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COMMISSION OF THE EUROPEAN COMMUNITIES

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Draft

**COMMISSION REGULATION (EC) No .../..**

**of**

**implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment**

## EXPLANATORY MEMORANDUM

### 1. CONTEXT OF THE PROPOSAL

- Grounds for and objectives of the proposal

Directive 2005/32/EC lays down a framework for the Commission, assisted by a Regulatory Committee, to set ecodesign requirements for energy-using products. Ecodesign requirements are requirements that products covered by implementing measures must meet in order to be placed on the market, with the aim of improving their environmental performance.

Article 16 of the Directive states that the Commission shall, as appropriate, introduce by anticipation a separate implementing measure reducing stand-by losses for a group of products" in accordance with the criteria set out in Article 15 (in particular significant volume of sales and trade, significant environmental impact, significant potential for improvement and assessment of impacts).

A technical, environmental and economical analysis ("preparatory study") has shown that (i) products with standby and off mode are placed in large quantities on the EU market, (ii) the environmental impact of electricity consumption in standby/off mode in the EU is significant, (iii) there are wide disparities in power consumption levels in standby/off-mode, and cost-effective technical solutions exist which could significantly improve the environmental impacts of standby/off mode. Pursuant to Article 15 of Directive 2005/32/EC standby/off-mode shall therefore be covered by an ecodesign implementing measure

- General context

Although cost-effective solutions for improving the life cycle environmental impact of standby/off mode exist, market forces alone have resulted in market penetration by products whose standby/off mode power consumption being much higher as it could be, and cost-effective (from the user's perspective) improvement potentials are not realized. This market failure is mainly related to the incremental costs of technologies leading to better product performance in standby/off mode. These costs are small, but nevertheless relevant in price sensitive markets in which standby/off-mode is very important, in particular household electrical and electronic equipment, consumer electronics and information and communication technologies. Though very small when looked at in isolation for a single product, standby/off-mode energy consumption represents significant losses of energy and money for users when multiplied by the number of products involved.

The preparatory study estimated that 3.7 billion installed products had standby/off mode in 2005, leading to electricity consumption in standby/off-mode of 47 TWh in the EU-25, corresponding to electricity costs of EUR 6.4 billion and 19 Mt of CO<sub>2</sub> emissions. By 2020 it is expected that some 4.6 billion installed products will have standby/off mode and that, without specific countermeasures, electricity consumption in standby/off-mode will have risen to 49 TWh per year (as much as the total electricity consumption of Greece).

It is estimated that the proposed ecodesign requirements would lead to a reduction of approximately 35 TWh of electricity per year by 2020 in the EU. Additional energy savings are expected in other parts of the world because some equipment categories are produced for the world market to identical specifications.

- Existing provisions in the area of the proposal

There are no existing provisions in the area of the proposal.

- Consistency with the other policies and objectives of the Union

Directive 2005/32/EC is an important instrument to achieve the target of 20% increase of energy efficiency by 2020, and its implementation is one of the priorities of the Commission's Energy Efficiency Action Plan. Furthermore, implementation of Directive 2005/32/EC contributes to the EU's binding target to attain a reduction of greenhouse gases by at least 20% in 2020, or 30% in 2020 if there is an international agreement which commits other developed countries to comparable emissions reductions. The proposed Regulation is an important contribution to this process..

## 2. CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

- Consultation of interested parties

### Consultation methods, main sectors targeted and general profile of respondents

Stakeholders were consulted as part of the preparatory study and in the Ecodesign Consultation Forum.

On 19 October 2007 the Ecodesign Consultation Forum (set up pursuant to Article 18 of Directive 2005/32/EC) held a meeting on standby/off mode. Building on the results of the preparatory study, Commission staff presented a "working document" suggesting ecodesign requirements for standby/off mode. On 19 September 2007 the working document was sent to the members of the Consultation Forum, and to the secretariats of the ENVI (Environment, Public Health and Food Safety) and ITRE (Industry, Research and Energy) Committees of the European Parliament for information. The working document was published on DG TREN's ecodesign website and included in the Commission's CIRCA system alongside the stakeholder comments received in writing before and after the meeting.

