



dyne-a-pak
FOAM TRAYS

FOAM AND PLASTICS ENVIRONMENTAL IMPACT DATA FOR FOOD PACKAGING

Dyne-a-Pak, Canada
Jan 2019

ABOUT US

Our Mission

To manufacture and deliver, just in time, the best food packaging products in North America and contribute building a better future for our employees our customers and the community

- **LEADING PRODUCER OF XPS & XPLA FOOD TRAYS IN CANADA SINCE 1972**
- **BASED IN LAVAL, QUEBEC**
- **ALL OF OUR PS FOAM TRAYS CONTAIN POST CONSUMER AND POST INDUSTRIAL RECYCLED CONTENT**





HOW DO FOAM TRAYS
COMPARE WITH OTHER
CURRENT PACKAGING
OPTIONS ?



PS FOAM ATTRIBUTES FOR FOOD PACKAGING



- Insulation
- Protection
- Rigidity
- Recyclability
- Light weight
- Low cost
- Low resources intake
- Inert material

LOW WEIGHT OF FOAM

FOAM



RIGID PLASTIC



MOLDED FIBER



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LCA OF PS FOAM TRAYS VS OTHER OPTIONS



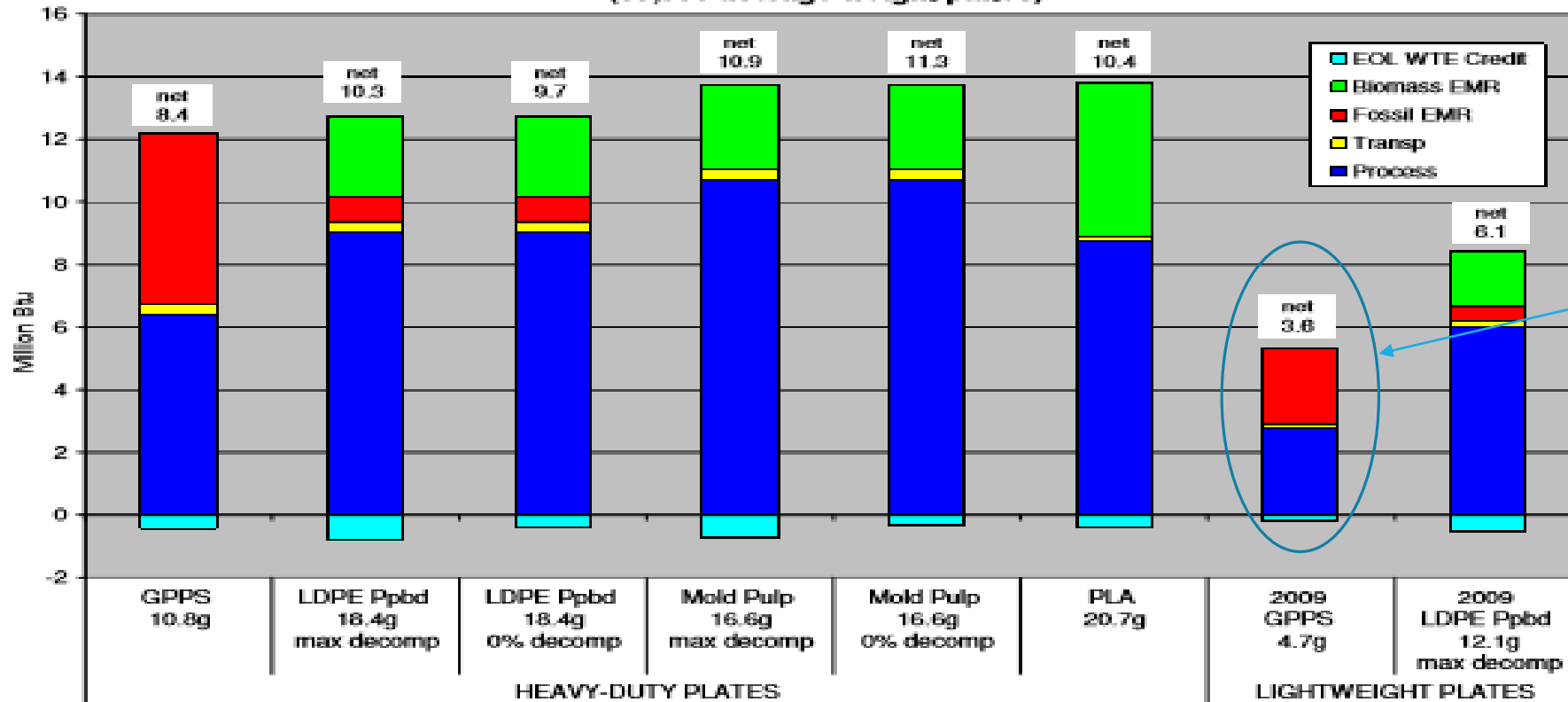
2 researches show that Polystyrene Foam Products consume significantly less energy than the alternatives :

