

Towards a Circular Economy for Lighting

The circular economy for lighting is a quantified product design and supply-chain management exercise, it is not vague ideology. Applying standards-based circular economy principles is a coming commercial opportunity for New Zealand suppliers and contractors.

The upcoming 2021 implementation of the European Union Single Lighting Regulation (SLR) is acting as a global motivator of supply-chain reform towards a circular economy for lighting products. In short, this means a progressive evolution from a linear “take, make, dispose” resource use ethos towards a model that extends and revives the life of product components and materials in a circular manner. The circular economy includes the major topics of ecodesign and materials efficiency.

ECODESIGN

Ecodesign is about savvy design, manufacture, supply and operation to target the elimination of waste and pollution over life, and to avoid premature product obsolescence. Ecodesign for luminaires includes:

- Design for improved product durability and extended life
- Design for ease of product disassembly and materials separation
- Product and component repair, upgrade and re-use
- Product takeback and re-manufacture
- Materials recovery and recycle at end-of-life



MATERIAL EFFICIENCY

Material efficiency is very similar in concept to energy efficiency, and ensures that material use is identified, quantified and minimised and, where practical, recycled materials are prioritised. Emergent IEC standards are providing metrics and methods for calculation of recycled content and material circularity.

MODULAR CONSTRUCTION

Impending requirements for easy replacement and upgrade means that luminaires need to be designed for modular plug and play interchangeability of major

components. Over the last decade the Zhaga Consortium has been working to develop specifications for mechanical, electrical and optical interchangeability of luminaire components and these are now being converted into IEC international standards, and locally into AS/NZS standards.

BUSINESS MODELS

In the wider world, companies like Uber, AirBnB, Spotify and Netflix with “as-a-service” models have transformed their business sectors using circular economy principles. Lighting-as-a-Service (LaaS), where the supplier seamlessly owns and maintains the lighting assets and takes responsibility for performance over contract life, is set to do similar for larger commercial and industrial lighting projects.

LCNZ LEADERSHIP

LCNZ is providing a circular economy leadership role by chairing International Electrotechnical Commission (IEC) lighting standards on Environmental Aspects, a central role that brings best-practice thinking to benefit the New Zealand industry and consumers.

Lighting Council New Zealand is the industry association for lighting manufacturing, importing, and distribution companies in New Zealand, and associated lighting industry participants. www.lightingcouncil.org.nz

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