

Green light for solar

With the global charge towards net zero by 2050, sustainable procurement of solar lighting aims for the lowest possible environmental impact and the most positive social results.

Sustainable procurement assesses the whole-of-life cost of goods (cradle to grave), and refers to estimating goods' environmental impact, such as the use of recycled materials, and the capability of the product to be re-used, recycled, or repurposed within a circular economy.

Standalone solar lighting in public areas has become popular due to its ease of installation, low environmental impact, and use of a free renewable power source. This can significantly reduce greenhouse gas emissions and mitigate climate change, which is critical to protecting humans, wildlife, and ecosystems.

Not all solar lights are similar in design or have the same environmental sustainability. When procuring solar lighting, it is important to remember that unit pricing alone is not the only factor when assessing value for money.

Undertaking a whole-of-life assessment is critical when procuring solar lighting. This assessment should consider the following:

Product

The assessment should consider the design, materials used in manufacture, overall quality, and whether it is fit for purpose, or if there are limitations that could expose compliance or liability risk, such as dimming to non-compliant lighting levels.

Capital expenditure

Acquisition costs, including unit price, packaging, delivery, installation, connection (or lack thereof), and commissioning costs are important.

Operating expenditure

Labour, materials, consumables, and environmental impacts, such as energy consumption when compared with traditional lighting solutions, should be considered.

Maintenance costs

Spare and replacement parts, maintenance and inspection frequency, and the warranty term

– including exclusions of any critical components, are part of maintenance.

End-of-life costs

End-of-life costs include safe disposal and removal, and any potential for upcycling or recycling.

A product's warranty term can provide an approximation of its expected life cycle, to calculate whole-of-life costs.

Here are two examples of warranty term-based life-cycle cost scenarios.

Short life-cycle products with a one- to five-year warranty will:

- require more frequent replacement of the complete asset (in most cases), as well as batteries (if changeable with the product), and most warranties would be voided if the battery is not replaced by the supplier
- additional labour costs due to removal of the old asset and reinstallation of the new asset
- have higher disposal costs and environmental impacts due to shorter life cycles.

Long life-cycle products with a 10-year warranty will:

- require no component replacement within 10 years, as most will have a life expectancy of up to 15 years or longer
- have minimal disposal costs if a warranty claim is made, resulting in a small environmental impact.

One next-generation solar bollard light with a long life cycle can now even illuminate previously unheard-of locations, such as fully shaded areas or flood-prone zones. Procuring quality solar lighting can be a wise investment for any council; however, an assessment of the total life-cycle cost of goods is essential to achieve the best sustainable procurement outcome. ●

