

<p><b>Contribution to the public consultation on the review of RoHS: Special purpose lamps used in the live performance, film and wider entertainment sector</b></p>
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The undersigned organisations appreciate the opportunity to give input to the review of RoHS and welcome the initiative of the European Commission to review the Restriction of Hazardous Substances Directive.

In general, discharge lamps for special purposes that contain small amounts of mercury are still quite common but more and more replaced in the wider entertainment industry, film sector and live performance organisations such as theatres due to technological progress for certain applications.

We would like to underline that the new generation of discharge lamps are far more efficient in terms of energy efficiency than their predecessors, with many lamps designed specifically for entertainment lighting as they have unique characteristics of high interest for live events and for filming.

### **1. Uses of the discharge lamps in the live performance and film sector**

Discharge lamps are predominately used for high powered automated fixtures (moving lights) and follow spots (high powered lights specifically used for 'following' a performer from a long distance away operated by a human operator).

This includes medium to long throw follow spots, high output parallel beam lights, long throw spots and washes.

For theatrical performances, there is an artistic requirement to have one very bright source (4kW HMI Fresnel).

The live touring market sector relies heavily on the visual imagery created by these sources. Touring shows use a lot of small discharge lamps which are highly efficient in terms of output to wattage (like Clay Paky Sharpy, Mythos, Robe Megapointe...) and also powerful spots (like Robe BMFL, Martin Viper....).

Film and Television rental companies servicing both indigenous and inward investment production markets in the UK, which run the gamut of Major Motion Pictures, High End Episodic Television, Commercials and Music Videos are currently still dependent and stocking quantities of lamps carrying metals that have been exempted from RoHS in the frame of 'special purpose lamps'.

These lamps are stocked and requested by Cinematographers for their technical and creative uniqueness and principally because the ability is not there yet from LED sources to replicate them.

## **2. Trends towards substituting discharge lamps in the next years**

While the general trend is to replace discharge lamps containing mercury (new moving lights are typically equipped with LED source and bright profile spotlights are most likely to be replaced in the course of the next years...), there are still applications needed to achieve certain artistic design objectives without acceptable replacements.

In the film sector, there has been a significant investment and bringing into stock in rental inventories over recent years of LED luminaires as they have entered the market and as their technical development has advanced. However, as an illustration, in rental stocks of progressive and major lighting rental companies where the overall stock holding is tens of thousands of fixtures, LED luminaires represent just under 30% of the total stockholding but discharge and heads containing metals (still) represent just under 25% of total stockholding. The will is there to change, but there is no viable alternative currently.

The same can be said for the live performance. For high light output fixtures with optical characteristics that depend on a small point source of light, there is currently no suitable alternative light source either in LED or any alternative technology. With LED the equivalent luminous output cannot yet be achieved without an array of LED emitters, which does not conform to the optical form factor required, or the efficacy of an arc lamp.

It is important to understand in this context that not all light sources are compatible with the specific fixtures of discharge lamps. It is generally believed that it will be several years before an alternative light source will be found for the fixtures used for touring and in larger arena and stadium-based events.

Step by step, manufacturers are introducing LED fixtures, but there are still some new fixtures using discharge light source (example: Clay Paky Sharpy Plus). The biggest reason to switch from discharge to LED is the possibility to dim the source (not possible with discharge). However, as mentioned above, when high intensity and/or high density<sup>1</sup> are required, it is technically not possible to replace discharge by LEDs.

It should be noted that the adoption of lighting fixtures using alternative light sources will be rapid once suitable fixtures become available. The main reasons for this are high costs of the current lamps both in terms of replacement and maintenance required (due to high operating temperatures involved). Lower energy LED fittings are generally more reliable as they function with lower temperatures and are cheaper to operate.

