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Ecodesign requirements for energy-related products

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Up-to-date status of the studies carried out and legislation arising from the Ecodesign Framework Directive with energy labelling commentary.

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The Ecodesign for Energy-related Products Framework Directive

In 2009 a Framework Directive (2009/125/EC) was adopted as an EU law. This defined what constituted an "energy-related product" and provided criteria against which product groups could be selected and subjected to ecodesign requirements – particularly minimum energy performance requirements. Directive 2009/125/EC superseded the old Ecodesign Requirements for Energy-using Products Framework Directive, so changing the shorthand from "EuP" to "ErP" or, as has become more common, "ecodesign".

Directive 2009/125/EC defines the legal context for so-called "implementing measures" but does not itself impose any obligations on industry. Many implementing measures have, however, taken the form of EU Regulations, bringing into effect design requirements for a wide range of products across all EU Member States simultaneously (EU Regulations differ from Directives in that they have direct effect and do not require transposition into national law).

Objectives and scope

Ecodesign legislation seeks to bring about improvements in the environmental performance of products throughout their life cycle from mining of the raw material through to recycling at end-of-life. Up to now the focus has been on increasing energy efficiency particularly during the use phase of a product's life. Obligations which arise focus on the design phase since it is considered that this is the determining stage affecting the resources used in a product.

The Framework Directive stipulates that ecodesign requirements do not apply to means of transport (planes, cars, shipping, etc.) but, apart from this, the scope is deliberately broad covering, in principle, any product which when in use depends on, generates, transfers or measures energy (electricity, fossil fuel or renewable) – boilers, computers, televisions, industrial fans, light bulbs, etc. However, many products have an indirect impact on the energy in use such as water using devices like taps and shower heads and double glazing windows or insulating material. Improvement in design could clearly result in significant saving of energy and other resources. These types of product also fall in scope.

How do implementing measures arise?

Before an implementing measure can be put in place for a particular product sector (e.g. boilers) certain criteria must be taken into account and determine whether there really is a need and a benefit for doing so. These criteria are as follows:
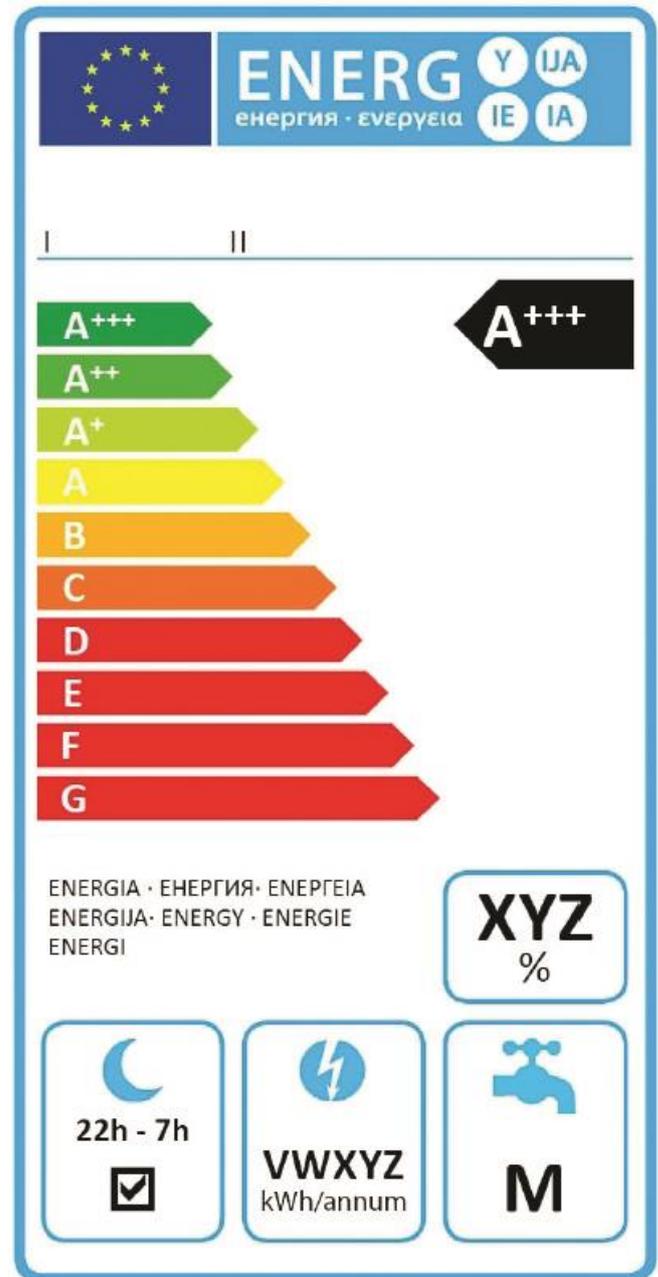
A product sector must

- represent a significant volume of sales and trade – indicatively more than 200,000 units per year in the EU;
- have a significant environmental impact;
- present significant potential for improvement.

