COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 17.10.2008

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 no-load condition electric power consumption and average active efficiency of external power supplies

(presented by the Commission)

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

- **Grounds for and objectives of the proposal**

The Ecodesign Framework Directive 2005/32/EC establishes a framework for the setting of ecodesign requirements for energy-using products. It is a key instrument of EU policy for improving the energy and other environmental performances of products in the Internal Market. The Directive lists products identified by the Council and the European Parliament as priorities for the Commission for implementation, including consumer electronics and office equipment (Article 16). Such equipment is often powered by external power supplies (EPSs), which convert electricity from the mains power source to power specific to 'primary load products' (e.g. notebook computers, mobile phones, MP3 players). The power conversion efficiency of external power supplies is an important aspect for the energy performance of primary load products, thus external power supplies are one of the priority products groups considered for implementing measures under the Ecodesign Directive.

A technical, environmental and economical analysis ('preparatory study') has shown that i) EPSs are placed in large quantities on the EU market, ii) the environmental impact related to the life cycle energy consumption and electricity consumption of EPSs is significant, iii) there is a wide disparity in the environmental impacts of EPSs currently on the market, and technical cost-effective solutions exist that could lead to significant improvements. Under Article 15 of Directive 2005/32/EC, EPSs should therefore be covered by an ecodesign implementing measure.

- **General context**

The significant aspect for improving the environmental performance of EPSs is the life cycle energy consumption. For many applications (e.g. notebook computers), the use-phase energy consumption is the most significant contribution to the life cycle energy consumption. For EPSs powering mobile primary load products (e.g. mobile phones) impacts from production and distribution are comparable to the use-phase impact. The use-phase electricity consumption of EPSs can be reduced significantly in a cost effective way, as can the environmental impact of their production, distribution and disposal by putting on the market EPSs with lower material content/weight. Additional reductions may be achieved by reducing the number of EPSs placed on the market/in use. The latter can possibly be achieved by extending the life time of EPS, in particular by ensuring their compatibility by standardising the interfaces (allowing a single EPS to power other similar products).

EPSs are an accessory usually sold together with the 'primary load' product such as a mobile phone or a notebook computer. Little incentive exists for the manufacturers of 'primary load' products to supply energy-efficient EPSs to the user, because EPSs with advanced environmental performance may cost more to procure. Even if the additional cost is usually very small per EPS unit, this can nevertheless be important for price-sensitive markets. Cost-effective improvement potentials for the end-user are therefore often not realised.

The standardization of interfaces so far has not been widespread, e.g. due to technical

challenges arising from safety considerations.

The objective of the proposed Regulation is to trigger the market transformation needed to realise the improvement potentials. Compared to a business-as-usual scenario it is estimated that the proposed Regulation will lead to annual use-phase electricity consumption savings (EU-27) of about 9 TWh by 2020, corresponding to an annual reduction of 3.6 Mt of CO2 emissions. The improvement in use-phase electricity consumption will also lead to life cycle-primary energy savings of 118 PJ and reduce waste, because use-phase efficiency improvements are achieved to a large extent with technologies using less material input.

Additional savings are expected with EPSs sold in other parts of the world, because many primary load products powered by EPSs are produced or delivered to identical specifications, for the EPS as well.

- **Existing provisions in the area of the proposal**

There are no existing provisions covering ecodesign of EPSs in the area of the proposal. The proposal is expected to reduce waste from EPSs, and thereby contributes to meeting the objectives of Directive 2002/96/EC of the European Parliament and of the Council ('WEEE Directive').

- **Consistency with the other policies and objectives of the Union**

Directive 2005/32/EC is an important instrument for achieving the objective of 20% energy savings compared with projections for 2020, and its implementation is one of the priorities in the Commission's Energy Efficiency Action Plan. Furthermore, implementation of the Directive 2005/32/EC will contribute to the EU's target of reducing greenhouse gases by at least 20% by 2020, or 30% if there is an international agreement that commits other developed countries to comparable emissions reductions. The proposed Regulation is a concrete contribution to this process and is in line with the Commission Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy.

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 (see below for details) and within the Ecodesign Consultation Forum.

On 22 February 2008, the Ecodesign Consultation Forum (established under Article 18 of Directive 2005/32/EC) held a meeting on EPSs. Building on the results of the preparatory study, Commission staff presented a 'working document' suggesting ecodesign requirements for these de devices. The working document also contained suggestions for ecodesign requirements for halogen lighting convertors powering low-voltage halogen lamps. It 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 placed on the Commission's CIRCA portal alongside the stakeholder comments received in writing before and after the meeting.

