

Do not go where the path may lead - go instead where there is no path and leave a trail.

### **Purpose**

There is little to be gained from the stated purpose of implementing a Zero Plastic Waste program for plastic food packaging. Reducing environmental impact of existing plastic is not possible:

- once plastic has been produced, it is pollution--the horse has left the barn,
- there is no known technology for reducing the environmental impact of plastic because it is persistent—even when recycled,
- there is no evidence that recycling plastic prevents pollution,
- recycling plastic does not reduce fossil fuel extraction and production of more plastic,
- plastic packaging is made of fossil-fuel based raw materials and continues to worsen climate change,
- a circular economy cannot be created from non-recyclable plastic,
- a circular economy cannot be created from plastic recycled once, then landfilled,
- Location is irrelevant: plastic is pollution in a linear economy, in a circular economy, in use, in a landfill, in a waterway—all of which is in the environment.

Q1. Are there any other objectives and/or factors the Government of Canada should consider as it develops an approach to address primary food plastic packaging? If so, what are they and why are they important?

### **Circular Economy for plastic is a mythical beast.**

Like unicorns and Bigfoot, we would all like to believe there can be a circular economy for plastic, but it is not possible. There can be no circular economy when most plastic isn't recycled, what is collected can be recycled once (not back into original product) and is then destined for landfill. There is no circularity in this model. There is no reduction of plastic. It is common knowledge that plastic production is set to increase by 30% by 2050, with market value increase of 4%/year.. Statista, 2023. <https://www.statista.com/statistics/1060583/global-market-value-of-plastic/>

P2 is no match

“While the Government of Canada is advancing solutions to improve recycling rates to keep plastics in the economy and prevent them from becoming waste or pollution”

Stop perpetuating plastics industry propaganda that “keeping plastic in the economy keeps it out of the environment.” The economy is not some safe haven for plastic, separate from the environment. Just because someone buys and uses the plastic does not mean it isn't polluting. Knowing what we know about degradation of plastic while in use, 9% historical recycling, single recycle capacity (which underpins the falsehood of the circular economy for plastic), GHG's from fossil fuel production, recovery as alternate fuel, the environmental crisis of plastic pollution in waterways and landfills, and damage to wildlife everywhere, there is

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no other conclusion except that plastic in the economy is in the environment, and creates constant pollution. **See attached video of playing field plastic turf.**

“A circular economy for plastics could reduce plastic and carbon pollution, generate billions of dollars in revenue, and create approximately 42,000 jobs by 2030.”

RecycleBC collects 28% of flexible plastic released on the market, but they collect 100% of producer fees for flexible plastic. I guess that makes plastic valuable, but only if it isn't recycled (Please note, this is a reflection of the properties of plastic, not of RecycleBC).

Recycled plastic is not valuable. Perpetuating the myth is very valuable.

A circular economy depends on

- Multiple cycles of reuse
- Multiple cycles of recycling

The only two packaging products with this capacity are

1. Glass
2. Metal

Even if “keeping plastic in the economy did prevent it from becoming waste, recycling does not prevent plastic from becoming waste. Recycling plastic once ensures it will be landfilled after use. Can we acknowledge this is a starting point to abandon the concept of a circular economy for plastic?

### **Recycled content does not create a Circular Economy.**

All recycled content downgrades the quality of resultant plastic. Most plastic cannot be made into the original product, can only be recycled once, and does nothing to reduce virgin use to make more of the original product. Nothing circular about that.

As a principle, products that cannot be safely used, reused, and recycled should not be produced or placed on the market in the first place. Stop with attempts to manage the effects of plastic—in humans, wildlife, and on the planet. There is no known technology to reduce the environmental impact of plastic while it is being produced, or once it has been produced.

It is noted that “reducing environmental impact” is a low bar. It is unclear how this P2 can prevent pollution.

### **Effectiveness of P2 Notices**

It is noted that previous P2 Notice success has depended on alternative substitution for a toxic substance. “As material or feedstock substitution is one of the most popular actions used by facilities to prevent pollution, the success of P2 notices is dependent on the availability of a safer alternative chemical to replace the toxic substance”

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Alternatives to plastic food packaging exist in metal and glass and, to a lesser extent, paper and board. Plastic is a hard act to follow in categories of function, versatility, light weight, durability and profitability and, as such, producers are reluctant to switch back to glass and metal. Except for grocery products like soap and shampoo, the types of food that grocers have packaging control over are not necessarily well matched to metal and glass containers. Fresh products are more difficult to manage: an iced cake won't travel well in a reusable cloth grocery bag. That means the grocer must implement "bring your own container" programs or prohibitive charges for plastic food packaging to reduce plastic use.

