Basic Concepts on Ecodesign

Unit 3: European legal framework of Environment and Ecodesign

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At the end of this unit, the student will be able to:

- Know the European Legal Framework of Environment and Ecodesign in general.
- Know the legislation and general standards for Ecodesign.
- Know the legislation and reference standards of materials and products.

3.1 Environment and Ecodesign European legal framework

3.1.1 Evolution of European Environment Policy

In the Treaty of Rome of 1958, Treaty establishing the European Community, countries expressed concerned about the problems of pollution and environmental deterioration, although were not reflected in the Treaty.

In the 1970s, structural actions were taken to benefit the environment. At the Paris European Council in 1972, it was recognized the need to adopt a common European environment policy to accompany the economic expansion and a program of action to implement it.

But it wasn't until 1987, through the Single European Act, that the first legal basis for a common environmental policy was established. It included the incorporation of legislation of environmental issue into European Community law.

Some targets and principles of action were established in the Constitutional Treaty of the European Community which has been maintained, with minor modifications, by the Treaty on European Union (Maastricht) and the Treaty of Amsterdam. In subsequent revisions of the Treaties, the EU's commitment to environmental protection was reinforced, and, on the other hand, the development of the role of the European Parliament.

Maastricht Treaty, 1993:

- The environmental field was made official in the EU policy area, and co-decision and qualified majority voting as a general rule of the Council.

Amsterdam Treaty, 1999:

- The obligation to integrate environmental protection into all EU sectoral policies was established to promote "sustainable development".

- The co-decision procedure was extended and adjusted to increase its effectiveness.

> *Objectives of Community Environmental Policy set up in the Treaty of the European Community (Article 130 (R)):*
>
> - Preserve the quality of the environment.
>
> - Protect human health.
>
> - Ensure the rational use of resources.
>
> - Promote measures at the international level to address regional or global environmental problems.

The principles of community environmental policy are initially set up in the article 130.R of the Treaty on European Community. These principles, as in other areas, fulfil with a number of key environmental tasks, such as clarifying and integrating regulations, and solving problems that require a legal response.

In 2009, the Lisbon Treaty set as a specific objective the "Fight against climate change" and "Sustainable Development" in relation with third countries.

Lisbon Treaty, 2009:

- It was increased the capacity of the EU and its parliament in order to act and speak out.

- It extended the competences of the European parliament in more than 40 areas put it on a footing with the Council, which represents all member states. Furthermore, it was given power to set the political course of Europe.

All these reforms guarantee that, through their vote in the European elections, the citizen has more weight in the decisions on the course that Europe has to take.

In recent years, there have been important progress in the integration of environmental policy in several areas such as energy, with the development of the "Climate and Energy" strategy, or another such as the Roadmap towards a "Low-carbon economy 2050" for the main sectors responsible of the emission in Europe such as industry, energy generation, transport, agriculture, buildings and construction.

The European Union may conclude international agreements.

3.1.2 General principles of European environmental policy

The general principles of the European environmental policy are:

- **Precautionary principle:** In case there are clear evidences of a new environmental problem, without full scientific confirmation of it, precautionary measures will be applied.
- **Prevention principle:** Try to avoid any form of pollution or deterioration of the environment, instead of repairing the effects it produces when the damage cannot be avoided.
- **Rectifying pollution at source principle:** Immediate implementation of the timely resolution to neutralize as much as possible the effects of the attacks produced and to avoid the progression of the same ones.
- **"Polluter-pays" principle:** Oriented to the development of the regulation that establishes the responsibilities before actions, identification of the offender which the damage to the environment is attributable and the infractions of those damages that have to be repaired.

3.1.3 Basic legal framework of European environmental policy

The multiannual environmental action programs set up the framework for future actions in all areas of environmental policy. They are integrated in horizontal strategies and are taken into consideration in international negotiations on environmental issue. In addition, its application is critical.

Summary of the Legal Framework of European Environmental Policy

> ACTION PROGAMMES
>
> HORIZONTAL STRATEGIES
>
> ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC PARTICIPATION
>
> INTERNATIONAL COOPERATION
>
> IMPLEMENTATION, COMPLIANCE AND MONITORING OF THE LEGISLATION

ACTION PROGRAMMES

They lay down future legislative proposals and objectives for the Union's environmental policy over a period of several years. The specific measures are adopted after.

The programs are the background on the legislative measures which will be adopted and the first-rate interpretative frame.

The current program, the seventh of its type "VII EAP", was approved by the European Parliament and the Council of the European Union in November 2013 and covers the period up until 2020. The program describes nine priority objectives and what the European Union has to do in order to reach them by 2020. They are:

Objectives of VII EAP- General Union Environment Action Programme:

- Protect, conserve and improve the natural capital of the Union.
- Make the Union into a low-carbon, resource-efficient, ecological and competitive economy.
- Protect citizens of the Union from environmental pressures and risks to health and well-being.
- Maximize the benefits of the Union's environmental legislation by improving its application.
- Improve knowledge of the environment and expand the evidence base on which to base policies.
- Ensure investments for climate and environment policy and take into account the environmental costs of all the activities of the society.
- Better integration of environmental concerns into other policy areas and ensure the coherence of the new policies.
- Increase the sustainability of the Union cities.
- Strengthen the Union's effectiveness in the Union when it have to deal with environmental and climate challenges at international level.