In addition, the initiative was discussed in meetings between Commission staff and stakeholder representatives, and with international partners on many occasions, e.g. in the EU-US Summit process, the EU-Japan Energy and Regulatory Cooperation Dialogues, the IEA "Implementing Agreement Energy Efficient End Use Equipment" and the G8 Gleneagles process, the "1-Watt Initiative", the International Platform for Energy Efficiency Cooperation, and during bilateral meetings between Commission staff and with delegations from China, India, Korea, APEC, etc.

### Summary of responses and how they have been taken into account

The positions of the main stakeholders, as expressed before, during and after the Consultation Forum meeting on 19 October 2007 as a reaction to the Commission staff working document can be summarised as follows.

The Member States support "horizontal" ecodesign requirements on standby/off-mode. The suggested levels for power consumption requirements and staged timing were considered appropriate in general, although some concerns were raised that the timing originally suggested, in particular the three years suggested for the entry into force of the second stage, was too short. Further issues that were raised include the precise definitions of "standby" and "off mode", the need to avoid potential loopholes, and the appropriateness of requiring a "hard off" switch or a "0 Watt mode".

The general approach to setting mandatory minimum requirements in the framework of ecodesign is largely supported by industry associations. Specific issues that were

raised include the scope of the implementing measure and its legal definition, the definitions of the relevant operating modes, the relation to "vertical" (product-specific) ecodesign implementing measures, the suggested power consumption requirements for the second stage (seen as demanding), and the timing of entry into force.

Environmental and consumer NGOs welcome "horizontal" ecodesign requirements on standby/off mode. Concerns were raised on potential loopholes, the scope of the operating modes addressed, in particular "networked standby" operating modes, the need for "hard off switch" and the role of requirements for providing relevant information to consumers.

These issues have been considered with a view to the proposed Regulation. Details are given in the impact assessment.

- Collection and use of expertise

#### Scientific/expertise domains concerned

External expertise on standby/off-mode was mainly gathered through the preparatory study providing technical, environmental and economic analysis, which was carried out by a consortium of external consultants on behalf of the Commission's Directorate-General for Energy and Transport.

#### Methodology used

The methodology followed the provisions of the Directive, in particular Article 15 and Annexes I and II. The technical, environmental and economic analysis followed the structure of the "Methodology Study Eco-design of Energy-using Products" developed for the Commission's Directorate-General for Enterprise and Industry and endorsed by stakeholders.

#### Main organisations/experts consulted

The preparatory study was conducted in an open process that took into account input from relevant stakeholders including manufacturers and manufacturing associations, environmental NGOs, consumer organizations, EU/EEA Member State experts, experts from third countries (e.g. Australia, Canada, Japan, Korea, and the USA) and international organisations such as the International Energy Agency (IEA).

#### Summary of advice received and used

No potentially serious risks with irreversible consequences were raised by any stakeholder, nor were any identified during the preparatory work.

The technical, market and economical analysis carried out in the framework of the preparatory study resulted in recommendations on levels for standby/off mode power consumption. These recommendations were used as a basis for suggesting possible ecodesign requirements to the Consultation Forum.

#### Means used to make the expert advice publicly available

The preparatory study was given a dedicated website where interim results and further relevant materials were published regularly for timely stakeholder consultation and input. Written submissions from stakeholders are listed in the final report. The study website was promoted on the ecodesign-specific websites of the Transport and Energy DG and the Enterprise and Industry DG. The Commission hosted an open consultation meeting for stakeholders directly affected in Brussels on 4 May 2007 to discuss the preliminary results of the study.

The written submissions received through the Consultation Forum process are available in the Commission's CIRCA system. The minutes of the Forum meeting on standby/off mode are available on the Transport and Energy DG's website.

- Impact assessment

An impact assessment was carried out pursuant to Article 15(4 b) of Directive 2005/32/EC. Several Options for improving the power consumption of standby/off mode were considered, and the outcome can be summarised as follows.

Option 1. No EU action:

This option implies that the market failure would persist, and it is to be expected that Member States would want to take individual, non-harmonised action on standby/off mode. This would hamper the functioning of the internal market and lead to considerable administrative burdens and costs for manufacturers, contrary to the goals of the ecodesign framework Directive. In addition, it ignores the specific mandate given to the Commission by the Council and Parliament..

Option 2. Self regulation:

No industrial sector has brought forward any initiative for self-regulation of standby/off mode for electrical and electronic equipment. On the contrary, some industry sectors terminated relevant voluntary initiatives in 2007 by industry and called for a clear legal framework ensuring fair competition (a "level playing field")..

