

## ENVIRONMENTAL MARKS FOR ELECTRONICS AND ELECTRONIC DEVICES IN AUSTRIA

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### Abstract

*In recent decades, there has been a considerable expansion of a range in approaches to environmental policy at the national and international level as well. There is important role of voluntary approaches and in several cases they have been taken as standard procedures. With this expansion began research of the problematic aimed to explore not only the theoretical*

*aspects but also the generalization of practical use gained from the individual studies, simultaneously. The work deals mainly with the issue of the application of eco-labelling in Austria, as an important tool of environmental management, governed by legislation or standards.*

### Key words:

*labelling, environment, electronics, energy*

### Introduction

Environmental labeling in Austria is gradually coming into public awareness. This time the informing of public on this problematic is at the level of secondary schools, in form of various lectures about environmental labeling and its importance and implementation in practice. Nowadays, there are some plans to introduce ecolabelling themes on the university level to provide a more professional approach to this system as a component of environmental management. Environmental labeling would thus be more efficient integrated into the manufacturing processes and generally to business structure in the country.

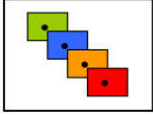
### Ecolabel & Eco-Management and Audit Scheme Regulation (EMAS)

The EU Eco label currently covers a huge range of different products and services, ranging from tissue paper, all-purpose cleaners to paints, hard floor coverings to TVs and computers, light bulbs to heat pumps. While the scope of the Regulation goes in general beyond our sector, more and more criteria are developed for our industry's products as implementation of the Ecodesign and Energy Label Directives progresses. The objective is to progress from 25 product groups in 2010 to targeting 40-50 product groups under the Eco label Regulation by 2015. The work plan 2010-2015 indicates a non-exhaustive list of product groups to be considered as priorities. EU Ecolabel criteria focus on product life stages with the highest environmental impact and, as a consequence, differ from one product to the other. Eco label criteria for electronic equipment focus mainly on the level of efficiency in terms of energy consumption in the use phase, since this represents the overriding environmental impact of these products. The EU Eco Label can also be used for demonstrating conformity of products with eco design requirements established under the Eco Design Directive as long as the EU Eco Label criteria correspond with the established eco design requirement.

The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed by the European Commission for companies and other organizations to evaluate, report, and improve their environmental performance. EMAS is open to every type of organization eager to improve its environmental performance. It spans all economic and service sectors and is applicable worldwide.



Figure 1 Logo EU Eco-Management and Audit Scheme (EMAS).



### **Best Environmental Management Practice**

Many organizations and companies have a large scope for improving their environmental performance. With motivations ranging from eco-efficiency to reputation and concerns about the sustainability of their business, many of them intend to reduce their impact on the environment.

To help organizations to reach such objective, the JRC identifies, evaluates and documents best environmental management practices (BEMPs) for different sectors in close co-operation with the stakeholders concerned. To do so, the JRC follows the so-called frontrunner approach, i.e. it studies those techniques, measures or actions that are implemented by the organizations within the sector that are most advanced in terms of environmental performance in each of many areas, such as energy efficiency, resource efficiency, emissions, but also supply chain management. The results of this work are Sectoral Reference Documents (SRDs) on best environmental management practice.

This activity is part of the European Commission's work to implement the EU Eco-Management and Audit Scheme (EMAS), a voluntary framework for companies and other organizations to evaluate, report and improve their environmental performance. Within this framework, the EU decided in 2009 to promote best environmental management practice, by developing Sectoral Reference Documents.

#### **JRC**

The Joint Research Centre (JRC) is the European Commission's in-house science service which employs scientists to carry out research in order to provide independent scientific advice and support to EU policy.



*Figure 2 Logo Joint Research Centre.*

As the European Commission's science service, the Directorate-General Joint Research Centre's mission is to support EU policies through evidence-based scientific and technical advice.

