Commission Staff Working document (report to the Ecodesign Consultation Forum) on the

Review of Regulation (EC) No 278/2009 regarding External Power Supplies

Context

It was agreed in the Horizontal Consultation Forum of 19 April 2012 that priority should be given to completing new ecodesign and energy labelling implementing measures that are already well advanced, to focussing the Ecodesign Working Plan 2012-2014 on a few key measures and to use the required reviews of existing Ecodesign and Energy Labelling implementing measures to identify and focus on those with the most significant potential.

The TV regulation review, due for 12 August 2012, was reported to the Consultation Forum on 8 October 2012.

This report fulfils the Commission's obligation to review the ecodesign regulation on external power supplies and to report on this to the Consultation Forum by 26 April 2013.

A review of the provisions of Regulation 244/2009 dealing with the stage 6 requirements is currently under way with a view to reporting to the Consultation Forum before summer 2013.

A report embodying the reviews of Simple Set top boxes[1], Tertiary Lighting[2], Household refrigerating appliances[3], Household washing machines[4], Household dishwashers[5], and of the remaining parts of Regulation 244/2009 is under preparation. These regulations are all due for review by 2014 at the latest.

Background

Regulation 278/2009 regarding External Power Supplies (EPS) requires the Commission to review the regulation within 4 years after entry into force (i.e. by 26 April 2013) in view of technological progress and to present its findings to the Ecodesign Consultation Forum.

A review study (attached) was launched to explore the additional saving potential as well as the appropriateness of the scope, the definitions and the requirements.

The availability of data is decent as EPS have been extensively addressed at European and international level. Important references and sources of information are:

- the analysis on external power supplies carried out by CLASP[6]
- the EU Code of Conduct for external power supplies[7]
- Energy Star/ US Department of energy – proposed rules[8]

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[1] Commission Regulation (EC) No 107/2009
[2] Commission Regulation (EC) No 245/2009
[3] Commission Regulations (EC) No 643/2009 and 1060/2010
[4] Commission Regulations (EC) No 1015/2010 and 1061/2010
[5] Commission Regulations (EC) No 1016/2010 and 1059/2010
[6] CLASP (2013): "Estimating potential additional energy savings from upcoming revisions to existing regulations under the ecodesign and energy labelling directives - a contribution to the evidence base" (supported by eceee). CLASP based their analysis inter alia. on a large dataset - nearly 6500 EPS units - collected by the Natural Resources Canada.
[7] http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/code_of_conduct_for_ps_version_5_-_draft_120919.pdf

Aspects of the review

I. Additional saving potential

The additional savings potential is estimated to be 3 TWh, involving the following options:

- Tightening the existing power consumption requirements;
- Extending the scope to products so far not included;
- Introducing a new requirement for 10% loading active efficiency.

As it can be seen from the following table, the options would have different starting points and implications:

Change	Saving (TWh) per year in 2025	Test method available?	Requirement basis?
1. Revised requirements, three Tiers	1.461	**Yes**	**Yes**
2. High power (>250W) EPS in scope	0.002	**Yes**	**Yes**
3. Multiple Voltage Output EPS in scope	0.839	**Yes**	**Yes**
4. Low voltage wireless Chargers in scope	0.538[9]	**No**	**No**
5. 10% loading active efficiency requirement	0.125	**No**	**Yes**
Total savings	**2,965**		

1. Revised requirements (e.g. along the lines of the draft EU Code of Conduct[10])

The review study estimates that 52% of the 2012 models would need to be redesigned to meet tier 1 and 93% redesigned to meet tier 2 of the draft EU Code of Conduct. Any proposal would need to make sure that sufficient time is granted to allow for a redesign at reasonable additional costs.

2. Extension of the scope to High Power EPS

The extension of the scope to High Power EPS would be beneficial in terms of consistency but would trigger only minor savings while also the savings potential of this extension is likely to decrease and not increase in the future.

