

Brussels, XXX  
[...] (2017) XXX draft

**Explanatory Memorandum to**

**COMMISSION REGULATION (EU) No .../..**

**of XXX**

**implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for light sources and separate control gears, \_\_repealing \_\_Regulation (EC) No 244/2009 with regard to ecodesign requirements for non-directional household lamps, \_\_Regulation (EC) No 245/2009 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 \_\_Regulation (EU) No 1194/2012 with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment**

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## EXPLANATORY MEMORANDUM

### 1. CONTEXT OF THE PROPOSAL

#### Grounds for and objectives of the proposal

The Ecodesign Directive 2009/125/EC <sup>(1)</sup> establishes a framework for the setting of eco-design requirements for energy-related products at EU level. It is a central piece of legislation through which the EU can improve the energy efficiency and other aspects of the environmental performance of products being sold in the single market.

Currently there are three Commission Regulations implementing Directive 2009/125/EC for the eco-design of lighting products:

- Commission Regulation (EC) No 244/2009 <sup>(2)</sup>, as amended by Commission Regulation (EC) No 859/2009 and Commission Regulation (EU) 2015/1428, for non-directional household lamps, covering e.g. compact fluorescent lamps with integrated ballast (CFLi), halogen lamps (HL) and incandescent lamps (GLS). The requirements of this Regulation resulted in removing incandescent light bulbs from the market.
- Commission Regulation (EC) No 245/2009 <sup>(3)</sup>, as amended by Commission Regulation (EU) No 347/2010 and Commission Regulation (EU) 2015/1428, for lamps mainly used in office and street lighting, covering linear fluorescent lamps (LFL), compact fluorescent lamps without integrated ballast (CFLni) and high-intensity discharge lamps (HID). The requirements of this Regulation resulted in the removal of e.g. high-pressure mercury lamps from the market and also set requirements for control gears (ballasts).
- Commission Regulation (EU) No 1194/2012 <sup>(4)</sup>, as amended by as amended by Commission Regulation (EU) 2015/1428, for directional lamps (spots), including light emitting diodes (LED).

The review of these regulations has been performed according to the respective revision clauses (Article (7) or (8) depending on the Regulation) during several studies: the 2013 'Stage 6 review study' <sup>(5)</sup>, the 2014 'Omnibus study' <sup>(6)</sup>, the 2015 'Market assessment on directional lamps' <sup>(7)</sup> and the 2015 'Lot 8/9/19 Preparatory study' <sup>(8)</sup>, which integrates the results of the previous studies.

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<sup>1</sup> Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of eco-design requirements for energy-related products (OJ L 285, 31.10.2009, p. 10).

<sup>2</sup> Commission Regulation (EC) No 244/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to eco-design requirements for non-directional household lamps, OJ L76/3, 24.3.2009

<sup>3</sup> Commission Regulation (EC) No 245/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to eco-design 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, OJ L76/17

<sup>4</sup> Commission Regulation (EU) No 1194/2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to eco-design requirements for directional lamps, light emitting diode lamps and related equipment, OJ L342/1, 14.12.2012

<sup>5</sup> Review study on the stage 6 requirements of Commission Regulation (EC) No 244/2009, final report, VHK/VITO for the European Commission, 14.6.2013

<sup>6</sup> '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.

<sup>7</sup> Market Overview on Directional Mains-Voltage Lamps related to stage 3 of Commission Regulation (EU) No 1194/2012, VHK for the European Commission, 3 September 2015

In the Commission's Ecodesign Working Plan 2016-2019<sup>(9)</sup> the revision of the implementing acts for lighting products is mentioned as one of the major energy saving opportunities, with anticipated 125 TWh per year of primary energy savings in 2030 (combined effect of ecodesign and energy labelling).

In addition there are new policies that require the revision to look beyond the strict scope mentioned in the review articles of the existing implementing acts for lighting products: a renewed effort in carbon emission abatement through the Paris climate agreement<sup>(10)</sup>, the Commission's Circular Economy Action Plan<sup>(11)</sup>, the Better Regulation policy aiming at more efficient and effective legislation<sup>(12)</sup>, the need to address possible circumvention of testing standards<sup>(13)</sup>, etc.