### **The reference document for the Electrical and Electronic Equipment Manufacturing sector**

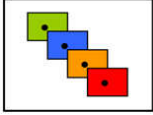
The European Commission's Joint Research Centre (JRC) is developing a sectoral reference document on best environmental management practice in the electrical and electronic equipment (EEE) manufacturing sector. This activity is part of the JRC work on identification of best environmental management practice and development of EMAS Sectoral Reference Documents for different sectors. Within the whole value chain of electrical and electronic equipment, three key areas (supply chain management, manufacturing and recycling activities) are being investigated. The document will identify the main environmental issues and describe best environmental management practices that electrical and electronic equipment manufacturers can implement to reduce their environmental impact, while avoiding overlaps with applicable legislation in this area such as reference documents under the Industrial Emissions Directive or the Waste EEE Directive.

#### **Restriction of Hazardous Substances (RoHS)**

Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (known as the 'recast RoHS Directive' or 'RoHS2') restricts the use of six hazardous substances (lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls and polybrominated diphenylethers) in certain electrical and electronic equipment, such as TVs, laptops, washing machines, fridges and lighting equipment. In comparison to the initial Directive 2002/95/EC ('RoHS1'), the scope of the Directive has now been extended to progressively cover medical devices, monitoring and control equipment and other electrical and electronic equipment. The Directive also harmonises the rules for reviewing the existing substance restrictions and for adding new ones. It improves the exemptions mechanism in case there are no alternative solutions available for certain applications. In November 2010, the European Parliament adopted the Recast RoHS Directive. On 27 May 2011, the European Council formally adopted a two and half year recast procedure on the revised RoHS Directive. Published in the Official Journal on 1 July 2011, Directive 2011/65/EU entered into force on 21 July 2011. Member states have to transpose the recast RoHS Directive into national law by 2 January 2013 at the latest. The RoHS1 Directive was repealed with effect from 3 January 2013.



*Figure 3 Logo RoHS compliant.*



Restricting the use of certain substances in electrical and electronic equipment requires a reorganization of companies' global and often highly complex supply chains, redesign of products, as well as adaptations of production lines under the given time constraints. This gives rise to costs, and requirements for the technical and administrative adaptation of the manufacturing processes. The recast modified the initial Directive in the following areas: scope, criteria and procedure of setting new substance restrictions, criteria and applications for exemptions to substance restrictions and aligning RoHS with REACH and the New Legislative Framework (NLF). Therefore, manufacturers will be required to adjust their own implementation activities to ensure compliance with the new requirements. Finally RoHS2 does not stand alone. It comes into an area that is heavily regulated, notably the complementarity of RoHS2 with the EU's wider horizontal chemicals law, the REACH Regulation, but also with the Eco design Directive and New Legislative Framework. There is therefore a need to achieve a common understanding in order to secure the key principles enshrined in the Treaty, such as the functioning of the Internal Market, but equally an effective implementation of the Directive from an environmental point of view. Orgalime is contributing to the development of such a common understanding.

#### **Labeling and CE Marking**

RoHS II is a CE Mark Directive. This means that each product covered by ROHS must have technical testing and accompanying documents, a declaration of conformity, and the CE marking affixed to the product. The format of the declaration of conformity is outlined in Annex VI of the Directive. The CE mark for ROHS products entered into force on 2 January 2013.



Figure 4 Mark RoHS2.

#### **EKOenergy**

EKOenergy is an ecolabel for electricity. When you buy electricity with this label, you get renewable electricity, but also something more: EKOenergy helps you make a difference. As a green electricity consumer, you probably expect that your purchase somehow leads to concrete results, i.e. to changes that would not have taken place without your purchase. For individual consumers, it is very difficult to check if this really happens. But if we speak with one voice, the situation is very different.



Figure 5 Logo EKOenergy.