- Life Cycle Inventory (LCI) of Foam PS, Paper-Based, and PLA Foodservice Products by Franklin Associates from Feb 2011
- Comparative Life Cycle Assessment (LCA) Report of Food Packaging Products by CIRAI G for Cascades from Feb 2011

LCA OF PS FOAM VS OTHER OPTIONS



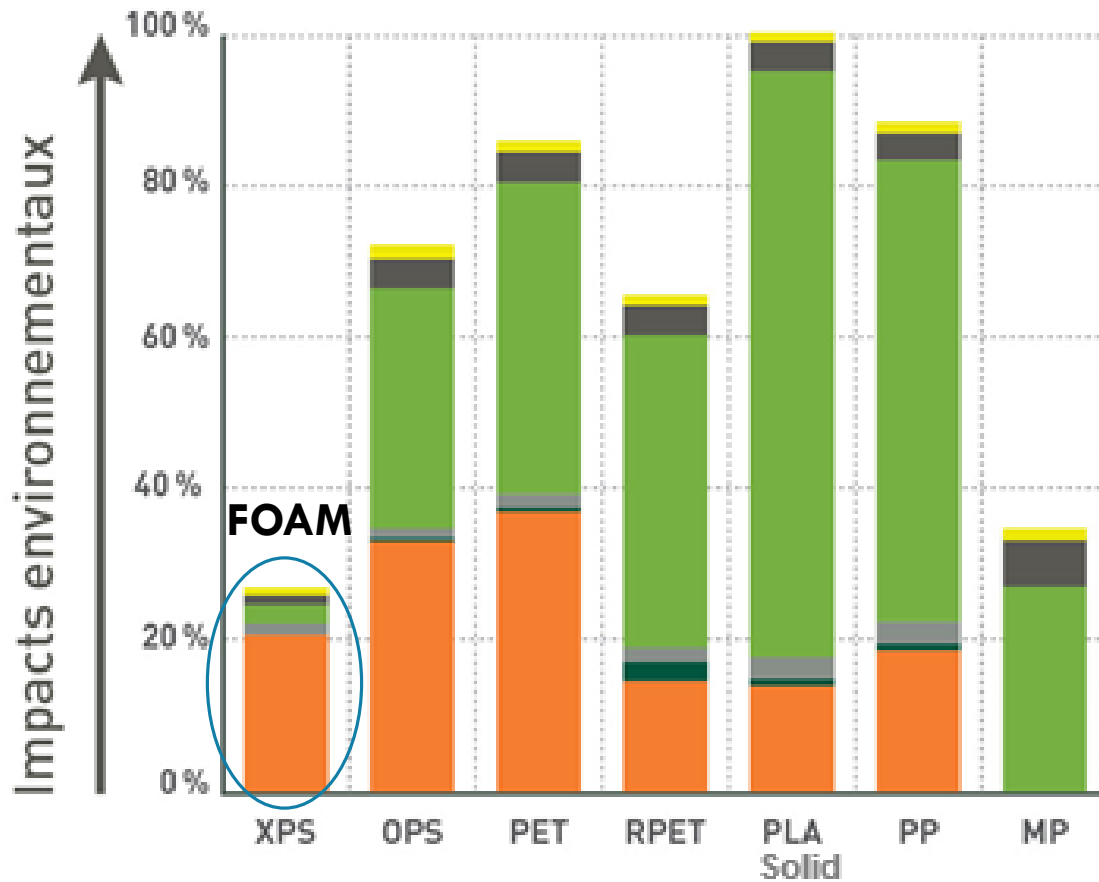
Figure ES-3. Energy for 9-inch Plates
(10,000 average weight plates)