The programme identifies three priority areas which require more actions to protect nature and strengthen ecological resilience, promote a low-carbon growth which uses

resources efficiently, and reduces the threats to human health and well-being associated with pollution, chemical substances and the impact of climate change.

HORIZONTAL STRATEGIES

They are joining forces to promote environmental improvements alongside other aspects such as: promoting growth and employment with an environmental dimension, quality of life promoting prosperity, environmental protection and social cohesion, etc.

In 2001, the Sustainable Development Strategy, which complemented the Lisbon Strategy, was introduced with the aim of promoting growth and employment with an environmental dimension. In 2006, it was renewed to integrate the internal and international dimension of the sustainable development.

Under these objectives, the aim of the Europe 2020 strategy for growth is to achieve a "smart, sustainable and inclusive growth".

> *COMUNICATION FROM THE EUROPEAN COMMISION 2020*
>
> *A strategy for smart, sustainable and inclusive growth.*
>
> *The commission suggests five quantifiable2020 targets for the European Union which will set the lines of the process and translate into national targets: employment, research and innovation, climate change and energy, education and the fight against poverty.*

In this new framework, the flagship initiative for resource-efficient Europe points the way to sustainable growth and supports the progress towards a low-carbon, resource-efficient economy.

In 2011, the Union was compromised to end the loss of biodiversity and the degradation of the ecosystem services by 2020 (Union Strategy on Biodiversity).

ENVIRONMENTAL IMPACT ASSESMENT AND PUBLIC PARTICIPATION

Assessment of activities projects with great impact on the environment.

> *This project assessment is carried out according to the European directive:*
>
> Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.

They are also subject to assess, called "Strategic Environmental Assessment", to other public programs or plans in relation to land, transport, energy, waste or agriculture uses.

> *This Strategic Environmental Assessment is carried out according to the European directive:*
>
> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

The Aarhus Convention (Multilateral Agreement on the Environment under the auspices of the United Nations Economic Commission for Europe–UN/CEPE) entered into force in 2001 to ensure a high level of environmental protection, in which environmental considerations are integrated in the planning phase, and possible consequences are taken into account before the approval or authorization of a project.

> *The Aarhus Convention guarantees three rights to citizens in the field of the environment:*
>
> - Public participation in decision-making.
>
> - Access to information held by public authorities, such as the state of the environment or human health, if it has been affected by the first.
>
> - The right of access to justice in case of failure to take into account the other two rights.

INTERNATIONAL COOPERATION

The European Union take part of global, regional, supra-regional, "Agreements"on a wide range of issues (Nature and biodiversity, Climate Change, Transboundary air and water pollution).

> *The European Union has contributed over the years in different agreements such as:*
>
> - The Convention on Biological Diversity "Tenth Meeting of the Conference of the Parties", 2010 Nagoya (Japan), reached an agreement on a global strategy to halt the loss of biodiversity by 2020.
> - The decision to develop Sustainable Development Objectives which resulted in the Rio+20 Conference of 2012.
> - The fight of all crime against endangered species of Fauna and Flora at international level through the accession to CITES Convention.

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IMPLEMENTATION, COMPLIANCE AND MONITORING OF THE LEGISLATION

Legislation such as: Directives, Regulations and Decisions, both at level of the state of the environment, and compliance with these legal requirements.

Measures adopted by the European Union to ensure that compliance with legislation at national, regional and local level is effectively implemented:

- In 1990, The European Environmental Agency (EEA) was established to support the development, implementation and assessment of environment policy and to inform the general public.

- In 2001, the European Parliament and the Council adopted minimum (non-binding) standards for environmental inspections.

- Effective, proportionate and dissuasive penal sanctions were predicted for the most serious environmental crimes.

- A platform for the exchange of ideas and best practices for policymakers, environmental inspectors and law enforcement agents was launched thought the European Network for the Implementation and Enforcement of Environmental Law (IMPEL).

- In 2016, The Commission revised environmental legislation and launched an instrument designed to achieve full implementation of environmental legislation, accompanied by a Program for the adequacy and effectiveness of the "REFIT" regulation (monitoring and reporting obligations arising from current legislation).

3.1.4 Legal framework of Ecodesign

The European Union began to develop regulation and legislation in product Ecodesign in the 1990s. Ecodesign is of vital importance in European environmental policies, as is demonstrated by the European strategy for "Sustainable Development" of 2009, which established the Sustainable Consumption and Production as one of the priority areas of action.

Summary of the Basic Legal Framework for Ecodesign in Europe

INTEGRATED PRODUCT POLICY

ACTION PLANS: EFFECTIVE USE OF RESOURCES, ECO-INNOVATION, SUSTAINABLE CONSUMPTION AND PRODUCTION, AND CIRCULAR ECONOMY

WASTE MANAGEMENT AND PREVENTION

ECOLOGICAL AND ENERGY LABELLING

ECO MANAGEMENT AND AUDIT SCHEME (EMAS)

ECOLOGICAL DESIGN

GREEN PUBLIC PROCUREMENT

ENVIRONMENTAL PRODUCT DECLARATIONS, EPD

OTHERS VOLUNTARY INSTRUMENTS (STANDARDS)

The main European legislation and regulations (Basic legal framework) are listed below in chronological order.