This year, Clay Paky is introducing a fixture with a Laser source. The source is a very good replacement in terms of high density; but not powerful enough in white. Especially for

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<sup>1</sup> **High intensity light sources:** Light sources that are excluded from Ecodesign as they generate more than 82.000 Lumen. LED light engines achieve typically (only) 20.000 – 30.000 Lumen

**High density light sources:** Light sources that are excluded from Ecodesign as they generate more than 500 lm/mm<sup>2</sup>. LED light engines achieve typically (only) 200 lm/mm<sup>2</sup>

theatres it does not provide sufficient colour rendering in white. The fixture is still very expensive, as it was just brought on the market. It will take years to develop it further.

### **3. Consequences of a premature ban of discharge lamps in our sectors**

A premature mercury ban would have an **artistic** and **economic** impact on the live performance and film sector.

In a middle-sized theatre, it would affect around 20% of lighting fixtures used; for those luminaires, there might be replacements for 80% (which will incur considerable costs); however, for the time being there are no replacements for the remaining 20%.

We would like to highlight the following consequences for our sectors:

Diminished artistic quality: If discharge lamps were banned before a viable alternative was available, the artistic quality of the event, performance or film would be compromised (i.e. you wouldn't be able to see the performers in the artistically appropriate light).

Theatres, concert halls, festivals and other live events and film companies would make investments on products that artistically cannot replace discharge lamps.

Waste: The environmental impact of all unusable discharge-based fixtures would be important. A premature ban of discharge lamps would mean that hundreds of thousands of perfectly good lighting fixtures became obsolete instantly and therefore needed to be scrapped.

Example: The rental company White Light Ltd. currently have over 4000 of these fixtures in their rental stock which are still actively specified and used.

In the context of waste reduction, we would like to draw the attention of the recycling of discharge lamps in some European countries, i.e. in France:

<https://www.recylum.com/equipement/lampes/#/>

While several discharge lamps due remain extremely important to our sector for artistic and energy efficiency reasons until they can be replaced by equivalent newer technologies, we are committed to supporting Extended Producer Responsibility (EPR) and the recycling of those discharged lamps to prohibit the loss of Hg potentially emitted to the environment.

Several of the larger manufacturers of discharge lamps for our industry have implemented recycling programmes to work with CRSO (Collection and Recycling Service Organizations) in the EU member states. We would welcome and support legislation to increase the level of compliance within the member states to follow the Waste Electrical and Electronic Equipment (WEEE) Directive in regard to Hg in discharge lamps.

Market: The sector is already reducing the quantity of sold arc lamps as most of the new moving lights are shipped in LED. However, there are still certain Moving Lights (Sharpys, Pointe, ...) without technical replacement. By banning discharge lamps too quickly, the market would be destroyed as nobody would be able to change inventories so quickly. It would also mean that manufacturers that are currently doing research to replace discharge lamps might not be able to do so anymore.

Financial burden for cultural institutions: Replacing discharge lamps without giving the market the time to develop new products would result in an enormous financial burden for

film and event companies, theatres, festivals and other venues, and ultimately, as part of the sector is publicly financed, for public authorities such as regions and cities.

Even if in the future suitable non-arc versions of fixtures (LED, laser, other new sources, ...) became available, it would be highly expensive to replace the entire stocks of existing fixtures.

Time is therefore required for a phased transition, with the aim to allow the development of new technology to replace the arc sources that currently have no 'new technology' alternative.

## Conclusions

- Lack of technological alternatives

As explained above, for a certain range of discharge lamps used in the entertainment, film and live performance sector, it is technically not possible to replace them. In this case, Directive 2011/65/EU foresees an exemption according to article 5.1(a).

With the aim of not compromising on the artistic quality of live events such as theatres plays, music concerts, musicals, festivals, operas and dance performances, we request to keep a sector exemption in article 4(f) covering "lamps for projection, studio and stage lighting purposes" such as introduced by Lighting Europe for the 2015 draft delegated act on exemptions.

A continuous exemption from the restriction in Article 4(1) of Directive 2017/2102 amending Directive 2011/65/EU, specified in Annex III, 4(f) would allow sufficient time for the industry to further develop sustainable, future-proofed technical solutions.

