Questionnaire for further clarification

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 contractfor 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[1].

You have submitted the above mentioned request for exemption which has been subject to a first completeness and understandability check.As a result we have identified that there is some information missing and a few questions to clarify before we can proceed with the online stakeholder consultation on your request.

Questions

1. In your application you make a distinction between HLDT'S used inside and outside and the amount of mercury that they respectfully require to function properly depending on tube length. Please propose **a new formulation of the exemption wording**, so that this distinction may be integrated into the wording.As the application foresees a reduction in the amount of mercury needed per lamp by 2015 we suggest to integrate these time frames into the wording as well.
   We cannot agree to the changing of our 'targets' into 'fixed reductions' for the future if these cannot be guaranteed to work under all conditions. Our proposal had clearly balanced wording, setting the initial new limits from 2013 to 2015, for applications below 20°C (20 mg/EP +15mg*L/50) and for applications above 20°C (15mg/EP +12mg*L/50) with an overall maximum quantity of 80 mg per tube. -Nothing more.- For the period after 2015 ESF and the combined European industry have committed to strive to achieve further goals of reduction based on broad R&D and proven in the field experience.

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

We cannot guarantee now HLDT will work properly in all conditions if those reductions are applied. There for the combined working group needs to agree in 2015 that the –by then- tested levels of mercury per tube are safe to work with.

The following wording reflects what has been agreed by the applicants before:

Mercury in hand crafted luminous discharge tubes (HLDT) used for signs, decorative or general lighting and light-artwork:	Where EPrepresents electrode pairs and L is tube length in cm the mercury content shall be limited as follows:
For outdoor applications and indoor applications exposed to temperatures below 20°C	=20 mg/ EP +15mg* L /50 ≤ 80 mg
For Indoor applications exposed to temperatures above 20°C	=15 mg/ EP +12mg* L /50 ≤ 80 mg

2. Please provide a clear technical calculation of the mercury quantity in relation to lamp dimensions and for further effects of mercury "consumption" during operation to enable a scientific validation.
   ESF has provided extensive information in the previous request for exemption that HLDT are a totally different animal from standard mass produced lamps like commercial T8 and T5 fluorescent lamps. Perhaps this has failed to draw the attention of the consultants. Working conditions as well as (known) parameters for HLDT vary so widely that a simple a+b=c calculation would not be applicable. Only a broad testing under all these complex conditions can lead to the probability that a tube manufactured with similar parameters as the test tube would also work under all these conditions. On HLDT – in contrast to mass produced lamps- no systematic nor scientific research has been done in the past or at present. Thus, we can neither cite scientific literature other than we did in our first application (which we trust you have read), nor will you be able to find applicable papers in your own research.

3. You mention that *"The total quantity of mercury used per year by all European HLDT manufacturers combined is less than 0.4% of the quantity of mercury sold every year in 'Energy Saving' lamps, promoted by all governments to reduce the energy bill."*.Please estimate the total amount of mercury entering the European market per annum through the application for which this exemption has been requested.
   In the present market situation not more than 20 kg mercury is used in the manufacturing of HLDT in Europe. On the one hand recycled (and not replaced)

tubes largely outnumber new tubes because of market trend, on the other hand the old (recycled) tubes contain up to 3 times more mercury than the new ones, because of efforts of the industry in recent years. Hence it is common sense to say the sum of how much is added less how much is leaving the market is negative. Again, that is a quite different situation from the one with so called energy saving lamps.

4. Please provide an explanation as to what technological developments are foreseen over the next years, so as to clarify what developments are necessary to allow the time frame proposed for mercury reduction in HLDT'S.
   In the field of HLDT, practically all developments are propriety and/or even protected by patents. Therefore, it is practically impossible to foresee today what future developments may be. Even if a new patent has been applied for recently, this does not necessarily imply that the presented technology will be applicable to HLDT in general or in only a few cases. Because of the long lifetime of HLDT, every product development today will turn out to be either successful or impracticable in approximately 5 to 10 years, but to get accepted by the HLDT manufacturers it may yet take another 10 to 20 years. Therefore any prediction of technologies that may be available in the future is simply fiction and therefore will not be submitted in ESF's serious application.

   To help you understand what HLDT are and how they are made, please visit:
   http://www.youtube.com/watch?feature=player_detailpage&v=Gawt7JsDQsY
   (produced by an american colleague, but the process is similar in Europe)