



## Mercury Policy Project

### Environmental NGOs Feedback on draft Delegated Directive for RoHS Exemption Categories 2a1-5 Double-Capped Linear Fluorescent Lamps

16 July 2021

The European Environmental Bureau, the Mercury Policy Project, and the Responsible Purchasing Network<sup>1</sup> welcome the draft proposals from the European Commission to finally revise the annex of the RoHS directive concerning lighting, despite coming with a [5-year delay](#).

As per our letters sent in December 2019 and January 2020<sup>2</sup>, February 2020<sup>3</sup> and February 2021,<sup>4</sup> we strongly urge the European Commission and DG Environment to review and remove exemptions for virtually all fluorescent and most high-intensity discharge (HID) lamps under the Restriction of Hazardous Substances for Electric and Electronic Products (RoHS) Directive, which based on the evidence, we conclude are no longer needed or justified. Phase-outs should take place at the earliest possible date, mainly for the larger categories including compact fluorescent lamps (CFLs), linear fluorescent lamps (LFLs), and low-wattage HID lamps used for general lighting applications.

Although the validity of the existing exemptions expired in July 2016, the delay in an actual decision by the Commission has led to these lamps still being allowed on the EU market, contributing to mercury pollution as well as much more expensive lighting. While more energy efficient mercury-free alternatives are available.

Mercury and its compounds are highly toxic to the developing nervous system as well as harmful to ecosystems and wildlife. Methylmercury, its most toxic form, has the capacity to bioaccumulate and bioconcentrate, especially in the aquatic food chain.

The EU via its 2005 mercury strategy, accompanied measures and as Party to the Minamata Convention on Mercury has as its objective to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds.

---

<sup>1</sup> NGOs include the **European Environmental Bureau, (EEB)**, [www.eeb.org](http://www.eeb.org), is a federation of more than 170 environmental citizens' organisations based in over 35 countries in Europe. These organisations range from local and national, to European and international. The aim of the EEB is to protect and improve the environment of Europe and to enable the citizens of Europe to play their part in achieving that goal.

The **Mercury Policy Project (MPP)**, a project of the Tides Center, [www.mercurypolicy.org](http://www.mercurypolicy.org), works to promote policies to eliminate mercury uses, reduce the export and trafficking of mercury, and significantly reduce mercury exposures at the local, national, and international levels. We strive to work harmoniously with other groups and individuals who have similar goals and interests.

The **Responsible Purchasing Network**, [www.responsiblepurchasing.org](http://www.responsiblepurchasing.org), is a non-profit organization based in the United States that helps government agencies, institutions and businesses to specify, evaluate and purchase environmentally preferable goods and services.

<sup>2</sup> <https://eeb.org/library/making-the-case-for-a-ban-on-mercury-lamps/>

<sup>3</sup> <https://eeb.org/library/mercury-containing-lamp-exemptions-to-rohs-directive/>

<sup>4</sup> <https://eeb.org/library/why-hasnt-the-european-commission-banned-wasteful-lamps/>

Furthermore, most recently, under the European Green Deal, the EC has pledged 'to ensure a toxic-free environment', to 'help to protect citizens and the environment better against hazardous chemicals and encourage innovation for the development of safe and sustainable alternatives'.

Given the global implications of the RoHS directive, making definitive decisions without further delay to end the exemptions for compact and linear fluorescent lamps, will confirm and demonstrate the EU's commitment to the health and environmental objectives described above.

## 1. Introduction

As explained in our comments below, equivalent products with no mercury are widely available in the European marketplace and around the globe as lamp makers often advertise. They are listed in the online catalogues of multiple large and small lighting manufacturers such as Osram, Tungsram and Philips. Most importantly, drop-in replacement light-emitting diode (LED) *mercury-free* lamps, retrofit kits and fixtures are not only widely available but are also more energy-efficient and have a longer rated life than most types of fluorescent and HID lamps used for general lighting applications. In addition, LEDs are now cost competitive, giving consumers the opportunity to save money when cut energy, replacement, and waste disposal costs are considered.

