



ECOSIGN

Ecodesign of Electronic Devices

UNIT 3: Eco certificates and labels of electronic devices

UNIT 3: ECO CERTIFICATES AND LABELS OF ELECTRONIC DEVICES



Eco certificates and labels of electronic devices

- The management of electronic products is traditionally linked to directives and regulations that require manufacturers to pay more attention and assume responsibility for products throughout the life cycle.
- The background of ecological policy. The producer's responsibility is a principled policy that emphasizes and encourages and requires the manufacturer to lead and manage the entire product life cycle. Such an approach enables a transparent insight into the production and use of the product in terms of minimizing environmental impact.
- The European Union's environmental policy was also covered by other countries, including Japan, Korea, Canada and America, which introduced the requirements of ecological approaches to a wide range of products and materials.

Responsible products, the change motivators

- The primary goal of the term responsible products is that the manufacturer also includes environmental effects in the development and production. With internalization and awareness about environmental effects the manufacturer undertakes the initiative of new approaches to product development or redesigns the existing products to be environmentally compliant.
- The initiative is visible with manufacturers who themselves take care of recycling their products or products of other manufacturers. Despite clear evidence that responsible products encourage different developmental and design methods, their connections are still a subject of many debates.
- Responsible products, their motivation, and encouragement to more advanced design approaches vary between manufacturers and their developmental program.

Extended product control with ecolabels and certificates

- Restrictions related to the traditional product control question if the classical methods and policy instruments can assure that all responsible products aspects will be realized in the product lifecycle.
- Standards, ecolabels and product certificates are precious comparing to the standard methods. These approaches define marketing advantages of ecological products as well as encourage innovation with the use of ecological and less toxic materials. Primarily, they tend to use health friendly and environmentally less hazardous substances. Ecological standards also stimulate the manufacturers to establish their own recycling programs and to take in their products after the end of lifecycle.

From environmental requirements to ecological standards

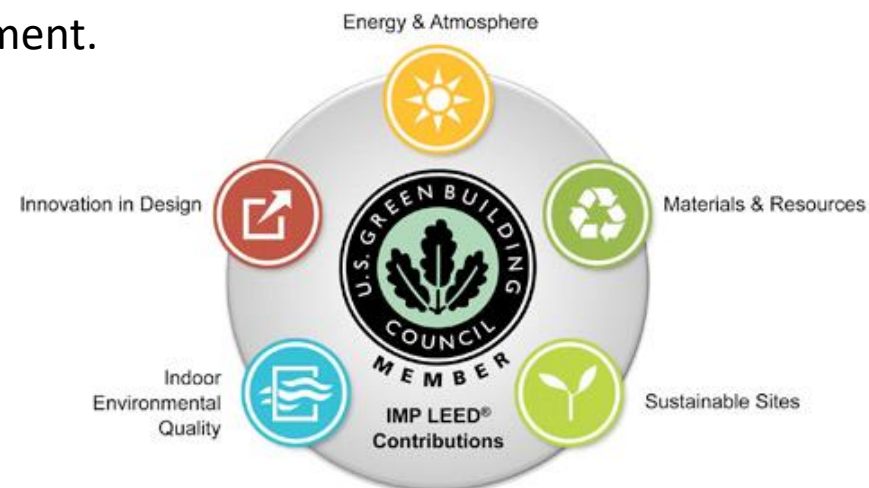
- Environmental requirements and declarations that promote the environmental aspects of individual products have been introduced since 1970. With the introduction of standards, certification and eco-labeling have brought more stringency and expansion of environmental products in this field. Interest of environmental standards and labeling is conditioned by various factors.
- Many new ecological standards take a flexible approach where many different criteria are in place and allow the manufacturer to decide which criteria he wants to highlight more in the product.
- Among all the features of the certification program is the consensus which is used to set the standard. This approach leads to a higher credibility and impartiality of the program and uses a measurable metric to evaluate the device.

Product standards – Approach types

- Product standards, certification, and Eco-labeling cover a wide range of approaches. These include governmental programs, as well as standards, introduced by private organizations.
 - Type I is a voluntary program. It is led by an independent group that allocates ecolabels by multiple criteria based program, the licenses within a certain product groups.
 - Type II is a program based on the declared environmental requirements.
 - Type III is a program that uses third person verification for evaluating quantitative databases for lifecycle evaluation, established by outer organization parameters.

LEED and the growth of certification systems

- LEED stands for the Leadership in Energy and Environmental Design. The growth of non-governmental environmental standards and product certification programs has increased significantly over the past few years. The LEED certificate encourages construction workers to ecological construction and the achievement of LEED standards. The LEED certification system has helped to expand market demand for buildings that are environmentally friendly during their use and are built with eco-friendly approaches and materials.
- The LEED program also includes electronics. Modern and future modernization of buildings include many electrical appliances for building control and management.



