



# UNDERSTANDING SUSTAINABILITY METRICS FOR LIGHTING PRODUCTS

*A GUIDE FOR LIGHTING DESIGNERS AND SPECIFIERS*

**ISSUE 2  
SEPTEMBER 2025**

# CONTENTS



<b>CONTENTS</b>	<b>2</b>
1.1 INTRODUCTION	3
1.2 SCOPE	3
<b>2. WHY SUSTAINABILITY MATTERS FOR LIGHTING</b>	<b>4</b>
2.1 WHY ARE LIGHTING MANUFACTURERS REPORTING ON SUSTAINABILITY?	4
2.2 WHY IS IT RELEVANT TO THE WIDER LIGHTING INDUSTRY?	4
<b>3. QUANTIFYING</b>	<b>5</b>
<b>4. LEVELS OF REPORTING</b>	<b>6</b>
4.1 WHY ARE EPDS TREATED AS THE GOLD STANDARD?	7
4.2 ARE EPDS THE GOLD STANDARD TODAY?	7
4.3 WHY CAN'T I FIND AN EPD FOR EVERY LUMINAIRE?	7
4.4 IS IT REASONABLE TO REQUEST AN EPD?	7
<b>5. USING RESULTS</b>	<b>8</b>
5.1 HOW CAN I USE THIS DATA?	8
<b>6. COMPARING SUSTAINABILITY VALUES</b>	<b>9</b>
6.1 HOW DO I DETERMINE WHICH PRODUCT IS MORE SUSTAINABLE?	9
6.1.1 IT'S OK TO COMPARE TWO REPORTS WHEN:	9
6.1.2 YOU SHOULDN'T BE COMPARING WHEN:	9
6.2 VARIABLE CONSIDERATIONS:	10
<b>7. SMART QUESTIONS TO ASK MANUFACTURERS</b>	<b>11</b>
<b>8. COMMON PITFALLS &amp; USEFUL TIPS</b>	<b>12</b>
<b>9. CONCLUSION: CALL TO ACTION</b>	<b>13</b>
9.1 ASK MANUFACTURERS FOR DATA	13
9.2 UNDERSTAND THE METHODS AND REPORTING QUALITY LEVELS	13
9.3 FOCUS ON INTEGRATING INFORMATION TO UNDERSTAND THE BIGGER PICTURE	13
<b>ACRONYMS &amp; DEFINITIONS</b>	<b>14</b>

# 1. INTRODUCTION

## 1.1 INTRODUCTION

This document is not only intended to provide the wider lighting industry, including specifiers and designers, but also procurement professionals, and sustainability consultants, with a clear and accessible guide to understanding the sustainability reporting tools currently used within the lighting industry. As sustainability considerations increasingly influence procurement and project decisions, it is vital that stakeholders are equipped to interpret and apply environmental data meaningfully and responsibly.

This guide explains the scope, purpose, and reporting levels of several assessment and communication methods applied in the lighting industry, i.e. TM66, TM65.2, Life Cycle Assessment (LCA), and Environmental Product Declarations (EPDs). It also outlines how these tools contribute to evaluating the environmental and circular performance of lighting products.

This document assumes a basic understanding of lighting products and general sustainability principles. While technical expertise in lifecycle analysis or carbon reporting is not required, readers will benefit from familiarity with common concepts such as embodied carbon, circularity, and environmental impact metrics. More advanced users will find value in the comparative guidance, quality levels, and practical questions included to support deeper engagement with manufacturers and their product data.

Ultimately, this guide aims to support transparency and informed decision-making, supporting the transition to more sustainable lighting choices across the built environment.

## 1.2 SCOPE

This document is intended to align reporting practices between manufacturing members of The LIA and the wider lighting industry while raising awareness of the range of available methodologies to assess sustainability of lighting products.

# 2. WHY SUSTAINABILITY MATTERS FOR LIGHTING



Lighting contributes to the operational energy use of buildings; whilst the embodied carbon of lighting may be less significant compared to other building elements, it is important to track and report these emissions in order to reach decarbonisation targets and other sustainability goals. As pressure grows to meet climate change mitigation targets and adopt circular economy principles, understanding the sustainability of lighting products has become essential.

## 2.1 WHY ARE LIGHTING MANUFACTURERS REPORTING ON SUSTAINABILITY?

**The goal:** to facilitate transparent and comparable information to support the selection of more sustainable products.