[8] 18478 Federal Register / Vol. 77, No. 59 / Tuesday, March 27, 2012 / Proposed Rules
[9] The potential for wireless car chargers is not included in this figure.
[10] The EU Code of Conduct run by the JRC is a voluntary initiative towards developing ambitious standards and references for industry self-commitment. The latest version of the EU Code of Conduct on external power supplies has been published in September 2012. The levels proposed by the CoC are very similar compared to the levels proposed by the US Department of Energy

3. Extension of the scope to Multiple Voltage output devices

The extension of the scope to Multiple Voltage output devices would require a careful analysis of the implications which follow from the necessary consequent modification, i.e. deletion, of criterion b) of the regulation's definition of external power supplies[11]. However, the savings potential could justify verifying this aspect.

4. Extension of the scope to Low voltage wireless chargers

Wireless technology and applications (e.g. electric vehicles) are growing rapidly while there seems to be room for efficiency improvement. However, there is currently a complete lack of data, which implies that a preparatory study would need to be launched to create a basis for any requirements. Not at least due to their relevance for electric vehicles however, wireless chargers should indeed be addressed at a later stage.

5. 10% loading active efficiency requirement

Outside the normal four-point measurement scale (25%, 50%, 75% and 100% load), there might be improvement potential at 10% load which is likely to become a rather common load level. Test methods are not yet available and the energy saving potential is moderate (0,125 TWh). Nevertheless, it should be considered to establish 10% loading active efficiency requirements at a later stage.

All options would require a revision of the Regulation. However, the options differ significantly in analytical, procedural and legislative complexity. Options 1-3 would allow the Commission to proceed immediately with the legislative procedure, involving a light impact assessment and Interservice Consultation followed by the WTO-notification and the vote.

Options 4-5 would require a preparatory study with extensive data gathering followed by a full legislative procedure.

II. Updating of definitions:

Other issues that might be tackled in the review process are:

a) Definition of Low Voltage Power Supplies:

The exemption of equipment placed on the market with a low voltage external power supply established in article [8] of Regulation 278/2009 was introduced to keep mobile phones out of the scope of Regulation (EC) No 1275/2008. There are indications that products increasingly enter the market that meet the criteria for exemption but which are not mobile phones.

At the same time, there may be mobile phones (smart phones) that do not meet the criteria for exemption and would hence be unintentionally included.

b) Clarification regarding USB-Adaptor plugs

Many handheld products, such as e-readers, are being placed on the market only with a USB connector for charging via a computer. Adaptor plugs are available to allow for charging directly from the mains. Whilst these chargers are already likely to be efficient, it should be clarified that they are

included in the scope (modification of criteria b) and e) of the regulation's definition of external power supplies)

c) Clarification regarding chargers with integrated backup batteries

Products have become available on the market that contain battery back-up, and in some cases also feature solar trickle charging capability. Whilst these chargers are already likely to be efficient, it should be clarified that they are included in the scope (modification of criteria a) and b) of the regulation's definition of external power supplies)

III. Introduction of resource efficiency parameters

In the longer run, it might be justified to include resource efficiency parameters in the regulation. For instance, a substantial proportion of external power supplies are unnecessarily bulky; it could be an option to include a requirement on maximum weight. However, this would require a careful analysis within the frame of a preparatory study and would imply a full legislative process.

IV. Memorandum of Understanding regarding the compatibility of chargers

The Memorandum of Understanding between the Commission and Digital Europe regarding the compatibility of chargers has expired in December 2012. In the longer run, it might be worthwhile to follow up on the achievements of the Memorandum of Understanding and, if appropriate, to consider action in this field.

Conclusions:

This review shows that revision of Regulation (EC) No 278/2009 on External Power Supplies has only a low savings potential (3 TWh) compared to other measures currently under preparation. This means that a revision process with a high analytical, procedural and legislative commitment is not justified at this time. However, the review also shows that a significant part of this savings potential (more than 2 TWh) can be obtained through a revision process that makes only low demands in these respects; and that this revision could at the same time permit certain definitions to be updated to reflect technical progress. The Commission therefore proposes to follow this low-demand approach.

