



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

15.May. 2019



TRAYAK

How many companies have committed?

Justin's



gaia
HERBS

383

Companies
Committing to Action

1457

Commitments



Community
FOOD CO OP



REBBL™

seventh
generation.



MegaFood®
Fresh From Farm To Tablet™

nutiva®
NURTURE VITALITY™





BEFORE

COMMITMENT: REDUCE THE CLIMATE IMPACT OF PACKAGING

AFTER

Photo courtesy of Annie's

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>

228

of Companies that
have made a packaging
commitment!

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

THANK YOU TO OUR DONORS!

Alter Eco

Annie's

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Packaging

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California Olive Ranch

Cheer Pack

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Safe Sterilization USA
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Stonyfield

Straus Family
Creamery

Studio Fab

Sweet Additions

Traditional Medicinals

Trayak

Our Speakers



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Trayak

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.”

Mainstreaming Sustainability

EcolImpact



COMPASS



SCORE

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)

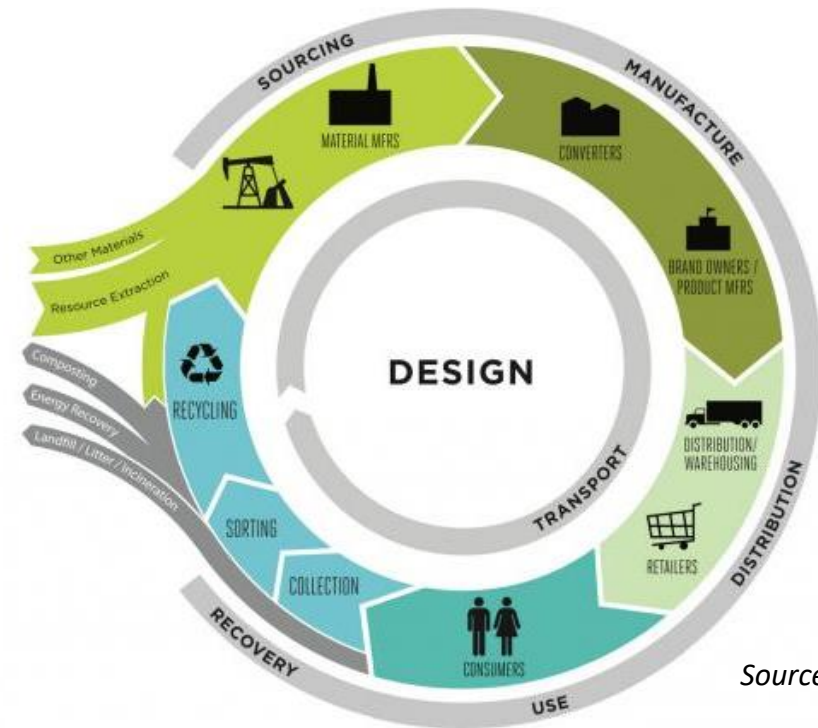
Collection of data to model the entire product/package

Life Cycle Impact Assessment (LCIA)

Calculation of environmental impact with various indicators (ex. COMPASS®)