**Note:** Achieving this requires significant investment of time and resources from manufacturers, reflecting their commitment to understanding impacts, reducing them, and monitoring progress. This work is not only about meeting client or regulatory demands, but also about driving measurable improvements across the industry

## 2.2 WHY IS IT RELEVANT TO THE WIDER LIGHTING INDUSTRY?

**The goal:** to enable specifiers, designers, manufacturers and other invested parties to evaluate product sustainability consistently, avoid common mistakes, and make informed, aligned decisions that support environmental goals, project requirements, and long-term value.



# 3. QUANTIFYING



**Sustainability:** a broad term encompassing environmental, social and economic aspects, where impacts in each aspect must be assessed with suitable methods and tools. Some methods available to lighting professionals are:

SUSTAINABILITY			
CIRCULARITY	ENVIRONMENTAL IMPACT		SOCIAL & ECONOMIC IMPACTS
	EMBODIED CARBON	EMBODIED CARBON AND OTHER IMPACTS	
<p><b>CIRCULAR ECONOMY ASSESSMENT METHOD (CEAM) – CIBSE TM66</b></p> <p><b>WHAT IT IS:</b> a specific way to assess how “circular” a lighting product is.</p> <p><b>WHAT IT MEASURES:</b> how well the product and its support system align with circular economy principles, covering design, manufacturing, materials, and supporting ecosystem.</p> <p><b>HOW IT REPORTS:</b> gives a score from 0 (very low circularity) to 4 (excellent circularity)</p> <p><b>WHAT THE SCORE MEANS:</b> higher scores mean the product is designed and supported to last longer, be easier to maintain/repair, and recycle at the end of its life, using resources more efficiently.</p> <p><b>WHY IS IT RELEVANT TO THE SPECIFIER:</b> It describes the degree to which a product may be considered circular.</p>	<p><b>DT65 – CIBSE TM65.2</b></p> <p><b>WHAT IT IS:</b> a simplified tool to estimate the embodied carbon of lighting products.</p> <p><b>WHAT IT MEASURES:</b> the estimated GHG emissions (kgCO<sub>2</sub>e), contributing to the Global Warming Potential (GWP) indicator from materials, manufacturing, transport, and end-of-life stages (excluding operational energy).</p> <p><b>HOW IT REPORTS:</b> provides total estimated kgCO<sub>2</sub>e, broken down by lifecycle stage.</p> <p><b>WHAT THE RESULTS MEAN:</b> estimate of the embodied carbon of a product based on generic data and assumptions.</p> <p><b>WHY IS IT RELEVANT TO THE SPECIFIER:</b> it informs the specifier on an estimate of the embodied carbon in a lighting product.</p>	<p><b>ENVIRONMENTAL IMPACT ASSESSMENT (LIFE CYCLE ASSESSMENT – LCA)</b></p> <p><b>WHAT IT IS:</b> a comprehensive, standard-based method (ISO 14040/14044) to evaluate environmental impacts across a product’s entire life cycle.</p> <p><b>WHAT IT MEASURES:</b> the estimated environmental impacts across 13+ impact categories, including GWP, water use, resource depletion and many more.</p> <p><b>HOW IT REPORTS:</b> quantified results for multiple environmental categories, broken down by lifecycle stage.</p> <p><b>WHAT THE RESULTS MEAN:</b> they inform the specifiers of the environmental impacts across the whole life cycle of the product and multiple impact categories. The estimates are more accurate than TM65.2 due to less generic &amp; more comprehensive data. Results are self-assessed unless verified (i.e.independently verified EPD).</p>	<p><u><b>OUTSIDE THE SCOPE OF THIS DOCUMENT</b></u></p>

# 4. LEVELS OF REPORTING



Understanding the quality and credibility of sustainability reporting is essential for interpreting results correctly and making sound comparisons. This section outlines the different reporting levels for CEAM (TM66), DT65 (TM65.2), and LCA, explaining what each level communicates, how much experience and technical knowledge is required to interpret results and the associated evidence level provided. A lower level of reporting usually provides less evidence on the data, therefore the specifier relies more heavily on assumptions and unverified data, while higher levels of reporting involve greater rigour from the manufacturer and provide clearer, more reliable data and evidence to support decision-making.

