

Open Forum EU Policies on Lighting:
**EU legislative texts with an impact on the market supply of
fluorescent lamps**

– Background information by Christoph Mordziol, UBA –

* For changes from the previous version, see page 12.

This background text is also available in German: i) with the usual cover sheets and ii) without

i) https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Hintergrundtext_01_i1_DE.pdf

ii) https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Hintergrundtext_01_i1_DE_oV.pdf

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Summary

At EU level, there are three main legal texts concerning lighting products: These lay down requirements

- ① on ecodesign,
- ② on energy labelling and
- ③ on the restriction of the use of hazardous substances (RoHS).

There is a new regulation on ecodesign ① and on energy labelling ②, which will replace the previous regulations in 2021. Concerning the restriction of the use of hazardous substances ③ the EU Commission issued delegated acts in December 2021. These stipulate that, compared to the new regulation on ecodesign, a phase-out will be imposed on

1st significantly more types of fluorescent lamps and

2nd at an earlier date: February/August 2023.

The current exemptions from the very strict mercury limits will then no longer apply and fluorescent lamps used for general lighting will no longer be allowed be placed on the market:

Compact fluorescent lamps without integrated ballast



with pin base and 16 mm (T5) and 26 mm (T8) diameter fluorescent lamps (T5 and T8) with G5 or G13 sockets.

LED technology, like any other light-generating technology, has its limits of use. Furthermore:

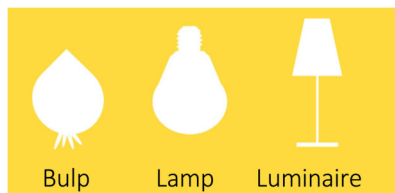
Switching to LED technology often requires luminaires to be converted or even replaced.

Further additional costs can be incurred by necessary

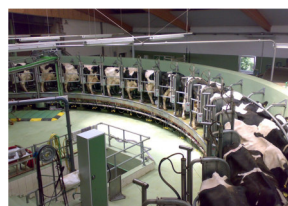
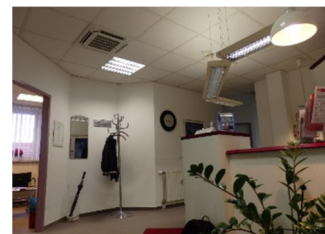
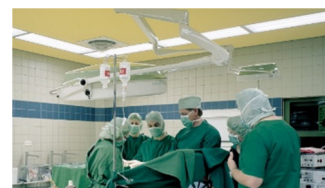
modifications to the lighting

system and by statutory regulations for lighting at workplaces.

Many operators of lighting systems in industry, commerce, trade and services, including local authorities, will be affected.



Meaning of terms in technical language






Note: This text deals with fluorescent lamps with the focus on general lighting. Lamps for special applications are only considered in passing.

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Comparison and timeline of EU legal texts

At EU level, there are three main regulations concerning lighting products. The following table shows a comparison of these regulations:

	①	②	③
	Ecodesign 	Energy labelling 	Restriction of use of hazardous substances (RoHS) 
	ecodesign	energy labelling	
responsible	DG Energy		DG Environment
Type of the legal texts	Regulation (Reg.)		Directive (Dir.)
Requirements on product design	<ul style="list-style-type: none"> • Energy Efficiency • further functionalities 	—	<ul style="list-style-type: none"> • Maximum value for contained <ul style="list-style-type: none"> ○ Mercury ○ ...
Requirements on product information ^[1]	<ul style="list-style-type: none"> • Functionalities 	<ul style="list-style-type: none"> • Energy Class A ... G • Functionalities (Product data base) 	
effective legal texts	Reg. 244/209/EU, 245/2009 and 1194/2012/EU	Reg. 874/2012/EU	Dir. 2011/65/EU
Discussion	2015/2016: Start of the discussion on ... Content of the regulations		possible extension of several exemptions

¹ concerning the new Regulations 2019/2020/EU and 2019/2015/EU

	① Ecodesign 	② Energy labelling 	③ Restriction of use of hazardous substances (RoHS) 
Present state	new regulation published: 2019/2020/EU + 2021/341/EU		Directive 2011/65/EU was amended by 12 delegated acts
Entry into force of the new rules	2019 / <u>2021</u> * / 2023	2019 / <u>2021</u> *	around mid-2023 **
* Main stage ** For more details, see the next section. *** The regulations on ecodesign ① and energy labelling ② were published in December 2019. In November 2020, a decision was taken on amendments. These serve primarily to eliminate errors (Regulations 2021/341/EU and 2021/340/EU). The creation of an exemption for long-life fluorescent lamps with a diameter of 26 mm, which was sought by Germany, was not supported by the majority of EU member states.			

