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COMMISSION DELEGATED REGULATION (EU) .../...

of **XXX**

supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of light sources

repealing

Regulation (EU) No 874/2012 with regard to energy labelling of electrical lamps and luminaires

(Text with EEA relevance)

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1. CONTEXT OF THE DELEGATED ACT

Grounds for and objectives of the proposal

Regulation (EU) 2017/1369¹ establishes a framework for setting energy labelling regulations for energy-related products at EU level and repeals the previous framework set out in Directive 2010/30/EU. Energy labelling is a key EU policy instrument for informing consumers about the energy efficiency and other environmental performance aspects of energy-related products placed on the internal market.

The energy labelling measures applicable to lighting products are in:

- Commission Delegated Regulation (EU) No 874/2012² of 12 July 2012 with regard to energy labelling of electrical lamps and luminaires;
- as amended by Commission Delegated Regulation (EU) No 518/2014³ of 5 March 2014 with regard to labelling of energy-related products on the internet.

The revision of the energy labelling measure for lighting products follows Article 7 of Commission Delegated Regulation (EU) No. 874/2012. In particular, this review should assess verification tolerances.

Furthermore, according to article 11(5) of the new framework Regulation (EU) 2017/1369, a new delegated act for energy labelling of lighting products must be adopted at the latest by 2 November 2018 to rescale products from A to G (as of today, it applies A++ to E).

Moreover, there are new policies that force the revision to look beyond the strict scope mentioned in the review articles of the existing acts for lighting products: a renewed effort in carbon emission abatement through the Paris climate agreement⁴, the Commission's Circular Economy⁵, the Better Regulation policy aiming at more efficient and effective legislation⁶, the need to address possible circumvention of testing standards, etc.⁷

This act is developed in parallel with the proposed act for ecodesign of lighting products.

General context

In 2014, the Commission conducted an 'Omnibus' review⁸ of several product groups that indicated that there is still a large untapped saving potential for lighting products making the acts on ecodesign and energy labelling eligible for a revision. This was confirmed by the review study, concluded in October 2015⁹, for which consultants developed the 'Model for European Light Sources Analysis' MELISA.

¹ OJ L 198, 28.7.2017, p. 1–23.

² OJ L 258, 26.9.2012, p. 3

³ OJ L 147, 17.5.2014, p. 1–28

⁴ http://ec.europa.eu/clima/policies/international/negotiations/future/index_en.htm

⁵ Closing the loop - An EU action plan for the Circular Economy". COM(2015) 614 final, Brussels, 2.12.2015

⁶ http://ec.europa.eu/smart-regulation/better_regulation/key_docs_en.htm#_br

⁷ <http://www.europarl.europa.eu/committees/en/emis/home.html>

⁸ 'Omnibus' Review Study on Cold Appliances, Washing Machines, Dishwashers, Washer-Driers, Lighting, Set-top Boxes and Pumps, consortium of VHK, VITO, Viegand Maagøe, Wuppertal Institut für Klima, Umwelt, Energie for the European Commission, DG ENER-C3, Brussels/Delft, April 2014.

⁹ Preparatory Study on Light Sources for Ecodesign and/or Energy Labelling Requirements ('Lot 8/9/19'), Task reports 0-7, VHK for the European Commission, October 2015. <http://ecodesign-lightsources.eu/documents>.

In the Ecodesign Working Plan 2016-2019 of the European Commission¹⁰ the revision of the implementing acts for lighting products is mentioned as one of the major energy saving opportunities, with anticipated 125 TWh of primary energy savings per year in 2030 (combined effect of ecodesign and energy labelling).

In 2015, around 1.7 billion light sources were sold in EU-28, of which approximately 22% based on LED technology. In the same year, around 11.4 billion light sources were operating in EU-28, of which 6.5% LED. These light sources consumed a total of 335 TWh/a of electricity, covering 12.4% of the overall EU-28 electricity use. This corresponded to greenhouse gas (GHG) emissions of 132 megatons of CO₂ equivalent per year (MtCO₂eq/a), i.e. 2.8% of the overall EU-28 GHG-emission.