Option 3. Ecodesign requirements for standby/off mode set only under product-specific ecodesign implementing measures:

If this option were chosen, most of the potential for improving standby/off mode would not be realized because dedicated product-specific ecodesign implementing measures would not be justified for other characteristics of those products. Therefore the electricity consumption in standby/off mode of many products entering the market in the future would be higher than necessary. Furthermore, from an administrative point of view, having a (large) number of product-specific implementing measures aiming to produce the same effect is not efficient. It also ignores the specific mandate given to the Commission by the Council and Parliament.

Option 4. Labelling targeting the energy consumption of standby/off mode:

If this option were chosen any market transformation towards equipment with desirable levels of standby/off mode energy consumption would take place very slowly, because the absolute energy consumption in standby/off mode of an individual product is low, and would hardly influence consumers to purchase equipment with "good" standby/off-mode energy consumption. The burden on manufacturers and retailers would be disproportionate. It also ignores the specific mandate given to the Commission by the Council and Parliament.

Option 5. "Horizontal" ecodesign implementing regulation on standby functions and off mode:

This option implies setting of ecodesign requirements on maximum levels for the energy consumption of standby/off mode for electrical and electronic household and office equipment. It is estimated that the proposed requirements would lead to a reduction of some 35 TWh electricity per year in 2020 in the EU. The measure is highly cost-effective for consumers. In addition, it complies with the specific mandate given to the Commission by the Council and Parliament.

Following the principle of proportionality in the analysis effort, Options 1-4 were assessed qualitatively and discarded for the detailed analysis, and the impact assessment focussed on Option 5. With a view to Article 15(4) and 15(5) of Directive 2005/32/EC the impact on environment, consumers and manufacturers of several sub-options for setting ecodesign requirements on power consumption levels and the timing for entry into force have been assessed. It has been concluded that two sets of ecodesign requirements (2W/1W, and 1W/0.5W) on power consumption of standby/off mode, which become effective 1 year and 4 years after entry into force of the proposed Regulation respectively, provide the appropriate balance between an improvement of the environmental impact of the affected equipment and the cost benefits for the user/consumer (due to a reduction of electricity consumption) on the one hand, and possible additional burdens for manufacturers (in particular due to unplanned re-design) on the other hand.

### 3. LEGAL ELEMENTS OF THE PROPOSAL

- Summary of the proposed action

#### Scope

The product categories addressed by the proposed Regulation covers electrical and electronic household and office equipment, in line with the analysis carried out in the preparatory study. The term "equipment" is used to underline that end-use equipment is addressed, but "parts", within the meaning of Directive 2005/32/EC, are not. The scope has been defined using an approach similar to that of the "Waste electrical and electronic equipment" (WEEE) Directive (2002/96/EC), but limited to household and office equipment. In addition, "catch all" clauses are included to ensure that products not explicitly named in the product list, which can never be exhaustive, are covered. This aspect is crucial, because it ensures that categories of equipment not yet available on the market are designed to fulfil minimum requirements for standby and off-mode.

#### Staged implementation

It is proposed to introduce maximum power levels in two stages. In the first stage, products placed on the market one year after the proposed Regulation has come into force must have a maximum power consumption of 1 W for off mode only or standby/reactivation function only and 2 W for standby/reactivation function and/or display function only.

In the second stage, four years after the proposed Regulation has come into force, products must have a maximum power consumption of 0.5 W for off mode only or standby/reactivation function only, and 1 W for standby/reactivation function and/or display function only.

The preparatory study has shown that those levels are cost-effective and can be achieved with current state-of-the-art technology. The stages are timed to avoid negative impacts on the functionalities of equipment on the market, and to take into account cost impacts for manufacturers, including SMEs, while ensuring timely achievement of the policy objectives.

#### Definitions for "off mode" and "standby"

The definitions of "off mode" and "standby" are based on the preparatory study. The definitions are considered for the on-going revision of the international "standby standard" IEC 62301. Taking into account stakeholder feedback, the definitions have

been refined compared to the preparatory study and/or Committee draft 59/490/CD for the revised IEC 62301.

Conditions of equipment involving sensor-based safety functions are not included in the definition of standby in order to prevent that safety functions from being left out of equipment merely for the sake of meeting ecodesign requirements. This mainly applies for wet appliances (water-stop functions) and cooking equipment, e.g. sensors indicating that a cooking field is hot.

