



Product sustainability and life cycle assessment

Improving product sustainability with targeted analysis

Life cycle assessments (LCAs) offer insight into product and service environmental impact drivers by conducting rigorous and in-depth analysis that guides product design innovation and improves sustainability throughout the value chain. An LCA does not tell you what is best; it tells you what is.

WSP USA offers a scientific framework for quantifying the environmental benefits and burdens of production, use and disposal of goods and services. We help clients differentiate products in the marketplace, enhance brand, identify cost savings, increase stakeholder engagement and validate product certifications and environmental claims. We also identify hot spots in the supply chain or design of a product to improve sustainability.

Our services

We offer guidance from goal setting to the strategic application of results to guide product innovation using the tools of LCA, risk assessment and product footprinting. We use LCA as a practical and cost-effective business solution to evaluate cradle-to-grave impact.

- **Product risk assessment:** Assess a product or service’s risk exposure to water scarcity, resource use, deforestation and social impacts; benchmark products and services compared to competitors; assess the risks and benefits of product claims; and create a strategic plan to address risks.
- **Screening-LCA:** Gain high-level insights on life cycle hotspots to drive innovation.
- **ISO-conformant LCA (per ISO 14040 and 14044):**

	Non-comparative	Comparative
Without Critical Review	Reveal the drivers of environmental impact.	Discover how the environmental impact of a product or service compares to that of competitors.
With Critical Review	Speak confidently about the environmental impact of a product or service in external communications, substantiated by independent third-party verification.	Substantiate comparative marketing claims with independent third-party verification.

- **Water footprint:** Quantify water impacts to identify impact drivers in the value chain (per ISO 14046).
- **Carbon footprint:** Calculate GHG emissions for a product or an entire organization, service or event (per ISO 14067).
- **Environmental product declarations (EPDs):** Increase the transparency of a product’s environmental profile with an easy to understand document while gaining valuable LEED v4 points; create Product Category Rules for generating EPDs; and verify EPDs for listing with the International EPD® System.
- **Whole building LCA:** Assess the impacts of an entire building and gain valuable LEED v4 points.

Our experience

As a silver member of the American Center for Life Cycle Assessment (ACLCA), with a team members serving on the board, WSP has an extensive network within the industry. Members of the WSP team are also certified EPD verifiers with the International EPD System® and serve on the International Standards Organization US Technical Advisory Group 207 on environmental management, which oversees revisions to relevant LCA standards. These connections provide insight into changes and developments in LCA standards, stakeholder engagement and market trends in the ever-evolving LCA space.

WSP provides guidance through every step of the LCA process from setting study goals and scopes to strategically applying results to guide product innovation. WSP has supported clients from start-ups to Fortune 100s in the following areas of LCA:

Project examples

CONDUCTED TWO PRODUCT LCAS FOR TECHNOLOGY CLIENT

Our team conducted two cradle-to-grave LCAs on electronics products to understand the material hot-spots in the life cycle to inform circular design, aid in GHG emissions reporting, and provide data for key product environmental reporting initiatives. Using WSP's streamlined approach to LCA, we evaluated two disparate products simultaneously and built a customized model to evaluate the environmental impacts of changes to product design.

CALCULATED PRODUCT ENVIRONMENTAL IMPACTS FOR CONSUMER GOODS CLIENT

WSP calculated the environmental impacts of disposable beverage cups and bottles to help customers track the environmental benefits of using the client's reusable beverage containers through their innovative app. Additionally, we calculated the carbon payback period for each of the client's products to help their customers understand how many times to reuse the product to offset its production.



CONDUCTED ISO-CONFORMANT COMPARATIVE LCAS FOR A BIOFUELS CLIENT

WSP compared innovative cellulosic ethanol production with conventional fuels for a biofuels client to inform internal process technology decisions and substantiate business-to-business communications.

About WSP

WSP USA is the U.S. operating company of WSP, one of the world's leading engineering and professional services firms. Dedicated to serving local communities, we are engineers, planners, technical experts, strategic advisors and construction management professionals. WSP USA designs lasting solutions in the buildings, transportation, energy, water and environment markets. With more than 9,500 employees in 150 offices across the U.S., we partner with our clients to help communities prosper.

Our multidisciplinary sustainability, energy and climate change team has been providing related services for two decades. We support clients across sectors by providing strategy and planning, operational and technical expertise, a collaborative approach and a unique perspective on the market.



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