- Alignment between ecodesign and RoHS

Compliance in European law in the fields of Ecodesign and RoHS, which both have a (potential) impact on the professional use of light sources in our sectors and the related industry, is of essential importance. Recognised as "high intensity lamp sources", discharge lamps designed for special purposes in the entertainment and live performance sector do not fall under the scope of ecodesign regulations.

We understand the the aims of ecodesign (energy efficiency) and RoHS (hazardous substances on the market) are different. However, inconsistency bears the risk of differing enforcement in the member states and legal uncertainty for the industry coming from outside the EU.

- Impact assessment on the socio-economic dimension

As mentioned above, phasing out certain discharge lamps in the entertainment, film and live performance sector too quickly would have an **essential financial impact** on suppliers and end users as well as on public authorities in the member states such as regions and cities.

The 2019 study to assess socio-economic impact of substitution of mercury-based lamps currently exempted under RoHS, commissioned by the Commission and carried out by Oeko-Institut e.V., only assesses administrative costs for the industry, but doesn't provide data for replacement costs for end users such as theatres, concert halls, opera houses, touring productions, cultural centres etc.

**We therefore urge the Commission to carefully consider the possible impact, including the socio-economic dimension for our sectors, as required in the RoHS Directive.**

Our organisations are committed to further work with the European Commission on the topic of RoHS, in particular on discharge lamps used in the entertainment and live performance sector, recycling of those lamps and alternative technical solutions with the aim to further reduce discharge lamps on the market.

The number of discharge lamps in our sector has significantly decreased due to technical progress over the last 5 years and even in a BAU scenario this continuous reduction is expected to continue.

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A part of the undersigned have been involved in the review of ecodesign regulations and in this context proposed a technical exemption for the entertainment, live performance and film sector. Since October 2018, Pearle – Live Performance Europe is a member of the Ecodesign Consultation Forum and as such represents the *European Entertainment Ecodesign Coalition*, an ad hoc group representing end users in our sectors.

**PEARLE\* - Live Performance Europe** – is the 'Performing Arts Employers' Associations League Europe'. Pearle\* represents through its member associations the interests of more than 10,000 organisations including orchestras, music ensembles, groups, festivals, concert halls and producers across Europe. This includes profit as well as non-profit organisations, ranging from micro-enterprises to companies over 250 employees. Pearle\* is recognised by the European Commission as a European sectoral social partner, representing the employers in the European sectoral social dialogue committee live performance.

[www.pearle.eu](http://www.pearle.eu)

**OETHG** – The Austrian Association for Theatre Technique was founded in 1973 to promote national and international communication within the entertainment industry, including authorities, media and institutions. OETHG is member of OISTAT (Organisation Internationale des Scénographes, Techniciens et Architectes de Théâtre) and UNESCO's ITI (International Theatre Institution) Austrian branch. There are 400+ members and theatres all across the entertainment industry value chain: manufacturers, dealers, consultants, installation companies, opera houses, festivals, theatres congress centres, rental and event companies, individual technicians and broadcasting.

[www.oethg.at](http://www.oethg.at)

**ROBE lighting** - based in the Czech Republic, manufactures innovative, high quality moving lights and digital lighting products. The Robe brand is still experiencing record growth in all sectors and our products can be found on stages, in concert halls and Television studios throughout the world.

Over 600 employees work at Robe's primary 55 000 square metre facility in Valašské Meziříčí, and the products are exported via a worldwide distributor network to over 100 countries across all continents. Robe continues to focus on designing and producing well-engineered products utilising the very latest available technology to meet the creative, technical and practical demands of our wide range of users and investors.

[www.robe.cz](http://www.robe.cz)

**Robert Juliat** – Founded in 1919, Robert Juliat is a three generation, independent, 100% family-run company, and the oldest existing manufacturer of high-quality lighting equipment for theatres, opera houses, events, TV and architectural applications.