FOAM

Net expended energy = total energy requirements - energy recovery - energy content of landfilled material

LCA OF PS FOAM TRAYS VS OTHER OPTIONS



LCA (Life cycle Analysis)

- PS Foam trays beat any other alternative
- Substitute products add major costs, increase carbon footprint.
- End of life has a low impact on total LCA
- Using recycled materials allows for reducing the environmental impact

HOW DOES PLASTIC PACKAGING COMPARE WITH OTHER CURRENT OPTIONS ?



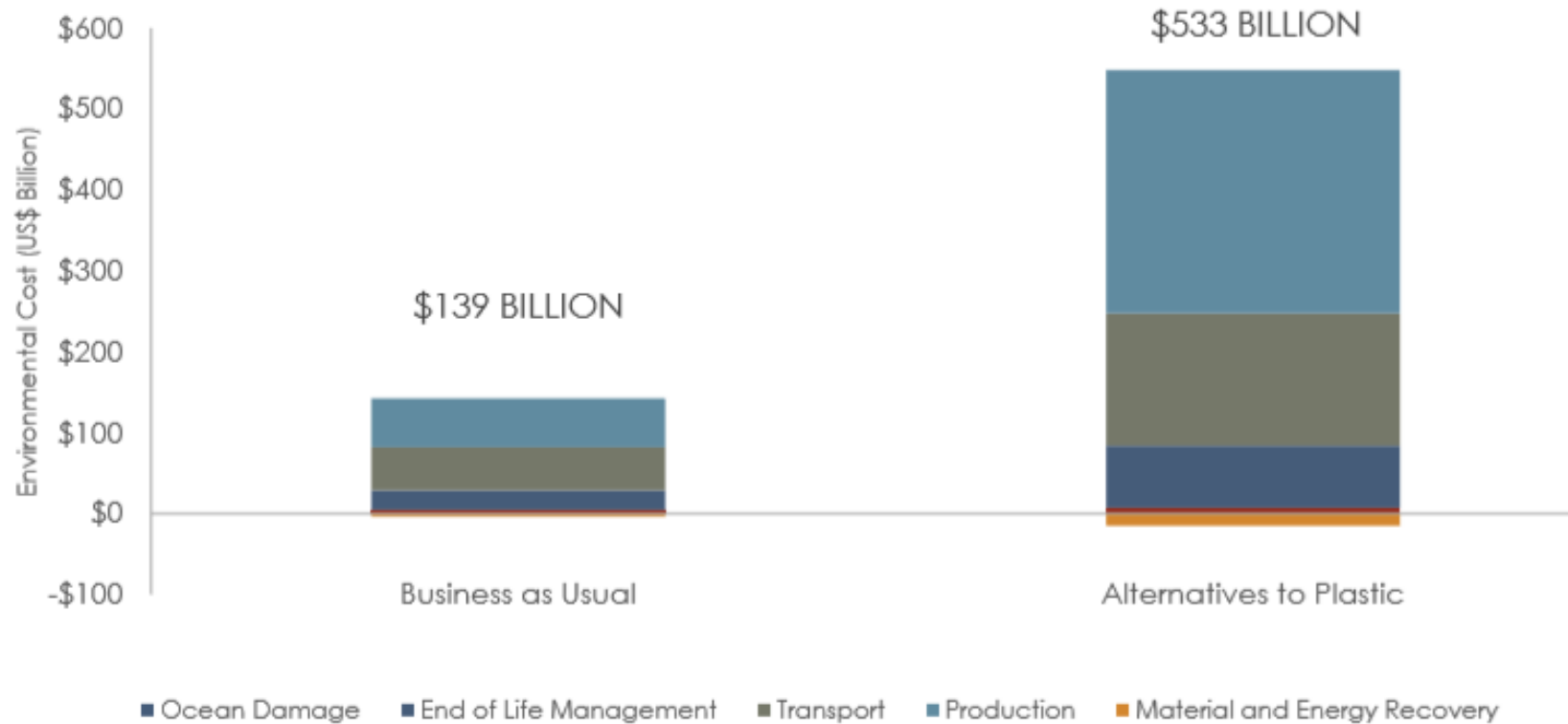
HOW DOES PLASTIC PACKAGING COMPARE WITH OTHER CURRENT OPTIONS ?