#### Requirement of standby/off mode and power management

The loss of standby functionalities would lead to an increase in overall energy consumption because users would often not switch off the main function, which usually consumes much more energy than standby. The strategy for minimising the overall energy consumption of equipment is therefore to require that equipment has

- a standby/off mode with low power consumption levels, or an operating condition meeting the standby/off mode power consumption requirements,
- an automatic switch to standby/off mode, or an operating condition meeting the standby/off mode power consumption requirements, when the main function is not being used.

The first requirement also aims to prevent loopholes and unfair competition, because there is a risk that equipment could be designed without standby/off mode, with the aim to evade the requirements. The second requirement aims to ensure that equipment is switched to standby/off mode (conditions with very low power consumption) when the main function is not used. The automatic switch to standby/off mode may require a more thorough re-design of the product, and is therefore required only in the second stage.

#### Measurements

The proposed Regulation requires that measurements have to be reliable, accurate and reproducible. A mandate for a corresponding harmonised standard will be issued.

#### Verification procedure for market surveillance purposes

A number of Member States have argued that the procedure in EN 62301 (and similar labelling standards under Directive 92/75/EEC) leaves room for product design which could be systematically exceeding ecodesign power levels (energy efficiency grades for labelling purposes) by several per cent. The tolerance for the first test of the verification procedure is therefore reduced from 15% to 10% for power consumption greater than 1 W, and from 0.15 W to 0.1 W for power consumption equal to, or less than, 1 W. Information to be provided by the manufacturers

In order to facilitate compliance checks manufacturers are requested to provide information in the technical documentation referred to in Annexes IV and V of Directive 2005/32/EC on operating conditions subject to the definitions of standby/off mode, and the corresponding power consumption levels. Furthermore it is requested to provide information on the product characteristics as relevant for the requirements that equipment has to have standby/off mode and power management.

#### Date for evaluation and possible revision

The main issues for a revision of the proposed Regulation are:



- the feasibility of extending the measure to horizontal requirements on "networked" operating conditions (in addition to the standby/off mode currently covered);
- whether the levels of ecodesign requirements on standby/off mode are still appropriate;
- whether the scope is still appropriate.

Taking into account the time needed to collect, analyse and complement the data and experiences of the second stage in order to properly assess technological progress, a review could be presented to the Consultation Forum six years after entry into force of the Regulation.

- Legal basis

The proposed Regulation is an implementing measure pursuant to Directive 2005/32/EC, and in particular Article 15(1) thereof. The Directive is based on Article 95 of the Treaty.

- Subsidiarity principle

The adoption of different ecodesign measures for standby and off mode electric power consumption by individual Member States would lead to obstacles to the free movement of goods within the Community. Such measures must therefore have the same content throughout the Community. In line with the principle of subsidiarity, it is thus appropriate that the measures in question are adopted at Community level.

- Proportionality principle

The proposal complies with the proportionality principle for the following reason(s).

In accordance with the principle of proportionality, this measure does not go beyond what is necessary in order to achieve the objective.

No costs for national administrations for transposition of the action into national legislation arise.

- Choice of instruments

Proposed instruments: Regulation.

Other means would not be adequate for the following reason(s).

The proposed form of action is a Commission Regulation (implementing Directive 2005/32/EC), because the objectives of the action can be achieved most efficiently by fully harmonized requirements throughout the EU, ensuring free movement of compliant equipment.

Trade implications: WTO/TBT will be notified to ensure that no barrier to trade is introduced.

#### **4. BUDGETARY IMPLICATION**

The proposal has no implications for the Community budget.

#### **5. ADDITIONAL INFORMATION**

- Review/revision/sunset clause

The proposal includes a review clause.

- European Economic Area

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.

