Clear Winners: How Three Companies Improved Their Packaging Impacts Using LCAs

15. May. 2019
How many companies have committed?

383 Companies Committing to Action

1457 Commitments
Why Commit To Reducing the Climate Impact of Packaging?

On average, packaging accounts for about 5% of the energy used in the life cycle of a food product making it a significant source of greenhouse gas emissions.

Learn more about how to reduce your packaging’s impact at: https://www.climatecollaborative.com/packaging

Climate Collaborative Resources Include:

• Right Side Up: The Lowdown on Packaging Lifecycle Climate Impacts and Opportunities
• A Delicate Balance: The Science, Art, and Business of Sustainable Plastic Packaging Design
• Yin and Yang: Understanding and Conveying Advantages of your Sustainable Product Packaging

See more at: https://www.climatecollaborative.com/packaging_resources
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Clear Winners: How 3 Companies Improved Packaging Impacts using LCAs
Agenda

• Introductions
• Life Cycle Thinking
• Packaging Assessment Project Overview
• Packaging Sustainability Improvements
  • Guayakí
  • Happy Family Organics
  • REBBL
• Takeaways
• Call to Action
Vision: “Enable all companies to design & manufacture their entire product portfolio using sustainable strategies.”
Life Cycle Thinking

Life Cycle Assessments calculate environmental impact of a product/package from sourcing, manufacturing, distribution, use, and disposal.

--- LCA Data Flow ---

**Life Cycle Inventory (LCI)**
Collection of data to model the entire product/package

**Life Cycle Impact Assessment (LCIA)**
Calculation of environmental impact with various indicators (ex. COMPASS®)

**Life Cycle Assessment (LCA)**
Holistic approach and methodology to determine hotspots and tradeoffs

Source: GreenBlue®
Packaging Assessment Project

Trayak

The Climate Collaborative

Package Committed Company

Sustainable Packaging Journey
Packaging Assessment Project Steps

Define Packaging Change
Respond to Call to Action
Selection Process
Data Collection
Modeling
Analyzing New vs Old
Create Case Study
Market Driven Regeneration® Business Model

- Nearly all product and shipping packaging can be recycled or composted
- Optimize product to packaging ratios, product pallet configurations, and product ordering

Be a Leader in Environmental Stewardship

- Designing 100% recyclable or compostable packaging is a high priority
- Reduce amount of materials for packaging products

Long Term Goals for Improving Climate Impact:

- “Reimagine and redesign beverage delivery systems to eliminate waste and be cyclical, non-toxic and healthy for all living things”
- “Achieve carbon drawdown for our business operations and supply chain”
Proposed Packaging Change Options

- Recycled content addition
- Light-weight package
- Reduce size of package
- Change material to improve the package recyclability
- Improve packaging to product ratio
Increase recycled content in secondary packaging to 50/100%

Reduce headspace by 1” on Yogi’s bag and right-size cardboard case

Increase recycled content in PET bottles to 50%
Data Collection and Modeling

• Packaging System Data Request sent to companies
• Packaging Information Needed for Baseline and New Design
  • Materials
  • Mass of Materials
  • Conversion Processes
  • Packaging Type
Measuring Package Environmental Impact

COMPASS LCA Indicators

- FOSSIL FUEL CONSUMPTION
- GREENHOUSE GAS EMISSIONS
- WATER CONSUMPTION

Additional Packaging Attributes

- REUSED OR RECYCLED CONTENT
- CUBE UTILIZATION
- MANUFACTURING COST
Increase recycled content in secondary packaging to 50/100%
Data Inputted in COMPASS

Corrugated (mass)
Production of Corrugated Containers
Corrugated Boxes

Increased to 100% PCR

Polypropylene Wrap (mass)
Film Extrusion
Bags, Sacks & Wraps

Increased to 50% PCR
Analyzing New vs Old - Guayakí

Measuring environmental impact of baseline and new package design

Water Use (liters)

- Standard 40% PCR Corrugated 0% PCR Wrap
- 50% PCR Wrap + 100% PCR Corrugate

Fossil Fuel Use (MJ deprived)

- Standard 40% PCR Corrugated 0% PCR Wrap
- 50% PCR Wrap + 100% PCR Corrugate
Simple LCA Indicator Results

Fossil Fuel reduced by 319 barrels of oil!

Greenhouse Gas Emissions Reduction eq. to Planting 1,782 tree seedlings!

Water Saved Enough for 863 people to shower every day for an entire year!

*Savings Calculated Based on Incorporating PCR Content in Secondary Packaging required to deliver annual volume of 36 million Guayakí cans.
Reduce headspace by 1” on Yogi’s bag and right-size cardboard case
Data Inputted in COMPASS

Composite Film (mass)
Film Extrusion and Lamination
Composite

Reduced 1” of headspace from pouch

Improved Cube Utilization (more pouches per case)
Analyzing New vs Old – Happy Family Organics

Measuring environmental impact of baseline and new package design
Simple LCA Indicator Results

Greenhouse Gas Emissions Reduction eq. to taking

40 passenger vehicles

Off the road for an entire year!

New Design Reduces Materials by eq. weight of

30 Elephants

New Design Saves Amount of Water to Fill

18 Olympic sized pools

*Savings Calculated Based on Right Sizing the packaging required to deliver annual volume of 8 million Yogi pouches.
Additional Savings

37%

Cost Savings by Right Sizing Pouch and Case

65% Improvement

864 bags transported in original pallet
1,428 bags transported with new right-size design
Increase recycled content in PET bottles to 50%
Data Inputted in COMPASS

Polyethylene terephthalate (PET) bottle (mass)
Blow Molding
Drink Bottles

Polypropylene Cap (mass)
Injection Molding
Other Plastic Packaging

PET Sleeve (mass)
Film Extrusion
Bags, Sacks & Wraps

Increased to 50% PCR PET

COMPASS®
COMPARATIVE PACKAGING ASSESSMENT

TRAYAK
Analyzing New vs Old - REBBL

Measuring environmental impact of baseline and new package design

Water Use (liters)

Fossil Fuel Use (MJ deprived)
Simple LCA Indicator Results

Greenhouse Gas Emissions Reduction eq. to carbon sequestered by 551 Acres of U.S. Forests in 1 year.

Fossil Fuel Saved Could Power Average U.S. homes for an entire year!

Water Saved Could Fill 3,646 Average Backyard Swimming Pools

*Savings Calculated Based on Incorporating 50% PCR PET into annual volume of 20 million REBBL bottles.
Takeaways

• Even small packaging changes when rolled up with annual volumes, can have a big impact at the company level.

• Certain sustainability strategies can be easy wins such as incorporating recycled content.

• Other strategies like light-weight components and right-sizing packages can be longer term, but can translate to even bigger savings.

  • Savings in primary, secondary and tertiary packaging as well as manufacturing cost and packaging to product ratios.
Call to Action

• The Climate Collaborative and Trayak are teaming up again to offer the same engagement (short term and long term packaging change) to other Climate Committed Companies.

• If you are interested:
  • Write to info@climatecollaborative.com with “Trayak Optimization Candidate Application” in the subject line
  • Indicate the project type you would like to participate in
  • Describe how you meet the candidate & project profile

• Applications due by May 31, 2019.
• The full project engagement can be found [here](#).
Packaging Assessment Project Steps

1. Define Packaging Change
2. Respond to Call to Action
3. Selection Process
4. Data Collection
5. Modeling
6. Analyzing New vs Old
7. Create Case Study
Questions?

Thank you!

https://ecoimpact.trayak.com

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