Draft Working Plan of the Ecodesign Directive (2009 – 2011)

Version 28 April 2008

1. Introduction

"Ecodesign" aims at improving the environmental performance of products throughout their life-cycle (production, use, and end-of-life) by systematic integration of environmental aspects at the earliest stage of the product design. It is estimated that over 80% of all product-related environmental impacts are determined during the design phase, and most of the costs involved are committed then.

Energy-using products (EuPs) are dependent on energy input (electricity, fossil fuels, and renewable energy sources) or generate, transfer and measure such energy. They account for a large proportion of the consumption of energy and other natural resources in the Community and have a high potential for reduction of greenhouse gas emissions.

The Ecodesign Directive 2005/32/EC[1], adopted by the European Parliament and the Council in July 2005 and amended by Directive 2008/28/EC[2], establishes a framework for the setting of ecodesign requirements for such energy-using products. It is therefore a key element of EU's policy for improving the energy and other environmental performances of products in the Internal Market. The Directive facilitates the free movement of energy and resource efficient products across Europe, which supports European industry to enhance its competitiveness in the global market place through innovative products. The Directive also encourages the integration of ecodesign in small and medium-sized enterprises (SMEs) by easy access to information relating to the sustainability of their products. The ecodesign framework allows the consumer to benefit from a combination of better products, energy savings and an improved environment.

Objective of the Working Plan

Article 16 (1) of the Ecodesign Directive specifies that the Commission shall publish this working plan with the objective of setting out for the three following years an indicative list of energy-using product groups, which are considered as priorities for the development of implementing measures.

The working plan should build on the work done since mid-2005 for the transitional priority product groups listed in Article 16 (2) of the Directive. The underlying environmental priorities for the development of implementing measures remain the same, in particular the priority to exploit the potential of energy-using products to combat climate change in a cost-effective manner.

[1] 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 (EuP) and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council (OJ L 191, 22.7.2005, p. 29.)

[2] Directive 2008/28/EC of the European Parliament and of the Council of 11 March 2008 amending Directive 2005/32/EC establishing a framework for the setting of ecodesign requirements for energy-using products, as well as Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC, as regards the implementing powers conferred on the Commission (OJ L 81, 20.3.2008, p. 48.)

2. Mechanisms of the Ecodesign Directive

The Ecodesign Directive is a framework directive. It means that, in practice, binding ecodesign requirements are set through implementing measures specific to each product group. The Directive in itself only defines conditions and criteria for setting implementing measures: they may be adopted for a particular product, if it has a significant impact on the environment coupled with a high volume of sales and trade in the Internal Market and with clear potential for improvement not entailing excessive costs. They shall cover environmentally significant product characteristics, such as energy consumption in the use phase, resource consumption in the production phase, hazardous substances, waste reduction, extension of lifetime or modular assembling enabling repair and recycling of the product or its components. Implementing measures may also provide that no ecodesign requirement is necessary for certain parameters.

Implementing measures are considered when no valid self-regulatory initiative has been taken by industry. Self-regulation by industry, including voluntary and unilateral commitments, may indeed provide for quick progress due to rapid and cost-effective implementation, and allows for flexible and appropriate adaptation to technological options and market sensitivities.

Each implementing measure is preceded by preparatory studies and an impact assessment conducted by external experts and the Commission, which aim at identifying cost-effective solutions for improving the overall environmental performance of products.

The Ecodesign Directive offers participatory decision-making processes. The Commission is assisted by a Consultation Forum, composed of Member States' representatives and all representative parties at EU level interested in the product group in question, such as industry, trade unions, traders, retailers, importers, environmental protection groups and consumer organisations, and a Regulatory Committee, composed of the representatives of the Member States.