Following the conclusions of the 2015 preparatory study, the main objectives of this proposal are to:

- Simplify the ecodesign regulations for lighting products by integrating the three existing Regulations into one and unifying the way in which requirements are set. This is expected to reduce the administrative burden for the Commission and for industry and to facilitate market surveillance.
- Further facilitate compliance verification by market surveillance authorities by improving definitions for scope and exemptions (reduce risk of circumvention of the Regulation), reducing the number of parameters to test and reducing number of test samples and test duration where possible.
- Increase the minimum required energy efficiency of light sources to reflect technological progress made in recent years, in particular for LED technology. This will have as an effect to remove from the market some of the remaining less efficient light source types, thus capturing significant energy savings at EU-level and bringing economic advantages for users.
- Ensure that products in scope are removable from a containing product. .
- Align the verification procedure with the common approach used in Commission Regulation (EU) 2016/2282<sup>(14)</sup> and redefine the tolerances to be used during verification by market surveillance authorities.

### General context

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 CO<sub>2</sub> equivalent per year (MtCO<sub>2</sub>eq/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

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<sup>8</sup> 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>

<sup>9</sup> COM(2016) 773 final, Brussels, November 2016.

<sup>10</sup> [http://ec.europa.eu/clima/policies/international/negotiations/future/index\\_en.htm](http://ec.europa.eu/clima/policies/international/negotiations/future/index_en.htm)

<sup>11</sup> Closing the loop - An EU action plan for the Circular Economy". COM(2015) 614

<sup>12</sup> [http://ec.europa.eu/smart-regulation/better-regulation/key\\_docs\\_en.htm#\\_br](http://ec.europa.eu/smart-regulation/better-regulation/key_docs_en.htm#_br)

<sup>13</sup> <http://www.europarl.europa.eu/committees/en/emis/home.html>

<sup>14</sup> OJ L 346, 20.12.2016, p.51.

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 MtCO<sub>2</sub>eq/a GHG-emissions.

Without new measures (Business as Usual scenario, BAU), suppliers of light sources are expected to concentrate on lowering prices of their LED products (in particular for light sources typically used in households), paying less attention to product quality and energy efficiency. The EU light source industry would struggle to compete against extra-EU suppliers on price alone. The new measures aim at ensuring a minimum light source quality (functional and information requirements) and a continuing quest for higher energy efficiency (efficiency requirements).

As LEDs on average have longer lifetimes than the lamps they replace, there will be less need for users to buy replacement lamps, and consequently sales volume will decrease (projected to be 0.7 billion in 2030, i.e. 41% of the 2015 sales). Industry is expected to respond to the drop in sales of light sources by offering new light source features. These include so called ‘smart lamps’ (colour-tuneable, white-tone tuneable, and/or dimmable by remote control from e.g. a mobile phone), ‘Human Centric Lighting’ (use of specific light features for human health and well-being), increased use of lighting controls (occupancy sensors, day-light sensors, integration of lighting systems in building automation systems), use of light for data-transmission (LiFi), use of light sources as repeaters for wireless signals (WiFi range extension), etc. In general, these new features are useful and their development should not be obstructed, but they will consume additional electricity, which will reduce the savings due to the use of LED technology. Of particular concern is the electricity consumption in standby: future LED light sources might consume more electricity during long hours in standby (sensors monitoring, awaiting and processing control signals) than during the shorter periods of light emission. Although these new features are in scope of the proposed Regulation only when they are integrated with the light source or with the separate control gear, a maximum standby power requirement has been introduced.

### **Consistency with other EU policies and objectives**

The Ecodesign Framework Directive 2009/125/EC is an important instrument for achieving the Union's energy efficiency target set in Directive 2012/27/EU on energy efficiency. Energy efficiency is a crucial element of the EU Climate and Energy Policy Framework and is key to moderate energy demand.

The provision of this Regulation are in line with Directive 2011/65/EU<sup>(15)</sup> (RoHS Directive), with regard to the mercury content in light sources. It has to be noted that the RoHS Directive is undergoing a review of the exemptions for mercury content in light sources, which is expected to be finalised early 2018. At that time, the proposal for this Regulation will be updated according to the results of the RoHS review.

The provisions of Commission Regulation (EU) 2016/2282<sup>(16)</sup> with regard to the use of tolerances in verification procedures of the measured parameters by Member State authorities for lighting products are also added to this Regulation.

In line with the principle to promote a circular economy, this Regulation sets an obligation for the products in its scope to be readily removable from any product in which they are contained (e.g. luminaires, mirrors, shelves), without permanent mechanical damage. This

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<sup>15</sup> OJ L 174, 1.7.2011, p. 88, and amendments.

<sup>16</sup> OJ L 346, 20.12.2016, p. 51.

provision supports the Waste Electrical and Electronic Equipment Directive 2012/19/EU <sup>(17)</sup> (WEEE Directive).