1992_Ecological and energy labelling_European eco-labelling, Regulation (EEC) No. 880/92.

Council Regulation (EEC) No. 880/92 of 23 March 1992 on a Community eco-label award scheme.

Voluntary system to encourage companies to commercialize products and services according to ecological Criteria defined by the Regulation of application to the product. The products which obtain the eco-label are identified with a logo in the form of flower.

The product groups for which regulations are included are among others: cleaning products, household appliances, paper products, clothing, household and garden products, lubricants and services as tourist accommodations. The criteria are based on studies which analyze the impact of the product or service in the environment throughout its life cycle.

Eco-labels provide key information that allows consumers to make informed choices.

Regulation (EC) No. 66/2010 on the European Eco-label is currently in force...

1992_Ecological and energy labelling_Energy label system for household appliances (electrical appliances), Directive 92/75/ECC.

Council Directive 92/75/EEC of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances.

Introduced in the European Union, an energy labelling system for household appliances (electrical appliances), through labels and products brochures, provides potential consumers with information on the energy consumption of all available models. It is widely recognized and respected by manufacturers and consumers.

1993_The European Union Eco management and audit scheme (EMAS), Regulation (EEC) No. 1836/93.

Council Regulation (EEC) No. 1836/93 of 29 June 1993 allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme.

> *The Eco-management and Audit Scheme (EMAS) aims to promote continuous improvements in the environment performance of all European organizations and the dissemination of the relevant information to the public and other stakeholders.*

Companies have been able to make use of this system since 1995, although at the beginning it was only made available to companies in the industrial sectors.

In 2001, the Regulation was revised and amended**(Regulation (EC) No. 761/2001)**, and nowadays the EMAS system can be used in all the economic sectors, including public and private services.

The EMAS regulation **(Regulation (EC) No. 1221/2009)**, was revised and amended in 2009 with a view to encouraging the EMAS registration of different organization. Regulation (EC) No. 1221/2009 is currently in force.

This revision of the EMAS Regulation has improved the applicability and credibility of the system and strengthened its visibility and scope.

The organizations which can implement EMAS can be: industrial companies, small and medium-size enterprises, organizations of the services sector, public administrations, etc.

These entities recognised by EMAS can be identified with the EMAS logo, which guarantees the reliability of the information provided by that company.

1996_Specific legislation waste _Radioactive substances and waste. Directive 96/29/Euratom.

It states that activities involving a risk of ionizing radiation should be required a declaration. In view of possible dangers, these activities will in some cases be subject, in some cases, to prior authorization by the Member State concerned. Shipments of radioactive waste are covered by the Regulation (EURATOM) No. 1493/93 of Council and by **Council Directive 2006/117/EURATOM**.

1996_Specific legislation waste_Packages and packaging waste. Directive 94/62/EC

It applies to all packaging marketed in the Union and to all packaging waste. It forces to take preventive measures against the formation of packaging waste and to develop systems for the reuse of packaging. The amending **Directive 2004/12/EC** lays down criteria and clarifies the definition of 'packaging'. In addition, **Directive (EU) 2015/720** of 29April 2015 amends the Directive 94/62/EC as regards the reduction of the consumption of light weight plastic bags.

2000_Specific legislation waste_ End-of-life vehicles. Directive 2000/53/EC

It aims to reduce waste from end-of-life vehicles (ELV) and its components. In addition, the use of hazardous substances was limited, as well as to develop the integration of recycled materials.

2000_Ecological and energy labelling_ European eco-labelling. Regulation (EC) No. 1980/2000.

Regulation (EC) No. 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a revised Community eco-label award scheme.

(See: 1992_ Ecological and energy labelling_ European eco-labelling).

2001_The European Union Ecomanagement and audit scheme (EMAS), Regulation (EC) No. 761/2001.

Regulation (EC) No. 761/2001 of the European Parliament and of the Council of 19 March 2001, allowing voluntary participation by organizations in a Community eco-management and audit scheme (EMAS).

(See 1993_The EU Ecomanagement and audit scheme EMAS of the EU, Regulation (EEC) No. 1836/93).

2001_Integrated product policy, Green paper, COM/2001/0068 final.

Green paper on integrated product policy, COM/2001/0068 final.

In 2001 the "Green paper" was presented, a strategy to strengthen and reorient the product-related environmental policy to promote the development of a greener product market.

The integrated product policy (IPP) strategy focuses on the three stages of the decision-making process which influence the environmental impact throughout the product life cycle, and the points of improvement, such as product prices, consumer selection (based on product information), Ecodesign of the product, and other supporting tools (implementation of environmental management systems, research programmes, development and innovation programmes, the "LIFE-Environment" financial instrument and Accounting and Environmental Accountability.

The Integrated product policy includes different measures to promote the use of tools by companies, to encourage the change towards sustainability:

- Life Cycle Inventory and Analysis, data collection, identification-evaluation of environmental aspects and possible environmental impacts associated with the product.

- Ecological design, before going on the market.

- Standardization, inclusion of environmental criteria.

- The New Approach legislation defines mandatory essential requirements and the manufacturer can freely choose how to prove compliance.

- Panels of products, groups of products of interest which propose the way to reach the environmental objectives, look for solutions to particular problems.

2002_Specific legislation waste_Electrical and electronic equipment. The Directive 2002/96/EC (RoHS), modified by the Directive 2008/34/EC.