REPORTING LEVEL	MANUFACTURER			CLIENT	
	CEAM – TM66	DT65 – TM65.2	LCA	Client Knowledge & Experience Required	Evidence Level
LEVEL 1	Overall score only	Single embodied carbon value	Single (or multiple) impact values	Basic self-reporting method – requires result interpretation & relies heavily on supplier self-declaration.	Minimum – results are self-declared and unverified
LEVEL 2	Self-declared score breakdown across the 4 categories	Self-declared embodied carbon breakdown across applicable lifecycle stages	Self-declared LCA report documenting impacts across the lifecycle of the product	Detailed self-reporting method – requires knowledge and familiarity with environmental impact reporting, but more details support greater transparency of manufacturer claims.	Moderate – more detail is provided, but still self-declared
LEVEL 3	Level 2 + Independently verified (TM66 Assured)	Level 2 + Independently verified (TM65.2 Assured)	Level 2 + Independently verified (Environmental Product Declaration)	Independently verified reporting method – requires similar knowledge and familiarity to Level 2, but independent review provides greater confidence in the assessment results.	Higher – independent verification increases confidence & reliability

## 4.1 WHY ARE EPDS TREATED AS THE GOLD STANDARD?

---

In order to publish a Life Cycle Assessment (LCA) study as an Environmental Product Declaration (EPD), the declarant must produce the LCA in accordance with rigorous rules. Specifically international standards (ISO 14040/14044/ISO 14025) and Product Category Rules (PCRs). The LCA report and results must then undergo independent verification, often mandated as third-party verification by specific Programme Operators. This process ensures that more reliable product comparisons may be drawn if all underlying assumptions and methods have already been verified. Results communicated by manufacturers are trustworthy, consistent, and reliable

## 4.2 ARE EPDS THE GOLD STANDARD TODAY?

---

While Environmental Product Declarations (EPDs) are often considered the current “gold standard” in environmental reporting, it is important to recognise both strengths and limitations of EPDs. The information reported in EPDs is generally regarded as accurate and reliable, more than other types of reports, because it is based on standardised assessment methods and goes through independent verification, which provides specifiers and clients with greater confidence in the results. However, there are significant considerations around accessibility, cost and complexity, as the independent verification process adds additional expense on top of the LCA work already required from manufacturers. Since producing an LCA is the first, necessary step to producing an EPD, the main barrier lies in the extra cost and time associated with the independent assessment. The LIA is therefore advocating for measures to make EPDs more accessible to the industry, including exploring potential tax breaks and wider commercial incentives to encourage investment in EPDs, with Government and Public Affairs Committee (GPAC) taking the lead on this issue.

## 4.3 WHY CAN'T I FIND AN EPD FOR EVERY LUMINAIRE?

---

Publishing an EPD carries time and cost burdens for manufacturers. As a result, not all manufacturers are able to produce EPDs for every product range simultaneously. Additionally, some luminaires, such as bespoke or project-specific products, may require ad-hoc EPDs further adding to the complexity and cost.

As a result of this EPDs are generally produced based on sales volume; therefore, some product ranges may not have the volume to justify the capital expenditure to invest in an EPD.

Similarly, product variations including, for example, emergency conversions, may not have EPDs due to the lower volume of sales of this variant.

## 4.4 IS IT REASONABLE TO REQUEST AN EPD?

---

It is an accepted practice to request an EPD where possible, especially for large-scale or sustainability-led projects. However, specifiers should also understand the legitimate constraints that may prevent manufacturers from providing one immediately. Where EPDs are not available, manufacturers may offer alternative sustainability data from LCA reports or verified TM65.2 assessments.

# 5. USING RESULTS

## 5.1 HOW CAN I USE THIS DATA?

Sustainability data can support decision-making at different stages of a project, depending on the type and detail of the report available. This section outlines how each reporting method, TM66, TM65.2, LCA, and EPD, may be used in practice.

	REPORT TYPE	USE OF DATA
<b>1</b>	CEAM – TM66	Early design optioneering, information on repairability and reusability
<b>2</b>	DT65 – TM65.2	Early design optioneering, product screening, reporting on project carbon budget
<b>3</b>	LCA report	Entry 2 + addition to whole-building impact reports, better understanding of product impacts
<b>4</b>	EPD	Entry 3 + evidence for building-level schemes (e.g. BREEAM) and other official reporting schemes

*Table 3: Environmental data applications for each type of report.*

Sustainability data from TM66, TM65.2, LCA, and EPD reports can inform product selection at various project stages, from early optioneering to formal compliance. As reporting detail increases, so does the applicability of the data. EPDs are often required to support building-level sustainability certifications such as BREEAM, LEED, or NABERS.