In the legal texts with specifications on product design – the Regulation on ecodesign ① and the Directive on the Restriction of the Use of certain Hazardous Substances (RoHS-II Directive, in short: RoHS-II-RL) ③ – the so-called "placing on the market" is regulated. The operation of non-compliant products is not regulated.

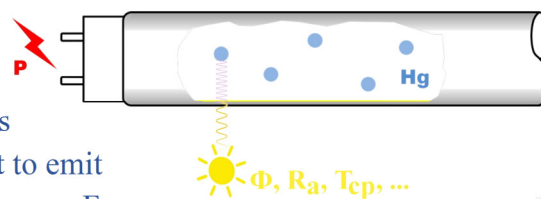
It is also the same that separate requirements apply from a fixed date. However, the legal texts differ as regards exemptions:

- In the regulation on ecodesign ① an exception means:
 - the product in question does not have to meet any or at least only some of the requirements (in terms of energy efficiency, other functionalities and information), and
 - this applies (in general) for the whole period during which the requirements are effective ^[2].
- For the Directive on the restriction of use of certain hazardous substances ③ – at least with regard to the mercury contained in lamps – an exemption
 - does not imply a total exemption from mercury content requirements. Instead, a less stringent limit value applies (i.e. instead of 0.1% mercury in homogeneous materials in Annex II of the RoHS-II Directive, a maximum value in mg per lamp or burning unit according to Annex III of the RoHS-II Directive) and
 - the exemption is not unlimited in time. It will initially apply for a certain number of years. An extension will only be granted if i) it is applied for within a certain period and ii) if the EU Commission, EU Parliament and Council have given their approval.

² For Regulation 2019/2020/EU, this is the period from 1 September 2021 until the date on which this Regulation is repealed by a subsequent Regulation.

Fluorescent Lamps and EU legal texts

Fluorescent lamps are electrically operated low-pressure discharge lamps. They contain mercury vapour at a relatively low pressure, usually in a glass tube. The mercury vapour is excited by energy input to emit radiation. This radiation is mainly in the ultraviolet range. For certain applications, such as disinfecting water, this is useful. However, the human eye cannot perceive ultraviolet radiation. For lighting purposes, therefore, a phosphor is applied to the inside of the glass tube (hence the white or slightly yellowish colouring of the lamp tubes). As it passes through the phosphor, the radiation shifts into a range in which it can be perceived by humans.



As energy-consuming products, these lamps are subject to regulations on ecodesign ^①, including the new Regulation 2019/2020/EU.

As mercury-containing products, they are subject to the Directive on the restriction of the use of hazardous substances in electrical and electronic equipment ^③ (RoHS) 2011/65/EU.

	Compact Fluorescent lamps without integrated ballast	Fluorescent Lamps with Ø 16 mm	Fluorescent Lamps with Ø 26 mm
<i>Examples</i>			
	CFL-ni	T5 (5/8 inch)	T8 (8/8 inch)
<i>Socket</i>	G23, G24-d1, G24-q3, 2G7 etc.	G5 (typical)	G13 (typical), 2G13, 2GX13
<i>Examples</i>			



	Compact Fluorescent lamps without integrated ballast 	Fluorescent Lamps with Ø 16 mm 	Fluorescent Lamps with Ø 26 mm 
Applications	Typical application in general lighting:		
Examples	Wall lights in hotels, square ceiling luminaires, ... 	Wall lights in offices, ... 	short length: also square ceiling luminaires, otherwise: offices, warehouses and production halls, workshops, transport services, ... see also ^[3] 
			
Objectives in the regulation on eco design ①.	Continuity		PHASE OUT   General lighting Special applications

The upper part of the previous table shows a rough systematic classification of important fluorescent lamps. The question of which lamps and when will be phased out as a result of one of the two legal texts – ecodesign ① and the use of certain hazardous substances (RoHS-II-RL) ③ – cannot be answered on the basis of this rough classification. There are several reasons for this:

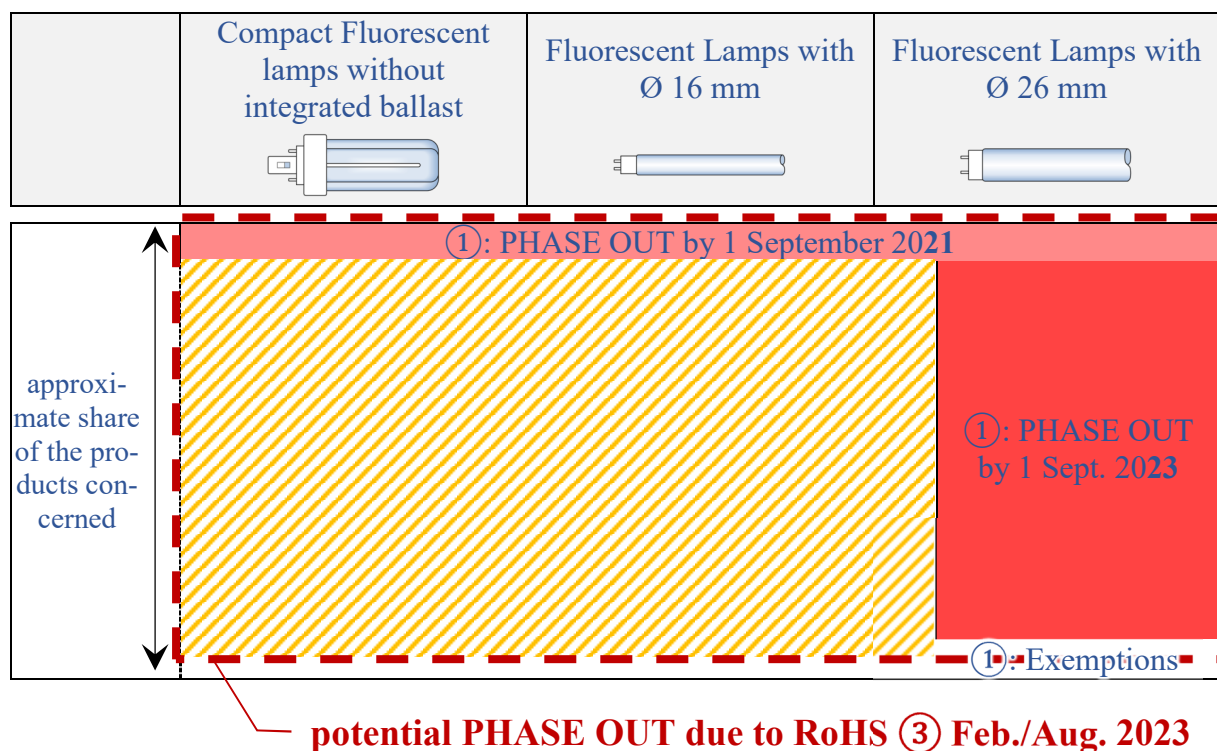
- i) Light sources of the same technology – e.g. tubular fluorescent lamps with a diameter of 26 mm and a length of 120 cm – are sometimes differentiated according to their application. This can lead to a general exception at ① or to an exception with a different maximum mercury value and a different validity period at ③.

³ https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Hintergrundtext_01gl_kurz_oV.pdf

ii) The aim of the regulation ① is to phase out certain techniques and keep others; see the above illustration with light green and light red areas. However, the Regulation does not say for example "XY lamps must be phased out from ..." but "lamps which do not meet certain requirements must be phased out from ...". The way these requirements are formulated, they do not exactly follow the boundaries of the individual technologies. Furthermore there are also exemptions for special applications.

The following table shows for the three lamp groups when a phase out occurs due to ① or when a phase out will result from the EU Commission's preliminary decision of Dec. 2021 on ③.

- It follows from the above under ii) that for all three lamp groups individual types will have to leave the market as early as 1 September 2021 ①, without this being expressly intended.
- From i) it follows that in the case of tubular fluorescent lamps with a diameter of 26 mm (T8), most products will be phased out by 1 September 2023 ①: Lamps in standard design with lengths of 60, 120 or 150 cm. However, lamps of other shapes and lengths and those for special applications may still be placed on the market afterwards.
- Due to the delegated acts of December 2021 of the EU Commission on ③, other compact fluorescent lamps without integrated ballast and tubular fluorescent lamps with a diameter of 16 mm (T5) will also be phased out.
- Overall, a much larger number of lamps will be affected. Note on the lower limit in the following illustration: the exemptions for special purposes are formulated differently at ① than at ③ and therefore cannot be directly compared.



- After the EU member states decided in December 2018 on the regulation ① which lamps shall be phased out and when, manufacturers and operators have started to adapt to this roadmap.