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**of**

**implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment**

**(Text with EEA relevance)**

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to 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/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council<sup>1</sup> and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

- (1) Under Directive 2005/32/EC ecodesign requirements shall be set by the Commission for energy using products representing significant volumes of sales and trade, having significant environmental impact and presenting significant potential for improvement in terms of their environmental impact without entailing excessive costs.
- (2) Article 16(2) second indent of Directive 2005/32/EC provides that in accordance with the procedure referred to in Article 19(3) and the criteria set out in Article 15(2), and after consulting the Consultation Forum, the Commission shall as appropriate introduce a separate implementing measure reducing standby losses for a group of products.
- (3) The Commission has carried out a preparatory study which analysed the technical, environmental and economic aspects of standby mode and off mode losses. The study has been developed together with stakeholders and interested parties from the EU and third countries, and the results have been made publicly available.
- (4) It has been stated in the preparatory study that standby functionalities and off mode losses occur for the majority of electrical and electronic household and office equipment products sold in the Community, while the annual electricity consumption related to standby functionalities and off mode losses in the Community has been estimated to be 47 TWh in 2005, corresponding to 19 Mt CO<sub>2</sub> emissions. Without taking specific measures, the consumption is predicted to increase to 49 TWh in 2020. It has been concluded that the electricity consumption of standby functionalities and off mode losses can be significantly reduced.

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<sup>1</sup> Directive 2005/32/EC (OJ L 191, 22.7.2005, p. 29) Directive as amended by Directive 2008/28/EC (OJ L 81, 20.3.2008, p. 48)

- (5) Improvements of electricity consumption of standby functionalities and off mode losses should be achieved by applying existing non-proprietary cost effective technologies, which lead to a reduction of the combined expenses for purchasing and operating equipment.
- (6) Ecodesign requirements for the power consumption of standby mode and off mode of electrical and electronic household and office equipment should be set with a view to harmonizing ecodesign requirements on standby mode and off mode throughout the Community and contributing to the functioning of the internal market and to improvement of the environmental performance of the products affected.
- (7) The ecodesign requirements should not have negative impact on the functionality of the product and should not affect negatively health, safety and environment. In particular, the benefits of reducing the electricity consumption during the use phase should over-compensate potential additional environmental impacts during the production phase of equipment having standby functionalities and/or off mode losses.
- (8) The application of this Regulation should be limited to products corresponding to household and office equipment intended for use in the domestic environment, which, for information technology equipment, corresponds to class B equipment as set out in EN 55022:2006. The scope should be defined such that equipment that is not yet available on the market, but have similar functionalities to those products explicitly named in this Regulation, are designed to fulfil the requirements. When appropriate, an amendment to this Regulation can complement the list of products.
- (9) Operating modes not covered by this Regulation, such as the ACPI S3 mode of computers, should be considered in product-specific implementing measures pursuant to 2005/32/EC.
- (10) As a general rule, requirements on standby and off mode set out in product-specific implementing measures pursuant to Directive 2005/32/EC should not be less ambitious than those set out in this Regulation.
- (11) In order to prevent unnecessary losses of energy, products should ideally enter into a "0-Watt" consumption state when providing no function. The technical feasibility and appropriateness should be considered on a product by product basis in the relevant implementing measure pursuant to Directive 2005/32/EC.
- (12) The two-staged entry into force of the ecodesign requirements should provide an appropriate timeframe for manufacturers to redesign products as far as standby functionalities and off-mode losses are concerned. The timing of the stages should be set in such a way that negative impacts related to functionalities of equipment on the market are avoided, and cost impacts for manufacturers, in particular SMEs, are taken into account, while ensuring timely achievement of policy objectives. Measurements of the power consumption should be performed taking into account the generally recognised state of the art; manufacturers may apply harmonised standards in accordance with Article 9 of Directive 2005/32/EC.
- (13) This Regulation should increase the market penetration of technologies yielding improved energy efficiency for standby functionalities and off mode losses, leading to estimated energy savings of 35 TWh in 2020, compared to a business as usual scenario.
- (14) Pursuant to Article 8(2) of Directive 2005/32/EC, this Regulation should specify that the applicable conformity assessment procedures are the internal design control set out in Annex IV and the management system set out in Annex V of Directive 2005/32/EC

- (15) In order to facilitate compliance checks manufacturers should be requested to provide information in the technical documentation referred to in Annexes IV and V of Directive 2005/32/EC on the operating conditions subject to the definitions of standby/off mode, and the corresponding power consumption levels.
- (16) Benchmarks for currently available technologies with low standby and off mode power consumption should be identified. This helps to ensure wide availability and easy access to information, in particular for SMEs and very small firms, which further facilitates the integration of best design technologies for reducing the energy consumption of standby and off mode.
- (17) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2005/32/EC.

HAS ADOPTED THE FOLLOWING REGULATION:

*Article 1*  
***Subject matter and scope***

This Regulation establishes ecodesign requirements related to standby and off mode electric power consumption. This Regulation applies to electrical and electronic household and office equipment.