Given the benefits, cost savings, profit potential, and convenience factors of plastic, there doesn't seem to be much advantage for the grocer to reduce plastic for fresh products.

Where EPR exists for residential packaging, grocer reports will undoubtedly show that all plastic packaging is recycled and therefore does not become pollution. Regardless of recycling opportunity, grocers will likely report consumer mismanagement of plastic packaging, lack of recycling infrastructure, or recycling inefficiencies of as the cause of pollution. Then what?

Previous successful P2 programs report up to 50% of success depends on operating practice, training, equipment modification, spill prevention and material feedstock substitution is. This leaves little chance to affect in-store use of plastic and subsequent pollution.

This means there will be low success from substitution efforts and simply banning or recommending NO point of sale/ direct to consumer packaging will be more successful.

### **Corporate commitment to reduce plastic**

"Several major retailers have committed to reduce plastics through ongoing initiatives such as the Canada Plastics Pact"

Canada Plastics Pact is a plastics industry smokescreen to promote the concept that industry is part of the plastic solution. Meanwhile industry continues to invest billions into continued plastic production, with stated production increase targets. The Golden Rules are suggestions for voluntary design changes that effectively "re-arrange deck chairs on the Titanic." The goal of the Golden Rules is to increase value of garbage plastic in order to continue production. It's greenwashing at its best.

Most corporate commitment to reduce plastic is marketing/greenwashing.

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Q3. What else is needed to advance reuse in grocery stores?

**Use Regulation: Ban direct to consumer primary food plastic packaging.**

**Purpose should be:**

The clear purpose should be to eliminate pollution by eliminating direct to consumer food plastic packaging.

Primary food plastic should be the highest priority for elimination because it is in direct contact with food. Direct to consumer food plastic packaging poses a known threat to human health, and by extension to all life. It is assumed that business to business or in-store plastic storage containers used for bulk delivery to consumer containers would be designed for long-term re-use.

Q9. Is there any data the Government of Canada should be aware of regarding the plastic footprint of food retailers

**Note: NRES has included quotes from researched material in this section. URL's and source information are provided with the notes from each article rather than providing a separate Reference page.**

**Food plastic and Food safety**

A litany of research reports chemical migration from plastic packaging into food.

From <https://www.sciencedirect.com/science/article/pii/S0959652618313325?via%3Dihub>

Title: Food packaging in the circular economy: Overview of chemical safety aspects for commonly used materials

Authors: Birgit Geueke, Ksenia Groh, Jane Muncke

In: Journal of Cleaner Production, Volume 193, 20 August 2018, Pages 491-505.

One important reason there cannot be a Circular Economy for primary food plastic is “recycling is currently seen as an important measure to manage packaging waste. However, recycling may increase the levels of potentially hazardous chemicals in the packaging and -after migration- in the food.”

“Recycling of food packaging waste into new food packaging presents particular challenges, especially with regard to safety issues. The use of recycled food packaging not only increases the possible sources of contamination, but often also the numbers and levels of chemicals that can migrate from the packaging into foods, thereby potentially affecting human health.”

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“... plastic multilayers are currently not recycled into new food packaging (Life rPack2L, 2017), because they are often immiscible and may only be blended by the addition of compatibilizers generating non-food grade materials (Hopewell et al., 2009; Ragaert et al., 2017).”

“Recycling of polyolefin packaging requires advanced cleaning and assessment protocols, because diffusion of a given substance is by orders of magnitude faster than in PET (Dole et al., 2006), strongly increasing migration rates, but also sorption of contaminants (Palkopoulou et al., 2016).

