of its aims.

Actions such as:

- Developing, harmonising and spreading the LCA methodology, mainly in small and medium-sized businesses.
- Determining which category of products have a large impact on the environment and carrying out detailed LCAs on them.
- Getting to know the motor forces of eco-design (market changes, the needs of society and so on).
- Resources for eco-design and eco-design networks.

### Prospects of future eco-products

This year there will be a debate on which instruments and actions proposed in the Green Book will have greater short-term priority for the environmentalisation of products. This debate will take place within European institutions and outside of them, in national forums consulting all of the sectors that are implied.

This debate will allow us to define the best way to place the IPP philosophy at the top of the EU's environmental policy, along with existing instruments, and how to integrate new ones.

The IPP will bring about a radical change in the world of design by promoting the systematic use of the concept of life cycle and the environmental analysis of products. This change will occur thanks to the publishing of eco-design guidelines, the introduction of an interdisciplinary work model for designers with other actors who are involved, such as environmentalists, engineers, business owners, administration and consumers, as well as the availability of research resources in eco-design.

Finally, the IPP will harmonise policies on the environmental improvement of products and the way of

applying them in all of the EU states, which will help to put the concept of sustainable development of products into practise.

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