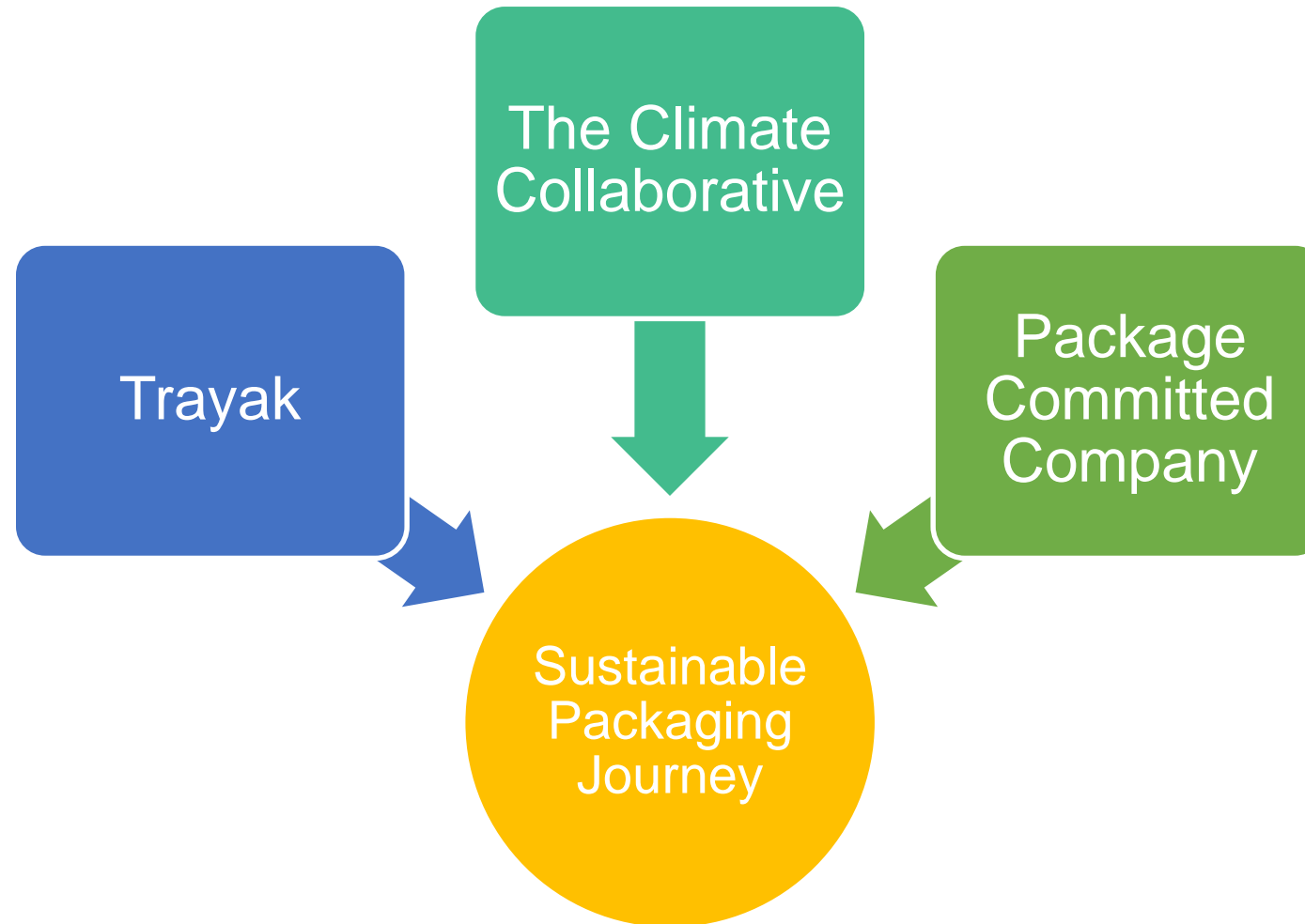
Life Cycle Assessment (LCA)

Holistic approach and methodology to determine hotspots and tradeoffs



Source: GreenBlue®

Packaging Assessment Project



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

Improve
packaging to
product ratio



Change material to improve the
package recyclability



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

Package Details

Material List

ADD REMOVE

- Polyethylene Terephthalate (PET)

Material

Polyethylene Terephthalate (PET)

Mass (g)

100

Recycled Content (PCR %) (0 - 100)