3. Product Groups covered in the Transitional Period (2005 – 2008)

The period between the entry into force of the Ecodesign Directive and the adoption of this working plan is called the transitional period, in which implementing measures should be introduced by anticipation for those product groups identified by Article 16 (2) of the Directive. This article classifies a number of energy-using products as priority, such as heating and water heating equipment, electric motor systems, lighting in both the domestic and tertiary sectors, domestic appliances, office equipment in both the domestic and tertiary sectors, consumer electronics and HVAC (heating ventilating air conditioning) system. Furthermore, a separate horizontal implementing measure should be introduced on stand-by losses for a group of products.

Nineteen preparatory studies with accompanying stakeholder meetings were launched in respect of these transitional priority product groups. For example, regarding heating and water heating equipment, preparatory studies on boilers, water heaters and solid fuel boilers were initiated or regarding electric motor systems, a preparatory study on electric motors, water pumps, circulators and ventilation fans. Each preparatory study analysed whether and which ecodesign requirements should be set for the product group. Based on the results of 14 finished preparatory studies, and in the absence of corresponding self-regulation measures, the Commission started to draft implementing measures and, if suitable, labelling requirements for specific energy-using products. Mid-2008 the other 5 preparatory studies are still ongoing.

The next steps following the preparatory study for each product group comprise the consultation of the Consultation Forum, an impact assessment to assess the economic, environmental and social impacts of a possible implementing measure, the submission of the draft implementing measure for a vote in the Regulatory Committee and the adoption by the Commission.

Mid-2008 no implementing measure has been introduced, but the adoption process is well under way: It is foreseen that in 2008 the Commission will adopt implementing measures for the product groups on tertiary sector lighting equipment (formerly public street lighting and office lighting equipment), stand-by and off-mode electricity losses, external power supplies, and simple set top boxes for digital reception. In 2009, it also intends submitting for vote in the regulatory committee televisions, domestic lighting (incandescent bulbs), domestic refrigeration and freezers, washing machines, dishwashers, boilers and water heaters, personal computers, imaging equipment, commercial refrigeration, electric motors, pumps, fans, circulators and room air conditioners.

Table A in the annex summarises the product groups covered in the transitional period.

4. Setting out an Indicative List of Product Groups

The Commission sets out in this working plan an indicative list of product groups, taking into account the work already done in the transitional period.

The listed product groups are considered as indicative priorities for preparatory studies and for the development of implementing measures in the following three years, subject to being recommended by the preparatory study, a favourable impact assessment and the condition that corresponding self-regulation measures are not in place.

The Commission was supported by a study[3] for preparing the working plan of the Ecodesign Directive. The aim of the study was to bring together and complement available information as to which product groups should be included among the indicative priorities and to give the opportunity for an early input from, and awareness-raising of, all relevant stakeholders. The study identified 57 energy-using product groups within the scope of the Ecodesign Directive but not covered in the transitional period[4].

The systematic identification of these product groups based on the PRODCOM product list is an essential prerequisite for the working plan. For example, the preparatory study made during the transitional period on the heating equipment "boilers" includes wet boilers and air to water solar and heat pumps. However, products excluded from this preparatory study are dry heating systems, air to air heat pumps, reversible aircos, steam producing boilers, very large boilers e.g. for process plant, micro cogeneration and local heating systems such as gas fires, direct electric heating, electric fires or electric storage heaters. The Working Plan study assigned these excluded products conclusively to three product groups[5].

The study screened the 57 product groups against the primary energy consumption in the use phase to identify the product groups with the highest contribution to climate change and

[3] EPTA Ltd, Greece; PE International, Germany; NTUA, Greece: Study for preparing the first Working Plan of the Ecodesign Directive, Report for tender No.: ENTR/06/026, Revised Final Report: 06/12/2007 http://ec.europa.eu/enterprise/eco_design/finalreport_wpstudy.pdf

[4] p. 29 of [3]

[5] p. 251-256 of [3]

resource depletion, resulting in 25 A and 9 B ranked product groups[6]. The Commission further assessed the 25 A ranked product groups regarding its prioritisation according to the criteria laid down in Article 15 of the Ecodesign Directive, notably

1. the product group represents a significant volume of sales and trade within the Community,
2. the product group has a significant environmental impact within the Community resulting from the energy-using products during their life cycle,
3. the product group presents significant potential for improvement in terms of its environmental impact without entailing excessive costs.