Following the growth in population and in economic activity, the total number of light sources operating in EU-28 will increase (projected 14.6 billion in 2030; 128% of the 2015 stock), but so will the share of LEDs in this stock (projected 81% in 2030). As these LEDs on average have higher energy efficiency than the light sources they replace, i.e. consume less electricity, the total EU-28 electricity consumption for lighting is expected to decrease to 275 TWh/a in 2030 (82% of the 2015 consumption), corresponding to 93 MtCO₂eq/a GHG-emissions.

Preliminary impact data from September 2016, based on the latest version of the MELISA model, estimates that this act on energy labelling of light sources will reduce the electricity consumption for lighting by 2030, reaching 20 TWh/y of electricity savings and 6 MtCO₂eq/y of GHG-emission savings in 2030, in addition to respectively 40 TWh/y and 14 MtCO₂eq/y from the ecodesign act. It is further estimated that the two acts will reduce the total user expense for lighting by 15 billion euros (4 billion euros thanks to energy labelling) per year in 2030 compared to a BAU-scenario without new measures.

The Commission will carry out an impact assessment of the measures under consideration, following the stakeholder consultation of December 2017 and the public consultation that will take place between November 2017 and January 2018.

2. CONSULTATIONS PRIOR TO THE ADOPTION OF THE ACT

Consultation of interested parties

Stakeholders (industry, Member States, NGOs) were consulted during the Lot 8/9/19 review study in two occasions. A 1st stakeholder meeting was held on 5 February 2015 on the MEERP (¹¹) Task 0, 1, 2 and 3 reports; a 2nd meeting was held on 17 June 2015 on the Task 4, 5 and 6 reports.

Study reports were updated to reflect stakeholders' comments. Importantly, the future projections for LED prices and LED efficiencies used in the analysis of the MELISA model were agreed with industry. Stakeholder comments were also taken into account when preparing the Commission Working Document (WD) for the Ecodesign Consultation Forum (ECF) of 7 December 2015.

The comments on the 2015 WD showed a lack of consensus among stakeholders on the general approach, the level of ambition and on many details. To resolve this situation following the 2015 ECF, between Spring 2016 and Spring 2017 further stakeholder meetings took place in an attempt to address the different comments. The MELISA model was extensively discussed with industry experts and adapted accordingly.

¹⁰ COM(2016) 773 final, Brussels, November 2016.

¹¹ MEERP is the methodology that the European Commission applies to make studies for ecodesign of energy-related products.

Furthermore, a second ECF is planned for December 2017 and a public consultation will be held between November 2017 and January 2018.

3. LEGAL ELEMENTS OF THE DELEGATED ACT

1. Scope

The scope of the measures is light sources. Light sources as defined by this act are always in scope, even when they are parts of ‘containing products’ such as e.g. luminaires, mirrors, fridges or shelves. However, the containing products themselves are not in scope of this act (but they may be in scope of other energy labelling acts). This means that this act eliminates the requirement of energy labelling of luminaires set out in Regulation (EU) 874/2012.

The scope covers all lighting technologies, including incandescent, halogen, fluorescent, high-intensity discharge and light-emitting diodes (both inorganic LED and organic OLED).

The definition of light sources is the same as that in the proposed act for ecodesign. However, fewer products are exempt under energy labelling than in the ecodesign act: while in the ecodesign regulation it is important to avoid the risk that light sources with special characteristics be unintentionally removed from the market, energy labelling of these light sources is useful, because the label will indicate the price to be paid, in terms of lower energy efficiency, to have the special characteristics. Thus, there will be light sources which are exempt from ecodesign requirements but not from the energy labelling.