0

Process

Blow Molding

Packaging Type

Soft Drink Bottles

Component End of Life

Recycling %

29.9

Waste To Energy %

13.76

Landfill %

56.34

EDIT

SUBMIT

CANCEL

Measuring Package Environmental Impact

COMPASS LCA Indicators



FOSSIL FUEL
CONSUMPTION

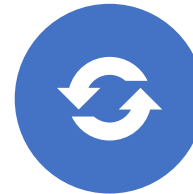


GREENHOUSE
GAS
EMISSIONS



WATER
CONSUMPTION

Additional Packaging Attributes



REUSED OR
RECYCLED
CONTENT



CUBE
UTILIZATION



MANUFACTURING
COST

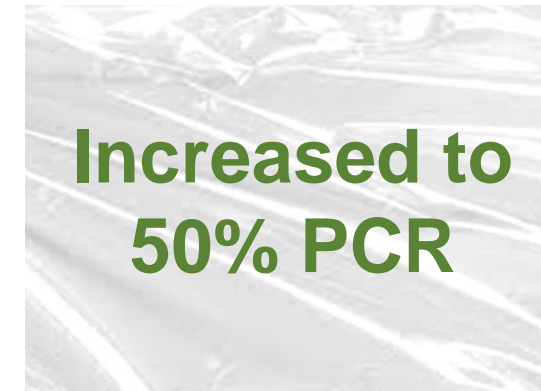


Increase recycled
content in secondary
packaging to 50/100%

Data Inputted in COMPASS



Corrugated (mass)
Production of Corrugated Containers
Corrugated Boxes



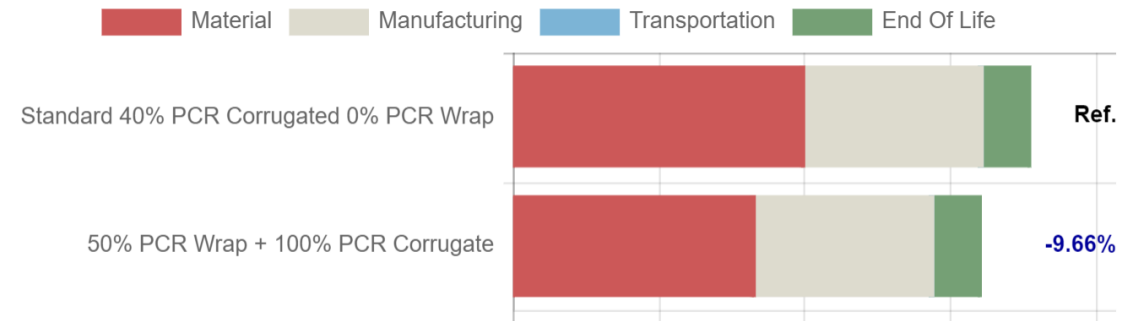
Polypropylene Wrap (mass)
Film Extrusion
Bags, Sacks & Wraps

Analyzing New vs Old - Guayakí

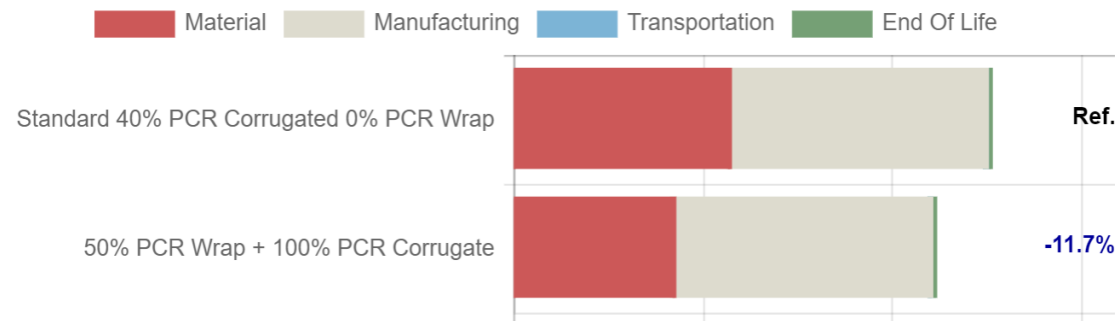
Measuring environmental impact of baseline and new package design



