

Texte zu EU-Regelungen zur umweltgerechten Produktgestaltung und zur Energieverbrauchskennzeichnung in der Beleuchtung – Zusammenstellung <sup>[1]</sup> des Umweltbundesamtes (UBA), Deutschland



## Studien der EU-Kommission

Anträge auf Erneuerung verschiedener Ausnahmeregelungen nach Richtlinie 2011/65/EU (RoHS) <sup>[2]</sup>:

### Studie vom 8. Mai 2020

– Herstellerverband LE <sup>[3]</sup> zu Auswirkungen eines frühen Aus' für Leuchtstofflampen (9. Juni 2020): Originalversion –

*Hinweis: Bitte beachten Sie, daß der angehängte Text nur in Englisch verfaßt ist.*

**EN:** Information on EU Lighting Regulations – Ecodesign and Energy Labelling – Compilation <sup>[1]</sup> of the Federal Environment Agency (UBA), Germany

## Studies of the EU Commission

### Requests for renewal of various exemptions under Directive 2011/65/EU (RoHS) <sup>[2]</sup>

– Study of 8. May 2020: Industry Association LE <sup>[3]</sup> on the impact of an early phase out of fluorescent lamps (9 June 2020): Original version –

**FR:** Informations sur réglementations de l'UE concernant l'éclairage – l'écoconception et l'étiquetage énergétique – Compilation <sup>[1]</sup> de l'Agence Fédérale de l'Environnement (UBA), Allemagne

## Études de la Commission européenne

### Demandes de renouvellement pour diverses exemptions pertinentes accordées par la directive 2011/65/UE (LdSD) <sup>[2]</sup>

– Étude du 8 mai 2020 : L'association de producteurs LE <sup>[3]</sup> sur l'impact d'une élimination précoce des lampes fluorescentes (9 juin 2020) : Version originale –

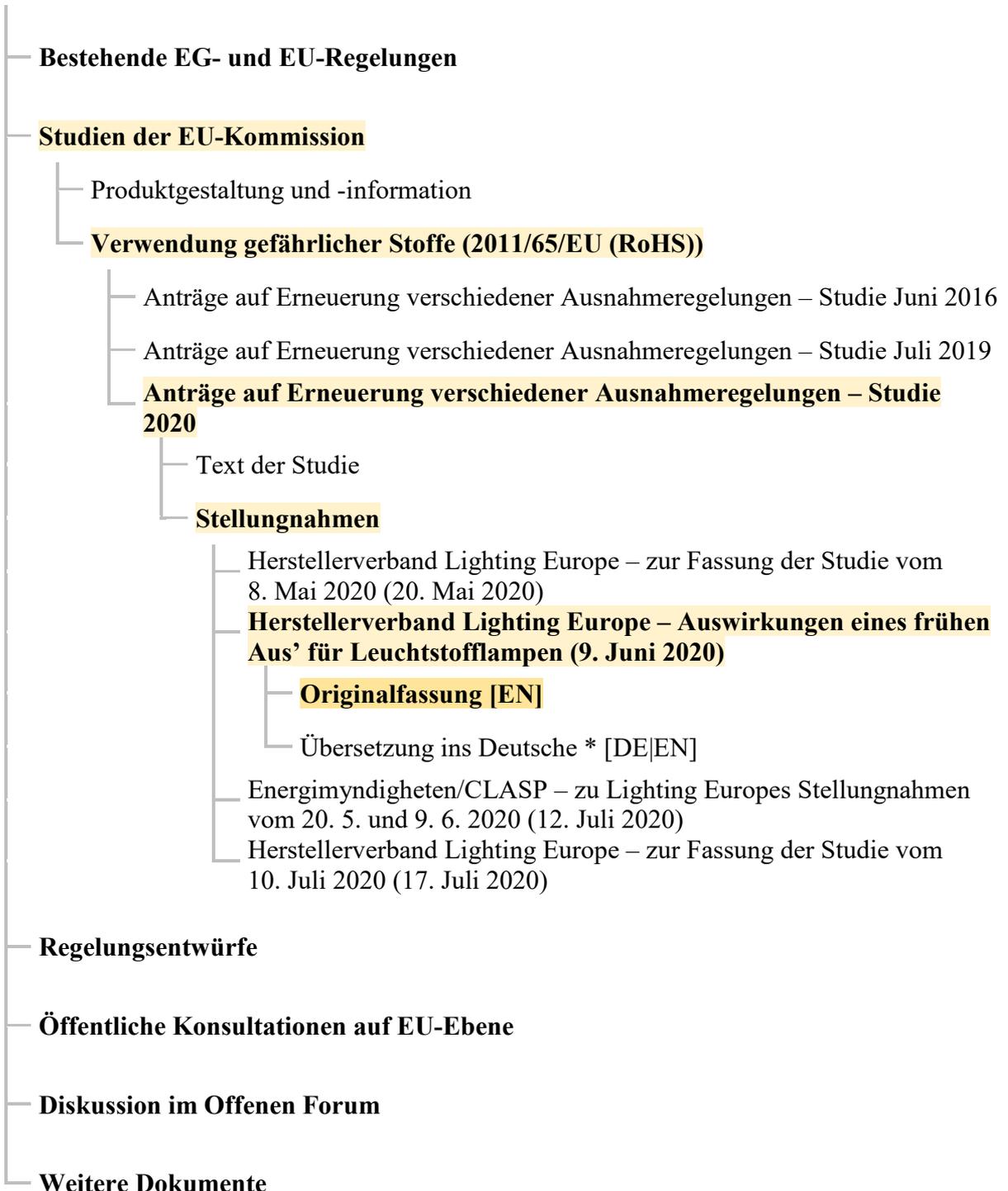
<sup>[1]</sup> <https://www.eup-network.de/de/eup-netzwerk-deutschland/offenes-forum-eu-regelungen-beleuchtung/dokumente/texte/>

