

EN

EN

EN



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 18.3.2009
SEC(2009) 325

COMMISSION STAFF WORKING DOCUMENT

Accompanying document to the

Commission Regulation implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps, and repealing Directive 2000/55/EC of the European Parliament and of the Council

IMPACT ASSESSMENT SUMMARY

{C(2009) 1891}
{SEC(2009) 324}

COMMISSION STAFF WORKING DOCUMENT

Accompanying document to the

Commission Regulation implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps, and repealing Directive 2000/55/EC of the European Parliament and of the Council

IMPACT ASSESSMENT SUMMARY

Background

The Ecodesign Framework Directive 2005/32/EC¹ ("Ecodesign Directive") lists products which have been identified by the Council and the European Parliament as priorities for the Commission for implementation, including "lighting in both the domestic and tertiary sectors" (Article 16). The Spring Council 2007 called for thorough and rapid implementation of the five priorities² set by the Energy Council on 23 November 2006³, based on the Commission's Action Plan on Energy Efficiency. It also explicitly invited the Commission to "rapidly submit proposals to enable increased energy efficiency requirements on **office and street lighting** to be adopted by 2008". The emphasis on lighting was further supported by the European Parliament.⁴

"Tertiary sector lighting products" is a common name for the following product groups that would be addressed by the different requirements in the measure: fluorescent lighting products, high intensity discharge lighting products, public street lighting products and office lighting products.

Approach for setting ecodesign requirements

The approach for developing the regulation on tertiary sector lighting products and this impact assessment was structured in the following steps

Step 1: assessment of the criteria for ecodesign implementing measure 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 Directive;

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

¹ Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC, OJ L 191, 22.7.2005, p. 29., **amended by** Directive 2008/28/EC of the European Parliament and of the Council of 11 March 2008 amending Directive 2005/32/EC establishing a framework for the setting of ecodesign requirements for energy-using products, as well as Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC, as regards the implementing powers conferred on the Commission, OJ L 81, 20.3.2008, p. 48

² Brussels European Council 8/9 March 2007, Presidency Conclusions, 7224/07.

³ TTE (Energy) Council on 23 November 2006, 15210/06.

⁴ 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 of the 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 Directive.

Summary of the results

Step 1

In order to assess the criteria for ecodesign implementing measures as set out in Article 15(2) of the Ecodesign Directive, the Commission has carried out technical, environmental and economic studies for office lighting and public street lighting products, which follow the provisions of Article 15(4a) and Annex II of the Ecodesign Directive. Two separate "preparatory studies" covering "public street lighting products" on the one hand and "office lighting products" on the other hand were carried out. After completion of the studies, for reasons explained in section 1, it was decided to integrate the work on public street lighting and high-intensity discharge lighting products and on fluorescent and office lighting products as they are the main technologies used in those applications into one single discussion on "tertiary" sector lighting products.

With regard to the criteria set out in Article 15(2) of the Ecodesign Directive, the preparatory studies have established the following results for the EU for tertiary sector lighting products:

| | | |
|------------------|--|---|
| Article 15 (2a): | Annual sales volume in the Community: | Fluorescent and high intensity discharge lamps, ballasts and luminaires are each sold in several million units a year in the EU (see tables in Annex I) |
| Article 15 (2b): | Environmental impact of installed base in 2005 a.) use phase energy consumption: b.) mercury content of lamps: | a.) 200 TWh b.) 12,6 tons of mercury |
| Article 15 (2c): | Improvement potential of installed base in 2020 compared to Business As Usual: a.) use phase energy consumption (applying cost effective existing technology in new products): b.) mercury content of lamps: | a.) Over 44 TWh less consumption per year (Up to 54 TWh less if new installations would be set at the level of the identified benchmarks) b.) 14 tons of mercury less in the installed base ⁵ |

The improvement potential is due to the fact that technical solutions exist which

- reduce the electricity consumption in tertiary sector lighting products, compared to the market average, while providing the same functionality;
- reduce the life-cycle cost for the end-users;

⁵ The baseline 2020 scenario shows an increase to 18,6 tons if nothing is done. Therefore it is possible to save 14 tons, which is more than the total current mercury content.

- lead to wide disparities of electricity consumption of the tertiary sector lighting products available on the market.

The mercury content of lamps is also greatly varied, and the variation is not always dependent on additional features of a particular lamp type compared to others, therefore we can consider that there is potential to reduce the mercury content without affecting product functionality.

The electricity consumption and the improvement potential are of the order of the total electricity consumption of Spain and Romania, respectively, and are therefore considered to be significant. The potential of reducing the mercury content of the installed base of lamps by 75% is also considered to be significant.

Step 2

As set out in Articles 15(2) and 15(4c) of the Ecodesign Directive, relevant Community and national environmental legislation are considered, and related voluntary initiatives both on Community and Member State level are taken into account.

The preparatory studies identified Directives 98/11/EC (Energy labelling of household lamps) and 2000/55/EC (Efficiency requirements on ballasts for fluorescent lamps) as relevant to the use phase energy consumption of tertiary sector lighting products. However, these directives do not sufficiently address the market failure in the case of the targeted products because of their limited scope and outdated content.