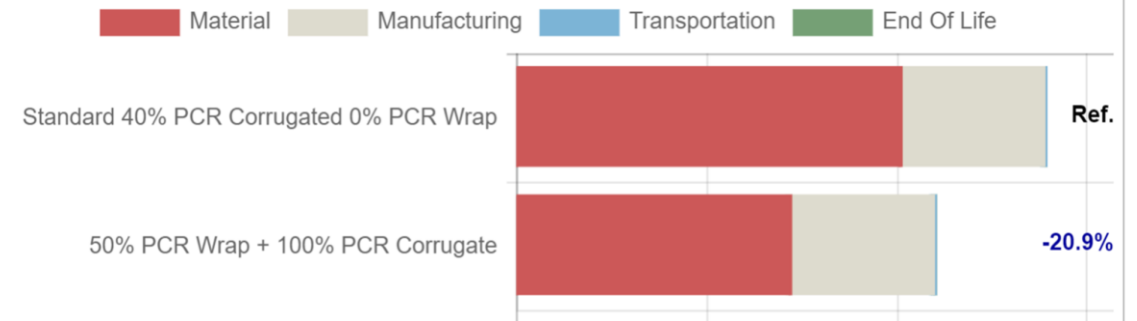
GHG Emissions (kg CO2 eq.)



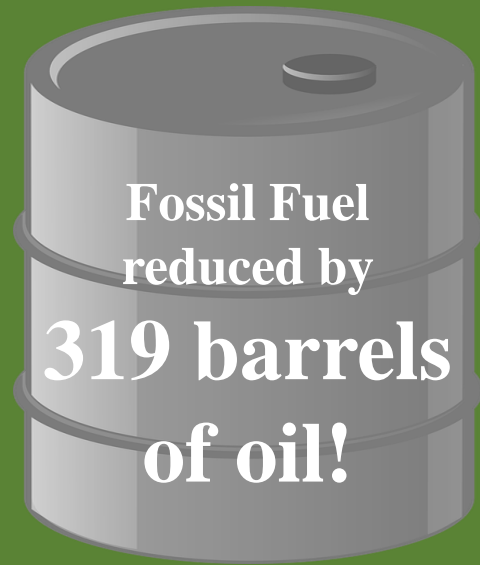
Water Use (liters)



Fossil Fuel Use (MJ deprived)