More specifically, the Commission proposes:

1) to tighten the existing requirements along the lines of the draft Code of Conduct (see Annex II). The time line should be more generous (e.g. 6/2015 and 6/2017) than the Code of Conduct foresees and a third tier (e.g. 6/2019) should be included;

2) to include Multiple Voltage Output devices in the scope;

3) to verify the definitions for Low Voltage Power Supplies and clarify the EPS-definition with regard to USB adaptor plugs and chargers with integrated backup batteries

4) to explore the following aspects in a further review in three years' time:

- extension of the scope to Low voltage wireless Chargers
- introduction of requirements for Active Efficiency at 10%-load;
- introduction of resource efficiency parameters, such as weight;
- the need to address the compatibility of chargers.

Annex I: Draft Final Report – Review External Power Supplies (separate document)

Annex II: Requirements proposed for EU Code of Conduct Revision (as of Sep 2012)

Tier 1

No-load Power (not to exceed Wattage) – Jan 2014		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage (Mobile handheld battery driven and P_{no} < 8W)
0.3 W ≤ P_{no} < 49 W	≤ 0.150 W	≤ 0.075 W
50 W ≤ P_{no} < 250 W	≤ 0.250 W	N/A
250 W < P_{no}	N/A	N/A
Four Point Average Active Efficiency (not less than %) – Jan 2014		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage
0 < P_{no} ≤ 1.0 W	≥ 0.5 × P_{no} + 0.145	≥ 0.5 × P_{no} + 0.085
1.0 W < P_{no} ≤ 49.0 W	≥ 0.0626 × ln(P_{no}) + 0.645	≥ 0.0755 × ln(P_{no}) + 0.585
49 W < P_{no} ≤ 250 W	≥ 0.890	≥ 0.880
250 W < P_{no}	N/A	N/A
10% Load Average Active Efficiency (not less than %) – Jan 2014		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage
0 < P_{no} ≤ 1.0 W	≥ 0.50 × P_{no} + 0.045	≥ 0.50 × P_{no}
1.0 W < P_{no} ≤ 49.0 W	≥ 0.0626 × ln(P_{no}) + 0.545	≥ 0.0755 × ln(P_{no}) + 0.485
49 W < P_{no} ≤ 250 W	≥ 0.790	≥ 0.780
250 W < P_{no}	N/A	N/A

Tier 2

No-load Power (not to exceed Wattage) – Jan 2016		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage
0.3 W ≤ P_{no} < 49 W	≤ 0.075 W	≤ 0.075 W
50 W ≤ P_{no} < 250 W	≤ 0.150 W	N/A
250 W < P_{no}	N/A	N/A
Four Point Average Active Efficiency (not less than %) – Jan 2016		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage
0 < P_{no} ≤ 1.0 W	≥ 0.50 × P_{no} + 0.160	≥ 0.517 × P_{no} + 0.087
1.0 W < P_{no} ≤ 49.0 W	≥ 0.071 × ln(P_{no}) – 0.0014 × P_{no} + 0.670	≥ 0.0834× ln(P_{no}) – 0.0014 × P_{no} + 0.609
49 W < P_{no} ≤ 250 W	≥ 0.890	≥ 0.880
250 W < P_{no}	N/A	N/A
10% Load Average Active Efficiency (not less than %) – Jan 2016		
Nameplate Output Power (P_{no})	Standard Voltage	Low Voltage
0 < P_{no} ≤ 1.0 W	≥ 0.50 × P_{no} + 0.060	≥ 0.517 × P_{no}
1.0 W < P_{no} ≤ 49.0 W	≥ 0.071 × ln(P_{no}) – 0.0014 × P_{no} + 0.570	≥ 0.0834 × ln(P_{no}) – 0.0014 × P_{no} + 0.509
49 W < P_{no} ≤ 250 W	≥ 0.790	≥ 0.780
250 W < P_{no}	N/A	N/A