The result of the assessment is summarised in table 1 below. The following assessment principles were applied to determine the significance of the Article 15 criteria:

According to the most recently available PRODCOM product list of 2005 and 2006, the product groups prioritised by the Commission fulfil the sales and trade criteria of indicatively more than 200,000 units a year within the Community. Energy-using products from the domestic, tertiary and industrial sectors are covered. This criterion is a yes/no question, as the impact of the number of units per product group directly influences the assessment of the second criterion, the environmental impact.

For the assessment of the significant environmental impact the following aspects were taken into account: Important primary energy consumption within the identified product groups (very high: > 10,000 PJ/year, high: > 1,000 PJ/year) and the related emissions such as greenhouse gases, acidification substances, persistent organic pollutants, heavy metals, particular matters and waste generation, is the first indication of a prioritisation. An important operating time (very high: up to 24 hours/day, three production shifts; high: heating or cooling period, about 8 hours/day), materials, parts and components contributing to the energy consumption, such as integrated motors not covered in the transitional period, or a predicted increase in energy consumption in the next decade due to a high growth market, underpin the importance of the environmental impacts related to energy consumption. Further environmental impacts are considered by materials, parts or components responsible for other resource consumption, and the related emissions and waste generation, such as used water, electronics, displays, refrigerants, oils or paints.

Regarding the third criterion, the significant potential for improvement in terms of the environmental impact of the product groups and the potential for ecodesign measures were considered to set priorities: An important potential for ecodesign measures is given by a high potential for energy savings (indicatively > 20%) or for better energy input (e.g. fossil fuels are more efficient for heating applications than electricity). Further important ecodesign measures may comprise reduced weight/volume of a product, optimised product design for the consumer's use phase, modularisation of a product to ease maintenance and recycling or the extension of the product's lifetime. Existing third country specifications, such as energy labelling, MEPS, Energy Star and/or eco-labels, indicate important potential for improvement and a wide disparity in the environmental performance of the energy-using products with equivalent functionality.

[6] p. 33 of [3]

Other Community legislation on Ecodesign measures is absent for the product groups prioritised by the Commission. At this stage it is assumed that the significant potential for improvement in terms of environmental impact of these product groups will not entail excessive costs, and that market forces fail to make progress in the absence of a mandatory or voluntary requirement. These preliminary assumptions should be investigated by preparatory studies. Suggested improvements in environmental performance should be based on least life cycle costs to guarantee cost-effectiveness.

Additionally, the Commission called upon the industrial sectors concerned to give priority to alternative self-regulation measures, in line with the provisions of the Ecodesign Directive and the Better Regulation strategy and its Rolling simplification programme of the Commission.

The Commission consulted the Consultation Forum according to Article 18 of the Ecodesign Directive to set out the indicative list of product groups.

The prioritisation assessment by the Commission may be subject to change after a fully quantitative assessment is carried out in a preparatory study. In particular, the number and heterogeneity of products belonging to each product group require a detailed assessment in a preparatory study to define which products may have the highest priority regarding ecodesign requirements within the product group and to define the products to be covered by possible implementing measures.

Indicative list of energy-using product groups of this working plan[7]

- Air conditioning systems and heat pumps
- Electric and fossil fuelled heating equipment
- Food preparing equipment
- In house networking and data processing, storing and providing equipment
- Industrial and laboratory furnaces and ovens
- Machine tools
- Refrigerating equipment
- Sound and image processing machines and equipment
- Transformers
- Water-using equipment

[7] Product groups in alphabetic order and excluding energy-using products covered in the transitional period.

Table 1: Non-exhaustive assessment of Energy-Using Product Groups included in the Indicative List of this Working Plan

The product groups in the table are listed in alphabetic order and exclude products already covered in the transitional period. The Commission reserves itself the right to choose energy-using products from these indicatively listed product examples to launch preparatory studies.