Simple LCA Indicator Results



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

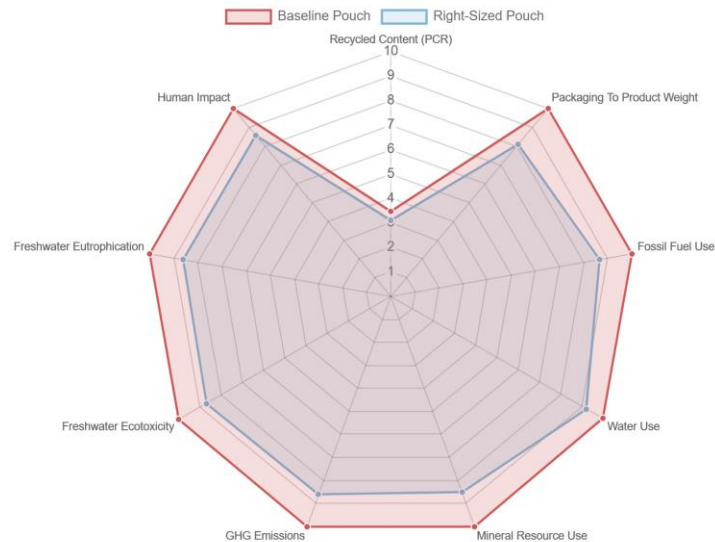
Reduced 1”
of headspace
from pouch



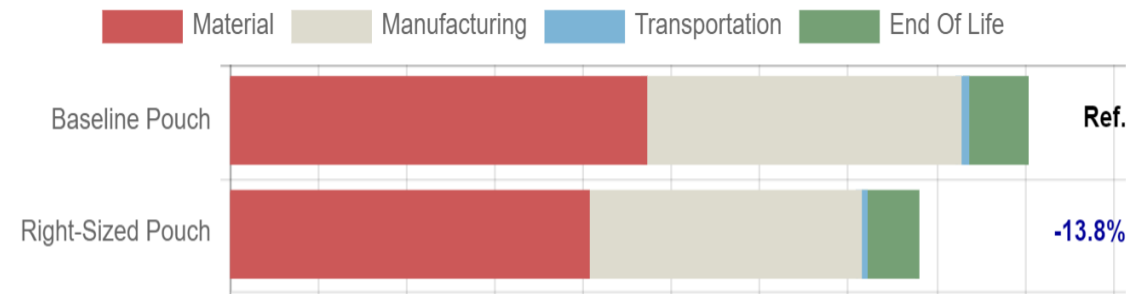
Improved Cube
Utilization (more
pouches per
case)

Analyzing New vs Old – Happy Family Organics

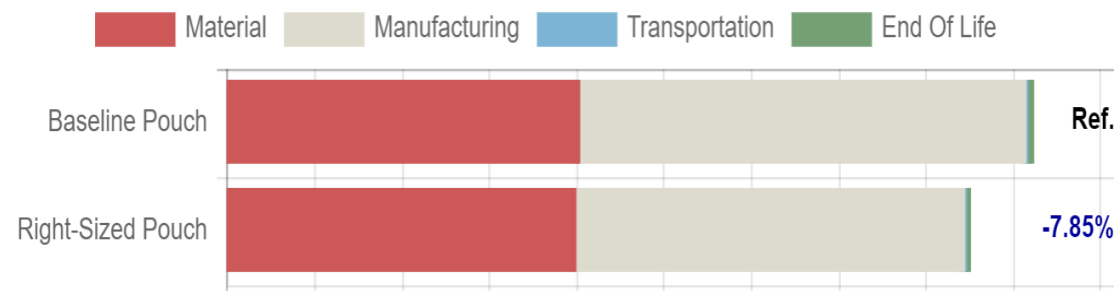
Measuring environmental impact of baseline and new package design



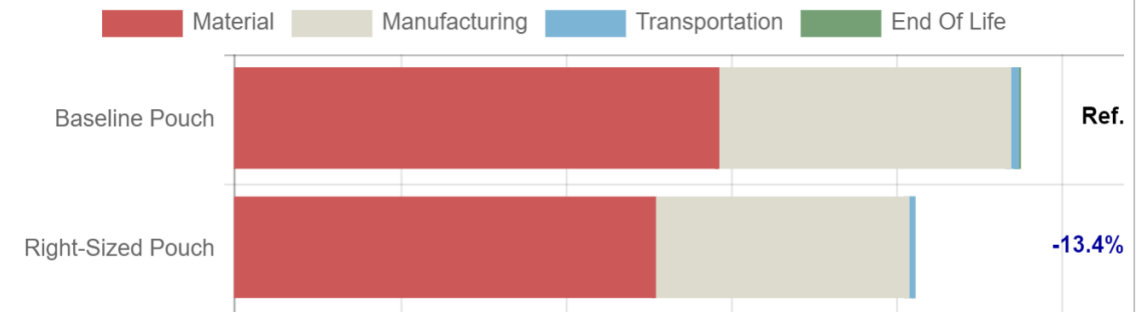
GHG Emissions (kg CO2 eq.)



Water Use (liters)



Fossil Fuel Use (MJ deprived)



Simple LCA Indicator Results

Greenhouse Gas Emissions
Reduction eq. to taking



Off the road for an entire year!

