

Response To Öko-Institut

regarding the

1st Questionnaire Exemption No. 2(b)(3) (renewal request)

*Exemption for “Mercury in other fluorescent lamps not exceeding (per lamp):
2(b)(3) Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9): 15
mg may be used per lamp after 31 December 2011”*

Date of submission: September 15, 2015

Name and contact details

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Abbreviations and Definitions

LED Light Emitting Diode

LEU LightingEurope

Pb Lead

Background

The Oeko-Institut and Fraunhofer IZM have been appointed within a framework contract¹ for the evaluation of applications for the renewal of exemptions currently listed in Annexes III of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.¹

¹ Contract is implemented through Framework Contract No. ENV.C.2/FRA/2011/0020 led by Eunomia

LightingEurope has submitted a request for the renewal of the above mentioned exemption, which has been subject to a first evaluation. The information you have referred has been reviewed and as a result we have identified that there is some information missing and have formulated a few questions to clarify some aspects concerning your request.

Questions

1. LEU explain that non-linear fluorescent lamps always need more mercury compared to linear lamps. Please explain the differences regarding the application of Hg and its function in non-linear and linear fluorescent lamps.

Answer of LightingEurope: As explained in the renewal request Chapter 4.2.4, p16f: *Non-linear fluorescent lamps always need more mercury compared to linear lamps. The main reason for this effect lies in the production process. Lamp production starts with a linear glass tube, to which coatings on glass are applied as well as the phosphor layer. After these processes the tube is brought in a circular, U-form or other non-linear structural shape. This process has influence on the coating and phosphor layers as small cracks are created where the glass is bent. So more mercury diffuses into the glass tube during operational lamp life meaning more mercury is consumed in these lamps. [...]*

2. The application illustrates the average Hg content of lamps [mg] in non-linear fluorescent lamps, which has decreased in the period between 2009-2013 from 15mg to 10mg.
 - a. Please explain why you do not propose adjusting the Hg threshold to 10mg for lamps falling under Ex. 2(b)(3)? Could the current threshold be decreased below 15 mg?
 - b. Furthermore, examples of lamps falling under this exemption show that in some cases a far lower threshold could be applied. In this respect, can certain sub-groups of lamps be addressed in relation to the actual use of Hg applied?

Answer of LightingEurope: It is correct that LightingEurope members producing these lamps have reduced mercury content of most lamp models in the past years. But as explained also there is not "the average lamp" but different wattages, phosphors, sizes and forms. Some lamps on the market have a value exceeding 10 mg average. Publicly available data only reveal mercury amounts of lamps for general lighting. But exemption 2(b)(3) can also covers special purpose lamps produced by thirds. Therefore LightingEurope recommends not to change the value as it would in practise only have impact in very small amounts, but probably with the consequence that for some lighting or non-lighting applications lamps would no longer be available.

3. You describe in detail the feasibility of alternatives in your application. It can be understood that the problem is mainly foreseen in replacement lamps for existing luminaires and areas where the use of LED in such lamps would require new luminaire installations (refurbishment)

Answer of LightingEurope: We do not consider the exchange of a luminaire from a fluorescent lamp technology luminaire to a LED based luminaire a refurbishment. The old lumi-

inaire is not adapted for the new LED's but has to be removed and replaced by a new luminaire. Only in certain applications the fixture is part of a larger equipment. In this case the exchange of the fixture would be necessary as far as technically feasible.

You state that “For non-linear T8, T9 and T12 lamps no significant LED retrofit solutions are currently available in the EU market, which can be used in respective fluorescent lamp luminaire. Those lamps which are available often need technically changes in the luminaire. Instead new LED solutions are replacing non-linear fluorescent lamps in new products, such as LED street lighting systems”. According to a brief research², it is apparent that such lamps are available (or at least for a part of the product range), though it could be that they are not yet marketed in the EU.

- a. Please clarify if and for what part of the product range substitutes are available; Please explain why available alternatives may not be marketed in the EU in all cases;

Answer of LightingEurope: As stated in the exemption renewal request “no significant LED retrofit solutions are currently available in the EU market, which can be used in respective fluorescent lamp luminaire.” Retrofit/conversion solutions marketed in US technically cannot be used in the EU due to different requirements to the electronic ballast of the lamp. New circular or U-bent lamps would have to be developed. So far there is no market justifying the effort to develop these lamps and make them available for the EU market.

- b. Please clarify what share of lamps could be substituted with LED replacements (conversion route; rewiring route; etc.)

Answer of LightingEurope: According to our knowledge there is no tendency to substitute lamps falling in exemption 2(b)(3) with LED lamps.

4. You claim that non-linear LED based replacement lamps are almost not available on the EU market. At present no significant trend for the relatively small market for nonlinear LED based replacement lamps is visible. Please provide a roadmap for substitution for special purpose lamps thus products without the relevant RoHS substance can be made available on the EU market.
 - a. What efforts have performed since the last review of this exemption to enhance substitute development?
 - b. What stages are needed to establish substitutes for the relevant product range?
 - c. Please estimate the time frame needed for each stage along with a short explanation that should allow following why the estimated time is needed;

² See for example the following links, all last accessed 18.8.2015:

<http://www.homedepot.com/b/Electrical-Light-Bulbs-LED-Light-Bulbs/U-SHAPE/N-5yc1vZbm79Z1z0vvqz;>

<https://www.earthled.com/collections/u-bent-fluorescent-led-replacement-tube-lights-ubent-bulb-u-bend-u-shaped>

<http://www.amazon.com/Shaped-Lights-Replaces-Fluorescent-5000K/dp/B00PYIBEKS>

- d. Where relevant, please state what stages could run in parallel and what stages need to take place on a linear basis?

Answer of LightingEurope: Lamps covered by exemption 2(b)(3) cover a small market segment. Developing retrofit or conversion lamps takes as much time as other comparable electrical and electronic equipment. Prerequisite for the development of such products is market demand. This market demand could only be sufficient for a positive marketing decision for the lamp types with the highest volume. Currently for this scenario there is no positive business case. This remains valid even if the lamps would be prohibited in certain cases. In other cases a LED replacement would not be feasible at all for certain applications. It is also much easier to produce different fluorescent lamp types and wattages due to the big similarity of phosphors and components compared to development and production of the full range of lamps in LED technology.

Please note that answers to these questions are to be published as part of the available information relevant for the stakeholder consultation to be carried out as part of the evaluation of this request. If your answers contain confidential information, please provide a version that can be made public along with a confidential version, in which proprietary information is clearly marked.