# LeaPP, a CPT Project:
# *Pathway Towards Food-Grade Recycled Polypropylene*

January 29, 2026

GAPC CPT
GROUPE D'ACTION PLASTIQUES CIRCULAIRES
CIRCULAR PLASTICS TASKFORCE

ÉCOEMBALLAGE+

*Proud partner of LeaPP project's Phase I*

A program coordinated by the FAQDD and financially supported by the Quebec government.

FONDS D'ACTION QUÉBÉCOIS pour le développement durable

Québec

# LEADING ORGANIZATIONS

Cascades

Chemistry Industry Association of Canada | Association canadienne de l'industrie de la chimie

DANONE ONE PLANET. ONE HEALTH

RECYCLEBC

Éco Entreprises Québec

circular materials

Keurig DrPepper Canada

ProAmpac

# OUR MISSION

Foster a better alignment between market needs and recycling outputs through optimization solutions and research projects to create a circular economy for post-consumer plastics in Canada.

# OUR VISION

That all plastic packaging put on the market in Canada be collected and recycled in keeping with market needs (volumes, grades, quality), to create a circular economy.


Complete!
Phase I
Foundational research
February 2020 - April 2021
Ongoing
Phase II
Projects: pilots + research
Winter 2022 - Today
Environment and
Climate Change Canada
Environnement et
Changement climatique Canada
With the financial support of
Québec

# Full Project Portfolio

**Implement industrial-scale solutions to quickly & concretely improve the quality of sorted materials, as well as the recycling rate of plastic packaging.**

# Ongoing Projects

**Small Items Recovery**

Analyze the composition of the small items stream found in MRFs and identify / trial strategies to optimize sorting performance in varied sorting facility settings.

**BiblioFlex**

Better understand the composition of flexible plastic packaging (FPP) and guide design and recycling processes by building a database of packaging types classified by product category.

**LeaPP**

Support the production of higher volumes of food-grade recycled PP using curbside-collected feedstock.

- Food Grade
- Formats
- PP
- Flexible Plastics

GAPC CPT

# Advancing Food-Grade Recycled Plastics in Canada

## *Challenges and Regulatory Perspectives*

# Regulatory Landscape

**Highlights:**

1. Source separation AND decontamination capacities are required for all resins
2. Compliance mechanisms are stricter in Europe
3. Both Health Canada and the FDA issue letters −i.e., Letter of No Objection (LONO) / No Objection Letter (NOL) respectively, but producers may want to rely on other guarantees from suppliers

| | CAN | US | EUR |
|---|---|---|---|
| Access to list of approved processes | Not public | Public | Public |
| Pre-market clearance | Voluntary | Voluntary | Mandatory |
| Responsible entity | Manufacturer | Manufacturer | Manufacturer |
| Nature of the approval | Not legal | Not legal | Legal |

# Recycling Systems Maturity

| | MOST MATURE | | | LEAST MATURE | |
|---|---|---|---|---|---|
| | **PET RECYCLING** | **HDPE RECYCLING** | **PP RECYCLING** | **LDPE RECYCLING** | **PS RECYCLING** |
| **Access to Significant Quantity of Verifiable Food-Grade Source Material** | ✓ | ✓ | ✗ | ✗ | ✗ |
| **Well-Established Ability to Decontaminate** | ✓ | ✓ | ✓ | ✓ | ✗ |

**Highlights:**

1. For PP and LDPE, while technologies exist, source control is more complex due to products diversity

2. For PS, technologies exist as well, but are less developed or less implemented at commercial scale

*As the demand for PCR resin use in food packaging applications increases, Canada needs a streamlined, well-functioning compliance process to ensure that its use is safe*

# Key Findings

1. Although Canadian qualification and compliance processes are aligned with U.S. mechanisms, they lack clarity compared to best practices implemented in other jurisdictions.

2. There are no standard Canadian protocols to guide PCR resin qualification as food-grade, which creates inefficiencies and complicates the process for applicants.

3. Technologies exist to manufacture food-grade LDPE, PP, and PS but the food-grade qualification process is challenging due insufficient suitable feedstock, complex traceability requirements and economic considerations.

4. PET and HDPE recycling systems are more mature. Meeting the requirements leading to the issuance of a LONO/NOL is easier.

5. To increase the volume of food-grade PCR resin produced, the industry needs to develop its capacity to leverage new feedstock, including materials coming from curbside collection.

