



# How can we evaluate the environmental impact of our products and drive the transition to a low-carbon economy?

**KPMG helps Signify**  
Client story



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The lighting industry plays a critical role in the transition to a low-carbon economy. In 2022, lighting was responsible for 2% of global greenhouse gas emissions (comparable to the aviation sector). A worldwide switch to energy-efficient LED lighting could directly reduce 1% of global emissions. As a global leader in lighting, Signify feels a great responsibility to be at the forefront of this transition. The company has set itself the goal of driving product sustainability through EPDs on a large scale. Zhizhen Wang, Sustainability Program Manager at Signify, explains, "Through our Brighter Lives, Better World 2025 program, we aim to double the pace of the Paris Agreement 1.5 °C scenario to cut emissions across our entire value chain by 2025 and achieve net zero by 2040." Signify is doing this by helping its customers reduce their emissions with more sustainable products. To achieve this, Signify aims to record the environmental impact of its energy-efficient LED products throughout their entire life cycle in an Environmental Product Declaration (EPD). With this knowledge, the company will be able to empower customers to make evidence-based decisions and drive the low-carbon transition.



**Jacqueline Zhou**

Manager Sustainability & Circular Economy, KPMG



**Zhizhen Wang**

Sustainability Program Manager, Signify

## Signify's request

Signify aims to lead the low-carbon transition with energy-efficient sustainable lighting products. Zhizhen Wang: "The development of an Environmental Product Declaration (EPD) helps demonstrate product environmental impact with transparency throughout the entire life cycle, helping us achieve our goal." Jacqueline Zhou, Manager Sustainability & Circular Economy at KPMG: "An EPD acts as a food 'label' for a product and shows its environmental impact. It ensures transparency throughout the product's life cycle, from raw material to end user."

The value of an EPD lies in its completeness, reliability and comparability: it covers all impacts throughout the life cycle (from extraction to disposal or recycling), is based on standardized, scientifically accepted methods and is verified by an independent third party, making it easy to compare products. This enables consumers, producers and policymakers to make informed decisions.

Jacqueline Zhou: "For companies like Signify, an EPD provides strategic value by meeting customer and regulatory requirements, demonstrating environmental awareness, and supporting competitive advantages in circular design and sustainable innovation."

## Why did Signify choose KPMG?

Signify approached KPMG for help in creating EPDs on a large scale. KPMG's global network and specific industry knowledge were reasons for the collaboration. Most importantly, the firm's expertise in Life Cycle Analysis was a key factor in the decision to work together. Zhizhen Wang: "It is precisely this experience that helps us to assess all potential environmental impacts over the entire life cycle of a product."

Another important reason for choosing KPMG was its expertise in automation and machine learning. Zhizhen Wang: "It helps us optimize the efficiency of data processing."

## New insights

The EPD process proved to be very data intensive and detail oriented. Zhizhen Wang: "The devil is in the details. We knew beforehand that it would be complex but not that it would be that complex." Jacqueline Zhou adds: "The project felt like a marathon of more than 10 months, full of surprises and challenges."

During the pilot phase, we selected a wide range of products to cover different processes and conducted data collection across different departments and vendors." In short, it was a lengthy process to track data throughout the entire value chain. Zhizhen Wang: "I'm really proud of the team at Signify and KPMG. We remained resilient and solution-oriented, and despite a long scale-up phase, we achieved great results." Not only did EPD production become increasingly efficient, but also the integrity of the data – and thus the high quality of the EPDs – remained guaranteed.

## Concrete actions

It started with building an international EPD core team of the best experts in sustainability, R&D, IT, procurement and quality. Jacqueline Zhou: "This team was responsible for defining a detailed and effective methodology, leveraging the deep knowledge of experts from different disciplines."

In addition, KPMG designed the end-to-end EPD generation process, which was tailored to the specific needs of each business unit. Jacqueline Zhou: "We started with a pilot for a few selected business units, collecting and validating data across the value chain." Based on the insights from the pilots, the processes were improved and scaled up to cover the entire product portfolio.

And then there was the use of automation and machine learning, which was a key factor in the project's success. Zhizhen Wang says, "We used digital tools for data collection from suppliers, for data consolidation from internal systems, and for EPD formatting to automate the end-to-end process." Jacqueline Zhou adds, "In particular, by using machine learning to map components within and across product families, we achieved tremendous efficiency."

## Real solutions

The collaboration with KPMG resulted in EPDs that quantify the full environmental impact of products. This practice will become a new norm as the Eco-design for Sustainable Product Regulation (ESPR) comes into force on July 18, 2024. This directive sets out a greater number of requirements that go beyond simply providing environmental information, and delve into the specifics of product circularity attributes throughout their entire life cycle. The introduction of the Digital Product Passport (DPP) is one of the 3 main elements of the ESPR, which requires manufacturers to provide a DPP in 2026/2027. In this context, EPDs serve as a version of these digital passports.



Signify's adoption and promotion of the EPD solidifies their position as a frontrunner in sustainability. The company can now better help customers make informed decisions about sustainable lighting products. Zhizhen Wang: "We are committed to sharing the environmental impact of our entire LED product range to lead transparency and strengthen our leadership in sustainability." With high-quality EPDs, Signify continues to advance sustainable product development and offering.

#### **The collaboration with KPMG**

The collaboration between Signify and KPMG was close and effective. Zhizhen Wang: "The dynamic within the team was inspiring. We worked together toward the same goal, with a common mission in mind. When you look at the dedication and flexibility of the KPMG team, it was truly impressive." Jacqueline Zhou adds: "You have to remember that we worked together very intensely every day, shoulder to shoulder. With professionals from Signify and KPMG from all over the world. It was a unique experience."

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Zhizhen Wang, Signify

# KPMG helps.

KPMG helped Signify create EPDs at scale by assembling a cross-functional team, designing an end-to-end EPD generation process, and applying automation and machine learning to improve efficiency. Our innovative 'Product Passport' approach integrates all key environmental information, offering customers a streamlined way to meet their Digital Product Passport obligations. This collaboration contributes to Signify's sustainability goals.

Inspired by Signify's story? Find out how KPMG's Sustainability and Circular Economy services can help your organization.

## Why KPMG?

1.

KPMG has a strong track record in the circular economy. For more than a decade, we have been advising organizations from various sectors.

2.

We are involved in the World Business Council for Sustainable Development, specifically on measuring and driving circularity. Together, we have developed a framework for Circular Transition Indicators (CTI), a universal framework for measuring circularity by organizations and for organizations.

3.

We closely monitor ongoing developments, for example in the field of laws and regulations such as the CSRD, which entails reporting requirements on circularity topics.

4.

And because we are an assurance expert as well, we can also look through that lens at what is needed in terms of performance metrics and circularity.

This combined experience makes us the most relevant partner to develop circularity performance measurement with.

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