As a label, we make sure it really happens:

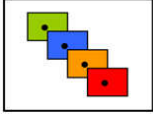
- EKOenergy focuses on providing proper information for consumers.
- EKOenergy is a tool to increase the sustainability of power plants.
- EKOenergy guarantees that a part of the green premium (i.e. the price you pay for the greenness of the electricity) ends up in new projects, through our Climate Fund.
- EKOenergy sets strict criteria for the tracking of green electricity.
- EKOenergy makes sure that the claims are audited.

#### **EPEAT**

EPEAT® is the definitive global rating system for greener electronics. It is an easy-to-use resource for purchasers, manufacturers, resellers and others to identify environmentally preferable devices. The EPEAT system combines strict, comprehensive criteria for design, production, energy use and recycling with ongoing independent verification of manufacturer claims. EPEAT was developed through a stakeholder consensus process and is managed by the Green Electronics Council, a non-profit organization based in Portland, Oregon, USA.



Figure 6 Logo Epeat.



### **TCO Certified**

TCO Certified is an international third party sustainability certification for IT products. By choosing TCO Certified computers, displays and other devices, businesses and organizations around the world are able to help meet environmental and social challenges associated with electronics. TCO Certified meets the requirements for the type 1 Ecolabel in accordance with ISO 14024. This means that criteria development is based on scientific principles and involves multiple stakeholders and experts in an open development process. Certified product models must meet all criteria in TCO Certified and are tested and verified for compliance by independent, accredited third parties. This applies to environmental and product performance criteria as well as socially responsible manufacturing. Manufacturers wanting to certify their products must meet all criteria relevant to the product and its manufacture.



*Figure 7 Logo TCO Certified.*

### **TÜV SÜD Mark EE01/EE02**

Requirements for Product EE01 are: 100 % of the energy supplied is from renewable sources. At least 30 % of the amount of energy supplied is generated in new power stations. Price surcharges are used for building new renewable sources of energy. Requirements for Product EE02 are: 100 % of the energy supplied is from renewable sources. Simultaneous generation and consumption in quarter-hour metering. Price surcharges are used to expand renewable sources of energy.



*Figure 8 Logo TÜV SÜD .*

### **Sustainability for good repaired products**

Devices with this seal of quality are guaranteed repairable. This means they can be dismantled (no adhesive and welds) and have a minimum lifetime of 10 years. Device schematics are available from the manufacturer, and the supply of spare parts is guaranteed. The reference document for this marking is ON-Rule ONR 192102 "repair-friendly electrical and electronic equipment". The Austrian Standards Institute sees itself as an impartial platform for the creation of standards and regulations in Austria. This time there are only washing machines included there.



*Figure 9 Logo Reparaturfreundlich und langlebig*

### **Development and Supply of Eco-products in OMRON**

OMRON conducts product assessment (Figure 10) at the product planning and design stages to verify the energy conservation capabilities and recyclability of its products at every stage of their life span. Through this endeavor, OMRON strives to develop products with minimal environmental impact.

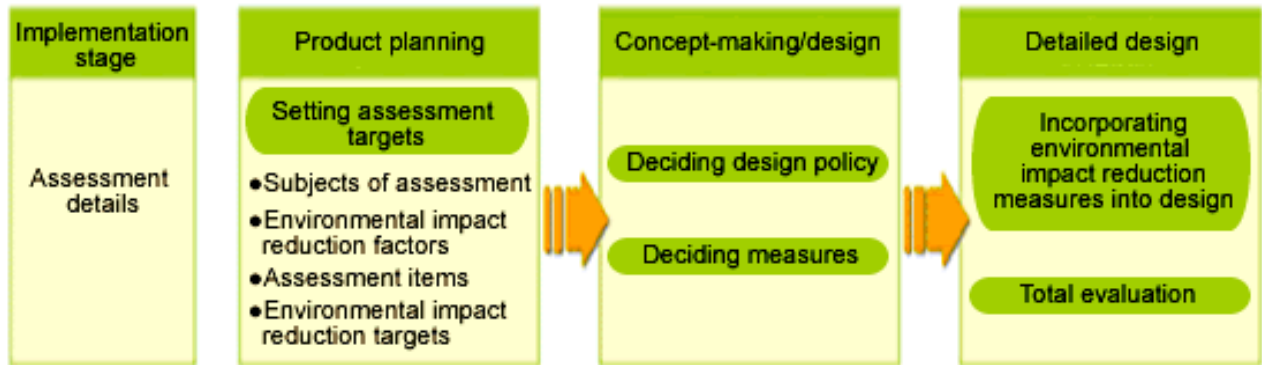
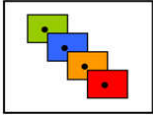


