Technical issues paper:

Recycled content for certain plastic manufactured items Regulations

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Purpose

The Government of Canada is seeking feedback from interested parties on the proposed development of regulations under the *Canadian Environmental Protection Act, 1999* (CEPA) that would set minimum recycled content requirements for certain plastic manufactured items. This document presents considerations and options for key elements of the proposed regulations.

In addition, we are asking that interested parties respond to a few specific questions to help guide certain aspects of the regulatory development process.

Issue

Currently, Canada's plastics economy is largely linear, meaning that the majority of plastic products are landfilled, incinerated, or littered into the environment at the end of a product's life rather than being recirculated into new products. Pollution prevention and service-oriented business models that avoid waste and extend product life through material reduction, reuse, repair, remanufacture and refurbishment, are important actions in the transition to a circular economy. However, recycling also needs to be an essential action to manage and recover value from end-of-life plastic products.

The vast majority of plastic products on the market today are made from primary (virgin) resins, which are derived from non-renewable fossil sources (oil, gas or coal). The success of recycling in "closing the material loop" relies on the use of recycled plastics in the manufacture of new products. However, there are several inter-related factors impeding recycled (secondary) plastic use, including weak markets for recycled plastics, the lower cost of primary resins, insufficient recycling and infrastructure systems, and products not being designed for recycling.

The main goal of minimum recycled content requirements would be to strengthen the market demand for recycled plastics. This in turn would create market pressures for increased collection, sorting and recycling of plastic waste. It would also create incentives for investments in supportive infrastructure and in innovation, such as in improved product design for recycling. As a result, recycled content requirements would contribute to reducing the amount of plastic waste that ends up in landfills, incinerators and that enters the environment as pollution, while also decreasing the associated greenhouse gas emissions.

Context

As part of Canada's plan to achieve zero plastic waste by 2030, the Government of Canada will require plastic packaging in Canada to contain at least 50% recycled content by 2030. This objective is supported by the Canadian Council of Ministers of the Environment, which endorsed a 50% recycled content requirement in plastic products,

where applicable, by 2030 as part of Phase 1 of the Canada-wide Action Plan on Zero Plastic Waste.[1]

In October 2020, Environment and Climate Change Canada (ECCC) published A proposed integrated management approach to plastic products: discussion paper (the Discussion Paper). The Discussion Paper outlined the steps the Government of Canada is taking toward eliminating plastic pollution in Canada, including proposing regulations under CEPA to require recycled content in plastic products and packaging. It sought input from Canadians on options for a regulatory approach for recycled content requirements (for example, product-based, resin-based or economy-wide approach), scope of products and resins, and other considerations. The publication of the Discussion Paper was followed by a 60 day public comment period and a series of webinars, including one that focussed on recycled content requirements (Webinar 4 – Performance Requirements) on November 20, 2020.

In August 2021, ECCC published a What we heard report that summarizes the feedback received on the Discussion Paper via written comments, webinars and stakeholder discussions. There was strong overall support for increasing the use of post-consumer recycled content (see section 4.1), the importance of verification standards, and the need for the Government of Canada to provide leadership through procurement, incentives for industry, and investment in infrastructure. Stakeholders also provided valuable input on considerations for recycled content use in different products and resins.

In May 2021, "plastic manufactured items" was added to Schedule 1 to CEPA.[2] This allows the Government to enact regulations under CEPA to manage plastic manufactured items at key stages in the lifecycle of plastic products, such as manufacture, use, disposal and recovery, in order to reduce pollution and create the conditions for achieving a circular economy for plastics.

Key elements of proposed regulations

Building on previous consultations, ECCC is seeking input from interested parties on considerations and options for the proposed Recycled Content for Certain Plastic Manufactured Items Regulations (the Regulations).

1. Scope of application

The Regulations would require applicable plastic manufactured items (see "Product Scope" in Section 3) to contain minimum prescribed amounts of recycled content. The Regulations could apply to anyone (person or business) that manufactures, imports, or sells the items in Canada.

[1] The Canada-wide Action Plan on Zero Plastic Waste: Phase 1 can be found at: https://ccme.ca/en/res/1589_ccmecanada-wideactionplanonzeroplasticwaste_en-secured.pdf
[2] The Order can be found at: https://canadagazette.gc.ca/rp-pr/p2/2021/2021-05-12/html/sor-dors86-eng.html

ECCC will determine whether different provisions for small businesses may be needed. These could include, for example, a *de minimis* threshold below which businesses would be exempted from the Regulations.