If the RoHS exemptions ③ expire in accordance with the EU Commission's intention, this means

1st In the next few years, significantly more types of fluorescent lamps will be phased out.

2nd This will take place at an earlier stage than previously expected.

The timing of the Phase Out by the RoHS Directive ③

This is calculated as follows:

- 18 to 2 June 2021: The EU Commission publishes draft regulations that provide for an end to exemptions for fluorescent lamps for general lighting. The drafts could be commented on by the public for a period of four weeks within the framework of the so-called "better regulation". ^[4]
- (until) December 2021: The EU Commission decided on the exemptions and adopted twelve legal acts in mid-December ^[5].
- At the same time the EU Commission transmitted these legal acts to the European Parliament and the Council (Article 20(3) RoHS II Directive). The latter could raise objections to the legal acts within a period of two months from the date of notification, i.e. until mid-February 2022 (Article 22(1) of the RoHS II Directive).
- As neither the EU-Parliament nor the Council objected to the delegated acts, they entered into force thus giving effect to Article 5(6) (RoHS-II-Directive): an exemption expires at the earliest 12 months and at the latest 18 months after the date of the decision.
- The delegated acts were published in the Official Journal of the EU von 24 February 2022. The phase-out for fluorescent lamps for general lighting by ③ comes on 24 February or 24 August 2023, depending on the exemption ^[6].

⁴ There are two working aids for these public consultations: i) on the draft regulations and ii) on how to participate in the consultations:

i) https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Arbeitshilfe_05b1.pdf,
ii) https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Arbeitshilfe_05b2.pdf.

⁵ See the overview at

https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Arbeitshilfe_05c01.pdf

⁶ For the timetable for the individual exceptions, see the working aid at

https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Arbeitshilfe_05b3.pdf.

Criticism

At the beginning of 2018, the content of the new regulation on ecodesign (energy efficiency; 2019/2020/EU) was still under discussion, and the extension of the exemptions to the RoHS Directive (mercury) had been discussed for years. During this period, there was a joint statement by 18 manufacturers' and operators' associations, which includes

“We call on regulators to adopt a pragmatic and realistic transition timetable to substitute lighting technologies and products. This timetable needs to respect the established maintenance and repair cycles of the end-users of these lighting products.

(...)

Where there are no substitute products and technologies, we call on regulators to continue to allow special purpose products on the EU market by exempting them from the Eco-design rules and renewing the exemptions under RoHS.

In the interest of a robust and balanced impact assessment, we call on the European Commission to take into account the input received from all stakeholders across the value chain (from lighting manufacturers to installers and end users) and under both legislative processes (consultations under RoHS and Eco-Design).

(...)”

This statement is still up-to-date in its basic statements

- on the interaction between the three schemes,
- to take account of the contributions of all the parties concerned, from manufacturers to installers and operators, and
- on the consequences for operators.

A working aid with original English text of the statement, translation into German and background information can be downloaded here:

https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Stellungnahme_Hersteller_Betreiber_2018_03_27_DE.pdf.

Discussion

A discussion was going on in the *Open Forum on Lighting* on the question of extending the exemptions for fluorescent lamps under the RoHS Directive ③:

https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Diskussionstext_04_p1.pdf

Sources for the legal texts

① Regulation on ecodesign 2019/2020/EU in a consolidated version taking into account the amendments made by regulation 2021/341/EU:

DE: https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_VO_2019_2020_EU_kons_20210901_DE.pdf

EN: https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_VO_2019_2020_EU_kons_20210901_EN.pdf

③ Directive on the restriction of the use of hazardous substances 2011/65/EU (RoHS-II-RL):

DE: Consolidated version as of 16 March 2022: for the time being at

https://www.w-w.info/o_f/pdf/Lichtquellen_RL_2011_65_EU_kons_20230216_DE.pdf

and from around 19 April 2022 at

https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2011_65_EU_kons_20230216_DE.pdf

EN: https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2011_65_EN.pdf

The delegated acts (Directives, Dir.) amending Directive 2011/65/EU:

- Dir. 2022/274/EU: Exemption 3: https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0274_EN.pdf
- Dir. 2022/275/EU: Exemp. 4(c): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0275_EN.pdf
- Dir. 2022/276/EU: Exemp. 1(a)...(e): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0276_EN.pdf
- Dir. 2022/277/EU: Exemp. 1(g): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0277_EN.pdf
- Dir. 2022/278/EU: Exemp. 4(e): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0278_EN.pdf
- Dir. 2022/279/EU: Exemp. 4(f): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0279_EN.pdf
- Dir. 2022/280/EU: Exemp. 4(a): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0280_EN.pdf
- Dir. 2022/281/EU: Exemp. 1(f): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0281_EN.pdf
- Dir. 2022/282/EU: Exemp. 2(b)(3): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0282_EN.pdf
- Dir. 2022/283/EU: Exemp. 4(b): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0283_EN.pdf
- Dir. 2022/284/EU: Exemp. 2(a): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0284_EN.pdf
- Dir. 2022/287/EU: Exemp. 2(b)(4): https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_RL_2022_0287_EN.pdf

There is a summary overview of these legal acts in the *Open Forum* ^[7].