**NOTE:** Canada Plastic Pact proposes to “maximise polyolefin content” to increase recycling value.

“Different groups of contaminants, e.g., oligomers, additives and their degradation products, as well as chemicals derived from previous (mis)uses, have regularly been reported in recycled plastic

The historical increase in beverage carton recycling in the EU, for example, has been from about 6000 tons (<1%) in 1992 to 100,000 tons (about 12%) in 1995, to 430,000 tons (about 47%) in 2016 (ACE, 2017). Since recycled fractions of beverage cartons are not used in primary food packaging, potentially elevated migration levels are currently not an issue. However, the examples show that complete recycling in the strict sense is currently not feasible for beverage cartons.

LCA tools could compare the human health impact of chemical migration from recycled packaging versus virgin materials. Nevertheless, focusing on chemical safety within the circular economy will add a new level of complexity during assessment and may identify additional conflicting goals, e.g., between reduced environmental impacts and protection of human health.”

From <https://www.foodpackagingforum.org/packaging-fact-sheets>

**“Material properties and/or missing processes do not allow recycling into new food packaging**

Most plastic food packaging (including bioplastics) that is not made of PET cannot be recycled into new food packaging due to missing processes and safety concerns. Therefore, it is typically downcycled and used in other applications, for example, in construction and agriculture.

Multilayer food packaging consisting of different plastic polymers or combinations of different materials is currently almost not recyclable, because the layers are very difficult to separate. Currently, only the paperboard fraction of beverage cartons can be separated in established recycling processes, but the recovered material is not used in contact with food again.

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### **Addition of virgin material and special measures needed to guarantee function and safety of recycled food packaging**

For other materials, such as polyethylene terephthalate (PET) and paper and board, established recycling processes exist. However, certain precautions must be taken to produce materials that are safe to use in contact with food. Alternatively, the direct contact of the recycled material with the food can be prevented by suitable measures such as barriers, which may, in turn, affect further recycling.

In addition to the safety concerns, plastic polymers and paper and board can only be recycled for a limited number of cycles and require the addition of virgin material.”

### **Other documents from Food Packaging Forum**

Plastic Food Packaging and recycling

[https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF\\_Factsheet\\_Plastic\\_v1.pdf#page=2](https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF_Factsheet_Plastic_v1.pdf#page=2)

Migration and Recycling of Multi material food packaging

[https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF\\_Factsheet\\_Multimaterial\\_v1.pdf#page=2](https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF_Factsheet_Multimaterial_v1.pdf#page=2)

Glass and metal food packaging saves energy and virgin material, but pose some risk from chemical migration:

Metal:

Retrieved from [https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF\\_Factsheet\\_Metal\\_v1.pdf#page=2](https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF_Factsheet_Metal_v1.pdf#page=2)

Glass:

recycling saves energy, but more importantly glass surface does not take up contaminants and so is ideal for reuse. Migration from lids and closures should be addressed to ensure safety.

Retrieved from [https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF\\_Factsheet\\_Glass\\_v1.pdf#page=2](https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2021/06/FPF_Factsheet_Glass_v1.pdf#page=2)

### **Other Published Research on plastic and food safety**

Title: Overview of intentionally used food contact chemicals and their hazards

Authors: Ksenia J. Groh <sup>a</sup>, Birgit Geueke <sup>a</sup>, Olwenn Martin <sup>b</sup>, Maricel Maffini <sup>c</sup>, Jane Muncke <sup>a</sup>

In: Environment International **Volume 150**, May 2021, 106225

Retrieved From

<https://www.sciencedirect.com/science/article/pii/S0160412020321802?via%3Dihub>

“However, the total extent of exposure to FCCs, as well as their health and environmental effects, remain unknown, because information on chemical structures, use patterns, migration potential, and health effects of FCCs is often absent or scattered across multiple sources.”

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Q4. Are there any supporting materials, such as guidance documents, tools, or awareness campaign the Government of Canada should consider developing to support industry and facilitate meeting the objectives?

Consider developing a Best Practice Model for Grocers such as Nanaimo Recycling Exchange Society has developed for Fast Food industry and outlets.

(Attached with email from [jan@recycling.bc.ca](mailto:jan@recycling.bc.ca))

**Please continue implementing Regulation for plastic.**

**Please consider Regulations that discourage or ban production and use of plastic.**

**Please discontinue use of theory that recycling reduces plastic waste and pollution.**

**Please discontinue use of circular economy theory to manage plastic waste or pollution: it is faulty and unproven. It is actually disproven.**

Jan Hastings,  
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