Figure 10 OMRON conducts product assessment.

### Eco-product Certification System

With increasing emphasis by stakeholders choosing a product on environmentally responsible features, OMRON launched a certification system for Eco-products and Eco-label products in 1998. Products that have met environmental targets through product assessment are designated as “Eco-products”.

Products that satisfy even higher standards of environmental impact reduction are certified as “Eco-label products.” The use of OMRON original Eco-labels provides customers with ecological information on OMRON products in a clearer and easier-to-understand manner.

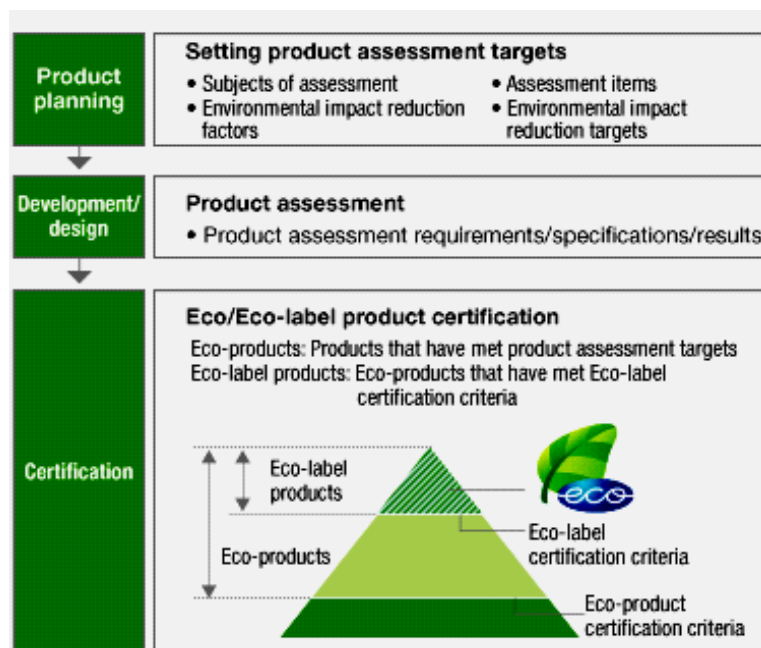
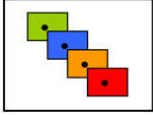


Figure 11 Eco-product Certification System.

### Eco-product Certification Criteria

Environmental factors	
Energy-saving	Reduction in electricity consumption during use/standby
Resource conservation	Reduction in use of main materials
Recycling	Promotion of use of recycled plastics
Direct contribution	Products originally developed for contribution to environmental preservation
Chemical substances	Non-use of polluting substances among the top in the industry



\* Eco-label products are evaluated and certified based on OMRON's in-house standards for the environmental factors listed above.

### **Conclusion**

To important factors of environmental policy and sustainable development, implemented now and at the end of the last century, belong trends to pursue a strategies of proactive approaches. There are applied procedures to ensure reducing of a negative impact. Implementation of these instruments should ensure the sustainable development of community, which are often associated with eco-labelling activities to inform, activate or to head streamline activities to reduce or eliminate the negative impacts. As these actions have been applied at all levels of society (geographical, regional, national, non-governmental, corporate or sectorial), came a great diversity in eco-labelling instrumentation. The labelling became a major social and cultural phenomenon.

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