# Consultation Questionnaire Exemption No. 1(f) (renewal request)

## *Exemption for „Mercury in single capped (compact) fluorescent lamps not exceeding (per burner) For Special purposes: 5 mg “*

### Abbreviations and Definitions

| | |
|---|---|
| CFL | Compact fluorescent lamp |
| DBD | Dielectric barrier discharge |
| Hg | Mercury |
| LED | Light Emitting Diode |
| LEU | LightingEurope |
| NARVA | NARVA Lichtquellen GmbH + Co. KG |
| OLED | Organic Light-Emitting Diode |
| UV | Ultraviolet |

### Background

The Oeko-Institut and Fraunhofer IZM have been appointed within a framework contract[1] 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]

LightingEurope (LEU) and NARVA Lichtquellen GmbH + Co. KG (NARVA) have submitted requests for the renewal of the above mentioned exemption, which has been subject to a first completeness and plausibility check. The applicants have been requested to answer additional questions and to provide additional information, to be made available on the request webpage of the stakeholder consultation:

http://rohs.exemptions.oeko.info/index.php?id=228

Both applicants apply for the renewal of Ex. 1 entries a-e, with the current wording formulation listed in Annex III of the RoHS Directive and requesting the maximum available duration allowed (based on Art. 5(2) of the Directive).

From the experience of LEU, CFL special purpose lamps (Ex. 1(f) lamps) count for 0.1% of the total CFL market share in Europe, i.e., approximately 400,000 special purpose lamps are placed on the EU market per annum, amounting to a maximum of 2 kg of mercury entering the EU.

LEU claims that Ex. 1(f) lamps can be applied both in professional and consumer applications. Such lamps are explained to generate UV light and are used among others in medical phototherapy applica-

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

tions[2], in tanning lamps, for disinfection purposes, in photo-polymerization of plastics and in other applications, where an efficient source of UV light or blue wavelength bands is needed. They differ in their construction from CFL general lighting lamps, in that they are made of different glass and using other phosphors (and for some no phosphor).

LEU explains that the level of Hg used in (compact) fluorescent lamps has been decreased considerably during the last years. For lamps falling under Ex. 1(f), however the technology needs a dosed mercury amount of at maximum 5 mg in order to function properly throughout the full indicated lifetime.

LEU states that only LED and DBD (dielectric barrier discharge) are possible substitutions. Whereas other lighting technology alternatives i.e. halogen and OLED lamps, cannot be considered since they do not produce radiation in the range that is required for applications of Ex. 1(f) lamps. LEDs are also explained not to be a viable alternative, in light of their differences in terms of wall-plug efficiency[3], effectiveness as well as problematic regulation/approbation (for example in medical applications). Though more and more LED solutions for general lighting are coming on the market, special purpose CFLs are a niche market, where the LED development is slower.

It is also explained that it can be difficult for a customer to choose between LED alternatives and to know when technical “retrofitting” changes are needed to ensure the compatibility of the LED with the existing installation.

Against this background, LEU does not expect LED alternatives to allow for a full phase-out of Ex. 1(f) lamps within the coming 5 years, and thus request a renewal of the exemption.

For details, please check the applicants’ exemption requests at:

http://rohs.exemptions.oeko.info/index.php?id=230

The objective of this consultation and the review process is to collect and to evaluate information and evidence according to the criteria listed in Art. 5 (1) (a) of Directive 2011/65/EU (RoHS II), which can be found under:

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32011L0065:EN:NOT

If you would like to contribute to the stakeholder consultation, please answer the following questions:

**Questions**

1. The applicants have requested the renewal of Ex.1(f), with the current wording formulation: *„Mercury in single capped (compact) fluorescent lamps not exceeding (per burner): 1(f) For special purposes: 5mg,* and with the maximum validity period possible (according to Art.2 of Directive 2011/65/EU).
    a. Do you agree with the scope of exemption 1(f) as proposed by the applicants? To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5(1)(a).

[2] E.g. Narrowband and Broadband UVB phototherapy, PUVA phototherapy, UVA-1 phototherapy

[3] Explained by LEU as follows: Wall Plug efficiency: Useful UV power divided by the power used by the whole lighting device (including control gear) from the mains power supply.

   b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording or with the wording of one or more of the entries.

2. Please provide estimations as to how the market share is distributed between private consumer uses and professional uses.

3. The applicants provided figures of lamp spectra with different characteristics (e.g. an efficient source of UV light, tanning effectiveness, blue wavelength bands etc. - see page 6 of original application document). Please provide in comparison with general lighting lamps:
   a. An exhaustive list of all relevant characteristics regarding the lamp spectra (where relevant associated with the various sub-groups of lamps falling under this request).
   b. More detailed information, graphs or explanations to clarify aspects that are relevant to describe the needs and thresholds of these characteristics.
   c. Please provide explanations, data and figures to support your explanations.

4. The applicants claim that DBD, halogen, LED and OLED lamps cannot produce radiation in the range that is required for applications of special purpose CFLs. Various alternative types of lamps are available but all have different characteristics.
   a. Do you agree with this line of argumentation?
   b. Please describe these alternatives (not only for LED) in (technical) detail so that the performance differences are clear and therewith the statements regarding limited feasibility of the alternatives.
   c. Please clarify if there are any differences regarding the viability of substitutes for professional and for consumer applications

5. According to the applicant LED technology is developing slower than for general lighting because of the niche market and differences in wall-plug efficiency, effectiveness and the problematics in regulation/approbation.
   a. Do you agree with this line of argumentation?
   b. What stages can be observed in the transition process from discharge lamps to LEDs - please provide an estimated time or time range for each stage.

**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.**