New Design Reduces
Materials by eq. weight of



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

**Increased to
50% PCR
PET**

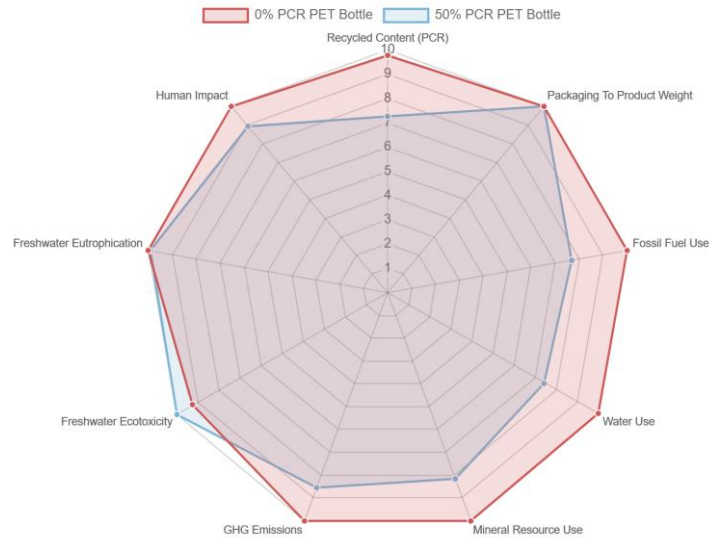


Polypropylene Cap (mass)
Injection Molding
Other Plastic Packaging

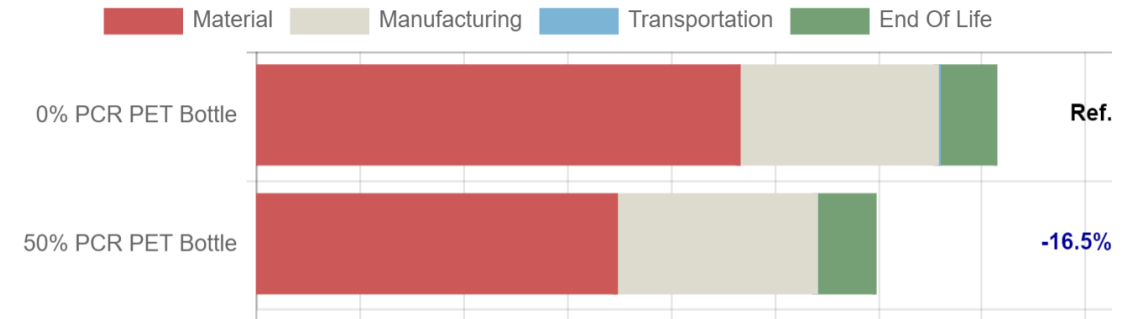
PET Sleeve (mass)
Film Extrusion
Bags, Sacks & Wraps

Analyzing New vs Old - REBBL

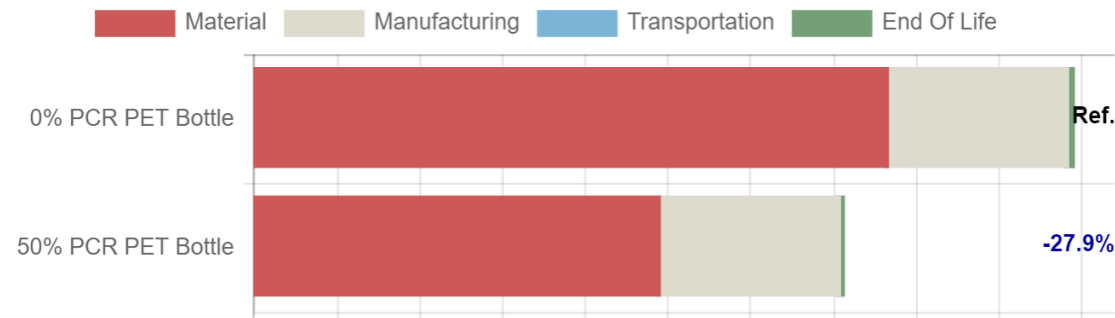
Measuring environmental impact of baseline and new package design