⁷ for the time being at https://www.w-w.info/o_f/pdf/Lichtquellen_Arbeitshilfe_01d05.pdf and from around 19 April 2022 at https://www.eup-network.de/fileadmin/user_upload/Lichtquellen_Arbeitshilfe_01d05.pdf

Abbreviations

CFL	Compact Fluorescent Lamp
CFL-ni	Compact Fluorescent Lamp non-integrated
Dir.	Directive
Reg.	Regulation
DG	Directorate General
RoHS	Restriction of Hazardous Substances
T5	Linear fluorescent lamps with a tube diameter of $\frac{5}{8}$ inch
T8	Linear fluorescent lamps with a tube diameter of $\frac{8}{8}$ inch

Picture credits

Abbreviations: §: Licence ☺: Creator

Page 1: • Printing plant: licht.de * • Underground station ☺: Gisor Henkel * • Paper factory: Aura-Licht * • Lecture room: Wikipedia ^[8]; ☺: Kansallisarkisto *; §: CC BY 2.0 * • Operating room: licht.de * • Doctor's practice: CM * • Fire brigade equipment hall: Wikipedia ^[9]; ☺: Martin Brunner und FFW Ehingen; §: free • Clothing store: Wikipedia ^[10]; ☺: High Contrast *; §: CC BY 3.0 DE • Storage room: licht.de * • Rotary milking parlor: Wikipedia ^[11]; ☺: Gunnar Richter *; §: CC BY-SA 3.0 * • Tunnel construction site: Wikipedia ^[12]; ☺: bigbug21; §: CC BY-SA 2.5 * • Drawings: Buld, Lamp and Luminaire; and affected lamp types: UBA * | **Table on page 3 onwards:** • Symbol for ① and ③: UBA * • Symbol for ②: Reg. 2019/2015/EU | **Table on page 5 onwards:** • header line: Drawings of the three lamp types: UBA * • Examples of lamps: Compact fluorescent non-integrated ballast: Osram * and Ledvance *; tubular fluorescent lamp with Ø 16 mm: licht.de *; fluorescent lamps with Ø 26 mm: a) U-shape: Ledvance *; b) tubular: licht.de * • Sockets: Osram * • Applications: Office: licht.de *; production hall: Aura Licht *; all others: CM *

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8 https://commons.wikimedia.org/w/index.php?title=File:Jyv%C3%A4skyl%C3%A4n_maakunta-arkisto_luentosali_01.jpg&oldid=268888752%E2%80%9C

9 <https://commons.wikimedia.org/w/index.php?title=File:Fahrg-halle-ehi.jpg&oldid=324931334>

10 https://commons.wikimedia.org/w/index.php?title=File:KiK_shop_from_inside_2014.jpg&oldid=122171419

11 <https://commons.wikimedia.org/w/index.php?title=File:Melkkarussell.jpg&oldid=155539956>

12 https://commons.wikimedia.org/w/index.php?title=File:Euerwang_tunnel_slab_track_setup.jpg&oldid=118287957

Changes compared to previous versions

13 April 2022 Version: Individual references to documents have been updated or, as in the case of footnote ⁷, supplemented.

23 March 2022 Version: After the twelve delegated acts on exemptions for mercury in lamps were published in the EU Official Journal and became effective, the description of the state of affairs was adapted to the new status.

24 January 2022 Version: After the EU Commission adopted twelve legal acts on exemptions for mercury in lamps and sent them to the EU Council and Parliament, , the relevant text passages were adapted.

18 October 2021 Version: According to information from the EU Commission, draft regulations on the RoHS exemptions are expected to be sent to the EU Council and Parliament in the second half of October 2021. The resulting new timetable has been taken into account.

(...)

Contact data

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(Datei „ErP-RL_2022-04-13-1102_n_43-VO-LqGes_Hintergrundtext_01-il_RoHS-Betreiber_EN_v13_Ef“)