

IALD Position Paper on Circular Economy

September 2020

INTERNATIONAL ASSOCIATION OF LIGHTING DESIGNERS

IALD

1. INTRODUCTION

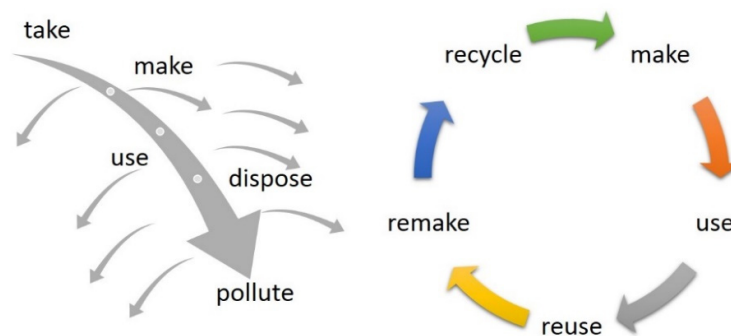
The purpose of this paper is to summarize the impact of the transition to circular economy on the lighting sector, discuss the role of independent lighting designers in this transition and position the **International Association of Lighting Designers (IALD)** vis-à-vis future or potential legislative initiatives of the European Union (EU) in this area.

2. THE CONCEPT OF CIRCULAR ECONOMY

As humans, we have adopted a linear and unsustainable approach to resources: we take, make and dispose. Because of the way we extract resources, process and transport materials, fuels and food, material use is expected to double by 2060. In fact, in 2017, packaging waste in Europe reached 173kg per inhabitant. There is, therefore, an environmental and economic imperative to change the way we produce and consume, to rethink and redesign products, components and packaging they come in.

Circular economy is a response to current linear economic system: We extract materials from the environment in unsustainable ways, we manufacture products not designed to last, and we dispose of used products in a way that ends up in landfills or incinerators. A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use and recycling end-of-life products back into the economy.

Linear versus Circular Economy



CC 3.0 Catherine Weetman 2016

Source: *A Circular Economy Handbook for Business and Supply Chains: Repair, Remake, Redesign, Rethink* by Catherine Weetman

The European Commission adopted the first Circular Economy Action Plan in 2015 to help stimulate Europe's transition toward a circular economy as well as foster sustainable economic growth. The theme of circular economy is at the centre of a wider package of measures of the new European Commission: the [European Green Deal](#). A part of this overarching strategy is a new [Circular Economy Action Plan](#), presented by the European Commission on 11 March 2020. It establishes a programme of actions covering the whole cycle: from production and consumption to waste management and the market for secondary raw materials. The purpose is to contribute to 'closing the loop' of product lifecycles through greater recycling and reuse, bringing benefits for both the environment and the economy.

The IALD welcomes the adoption of the Circular Economy Action Plan, will closely follow the relevant initiatives presented under this plan and will continue to be engaged as an EU stakeholder in all policies on lighting. The IALD advocates the value of lighting design and what it can bring to sustainability.

3. ECODESIGN TODAY

Current ecodesign policies of the EU focus on regulating products and its efficiencies through the Methodology for Ecodesign of Energy-related Products ([MEErP](#)), at the time of placing on the market.

The main purpose of these regulations is achieving energy savings by banning energy-inefficient products from the EU market and the IALD supported that goal. The [Commission regulation 2019/2020](#), which covers all lamps and luminaires, meant simplification of the three preceding regulations into one regulation on lighting.

An important element of ecodesign policy, from the circular economy perspective, is removability—making sure it is possible to take out a non-functioning part from a containing product that otherwise works well. This aspect also facilitates market surveillance testing, which is essential for keeping low quality and unsustainable products off the market.

In case of LED containing lamps, however, removability of LEDs is not helpful in prolonging equipment life in the vast majority of products, as the LEDs lifetime is likely to exceed the life of the control gear. On the contrary, it has a potential to create long term incompatibility issues. The aspect of removability of LEDs and its control gear therefore needs be further addressed by regulators.

One of the other remaining issues in the ecodesign lighting regulation is that replacement lamps, or LED equivalents, are sometimes unavailable or are not compatible with existing installations in buildings. This presents a risk of creating unnecessary waste from the need to replace these installations that could otherwise still be functioning. In addition, replacement of lamps with alternatives that have the wrong lighting characteristics results in lower/higher lighting levels and low lighting quality (and in extreme cases, negate any potential energy savings), has a negative impact on work and life environments and safety.