<sup>[2]</sup> [https://www.eup-network.de/fileadmin/user\\_upload/Lichtquellen\\_RL\\_2011\\_65\\_DE.pdf](https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2011_65_DE.pdf); \*EN.pdf; \*FR.pdf

<sup>[3]</sup> LE = Lighting Europe; <http://www.lightingeurope.org/>

Texte im Offenen Forum

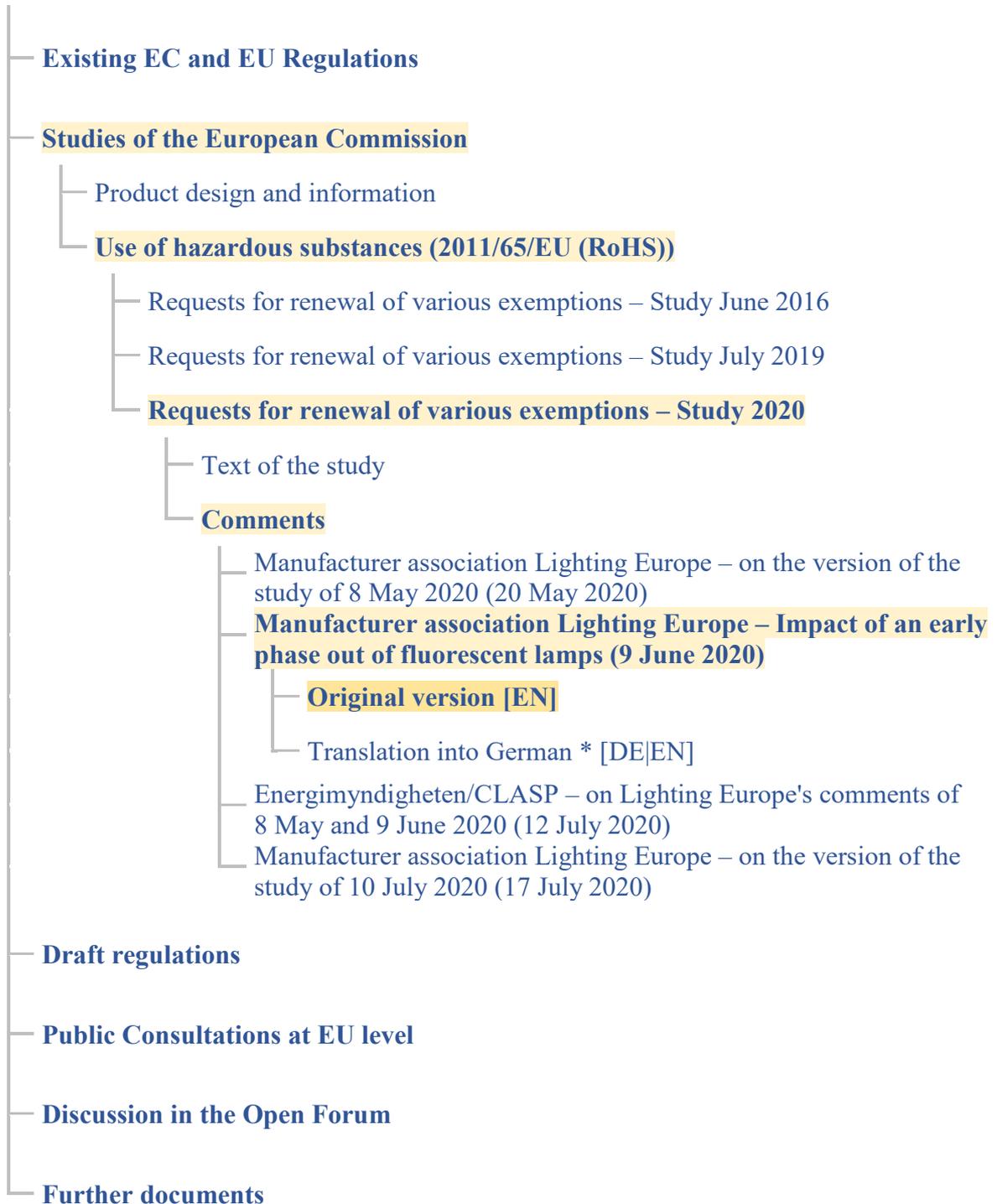
(abc = vorliegender Text)



\* Stand 16. Juli 2021: Dieser Text steht noch nicht zur Verfügung.