Parallel to the Lot 8/9/19 preparatory study on lighting products, a Lot 37 preparatory study on lighting systems was performed <sup>(18)</sup>. The recommendations of this study are currently being discussed in the context of Directive 2010/31/EU on the energy performance of buildings <sup>(19)</sup>. The proposed Regulation focuses on light sources and separate control gears, i.e. on some of the basic parts of a lighting system, while the work of Lot 37 focuses on design of luminaires, layout of luminaires inside a space, surface reflections inside the space, lighting calculations to verify if quantities of light required by standards are met and automatic control of lighting (switching on/off or dimming; use of occupancy and daylight sensors, etc), possibly in the wider context of building automation systems. Lot 8/9/19 and Lot 37 are therefore complementary, and energy savings in the Lot 37 analysis have been estimated in addition to those of the Lot 8/9/19 study, using the same MELISA model, without double counting <sup>(20)</sup>.

The proposed Regulation is developed in parallel with the proposed delegated act for energy labelling of lighting products.

## **2. CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT**

### **Consultation of interested parties**

#### *Methods used, main sectors targeted and general profile of respondents*

Stakeholders (industry, Member States, NGOs) were consulted during the Lot 8/9/19 review study in two occasions. A 1<sup>st</sup> stakeholder meeting was held on 5 February 2015 on the MEERP <sup>(21)</sup> Task 0, 1, 2 and 3 reports; a 2<sup>nd</sup> 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 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.

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

### **Collection and use of expertise**

#### *Analysis model MELISA*

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<sup>17</sup> OJ L 197, 24.7.2012, p. 38

<sup>18</sup> Preparatory study on lighting systems 'Lot 37', final report 15 December 2016, VITO, VHK, Paul Waide and Kreios for the European Commission DG Ener C3, <http://ecodesign-lightingsystems.eu/documents>

<sup>19</sup> <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>

<sup>20</sup> With Lot 8-9-19 in place, extra savings compared to BAU from Lot 37 would result in 10% of EU 28 electricity consumption for non-residential lighting at 2030: this low amount is the reason why the Commission's service is still analysing if the introduction of ecodesign requirements for Lot 37 is worthy.

<sup>21</sup> MEERP is the methodology that the European Commission applies to make studies for ecodesign of energy-related products.

The ‘Model for European Light Sources Analysis, MELISA’ was first developed during the Lot 8/9/19 preparatory study. Following the 2015 ECF it was extensively discussed with industry experts and adapted accordingly.

#### *New methodology for setting energy efficiency requirements*

In unifying the three existing ecodesign regulations for lighting products into a single regulation, a central element was the development of a unified method for setting energy efficiency requirements for all light source types. The result was a maximum power formula containing two parameters (a threshold efficacy and an end-loss factor), and bonus factors for special circumstances. Extensive work has been performed with industry experts to determine the values of the parameters and of the bonus factors (for each light source type) such that requirements using the new maximum power formula could be considered to be equivalent to the requirements in the existing regulations. Consensus was reached on these parameter values, which were used as the basis for proposing a higher level of ambition, i.e. to set more stringent energy efficiency requirements from September 2020.

#### *Flicker*

Experts from industry and from standardisation organisations have been consulted specifically on so-called ‘temporal lighting artefacts’ (TLA), including visible and non-visible (but perceivable) flicker. This is an important topic for users, being potentially related to health problems or discomfort. Intensive contacts are also being maintained with consultants for the Australian government and with experts working at NEMA – the US standardisation body, in an attempt to align regulations internationally on this point. Mainly based on expert advice, a preliminary and partial requirement on flicker has been included in the proposed Regulation. The research and testing on this topic is very dynamic and the requirement on flicker will be reassessed during the revision of the Regulation, when additional information is expected to be available.

#### **Impact assessment**

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.

Preliminary impact data are available from a study performed in September 2016, based on the latest version of the MELISA model described above. It is estimated that this Regulation will reduce the electricity consumption for lighting by 40 TWh/y in 2030 with respect to a Business-as-Usual (BAU) scenario without revised ecodesign and energy labelling measures. This corresponds to a reduction in GHG-emissions of 14 MtCO<sub>2</sub>eq/y in 2030. Combining the proposed Ecodesign Regulation with the separately proposed delegated act on Energy Labelling of light sources, the savings can further increase to 60 TWh/y of electricity and 20 MtCO<sub>2</sub>eq/y of emission in 2030. This is consistent with the 125 TWh primary energy savings (50 TWh/y of electricity) reported in the Ecodesign Working Plan 2016-2019. It is further estimated that this Regulation will reduce the total user expense for lighting by 11-15 billion euros per year in 2030 compared to a BAU-scenario without new measures.