EPEAT news standard generation

- The efforts of different European and foreign countries have led to the new generation of environmental standards named EPEAT (Electronic Product Environmental Assessment Tool). EPEAT was inspired by other standards, especially from construction standards. Development of EPEAT started in 2002 when EPA invited stakeholders with the intention to promote ecologically suitable information technology – IT.
- EPEAT is ecological evaluation tool that is intended for large purchasers of desk computers, laptops and monitors. EPEAT present a growing trend of standardization, and it includes multiple environmental effects in one standard. This standard is not focused only on narrow criteria, such as energy consumption and recycling, but it covers broader aspects and ecological adequacies. EPEAT standard present a flexible approach. It requires consideration of 23 specific criteria and at the same time offers 28 optional criteria in 8 categories.



Problems and challenges

- The topics such as ecological standardization, program certification, and ecolabels do not exist without a consensus among stakeholders. Some of the main entry points are:
 - Will the standards determine the lower limit which will encourage manufacturers to improve products and provide a development plan and initiative? Or will the standards serve as guidelines which will reward manufacturers with the most ecologically efficient trends and products?
 - Which external audit procedure is suitable? External independent evaluators are seen as an expense and can be a challenge to the manufacturers in case of rapid technological development and quick entry of product to the market.

Problems and challenges

- Will the consumer market accept the standardization program? This question is vital for determining if the ecological standards will improve and critically evaluate the ecological characteristics of devices.
- How will the ecological standards affect small businesses and manufacturers? Such effects are not only additional costs for product certification but also additional taxes for maintenance and standard authentication.
- Depending on the fast technological growth and short period needed for developing new devices, it is essential that the criteria used for evaluating ecological suitability are often revised and updated.
- For increasing awareness about ecological standards and certificates on the regional market, it is essential that the national authorities support and demand the ecological standards to be also introduced on the national level.

Ecological labels and certification

- The central premise of the label 80PLUS is that the computer manufacturers have to attain the additions of the innovative programs which they use to achieve integration of energy efficient power supply in the personal computers. This program was developed within the Plug Load Solutions program, which promotes and offers a wide range of highly energy efficient business and trade technologies.
- Label AENOR-Medio Ambiente is a system, intended for recognition of environmentally friendly products or services. The certification process is based on audit approaches and laboratory measurements. The label marks products with low environmental effects. It is mainly focused on labeling consumer products.



Ecological labels and certification

- Organisation BASF SE has developed a label for products which were evaluated with an eco-efficiency analysis. The label has high requirements and is given after an analysis and evaluation by the third party. Analysis results and findings need to be presented through the Internet.
- B Corporations are a new type of businesses which use the business power to solve social and environmental problems. B corporations differ from the traditional companies by reaching advanced and transparent social and environmental standards through stakeholders who are united under one brand.



Ecological labels and certification

- The Better Environmental Sustainability Targets (BEST) certification is intended for manufacturers of lead batteries which meet the minimal emission standards and accept used batteries for environmentally friendlier recycling. This label's goal is reduction of emissions made during production and recycling of lead-acid batteries and guarantee the lowest poisoning of environment and living beings with lead.
- CarboneCare scheme encourages and recognizes effects of an organization that fights against climate change with three steps. These are measurements, reduction, and leveling of carbon footprint. The scheme is defined by many acts, documents and different labels for different emissions.



Ecological labels and certification

- Label Blue Angel was initiated by the German government and an independent commission which awards this label to products and devices which are environmentally friendlier than comparable products. Each label shows that the product or service is focused on one of four different environmental goals: health, climate, water, and resources.
- CarbonFree label is part of certification that is intended for raising awareness of increased product emissions and as a recognition of companies that lower carbon footprint. The label was created as a response to a growing market of environmentally friendly products and consumer inquiries on transparent, reliable and easily accessible information.



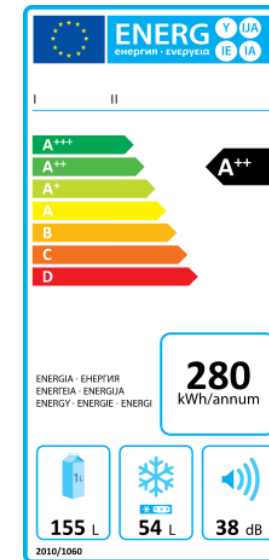
Ecological labels and certification

- Carbon neutral certification is intended for companies that level or decrease carbon footprint on different levels. Their primary task is raising awareness amongst manufacturers so they mindfully Ecodesign products through the whole lifecycle.
- Label Carbon Reduction is a public commitment that the product or service carbon footprint is measured and confirmed. The product's or service's owner commits to reducing carbon footprint in the following two years. The calculated footprint will be consistently measured and compared relating to PAS2050 standard and Footprint Expert.