2. Energy efficiency classes

The limits for the energy efficiency classes have been defined directly in terms of light source efficiency, as a result of the total light output of a light source (in lumen, *lm*) divided by the mains (230V) power input (in Watt, *W*) and expressed as *lm/W*. This is more straightforward and easier to understand than using the Energy Efficiency Index set out in the current regulation. This change implies that light sources with high light output do not need a higher efficiency than light sources with low light output to obtain a given energy efficiency class. This is reasonable considering that after 2020, when the measures start to apply, the label classes will mainly have to differentiate between LEDs with different efficiencies, and for LEDs the efficiency does not strongly depend on the amount of light output.

For directional light sources, where normally only the part of light output in a cone is taken into account, and for non-mains light sources (not taking 230 V as input), correction factors are applied to convert their efficacy to an efficacy comparable to the limits of the energy efficiency classes.

Class limits are proposed with 25 *lm/W* difference between consecutive classes: all light sources above 210 *lm/W* are class A. All light sources below 85 *lm/W* are class G.

As of October 2017 there are no light sources on the market that can meet the efficiency limits of classes A and B (but there are at laboratory level), so these classes would initially be empty as required by Regulation 2017/1369. The best LED light sources typically used by households today on the market would have new label class E; the best LED light sources for professional use today on the market would be class D. In 2020, when the new classes would start to apply, there might already be some class B light sources on the market, but class A is still expected to be empty.

In the highly dynamic light sources market, it is not an easy task to predict the share of models that will fall in class A around 2030, but it is unlikely that an update of the classes

would be necessary within 10 years of the introduction, thus meeting the requirements of Regulation 2017/1369. More data on the projected shares of light sources in the various energy efficiency classes in 2020 and 2030 will be supplied during the Ecodesign Consultation Forum of December 2017.

3. Energy label

The label is reviewed and updated following the instructions in the new framework Regulation (EU) 2017/1369. The general principle is that the label has to be displayed on the side of the packaging facing the potential buyer at the point of sale (visibility objective). Regulation (EU) 2017/1369, Article 16.3(e) sets out that delegated acts shall specify "the locations where the label shall be displayed (...) and the implications for customers, suppliers and dealers". Light source packages can be small, and there is also other information which must be displayed on the packaging. The tailor-made solution for small packages is to have the label on the rear of the packaging, with a coloured arrow with the energy efficiency class displayed on the front. This is in line with the outcome of the review study..

If the light source is sold inside a containing product (e.g. a luminaire) it would be confusing to attach a label for the light source to the packaging of the containing product. Hence, in this case, a label is not required, but the packaging of the containing product shall display a text declaring the energy efficiency class of the contained light source.

4. Implementation of product information requirements

The delegated act specifies the list of lighting parameters and other information:

- to be displayed on the packaging,
- to be entered in the public part of the product database established pursuant to Regulation 2017/1369 (this part can be printed as the product information sheet),
- to be entered in the compliance part of the product database established pursuant to Regulation 2017/1369 (this is a part of the technical documentation).

The list of parameters to be entered in the product database includes not only information strictly related to the energy label and its verification, but also all information useful for end-users and for market surveillance authorities to verify compliance with the ecodesign regulation on light sources, which is developed in parallel.

5. Verification procedure for market surveillance purposes

The procedure to be used by market surveillance authorities to verify the compliance of light sources with this Regulation is aligned to Commission Regulation (EU) 2016/2282¹², which is based on verification of parameter values declared by suppliers. In addition, the required number of samples has been reduced to 10 (3 for expensive products). This will facilitate market surveillance activities and remove some ambiguities.

As regards verification tolerances, the approach has been diversified, using different tolerances for different parameters and depending on the sample size, to better reflect reality.

6. Date of application

It is the intention of the Commission that this act starts to apply from the same date of application of the ecodesign act which is developed in parallel. The existing energy labelling regulation for lighting products (Commission Regulation (EC) No 874/2012) will be repealed from the day of application.