The 2015 Lot 8/9/19 preparatory study assessed impacts of several possible measures, including also life cycle cost (LCC) calculations and an analysis of environmental impacts during all phases of light source manufacturing, distribution, use, and end-of-life as prescribed by the MEERP. This analysis clearly indicated that electricity consumption during the use phase is the main environmental impact. Hence the focus in the proposed Regulation is on energy efficiency requirements.

The LCCs for light sources typically used in households showed that it is already worthwhile for average consumers to invest in LED lighting. The proposed Regulation therefore applies the same energy efficiency requirements to all these light sources, but only LED light sources can meet them. This implies e.g. that compact fluorescent lamps with integrated ballast (CFLi) and halogen lamps will no longer be able to enter the market from the application date of this Regulation onwards.

For light sources typically used in offices, in industry and in street lighting (e.g. LFL, CFLni, HID) the economic advantage of a shift to LED still depends on the specific circumstances (efficiency of the existing lamp, annual burning hours, maintenance costs, desire for additional features), but for average users it is expected to be worthwhile to invest in LED lighting starting from 2020-2022. For this reason amongst others, this Regulation maintains the existing energy efficiency requirements for LFL T5 and HID. A possible increase of requirements also for these light source types has been postponed to the next revision of the Regulation.

### **3. LEGAL ELEMENTS OF THE PROPOSAL**

#### **Summary of the proposed action**

##### **1. Definition of the scope of the proposed Regulation**

The scope of the measures are light sources and separate control gears, where ‘separate’ indicates control gears that are marketed as separate products, not integrated in the light source. Light sources and separate control gears as defined by this Regulation are always in scope, even when they are parts of ‘containing products’ such as e.g. luminaires, mirrors or shelves. However, the containing products themselves are not in scope of this Regulation (but they may be in scope of other ecodesign regulations). A tricky point is how to treat containing products (including luminaires) that cannot be taken apart (i.e. without permanent mechanical damage) to access the contained light source(s) and/or control gear(s) for compliance verification. Two options were investigated:

- (1) Option 1: the entire product could be considered as the light source/control gear, and thus be subject to the requirements of the Regulation. This is expected to stimulate suppliers to make their luminaires dismountable, with replaceable parts, which is a first step to including requirements related to the circular economy (further steps intended to be taken following the next revision of this Regulation).
- (2) Option 2: introducing already the obligation that light sources and/or control gears in scope of the Regulation can be readily removed (meaning without permanent mechanical damage) from any product containing them that is placed on the market.

Because of the importance of the principle of circular economy with the recently adopted EU strategy and the focus on circular economy objectives in the Ecodesign Working Plan 2016-2019, Option 2 was chosen.

The scope of this Regulation covers all lighting technologies, including incandescent, halogen, fluorescent, high-intensity discharge and light-emitting diodes (both inorganic LED and organic OLED). This means that the proposed single lighting regulation will replace the three existing ecodesign regulations for lighting products.

To avoid that too many exemptions would have to be made for light sources with special characteristics or for use in special applications (increasing the risk of circumvention of the Regulation), the term ‘light source’ has been intentionally defined with the following limitations:

- emitting white light within specified chromaticity coordinates: this excludes from the scope e.g. coloured, ultraviolet (blue), infrared (red, gold), horticulture (purple), collagen (pink) lamps.
- density of light emission less than 1000 lumen per square millimetre, excluding from the scope e.g. light guidance applications, laser sources, photographic flash tubes, etc.
- emitting between 60 and 82000 lumen of light. The lower boundary excludes from the scope a huge variety of dashboard-, status-display or other pilot-lights as well as purely decorative lamps. The burden to verify compliance of these numerous small lamps would outweigh the small energy savings that could be obtained. The upper limit excludes very powerful lamps for e.g. sports lighting, theatre-, stage- and studio-lighting, and some outdoor and industrial applications. Higher efficiency (LED) lamps are not (yet) readily available for these high power lamps, while users tend to be professionals that already pay attention to energy efficiency.
- colour rendering index larger than zero. This excludes from the scope e.g. monochrome lasers and low pressure sodium lamps.

In addition to this limitation of the scope, exemptions have been made, following the precautionary principle, for light sources that are related to health and safety (e.g. explosive atmospheres, emergency lighting, nuclear installations, military installations and equipment, applications in medicine, lights for signalling, and lights in or on means of transport for persons and goods).

