Replacing Plastic Packaging with Alternatives Will Hurt the Environment

- **Substitution will Accelerate Climate Change and Increase Air Pollution**

- **Substitutes for plastic like paper, glass, steel and aluminum generate more waste and emit more Greenhouse Gases than plastic**

COMMON ASSUMPTION: Replacing plastics in consumer packaging with alternative materials like paper, glass, and aluminum will stop climate change and reduce carbon pollution of our air.

THE REALITY: THE COMPLETE OPPOSITE IS TRUE. A ban on plastic whether single use or multiple use packaging will generate more waste, more carbon emissions, and make achievement of zero waste impossible.

THE FACTS: SCIENTIFIC EVIDENCE
Trucost Study: Substitution of paper, glass, steel and aluminum for plastics in consumer products and packaging would increase net environmental costs fourfold. Why? Because 4 times more replacement material is required to do the same function; more material means more carbon, energy use and resources.[1] The amount of additional waste generated varies by product category.

Additional Metric Tonnes of Material Needed to Replace Plastics & Deliver Same Function[2]

Plastic in Food Packaging	Increase from 3.1 tonnes to 14.4 tonnes with replacement **4.6X increase**
Plastic in Medical Products	Increase from 2.9 tonnes to 12.1 tonnes with replacement **4.2X increase**

[1] Study from Trucost Finds Plastics Reduce Environmental Costs by Nearly 4 Times Compared to Alternatives
[2] Plastics and Sustainability: A Valuation of Environmental Benefits, Costs, and Opportunities for Continuous Improvement - page 30

Plastic in Soft Drinks	Increase from 15.4 tonnes to 112 tonnes with replacement **7.3X increase**

Franklin Associates Substitution Analysis Life Cycle Impacts in Canada and the U.S.[3]

This study shows**: Substitution means more material needed to do the same function.** On a Canadian national level, replacing the 1.6 million metric tonnes of plastic packaging would require more than 7.1 million metric tonnes of substitute packaging. **And substitution consumes twice the energy of the equivalent plastic packaging** and global warming potential impacts for the substitute packaging are more than double the impacts for the plastic packaging replaced.

Table ES–6. Savings for Canadian Plastic Packaging Compared to Substitutes

	Comparison of Plastic Packaging and Substitute Packaging, Canada					
	Global Warming Potential (million metric tonnes CO2 eq)		Cumulative Energy Demand (billion MJ)		Expended Energy (billion MJ)	
	No Decomp	Max Decomp	No Decomp	Max Decomp	No Decomp	Max Decomp
Total for Plastic Packaging	11.8		225		155	
Total for Substitutes	27.5	29.6	446	439	401	394
Savings for Plastics	**15.8**	**17.9**	**221**	**214**	**246**	**240**
Substitutes % Higher than Plastics	134%	152%	98%	95%	159%	155%
Savings Equivalencies						
Million passenger vehicles per year	3.3	3.7	3.1	3.0	3.5	3.4
Million barrels of oil	36.5	41.3	36.1	35.0	40.3	39.1
Thousand tanker trucks of gasoline	208	236	197	191	220	214
Thousand railcars of coal	68	77	84	81	93	91
Coal-fired power plants (annual emissions)	4.5	5.1				
Oil supertankers	18	21	18	18	20	20

Use of plastic packaging vs alternatives on global warming potential eliminates 15.8 million metric tonnes of C02 emissions/year: like removing 3.3 million cars from the road per year.

[3] Executive Summary - Impact of Plastics Packaging on Life Cycle Energy Consumption and Greenhouse Gas Emissions in the United States and Canada - Page 16

TAKING ACTION: WHAT GOVERNMENT NEEDS TO CONSIDER

1. **Do not ignore air pollution and carbon emissions and impacts on climate change in policy development from substitutes for plastics. Federal government should be looking at air, land and water pollution. Focus on the full life cycle of packaging and product is required to manage all environmental, economic, social sustainability goals.**

2. **Do not abandon zero waste and the effort to build a circular economy. Alternative packaging materials generate 4 to 7 times more waste and environmental impacts.**

3. **More waste to manage means increased costs for stewards. Will cause spikes in food prices to Canadians. Could jeopardize adoption of 100% EPR funding by stewards as it will drive recovery and recycling costs, increase food waste and ultimately drive up the cost of food to Canadians.**