In addition, the initiative was discussed at meetings of Commission staff with stakeholders, and with international partners on many occasions, e.g. the EU-US Summit process, the EU-Japan Energy and Regulatory Cooperation Dialogues, the IEA 'Implementing Agreement Energy Efficient End Use Equipment', the International Platform for Energy Efficiency Cooperation and bilateral meetings of Commission services with delegations from China, India, Korea, APEC, etc.

The draft measure will be notified to the WTO/TBT before formal adoption to ensure that no barrier to trade is introduced.

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 22 February 2008 in reaction to the Commission staff working document, can be summarised as follows.

The Member States supported ecodesign legislation on EPSs as defined in the working document, including 'chargers' e.g. for mobile phones, but excluding battery chargers, e.g. for separate accumulators. The suggested levels for power consumption requirements and the staged timing were in general considered appropriate. A mandate to the European standardisation organisations for the standardisation of interfaces was supported.

The general approach to set mandatory requirements under the Ecodesign Directive was largely supported by industry associations. The European Information & Communications Technology Industry Association (EICTA) welcomed ecodesign legislation on EPSs, supported the proposed requirements the use-phase energy consumption, and welcomed the consistency with the criteria for the voluntary US Energy Star programme on EPSs, while underlining that the approach to make the Energy Star criteria mandatory could not be followed for potential ecodesign implementing measures for more complex products. However, for EPSs used with mobile primary load products such as mobile phones and MP3 players, the requirements for active efficiency were criticised as being too demanding, involving a risk that the life-cycle environmental impact could be negatively affected. Furthermore, the technical feasibility of ensuring the compatibility of EPSs by standardising EPS interfaces was questioned, and, with regard to manufacturers operating at European level only, concerns were expressed about the timing for the first stage.

The Federation of National Manufacturers Associations for Luminaires and Electrotechnical Components for Luminaires in the European Union (CELMA) suggested that halogen lighting transformers should be covered by lighting-specific implementing measures, including transformers built into luminaires. Magnetic transformers could not comply with the requirements suggested in the working document and a transitional period longer than one year was necessary. Furthermore, exemptions for special applications such as humid operating conditions should be provided.

Environmental and Consumer NGOs welcomed the requirement for use-phase energy consumption, but the scope should be extended to halogen lighting transformers with

an output power above 250 W (envisaged for EPSs). The Consumer NGOs supported a mandate to the European standardisation organisations for the standardisation of EPS interfaces, while Environmental NGOs expressed concerns that this approach was too lengthy and might not deliver the desired results in good time, so asked instead for the standardisation specification to be included in the implementing measure itself. Further issues raised included the role of requirements for providing relevant information to consumers.

- **Collection and use of expertise**

Scientific/expertise domains concerned

External expertise was mainly gathered through the preparatory study providing a 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 (DG TREN). Furthermore, the European Code of Conduct on Efficiency of External Power Supplies, a voluntary initiative which is in place since 2002 and is managed by the Commission's Directorate General Joint Research Centre, provided data and expertise.

Methodology used

The methodology followed the provisions of the Directive, in particular its 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 (DG ENTR) and endorsed by stakeholders.

Main organisations/experts consulted

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

Summary of advice received and used

The technical, market and economical analysis carried out for the preparatory study resulted in recommendations for the 'no-load' condition power consumption and average active efficiency of EPSs. These recommendations were used, in conjunction with the most recent available data from the European Code of Conduct for EPSs and the US Energy Star programme for EPSs, for suggesting possible ecodesign requirements to the Consultation Forum.

The existence of potentially serious risks with irreversible consequences has not been mentioned by any stakeholder nor were any identified during the preparatory work.

Means used to make the expert advice publicly available

The preparatory study was accompanied by a dedicated website where interim results and further relevant materials were published regularly for timely stakeholder

consultation and input. Written inputs from stakeholders are listed in the final report of the preparatory study. The study website was publicised on the ecodesign-specific websites of DG TREN and DG ENTR. An open consultation meeting for directly affected stakeholders was organised at the Commission in Brussels for discussing the preliminary results of the study.