It is clear that the lighting sector is a fast improving one in term of availability, performance and price of LED lamps; therefore, policy decisions can and should go beyond of the current market as relevant.

Moreover, LEDs are more acceptable to consumers than CFLs and other types of mercury-added lamps because they are more easily dimmable and give off a higher quality of light. They also last longer, which benefits consumers' pocketbooks because LEDs don't have to be replaced as often. In addition, they don't break as easily. According to *Business Matters Magazine*<sup>5</sup>, there are many benefits to using LEDs, including:

1. LED lights last far longer than incandescent or halogen bulbs.
2. They are highly energy-efficient, converting most of their energy into light, rather than heat.
3. They are ecologically sound because they are mercury-free and have a long life, reducing the user's carbon footprint.
4. LEDs are very tough and durable, making them able to "stand up to harsh weather, vibrations, shocks, and abrasions."
5. LEDs are a safe light source, that can offer excellent colour rendering and great quality light; they have almost no UV emissions, making them good options for museums and food pantries,
6. LEDs offer great design flexibility: "LED light arrays can be placed and combined in an infinite number of ways to produce efficient – but also controllable – illumination. The colour, shade, brightness and distribution of light can be controlled to perfection, which makes for not only technically-useful lighting, but also soothing, uplifting or energising mood lighting."
7. They work well in extreme temperatures, including freezers, unlike most fluorescent lamps.
8. They work instantly with no warm-up time and can be turned on an off many times without reducing their performance.
9. They work on low-voltage power, so they can be used outside.

---

<sup>5</sup> "The Top Nine Benefits of Using LED Bulbs," *Business Matters Magazine*, 10 November 2016, <https://www.bmmagazine.co.uk/in-business/top-nine-benefits-using-led-bulbs/>

## 2. Analysis and recommendation

Our comments below refer to draft delegated acts concerning the following lamp category:

**Proposed exemptions 2(a)(1-5): Mercury in Double-Capped Linear Fluorescent Lamps for General Lighting Purposes Not Exceeding the Following Values (Per Lamp):**

**2(a)(1) Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 4 mg:**

**2(a)(2) Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 3 mg;**

**2(a)(3) Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8): 3,5 mg;**

**2(a)(4) Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 3,5 mg;**

**2(a)(5) Tri-band phosphor with long lifetime (≥ 25 000 h): 5 mg.**

COM proposals for Exemption as per Directive 2011/65		COM proposals	EEB/ RPN/MPP Recommendation
<b>2a Mercury in Double-Capped Linear Fluorescent Lamps for General Lighting Purposes not Exceeding the Following Values (Per Lamp):</b>			
2(a)(1)	<i>Tri-band phosphor with normal lifetime and a tube diameter &lt; 9 mm (e.g. T2): 4 mg</i>	<i>Expires on [PO: 12 months after the adoption of the Delegated Directive]</i>	<b>We recommend that all of these exemptions be revoked with a 12-month transition period, especially T5 and T8s.</b>
2(a)(2)	<i>Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 3 mg</i>	<i>Expires on [PO: 18 months after the adoption of the Delegated Directive]</i>	
2(a)(3)	<i>Tri-band phosphor with normal lifetime and a tube diameter &gt; 17 mm and ≤ 28 mm (e.g. T8): 3,5 mg</i>	<i>Expires on [PO: 18 months after the adoption of the Delegated Directive]</i>	
2(a)(4)	<i>Tri-band phosphor with normal lifetime and a tube diameter &gt; 28 mm (e.g. T12): 3,5 mg</i>	<i>Expires on [PO: 12 months after the adoption of the Delegated Directive]</i>	
2(a)(5)	<i>Tri-band phosphor with normal lifetime (≥ 25 000 h): 5 mg</i>	<i>Expires on [PO: 12 months after the adoption of the Delegated Directive]</i>	

### Summary – 4000 characters text

**The European Environmental Bureau, the Responsible Purchasing Network and the Mercury Policy Project, recommend that all of linear fluorescent lamps under categories 2 (a) (1-5) exemptions be revoked with a 12-month transition period, especially T5 and T8s, as per our earlier submissions [in 2015](#) and [2020](#), and additional reasons below.**

We support the European Commission's proposal to phase out categories 2(a)(1) T2 and 2(a)(4) T12 fluorescent lamps in 12 months. The Ecodesign directive already phase out those categories by 1 September 2021.