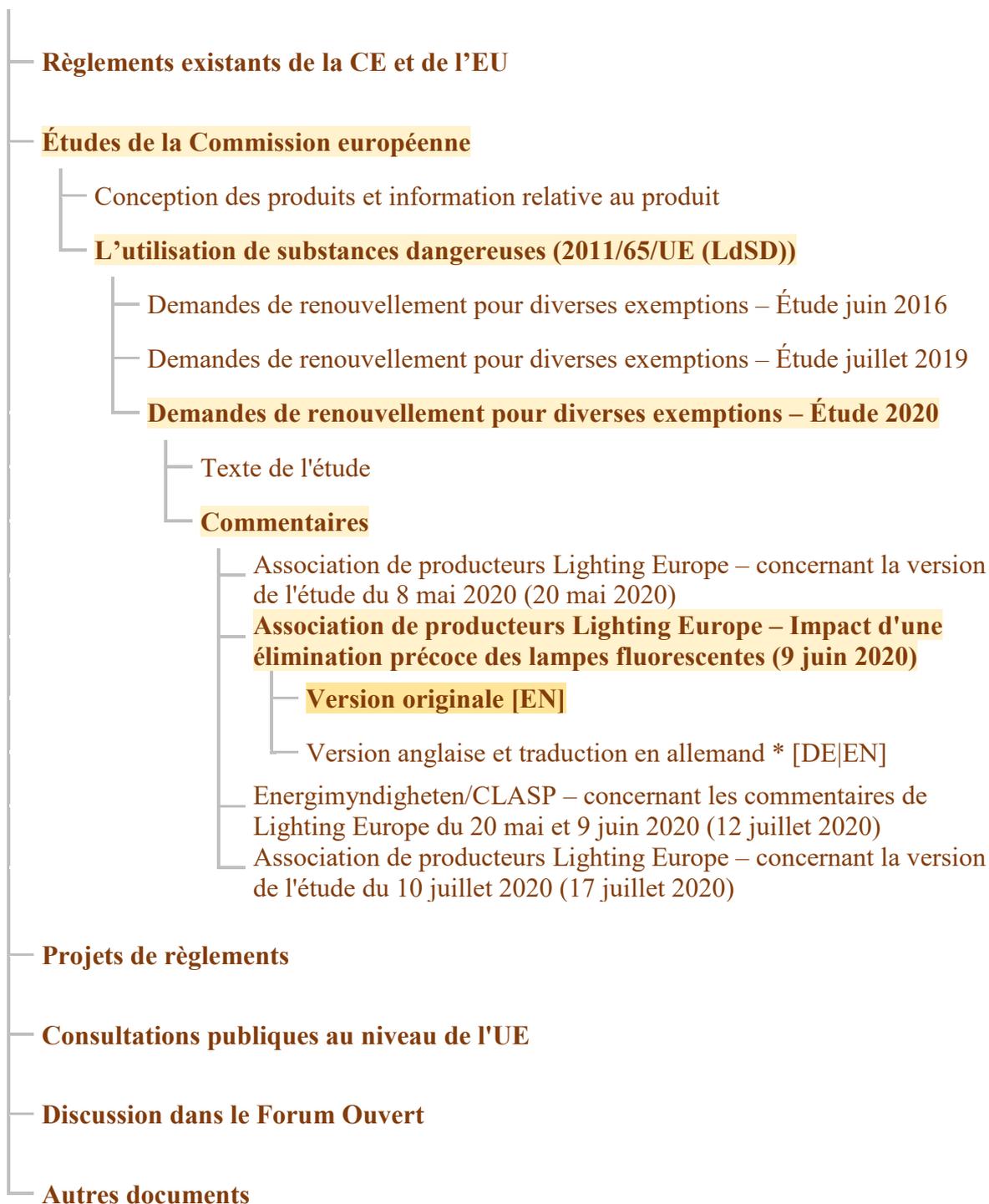
## Documents in the Open Forum

(abc = text at hand)



\* Status as of 16 July 2021: This text is not yet available.

Abbreviations: ● EC = European Communities ● EU = European Union



\* État au 16 juillet 2021 : Ce texte n'est pas encore disponible.

Abréviations : ● CE = Communauté européenne ● UE = Union européenne

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Nach Seite VI folgt ein unveränderter Originaltext.

**EN:** After page VI follows an unchanged original text.

**FR:** Après la page VI suit un texte original inchangé.

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**LIGHTINGEUROPE**  
THE VOICE OF THE LIGHTING INDUSTRY

# LightingEurope Calculations

## Potential impact of an early phase out of most fluorescent lamps subject to RoHS 2015 exemption renewal requests

LightingEurope believes that the data and conclusions in the Oeko May 2020 document, which are based on the input of 1 stakeholder only, are incorrect and misleading.

LightingEurope objects that the data we supplied to the European Commission in January 2020 as part of our applications to renew the RoHS exemptions for lighting beyond 2021, and in our letters to the European Commission in November 2019 and in January and February 2020 have not been acknowledged nor taken into account in the new Oeko document circulated on 11 May 2020<sup>1</sup>.

We have not yet received a response from the European Commission on what this new Oeko document constitutes, how it relates to the process to evaluate the 2015 RoHS renewal applications for lighting and why the data LightingEurope submitted has been neither acknowledged nor taken into account in this new document.