According to research : Replacing all plastics by substitute materials in the consumer good sector would actually have a **negative** environmental impact.



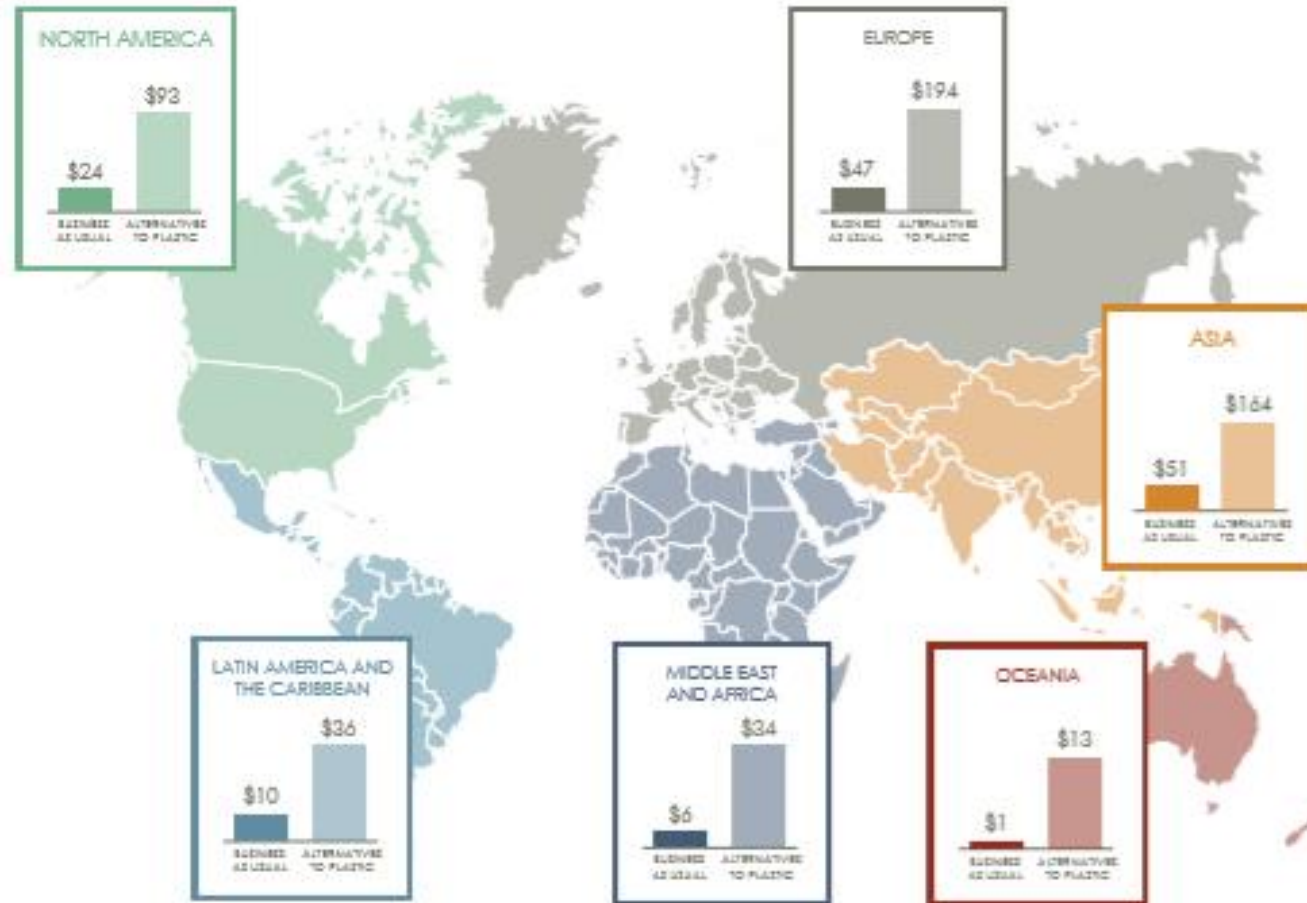
ENVIRONMENTAL COST TO REPLACE PLASTICS