The written input received during the Consultation Forum process is available on the Commission's CIRCA portal. The minutes of the Forum meeting on EPSs are available on the DG TREN website

- **Impact assessment**

The outcome of the impact assessment can be summarised as follows.

Several policy options have been considered.

Option 1: No EU action

This option implies that a major part of the improvement potential would not be realised, because the barriers for realizing the potentials to improve the environmental performance of EPSs would persist. Furthermore, Member States would most likely want to take individual, non-harmonised action. This would hamper the functioning of the internal market and lead to high administrative burdens and costs for manufacturers, contrary to the goals of the Ecodesign Directive. In addition, the mandate from the legislator would not be respected.

Option 2: Self-regulation

No initiative for self-regulation on EPSs under Annex VIII of the Ecodesign Directive has been brought forward.

Option 3: Ecodesign requirements for EPSs set only as part of Ecodesign implementing measures for primary load products

This option implies that many EPSs would not be covered, because the environmental impact of the associated primary load product is small and a dedicated ('vertical') ecodesign implementing measure may not be justified. Although 'no-load' energy consumption would be reduced by the planned implementing regulation for standby/off mode, the improvement potential with advanced performance in active mode would not be realised to a satisfactory extent because only a very minor proportion of EPSs would be covered by implementing measures for specific primary load products. Furthermore, a targeted measure for EPSs is, from an administrative point of view, more effective than a (large) number of measures targeting primary load products powered by EPSs, largely with the same or a similar objective. In addition, the specific mandate from the legislator would not be respected.

Option 4: Energy labelling targeting specifically EPSs

This option implies that a major part of the improvement potential would not be realised, because little incentive exists to purchase EPSs with a 'good' grading. This is because the absolute energy consumption of an EPS is small and the difference in electricity costs between two labelling grades is usually low, assuming the band

between two grades is sufficiently narrow to allow for differentiation between EPSs. Furthermore, the administrative burdens for manufacturers would be higher when compared with the burdens associated with minimum requirements, and, depending on the actual design of the labelling scheme, additional burdens could arise for retailers. In addition, the specific mandate from the legislator would not be respected.

Option 5: Ecodesign implementing regulation on EPSs

This option aims at improve the environmental impact of EPSs by setting maximum levels for energy consumption.

Following the principle of proportionality in conducting the analysis, Options 1-4 were assessed qualitatively and discarded for the detailed analysis, and the impact assessment focussed on Option 5. In accordance with Article 15(4) and 15(5) of Directive 2005/32/EC, the impact on the environment, consumers and manufacturers. Several sub-options for setting ecodesign requirements for power consumption levels and the timing for entry into force were assessed.

Conclusion

It has been concluded that two sets of ecodesign requirements for the active average efficiency and the no-load power consumption, to become effective 1 year and 2 years after entry into force of the proposed Regulation, respectively, provide the appropriate balance between an improved environmental impact of EPSs and cost benefits for the user/consumer (due to reduced electricity consumption), on the one hand, and possible additional burdens for manufacturers (in particular due to unplanned re-design) on the other hand. In particular:

1. a clear legal framework which leaves flexibility to achieve the energy efficiency levels of stage 2 for EPS either in two steps, or earlier (before stage 2 comes into effect);

2. no significant impacts on the competitiveness of industry, and in particular SMEs due to the small absolute costs related to product re-design and re-assessment of conformity;

3. no impact on employment in the EU, and minor impacts, if any, on employment in countries producing EPS;

4. reduction of the life cycle environmental impact of EPS, in particular related to the total energy consumption, the use-phase electricity consumption and waste;

5. removing of barriers for market take up of advanced EPS, and ensure proper functioning of the internal market;

6. no significant administrative burdens for manufacturers or retailers;

7. only a small increase, if any, of the purchasing cost (economies of scale for effective technologies), which would be largely overcompensated by savings during the use-phase of the product.

3) LEGAL ELEMENTS OF THE PROPOSAL

- **Summary of the proposed action**

1. Definition of the EPSs covered

The scope of the product categories addressed by the proposed ecodesign regulation on EPSs covers EPSs with a rated output up to 250W. This is in line with the preparatory study and international EPS initiatives and legislation. Products included in the scope are e.g. EPSs for mobile phones, MP3 players, notebooks, cordless phones etc. For primary load products powered by low voltage EPSs (mobile applications) the requirements on no-load set in the context of the EPSs regulation address the same environmental aspect as the requirements set out in Commission Regulation … (standby), because the standby/off mode power consumption of the primary load product/EPS system is measured only on the EPS. Furthermore, the no-load power consumption of low voltage EPSs should be more demanding than the ecodesign requirements for off-mode equipment set out in Commission Regulation.