¹² OJ L 346, 20.12.2016, p.51.

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(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation 2017/1369 of the European Parliament and of the Council of 28 July 2017 setting a framework for energy labelling ⁽¹³⁾ repealing Directive 2010/30/EU, and in particular Articles 11 and 16 thereof,

Whereas:

- (1) Regulation 2017/1369 empowers the Commission to adopt delegated acts as regards the labelling or re-scaling of the labelling of product groups representing significant potential for energy savings and, where relevant, other resources.
- (2) Provisions on the energy labelling of lighting products, namely electrical lamps and luminaires, were established by Commission Delegated Regulation (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU ⁽¹⁴⁾ and its successive amendment ⁽¹⁵⁾.
- (3) Lighting products are among the product groups mentioned in Article 11(5)(b) of Regulation (EU) 2017/1369 for which the Commission should adopt a delegated act to introduce an A to G rescaled label.
- (4) Regulation (EU) No 874/2012 contains a review clause in Article 7 requiring the Commission to review the regulation in light of technological progress.
- (5) The Commission has reviewed Regulation (EU) No 874/2012 and analysed technical, environmental and economic aspects of as well as real-life user behaviour. The review was undertaken in close cooperation with stakeholders and interested parties from the Union and third countries. The results of the review were made public and presented to the Consultation Forum established by Article 14 of Regulation (EU) 2017/1369.
- (6) The review concluded that there was a need for the introduction of revised energy labelling requirements for lighting products, namely light sources.

¹³ OJ L 198, 28.07.2017, p. 1.

¹⁴ OJ L 314, 2010, p. 47

¹⁵ OJ L 147, 17.5.2014, p.1

- (7) The environmental aspect of light sources, identified as the most significant for the purposes of this Regulation, is electricity consumption in the use phase.
- (8) The electricity used by light sources accounts for a significant share of total household electricity demand in the Union. The review has shown that the electricity consumption of products subject to this Regulation can be further significantly reduced by implementing energy label measures.
- (9) The measures provided for in this Regulation were discussed by the Consultation Forum and the Member States' experts in accordance Articles 14 and 18 of Regulation (EU) 2017/1369.
- (10) Regulation 874/2012 should be repealed and new provisions should be laid down by this Regulation.

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on, light sources, with or without integrated control gear. The requirements also apply to light sources placed on the market in a containing product.

This Regulation shall not apply to light sources specified in Annex I points 1 and 2. Light sources specified in Annex I point 3 shall only be subject to the requirements of Annex V point 5.

Article 2

Definitions

In addition to the definitions laid down in Article 2 of Regulation (EU) 2017/1369, the following definitions shall apply for the purposes of this Regulation:

- (1) '*light source*' means an electrically operated product intended to emit and/or be possibly tuned to emit light with the following optical characteristics:
 - (a) chromaticity coordinates x and y in the range

$$0,270 < x < 0,530$$
 and

$$-2,3172 x^2 + 2,3653 x - 0,2199 < y < -2,3172 x^2 + 2,3653 x - 0,1595;$$
 - (b) a luminous flux $< 1000 \text{ lm per mm}^2$ of projected light-emitting surface area as specified in Annex II;
 - (c) a luminous flux between 60 and 82 000 *lumen*;
 - (d) a colour rendering index $\text{CRI} > 0 \text{ Ra}$;

using incandescence, fluorescence, high-intensity discharge, light emitting diodes or their combinations as lighting technology.

High-pressure sodium light emitters (HPS, as defined in Annex II) that do not fulfil condition (1)(a) are anyway considered light sources in the sense of this Regulation.

If a containing product is itself a light source, the light source to be considered for the purpose of this Regulation is the smallest physical unit that can be readily removed from the containing product without permanent mechanical damage and that meets the definition for light source.