Worldwide Environmental Costs of Plastics vs Alternatives in the Consumer Goods Sector (\$US Billion)



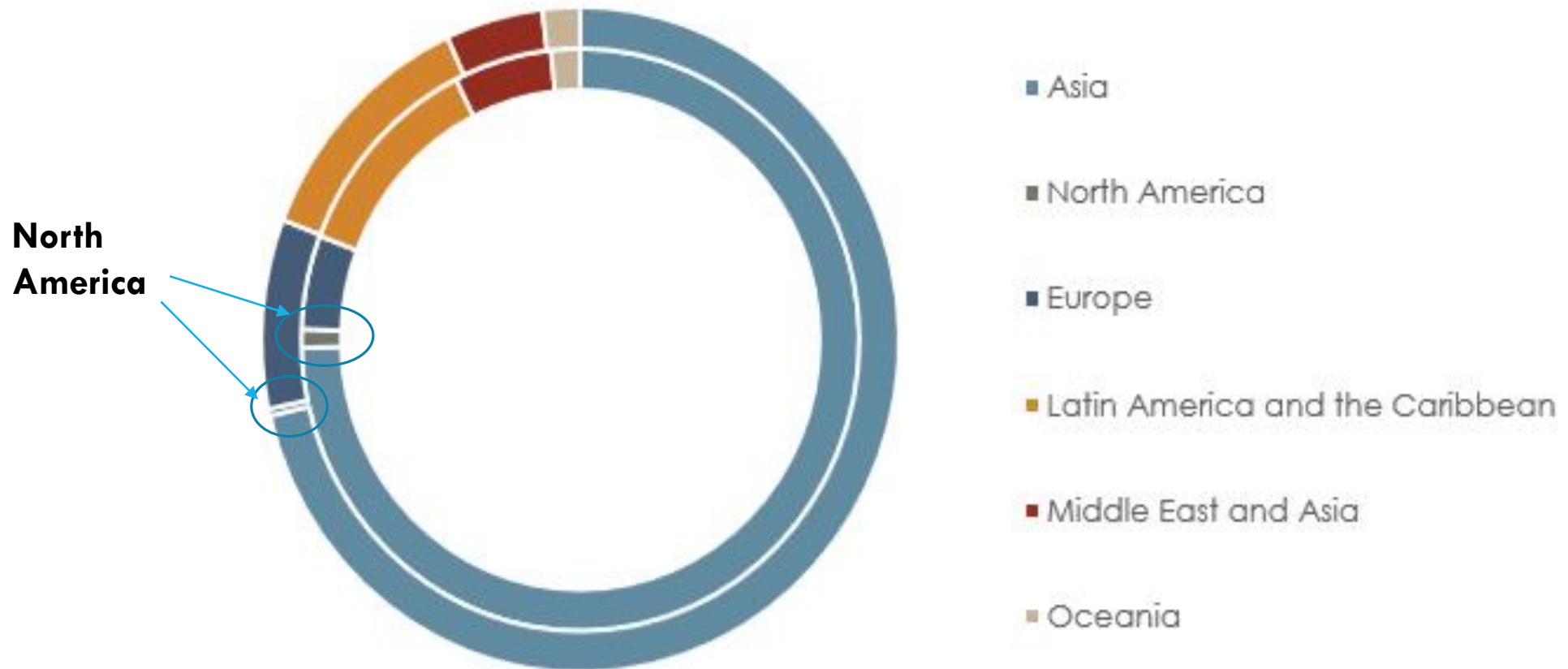
ENVIRONMENTAL COST TO REPLACE PLASTICS

Environmental Costs of Plastics vs Alternatives in the Consumer Goods Sector by region (\$US Billion)