The preparatory study also analysed 'halogen lighting convertors' for low-voltage halogen lamps, and 'battery chargers'. The main difference between battery chargers and EPS is that the output of the battery charger physically connects directly to a removable battery (e.g. standard battery charger for AA/AAA accumulators), which is not the case for EPSs. Halogen lighting convertors will be covered by a lighting-specific ecodesign implementing measure, because this ensures a more consistent legislative framework (differing measurement methods, importance of convertors built into luminaires, output power of convertors often greater than 250W). Battery chargers are not covered because the preparatory study concluded that the potential for improving the environmental impact is only minor. In particular, the potential for improving the use-phase energy is not cost-effective, and the contribution to the life-cycle energy consumption of the products analysed in the preparatory study is less than 5%. Furthermore, appropriate measurement methods necessary for setting specific ecodesign requirements are not available.

2. Staged implementation of ecodesign requirements

- Energy Efficiency levels

Minimum requirements for energy efficiency levels for active average efficiency and no-load consumption are proposed, to come into force in two stages, with transition periods of one year and two years after entry into force of the proposed regulation. These requirements aim to realise the use-phase energy consumption improvement potential, while fulfilling the criteria for ecodesign implementing measures set out in the Ecodesign Directive. In addition to improvements of the use phase energy consumption, improvements of the life-cycle energy consumption are achieved, because design-solutions yielding improved energy performance imply reductions of material input and weight, and, consequently, reductions of distribution phase environmental impacts, and reductions of waste. The preparatory study and analysis of the most recent data, including data from the European Code of Conduct for EPS and Energy Star, have shown that these levels can be achieved with current state-of-the-art technology.

The Stage 1 requirements correspond to the mandatory requirements set in federal US legislation, applicable as of 1 July 2008, and the Stage 2 requirements correspond to

the new specifications (Version 2.0) of the US Energy Star programme for EPSs. The proposed levels differ slightly from the levels suggested in the working document, because the final version of the new specifications (Version 2.0) of the US Energy Star programme for EPSs has been fine-tuned compared to the draft version available when the working document was presented to the Consultation Forum on 22 February 2008. However, the guiding principle for the stage 2 requirements was alignment with the new Energy Star criteria.

Compared to the suggestions contained in the working document, the average active mode requirement is less demanding for EPSs for mobile primary load products (e.g. mobile phones), because the environmental impact of 'active' use is less important, and there may be a trade-off with material-related impacts for achieving compliance. On the other hand, for mobile primary load products the no-load power consumption is more important, because the EPS often remains connected to the mains power source after the mobile primary load product is disconnected from the EPS, and consequently a more demanding no-load requirement than in Regulation … on standby/off mode is proposed (0.3 W in contrast to 0.5 W).

The first-stage requirements ensure that EPSs placed on the market during the time between the first and second stage achieve a certain environmental performance. Otherwise, EPSs placed on the market, with a life time of several years, would be on the market longer than necessary, leading to unnecessary energy consumption.

In order to allow sufficient time for re-design to ensure compliance, and in order to allow economies of scale to come into effect for technologies that are not yet cost-effective, the second stage is proposed to become effective two years after entry into force of the regulation (in 2011 if the regulation comes into force as planned in 2009).

3. Measurements

- Measurement method

An appropriate measurement method has been developed for the US Energy Star programme. The method is widely accepted and used in legislation in the US and in China, and by the European Code of Conduct for EPSs. The relevant draft mandate will be presented to the Regulatory Committee.

Verification procedure for market surveillance purposes

A verification procedure for market surveillance purposes has to be specified. It is proposed to set a tolerance of 10% for no-load, and 5% for average active efficiency. The test procedure should eventually be part of the European standard for measurement, which will supersede the verification procedure contained in the proposed regulation.

4. 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 the average active efficiency, and the no-load power consumption.

5. Conformity assessment procedures

As required in Article 8 of Directive 2005/32/EC the internal design control set out in Annex IV of Directive 2005/32/EC and the management system for assessing conformity set out in Annex V of Directive 2005/32/EC are specified as the applicable procedures for carrying out conformity assessment under this Regulation.