The Regulations would not replace other existing or future requirements, which would continue to apply to certain types of plastics, plastic products and packaging. For example, food chemical safety is a consideration when using recycled, biobased or compostable plastics in food contact applications. The use of these plastics, as with any other material in food packaging, must comply with the safety provisions of the *Foods and Drugs Act* and *Regulations*. In addition, the *Prohibition of Certain Toxic Substances Regulations, 2012* prohibit the manufacture, use, sale, offer for sale or import of certain toxic substances, as well as products containing them. Any material containing the substances covered by those regulations would be prohibited from being used as recycled content, unless the substance is incidentally present or another exemption applies.[3] Other regulations implement Canada's obligation under Article 6 of the Stockholm Convention ensure that when persistent organic pollutants (POPs) become waste they are not recovered, recycled, reclaimed, or reused.

2. Product-based approach

The Government of Canada intends to establish recycled content requirements on the basis of product application (e.g., beverages) and format (e.g., rigid containers). A product-based approach was the most widely supported by stakeholders in consultations on the Discussion Paper. The minimum technical performance attributes (e.g., moisture barrier) of any particular product application and format are generally consistent regardless of resin type (e.g., polyethylene), but different product applications and formats can vary significantly in their ability to use recycled content. For example, in general it is technically easier to use recycled content in thicker-walled containers because they are more tolerant to quality imperfections that may be present in recycled plastics. Since product format and application are more significant factors than resin type when considering the technical ability to use recycled content, stakeholders considered a resin-based or an economy-wide approach unfeasible.

3. Product scope

ECCC proposes to target packaging in the initial version of the proposed Regulations. Packaging formats can include bottles, rigid, flexible, and foam containers, film (e.g., shrink wrap), and others. Packaging has consistently been identified by stakeholders as the most ready for recycled content from a technical feasibility perspective. In addition, packaging rules would have the greatest impact on recycled resin markets. Packaging is the single largest market for plastic, is used by virtually all sectors of the economy, and is the largest source of plastic waste.[4] Packaging products have relatively high

[3] More information can be found at: www.canada.ca/prohibited-chemical-substances

[4] For more information, see the report *Economic Study of the Canadian Plastic Industry, Markets and Waste: summary report* by Deloitte at: https://www.canada.ca/en/environment-climate-change/services/managing-pollution/publications/plastic-waste-report.html

rates of collection for recycling, are generally easier to recycle than most other plastic products from a technical standpoint, and are therefore already the largest source of recycled material available for use as recycled content.

In addition to packaging, durable items like waste bins are being considered for the proposed recycled content requirements. These items were identified by stakeholders as having high readiness for recycled content, and an ability to use lower quality recycled plastics that are more difficult to use in packaging applications.

ECCC is considering differentiating recycled content requirements by product application and format, in recognition of differing technical readiness (see Box).

Proposed product scope and timelines under consideration for the Regulations

Short-term (e.g., 2025) and longer-term (e.g., 2030) requirements, with percentage targets differentiated for each of the following categories:

Beverage containers
For containing carbonated and non-carbonated beverages including water, soft drinks and juice.

Bottles (other than those in direct contact with food)
For containing products such as motor oil, laundry detergent, cleaning products, shampoo and other personal care products.

Non-bottle rigid containers and trays (other than those in direct contact with food)
Items such as clamshells, jars, pots, trays, pails. For containing products such as paints, plants, cleaning products, cosmetics, housewares, electronics, appliances, sports equipment and toys.

Foam packaging (other than those in direct contact with food)
Items such as trays, containers, and protective packaging. For containing products such as housewares, furniture, electronics and appliances.

Film and flexible plastic packaging (other than those in direct contact with food)
Items such as film bags, woven and net bags, stretch wrap, shrink wrap, stand-up pouches, and bubble wrap. For containing or protecting products such as clothing, flyers, housewares, cosmetics, furniture, electronics, appliances, sports equipment and toys.

Garbage bags
Bags of various sizes intended for storage and disposal of waste, excluding organic bin liners.

Waste bins
Garbage, organics, and recycling bins and containers.

3.1 Proposed Products outside of scope of Regulations

3.1.1 Primary food packaging

The limited supply of food-grade recycled resins is a significant challenge to meeting mandatory recycled requirements for many types of food packaging.[5] ECCC therefore proposes to exclude primary (direct contact) food packaging from the Regulations at this time, with the exception of beverage containers. ECCC intends to develop instruments and approaches that will increase recycled content in these application which could include future regulation.

3.1.2 Product application exclusions

ECCC is also considering excluding product applications from the scope of the Regulations in cases where:

- other legal requirements do not allow for the use of recycled content in the product; or
- use of recycled content in the product could create risks for human health or the environment

ECCC is seeking input on the below product applications proposed to be excluded from the Regulations based on these criteria. ECCC would also welcome input on whether there are other cases where exclusions may be justified.