Ecological labels and certification

- By law, all electronic devices sold in European Union need to be labeled with an ecolabel. The ecolabel is an indicator of efficiency and savings. Directive is used for the following types of household appliances, even when they are used in a non-household way.
- The goal of the Climatop label is labeling of the most climate-friendly products and services (best in their class). Similar products from the same group are compared by the emissions. The products that cause CO2 emission equivalent, which is generally 20% lower than emissions of similar devices in their group are awarded the Climatop label. Only products that have an ecological balance in the production process and are better or same as their competitors in the same group can have this label.



Ecological labels and certification

- The Cradle to Cradle Certified is a program for labeling companies that encourage intelligent Ecodesign. Cradle to Cradle certificate is a four-stage approach to labeling that consists of the evaluation scale: basic, silver, gold, and platinum. This certification program is valid for materials as well as for final products.
- DIN CERTCO is an organization that manages certification of products by different providers. They evaluate and issue certificates services, products, companies, and personnel. The organization helps the customer or company choose the appropriate certificate and the certification process depending on the product or service that they offer.



Ecological labels and certification

- ECO-living label is part of the organization Living Direct. The label is awarded to online stores, specialized devices and ventilation devices. ECO-living label is awarded to environmentally friendly products and is certified by Energy Star, RoHS, and HEPA (High-Efficiency Particulate Air) certificate.
- ECOLOGO label is part of UL Environment which is a member of UL-Underwriters Laboratories. ECOLOGO certificate is based on multiple criteria evaluation of lifecycle standards. All products certified with ECOLOGO certificate need to meet or exceed the lifecycle standards. ECOLOGO certificate is classified, similar to ISO TIP1 for the environment and is successfully evaluated by the global ecological network, which additionally confirms its credibility.



Ecological labels and certification

- European eco-flower is a label for products that met the required ecological criteria. The European eco-flower is awarded based on the European Council and Parliament Directive EC 66/2010/EEC. Its management is carried out by the European Commission together with other European Union members and other stakeholders.
- The main objective of EPD Environmental Product Declaration is to guarantee appropriate, verified and comparable information for fulfilling requirements of different customers and the market needs. The international system helps and supports organizations with maintaining the environmental efficiency of their products (goods and services).



Ecological labels and certification

- EPEAT is a global system for management of ecological electronic devices. Users of EPEAT (Electronic Product Environmental Assessment Tool) can evaluate and compare different electronic components and devices in 43 countries. EPEAT is currently managing the following categories: personal computers, televisions, printers, copy machines, scanners, etc..
- E-Stewards certification consists of individuals, corporations, nonprofit organizations and governmental agencies which support ethical and responsible standards for recycling and reuse of electronic devices.



Ecological labels and certification

- Energy Star presents the level that every environmentally aware manufacturer wants to reach. Energy Star program was established as an agreement between the European Union and the United States of America for a coordinated energy labeling of office supplies in 1992. It is used for labeling energy-efficient electronic devices, such as personal computers, screens, optical devices, uninterruptible power supply devices (UPS) and servers.
- ECMA is a voluntary identification standard and labels environmental attributes which are linked to information and communication technologies and electronic devices through the whole product lifecycle. This declaration does not have fixed requirements but it gives information on product efficiency.



Ecological labels and certification

- This label is used as credential of ecological products by Siemens company. It is awarded when products meet the highest environmental standards, production methods, energy efficiency, recycling, use of nonhazardous materials and packaging materials. Super green products are characterized as environmentally friendly products which were made in ecologically oriented production.
- Green productions standard enables and helps consumers understand a growing number of ecological products. The standard includes an in-depth lifecycle analysis of each product. Depending on the lifecycle results the Green production standard evaluation is awarded for the eco-friendliness.



Ecological labels and certification

- Green Tick Sustainable Certified is an independent organization that manages evaluation and certification of ecological products. The product or service evaluation is based on the lifecycle analysis depending on certain standards of Green Tick organization. The products are evaluated by independent commission according to standards ISO 17011, ISO 17021, ISO 19001, etc.
- A Simple Switch is a label by company Philips which presents to their customers and society that the ecological suitability of the product is improved for at least 10%. The ecological suitability covers efficient energy use, lowered or restricted use of hazardous substances, reduced product weight, prolonged lifetime and packaging.



Ecological labels and certification

- TCO is an international label for IT devices, and it includes a wide range of criteria, such as ecodesign, longer lifetime, recycling and reuse. The certificate merges social responsibility in the production process, where the product is manufactured, the safety of production, product ergonomics as well as lower environmental effects. The certificate requires verification after a certain period, to evaluate if the product still meets ecological and social standards.
- UL Underwriter Laboratory offers services for verification of devices that meet requirements on energy efficiency. Through UL services the manufacturers can show their customers, users or competitors that they meet strict regulation of energy efficiency with their devices. UL program verifies and tests the energy efficiency of devices according to the energy standards.