*Article 2*  
***Definitions***

For the purposes of this Regulation, the definitions set out in Directive 2005/32/EC shall apply. The following definitions shall also apply:

1. "electrical and electronic household and office equipment (hereafter referred to as "equipment"), means any energy using product which
  - (a) is made commercially available as a single functional unit and is intended for the end-user,
  - (b) falls under the list of energy-using products of Annex I,
  - (c) is dependent on energy input from the mains power source in order to work as intended, and
  - (d) is designed for use with a nominal voltage rating of 250 V or below, also when marketed for non-household or non-office use;
2. "standby mode(s)" means a condition where the equipment is connected to the mains power source, depends on energy input from the mains power source to work as intended and provides *only* the following functions, which may persist for an indefinite time:
  - reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or
  - information or status display.
3. "reactivation function" means a function facilitating the activation of other modes, including active mode, by remote switch including remote control, internal sensor, timer to a condition providing additional functions, including the main function;

4. "information or status display" means a continuous function providing information or indicating the status of the equipment on a display, including clocks;
5. "active mode(s)" means a condition in which the equipment is connected to the mains power source and at least one of the main function(s) providing the intended service of the equipment has been activated;
6. "off mode" means a condition in which the equipment is connected to the mains power source and is not providing any function; the following shall also be considered as off mode:
  - (a) conditions providing only an indication of off mode condition,
  - (b) conditions providing only functionalities intended to ensure electromagnetic compatibility pursuant to Directive 2004/108/EC of the European Parliament and of the Council<sup>2</sup>.
7. "information technology equipment" means any equipment which has a primary function of either entry, storage, display, retrieval, transmission, processing, switching, or control, of data and of telecommunication messages or a combination of these functions and may be equipped with one or more terminal ports typically operated for information transfer.
8. "domestic environment" means an environment where the use of broadcast radio and television receivers may be expected within a distance of 10 m of the apparatus concerned.

*Article 3*  
***Ecodesign requirements***

The ecodesign requirements related to standby and off mode electric power consumption are set out in Annex II.

*Article 4*  
***Conformity assessment***

The procedure for assessing conformity referred to in Article 8(2) of Directive 2005/32/EC shall be the internal design control system set out in Annex IV of Directive 2005/32/EC or the management system set out in Annex V of Directive 2005/32/EC.

*Article 5*  
***Verification procedure for market surveillance purposes***

Surveillance checks shall be carried out in accordance with the verification procedure set out in Annex III.

*Article 6*  
***Benchmarks***

The indicative benchmarks for the best-performing products and technology currently available on the market are identified in Annex IV.

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<sup>2</sup> OJ L 390 of 31.12.2004, p. 24.

*Article 7*  
***Revision***

No later than 6 years after the entry into force of this Regulation the Commission shall review it in the light of technological progress and present the result of this review to the Consultation Forum.

*Article 8*  
***Entry into force***

This Regulation shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Union*.

Point 1 of Annex II shall apply as from one year after the date referred to in the first paragraph.

Point 2 of Annex II shall apply as from four years after the date referred to in the first paragraph.

*Article 9*

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the Commission*

*Member of the Commission*

## ANNEX I

### **List of energy using products covered by this Regulation**

1. Household appliances
  - Washing machines
  - Clothes dryers
  - Dish washing machines
  - Cooking:
    - Electric ovens
    - Electric hot plates
    - Microwave ovens
    - Toasters
    - Fryers
  - Grinders, coffee machines and equipment for opening or sealing containers or packages
  - Electric knives
  - Other appliances for cooking and other processing of food, cleaning, and maintenance of clothes.
  - Appliances for hair cutting, hair drying, tooth brushing, shaving, massage and other body care appliances
  - Scales
2. Information technology equipment intended primarily for use in the domestic environment
3. Consumer equipment
  - Radio sets
  - Television sets
  - Videocameras
  - Video recorders
  - Hi-fi recorders
  - Audio amplifiers
  - Home theatre systems
  - Musical instruments
  - And other equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image other than by telecommunications
4. Toys, leisure and sports equipment
  - Electric trains or car racing sets
  - Hand-held video game consoles



Sports equipment with electric or electronic components

Other toys, leisure and sport equipment

## **ANNEX II**

### **Ecodesign requirements**

1. One year after this Regulation has come into force:
  - a) Power consumption in "Off mode":

Power consumption of equipment in any off mode condition shall not exceed 1.00 W.
  - b) Power consumption in "Standby mode(s)":

The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 1.00 W.