Other exemptions regard light sources with special characteristics (e.g. very small LFL, HID with special features, spots with very concentrated light, lights for ovens), light sources already covered by regulations for other products (e.g. electronic displays, imaging equipment), and light sources where inclusion in scope would not be worthwhile (e.g. light sources in portable battery operated equipment, bicycle lights).

## 2. Implementation of ecodesign requirements

Ecodesign requirements of the new proposed Regulation will apply from September 2020. Until then, the requirements of the three existing regulations will continue to apply. This gives suppliers sufficient time to prepare for the new requirements and allows a smooth transition. Also it has to be recalled that most of the requirements of the last stage (those that had to be applied by 2016) have been postponed by Commission Regulation (EU) 2015/1428 to 2018, i.e. no new requirements are introduced between 2016 and 2020.

Energy efficiency requirements are now formulated for all light source types in a uniform manner, using a formula defining the maximum allowed power for a light source in function of the quantity of light emitted. This formula contains two parameters (threshold efficacy and end-loss factor) than can be set differently for each light source type where necessary. In addition power bonuses apply for special circumstances (presence or not of a control gear inside the light source, directional or non-directional light, light sources connected in a network, special features of the light).

For light sources typically used in households, a single efficiency requirement applies to all types. The level of this requirement is such that most LED lighting products can meet it, while halogen light sources (HL) and compact fluorescent light sources (CFLi) cannot, and thus would no longer be able to enter the market after 2020. High-efficiency LED products are already available to replace these HL and CFLi, or will be by 2020 when the measures start to apply. LCC calculations have shown that replacement by LED is cost-effective for consumers. The only exception are linear double-capped HL with R7s caps with a light output below 2700 lm, so for these light sources this Regulation maintains the existing requirements, allowing them to remain on the market for the time being.



For light sources typically used in offices, industrial applications and street lighting, a diversified approach has been adopted. For T8 linear fluorescent light sources (LFL T8, often used in offices), energy efficiency requirements have been set at the same level as those for LED lighting products, implying that LFL T8 will no longer be able to enter the market after 2020. Suitable LED replacements are already available for LFL T8, and LCC calculations indicate that for the average user substitution by LED will be economically advantageous from 2020 when the measures of this Regulation start to apply.

Manufacturers and importers that have recently invested in T5 linear fluorescent light sources (LFL T5) operating on electronic control gear, replacing less efficient T8 fluorescent light sources operating on less efficient electromagnetic control gear in e.g. their office lighting, should be given time for their investment to payback. The same applies for users that have recently invested in high-pressure sodium light sources (HPS) or metal-halide light sources (MH), replacing less efficient high-pressure mercury light sources (HPM) in e.g. street lighting, industrial lighting and sports lighting, because HPM were no longer on the market following the effects of Commission Regulation (EC) No 245/2009. For compact fluorescent light sources without integrated control gear (CFLni) no higher-efficiency (LED) light sources are (yet) available that are functionally comparable and cost-effective. Hence, for LFL T5, HPS, MH and CFLni, the proposed regulation maintains the energy efficiency requirements of the existing regulations, implying that these light source types are allowed on the market also after 2020.

The proposed Regulation does not foresee a second stage with higher energy efficiency requirements in e.g. 2023 or 2024. Although this would give a clear signal of what to expect in future (and some stakeholders are in favour of this), the lighting products market is highly dynamic in this moment, making it difficult to foresee today the situation 6 or 7 years from now. Therefore it is proposed to define further action only for the next review.

For separate control gears, the energy efficiency requirements are essentially the same as those in the existing regulations. The requirements for LED separate control gears are also not particularly ambitious.

The number of functional requirements in this Regulation is smaller than the combined requirements from the three existing regulations. This is intentional, to reduce the burden for industry and for market surveillance authorities. Most importantly, an accelerated endurance test has been included for LED products, to ensure that they maintain a minimum quality even with the higher energy efficiency limits. The duration of this test is 1000h, significantly shorter than the 6000h test that is in place under the current regulations. This change will facilitate compliance verification by market surveillance authorities.

Other functional requirements regard colour rendering, colour consistency, disturbance of the electricity grid and flicker of LED light sources. As explained above, requirements on flicker are partial and a first step only. These requirements will be further elaborated during the review of the Regulation, when additional information on the topic is expected to be available.