6. Based on the currently available technologies with high active efficiency and low no-load power consumption benchmarks are provided in order to ensure wide availability and easy access to information, in particular SMEs and very small firms, which further facilitates the integration of best design technologies for reducing the energy consumption.

7. Date for evaluation and possible revision

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

- the appropriateness of the energy efficiency levels;

- the appropriateness of the benchmarks;

- the appropriateness of the product scope, in particular the exclusion of battery chargers.

The second stage is proposed to become effective two years after entry into force of the regulation. Taking into account the time necessary to collect, analyse and complementing the data and experiences related to the second stage in order to properly assess the technological progress, a review can be presented to the Consultation Forum four years after entry into force of the regulation.

- **Legal basis**

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

- **Subsidiarity principle**

The adoption of different ecodesign measures for external power supplies 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 for the measures in question to be adopted at Community level.

- **Proportionality principle**

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

- **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 harmonised requirements throughout the EU (including the date for entry into force), thus ensuring the free movement of complying equipment. No costs arise for national administrations for transposition into national legislation.

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.

Draft

COMMISSION REGULATION

of […]

implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies

(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[1] and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

(1) Under Directive 2005/32/EC ecodesign requirements are to be set by the Commission for energy using products representing significant volumes of sales and trade, having a significant environmental impact and presenting significant potential for improvement in terms of their environmental impact without entailing excessive costs.

(2) Article 16(2) 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 will as appropriate introduce an implementing measure for office equipment and consumer electronics.

(3) Office equipment and consumer electronics are often powered by external power supplies (EPS) which convert electricity from the mains power source. The power conversion efficiency of external power supplies is an important aspect of the energy performance of such products, and thus external power supplies are one of the priority product groups for which ecodesign requirements should be established.

(4) The Commission has carried out a preparatory study to analyse the technical, environmental and economic aspects of external power supplies. The study has been

[1] OJ L 191, 22.7.2005, p. 29.

carried out together with stakeholders and interested parties from the Community and third countries, and the results have been made publicly available.

(5) It is stated in the preparatory study that external power supplies are placed on the Community market in large quantities, with their annual energy consumption in all life cycle stages being the most significant environmental aspect, and their annual electricity consumption due to losses for power conversion and no-load amounting to 17 TWh, corresponding to 6.8 Mt of CO2 emissions. In the absence of measures this consumption is predicted to increase to 31 TWh in 2020. It has been concluded that the life-cycle energy consumption and the use-phase electricity consumption can be improved significantly.

(6) Improvements in the electricity consumption of external power supplies should be achieved by applying existing non-proprietary cost effective technologies that can reduce the total costs of purchasing and operating external power supplies.

(7) Ecodesign requirements should harmonise electricity consumption requirements for no-load condition power consumption and average active efficiency of external power supplies throughout the Community, thus and contributing to the functioning of the internal market and to the improvement of the environmental performance of these products.

(8) The ecodesign requirements should not have negative impact on the functionality of the product and should not affect negatively health, safety and the environment. In particular, the benefits of reducing electricity consumption during the use phase should more than offset potential additional environmental impacts during the production phase.

(9) The two-staged entry into force of the ecodesign requirements should provide an appropriate timeframe for manufacturers to redesign products. The timing of the stages should be such that negative impacts on the functionalities of equipment on the market are avoided, and cost impacts for manufacturers, in particular small and medium-sized enterprises, are taken into account, while ensuring timely achievement of the objectives of the Regulation. Measurements of the power consumption should be performed taking into account the generally recognised state of the art. Manufacturers may use harmonised standards established in accordance with Article 10 of Directive 2005/32/EC.

(10) This Regulation should increase the market penetration of technologies that improve the life-cycle environmental impact of external power supplies, leading to estimated life-cycle energy savings of 118 PJ and electricity savings of 9 TWh by 2020, respectively, compared to the situation without taking any measures.

(11) In conformity with Article 8 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 of Directive 2005/32/EC and the management system set out in Annex V of Directive 2005/32/EC.

(12) 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 average active efficiency and no-load electric power consumption.

(13) Benchmarks for currently available technologies with high active efficiency and low no-load power consumption should be identified. This will help to ensure the wide availability and easy accessibility of information, in particular for small and medium-sized enterprises and very small firms, which will further facilitate the integration of best design technologies for reducing energy consumption.

