# Consultation Questionnaire Exemption Annex III Ex. 4(f)-II

# Exemption for "Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required"

## Abbreviations and Definitions

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| RoHS | Directive 2011/65/EU on the Restriction of Hazardous Substances in Electrical and Electronic Equipment |
| EEE | Electrical and Electronic Equipment |
| LED | Light emitting diode |
| LEU | LightingEurope |
| Hg | Mercury |
| HPMVL | High pressure mercury vapor lamp |
| UHPL | Ultra-High-Performance lamp |

## Background

The Oeko-Institut and Fraunhofer IZM have been appointed by the European Commission, within a framework contract[1], for the evaluation of applications for exemption from Directive 2011/65/EU (RoHS), to be listed in Annexes III and IV of the Directive.

LightingEurope (LEU) has submitted a request for an exemption renewal, with maximum duration i.e. 5 years for product categories 1-7, 10 and 11 and 7 years for product categories 8 and 9. A summary of the main argumentation for justifying the request is provided below. Additional information supporting this request can be found on the request webpage of the stakeholder consultation (https://rohs.exemptions.oeko.info/exemption-consultations/2026-consultation-1 ).

For further details, please check the exemption request and additional information submitted by the applicant on the request webpage of the stakeholder consultation.

[1] The contract is implemented through Framework Contract No. ENV.B.3/FRA/2023/0012, led by Ramboll Deutschland GmbH.

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 2), which can be found under:

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02011L0065-20250101

If you would like to contribute to the stakeholder consultation, please review the summary of the argumentation provided and answer the questions that follow.

**History of the exemption**

The exemption 4(f) “Mercury in other discharge lamps for special purposes not specifically mentioned in Annex III” was evaluated in 2015-2016 and as a result it was split into four application areas:

- I) Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex (expired)
- II) Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required (24 February 2027)
- III) Mercury in high pressure sodium vapour lamps used for horticulture lighting (24 February 2027)
- IV) Lamps emitting light in the ultraviolet spectrum (24 February 2027)

## 1 Summary of argumentation of applicant on the justification of the exemption

High pressure mercury vapor lamps (HPMVL) are a discharge lamp technology developed to produce white light for projectors. LEU states that at <2000 lumen ANSI, a projector is in the low lumen class.

Ultra-High-Performance lamps (UHPL) denotes a specific trademarked design of HPMVL. They share the exact same underlying technology, operating mechanism, and characteristics. UHPL use pure mercury at a very high pressure and a short arc.

UHPL replaced Metal Halide Lamps for projectors about 30 years ago.

**Product categories**

While product type is explicitly stated in the exemption wording, its product category has some ambiguity. If "lighting" is interpreted as irradiation, it is product category 5 only. LEU argues that HPMVL benefitting from this exemption cover the following product categories:

3. IT and telecommunications equipment

4. Consumer equipment

5. Lighting equipment

8. Medical devices

9. Monitoring and control instruments

11. Other electrical and electronic equipment not covered by any of the above categories

### Hg-free alternatives

Laser-based, LED-based and hybrid projectors are available on the market and marketed in addition to Hg-based projectors with similar properties by the same manufacturers (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). While LED is used in the lower Lumen regime, laser is used in the medium to upper Lumen regime.

According to LEU, solid state light sources are not sufficiently mature to be used for mainstream projection purposes.

### Advantages of HPMVL over Hg-free projectors

Hg-free projectors exist, namely LED-based, Laser-based or hybrid projectors.

According to LEU, mercury lamp projectors have the following advantages over laser projectors:

- Accurate and natural colour reproduction (surpassing low-cost laser solutions).
- Lamp-based projectors do have simple optics, while laser projectors do have a more complex optical design, having an impact on product design and recyclability.
- Easier and cheaper replacement parts (no need to go to a service centre for repair).
- Reduced purchase costs: simpler light engine.
- Lower complexity and costs for projection at very large angles (e.g., >120° field of view)
- Laser-based solutions require additional optics resulting in 1-2 kg additional weight. (<2kg is mobile use, <4kg is portable)

### Retrofit and replacement HPMVL

Optics and electrical components differ in projectors with different light-emitting technology. Thus, LEDs or laser light sources are not suitable for retrofitting.

In general, a projector will need at least 1 replacement lamp throughout the entire product life cycle (6-10 years for projectors). Some specific applications do have higher user rates, like museums (full working day), control rooms (24-hour operation) and flight simulator (high intensity usage). For these applications, a higher replacement ratio is expected/applicable.

If spare HPMVL for legacy projectors were not available, it is likely that premature waste is generated. A reference projector weighs 3kg and materials are plastic (50%), printed circuit board (20%), electronic harness (10%), metal (10%) and glass (10%).

**Volume of Hg to be placed on the EU market through the exemption**

LEU estimates an amount of 8.4 kg of mercury in lamps used in new discharge lamp-based projectors and a maximum of 4.9 kg of mercury in replacement/spare part lamps for projectors already in use.

## 2 Questions to stakeholders

Before you start, please fill in your contact details:

Name:

Company:

E-Mail and phone number:

1. Do you agree with the arguments put forward by the applicants? Are there any additional reasons that support the requested extension of the exemption?
2. Which product categories are concerned by the exemption?
3. In your opinion, what reasons oppose the requested extension of the exemption?
4. What is your perspective on replacement HPMVL? Can they be treated differently to projectors? How?
5. Are there any other aspects that you believe should be taken into account when assessing this application? Please provide relevant documents and evidence.

**Please send your answers to the project email: rohs.exemptions@oeko.de at the latest by 24 July 2026.**

**Responses submitted electronically will be posted on the RoHS Exemption Website site as they are received unless respondents specifically request that their contribution should not be published. In the latter case, responses should be clearly and visibly marked with the words "Not for publication" and a version for publication should be provided alongside the confidential one.**