Therefore, a standard for compatibility of retrofitting lamps should be established, as the industry exercises this already with control systems such as DALI (Digital Addressable Lighting Interface).

4. THE FUTURE OF ECODESIGN: DURABILITY, REPARABILITY AND RECYCLABILITY

Further focus on physical design of products is a necessary step in the transition to circularity. A key element of circular economy principles is that products ought to be used longer through extended lifetime and then should be reused, repaired or recycled. If the products are designed to last longer, to be more easily recyclable and repairable, unnecessary waste and resource depletion can be avoided. The IALD welcomes the European Commission to include durability, reparability, and recyclability requirements within the ecodesign product policy in its work plan.

Defining waste as an important material resource is a precondition for reaching maximum level of using recycled content in all future products.

The IALD position on durability is that any future ecodesign regulations on lighting should define lifetime requirements for products. These requirements should refer to operating hours of a fitting (instead of a time-based guarantee) and to its operational characteristics including light output and colour stability. Such information on the lifetime of a lighting product would enable lighting designers to calculate and better advise on life expectation of entire lighting projects.

To allow for repairs, spare parts availability should become a requirement for lighting, as it is already in place for other electrical products. However, it is necessary to consider the diversity of lighting products on the market. Upgradeability of lighting installations would enable further energy-efficiency gains and enhance the ability to add new features such as connectivity.

While some durability and recyclability requirements are included in current regulations for lamps, they could be further strengthened by new instruments such as an electronic product passport, reparability index or sustainability score for electronic products.

The IALD will actively participate in the discussion of new proposals on product rules.¹ Our organization welcomes the European Commission to introduce legislation on sustainable products, widening the ecodesign framework to a broad range of products, as suggested by the Circular Economy Action Plan.

In case of lighting related products, these regulations should be extended not only to the light engine and the electrical components, but also to the control gear and the housing of the fitting.

In order for lighting designers to be able to advise clients on sustainability of lighting installations and their elements, manufacturers will need to provide more transparency and information on the materials used in their products. Information on material composition or on recycled content could become part of future sustainability scoring and labelling requirements.

5. LIGHTING SYSTEMS

As mentioned above, the IALD has supported the focus of the ecodesign on regulating products such as light sources. In the future, narrow focus on products will not be enough to achieve further environmental benefits and a more systematic approach will be needed.

A [feasibility study](#) on ecodesign for lighting systems shows that lighting systems is an area where the potential of energy savings and delivering on circular economy principles can be accomplished while improving the quality of light. Thus, it remains a priority for the IALD that the EU adopts a regulatory strategy relating to lighting systems.

The study states that energy efficiency benefits from optimized lighting applications are obtained not only through the adoption of high efficacy luminaires, but also through well refined design options. Lighting design that incorporates utilisation, daylight contributions (via controls and design), apply occupancy control and surface reflectance, can all contribute to energy saving opportunities. The IALD believes that it is firmly within lighting designers'

¹ See for example Commission working document: [Sustainable Products in Circular Economy](#)

capabilities to optimize these factors and to take the responsibility to sign-off for lighting systems that meet the requirements.

6. PHASING OUT OF LIGHTING PRODUCTS CONTAINING MERCURY

While reducing waste is the ultimate goal of the circular economy model, a necessary step toward this goal is the need to eliminate substances in products that are detrimental to the environment when these products become scrap.

The IALD supported the goals of the RoHS Directive² to remove mercury from different products. In fact, independent architectural lighting designers today use mercury-containing lamps only rarely in special cases, where the use of LED alternatives is not viable or effective. Similarly, as LED and laser-based products become available for theatrical use, mercury-containing discharge lamp products are being replaced in the market and in use.

The IALD recognizes the need for maintaining existing fittings as part of the circular economy and therefore a continued supply of mercury-containing lamps for use in such fittings must be maintained for a reasonable period. However, we clearly call for new lighting products in the market to be free of the requirement for mercury-containing lamps and existing products that use such lamps to be withdrawn from sale as soon as practically possible. Moreover, we accept our responsibilities as professional lighting designers to avoid specifying lighting equipment that requires mercury-containing lamps when possible.

In November 2019, the IALD joined several stakeholders in the entertainment lighting sector in signing a position paper³ calling for a continuation of discharge lamps that are currently used in theatres.