**LightingEurope represents over 1000 companies and expects that all data from all stakeholders is evaluated when considering the impact of renewing or discontinuing the RoHS exemptions for lighting.**

In the interest of transparency and due process, LightingEurope has used the data we submitted to the Commission in November 2019, January and February 2020 and calculated the impact of an early phase-out in September 2021 of CFL-ni, T5 and T8 lamps (the lamps that are addressed by the new Oeko document) by using the data of the 2019 VHK model as provided in the Oeko 2020 document.

Member states have already evaluated and voted on the impact of phasing out these products due to the 2019 Ecodesign Directive: a ban of CLF-i takes effect as of 1 September 2021 and a ban of most T8 lamps will take effect as of 1 September 2023.

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<sup>1</sup> “Update of the data provided by the analysis model developed in the course of the “Study to assess socioeconomic impact of substitution of certain mercury-based lamps currently benefiting of RoHS 2 exemptions in Annex III” published on the 11th of May 2020, available at the link here: [https://rohs.exemptions.oeko.info/fileadmin/user\\_upload/reports/RoHS\\_SEA\\_Lamps\\_2020\\_Revision\\_Final\\_08052020.pdf](https://rohs.exemptions.oeko.info/fileadmin/user_upload/reports/RoHS_SEA_Lamps_2020_Revision_Final_08052020.pdf)

## LightingEurope assessment of a phase out of most fluorescent lamps subject to RoHS 2015 exemption renewal requests in 2021:

### Additional investment costs

- **133 billion € additional investment costs** for public authorities and private companies/users, mainly to be borne until 2025, the split per lamp type is:
  - **CFL-ni** additional investment cost **17 billion €**
  - **T5** additional investment cost **78 billion €**
  - **T8** additional investment cost **38 billion €**
- The split of the estimated additional investment costs to be incurred **per EU Member State** is found in Annex I.
- **1232 (kg) total mercury** going into the environment until 2035 – the socio-economic impact outweighs the environmental benefits:
  - **CFL-ni** investment cost **70 Mio €/kg mercury**
  - **T5** investment cost **146 Mio €/kg mercury**
  - **T8** investment cost **84 Mio €/kg mercury**
- **702 (Mio kg)** average unnecessary and avoidable **waste** generated until 2035.

### Practical consequences for users in case of an early phase out in 2021:

An early phase out will create a disruption on the market, both on the supplier and customer side. Below is the possible impact for users<sup>2</sup>:

#### **About 50% of retrofit solutions are not compatible with installed luminaires:**

- In the absence of **functioning substitutes**, users will need to allocate sufficient resources to rewire or replace existing luminaires. Hence the high costs above.
- Rewiring and replacing luminaires requires new **certification** to ensure the safety and quality of the product.
- Planning for **new installations** and related investments usually takes up to 3 years, which means users will not have sufficient time to prepare.
- Users will **stockpile** spare parts, because they will not have had the time to accumulate the necessary resources and expertise to transition to alternatives.
- Manufacturers of compliant products will struggle to ramp up production of (higher priced) alternative technologies (demand replacement).
- A sudden ban will create high demand for new LED luminaires and LED lamps, resulting in **higher prices** for users.
- Phase-outs should be aligned to the **luminaire replacement cycles** (typically 14 years) to allow users time to allocate the sufficient resources to transition to the alternative technology. The users of these products, together with LightingEurope, have repeatedly called for a smooth transition timetable ([2018 Joint Statement](#)).

#### **Spare parts should be available for users in accordance with Article 4 RoHS:**

- This will avoid luminaire replacement costs, market disruption and unnecessary waste.
- The **right to repair** is promoted in the EU Circular Economy Action plan March 2020<sup>3</sup>.
- Users may buy **products online**, where compliance with CE marking and product safety and quality requirements is not ensured.