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Also, implementing measures must not have a "significant negative impact" on

- a product's price or performance, or
- on the competitiveness of EU industry.

Having taken all this into account the European Commission may decide not to introduce an implementing measure or to limit the scope. This could happen if it believes that the industry is already progressing at a satisfactory speed (e.g. by voluntary self-regulatory agreements or targets to reduce energy consumption). Lack of suitable standards to assess compliance can also hinder regulation.

What obligations arise from implementing measures?

As stated, most implementing measures have taken the form of EU Regulations to date. A typical EU Ecodesign Regulation comprises three elements:

- Specific requirements – numerical targets which must be met before the product can be placed on the market. Targets such as a maximum power consumption when off-load or minimum efficiency when on-load are common. These targets generally tighten with time and are often linked to the requirement to label under the Energy Labelling Framework Directive (and corresponding product-specific Regulations) to enable consumers to make an informed purchase choice.
- Generic requirements – non-quantitative requirements such as providing information to the end user on parameters relevant to the environmental performance (e.g. noise, rating).
- Conformity assessment – the requirement to assess the product for compliance with the given requirements in a formal way, provision of a Declaration of Conformity (DoC) and application of the CE marking.

In comparison, a Voluntary Agreement (the alternative form an implementing measure could take) would include the first two of these elements and manufacturers would generally need to meet the criteria in Annex VIII and provide evidence of conformance to an independent third party to demonstrate to the Commission and third parties that the scheme is effective.

Products covered and status of implementation

The tables below provide a summary.

Key			
Symbol	**Status**	**Symbol**	**Status**
N	Not yet started	P	Legislation proposed
S	Study underway	V	Voluntary agreement
C	Study completed	R	EU regulation in force

Note: Each implementing measure includes a precise definition of what products are covered, please refer to them for this.

Product Groups - Phase 1 Studies	Energy Label	Status
Boilers and combi-boilers (gas/oil/electric)	Yes	R
Water heaters (gas/oil/electric)	Yes	R
Personal Computers (desktops & laptops) and "small scale" servers		R
Imaging equipment: copiers, faxes, printers, multifunctional devices		V
Consumer electronics: televisions and displays	Yes	R
Standby and off-mode losses of EuPs		R
External power supplies (and battery chargers - studied but omitted)		R
Office lighting and (Public) street lighting (combined as tertiary lighting)	Yes	R
Residential room conditioning appliances (aircon and ventilation)	Yes	R
Residential room conditioning appliances (comfort fans)	Yes	R
Electric motors 1-150 kW		R
Water pumps (commercial buildings, drinking water, food, agriculture)		R
Circulators in buildings		R

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Fans (non-residential 125W to 500kW).(Note scope now widened beyond ventilation)		R
Commercial refrigerators and freezers, including chillers, display cabinets and vending machines		P
Domestic refrigerators and freezers	Yes	R
Domestic washing machines	Yes	R
Domestic dishwashers	Yes	R
Solid fuel small combustion installations (in particular for heating)	P	R
Simple Converter Boxes for digital television		R
Laundry dryers	Yes	R
Vacuum cleaners	Yes	R
Complex set top boxes (with conditional access and/or functions that are always on)		V
Domestic lighting products I - including incandescent bulbs (non-directional)	Yes	R
Domestic lighting products II - reflector lamps and luminaires (directional)	Yes	R

Product Groups - Phase 2 & 3 Studies	Label	Status
Professional storage cabinets, blast cabinets, condensing units and process chillers (excluding walk-in cold rooms)	(Yes)	R
Transformers: distribution transformers, power transformers		R
Video game consoles (reduction in scope from Sound and imaging equipment)		V
Local room heating products	(Yes)	R
Air heating products, cooling products and high temperature process chillers		P
Domestic ovens (electric, gas, microwave), including when incorporated in cookers	Yes	R
Domestic hobs and grills, including when incorporated in cookers		R
Professional washing machines, dryers and dishwashers		C
Non-tertiary coffee machines		R
Networked standby losses of EuPs		R
Air-conditioning and ventilation systems	Yes	R
Industrial and laboratory furnaces and ovens		C
Machine tools		V
Water-using equipment		C
Medical imaging equipment [Endorsed t by the EC]		[V]