It aims to protect soil, water and air through better and less waste from electrical and electronic equipment (WEEE). Restrictions on the use of certain hazardous substances in equipment are established. Directive 2002/95/EC, adopted in parallel to the WEEE Directive, aims to protect the environment and human health by limiting the use of lead, mercury, cadmium, chromium and some flame retardants brominated. The application of these two directives has had difficulties. Therefore, in 2012, after a long legislative process, a recast of **Directive 2012/19/EU (Directive WEEE)** and the **Directive 2012/18/EU (Directive RoHS)** was adopted. The new directives require Member States to increase their level of electronic waste collection and allow consumers to deliver their small electrical appliances to any electrical appliance establishment without having to purchase new products.

2002_Specific legislation waste_Package and packaging waste. The Directive 2004/12/EC (Modified by the Directive 94/62/EC).

Establish criteria and clarify the definition of packaging.

2004_Environmental Technologies Action Plan (ETAP), COM (2004), 38.

In 2004, The Commission adopted the European Union Environmental Technologies Action Plan (ETAP) (COM (2004) 38).

The objective of the plan was to stimulate the development and use of environmental technologies, improving competitiveness in this area, Europe.

The plan consisted of:

- A study of the technologies which could solve the main environmental problems.
- Identification of market and institutional barriers hampering the creation and use of specific technologies.

2004_Green public procurement. Directive 2004/17/EC and 2004/18/EC

The green public procurement (GPP) is a voluntary policy to support public authorities in procurement of product, services and works with a low environmental impact.

This tool is used to promote markets for green products and services, and to reduce the environmental impact of Public Authorities activities.

Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

They were the first directives to incorporate environmental considerations into the contract award of contracts (environmental requirements in technical specifications, use of eco-labels, etc.).

2005_Waste Management and prevention_ COM (2005) 0666. Communication "Taking sustainable use of resources forward: A thematic strategy on the prevention and recycling of waste".

It establishes as a key priority the integrated application of legislation on community waste. The main actions that proposes are:

- Simplification and modernization of existing legislation.
- Introduction of the life –cycle concept in waste policy.
- Improvement of the knowledge base of European waste policy.
- Waste prevention.
- Recycling, encourage reuse and repair activities.
- Towards a European recycling society, to achieve minimum common criteria for recovery and recycling.

2005_Ecodesign. Ecodesign requirements for energy-using products, Directive 2005/32/EC.

Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of Ecodesign requirements for energy-using products and amending Council Directive 92/42/ECC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council. These directives, which are amended, relate to boiler requirements, computers and televisions in order to achieve energy savings or energy efficiency, and arose from others, SAVE Programme (Decision 91/565/EEC, establishes " the SAVE programme ") to support and promote the energy efficiency of the Community.

This Directive was revised in 2009, Directive 2009/125/EC, and its scope was extended to energy-related products which are not energy-efficient products in strict terms, they do so in an indirect way, such as: windows, insulation materials or other products that use water.

In 2012, the Commission published an evaluation of Directive 2009/125/ECwhich concluded that it was not necessary to immediately revise the Ecodesign Directive or extend its scope to non-energy related products.

The ecological design of the products::

- It is a key element of the Community strategy on integrated product policy.

- It has a preventive approach to obtain a better environmental performance of the products while maintaining its functionality.

- Offers manufacturers, consumers and society in general new opportunities.

2006_Waste prevention and management_Regulation on the shipments of waste.

It set standards in this area, both within the European Union and in third countries, to improve the protection of the environment (except for radioactive waste), road, rail, sea and air. The exports of waste are forbidden outside the OECD and those destined for disposal outside the UR/Free Trade Association.

2006_Specific waste legislation_Batteries, accumulators and their waste. Directive 2006/66/EC.

It aims to improve the environmental management and performance of batteries and accumulators. It sets up standards for collection, recycling, treatment and disposal. It sets limit value for certain hazardous substances in batteries and accumulators (mercury and cadmium). In 2013, an amendment to this directive was approved, Directive 2013/56/EC eliminated the exemption for button cells with a mercury content of not more than 2% by weight.

2006_Specific waste legislation_Waste from extractive industries. Directive 2006/21/EC related to mining waste

Its objective is to address the significant risks posed to the environment and health by the volume and potential of existing and past mining waste.

2008_Sustainable Consumption and Production Action Plan.

In 2008, the European Commission presented actions and proposals to improve the environmental performance of products throughout their life-cycle and to promote the demand for more sustainable products and technologies for production.

Actions and proposals of the Sustainable Consumption and Production Plan:

- Develop and complete other previous proposals such as the Integrated Product Policy (IPP).

- It led to the development of other instruments which are part of the EU's new "Sustainable Development" Strategy (2009): Expansion of the Ecodesign directive, Revision of the European Eco-label Regulation, Revision of the EMAS Regulation, Green Public Procurement legislation, Roadmap towards an efficient Europe in the use of resources and Eco-innovation Action Plan. It offers manufacturers, consumers and society in general opportunities.

In 2008, the Sustainable Production and Consumption Strategy (SCP) was published. There are three main lines for action: more sustainable production models: use of materials, production processes, innovation and design; promotion of environmental improvement of products throughout the supply chain; more sustainable consumption models: influencing purchase options and human behaviour. Those lines of action are intended to materialize in different strategies of action.