<sup>2</sup> Users that will have to prepare for the ban are mostly public authorities, as these lamps are found in public places (public administration buildings-municipalities, ministries etc., metro and train stations, hospitals, schools, theaters, streets, industrial sites, offices, hotels, convention centers etc.). In addition, they are used in commercial places, offices, garages, production plants, food industry, agriculture, etc.

<sup>3</sup> EU Circular Economy Action Plan, March 2020 available here, [https://ec.europa.eu/environment/circular-economy/pdf/new\\_circular\\_economy\\_action\\_plan.pdf](https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf)

- Without access to compatible and functioning spare parts, users will have to **discard essential applications prematurely** (e.g. emergency lighting and modern daylight controlled dimming installations – see Annex II). Many businesses and municipalities were incentivised by government programmes to invest in efficient fluorescent lamps (especially T5) only a few years ago and need spare parts to recuperate their investments.<sup>4</sup> Currently, nearly all new installations for general lighting are based on LED technology.

#### **Impact on employment:**

- Thousands of employees in EU factories as well as in supply channels that today produce these lamps will not be able to move on to other jobs, such a transition requires time and training and has been planned according to the timetable voted on under the EU Ecodesign rules.
- The Oeko 2019 assessment calculates up to 27,500 additional temporary electrician jobs for CFL-ni and up to 55,000 jobs for LFL to manage a fast transition during a few years' time. In a premature phase-out, Member States must ensure that enough trained electricians are available and have the skills to install new luminaires, to avoid causing health and safety issues for individuals, as well as legal risks for enterprises in case of violations of workplace laws.

#### **Article 5(1)(a) RoHS Criteria for granting an exemption are satisfied:**

- Substitutes are not available for all applications and products.
- Alternatives, like most electronics, contain RoHS Annex II restricted substances.
- A premature phase-out will result in significant costs and unnecessary and avoidable waste.
- LightingEurope has put forward a proposal which will result in a significant reduction in mercury placed on the EU market, in line with the objectives of RoHS (see Annex III).

#### **LightingEurope asks that all data from all stakeholders is evaluated when considering the impact of renewing or discontinuing the RoHS exemptions for lighting.**

LightingEurope expects that recent data on the impact post 2021 is reviewed in a lawful, fair and transparent way by all stakeholders impacted by these exemptions, including the many who were neither made aware of nor invited to provide feedback to the February 2020 meeting. LightingEurope has submitted feedback and data in response to the European Commission's request on at least 4 occasions.<sup>5</sup>

#### **Contacts**

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#### **About LightingEurope**

LightingEurope is the voice of the lighting industry, based in Brussels and representing 33 companies and national associations. Together these members account for over 1,000 European companies, a majority of which are small or medium-sized. They represent a total European workforce of over 100,000 people and an annual turnover exceeding 20 billion euro. LightingEurope is committed to promoting efficient lighting that benefits human comfort, safety and well-being, and the environment. LightingEurope advocates a positive business and regulatory environment to foster fair competition and growth for the European lighting industry. More information is available at [www.lightingeurope.org](http://www.lightingeurope.org).

<sup>4</sup> Impact Assessment EU Ecodesign & labelling of light sources - paragraph 5.3.2 of part 1, p.28.

<sup>5</sup> Documents: 8 November 2019 [LE - RoHS 2015 applications compatibility and waste - 20191108 - FINAL]; 21 February 2020 [LE - Comments to Stakeholder Meeting 12 February 2020 - 20200221 - FINAL]; 20 May 2020 [LE Concerns - Revised Oeko SEIA 2020 - 20200520 - FINAL].

## Annex I – Breakdown of investment costs for Member States

CFL-ni, T5 and T8 lamps are found primarily in public spaces.<sup>6</sup> Public authorities will also have to cover a significant part of the cost of transitioning to LED alternative.

Explanation of methodology: We use the data for total lamps sales by LightingEurope members in 2019 in all 27 EU Member States, we multiply the market share of these lamps per country and the total costs calculated in the LE scenario.