ENVIRONMENTAL COST VS NORTH AMERICAN CONTRIBUTION TO MARINE POLLUTION

Contribution to Global Ocean Marine Debris - Business as Usual (inner) vs Alternatives to Plastic (Outer)



LIFE CYCLE ANALYSIS OF PLASTIC PACKAGING VS OTHER OPTIONS

LET'S COMPARE LCA OF :

- LDPE
- HDPE
- PP
- PVC
- PS
- EPS
- PET

VS

- steel
- aluminum
- glass
- paper-based
- molded fiber
- wood

LCA OF PLASTICS VS OTHER OPTIONS



In every environmental aspects of its life cycle (energy consumption, water consumption, waste, etc...), **plastic shows a better performance than any alternative, biodegradable or not.**

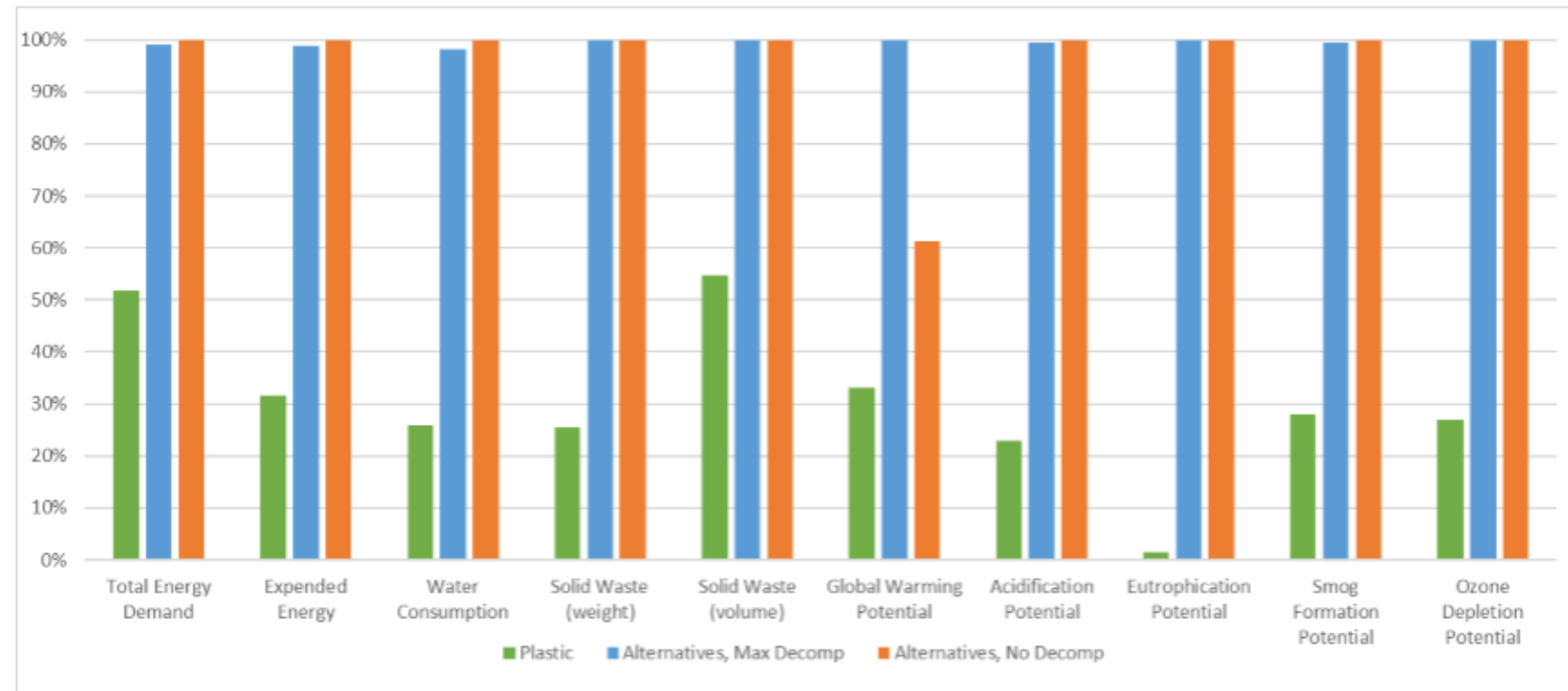


Figure ES-4. Normalized Canadian Results for Plastic Packaging and Substitutes

WHAT ARE THE GLOBAL
EFFORTS MADE FOR
SUSTAINABLE TREATMENT OF
PLASTIC PACKAGING ?



PLASTICS INDUSTRY ANSWERS CALL TO HELP STOP MARINE LITTER

Tackling a Global Problem

