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**COMMISSION STAFF WORKING DOCUMENT**

**Accompanying document to the**

**Commission Regulation implementing Directive 2005/32/EC with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies**

**IMPACT ASSESSMENT SUMMARY**

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## IMPACT ASSESSMENT SUMMARY

### BACKGROUND

The Ecodesign Framework Directive 2005/32/EC ("Ecodesign Directive") lists products which have been 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 (EPS), converting electricity of the mains power source to power with characteristics specific to "primary load products", as e.g. mobile phones or notebooks. The power conversion efficiency and the no-load condition power consumption of EPS are an important aspect for the energy performance of primary load products, and EPS are one of the priority products groups considered for implementing measures under ecodesign.

The Spring Council 2007 called for thorough and rapid implementation of the five priorities<sup>1</sup> set by the Energy Council on 23 November 2006<sup>2</sup>, based on the Commission's Action Plan on Energy Efficiency. The priorities include to "dynamically and regularly improve and expand the scope of minimum efficiency requirements for energy-using products, including standby-loss reduction", by "fully utilizing the Eco-Design Directive". The strategy of adopting minimum energy performance standards for equipment and appliances was welcomed by the European Parliament<sup>3</sup>.

### APPROACH FOR SETTING ECODESIGN REQUIREMENTS

The approach for developing the regulation for EPS and the impact assessment was structured in the following four steps.

Step 1: assessment of the criteria for ecodesign implementing measures as set out in Article 15(2a)-15(2c) of the Ecodesign Directive, taking into account the ecodesign parameters identified in Annex I of the Ecodesign Directive;

Step 2: consideration of relevant Community initiatives, market forces and environmental performance disparities of EPS on the market with equivalent functionality as set out in Article 15(2) of the Ecodesign Directive;

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<sup>1</sup> Brussels European Council 8/9 March 2007, Presidency Conclusions, 7224/07.

<sup>2</sup> TTE (Energy) Council on 23 November 2006, 15210/06.

<sup>3</sup> European Parliament resolution of 31 January 2008 on an Action Plan for Energy Efficiency

Step 3: establishing policy objectives including the desirable level of ambition, the policy options to achieve them, and the key elements of the ecodesign implementing measure as required by Annex VII by the Ecodesign Directive;

Step 4: environmental, economic and social assessment of the impacts, with a view to the criteria on implementing measures set out in Article 15(5) of the Ecodesign Directive.

**SUMMARY OF THE RESULTS**

Step 1

In order to assess the criteria for ecodesign implementing measures as laid out in Article 15(2) of the Ecodesign Directive, the Commission has carried out a technical, environmental and economic study for external power supplies ("preparatory study") which follows the provisions of Article 15(4a) and Annex II of the Ecodesign Directive.

With regard to the criteria established by Article 15(2) of the Ecodesign Directive, the following main results have been established for the Community:

Article 15 (2a):	annual EPS sales:	approx. 600 mln
	EPS in use:	approx. 2 bln
Article 15 (2b):	Environmental impact:	
	EPS use-phase electricity consumption	17 TWh
Article 15 (2c):	Improvement potential EPS use phase electricity consumption in 2020	9 TWh

The main environmental aspect is the electricity consumption of EPS in the use phase, i.e. the losses associated to the conversion of mains power to power suitable for a particular primary load described by the "average active efficiency", and the no-load power consumption. In a no-action scenario, the electricity consumption is expected to increase to annually 30.6 TWh by 2020, because the annual sales and the EPS in use in the Community are expected to almost double.

The improvement potential is due to the fact that technical solutions exist which reduce the no-load electricity consumption and improve the active average efficiency of EPS compared to the market average, while providing the same functionality and reducing the life-cycle cost. This leads to a wide disparity of electricity consumption of the EPS available on the market. Technologies which reduce the electricity consumption of EPS in the use-phase imply also lower material content/weight, which lead to a reduction of the environmental impacts related to production, distribution and disposal of EPS. Further reduction could be triggered by reducing the amount of EPS placed on the market/in use, which could be facilitated by standardised connectors.

Though being small when looked at in isolation for a single EPS, no load power consumption and power conversion losses of EPS lead to an electricity consumption which is approx. half

of the total electricity consumption of Denmark when multiplied by the number of EPS used in the Community, and the improvement potential is of the order of the total electricity consumption of Lithuania.

## Step 2

Market take-up of EPS with improved environmental performance is prevented by barriers which are linked to the fact that EPS are an accessory usually sold together with the primary load product. Little incentives exist for the manufacturers of the primary load products to deliver energy efficient EPS to the user, because an additional cost may arise for acquiring EPS with advanced environmental performance. Even when usually the additional cost is very small per EPS unit, this can nevertheless be important for price sensitive markets. Cost-effective improvement potentials are therefore often not realized.

