

# What is a Product Life Cycle Assessment?

A Life Cycle Assessment (LCA) measures environmental impact by considering the entire life cycle of a product from raw material extraction through disposal. An LCA is a quantitative assessment that is the gold standard in understanding the environmental consequences of a product.

A product LCA also enables businesses to identify opportunities for improvement, optimize resource efficiency, reduce waste, and make informed decisions regarding product design and supply chain management.

An LCA also serves as the base report/first step for generating a third-party certified Environmental Product Declaration (EPD).

LCAs and EPDs can offer a major boost to market access, particularly for manufacturers of building products, furnishings, and materials, opening doors to the architects, designers, engineers, contractors, specifiers, and decision makers looking to purchase green and sustainable products for their projects, buildings, and facilities.

## Why Conduct A Life Cycle Assessment?

Securing an LCA for a product provides a competitive advantage by opening new market opportunities, particularly in the buildings and construction industry where demand for energy efficient, reliable, and green design is growing rapidly.

\$83 Billion U.S. Market	12.3% Annual Growth	1 in 4 Decarbonizing
<p>The US green building market surpassed \$83 billion in 2021 and is experiencing significant growth.</p> <p><a href="#">Statista   Size of the green building market in the United States from 2017 to 2021</a></p>	<p>The global green building materials market is projected to grow from \$422 billion in 2023 to \$951 billion by 2030, at an annual growth rate of 12.3%.</p> <p><a href="#">Fortune Business Insights   Green Building Materials</a></p>	<p>About one quarter of the largest commercial real estate investment trusts are making serious, science-based commitments to decarbonize their buildings.</p> <p><a href="#">U.S. Commercial Real Estate Market: State of Decarbonization 2023</a></p>

The LCA process can provide companies with:

- **Marketing/Competitive Advantage:** An LCA-based Environmental Product Declaration (EPD) report can be a major boost to market access, particularly for building products and materials.
- **Design Recommendations:** LCAs can identify potential changes that could be made to lessen a product's environmental impact.
- **Guidance on Purchasing:** An LCA can identify products that have the least environmental impact.
- **Benchmarking:** An LCA report can provide data that compares the company to others in the industry.
- **Resource Preservation:** The LCA process identifies areas where resources are being used inefficiently or where alternative materials or processes may be more sustainable. Assessments can identify processes to reduce energy consumption, greenhouse gas emissions, water usage, and waste generation.
- **Tracking:** An LCA can compare a company's environmental performance with past years.
- **Policy Guidance:** LCAs can identify initiatives that will help the company improve its overall environmental outcomes.

"The benefits of a Life Cycle Assessment for Berner are many. Having a **better understanding of our products' environmental footprint** allows us to **identify areas of improvement** in our sourcing, manufacturing, and product design. Conducting an LCA also helps Berner tell a more complete story. We speak a lot about the sustainability benefits of our air curtains when they are in use (thermal comfort, energy savings, food safety, chemical-free insect control, etc.). With a life cycle assessment, we will be able to **include the physical aspect of the product, along with the functional**. At Berner, our mission is to save energy and create healthy, comfortable environments. Performing an LCA allows us to **go further towards achieving our mission**. For Berner, it's the right thing to do."

**Miranda Berner**, LEED AP BD+C

[Berner Air Curtains](#)

"It is good practice these days for all manufacturers to consider EPDs. This is certainly important for **understanding the embodied carbon in a product**, and there is growing legislation about purchasing products with EPDs ... [including] specifically with regard to building materials and products. And **LEED (Leadership in Energy and Environmental Design) has offered credits for purchasing products with EPDs** ever since LEED version 4 was released. I think EPDs will become as common as nutrition labels on food items. **Manufacturers who do not have EPDs will be left behind**. It is also important for manufacturers to **get Red List chemicals out of their products** and to **refrain from contributing to bad labor practices/slave labor**."

**Amy Hattan**, Corporate Responsibility Officer

[Thornton Tomasetti](#)



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