We further support the Commission's proposal to phase out category 2(a)(5) for long-life linear fluorescent lamps in 12 months. LED replacement tubes already have a longer lifetime than fluorescent lamps and LED tubes are widely available at 60,000 – 70,000 hours, examples: [70k hour GE Current](#); [60k hour LEDvance](#); [60k hour Sylvania](#)]

**For categories 2(a)(2) T5 and 2(a)(3) T8 linear fluorescent lamps, we urge the Commission to revoke the exemption with 12 rather than 18 months transition,** for the following reasons:

- As confirmed by the European Commission's consultant Oeko Institut<sup>6</sup> (July 2020), there are significant environmental and socio-economic benefits by a 2021 phase out:

- €29.9 billion Euros net savings for Europe
- 309 TWh electricity savings (92.1 million metric tonnes CO<sub>2</sub>)
- 2.9 metric tonnes of Hg in lamps (+2.48 metric tonnes power station).

- Taken together, this category of double-capped linear fluorescent lamps was estimated to account for 34% of the mercury use in all lighting products in Europe. [Oko-Institut, 2016.](#)

- There are already thousands of direct, drop-in *mercury-free* LED retrofits available on the market (see p. 101 and 110 of this [Sweden-CLASP report](#) - [https://www.clasp.ngo/wp-content/uploads/2021/01/SEA-CLASP-Clarifications-on-Industry-Comments\\_final.pdf#page=102](https://www.clasp.ngo/wp-content/uploads/2021/01/SEA-CLASP-Clarifications-on-Industry-Comments_final.pdf#page=102))

- The compatibility of LED tubes is 91-93% with existing fluorescent fixtures, source: [Sweden-CLASP report](#), Table 9 on p.18]. ([https://www.clasp.ngo/wp-content/uploads/2021/01/SEA-CLASP-Clarifications-on-Industry-Comments\\_final.pdf#page=19](https://www.clasp.ngo/wp-content/uploads/2021/01/SEA-CLASP-Clarifications-on-Industry-Comments_final.pdf#page=19))

- There are important financial and mercury savings that have been lost due to delays already relative to [Oko-Institut report](#) published in July 2020, as estimated in the most recent [June 2021 CLASP study](#) (<https://www.clasp.ngo/research/all/how-many-years-does-it-take-the-european-commission-to-change-a-toxic-lightbulb/>) with a delay likely to be 2 years relative to Oko-Institut report calculation. Continuing to allow T5 and T8 (and CFLni) on the market, will cost bill-payers an estimated €16.8 million per day in lost efficiency savings for the next 2 years.

- Industry had ample time to adapt to these changes given that already the 2016 Oko institut report had recommended phase out of these lamps by January 2018. Furthermore it is regrettably clear that industry is [promoting a strategy to keep those lamps on the market for as long as possible](#), and therefore profiting from these delays, contrary to their sustainability claims from their own websites.

Therefore , it is imperative that no more delays occur in the decision-making process; otherwise mercury will keep being added to the environment, additional CO2 will be emitted into the atmosphere, and millions of Euros will be lost each day as [recent studies show](#).