On Community level several initiatives related to EPS have been launched. The no-load power consumption of EPS is implicitly addressed by Commission Regulation (EC) No 1275/2008<sup>4</sup> of 17 December 2008, which sets maximum power consumption levels for the standby and off-mode power consumption of household and office equipment, including primary load products operated together with EPS. However, the active average efficiency is not covered, and the no-load requirements for EPS should be more demanding than standby/off-mode requirements for primary load products.

Several voluntary initiatives address both no-load and active average efficiency: the Commission's Code of Conduct for EPS, the Energy Star programme for office equipment, and the Ecolabel. However, these programmes address only a very limited subset of primary load products operated by EPS, and/or only a limited amount of manufacturer takes part in them.

Several initiatives were taken in the Member States to raise awareness for standby and off-mode electricity consumption, which, for primary load products operated by EPS, to some extent are relevant for the no-load power consumption of EPS. However, these initiatives do not address the active average efficiency of EPS, and awareness-raising alone cannot solve the problem leading to market failure. Furthermore, the Ecodesign Directive implies that legislative action on EPS cannot be taken on Member State level, and the Member States expect that a harmonized legislative framework is set, the legal basis being Article 95 of the Treaty.

Standardization of EPS connectors, and in particular mobile phone EPS which are particularly relevant due to the large sales volume, so far has not happened on a larger scale, although for mobile phones suitable USB interfaces exist. A spontaneous move towards such interfaces is on-going, including a voluntary standardisation initiative of the mobile operators, which procure approx. 80% of the mobile phone/handsets. In addition, an official Commission standardisation mandate is being elaborated.

## Conclusion of Step 1 and Step 2

EPS are placed in large quantities on the Community market. The electricity consumption due to conversion losses and no-load power consumption of EPS is significant, and significant

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<sup>4</sup> OJ L 339, 18.12.2008, p. 45.

improvement potentials exist, which are linked to wide disparity of electricity consumption of EPS with identical functionality.

On the other hand, voluntary Community programmes and related initiatives in the Member States, and the market forces do not address no-load power consumption and the active average efficiency of EPS properly.

It is concluded that the criteria for ecodesign implementing as set out in Article 15(2) of the Ecodesign Directive are met, and EPS shall be covered by an ecodesign implementing pursuant to Article 15(1) of the Ecodesign Directive.

### Step 3

Further to Annex II of the Ecodesign Directive, the level of ambition for improving the electricity consumption of EPS is determined by an analysis of the least life-cycle cost for the user. Furthermore, benchmarks for technologies yielding best performance, as developed in the preparatory study and the discussions with stakeholders during the meeting of the Ecodesign Consultation Forum on 22 February 2008, are considered. The results are reflected in the objectives that the implementing measure aims to achieve, in particular the market transformation that would lead to the realisation of the improvement potentials.

The policy options considered include "no action", self-regulation, ecodesign requirements on EPS set in the context of implementing measures on individual primary load products, labelling, and an ecodesign regulation on EPS, and their appropriateness to achieve the objective was analysed. However, due to the clear mandate of the Legislator, the depth of the analysis for options other than an ecodesign implementing measure is proportionate for an implementing legal act, and the focus is on the assessment of its key elements taking into account the preparatory study and the input from stakeholders.

### Step 4

An assessment of the implementing measure is carried out. In particular, sub-options for the intensity of the measure, i.e. timing for the staged setting of ecodesign requirements for no-load condition power consumption and average active efficiency are analysed, taking into account the criteria set out in Article 15(5) of the Ecodesign Directive, and the impacts on manufacturers including SMEs.

### Conclusion on Step 3 and Step 4

A comparison of the options shows that the appropriate policy option for realising the improvement potential is a regulation setting ecodesign requirements for no-load condition power consumption and average active efficiency of EPS. The requirements of the regulation should be set in two stages, which become effective one year and two years, respectively, after the regulation has entered into force. This approach ensures:

- that the environmental impact of EPS is reduced, leading to important savings of electricity consumption in the use phase, and energy consumption further life-cycle phases, CO<sub>2</sub> emissions and waste, while reducing the life-cycle costs;
- that, compared to a "no action" scenario, by 2020 the regulation will lead to annual savings of 9 TWh of electricity consumption in the Community, corresponding to 3.6 mln tons of

CO2 emissions, and additional 118 PJ gross energy savings related to production/distribution of EPS due to reduced material content/weight;

- a clear legal framework ensuring fair competition;
- that requirements for EPS are harmonized in the Community, leading to a minimization of administrative burdens and costs for the economic operators;
- that no disproportionate burdens for manufacturers are created due to transitional periods which duly take into account re-design cycles, and synergies with legislation in other parts of the world, including USA and China.

## **MONITORING**

Monitoring of the impacts will mainly be done by market surveillance carried out by Member State authorities ensuring that the requirements are met. The appropriateness of scope, definitions and concepts will be monitored by the ongoing dialogue with stakeholders and Member States.