(14) Ecodesign requirements for the no-load condition of low voltage external power supplies address the same environmental impact parameter as ecodesign requirements for the off-mode condition of electrical and electronic household and office equipment placed on the market with a low voltage external power supply. As ecodesign requirements for the no-load condition of low voltage external power supplies should be more demanding than ecodesign requirements for off-mode condition of electrical and electronic household and office equipment placed on the market with a low voltage external power supply, the requirements of 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 power consumption of electrical and electronic household and office equipment[2], should not apply to electrical and electronic household and office equipment which is placed on the market with a low voltage external power supply. Regulation (EC) No …/… should therefore be amended accordingly.

(15) 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

1. This Regulation establishes ecodesign requirements related to electric power consumption in no-load condition and average active efficiency of external power supplies.

2. This Regulation shall not apply to:

(a) voltage convertors,

(b) un-interruptible power supplies,

(c) battery chargers,

(d) halogen lighting convertors,

(e) external power supplies for medical devices,

(f) external power supplies placed on the market no later than 30 June 2015 as a service part or spare part for an identical external power supply which was placed on the market not later than one year after this Regulation has come into force, under the condition that the service part or spare part, or its packaging, clearly indicates the

[2] OL L …, …., p. …

primary load product(s) for which the spare part or service part is intended to be used with.

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) "external power supply" means a device which meets all of the following criteria:

(a) it is designed to convert alternating current (AC) power input from the mains power source input into lower voltage direct current (DC) or AC output;

(b) it is able to convert to only one DC or AC output voltage at a time;

(c) it is intended to be used with a separate device that constitutes the primary load;

(d) it is contained in a physical enclosure separate from the device that constitutes the primary load;

(e) it is connected to the device that constitutes the primary load via a removable or hard-wired male/female electrical connection, cable, cord or other wiring;

(f) it has nameplate output power not exceeding 250 Watts,

(g) it is intended for use with electrical and electronic household and office equipment as referred to in Article 2 (1) of Regulation (EC) No …/…

(2) "low voltage external power supply" means an external power supply with a nameplate output voltage of less than 6 Volts and a nameplate output current greater than or equal to 550 milliamperes;

(3) "Halogen lighting convertor" means an external power supply used with extra low voltage tungsten halogen lamps;

(4) "un-interruptible power supply" means a device providing automatically backup power when the electrical power from the mains power source drops to an unacceptable voltage level;

(5) "battery charger" means a device which connects directly to a removable battery at its output interface;

(6) "voltage convertor" means a device converting 230V mains power source output to 110V power output with characteristics similar to mains power source output characteristics;

(7) "nameplate output power" (P_O) means the output power as specified by the manufacturer;

(8) "no-load condition" means the condition in which the input of an external power supply is connected to the mains power source, but the output is not connected to any primary load;

(9) "active mode" means a condition in which the input of an external power supply is connected to the mains power source, and the output is connected to a load;

(10) "active mode efficiency" means the ratio of the power produced by an external power supply in active mode, to the input power required to produce it;

(11) "average active efficiency" means the average of the active mode efficiencies at 25%, 50%, 75% and 100% of the nameplate output power.

Article 3
Ecodesign requirements

The ecodesign requirements related to no-load electric power consumption and average active efficiency of external power supplies placed on the market are set out in Annex I.

Article 4
Conformity assessment

The procedure for assessing conformity referred to in Article 8 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 for assessing conformity 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 II.

Article 6
Indicative Benchmarks

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

Article 7
Revision

No later than 4 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

Amendment to Regulation (EC) No …/…

Regulation (EC) No …/… is amended as follows:

(1) The following second paragraph is added to Article 1:

"This Regulation shall not apply to electrical and electronic household and office equipment placed on the market with a low voltage external power supply."

(2) The following point 9 is added to Article 2:

"9. low voltage external power supply" means an external power supply with a nameplate output voltage of less than 6 Volts and a nameplate output current greater than or equal to 550 milliamperes."

Article 9

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(a) of Annex I shall apply as from one year after the date referred to in the first paragraph.

Point 1(b) of Annex I shall apply as from two years after the date referred to in the first paragraph.

Article 10

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

Ecodesign requirements

1. No-load power consumption and average active efficiency

a) ***One year*** after this Regulation has come into force:

The no-load condition power consumption shall not exceed 0.50 Watt.