<sup>6</sup> [https://ec.europa.eu/environment/pdf/waste/rohs\\_eee/Study%20on%20the%20socio-economic%20impact%20of%20substitution%20of%20certain%20mercury-based%20lamps%20-%20Update%202020.pdf](https://ec.europa.eu/environment/pdf/waste/rohs_eee/Study%20on%20the%20socio-economic%20impact%20of%20substitution%20of%20certain%20mercury-based%20lamps%20-%20Update%202020.pdf)

We strongly support the Commission's proposal to phase out T2 and T12 linear fluorescent lamps, revoking Exemptions 2(a)(1) and 2(a)(4) in 12 months, which is consistent with the EU's Ecodesign Directive scheduled phase-out of these products on 1 September 2021 because of their notoriously poor energy efficiency rating<sup>7</sup>.

We further support the Commission's proposal to phase out category 2(a)(5) for long-life linear fluorescent lamps in 12 months. LED replacement tubes already have a longer lifetime than fluorescent lamps and LED tubes are widely available at 60,000 – 70,000 hours, examples: [70k hour GE Current](#); [60k hour LEDvance](#); [60k hour Sylvania](#)]

**For categories 2(a)(2) T5 and 2(a)(3) T8 linear fluorescent lamps, we urge the Commission to revoke the exemption with 12 rather than 18 months transition**, also as per our earlier submissions [in 2015](#) and [2020](#), and for the following reasons:

1. As confirmed by the European Commission's consultant Oeko Institut<sup>8</sup>, there are significant environmental and socio-economic benefits by a 2021 phase out:
  - o €29.9 billion Euros net savings for Europe
  - o 309 TWh electricity savings (92.1 million metric tonnes CO<sub>2</sub>)
  - o 2.9 metric tonnes of Hg in lamps (+2.48 metric tonnes power station).
2. Taken together, this category of double-capped linear fluorescent lamps was estimated to account for 34% of the mercury use in all lighting products in Europe. [Oko-Institut, 2016](#)
3. Furthermore, according to the [Sweden-CLASP report: Clarifications on Europe's Comments to the RoHS Committee A report for the Committee on the Restriction of Hazardous Substances \(RoHS\) addressing Lighting Europe's Comments of 20 May and 9 June Relating to the Exemption Application for Fluorescent Lighting](#), there will be significant environmental and financial impacts if the Commission delays the phase-out of Exemptions for T8, T5 and CFLni fluorescent lamps, including:
  - Significant benefits with a Sept 2021 phase-out for CFLni, T5, T8 (avoided mercury use and CO<sub>2</sub> emissions, energy/lamp and electricity savings)
  - Mercury from lamps released (50-83% incorrect disposal), pollutes environment and is a health risk
4. There is **91-93% compatibility of LED lamps which can replace these** typical workplace linear fluorescent lamps (T5 and T8) **as there are already thousands of direct, drop-in mercury-free LED retrofit lamps available on the market**<sup>9,10</sup>, found from the websites of the European lamp manufacturers. It also needs to be noted that the Commissions

---

<sup>7</sup> <https://eeb.org/library/making-the-case-for-a-ban-on-mercury-lamps/>

<sup>8</sup> [https://ec.europa.eu/environment/pdf/waste/rohs\\_eee/Study%20on%20the%20socio-economic%20impact%20of%20substitution%20of%20certain%20mercury-based%20lamps%20-%20Update%202020.pdf](https://ec.europa.eu/environment/pdf/waste/rohs_eee/Study%20on%20the%20socio-economic%20impact%20of%20substitution%20of%20certain%20mercury-based%20lamps%20-%20Update%202020.pdf)

<sup>9</sup> <https://storage.googleapis.com/clasp-siteattachments/SEA-and-CLASP-analysis-of-RoHS-exemptions-for-fluorescent-lamps.pdf>

<sup>10</sup> <https://www.clasp.ngo/research/all/clarifications-on-lighting-europes-comments-to-the-rohs-committee/>

consultant had recommended already in 2016, a January 2018 phase out of T5 and T8 lamps, as it was evaluated that the LED market replacing those was already adequately mature.

