Response To Öko-Institut

regarding the

1st Questionnaire Exemption No. 3

Mercury in cold cathode fluorescent lamps and external fluorescent lamps (CCFL and EEFL) for special purposes not exceeding per lamp:
3(a): Short length ≤ 500mm 3.5mg/lamp
3(b): Medium length (> 500mm and ≤1500mm) 5mg/lamp
3(c): Long length (> 1500mm) 13mg/lamp

Name and contact details

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Abbreviations and Definitions

CFL	Compact fluorescent lamp
CCFL	Cold cathode fluorescent lamps
EEFL	External fluorescent lamps
Hg	Mercury
LEU	LightingEurope

Background

The Oeko-Institut has been appointed within a framework contract[1] for the evaluation of an application for granting an exemption to be included in or deleted from Annex III of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.[1]

LightingEurope has submitted the above mentioned request for 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 a few questions to clarify concerning your request.

Questions

1. LEU explains that lamps falling under exemptions 3(a), 3(b) and 3(c) are not typically used in general lighting applications and are not intended to be replaced by the user. Replacements are typically made by the equipment manufacturer or repair facility and the spent lamps would be required to be recycled. The major part of development resources of lighting companies are said to have already been allocated to developing LED based alternatives. Moreover LEU supports the limitation of these lamp types to non-general lighting applications. Finally, it is claimed that further reduction of mercury might technically be possible with high economic effort and R&D resources, however in light of the expected phase-in of LED light sources research into alternative discharge lamps has been discontinued. Please explain how your argumentation can support a renewal of the current exemption, which allows use of CCFL and EEFL lamps abiding the Hg thresholds in all applications despite the fact that LED substitutes have been applied in many cases2. For example, it is stated that ensuring electric compatibility and legal compliance of LED alternatives may require technical changes to the luminaire – please further explain why this is an obstacle to phase-out when it is also mentioned that equipment manufacturers usually perform replacements of lamps;

LightingEurope Answer. These types of cold cathode fluorescent lamps are mostly used for applications for backlighting of liquid crystal displays such as in computer displays and monitors. These lamps are described in the ruling provided on March 13, 2014 in Annex IV to Directive 2011/65/EU under point 35 [3] . While not all applications are specifically known to us some special lighting applications in equipment, displays and indicator panels are replaced professionally as these lamps are usually custom sizes and colors and are not made with typical lamp end caps that fit into standardized lamp sockets. While many new designs have already been changed to LEDs there are products made, although in very limited usage, that have not yet been redesigned. Based on the prior submission by The Test and Measurement Coalition, the subsequent Oeko

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

[2] See for example data provided by 3M and QD Vision in past exemption evaluations, regarding the penetration rate of LEDs into display backlighting, summarised on page 76-77 of the Oeko-Institute 2014 Report available under http://rohs.exemptions.oeko.info/fileadmin/user_upload/RoHS_IX/20140422_RoHS2_Evaluation_Ex_Requests_2013-1-5_final.pdf

[3] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014L0075

recommendations and the EU adoption of the Category 35 exemption we respectfully amend the proposal for application in Category 5 and request consideration under Category 9 to allow for the continued limited use in these products where the change in technology has not yet been adopted.

2. LEU explains that the light distribution of a LED tube differs significantly from fluorescent tubes and therefore it is difficult to achieve an omnidirectional luminous intensity distribution. However, LED lamps are already used in many cases of EEE lighting, such as displays and it is thus assumed that light distribution can be solved through design, where of relevance. Though this argument may apply in some cases to replace discharge lamps in existing devices where omni-directional light or where unique light distribution plays a role, it is not clear why this argument would apply to all cases. Please detail your argumentation regarding the full range of Ex. 3 lamps in relation to typical lamp sub-groups and their application in various equipment types;

Lighting Europe Answer. LEDs do not lend themselves to retrofit since neither form, fit nor function, is adequate and the entire electrical/electronic control gear is different for a cold cathode fluorescent lamp vs. an LED. Any substitute of the cold cathode fluorescent lamp with an LED would require a complete change of the power supply and control gear. In addition the light dispersion is different in a cold cathode fluorescent lamp than an LED and would require a change in the light guides to provide even light distribution. Replacements and repairs using LEDs therefore would not be practical.

3. Please provide an overview of CCFL and EEFL lamps compared to available LED alternatives (drop-in as well as alternatives relevant for newly designed equipment). In this respect:

   a. Please provide performance data related to the key parameters, like luminous efficacy (lm/W), lamp life, CRI, average price, light fluxes, colour temperature, switching resistance etc**.**

   Lighting Europe Answer. Please see exemption request 20a of 2012 Consultation 4 [4] . We are not requesting any changes in exemption limits from the proposal entered in 2012.

   b. Please clarify what proportion of the market share of lamps falling under Ex. 3(a-c) is used for replacing lamps in equipment which is already on the EU market and what part is needed for new product placed on the market**.**

   Lighting Europe Answer Lighting Europe has no information concerning the product mix but would support the findings or estimates of exemption request 20a of 2012 Consultation 4 .

   c. Please explain if the exemption could be limited to use in EEE placed on the market in the past and if specific product sub-groups could be specified in which such lamps are still needed for new products to be placed on the market in the coming 5 years.

[4] The exemption request 20a in 2012 is published: http://rohs.exemptions.oeko.info/index.php?id=178

Lighting Europe Answer. Yes we agree that we can limit the use of these lamps as stipulated in exemption request 20a of 2012 Consultation 4.

4. Please provide a roadmap for substitution for CCFL and EEFL with Hg-free technologies (e.g. LED) to estimate when products without the relevant RoHS substance can be made available on the EU market.

    a. What efforts have been realised since the last review of this exemption?

    b. What stages are required to allow the phase-out of Ex. 3 lamps?

    c. Please provide an estimated timeframe for each stage along with a short explanation that should allow following why the estimated time is needed;

    d. Where relevant, it should be stated what stages could run in parallel and what stages need to take place on a linear basis

Lighting Europe Answer. In new installations integrated LED solutions are rapidly entering the market. Current installations need replacement lamps since retrofit LED lamps are not available for the whole range of products. Since the equipment is diverse and not manufactured by the lighting companies it is not possible to give an accurate time line for the replacement of this equipment. Stopping replacement would render, otherwise well-functioning equipment, useless and would lead to unnecessary waste.

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.