Product Group	**Product Examples**	**Significant Environmental Impact**[1]	**Significant Potential for Improvement**
Air conditioning systems and heat pumps	Air conditioning machines with refrigeration unit, Larger packaged air conditioners, Air handling units, Ventilation packages, Hoods, Heat pumps	High energy consumption (> 1,000 PJ/year), High operating time (cooling/heating period, increasing ventilation time), High growth market, Environmental impacts from power electronics, displays, refrigerants	High potential for energy savings (estimated average > 20%), High potential for Design for Environment (e.g. modularisation, substitution of refrigerants), Various third country specifications (Energy labelling, Eco-labels, Energy Star, MEPS)
Electric and fossil fuelled heating equipment	Electric storage heating radiators, Electric heaters for space and soil heating, Gas- and oil fired dry space heating systems	High energy consumption (> 1,000 PJ/year), High operating time (heating period), Environmental impacts from power electronics, materials used	High potential for substitution of less efficient electric heating by more efficient primary fuels (electric heating corresponds to about 20% of the residential electrical consumption, space heating in industry and stores), High potential for Design for Environment (e.g. design of fireplace, materials for new radiator technologies, phasing out outdoor heating)
Food preparing equipment	Small and large electric and gas-fired ovens, hobs and grills, Microwave ovens, Coffee and tea machines	High energy consumption (> 1,000 PJ/year), High operating time in the tertiary sector (about 8 hours/day), Energy consumption of integrated motor, fan	High potential for energy savings (estimated 10-30%), High potential for Design for Environment (e.g. daily use phase, modularisation, extension of life time), Various third country specifications (Energy labelling, Eco-labels, MEPS) and Member States' eco-labels (Nordic Swan, NF Environnement)
In house networking and data processing, storing and providing equipment	Small, medium and large IT servers, Data distribution and storage centres	Very high energy consumption (> 10,000 PJ/year), Very high operating time (24 hours/day), High growth market, Environmental impacts from electronics	Very high potential for energy savings (estimated 5-30% for components, 80% for system, networked standby), High potential for Design for Environment (e.g. waste heat recovery, modularisation, extension of life time), Third country specification under development (Energy Star)
Industrial and laboratory furnaces and ovens	Infra-red radiation ovens, Resistance heated industrial and laboratory furnaces and ovens, Electrical induction industrial or laboratory furnaces and ovens	Very high energy consumption (> 10,000 PJ/year), High operating time (about 8 hours/ working day), Energy consumption of integrated fan, Environmental impacts from materials used	High potential for energy savings (estimated average > 20%, transforming energy into heat), High potential for Design for Environment (e.g. improved heat transfer systems, reduction of mass), Various third country specifications (Energy labelling, MEPS)

Product Group	Product Examples	Significant Environmental Impact[1]	Significant Potential for Improvement
Machine tools	Grinding machines, Folding machines, Cutting machines, Drilling machines, Rolling machines	Very high energy consumption (> 10,000 PJ/year), High to very high operating time (up to three production shifts), Energy consumption of integrated motor, Environmental impacts from power electronics, monitor	High potential for energy savings (low power factor of 0.7-0.8), High potential for Design for Environment (e.g. reduction of mass, materials used, extension of tool lifetime, optimised PWB, CPU, monitor)
Refrigerating equipment	Freezing equipment, Chillers, Walk in cold rooms, Ice makers	High energy consumption (> 1,000 PJ/year), Very high operating time (up to 24 hours/day), Environmental impacts from refrigerants	High potential for energy savings (estimated 10-60%), High potential for Design for Environment (e.g. substitution of refrigerants, design of cold room)
Sound and image processing machines and equipment	DVD and Video player/recorders, Digital cameras , Video camera recorders, Beamer/ Video projectors	High energy consumption (> 1,000 PJ/year), Growth market, Environmental impacts from electronics, displays	High potential for energy savings (estimated average > 20%), High potential for Design for Environment (e.g. modularisation, extension of lifetime), Various third country specifications (Energy labelling, Eco-labels, Energy Star)
Transformers	Distribution transformers, Power transformers	Very high energy consumption (> 10,000 PJ/year), Very high operating time (24 hours/day), Environmental impacts from used oils, paints	High potential for energy savings (about 30% possible which corresponds to about 15% of the electricity networks losses), High potential for Design for Environment (e.g. reduction of mass, materials used, obsolete stock with long lifetime of about 40 years), Various third country specifications (Energy labelling, Eco-labels, Energy Star, MEPS)
Water-using equipment	Water cleaning appliances, Agricultural and farming machines and equipment including irrigation equipments, Water beds and swimming pools	Waste of water of 14,360 million m³/year in industrial sector due to inappropriate devices, Waste of water of 52,750 million m³/year in agriculture due to inappropriate equipments, Waste of water of 24,430 million m³/year in households and public facilities due to inappropriate devices	High potential for substitution of less efficient water using devices by more efficient water using devices and equipments, Water saving potentials of 43% in industrial sector and agriculture, Water saving potential of 33% in public water supply