These LED tube lamps, which typically have an A++ energy-efficiency rating, are more efficient and have a longer rated life than equivalent fluorescent T8 and T5 lamps. The Commission's proposal is consistent with the EU's Ecodesign Directive, which has already set to phase-out the most popular lengths (2-foot, 4-foot and 5-foot) of T8 linear fluorescent lamps on 1 September 2023. Moreover, while linear LED lamps (TLEDs) typically have a rated life of 50.000 – 70.000 hours, LFLs typically have a rated life about half as long, around 15.000 – 24.000 hours, with long life models typically at 25.000 – 36.000 hours (based on our market assessment of available products).

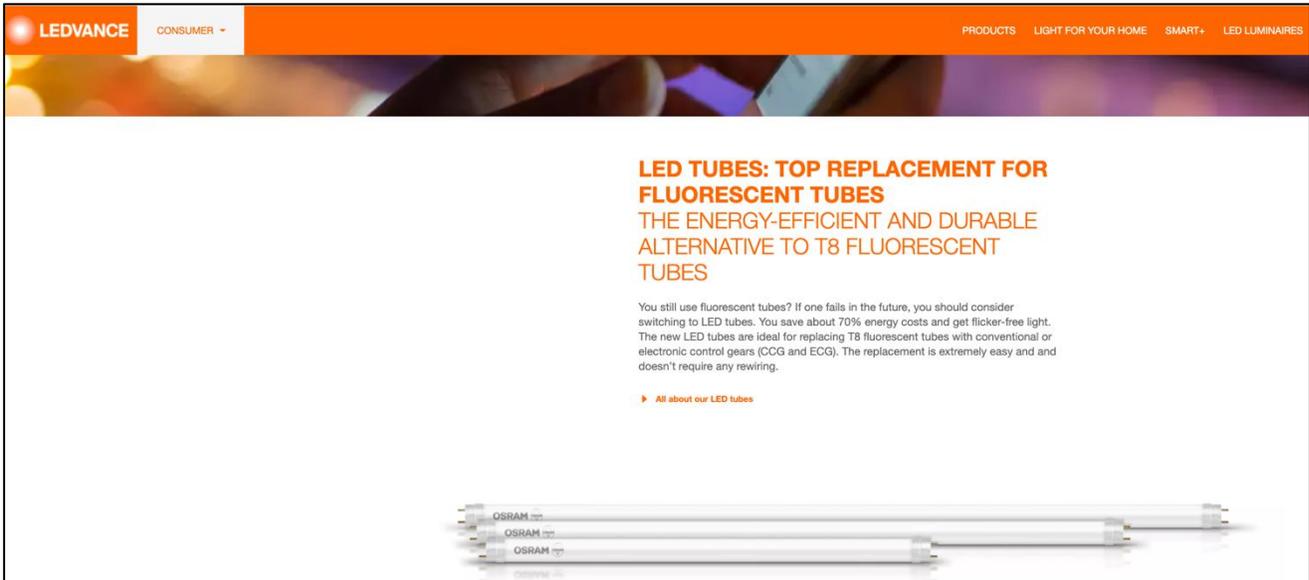
LED T8s and T5s are widely available in the European marketplace and globally. Examples include:

- [Tungfram's Ultra Glass T8](#) and [LED T8 Value Glass](#), which are two families of LED T8 lamps that have an A++ energy-efficiency rating and a rated life of 50.000 hours. See screenshots below.