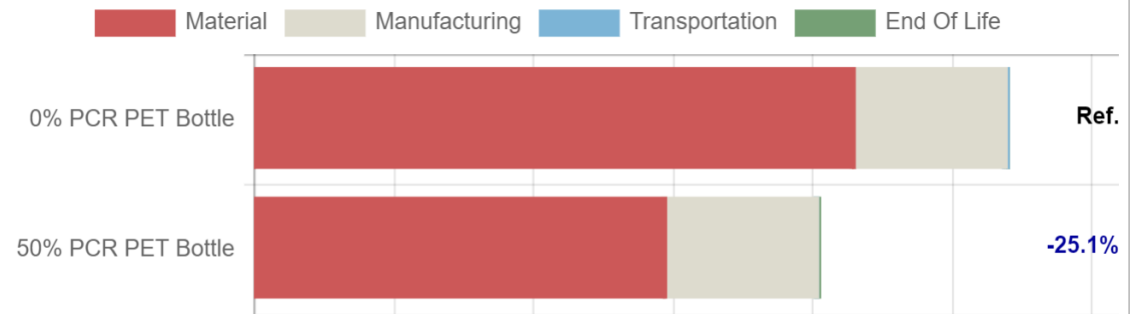
GHG Emissions (kg CO2 eq.)



Water Use (liters)



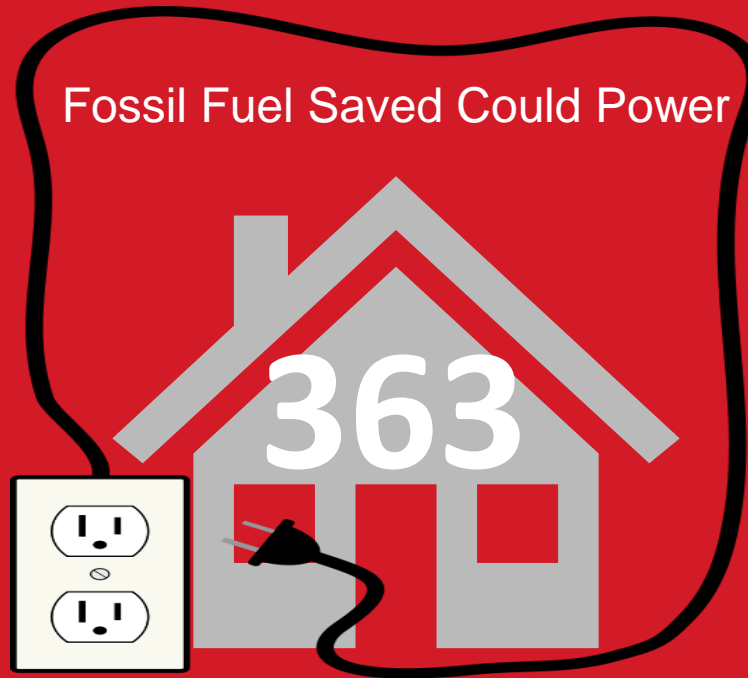
Fossil Fuel Use (MJ deprived)



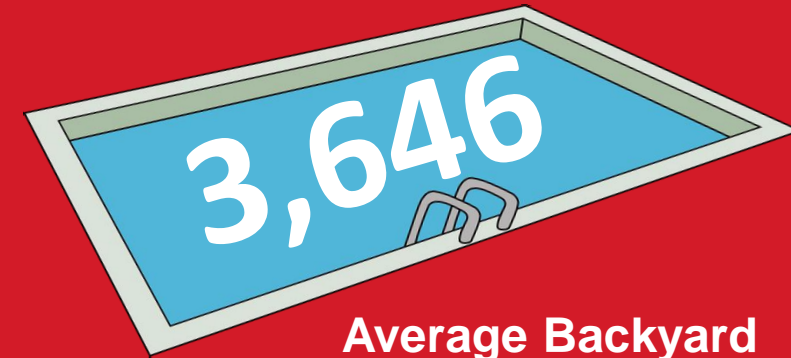
Simple LCA Indicator Results



Greenhouse Gas Emissions
Reduction eq. to carbon
sequestered by



Water Saved Could Fill



*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



Define
Packaging
Change



Respond
to Call to
Action



Selection
Process



Data
Collection



Modeling



Analyzing
New vs
Old



Create
Case
Study



Questions?

Thank you!

<https://ecoimpact.trayak.com>

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