The average active efficiency shall be not less than:

$0.500 \cdot P_O$, for $P_O < 1.0$ Watt;

$0.090 \cdot \ln(P_O) + 0.500$, for 1.0 Watt $\leq P_O \leq 51.0$ Watts;

0.850, for $P_O > 51.0$ Watts.

b) ***Two years*** after this Regulation has come into force:

The no-load condition power consumption shall not exceed the following limits:

	AC-AC external power supplies, except low voltage external power supplies	AC-DC external power supplies except low voltage external power supplies	Low voltage external power supplies
$P_O \leq$ 51.0 Watts	0.50 Watt	0.30 Watt	0.30 Watt
P_O >51.0 Watts	0.50 Watt	0.50 Watt	n/a

The average active efficiency shall be not less than the following limits:

	AC-AC and AC-DC external power supplies, except low voltage external power supplies	Low voltage external power supplies
$P_O \leq$ 1.0 Watt	$0.480 \cdot P_O + 0.140$	$0.497 \cdot P_O + 0.067$
1.0 Watt < $P_O \leq$ 51.0 Watts	$0.063 \cdot \ln(P_O) + 0.622$	$0.075 \cdot \ln(P_O) + 0.561$
$P_O > 51.0$ Watts	0.870	0.860

2. Measurements

The no-load condition power consumption and the average active efficiency referred to in Point 1 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 Watt 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 Watt shall be made with an uncertainty of less than or equal to 0.01 Watt at the 95% confidence level.

3. Information to be provided by manufacturers

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

Reported Quantity	Description
Root mean square (Rms) Output Current (mA)	Measured at Load Conditions 1 – 4
Rms Output Voltage (V)	
Active Output Power (W)	
Rms Input Voltage (V)	Measured at Load Conditions 1 – 5
Rms Input Power (W)	
Total Harmonic Distortion (THD)	
True Power Factor	
Power Consumed (W)	Calculated at Load Condition 1 – 4, Measured at Load Condition 5
Efficiency	Calculated at Load Conditions 1 – 4
Average Efficiency	Arithmetic Average of Efficiency at Load Conditions 1 – 4

The relevant load conditions are as follows:

Percentage of Nameplate Output Current	
Load Condition 1	100 % ± 2%
Load Condition 2	75% ± 2%

Load Condition 3	50% ± 2%
Load Condition 4	25% ± 2%
Load Condition 5	0% (no-load condition)

ANNEX II

Verification procedure

When performing the market surveillance checks referred to in Article 3 (2) of Directive 2005/32/EC, the authorities of the Member States shall apply the following verification procedure for the requirements set out in Annex I.

1. Authorities of the Member State shall test one single unit.

2. The model shall be considered to comply with the provisions set out in Annex I, if:

(a) the result for no-load condition does not exceed the applicable limit value set out in Annex I by more than 0.10 Watt, and

(b) the arithmetic average of efficiency at load conditions 1-4 as defined in Annex I does not fall below the applicable limit value for average active efficiency by more than 5%.

3. If the results referred to in points 2(a) and (b) are not achieved, three additional units of the same model shall be tested.

4. After three additional units of the same model have been tested, the model shall be considered to comply with the requirements if:

(a) the average of the results for no-load condition does not exceed the applicable limit value set out in Annex I by more than 0.10 Watt, and

(b) the average of the arithmetic averages of efficiency at load conditions 1-4 as defined in Annex I does not fall below the applicable limit value for average active efficiency by more than 5%.

5. If the results referred to in points 4(a) and (b) are not achieved, the model shall be considered not to comply with the requirements.

ANNEX III

Indicative Benchmarks referred to in Article 6

a) No-load condition

The lowest available no-load condition power consumption of external power supplies can be approximated by:

– 0.1 Watt or less, for $P_O \leq 90$ Watts;

– 0.2 Watt or less, for 90 Watts $< P_O \leq 150$ Watts;

– 0.4 Watt or less, for 150 Watts$< P_O \leq 180$ Watts;

– 0.5 Watt or less, for $P_O > 180$ Watts.

b) Average active efficiency

The best available active average efficiency of external power supplies according to most recent available data (status January 2008) can be approximated by:

– $0.090 \cdot \ln(P_O) + 0.680$, for 1.0 Watt $\leq P_O \leq 10.0$ Watts;

– 0.890, for $P_O > 10.0$ Watts.