- Drugs and medical devices
- Dangerous goods and waste

3.1.3 Reusable packaging

ECCC welcomes input on whether the Regulations should set different requirements for certain types of reusable packaging as a way to incentivize companies to increase the use of reusable packaging relative to single-use packaging. Lifecycle analysis studies indicate that reusable or refillable containers often have higher upstream environmental impacts than single-use items (the impact of their production is higher because they may contain more material, are harder to manufacture, etc.), but when used multiple times or when end of life management is factored in, they have a lower overall impact per item.

[5] For more information, see the report *Assessing the State of Food Grade Recycled Resin in Canada & the United States (2021)* by Stina at: https://www.plasticsmarkets.org/jsfcontent/ECCC_Food_Grade_Report_Oct_2021_jsf_1.pdf

Consultation questions:

1. Should any product categories be added to or removed from the proposed scope? Please provide rationale.
2. What actions could government take to facilitate an increase in recycled content for primary food packaging?
3. Are there other product applications for which the use of recycled content is not feasible or permissible due to legal or other requirements or potential risks for human health or the environment?
4. Should special consideration be given to certain types of reusable plastic packaging? Please provide rationale.

4. Definitions

4.1 Recycled content

4.1.1 Post-consumer and pre-consumer recycled content

There are two main categories of recycled content: post-consumer and pre-consumer (also known as post-industrial). Definitions for these categories are included in the national standard CSA ISO 14021:20 (Environmental Labels and Declarations - Self-Declared Environmental Claims (Type II Environmental Labelling)), adopted from the international standard ISO 14021. Pre-consumer resins are recycled from manufacturing processes prior to their use in a product, while post-consumer resins are recycled from end-of-life products, whether these are from residential, industrial, commercial, or institutional sources. There is little available data on the use of pre-consumer recycled content in plastic products.

Options under consideration for defining recycled content for the purposes of the Regulations include:

- Post-consumer recycled content only (for example, pre-consumer content would not be permitted to meet requirements)
- Post-consumer and pre-consumer recycled content (for example, either category would be permitted to meet requirements)
- Post-consumer and pre-consumer recycled content with a maximum limit to the amount of pre-consumer content that would be permitted to meet requirements. For example, if this limit were set at 50% of a product requirement, for a product with a 20% recycled content requirement, use of a maximum of 10% pre-consumer recycled content and a minimum of 10% post-consumer recycled content in the product would meet the requirement.

4.1.2 Sources of recycled content

While the majority of recycling in Canada today is done using mechanical recycling processes, chemical recycling technologies are emerging as a solution for increasing

recycling rates, particularly for hard-to-recycle plastic products. In contrast to mechanical recycling, which alters the physical structure (for example, melts) but not the chemical structure of plastics, chemical recycling generally involves the breakdown of chemical bonds in plastics. There are a variety of chemical recycling technologies, and outputs from these processes can include highly purified plastic resins, basic chemicals, fuels, and other products. Some stakeholders have raised concerns about the potential environmental impacts of some technologies used in chemical recycling or have concerns about how recycled content is measured from these processes. Proponents argue that chemical recycling, once implemented at scale, can complement mechanical recycling and significantly boost recycling rates.

ECCC is considering options for allowing the outputs from chemical recycling technologies to meet the recycled content requirements in the proposed Regulations, and is seeking feedback and evidence to support whether certain technologies should be within scope or not.

4.2 Biobased plastics

Biobased plastics are made from renewable resources such as plants or other biomass (including waste by-products). As such, they can reduce the use of conventional fossil-based primary resins. Biobased plastics can be either compostable (addressed in section 4.3) or “drop-in”, meaning they are chemically identical to conventional plastics (for example, biopolyethylene). Biobased plastics currently represent a small but growing fraction of plastics used in Canada and globally. They are currently more expensive to manufacture than fossil-based plastics.

Drop-in bioplastics, unlike compostable plastics, are compatible with the use of recycled resin. Options under consideration for biobased drop-in plastics, for the purposes of meeting regulatory requirements, include:

- Limited exemption. Under this option, products made fully from biobased plastic would be exempt from recycled content requirements. This could be done in the regulation itself or via a permit process.
- Recycled content equivalence. Under this option, biobased plastic content would be considered equivalent to recycled content for either the entire required amount or for a certain percentage of the total amount.
- No exemption: biobased plastic products would need to meet the same recycled content requirements as products made from fossil-based plastics.

4.3 Compostable plastics

Compostable plastics are chemically distinct from conventional plastics. They are designed to biodegrade in industrial composting facilities, rather than enter recycling systems for recirculation into new products. Therefore, products made from compostable plastics cannot practically use recycled content. At the same time, compostable plastics offer the potential for advantages in niche applications where recycling is difficult or where organic waste diversion can be supported (e.g., some types of food packaging, organic waste bin liners). Currently, the majority of compostable plastics used in Canada end up in landfill as organics processing facilities

generally do not accept these materials. However, work is underway by federal and provincial governments and other organizations to improve standards for compostable plastic products.