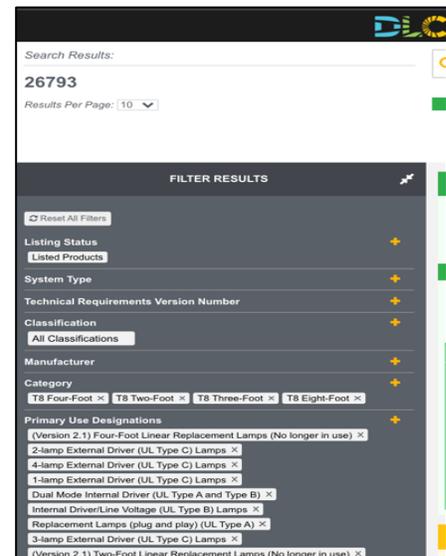
- [Philips MasterValue LEDTube MasterValue T8s](#) also have an A++ energy-efficiency rating and a 50.000-hour rated life. They are designed "to fit directly into luminaires operating on an electromagnetic ballast, an electronic HF-ballast or to the mains connection." The manufacturer describes the following benefits of these LED retrofit products:
  - Lower operating costs thanks to lower energy consumption
  - Lower maintenance costs due to longer life compared to conventional lamps
  - The fastest and easiest way to upgrade existing luminaires to LED technology through a completely safe product and installation process.
- [Philips' Instafit LED T8s](#) are a plug-and-play replacement option for various lengths and sizes of LFLs; they have a A++ energy-efficiency rating and a rated life of 60.000 hours.

- According to LEDVANCE (Osram Sylvania), its LED tube lamps reduce energy costs by 70% and “are ideal for replacing T8 fluorescent tubes with conventional or electronic control gears (CCG or ECG). The replacement is extremely easy and doesn’t require any rewiring.” See screenshot of marketing material for this family of LED tube lamps, below.



- [Tungrams LED T5 Premium Lamps](#) “offer more reliable and efficient way to convert existing Fluorescent luminaires to LED technology. This new LED product range offers energy saving replacements for HE 14W-28W-35W and HO 24W-54W-49W-80W Fluorescent tubes. The new LED tubes are designed to operate on 220-240VAC ‘Direct-to-Mains’ connection to maximise energy efficiency and avoid reliability & compatibility issues relating to HF ballast connection.” Similarly, these products have an A++ energy-efficiency rating and a 50.000-hour rated life.
- [Philips LED T5 Lamps](#), which have a A++ energy-efficiency rating, are designed to replace fluorescent T5 lamps, which at best have an A+ energy-efficiency rating. This manufacturer’s LED T5s have a rated life of 50.000 hours, while its [fluorescent T5s](#) have a rated life of 25.000 hours.

The [Design Lights Consortium \(DLC\)](#), which is a collaboration of utilities and lighting manufacturers based in the United States, currently lists over 26.000 models models of LED linear T8 lamps on its Qualified Products List as well as over 2600 models of LED linear T5s. While the DLC database does not cover Europe, the European market is expected to have a similarly large sample of models for sale.



5. There are **important financial and mercury savings that have been lost due to delays** already relative to [Oko-Institut report](#) published in July 2020, as estimated in the most recent [June 2021 CLASP study](#) with a delay likely to be 2 years relative to Oko-Institut report calculation. Continuing to allow T5 and T8 (and CFLni) on the market, will cost bill-payers an estimated €16.8 million per day in lost efficiency savings for the next 2 years.
6. - Industry had ample time to adapt to these changes given that already the 2016 Oko institut report had recommended phase out of these lamps by January 2018. Furthermore it is regrettably clear that industry is [promoting a strategy to keep those lamps on the market for as long as possible](#), and therefore profiting from these delays, contrary to their sustainability claims from their own websites.

Therefore , it is imperative that no more delays occur in the decision-making process; otherwise mercury will keep being added to the environment, additional CO2 will be emitted into the atmosphere, and millions of Euros will be lost each day as [recent studies show](#).

-----  
For more information please contact:

Elena Lymberidi-Settimo, Policy Manager “Zero Mercury Campaign”, European Environmental Bureau, T: +32 2 2891301, [elena.lymberidi@eeb.org](mailto:elena.lymberidi@eeb.org)

Alicia Culver, Executive Director, Responsible Purchasing Network T: +1 510-367-3676  
[alicia@responsiblepurchasing.org](mailto:alicia@responsiblepurchasing.org)