Robert Juliat is the first name in profile spots, Fresnels, PCs, followspots and ambient lighting fixtures, with LED, discharge and traditional tungsten sources. RJ is internationally recognised for outstanding quality, superb optics, ergonomic perfection, and mechanical excellence in all its stage lighting. All Robert Juliat luminaires are designed and built in France and in Europe: 10,000 sq metres of R&D, production-line and offices are located in a small, quiet village 50km north of Paris.

<https://www.robertjuliatt.fr/>

**White Light Ltd** – Employing over 250 staff in South London, White Light supplies lighting, video & audio technology for hire or sales to the theatre, broadcast, corporate event, leisure and music industries. With a long history in supplying West End theatre WL is probably the largest supplier of theatre lighting in the UK with a rental stock valued at over £30M.

[www.whitelight.ltd.uk](http://www.whitelight.ltd.uk)

**VPLT** – is the German Entertainment Technology Association. VPLT members include international manufacturers, technical service providers and technicians from German-speaking Europe. The association also represents our members within the IGWW – the German Community of Interest for the Event Industry. Internationally, the VPLT is a member of the World Entertainment Technology Federation (World-ETF) and an Affiliate Member of the Event Safety Alliance. The VPLT is actively involved in all of the relevant industry standards and norms processes and is represented in the European CEN/TC 433 – Entertainment Technology and is registered in the EU-Transparency Register as well as the official list of German Lobby Organisations.

<https://www.vplt.org/>

**ALD** – The ALD is the professional body representing all those who work or are interested in the creation of lighting, video & projection for live performance and events.

Its aims are to further the art of lighting design for the theatre, live entertainment and associated industries and raise the professional status of the lighting and video / projection designer as members of the creative production team, advocating for the art and creative input of light in all its forms for live performance.

The Association also acts as a resource for information about lighting and video / projection designers, lighting art and the business of lighting design, training and education for the profession.

<https://www.ald.org.uk/>

**PLASA** – is the lead international membership body for those who supply technologies and services to the event, entertainment and installation industries. The Association works to ensure that each sector is fully represented and championed on issues of concern and plays an active role in defining best practice, safe working conditions and driving standards. PLASA is also an authoritative and influential voice within the lighting community serviced by PLASA members who would identify themselves as being part of a specific and unique “Entertainment” or “Creative” sector which is quite distinct from the Commercial, Industrial or Residential lighting sectors. Our community typically (but not exclusively) operate in the following market segments:

Theatre, Television, film, concert touring, festivals, arenas and stadium, music venues, corporate event spaces and at international public spectacles (such as the Olympic Games, Eurovision Song Contest etc.). <https://www.plasa.org/>

**ASPEC** – part of PLASA is an Association of Studio and Production Equipment Companies which consists of leading Film, Television and Broadcasting facilities companies. ASPEC exists to provide a collective voice within the industry and represent the interests of its members.

**DTHG** - The German Theatre Technical Society (Deutsche Theater-technische Gesellschaft, DTHG) is a professional association for anyone working in the technical, technical/artistic and artistic fields of overall cultural production, regardless of whether they are employed, freelance, self-employed, theatres, institutions, educational establishments or companies. The DTHG is a non-governmental organisation (NGO) and is an independent professional association. It promotes qualifications, training and continuing education for all technical and artistic careers in scenery, costumes and production. The DTHG also promotes the academic development and the practical use of technology and equipment in theatres, television and film production studios, multi-purpose halls and other meeting places. The DTHG gathers and disseminates technical information for the operation, planning, construction and equipping of institutions in this area of media. The DTHG is an intermediary between art and technology. <https://www.dthg.de/english/>

**IALD** - Founded in 1969, the International Association of Lighting Designers (IALD) is an internationally recognised organisation dedicated solely to the concerns of independent architectural lighting designers. The IALD strives to set the global standard for lighting design excellence by promoting lighting quality, the advancement and recognition of architectural lighting designers and the architectural lighting design profession. IALD members are located in 54 countries and practice globally. The IALD has a European office based in Brussels. [www.iald.org](http://www.iald.org)