# LeaPP Project Overview

## Objective

Define acceptable pathways to enable the production of high-quality food-grade recycled polypropylene (rPP) using curbside-collected feedstock

### Implementation steps

- Phase 1: Determine key technical characteristics (attributes) to consider for recycling PP products into food packaging applications
- Phase 2:
  - Identify and test sorting and recycling solutions that could help meet technical and safety specifications
  - Document processes and present to food safety authorities

### Timeline

- Phase 1: near completion
- Phase 2: Q4-2026

### Project partners

Keurig DrPepper Canada

DANONE ONE PLANET. ONE HEALTH

The Recycling Partnership
Building a Better Recycling System

interpipeline

WINPAK
IT'S OUR NATURE TO PROTECT™

# About Green Group

***Our Mission:***

*Green Group Consulting empowers organizations to achieve bold sustainability goals. Through tailored solutions and proven expertise in recycling and compliance, we help clients unlock value, reduce risk and rescue materials to lead the way toward a more sustainable planet.*


Green Group CONSULTING

# Core Objectives

- Establish a practical pathway for incorporating curbside post-consumer recycled (PCR) polypropylene (PP) into food contact applications
- Technical lead for developing processes and end-use requirements
- Identify the most suitable recycled content resins for the highest-volume applications
- Define how processors can meet brand owner requirements

Green Group CONSULTING

**Use:**

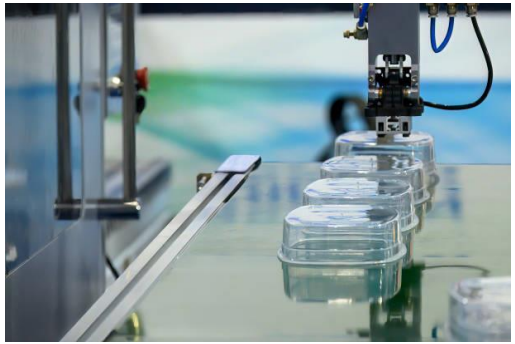
Complex and durable packaging parts (e.g., caps, closures, containers)

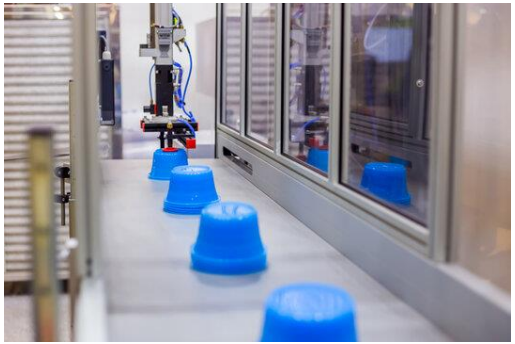
High dimensional accuracy, ideal for application of strength and intricate details

# Injection Molding

**Injection Molding**:

- Polypropylene pellets are melted and injected into a closed mold cavity under high pressure
- Material cools and solidifies inside mold, creating a rigid and precisely shaped component





Green Group CONSULTING

**Use:**

Sheets can be cut or trimmed to desired width to produce lightweight packaging items (e.g., trays, cups, clamshells)

Ideal for high-volume production and thin-walled packaging

# Thermoforming

**Thermoforming**:

- Polypropylene pellets are melted and homogenized in an extruder using heat and mechanical shear
- Molten polymer is forced through a flat die forming a continuous sheet with controlled thickness
- The sheet cools and solidifies while maintaining dimensions and surface finish

Green Group CONSULTING

# Post-Consumer Recycled (PCR) Resin Integration into Food Contact Packaging

# Targets for PCR Content

Clearly defined and supported by detailed resin specifications outlining critical properties such as melt flow rate, density, flexural modulus, tensile strength, and impact resistance

Maintaining these properties within acceptable ranges ensures PCR containing resins meet requirements of food contact packaging and adhere to regulatory standards

# Compliance with Food Safety Regulations

FDA No Objection Letter (NOL) is considered essential

Quality protocols are mandated to verify PCR content and performance

Conditions of use for food contact applications span a wide range from high temperature sterilization to refrigerated and frozen storage

Companies requiring migration tests

PCR resins must perform reliably under diverse conditions

# Colour Flexibility

Colour flexibility is generally accepted, with accommodations around off-white/gray tones given colour stability

Not viewed as an insurmountable barrier to PCR resin adoption

# Pricing

- Pricing considerations remain a challenge, PCR resin carries a premium over virgin resin
- Virgin polypropylene is around $.40/lb while PCR polypropylene with NOL is over $1/lb
- Organization willingness to absorb cost increase in alignment with sustainability objectives

# Technical Components

Supplier requirements emphasize robust quality control, feedstock traceability and compliance with chemical management policies

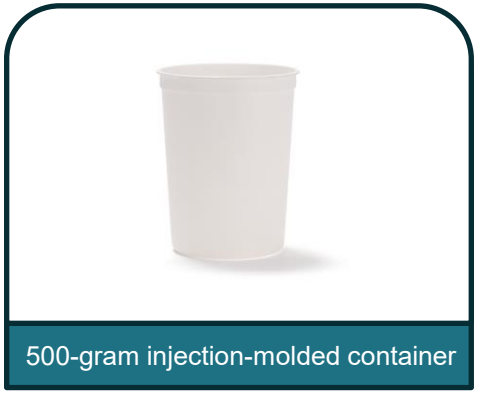
Audits and certifications are common to ensure food safety and regulatory compliance