2008_Waste management and prevention_Waste Framework Directive.

The current Waste Framework Directive (Directive 2008/98/EC) derives from the thematic strategy on the prevention and recycling of waste (COM (2005)666), and repeals previous Directives related to waste (Directive 75/442/EEC, coded in the Directive 2006/12/EEC), the hazardous waste (Directive 91/689/EEC) and the used oils (Directive 75/439/EEC).

2008_Green Public Procurement, COM (2008) 400 final.

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and Committee of the regions about public procurement for a better environment, COM (2008) 400 final.

It sets out the measures to be taken by the awarding authorities to implement green public procurement. Common criteria were developed for this purpose and for certain sectors (transport, office equipment, cleaning products and services, construction, thermal insulation and gardening products and services).

2009_Ecodesign_Ecodesign requirements for energy-related products, Directive 2009/125/EC.

Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of Ecodesign requirements for energy-related products.

(See 2005_Ecodesign_Ecodesign requirements for energy-related products, Directive 2005/32/EC).

2009_the EU Eco-Management and Audit Scheme (EMAS), Regulation (EC) No. 1221/2009.

Regulation (EC) No. 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS), repealing Regulation (EC) No. 761/2001 and Commission Decisions 2001/681/EC and 2006/193/EC.

(See 1993_EU Eco Management and Audit Scheme (EMAS), Regulation (ECC) No. 1836/93).

2010_ Ecological and energy labelling European Ecolabelling, Regulation (EC) No. 66/2010.

Regulation (EC) No. 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel (Text with EEA relevance).

It seeks to encourage the use of the voluntary eco-label scheme by reducing the economic and bureaucratic burden associated with enforcement of regulations.

At present, it is the current regulation.

(See 1992_Ecological and energy labelling European Ecolabelling).

2010_Ecological and energy labelling System of energy labelling of the household appliances (electrical household appliances), Directive 2010/30/EU.

Directive 92/75/EEC was revised in June 2010 and Directive 2010/30/EU related to the indication of energy consumption and other resources by energy-related products through labelling and standardized information.

In this Directive, its scope extends to more products, including those using energy and other related products.

On 15 July 2015, the Commission proposed to return to a single labelling scale from A to G. It also proposed the creation of a new digital database for energy-efficient products in order to boost transparency and improve compliance with standards.

2011_Resource efficiency use Roadmap towards an efficient Europe in the use of resources

It arises from the Europe 2020 Strategy on the efficient use of resources. Actions are proposed to increase productivity and to decouple economic growth from the use of resources and their environmental impact.

It is the Strategic Framework which sets the conditions to rewarding innovation and resources efficiency and generating economic opportunities and greater security of supply through:

- New product design.
- Sustainable management of environmental resources.
- Increased reuse, recycling and replacement of materials.
- Saving resources.

The roadmap towards an efficient Europe in the use of resources is one of the key initiative of the Seventh Environmental Action Programme (EAP).

- Main objective: Unlocking the economic potential of the Union so that it can be more productive while using less resources and moving towards a circular economy.

This roadmap develops and completes others initiatives: Low-carbon Economy, Strategy on the sustainable use of natural resources (2005) and Sustainable development strategy (2009). It is reported in the context of international efforts towards the transition to a "Green Economy".

2011_Eco-Innovation Action Plan

The Commission's Eco-innovation Action Plan (2011) is the successor to the "Environmental Technologies Action Plan (ETAP) (COM (2004) 38)", and is based on the latter's experience. The aim of the ETAP was to promote the development and use of environmental technologies and to improve European competitiveness in this area.

(See: 2004_Environmental Technologies Action Plan (ETAP), COM (2004), 38).

The Eco-Innovation Action Plan is linked to the flagship initiative 'Innovation Union' of the Europe 2020 Strategy.

> *The Eco-innovation Action Plan is linked to the flagship initiative <<Innovation Union>> of Europe 2020 Strategy.*

The Eco-innovation Action Plan:

- It aims to ensure that innovation policies also focus on green technologies and eco-innovation.

- Emphasizes the role of environmental policy as a factor of economic growth.

- It addresses the specific barriers and opportunities of eco-innovation, especially those not covered by more general innovation policies.

The Eco-innovation Action Plan covers a broad policy framework which can be funded from different sources, the2020 Horizon Programme, between 2014 and 2020.

2012_Recasting of the Directive 2012/19/EU (WEEE) and the Directive 2012/18/EU (RoHS), for an increased electronic waste collection.

(See 2002_waste legislation_Electrical and electronic devices).

2013_Specific legislation waste_Ship recycling (Regulation (EU) No. 1257/2013).

Regulation (EU) No. 1257/2013 of the European Parliament and of the Council of 20 November on ship recycling and amending Regulation (EC) No. 1013/2006 and Directive 2009/16/EC.

Its main objective is to prevent, reduce and prevent accidents, injuries and other negative effects about human health and the environment, resulting from the recycling and treatment of Union ships, with a view to ensuring environmentally friendly management of hazardous waste from ship recycling.

2014_Management and prevention waste_Regulation (EU) No. 660/2014.

Regulation (EU) No. 660/2014 of the European Parliament and of the Council of 15 May 2014 amending Regulation (EC) No. 1013/2006 on shipments of waste.