Plastics associations around the world signed the Declaration of the Global Plastics Associations for Solutions on Marine Litter in 2011. This represents a public commitment by a global industry to help tackle a global problem: plastic litter in the coastal and marine environment.

By 2017, the group launched more than 355 projects around the world focusing on six key areas.

PLASTICS INDUSTRY ANSWERS CALL TO HELP STOP MARINE LITTER

Number of Projects in each Work Area

Education

136

Recycling/Recovery

91

Public Policy

42

Best Practices

41

Research

38

Plastic Pellet Containment

9



Number of Projects per Region

The Americas

128

Europe including Turkey & Russia

109

Asia

70

Africa

24

Australia/New Zealand

12

Arabian Gulf

7

Global

7





MEASURES TAKEN MORE
PARTICULARLY IN CANADA



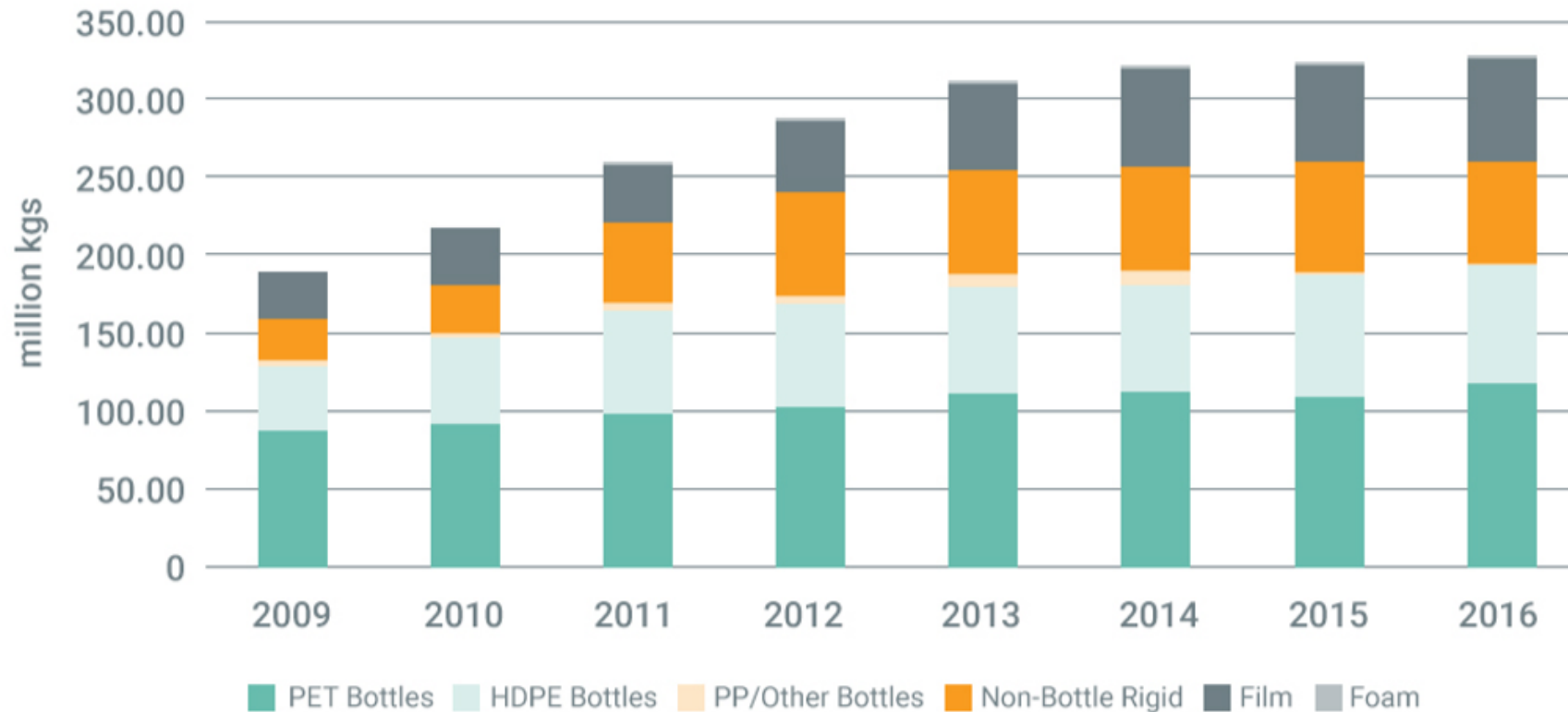
SUSTAINABILITY AND RECYCLING SOLUTIONS FOR PLASTICS : INCREASING ACCESS TO RECYCLABILITY