Product Groups - Phase 4 Studies	Label	Status
Uninterruptible power supplies (UPS)		C
Pumps (extended product approach including motors, VSD & controls, where appropriate) for private and public waste water (including all stages including buildings, networks and treatment facilities) and for fluids with high solids content		C
Pumps (extended product approach including motors, VSD and controls, where appropriate) for private and public swimming pools, ponds, fountains and aquariums, as well as clean water pumps larger than those regulated under lot 11		C
Products in motor systems outside the scope of the Regulation 640/2009, such as special purpose inverter duty motors (asynchronous servo motors), permanent magnet motors, motors cooled by their load (fans), including motors and products under Article 1, points 2(b), (c) and (d) and including drives, such as soft starters, torque or variable speed drives (VSD) from 200W–1000kW. Also motors in scope of 640/2009 from 750kW–1000kW.		P
Products in motor systems outside the scope of lot 30 and Regulation 640/2009 on electric motors, in particular compressors, including small compressors, and their possible drives		P

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Product Groups - Phase 5 Studies	Label	Status
Steam boilers		C
Power cables		C
Enterprise servers and data equipment		S
Taps and showers		S
Toilets and urinals		S
Water-cleaning equipment		N
Irrigation equipment, including animal troughs		N
Windows		C
Lighting systems		S

European Commission guidance concerning "integrated products"

Some EU Ecodesign Regulations are potentially applicable to products on a standalone and an "integrated" basis – meaning when incorporated into other products (e.g. water pumps, electric motors). A 2015-circulated European Commission discussion paper provides guidance on this issue, clarifying that:

• Integrated products fall within regulatory scope, and it is for the "final manufacturer" or other appropriate economic operator (e.g. importer) to determine applicability as well as for ensuring compliance.

• Requirements apply when the integrated product is first placed on the market in the EU, but may also apply to components such as electric motors, when these are placed on the EU market.

• Placing on the market refers to each individual product and relates to a particular point in time; the integrated product must comply with all legislative requirements applicable to it at that moment.

• Economic operators may use the Declaration of Conformity (DoC) of an energy-related product incorporated into their goods to inform and build their own technical documentation. A DoC unique to their integrated product is also required though.

Standardization

As with other EU legislation that requires the affixing of the CE marking to products, the Ecodesign Framework Directive provides for manufacturers to follow harmonised standards in order to comply with their legal obligations through a "presumption of conformity". It is up to manufacturers to determine the harmonised standards that apply to their products; consultation should always be made with the Commission Communication that lists applicable standards with regard to the Ecodesign Regulation – or Regulations – the products are in scope of. For example, a number of products fall within the scope of the cross-cutting Standby Regulation (No. 1275/2008) in addition to product group-specific Ecodesign Regulations like those targeting washing machines or tumble driers. Here the harmonised standard EN 50564, "Electrical and electronic household and office equipment – Measurement of low power consumption" should be considered as a means of meeting standby and off mode electric power consumption requirements under Regulation No 1275/2008 while product group-specific harmonised standards should also be researched, e.g. EN 60456, "Clothes washing machines for household use – Methods for measuring the performance".

Note on energy labelling

Energy labels have been developed – or revised – in tandem with the roll-out of Ecodesign Regulations for specific product groups. Energy labelling is not, however, a feature of the Ecodesign Framework Directive or product-specific Ecodesign Regulations. Separate legislation applies, which is introduced for individual products in "Delegated Acts" arising out of the Energy Labelling Framework Directive (Directive 2010/30/EU).

Energy labelling applies to the provision of information on energy consumption and, where relevant, other essential resources during use. This means energy labelling can be about more than just energy consumption, e.g. water usage and noise feature on some labels.

The above tables indicate where labels have been introduced in addition to ecodesign requirements for different product groups.

Finally, it is understood that the "+" classes found above "A" in the current EU Energy Label (shown in the picture on page 2) are to be removed. This will require a rescaling where these classes have been used to date in order to fit them into revised "A to G"

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scales. While each of these A to G scales will be unique to the product groups subject to labelling, the intention is not to exceed A from now on but enter into rescaling exercises as technological shifts occur.

Disclaimer

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