This regulation amends Regulation (EC) No. 1013/2006,seeks to ensure a more uniform application of the regulation on the shipments of waste. It reinforces the inspection, establishes stricter requirements and national planning.

2014_Green Public Procurement, Directives 2014/23/EU, 2014/24/EU and 2014/25/EU.

Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (Text with EEA relevance).

Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (Text with EEA relevance).

Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (Text with EEA relevance).

These Directives simplify procedures and facilitate business innovation by promoting greater use of Green Public Procurement, supporting the evolution towards an efficient economy in the use of resources and low carbon emissions.

2015_Waste specific legislation_Packaging and packaging waste. Directive (EU) 2015/720 of 29/04/2015.

It modifies Directive 94/62/EC, regarding the reduction of the consumption of light plastic bag.

2015_The Circular Economy Package. COM (2015) 614 final. Brussels 2.12.2015. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the committee of the regions. Closing the loop: An EU action plan for the Circular Economy.

In 2015, the Commission presented an Action Plan on the Circular Economy, with a very ambitious package of measures covering the entire product life cycle: design, supply, production, consumption, waste management and the secondary raw material market. It is closely linked to European Union key priorities on employment and growth, investments, social agenda and industrial innovation.

In addition to legal obligations to revise waste targets, the package included four legislative proposals to amend the following Waste Directives (Framework), Waste Disposal, Packaging and Waste Packaging and Waste Disposal.

The revised waste legislative proposals set clear objectives for waste reduction and set out an ambitious and credible road in the long term for waste and recycling management. Some of the key elements of the revised waste proposal are:

KEY ELEMENT OF THE PROPOSAL	EUROPEAN UNION OBJECTIVE
Urban waste	Recycle 65% by 2030
Packaging waste	Recycle 75% by 2030
Municipal waste	Reduce the dump in landfills to a maximum of 10% by 2030
Separate collection of waste	Prohibition of dumping in landfills
Promotion of economic instrument	Dissuade the dumping in landfills
Harmonisation of the recycling percentage calculation	Simplified and improved definitions and harmonized calculation methods
Promoted the reutilization and industrial symbiosis	Establish concrete measures. Convert sub-products in raw material from another industry.
Economic incentives for producers	Greater commercialization of organic products Increased recovery and recycling of packaging, batteries, electrical and electronic equipment, and vehicles

2016_Ecodesign_Ecodesign Work Plan, COM (2016) 773 final.

This Work Plan implements the Ecodesign Directive for Energy-related products (ErP) for the coming three years. It is one of the most important instruments of the European Commission for the "Fight against climate change" and the "Lack of natural resources".

> *It sets the mandatory minimum requirements in the categories of product with greater potential of improvement. These requirements are reviewed and hardened periodically. The review integrates the Circular Economy.*

It aims to boost the efficiency of materials by extending the life of the products included in the Plan. At the request of the Commission, a standardization process has been initiated in the ECS (European Committee for Standardization), which will allow for the integration of these concepts in the standards before the end of 2019.

3.1.5 Voluntary instruments for the application of Ecodesign

Standards are not mandatory, so they are a just volunteer instrument which the company could apply or implement, unlike the legislation, if it is.

Environmental standards can be grouped into the ISO 14000 family of standard, and can be basically divided into three groups:
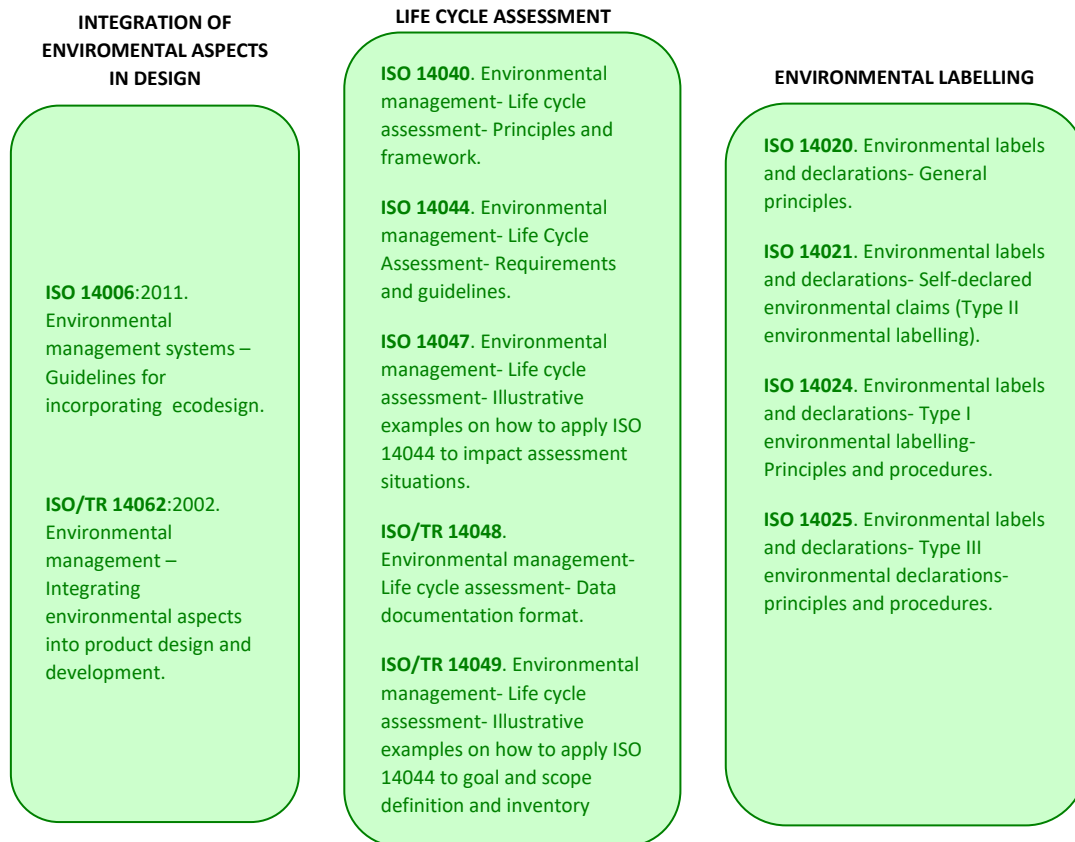
Groups within the ISO 14000 family of standards::