The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, shall not exceed 2.00 W.
  - c) Availability of Off mode and/or Standby mode

Equipment shall, except where this is inappropriate for the intended use, provide Off mode and/or Standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source.
2. Four years after this Regulation has come into force:
  - a) Power consumption in "Off mode":

Power consumption of equipment in any off mode condition shall not exceed 0.50 W.
  - b) Power consumption in "Standby mode(s)":

The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 0.50 W.

The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display shall not exceed 1.00 W.
  - c) Availability of Off mode and/or Standby mode

Equipment shall, except where this is inappropriate for the intended use, provide Off mode and/or Standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source.
  - d) Power management

When equipment is not providing the main function, or when other energy-using product(s) are not dependent on its functions, equipment shall, unless inappropriate for the intended use, offer a power management function, or a

similar function, that switches equipment after the shortest possible period of time appropriate for the intended use of the equipment, automatically into

- Standby mode, or
- Off mode, or
- Another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source. The power management function shall be activated before delivery.

### 3. Measurements

The power consumption referred to in Points 1.a), 1.b), 2.a) and 2.b) shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

Measurements of power of 0.50 W or greater shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power of less than 0.50 W shall be made with an uncertainty of less than or equal to 0.01 W at the 95% confidence level.

### 4. Information to be provided by manufacturers

For the purposes of conformity assessment pursuant to Article 4, the technical documentation shall contain the following elements:

- a) For each standby and/or off mode
  - The power consumption data in Watts rounded to the second decimal place
  - The measurement method used
  - Description of how the appliance mode was selected or programmed
  - Sequence of events to reach the mode where the equipment automatically changes modes
  - Any notes regarding the operation of the equipment
- b) Test parameters for measurements
  - Ambient temperature
  - Test voltage in V and frequency in Hz
  - Total harmonic distortion of the electricity supply system
  - Information and documentation on the instrumentation, set-up and circuits used for electrical testing
- c) The characteristics of equipment relevant for assessing conformity with the requirements set out in Point 1.c), or the requirements set out in Points 2.c) and/or 2.d), as applicable, including the time taken to automatically reach standby, or Off mode, or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode.

In particular, if applicable, the technical justification shall be provided that the requirements set out in Point 1.c), or the requirements set out in Points 2.c) and/or 2.d), are inappropriate for the intended use of equipment.

### **ANNEX III**

#### **Verification procedure**

When performing the market surveillance checks referred to in Directive 2005/32/EC, Article 3 (2), the authorities of the Member State shall apply the following verification procedure for the requirements set out in Annex II, Points 1.a) and 1.b), or Points 2.a) and 2.b), as applicable.

For power consumption requirements larger than 1.00 W:

Member State authorities shall test one single unit.

The model shall be considered to comply with the provisions set out in Annex II, Points 1.a) and 1.b), or Points 2.a) and 2.b), as applicable, of this Regulation if the results for off-mode and standby mode conditions, as applicable, do not exceed the limit values by more than 10%.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulation if the average of the results of the latter three tests for off-mode and/or standby mode conditions, as applicable, does not exceed the limit values by more than 10%.

For power consumption requirements smaller than, or equal to, 1.00 W:

Member State authorities shall test one single unit.

The model shall be considered to comply with the provisions set out in Annex II, Points 1.a) and 1.b), or Points 2.a) and 2.b), as applicable, of this Regulation if the results for off-mode and/or standby mode conditions, as applicable, do not exceed the limit values by more than 0.10 W.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulation if the average of the results of the latter three tests for off-mode and/or standby mode conditions, as applicable, does not exceed the limit values by more than 0.10 W.

Otherwise, the model shall be considered not to comply.

### **ANNEX IV**

#### **Benchmarks**

The following benchmarks are identified for the purpose of Annex I, part 3, point 2, of Directive 2005/32/EC:

Off mode: 0 W - 0.3 W with hard-off switch on the primary side, depending, inter alia, on the characteristics related to electromagnetic compatibility pursuant to Directive 2004/108/EC of the European Parliament and of the Council.

Standby – reactivation function: 0.1 W

Standby – display: simple displays and low power LEDs 0.1 W, larger displays (e.g. for clocks) require more power.