Directive 2002/95/EC (RoHS) contains provisions on the mercury content of fluorescent and high-intensity discharge lamps. As these provisions (currently under review) cover more lamp types than the ones used in general lighting and targeted by the planned Ecodesign implementing regulation, it is considered appropriate by the concerned Commission services and the affected stakeholders to leave the setting of mercury content requirements to Directive 2002/95/EC. Nevertheless, mercury content benchmarks are identified for the lamp types covered by the Ecodesign implementing regulation also as an input for the review of the RoHS.

No relevant Member States legislation or voluntary initiatives at the national or Community level were identified by the preparatory studies or the consultation process.

For electricity consumption, overall cost savings over the product's life cycle should already motivate a market switch to more efficient lighting products. However, due to the structure of the professional lighting market, where building/infrastructure planners and installers also have a role to play in selecting the products to be installed in tertiary lighting, and because of split incentives (the entity deciding on lighting design is often not the one paying for the lighting installation's electricity bill), there is insufficient market drive towards more efficient lighting products. Consequently the improvement potentials are not realized. This is further detailed in Section 2.

Conclusion of Step 1 and Step 2

Electricity consumption and mercury content of tertiary sector lighting products, sold in large quantities on the Community market, are significant, and cost effective improvement potentials exist, which are linked to a wide disparity of the environmental performance of the equipment on the market with identical functionality.

Mercury content is addressed by other relevant Community legislation which needs update. Market forces do not address properly the electricity consumption of tertiary sector lighting products.

It is concluded that the criteria for ecodesign implementing measures as set out in Article 15(2) of the Ecodesign Directive are met, and tertiary sector lighting products should be covered by an ecodesign implementing measure pursuant to Article 15(1) of the Ecodesign Directive as regards electricity consumption.

Step 3

Further to Annex II of the Ecodesign Directive, the level of ambition for improving the electricity consumption of tertiary sector lighting products is determined on the basis of an analysis of the least life cycle cost for the end-user. In addition, benchmarks for technologies yielding best performance, as developed in the preparatory study and the discussions with stakeholders during the meetings of the Ecodesign Consultation Forum on 22 June and 18 December 2007, are considered. The results are reflected in the objectives that the implementing measure aims to achieve.

The impact assessment looked into several options to trigger the market transformation that would realise most of the improvement potentials:

- the repeal of existing legislation,
- no EU action, self regulation,
- labelling (energy label, ecolabel),
- minimum requirements set out in an Ecodesign implementing regulation, and benchmarks for products manufactured for public street lighting or office lighting.

Their appropriateness to achieve the objectives was analysed. However, due to the clear mandate of the Legislator for establishing ecodesign requirements for tertiary sector lighting products, 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 key elements taking into account the preparatory study and the input from stakeholders.

Step 4

An assessment of the proposed implementing measure is carried out. In particular, sub-options for the intensity of the measure, e.g. the timing of ecodesign requirements in several stages 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 4

A comparison of the options shows that the appropriate policy option for realising cost-effective improvement potentials is a regulation setting ecodesign requirements for tertiary sector lighting products, becoming effective in four stages, one year / three years / six years / eight years respectively after the regulation has entered into force, including the identification of benchmarks. This approach ensures:

- that cost-effective potentials to improve the efficiency of tertiary sector lighting products are quickly realized, leading to important electricity and CO₂ savings, while reducing the life cycle costs;

- that by 2020 the annual electricity consumption will be reduced by at least 38 TWh compared to a baseline scenario (up to 46,5 TWh less if new installations were set at the level of the identified benchmarks);⁶
- accumulated electricity savings/electricity cost savings/CO2 emission savings of 193 TWh / 26 billion €/ 77 Mt until 2020;
- a clear legal framework that provides a level playing field for manufacturers, ensuring fair competition;
- the requirements on tertiary sector lighting products are harmonised in the Community, leading to a minimization of administrative burdens and costs for the economic operators;
- that no disproportionate burdens for manufacturers are created through transitional periods which take into account re-design cycles to the extent possible;

Furthermore, if the benchmark lamp mercury content limits were adopted under Directive 2002/95/EC and if new installations only took products identified as benchmarks:

- mercury content in the already installed tertiary sector lighting products would be reduced by 14 tons⁷
- the so-called "light pollution"⁸ from public street lighting products would be reduced.

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. Further data (in particular regarding public street lighting) will be provided by the Member States as part of their legal obligation under the 2006/32/EC Directive to report on their national energy efficiency plans and achievements.

⁶ We can also compare that to the theoretical improvement potential of 44 TWh (which assumes that all requirements come into force simultaneously in 1 year).

⁷ As lamp lifetime is 3 to 5 years, it is safe to assume that by 2020 all lamps will be replaced.

⁸ Light pollution is defined as adverse effects of artificial light in as much as they have an impact on the environment, including the direct impact of outdoor lighting and the brightening of the night sky that results from the reflection of radiation (sky glow).