- Integration of Environmental Aspects in Design and Development.

- Life-Cycle Analysis

- Environmental labelling (Eco-labels and Declarations).

The following chart summarizes the general Ecodesign standards of the ISO 14000 family of standards.

INTEGRATION OF ENVIROMENTAL ASPECTS IN DESIGN

ISO 14006:2011. Environmental management systems – Guidelines for incorporating ecodesign.

ISO/TR 14062:2002. Environmental management – Integrating environmental aspects into product design and development.

LIFE CYCLE ASSESSMENT

ISO 14040. Environmental management- Life cycle assessment- Principles and framework.

ISO 14044. Environmental management- Life Cycle Assessment- Requirements and guidelines.

ISO 14047. Environmental management- Life cycle assessment- Illustrative examples on how to apply ISO 14044 to impact assessment situations.

ISO/TR 14048. Environmental management- Life cycle assessment- Data documentation format.

ISO/TR 14049. Environmental management- Life cycle assessment- Illustrative examples on how to apply ISO 14044 to goal and scope definition and inventory

ENVIRONMENTAL LABELLING

ISO 14020. Environmental labels and declarations- General principles.

ISO 14021. Environmental labels and declarations- Self-declared environmental claims (Type II environmental labelling).

ISO 14024. Environmental labels and declarations- Type I environmental labelling- Principles and procedures.

ISO 14025. Environmental labels and declarations- Type III environmental declarations- principles and procedures.

The following are the main voluntary instruments, applicable to Ecodesign, in chronological order.

INTEGRATION OF ENVIRONMENTAL ASPECTS IN DESIGN.

2002_Voluntary Instruments_Environmental Management Systems. Integration of environmental aspects in design, ISO 14062.

ISO/TR 14062:2002. Environmental management – Integrating environmental aspects into product design and development.

This technical report describes current concepts and practices related to the integration of environmental aspects into product design and development, when "products" are understood to encompass both goods and services.

This technical report is applicable to the development of specific documents for each sector.

It is not applicable as a specification for certification and registration purposes.

2003_Voluntary instruments_ Environmental Management Systems. Integration of environmental aspects in design, UNE 150301:2003.

UNE 150301:2003. Environmental management of design and development process. Design for environment.

In Spain, the UNE 150301:2003 standard was developed in 2003. The main objective was to provide to the companies the elements of an effective environmental management systems for the product design and development process, which can be integrated with other management requirements (mainly those established by ISO 9001 and ISO 14001), and which could be certified by external agents to the organization.

It allows the implementation of an Ecodesign Management System for continuous improvement within companies, providing the elements of an Environmental Management system for the Design and Development of products and/or services.

Implement an Ecodesign Management System for continuous improvement within the companies, provides the elements of an Environmental Management system for the Design and Development of products and/or services.

Nowadays, the current standard is ISO 14006:2011. Environmental management systems- Guidelines for incorporation Ecodesign.

(See 2011_Voluntary instruments_ Environmental Management Systems. Incorporation of Ecodesign, ISO 14006:2011).

2009_ Voluntary instruments_ Environmental Management Systems. Integration of environmental aspects in design, IEC 62430:2009

IEC 62430:2009. Environmentally conscious design for electrical and electronic products.

This international standard is intended to be used by all parties involved in the design and development of electrical and electronic products. This includes all parties involved in the supply chain.

2011_ Voluntary instruments_ Environmental Management Systems. Integration of environmental aspects in design, ISO 14006:2011.

ISO 14006:2011. Environmental management systems – Guidelines for incorporating Ecodesign.

It allows the implementation of an Ecodesign Management System for continuous improvement within companies, providing the elements of an Environmental Management system for the Design and Development of products and/or services.

> *The standard specifies the requirements to be applied in the design and development process for the improvement of the products and services of an organization, through an environmental management system.*

Its implementation can facilitate the incorporation of a systematic for identify, control and continuously improve the environmental aspects of products and services which are designed in the organization.

LIFECYCLE ANALYSIS

1997_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14040:1997.

ISO 14040:1997. Environmental management- Life cycle assessment- Principles and framework.

Currently superseded. In force ISO 14040:2006.

(See 2006_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14040:2006).

1998_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14041:1998, ISO 14042 and ISO 14043:2000.