- (2) '*control gear*' means one or more devices, possibly integrated in a light source, intended to prepare the mains electricity supply for the electric format required by one or more specific light sources within boundary conditions set by electric safety and electromagnetic compatibility. It may include transforming the supply and starting voltage, limiting operational and preheating current, preventing cold starting, correcting the power factor and/or reducing radio interference.
- (3) '*containing product*' means a product containing one or more light sources in scope of this Regulation. Suppliers of containing products shall enable verification by market surveillance authorities of compliance of light source(s) as set out in Annex VI.
- (4) '*light*' means electromagnetic radiation with a wavelength between 380 *nm* and 780 *nm*.
- (5) '*mains*' or '*mains voltage*' or '*mains electricity supply*' (MV) means the electricity supply of 230 ($\pm 10\%$) *Volt* of alternating current at 50 *Hz*.
- (6) '*chromaticity*' means the property of a colour stimulus defined by its chromaticity coordinates (*x* and *y*).
- (7) '*luminous flux*' or '*flux*' (Φ), expressed in lumen (*lm*), means the quantity derived from radiant flux (radiant power) by evaluating the electromagnetic radiation in accordance with the spectral sensitivity of the human eye. It refers to the total flux emitted by a light source in a solid angle of 4π *steradians* under conditions (e.g. current, voltage, temperature) specified in applicable standards. It refers to the initial flux for the undimmed light source after a short operating period, unless it is clearly specified that the flux in a dimmed condition or the flux after a given period of operation is intended. '*Luminous flux*' without further specification is the total luminous flux in a 360° sphere. For light sources that can be tuned to emit different light spectra and/or different maximum light intensities, it refers to the flux in the 'reference control settings' as defined in Annex II.
- (8) '*colour rendering index*' (CRI), expressed in *R_a*, means the effect of an illuminant on the colour appearance of objects by conscious or subconscious comparison with their colour appearance under the reference illuminant. For the purposes of this Regulation it refers to the mean of colour rendering indices for a set of 8 test colour samples as specified in standards (*R_{a8}*).
- (9) '*incandescence*' means a phenomenon where light is produced from heat, in light sources typically produced through a threadlike conductor ('filament') which is heated by the passage of an electric current.
- (10) '*halogen light source*' (HL) means an incandescent light source with a threadlike conductor made from tungsten surrounded by gas containing halogens or halogen compounds.
- (11) '*gas discharge*' means a phenomenon where light is produced, directly or indirectly, by an electric discharge through a gas, plasma, metal vapour or mixture of gases and vapours.

- (12) '*high intensity discharge*' (HID) means an electric gas discharge in which the light-producing arc is stabilised by wall temperature and the arc has a bulb wall loading in excess of 3 *Watts per square centimetre*. For the purpose of this Regulation, HID light sources are limited to metal halide, high pressure sodium and mercury vapour types as defined in Annex II.
- (13) '*fluorescence*' or '*fluorescent light source*' (FL) means the phenomenon or a light source using an electric gas discharge of the low-pressure mercury type in which most of the light is emitted by one or more layers of phosphors excited by the ultraviolet radiation from the discharge. Fluorescent light sources may have one ('single-capped') or two ('double-capped') connections ('caps') to their electricity supply. For the purposes of this Regulation, magnetic induction light sources are also considered as fluorescent light sources.
- (14) '*inorganic light emitting diode*' (LED) means a technology in which light is produced from a solid state device embodying a p-n junction of inorganic material. The junction emits optical radiation when excited by an electric current.
- (15) '*organic light emitting diode*' (OLED) means a technology in which light is produced from a solid state device embodying a p-n junction of organic material. The junction emits optical radiation when excited by an electric current.
- (16) 'point of sale' means a physical location where the product is displayed or offered for sale, hire or hire-purchase to the end-user.
- (17) 'end-user' means a natural person buying or expected to buy a product for purposes which are outside his trade, business, craft or profession.
- (18) '*final owner*' means the entity owning a product during the use phase of its life cycle, or any other entity acting on its behalf.