More Canadians are able to recycle plastics



SUSTAINABILITY AND RECYCLING SOLUTIONS FOR PLASTICS : INCREASING % OF RECYCLED PACKAGING

Figure 1. Canadian Post-Consumer Plastic Recycled (million kgs)



SUSTAINABILITY AND RECYCLING SOLUTIONS FOR PLASTICS : INCREASED RESOURCES AND TOOLS

Foam packaging + plastic bag and overwrap recycling options



2 online search tools provide 600+ recycling locations across Canada

New Resource...

Plastic Bags and Overwrap Recycling Toolkit*

4 fact sheets



2 print ads

3 radio ads



2 social media ads

*2017 launch

Pilot Captures Trailer Load of Foam Packaging

CPIA partnered with the City of Dollard-des-Ormeaux, QC in a one-day special depot day to collect foam packaging.

- collected enough to stuff a 53-foot trailer to overflowing
- doubled the amount collected in previous one-day event

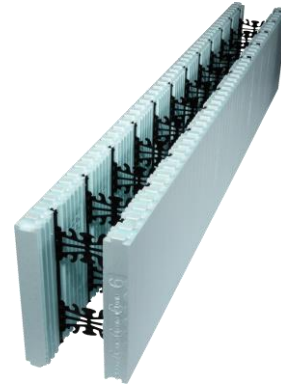


RECYCLED PS APPLICATIONS -- ALL AROUND

Lowe's Canada
(Decking)



Polyform Nadura
Insulated concrete forms



PRI
(printer rolls)



Dyne-a-Pak Azura®



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CONCLUSIONS

- **Polystyrene Foam Products consume significantly less energy and have significantly lower environmental impact than the alternatives.**
- **Replacing all plastics by substitute materials in the consumer goods sector would have a negative environmental impact.**
- **None of the available fiber-based alternatives perform adequately for meat packaging.**
- **Access and recycling rate of plastic packaging increase year after year.**

SOURCES

- LCI of Foam PS, Paper-Based, and PLA Foodservice Products, Franklin, Feb 2011
- Cascades & CIRAIG – Final assessment report: Comparative Life Cycle Assessment Report of Food Packaging Products, Feb 2011
- Trucost study Plastics and Sustainability: A Valuation of Environmental Benefits, Costs, and Opportunities for Continuous Improvement, July 2016
- Franklin Associates, A Division of Eastern Research Group (ERG) for ACC April 2018 study
- Marine Litter Solutions 2018 Executive Summary Report
- CPIA's 2016 Sustainability Achievements Infographic
- CPIA's 2016 Post-Consumer Plastics Recycling in Canada, April 2018

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