ISO 14041:1998. Environmental management. Life cycle assessment. Goal and scope definition and inventory analysis.

ISO 14042:2000. Environmental management. Life cycle assessment. Life cycle impact assessment.

ISO 14043:2000. Environmental management. Life cycle assessment. Life cycle interpretation.

Currently, the three standards are superseded. In force ISO 14040:2006

(See 2006_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14040:2006).

2000_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14049:2000.

ISO/TR 14049:2000. Environmental management -- Life cycle assessment -- Examples of application of ISO 14041 to goal and scope definition and inventory analysis

(See 2012_Voluntary instruments_Standards for Product Environmental Impact Assessment_Life Cycle Assessment, ISO 14049:2012).

2002_Voluntary instruments_Standards for Product Environmental Impact Assessment_Life Cycle Assessment, ISO 14048:2002.

ISO/TS 14048:2002. Environmental management -- Life cycle assessment -- Data documentation format

The standard provides guidelines for developing, managing and reviewing all life-cycle assessment and its inventory.

It allows a better use and interpretation of data: more representative, transparent and unequivocal information for data collection, calculation, exchange, etc.

2003_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment

ISO 14047:2003. Environmental management -- Life cycle assessment -- Illustrative examples on how to apply ISO 14044 to impact assessment situations.

Currently superseded. In force ISO/TR 14047:2012.

(See 2012_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14047:2012).

2006_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14040:2006

ISO 14040:2006 Environmental management- Life cycle assessment- Principles and framework

ISO 14040:2006 standard describes the principles and framework of the LCA, including definition of the objective and scope, Life Cycle Inventory (LCI) analysis, the Life-cycle impact assessment phase, the report and the critical review, limitations and the relationship between the LCA phases.

The standard specifies the requirements and provides specific guidelines for implementing a LCA, including: the definition of the objective and scope of the LCA, the Life Cycle Inventory (LCI) analysis, the Life-cycle impact assessment (LCIA) phase, the report and the critical revision.

2006_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14044:2006.

ISO 14044:2006. Environmental management- Life Cycle Assessment- Requirements and guidelines.

This standard describes the principles and framework for life cycle assessment (LCA). It covers Life Cycle Assessment (LCA) studies and Life Cycle Inventory (LCI) analysis.

The intended application of the LCA and LCI results is considered when defining the objective and the scope, but the implementation itself is beyond the scope of this standard.

This standard is not intended for contractual and regulatory purposes, neither for registration and certification.

2012_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14047:2012.

ISO 14047:2012. Environmental management -- Life cycle assessment -- Illustrative examples on how to apply ISO 14044 to impact assessment situations.

ISO/TR 14047:2012 standard provides examples illustrating the usual practices in carrying out Life-cycle impact assessment (LCIA) according to ISO 14044.

2012_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14049:2012.

ISO/TR 14049:2012. Environmental management -- Life cycle assessment -- Illustrative examples on how to apply ISO 14044 to goal and scope definition and inventory analysis.

It is a specification which provides examples in the definition of objectives and scopes as well as in the life cycle inventory (LCI) analysis in the Life Cycle Assessment (LCA) studies.

ECOLABELS AND ENVIRONMENTAL DECLARATIONS

1998_Voluntary instruments_Environmental labels and declarations, ISO 14020:1998.

ISO 14020:1998. Environmental labels and declarations. General principles.

Currently superseded. In force ISO 14040:2006.

(See 2006_Voluntary instruments_Standards for Product Environmental Impact Assesment_Life Cycle Assessment, ISO 14040:2006).

1999_Voluntary instruments_Environmental labels and declarations, ISO 14021_1999.

ISO 14021:1999. Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling).

Currently superseded. In force ISO 14021:2016.

(See 2016_Voluntary instruments_Environmental labels and declarations, ISO 14021_2016).

1999_Voluntary instruments_Environmental labels and declarations, ISO 14024:1999.

ISO 14024:1999. Environmental labels and declarations- Type I environmental labelling- Principles and procedures.

Voluntary multi-criteria programme, eco-labels are awarded by an independent third party, which acts as certifying entity.

2006_Voluntary instruments_Environmental labels and declarations, ISO 14020:2006.

ISO 14020:2006. Environmental labels and declarations- General principles.

Environmental labelling is, according to ISO 14020, a set of voluntary tools which try to stimulate the demand for product and services with lower environmental loads by offering relevant information about their life cycle to satisfy the demand of environmental information by the buyers.

2006_Voluntary instruments_Environmental labels and declarations, ISO 14025:2006.

ISO 14025:2006. Environmental labels and declarations- Type III environmental declarations. Principles and procedure.

Environmental product declarations (type III labels), as defined by ISO 14025; facilitate the objective, comparable and credible communication of the environmental performance of the products. These declarations present the quantified environmental information based on the Life Cycle Assessment (LCV) and allow the comparison between products which fulfil the same function.

2016_Voluntary instruments_Environmental labels and declarations, ISO 14021:2016.

ISO 14021:2016. Environmental labels and declarations- Self-declared environmental claims (Type II environmental labelling).

ISO 14021 standard specifies the requirements for environmental labelling Type II "Environmental Self-declarations", which are endorsed by the same manufacturer and

do not require certification from independent third parties, so it is fully responsible for its declaration, evaluation and verification.