### 3. Measurement methods

This Regulation uses the same measurement methods for parameters of light sources and separate control gears as applied in the existing regulations. The procedures for the newly introduced accelerated endurance testing of LED lighting products are available in existing standards. The only exception is for the methods to determine the  $P_{st}^{LM}$  level for flicker, where a formal agreed measurement standard is not yet available. However, there are several technical reports from standardization bodies that indicate the test procedure, and

standardisation work is underway, so that an agreed measurement standard (including Mandate 550 from the European Commission to CEN/CENELEC by 2013) is expected to be available by 2020 when measures start to apply. In any case, a transitional method is foreseen to cover this issue in the meantime.

#### 4. Verification procedure for market surveillance purposes

The procedure to be used by market surveillance authorities to verify the compliance of light sources and separate control gears in scope of this Regulation has been changed compared to the formulation in the three existing regulations. In general, the procedure has been aligned with the common approach used in Commission Regulation (EU) 2016/2282<sup>(22)</sup>, 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 making them more realistic. Activities to further discuss the tolerances with experts are ongoing.

#### 5. Date for evaluation and possible revision

The Regulation is to be reviewed no later than 1 September 2022. The topics to be at least considered during the revision are indicated in Article 9 of the proposed Regulation.

#### 6. Repeal

The existing ecodesign regulations for lighting products (Commission Regulation (EC) No 244/2009, Commission Regulation (EC) No 245/2009 and Commission Regulation (EU) No 1194/2012) will be repealed from 1 September 2020. The new requirements of this Regulation will apply from the same date.

### **Legal basis**

The legal basis of Directive 2009/125/EC on the Ecodesign of Energy-related Products is Article 114 TFEU (ex Article 95 TEC)<sup>(23)</sup>. The article mentions specifically amongst others ‘*the establishment and functioning of the internal market*’ (Art. 114.1) and a high level of protection for ‘*health, safety, environmental protection and consumer protection, will take as a base*’ (Art.114.3).

The proposed Regulation is an implementing measure adopted pursuant to Directive 2009/125/EC, in particular Article 15(1) thereof. The legal basis for the review of the existing ecodesign regulations for lighting products is the review clause of those regulations (Article (7) or (8) depending on the Regulation).

In the Commission’s Ecodesign Working Plan 2016-2019<sup>24</sup> the revision of the implementing acts for lighting products is mentioned as one of the major energy saving opportunities, with anticipated 125 TWh per year of primary energy savings in 2030 (combined effect of ecodesign and energy labelling).

### **Subsidiarity principle**

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<sup>22</sup> OJ L 346, 20.12.2016, p.51.

<sup>23</sup> The Treaty on the European Communities (TEC) was replaced by the Treaty on the Functioning of the European Union (TFEU) entering into force 1.12.2009, following the Lisbon Treaty of 13.12.2007. This led to the transposition of various articles, e.g. Article 95 TEC was moved to Article 114 TFEU. Ecodesign directive 2009/125/EC was defined under the TEC, whereas the recast of the Energy Labelling Directive 2010/20/EU was defined under the TFEU.

<sup>24</sup> COM(2016) 773 final, Brussels, November 2016.

Light sources and separate control gears are global products for which it is appropriate to have the same requirements at least in the entire EU. The adoption of ecodesign measures by individual Member States, through their national legislation, would create obstacles to the free movement of goods within the EU. The three existing ecodesign regulations for lighting products have successfully avoided this. The proposed substitution of these three regulations by a single Regulation for light sources and separate control gears is a simplification that reduces the administrative burden for industry and that facilitates compliance verification by market surveillance. In line with the principle of subsidiarity, it is thus appropriate for the measures in question to be adopted at EU 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 which is to set harmonised ecodesign requirements for light sources and separate control gears. As clarified by the above description of the scope and the exemptions, the Regulation does not apply to many small lamps (below 60 lm light output, light sources in portable battery-operated equipment, light sources on bicycles and similar) where the administrative burden for industry and the verification burden for market surveillance would outweigh the small energy savings that could be obtained.

### **Choice of instrument**

The proposed form of action is a directly applicable Commission Regulation implementing Directive 2009/125/EC. This continues the current practice of the existing three ecodesign regulations for lighting products, but simplifying and modernising..

## **4. BUDGETARY IMPLICATION**

The proposal has no implications for the EU budget.

## **5. ADDITIONAL INFORMATION**

### **Review/revision/sunset clause**

The proposal includes a review clause.

### **European Economic Area**

The proposed Regulation concerns an EEA matter and should therefore extend to the European Economic Area.