Country	Costs CFL-ni (Mio €)	Costs T5 (Mio €)	Costs T8 (Mio €)	Total costs (Mio €)
<b>Austria</b>	424	2797	954	<b>4175</b>
<b>Belgium</b>	357	2269	769	<b>3395</b>
<b>Bulgaria</b>	54	171	284	<b>509</b>
<b>Croatia</b>	300	1670	765	<b>2735</b>
<b>Cyprus</b>	16	142	101	<b>259</b>
<b>Czech Republic</b>	299	1635	1265	<b>3199</b>
<b>Denmark</b>	454	1810	512	<b>2776</b>
<b>Estonia</b>	59	269	132	<b>460</b>
<b>Finland</b>	505	1753	570	<b>2828</b>
<b>France</b>	1997	8798	5424	<b>16220</b>
<b>Germany</b>	5451	24914	9636	<b>40000</b>
<b>Greece</b>	180	1083	556	<b>1819</b>
<b>Hungary</b>	222	1043	625	<b>1890</b>
<b>Ireland</b>	137	858	267	<b>1262</b>
<b>Italy</b>	1434	5733	4933	<b>12100</b>
<b>Latvia</b>	25	120	114	<b>259</b>
<b>Lithuania</b>	40	201	310	<b>551</b>
<b>Luxembourg</b>	20	128	54	<b>202</b>
<b>Malta</b>	15	64	28	<b>107</b>
<b>Netherlands</b>	1358	5845	1349	<b>8551</b>
<b>Poland</b>	549	3135	3065	<b>6749</b>
<b>Portugal</b>	742	2105	918	<b>3764</b>
<b>Romania</b>	107	493	784	<b>1384</b>
<b>Slovakia</b>	103	613	324	<b>1040</b>
<b>Slovenia</b>	76	391	238	<b>705</b>
<b>Spain</b>	1356	2704	2134	<b>6195</b>
<b>Sweden</b>	1138	6937	1550	<b>9625</b>
<b>Total EU-27</b>	<b>17418</b>	<b>77682</b>	<b>37661</b>	<b>132760</b>

<sup>6</sup> See footnote 2.

## Annex II Overview of compatibility issues

As existing luminaires contain internal electronic drivers of many different topologies and manufacturers, many of them cannot function with newly designed LED substitutes in significant parts of installations or applications. Publicly available technical guidance documentation from companies (e.g. [PHILIPS brand](#), [OSRAM brand](#) and [Tungsram](#)) illustrates that LED substitutes are not compatible with many installed lighting fixtures or applications, and warranty does not apply, due to:

- 1) **Flicker** - effect of light variations which are annoying and fatiguing/not healthy for users.
- 2) **Light specification out of range** – light levels will not meet required application specifications for LED substitutes due to variations in installed electronics in luminaires.
- 3) **Emergency Lighting** - EL luminaires are obligatory to avoid casualties in case of emergencies to facilitate safety during evacuations in case of emergencies (e.g. fire, smoke etc) and mandatory for public buildings e.g. offices, theatres, schools, elderly homes, hospitals, public transport etc. Due to strict IEC and EN safety standards, LED lamps are not allowed to be used in installed conventional EL luminaires, as these are only certified for conventional lamps.<sup>7</sup>
- 4) **Dimming installations** – used in modern daylight-controlled offices, conference rooms, theatres, cinemas, hospital rooms etc. Many LED tubes are not allowed to dim due to e.g. flicker or temperature problems of components inducing early lifetime failures for electronic driver and LED lamp.
- 5) **Serial lamp connections** - Rectangular luminaires are used in many office and shop applications where 4 lamps are operated by 2 magnetic drivers. Therefore, 2 lamps operate in a serial circuit connection which is not allowed for many LED tube lamps.
- 6) **Water protected luminaires** - used in car parking's, home garages, industry halls, food industry, streetlighting, train- and metro stations etc., where most LED retrofit lamps cannot be used as one-to-one replacements.
- 7) **EMC** - Electro Magnetic Compatibility problems can happen due to driver/wiring combinations which can disturb electronic (IT) equipment when the originally designed conventional lamp is substituted by different electronic LED lamp designs.
- 8) **Light distribution problems** due to the narrow beam of LED lamps compared to wide beams of conventional lamp, inducing inhomogeneous light levels and zebra effects.
- 9) **DC operation applications** for conventional lamps e.g. battery-operated applications like boats, trucks, trains. LED lamps are not suited for these applications.
- 10) **B and C brand driver compatibility** - is unclear as these drivers were not tested. Only A-brand compatibility table data are tested and listed.

