



LIFE CYCLE ASSESSMENT

# REAL CIRCULARITY CAN CREATE REAL CHANGE

Transparent measurement is key to solving the global packaging waste crisis and addressing climate change. Because if products are not worth recycling – or too challenging to recycle – then we are simply managing waste. At Ball Corporation, we believe in pushing toward a real circular economy – rethinking how society designs, creates, and reuses products.

A crucial component of this transformation is the transparent measurement and active accounting of the real environmental impact of our waste – beyond traditional cradle-to-grave thinking. We must consider circularity, recycling, and the lifespan of pollution in order to achieve truly meaningful measurement and truly informed decision-making.

## WHAT IS REAL CIRCULARITY?

The new methodology for Life-Cycle Assessment (LCA) is a major first step toward Real Circularity.

### AT BALL, THIS MEANS:

- Designing fully circular products
- Working to dramatically improve recycling rates
- Supporting Extended Producer Responsibility policies and/or Deposit Return Systems
- Innovating collection systems that are both convenient for consumers and low cost to operate
- Investing in green infrastructure to increase recycling beyond just collection
- Educating consumers on what it means to be truly circular
- Valuing products that enable circularity with better measurement

## WHAT IS A LIFE-CYCLE ASSESSMENT?

Traditional LCA is a powerful, but imperfect tool. We can and must evolve how we think about environmental impact and how we measure it.

### LCA IS A MEANS FOR ASSESSING THE ENVIRONMENTAL IMPACTS ASSOCIATED WITH A PRODUCT BY:

- Compiling an inventory of relevant inputs and outputs of a product system
- Evaluating the potential impacts associated with those inputs and outputs
- Interpreting both the inventory analysis and impact assessment in relation to the objectives of the study.

## TRADITIONAL LCAs



### PURPOSE

- Identify environmental hotspots
- Inform stakeholders
- Add an environmental dimension for decision-makers to explore new design solutions
- Monitor environmental footprint improvements of a product over time
- Compare existing products with alternatives
- Support product claims



### LIMITATIONS

- Not an exact science
- For the same product, different LCAs can suggest different findings
- Circularity, real recycling rates, recycling yields, economics of recycling, and impacts of microplastics are not considered
- Describe one specific situation, cannot be generalized for all

# SPHERA COMPARATIVE LCA: A BETTER WAY TO MEASURE

Sphera, a global provider of software and services on Environment, Health, Safety & Sustainability, Operational Risk Management & Product Stewardship, along with an expert third-party critical review panel, has developed a new comparative LCA to deliver a more transparent and holistic view of packaging's environmental impact.

**Sphera's evolved methodology incorporates the following key factors when comparing Aluminum, PET, Glass, and Cartons:**

- Real global recycling rates
- Recycling process losses
- Global and material variations on recycled content
- Environmental impact categories including global warming potential, acidification, ozone depletion and ecotoxicity among other global indicators
- Material Circularity Indicators
- Sensitivity analyses to forecast potential impact of opportunities such as increasing recycled content, recycling rates, or renewable energy in manufacturing

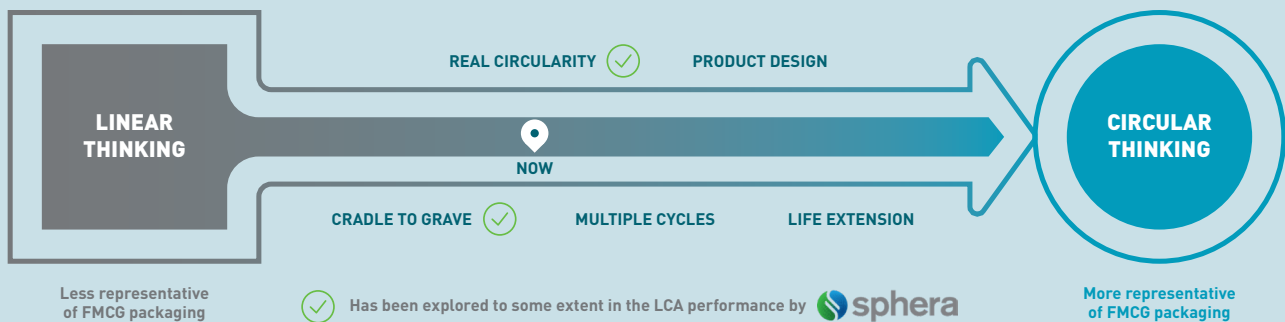
## CRITICAL PEER REVIEW PANEL

**DR. PERE FULLANA**  
Director of the UNESCO Chair in Life Cycle and Climate Change

**IVO MERSIOWSKY**  
Sustainability and leadership consultant, LCA expert

**ANGELA SCHINDLER**  
Environmental management consultant, LCA expert, reviewer for the International Journal of Life Cycle Assessment

## REAL CIRCULARITY



## A SHARED VISION

Evolving the traditional LCA methodology is already providing critically improved insights for Ball, our partners, and our customers. While there is much work ahead, this is one step toward more comprehensive, circular impact measurement.

As a global community, we must work together to combat the ever-growing crisis of packaging pollution.

**True and transparent measurement can help us all see opportunities and support a global shift toward a real circular economy.**



LEARN MORE: [BALL.COM/REALCIRCULARITY](https://ball.com/realcircularity)