PCR resins widely recognized as strategic towards circularity and reaching sustainability commitments beyond compliance

Physical qualities of PCR resin mirror virgin resin

# Product Targets

***Two PP packaging formats have been selected for resin testing to validate the use of PCR content:***



500-gram injection-molded container

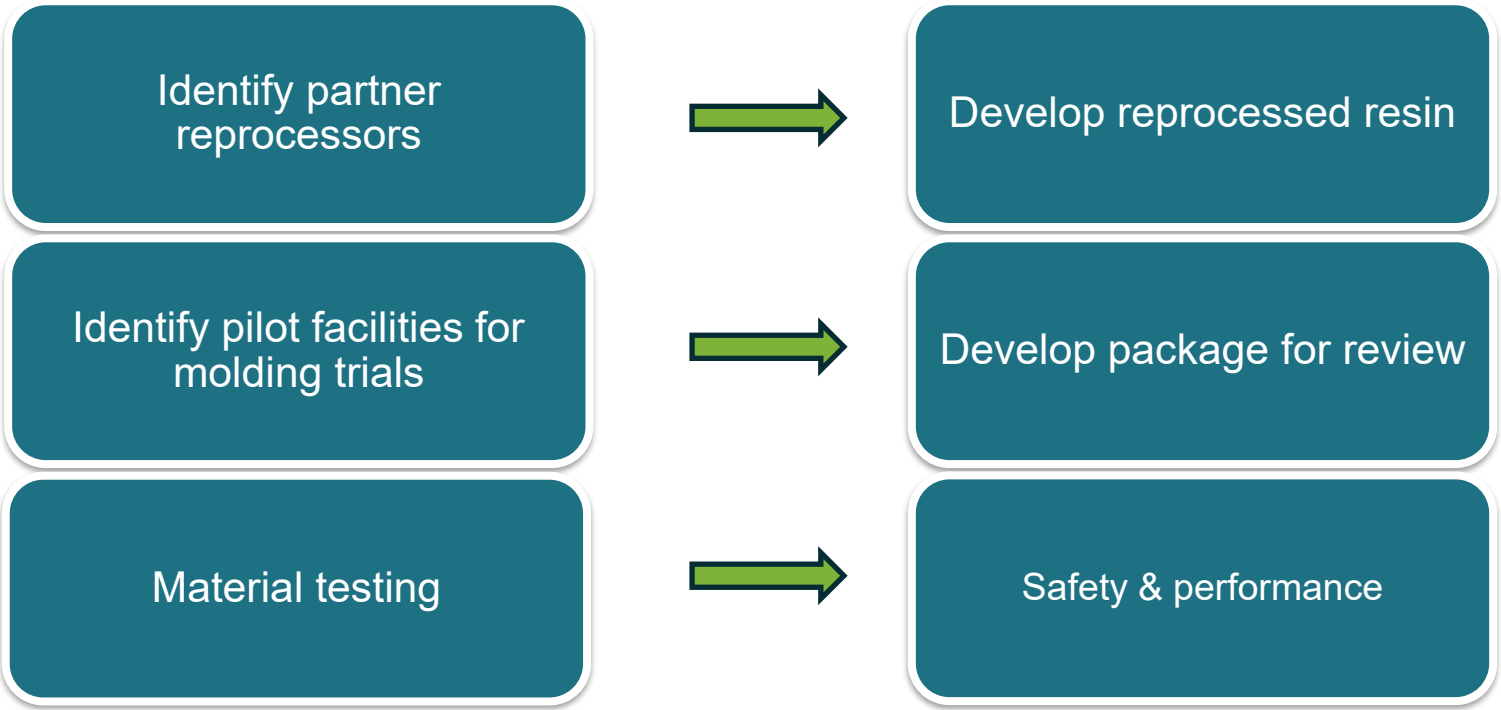
113-gram thermoformed container

Both are intended for food contact applications and must comply with FDA Conditions of Use (A-H), which includes high-temp sterilization as well as refrigerated and frozen storage

Both will incorporate 30% PCR content

Green Group CONSULTING

# Next Steps


Identify partner reprocessors
Develop reprocessed resin
Identify pilot facilities for molding trials
Develop package for review
Material testing
Safety & performance

## Scan to Access CPT's Publications

info@gapc.ca

www.circularplastics.ca

CPT

GAPC CPT

GROUPE D'ACTION PLASTIQUES CIRCULAIRES

CIRCULAR PLASTICS TASKFORCE