

Facing man-made climate change

Creating a circular economy in lighting

Over the last decade there has been a laser-like focus on in-use lighting energy efficiency, driven both by economics (a return on a lighting investment delivered by reduced energy costs), and increasingly, the move to low or zero carbon buildings in the face of man-made climate change.

The result has been a boom in replacing conventionally-lamped luminaires with LED versions. However, energy efficiency (output efficiency) of individual luminaires is but one narrow measure of lighting's sustainability.

LEDs have made a huge contribution to reduced energy consumption, but the move to LED has come with consequences. It has created the unmaintainable luminaire, with little or no provision to replace either the light engine or driver on failure; product lifecycles have become shorter and more complex; and the consequences of "offshoring" production to countries that extensively use fossil fuels, especially coal, in their power generation (and then shipping those luminaires and/or components on long

sea or air freight journeys) is severely damaging to the environment.

Consequently, CIBSE has produced TM66, which comprises two elements:

- **Circular Economy Assessment Method – Make:** a comprehensive tool allowing manufacturers to fully engage with the depth of detail required to create a fully circular economy-capable product;
- **Circular Economy Assessment Method – Specify:** a triage tool for designers, specifiers and engineers, allowing the quick comparison of two or more products.

This technical memorandum sets out what designing and manufacturing to comply with circular economy principles entails and includes a checklist, a method of assessing a product's circular economy



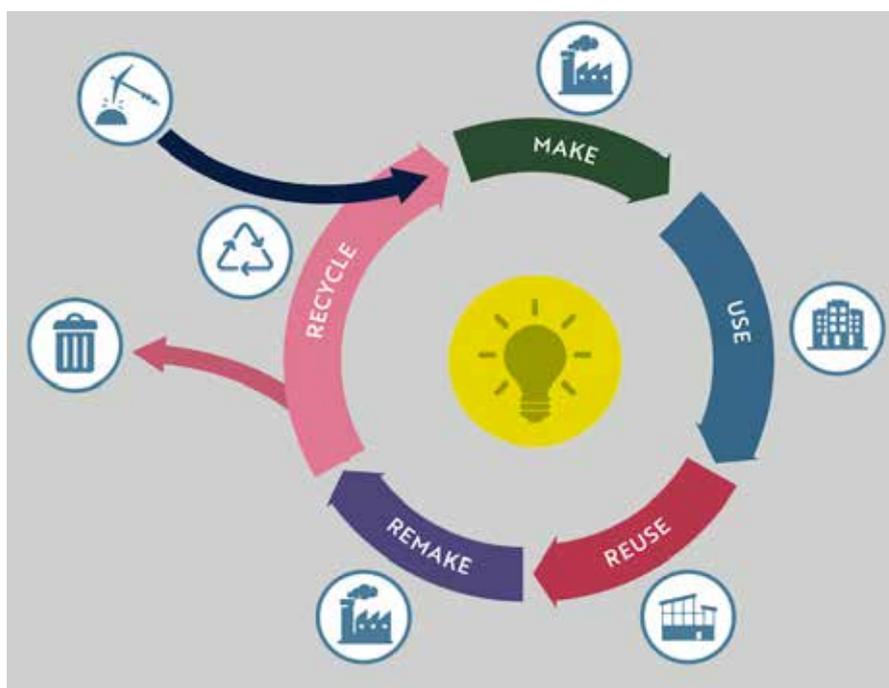
Refurbishment of a halogen installation to LED demonstrating the circular economy in action.

performance, and real-world examples of good practice.

The purpose of this document is to provide practical guidance to all in the lighting industry, at every level and all sizes. This includes specifiers such as lighting designers, consultants and architects, clients, manufacturers, importers and suppliers, electrical wholesalers, sustainability managers, contractors, facilities managers and end-users.

A full understanding of a scheme's sustainability must include product life cycle, a cradle-to-cradle analysis of all energy and resource inputs, and how to minimise the impact on the environment. Maximising resource efficiency "designs-out" waste and pollution, keeps products and materials in use, addresses resource scarcity and regenerates natural systems. TM66 will help achieve that goal.

Contact: <https://www.cibse.org/knowledge/publications> ■



The circular economy model.