Please note that the above references of LightingEurope are based on the experience of many manufacturers and for all lamp types.

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<sup>7</sup> See standards IEC 62776 & EN 60598-2-22.

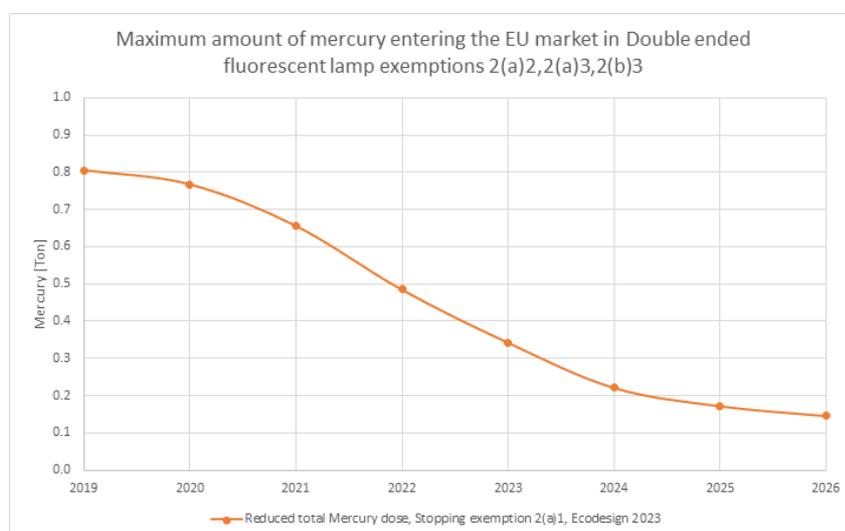
## Annex III – Mercury placed on the market from lighting products

Compared to the total mercury release from the main anthropogenic sources in the EU (77.2 ton)<sup>8</sup>, the proportion of mercury placed on the EU market by lighting LFL T8, T5 and non-linear products, is limited to below 1 metric ton per year and shows a steady decrease since many years due to continuous innovation by LightingEurope companies, enabling lower RoHS Mercury limits.

The current amount of Mercury release by these lamp types is 0.33 % of the total EU Mercury release in 2020 and decreasing to 0.1% in 2026. These values are calculated based on the EU Melissa model, an average lamp dosing value of 1/3 lower than the max RoHS limit and more than 50% recycling of all lamps.<sup>9</sup>

Total Mercury release (metric ton per year)	2020	2022	2026
Average dosage LFL T8, T5, & non-linear	0.51	0.33	0.1
Released in environment	0.25	0.16	0.05

Ratio (%) of total EU release	2020	2022	2026
Average dosage LFL T8, T5, & non-linear	0.7%	0.4%	0.2%
Released in environment	0.3%	0.2%	0.1%



Boundaries considered:

- Melissa model 2017
- Average dose of lamp is 2/3 of max RoHS dose
- Recycling of lamps is > 50%

<sup>8</sup> Page 12 of United Nations, Global Mercury Assessment, 2018:

<https://wedocs.unep.org/bitstream/handle/20.500.11822/27579/GMA2018.pdf?sequence=1&isAllowed=y>

<sup>9</sup> [Eucolight biennial report](#)