Circular economy considerations come into play if theatres are obliged to replace equipment that requires discharge lamps prematurely. These lamps are very expensive and are used in technically complex fittings in a sector that is generally not very well resourced with much dependent on public funding. In case of an abrupt ban, low budget theatres and performance

² [Directive 2011/65/EU](#)

³ Contribution to the public consultation on the review of RoHS: Special purpose lamps used in the live performance, film and wider entertainment sector, submitted on 26 November 2019 by Pearle – Live Performance and other stakeholders

companies would not get to use second-hand equipment and technologies as they are replaced by top-end theatres and performance companies. Preventing continued or reuse of such equipment will place financial strain across the sector and is directly contrary to the circular economy principle.

7. ENCOURAGING REUSE IN LIGHTING

True circularity in the economy will not be complete without adequate conditions for reusability. Today in Europe, a secondary market with used lighting and related products is almost non-existent, even though it would be beneficial from both the economic and environmental point of view. The IALD therefore calls for actions that will encourage development of the secondary market.

One of the actions could be creating favourable tax regimes for second-hand products. Other administrative obstacles need to be removed, for example on donations of old light fittings.

Lighting designers are well placed to give guidance on reuse of lighting elements and during refurbishment services and thus contribute to prolonged life of lighting and to avoiding the need for recycling.

8. NEW BUSINESS MODELS: LIGHTING AS A SERVICE

With the transition to circularity, new business models are appearing in the economy. In lighting, the shift to providing lighting services instead of lighting product is increasingly taking place in larger (industrial) projects⁴. This model provides for contracts where the client pays per lumen used instead of per fixture installed.

The IALD recognizes the potential of such a model to contribute to sustainability through the commitments of the manufacturer (and owner providing lighting as a service) of the light installations on maintenance and proper recycling at the end of life.

However, these benefits could be nullified by risks that lighting as a service model brings. The nature of the contracts under this kind of model could, under some circumstances, motivate the

⁴ Examples of such projects: <https://www.luxreview.com/2015/04/20/pay-as-you-go-lighting-arrives-at-amsterdam-s-schiphol-airport/> and <https://www.ellenmacarthurfoundation.org/case-studies/selling-light-as-a-service>

manufacturer to install more fixtures than necessary, which goes against resource efficiency. At the same time, selling only light as service instead of the lighting product with appropriate lighting design service does not assure that the provider will aim for the highest possible quality of light. Therefore, an independent lighting designer should play an important role in lighting as a service projects as a guarantor of the quality of light provided.

Furthermore, lighting as a service model does not necessarily guarantee that the equipment or service will be optimised for the circular economy. Although the single point of supply and maintenance should facilitate repair and reuse, the incentive to replace and recycle faulty fittings remains significant. Also, there is currently no incentive to reuse the fittings taken out of one installation before end of economic life in another installation. It will require a positive benefit such as a tax break to encourage reuse of elements or entire light fitting.

The European Commission in its Circular Economy Action plan envisages launching a sustainable product framework, which will feature encouraging new business models. The IALD will call for an effective way to regulate product as a service contracts to ensure they are fully coherent with the circular economy principles and that they do not discriminate against independent service providers.

9. CONCLUSION: A CHANGE IN BEHAVIOUR

Truly embracing the circular economy philosophy requires significant change to existing practices across the lighting and building industries. In lighting design, we need to be open to reusing existing equipment in our projects. We also need to consider second-hand equipment and encourage original equipment manufacturers and refurbishment companies to provide parts, services, warranties, and support for such equipment.

It is also necessary to engage lighting equipment manufacturers in discussions of product life, not just warranty periods. The design life of the lighting equipment and continued availability of parts and a repair service is essential in understanding how lighting products should be assessed during specification and at end of use in installations.

We also need to encourage contractors to engage with the process and be mindful of potential re-usability when removing equipment, taking specific care in dismantling, handling and storage of fittings being taken down and to become more aware and engaged with the secondary market and specific lighting equipment recycling schemes.

We also need to make strong economic cases to clients, encouraging them to consider circular economy principles during the design, commissioning the operation of the lighting systems we design. Lighting designers have a key role in the development of the circular economy of lighting and we need to lead the process.

ABOUT THE INTERNATIONAL ASSOCIATION OF LIGHTING DESIGNERS

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 in 62 countries and practice globally. More information about IALD is available at www.iald.org. The IALD has a European office in Brussels, Belgium.

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