

Exemption request evaluation under Directive 2011/65/EU

Questionnaire Exemption Request No. 15

Exemption Request No. 15 "Hand crafted luminous discharge tubes (HLDT) used for signs, decorative or general lighting and light-artwork."

Background

The Öko-Institut together with Fraunhofer IZM has been appointed within a framework contract for the evaluation of applications for granting, renewing or revoking an exemption to be included in or deleted from Annexes III and IV of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.

The European Sign Federation (ESF) has applied for an exemption for "Hand crafted luminous discharge tubes (HLDT) used for signs, decorative or general lighting and lightartwork."

The applicant puts forward the following main arguments.

- There is almost no light output in HLDT without or with insufficient mercury in the lamp, hence a minimum small quantity of mercury needs to be added. As these HLDT are used for indoor and outdoor applications and with an individual colour spectrum composition they have to work reliably in sensitive and cold conditions with very high life expectations because they are often difficult to access.
- The longevity of HLDT is closely related to its mercury content. HLDT can operate for up to 20 years which is equivalent to 130 000 hours without replacement, thereby outperforming any other light source in efficiency, life span and versatility regarding shape and light spectrum.
- HLDT are individually handcrafted products to which standardised requirements cannot be applied. They can thus not be considered to be classified as CCFL falling under exemption 3.

The applicant suggests covering the scope of indoor and outdoor applications for which he has been made following two wordings:

Mercury in hand crafted luminous discharge tubes (HLDT) used for signs, decorative or general lighting and light-artwork until the end of 2015:

- For outdoor applications and indoor applications exposed to temperatures below 20°C, 20 mg mercury per pair of electrodes plus 15 mg mercury per 50 cm of tube length, but not exceeding 80 mg mercury per tube.
- For Indoor applications exposed to temperatures above 20°C; 15 mg mercury per pair of electrodes plus 8 mg mercury per 50 cm of tube length, but not exceeding 80 mg per tube.

For details, please check the applicant's exemption request at

<http://rohs.exemptions.oeko.info/index.php?id=158>. This exemption request has been subject to a first completeness and plausibility check. The applicant has been requested to answer additional questions and to provide additional information (c.f. link above).

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 you can download from here:

<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. Please state whether you either support the applicant's request or whether you would like to provide argumentation against the applicant's request.
 - a. Do you agree with the scope of the exemption as proposed by the applicant? Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording.

The CCLA agrees with the scope.

- b. Please state whether you either support the applicant's request or whether you would like to provide argumentation against the applicant's request. In both cases provide detailed technical

argumentation / evidence in line with the criteria in Art. 5 (1) (a) to support your statement

The CCLA fully supports the applicant's request and their supporting documentation. We would emphasise the substantial lifetime benefits of HLDT and the need for an adequate quantity of mercury to support that lifetime.

2. The applicant states that "In general, when HLDT are to be repaired (or an old installation is dismantled), the complete tubes are taken back and the mercury is then recycled. However, it is not clear whether there are take-back agreements / binding regulations (e.g. under the WEEE Directive) to support this or whether the fate of waste HLDT is not regulated and thus no evidence can be given on the proper waste treatment of the contained mercury. Is there any supporting / contradicting evidence that you can provide in this regard?

The CCLA believes that in most European countries used HLDT are recycled under the same regulations, systems and controls as straight (hot cathode) fluorescent lamps for general lighting. The fact that HLDT are a specialist technology and therefore under the control of a limited number of companies and not generally available to the general public ensure a high level recycling.

3. Please provide information concerning possible substitutes/alternatives (i.e. LED) or developments that may enable substitution, reducing the quantity of mercury in a tube or elimination at present or in the future.

- a) There is no known substitute for mercury in fluorescent lamps such as HLDT.
- b) LED is a point source. HLDT are linear (but not necessarily straight) sources. To convert the LED source to emulate linear sources requires the use of complex (expensive) plastic lenses and plastic diffusers which substantially reduce the overall efficacy (in Lumen per Watt) of LED systems.
- c) The wide range of whites and colours available in HLDT cannot be reproduced by LED unless complex electronic control gear (WEEE) is involved and a reduction in overall efficacy (in Lumen per Watt) of LED systems.
- d) Developments are on-going to reduce the quantity of mercury in HLDT. However, there are a number of issues which need to be overcome:-
 - i. Problems with raw material storage.
 - ii. New technologies need stringent life testing and hence take a long time to introduce.
This is because HLDT has such a long life. There are no known acceleration tests possible.

4. Please indicate if the negative environmental, health and/or consumer safety impacts caused by substitution are likely to outweigh the environmental, health and/or consumer safety benefits. If existing, please refer to relevant studies on negative impacts caused by substitution.

- a) The efficacy, longevity and recycling of HLDT dramatically reduces its overall environmental impact compared with other technologies.
- b) The number of lamps per annum is also relatively small compared with other CCFL or CFL.
- c) The longevity reduces the need for frequent access for servicing of lamps. Servicing is often disruptive to operations, often involves working at height (with its intrinsic hazards to health and safety) and other hazards.

5. Do you consider any other aspects or details to be of importance, which have not yet been taken into account?

Finally, please do not forget to provide your contact details (Name, Organisation, e-mail and phone number) so that Öko-Institut/Fraunhofer IZM can contact you in case there are questions concerning your contribution.

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