ECCC is seeking feedback on options and considerations for compostable plastics, including whether or not to exempt certified[6] compostable plastic products from recycled content requirements in certain applications or circumstances.

Consultation questions:

5. Should certified compostable plastics be exempted from the Regulations, in certain applications, or circumstances? Please provide rationale.
6. Which option for biobased "drop in" resins, or any alternative option, should be adopted in the Regulations, and why? Should consideration be made to allowing only certain types of feedstocks (sources of biobased resin) for exemptions?
7. Which option for defining sources of recycled content based on pre-consumer or post-consumer recycled resin, or any alternative option, should be adopted in the Regulations, and why?
8. Are there any environmental or technical reasons to consider excluding any particular methods of recycling plastic? Please provide evidence, where possible.

5. Measurement and reporting

The Regulations would set out requirements for the measurement and reporting of recycled content in plastic packaging, including annual reporting requirements.

ECCC is considering including chain-of-custody models in the proposed Regulations for the measurement of recycled content. ISO 22095 provides the following definitions for the kind of chain-of-custody models under consideration:

- Controlled blending: "chain of custody model in which materials or products with a set of specified characteristics are mixed according to certain criteria with materials or products without that set of characteristics resulting in a known proportion of the specified characteristics in the final output."

- Mass balance: "chain of custody model in which materials or products with a set of specified characteristics are mixed according to defined criteria with materials or products without that set of characteristics."

[6] Standards and certifications for compostable plastics are available but are not compatible with most existing infrastructure.

- Book and claim: “chain of custody model in which the administrative record flow is not necessarily connected to the physical flow of material or product throughout the supply chain.”

These models are listed in order of increasing flexibility and decreasing physical traceability of recycled content. In essence, adoption of controlled blending would require reporting the recycled content percentage in each batch of manufactured or imported products. Adoption of mass balance would require reporting on the average amount of recycled content used in each product category produced within a set period. Adoption of book and claim would allow for the generation and trading of recycled content “credits”, which would be considered equivalent to physical recycled content for reporting purposes.

ECCC is considering allowing regulated parties to report compliance with the Regulations using a mass balance chain-of-custody model, where the average amount of recycled content used in each calendar year for each separate product category would have to be reported. This approach would balance the objective of stimulating end markets for a range of products and packaging with the need to provide flexibility for product manufacturers and importers amid fluctuations in quantity and quality of recycled plastics.

Consultation questions:

9. Do you agree in principle with allowing the use of a mass balance method for measurement and reporting of recycled content? If not, please explain why.
10. Should additional chain of custody methods be allowed? Please provide rationale.
11. Do you agree with the proposal to require annual reporting of recycled content use by product category? If not, what alternative reporting system would you propose to verify compliance with the requirements? Please provide rationale.
12. If you are a business that may be subject to the Regulations, would you expect to encounter any challenges with implementing any of the chain-of-custody methods of measurement (e.g. administrative impacts)? Please elaborate.

6. Verification

The use of transparent verification processes for recycled content is important in creating a level playing field and ensuring accountability. The Regulations would set minimum requirements for verification of reported recycled content. These requirements may be met through certification by accredited standards development organizations

(SDOs) or other third parties.[7] ECCC is seeking feedback on what should be included in minimum requirements, and how verification might work in practice for the regulated community, including for importers of applicable products under the Regulations.

Consultation questions:

13. What evidence requirements, at minimum, would be needed to ensure compliance with minimum recycled requirements?
14. If you are an importer of plastic products, what must be considered to obtain the required evidence for recycled content verification from overseas manufacturers? What other ways could importers demonstrate compliance?

Next steps

ECCC will consult with interested parties on the questions raised in this paper regarding the proposed Recycled Content for Certain Plastic Manufactured Items Regulations in early 2022.

The proposed Regulations may be published in the *Canada Gazette*, Part I, in late 2022. There will be a comment period following the publication, during which interested parties will have an opportunity to provide feedback.

Contact information

Interested Canadians are invited to provide written comments on this discussion document during the comment period, which will end on March 14, 2022.

Please send your comments to the following address.

E-mail: ContenuRecycleRecycledContent@ec.gc.ca

ECCC welcomes the further distribution of this document.

[7] A comparative assessment of standards and certification schemes for verifying recycled content is available at: https://www.eunomia.co.uk/reports-tools/a-comparative-assessment-of-standards-and-certification-schemes-for-verifying-recycled-content-in-plastic-products/. This report by Eunomia was commissioned by ECCC and the Standards Council of Canada.

ANNEX - CONSULTATION QUESTIONS

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5. Should certified compostable plastics be exempted from the Regulations, either for all or only some product applications, or not? Please provide rationale.
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