Other definitions are set out in Annex II.

Article 3

Obligations of suppliers

1. In addition to the obligations of suppliers laid down in Regulation (EU) 2017/1369, suppliers shall ensure that:
 - (a) each light source is supplied with a printed label in the format as set out in Annex III;
 - (b) the parameters of the product information sheet, as set out in Annex V, are entered into the product database established by Regulation (EU) 2017/1369;
 - (c) an electronic label in the format and containing the information as set out in Annex III shall be made available to dealers for each light source model;
 - (d) an electronic product information sheet shall be made available to dealers for each light source model;
 - (e) if requested by the dealer, the product information sheet shall be made available in printed form;
 - (f) the content of the technical documentation uploaded into the product database established by Regulation (EU) 2017/1369 is according to Annex V;

- (g) any visual advertisement for a specific model of light source, including on the internet, contains the energy efficiency class and the range of efficiency classes available on the label in accordance with Annex IX;
 - (h) any technical promotional material concerning a specific model of light source which describes its specific technical parameters, including on the internet, includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex IX;
 - (i) the printed label to rescale products is a sticker, of the same size as the one which is already on the package;
 - (j) no products are placed on the market that have been designed so that a model's performance is automatically altered in test conditions with the objective of reaching a more favourable level for any of the parameters specified in this delegated act or included in the documentation provided for the product.
2. Suppliers of containing products placed on the market shall provide information on the contained light sources as specified in Annex V point 3.2.
 3. The energy efficiency class shall be calculated in accordance with Annex IV.

Article 4

Obligations of dealers

1. In addition to the obligations of dealers laid down in Regulation (EU) 2017/1369, dealers shall ensure that:
 - (a) each light source, at the point of sale, bears the label provided by suppliers in accordance with Article 3.1(a) displayed as indicated in Annex III, in such a way as to be clearly visible;
 - (b) the label and product information sheet are provided in the case of distance selling in accordance with Annexes VI and VII;
 - (c) any visual advertisement for a specific model of light source, including on the internet, contains the energy efficiency class and the range of efficiency classes available on the label, in accordance with Annex IX;
 - (d) any technical promotional material concerning a specific model of light source, including on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex IX;
 - (e) existing labels on products on display at points of sale are replaced by the rescaled labels that need to be attached to the packages in such a way as to cover the existing label.

Article 5

Measurement methods

The information to be provided pursuant to Articles 3 and 4 shall be obtained by reliable, accurate and reproducible measurement and calculation methods, which take into account the

recognised state-of-the-art measurement and calculation methods, as set out in Annex IV and in Annex VIII.

Article 6

Verification procedure for market surveillance purposes

Member States shall apply the procedure laid down in Annex VIII when assessing the conformity of the declared energy efficiency class, the energy consumption and the information entered in the product database.

Article 7

Revision

The Commission shall review this Regulation in the light of technological progress and present the results of this review to the Consultation Forum no later than five years after its entry into force. The review shall in particular assess the energy efficiency classes and the possibility to introduce requirements on other environmental aspects in coherence with the objective to promote a circular economy.

In addition, the Commission shall review the label to rescale it when the requirements in Article 11 of Regulation (EU) 2017/1369 are met.

Article 8

Repeal

Regulation (EU) No 874/2012 is repealed as of the day of application of this Regulation as specified in Article 9.2.

Article 9

Entry into force and application

1. This Regulation shall enter into force on the 20th day following its publication in the Official Journal of the European Union.
2. It shall apply from **XXXX**.
3. The obligations in Article 3(1)(a) and (b) shall apply 4 months before **XXXX**.
4. The obligation in Article 4(1)(e) shall apply 30 days after the date of entry into force.

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

Done at Brussels,

For the Commission
Jean-Claude JUNCKER
The President

DRAFT