# 6. COMPARING SUSTAINABILITY VALUES



## 6.1 HOW DO I DETERMINE WHICH PRODUCT IS MORE SUSTAINABLE?

With the reports described so far, you can only know about the environmental impacts and circularity of a product; to assess full sustainability, you would have to investigate further into a manufacturer's practices and their social and economic burdens.

You can compare the reported environmental information of products following the directions below:

### 6.1.1 IT'S OK TO COMPARE TWO REPORTS WHEN:

- They were produced using the same methodology
- They report at the same level of the reporting quality table
- The underlying data, assumptions and rules followed are the same (for LCA and EPD)

### 6.1.2 YOU SHOULDN'T BE COMPARING WHEN:

- You're not sure how the values were calculated
- You're not sure about underlying assumptions adopted

## 6.2 VARIABLE CONSIDERATIONS:

Different reporting methods have different variables which contribute to reported values. The use of 3rd party external verification can reduce the subjective interpretation of supporting evidence.

Variables which may be considered include:

TM66	TM65.2	LCA AND EPD
Subjective interpretation of some questions	Lifetime of light source/control gear and luminaire	Programme Operator
Use of qualitative descriptors	BOM granularity	PCR/PSR
	Assembly location and energy mix during manufacturing	Database
	Maintenance/repair scenarios	Lifetime of light source/control gear and luminaire
		BOM granularity
		Transport scenarios
		Energy mix during manufacturing
		Packaging disposal assumptions
		Maintenance/repair scenarios
		Use scenarios (energy mix, controls, hours of use, etc.)

*Table 4: Comparison variables  
(See Table 6 for potential supporting questions)*

Be careful about drawing conclusions on product specification solely based on environmental data.

While TM66 scores can be compared, when scores are not verified through an assurance scheme you will be comparing two self-declared scores.

When comparing TM65.2 embodied carbon reports it is important to remember that although the methodology is based on fixed steps with little room for subjective interpretation, there are still some factors that can generate result variability (table 4, above).

When comparing impact results from LCA reports or EPDs it is important that the manufacturer provides as much information as possible on the scenarios and assumptions used for the assessment.

When a product appears to have a lower impact value compared to another product, it is important to evaluate aspects such as:

- Product lifetime
- Light quality
- Performance
- Possibility to repair and upgrade the luminaire
- Overall suitability in the installation

# 7. SMART QUESTIONS TO ASK MANUFACTURERS



While it's possible to compare headline values it's important to recognise additional information will be required to make a considered decision about the sustainability of a product.

These questions help you complement the information received from each reporting method, with additional aspects that may help you understand a bit more about the methods used to assess sustainability of products.

## Key:



The framework applies to the question



The framework doesn't apply to the question

	TM66	TM66 ASSURED	TM65.2	TM65.2 ASSURED	LCA	EPD
Can you provide supporting evidence for a CEAM questionnaire claim?	✓	✓	✗	✗	✗	✗
Have you registered for a TM Assured scheme?	✓	✓	✓	✓	✗	✗
Was the calculation basic or mid-level?	✗	✗	✓	✗	✗	✗
Does your product include any recycled materials? Can you provide evidence?	✓	✓	✓	✓	✓	✓
Where do you source your components and materials from? (Supply chain)	✓	✓	✓	✓	✓	✓
Do you plan to assess this product using an LCA?	✗	✗	✓	✓	✗	✗
Which PCR/PSR and database versions were used to produce the study?	✗	✗	✗	✗	✓	✓
How old is this report and how frequently are your reports updated?	✓	✓	✓	✓	✓	✓

Table 6: Manufacturer questions

# 8. COMMON PITFALLS & USEFUL TIPS



**Mixed methods:** you shouldn't draw conclusions and make final decisions based on information coming from different assessment and reporting methods.

**Tip:** *when the same reporting type is not available from multiple manufacturers, it's better to ask manufacturers for more information on their products in order to draw a more complete picture, before a decision is made.*

**Score ≠ quality:** a high TM66 score doesn't guarantee that a product has low environmental impact. The presence of an EPD for a product doesn't guarantee that a product is the most sustainable option available.

**Tip:** *reports are supporting information you collect about a product in order to make a decision. Reports should be fully read and understood before a decision is made. See section 5 for supporting questions.*

**Time validity:** environmental reports capture a snapshot of aspects related to a product at the time they were published.