[1] The energy consumption is indicated as PJ primary energy consumption in 2006. Primary energy is energy contained in fossil fuels and renewable energy sources that has not been subjected to any conversion or transformation process. To convert electricity from the public grid (secondary energy) to primary energy the factor 10.5 MJ/kWh$_e$ was used.

5. Outlook

The inclusion of a product group in the indicative list of this working plan indicates that the Commission will initiate a preparatory study on this product group during the 2009-2011 period and possibly adopt an implementing measure, subject to being recommended by the preparatory study, a favourable impact assessment and the condition that valid self-regulatory measures are not in place.

Useful information regarding the timeline for preparatory studies and development of implementing measures will be disseminated to all interested stakeholders for each product group, notably through the websites of the Commission services in charge of the Ecodesign Directive[8] and through stakeholder meetings and websites organised by the contractors of the preparatory studies.

Each preparatory study will investigate possible ecodesign requirements on the basis of technical, legal, economic and environmental analyses. The possibility of launching a mandate to standardise certain ecodesign parameters should be explored. Interested parties should cooperate actively in this analysis. The Ecodesign Directive encourages self-regulation as an alternative to implementing measures. Priority will therefore be given to alternative self-regulation by the industry, where such action is likely to deliver the policy objectives faster or in a less costly manner than mandatory requirements. The Commission will follow such initiatives during the next three years and subsequently evaluate the need for further implementing measures, for example where market forces fail to evolve in the right direction or at an acceptable speed.

According to Article 16 of the Directive the working plan shall be amended periodically by the Commission after consultation with the Consultation Forum.

[8] Directorate-General for Enterprise and Industry: http://ec.europa.eu/enterprise/eco_design/index_en.htm
Directorate-General for Energy and Transport: http://ec.europa.eu/energy/demand/legislation/eco_design_en.htm

Annex

Table A: Energy-Using Product Groups covered in the Transitional Period[9]

Measures planned to be adopted by the Commission in 2008
Tertiary sector lighting products Stand-by and off-mode losses External power supplies Simple set top boxes
Measures planned to be adopted by the Commission in spring 2009
Domestic lighting products I (including incandescent bulbs) Televisions
Measures to be submitted for vote in the Committee in 2008 and 2009
Boilers Water heaters Washing machines, dishwashers Domestic refrigeration, freezers Commercial refrigeration Electric motors Circulators (originally under electric motors) Computers Imaging equipment Electric pumps (originally under electric motors) Fans for ventilation in non residential buildings (originally under electric motors) Room Air Conditioners Domestic fans (originally under room air conditioners)
Other measures (preparatory studies finishing in 2009)
Complex set top boxes Laundry Driers Vacuum Cleaners Domestic lighting products II (reflector lamps and luminaires) Solid Fuel Boilers

[9] The planning of the adoption process is approximative and subject to change, as the planning is adjusted to the real advancement of preparatory work.