**Tip:** *make sure you check the date of publication and that reports are still valid. Ask manufacturers if any of the production techniques or supply chain operations have changed since the issuing of reports/certificates.*

**Geographical context:** some reports may have been produced using datasets that are not suitable in all regions, and/or assumptions based on a specific country's statistics. For example, impacts based on electricity use can vary significantly between countries depending on the average composition (including renewable generation) of the National electricity grid.

**Tip:** *check for validity notes on the report and for references and other information about the type and regional context of the datasets used. Note: This is applicable to EPDs and LCA reports.*



# 9. CONCLUSION: CALL TO ACTION



## 9.1 ASK MANUFACTURERS FOR DATA

Don't assume that sustainability data will be presented unprompted. Engage directly with manufacturers and request TM65.2 calculations, TM66 scores, LCA reports, or EPDs where relevant. Asking early in the project process ensures that you have time to evaluate options properly and encourages greater transparency and accountability across the supply chain.

Manufacturers may be willing to use metrics to evaluate relative impacts of design choices to support the design and specification process.

## 9.2 UNDERSTAND THE METHODS AND REPORTING QUALITY LEVELS

Each sustainability method communicates different information and varies in terms of scope, accuracy, and verification. Familiarising yourself with the reporting quality levels, from self-declared to independently verified, will help you assess how much confidence you can place in the data and reduce the risk of misinterpretation or misleading comparisons.

## 9.3 FOCUS ON INTEGRATING INFORMATION TO UNDERSTAND THE BIGGER PICTURE

No single metric can define how sustainable a product is. Use a combination of circularity, embodied carbon, and environmental impact data to build a more complete appraisal of a product's sustainability profile.

# ACRONYMS & DEFINITIONS



<b>TM65.2 (DT65)</b>	<b>CIBSE TECHNICAL MEMORANDUM 65.2</b> A simplified methodology developed by CIBSE to estimate the embodied carbon of lighting products using generic data and assumptions.
<b>TM66 (CEAM)</b>	<b>CIBSE TECHNICAL MEMORANDUM 66 – CIRCULAR ECONOMY ASSESSMENT METHOD</b> A scoring tool that assesses the circularity of lighting products, considering design, materials, and lifecycle support.
<b>LCA</b>	<b>LIFE CYCLE ASSESSMENT</b> A comprehensive, standardised methodology (ISO 14040/14044) that quantifies the environmental impacts of a product throughout its lifecycle—from raw materials to end-of-life.
<b>EPD</b>	<b>ENVIRONMENTAL PRODUCT DECLARATION</b> An independently verified document based on LCA, following strict Product Category Rules (PCRs), used to provide transparent, comparable environmental data for products.
<b>CO<sub>2</sub>E</b>	<b>CARBON DIOXIDE EQUIVALENT</b> A metric used to express the global warming potential (GWP) of all greenhouse gases in terms of the amount of CO <sub>2</sub> that would have the same impact.
<b>GWP</b>	<b>GLOBAL WARMING POTENTIAL</b> A measure of how much heat a greenhouse gas traps in the atmosphere relative to carbon dioxide.
<b>PCR</b>	<b>PRODUCT CATEGORY RULES</b> Detailed rules and requirements for conducting LCAs and producing EPDs for specific product categories, ensuring consistency and comparability.
<b>CEAM</b>	<b>CIRCULAR ECONOMY ASSESSMENT METHOD</b> The methodology described in TM66 to evaluate the circularity of a lighting product based on its design, lifecycle, and supporting services.
<b>BREEAM</b>	<b>BUILDING RESEARCH ESTABLISHMENT ENVIRONMENTAL ASSESSMENT METHOD</b> A widely used building sustainability assessment method that may require verified environmental data such as EPDs for product-level contributions.
<b>NABERS</b>	<b>NATIONAL AUSTRALIAN BUILT ENVIRONMENT RATING SYSTEM</b> An international building performance rating scheme, which can also reference environmental data for embodied carbon or circularity during assessment.
<b>LEED</b>	<b>LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN</b> A global green building certification system that uses LCA and EPD data to assess material impacts.

© The Lighting Industry Association 2025. All rights reserved.

All content, including downloads, visuals, and resources, are the intellectual property of The Lighting Industry Association and may not be reproduced, copied, or shared without prior written permission.