

PRFLEX

Optimizing the Recycling System for Flexible Plastic Packaging in Canada



Land Acknowledgment



Objectives

Showcase

key data and findings

Engage

subject matter experts to provide insights into the key learnings

Provide

the audience with an opportunity to ask questions to our experts

Discuss

next steps and recommendations



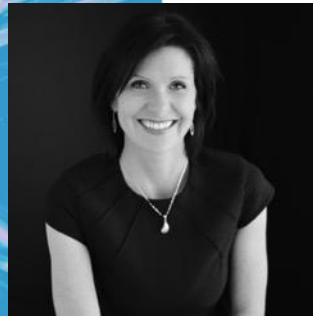
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Flexible Plastic Packaging in Canada



47% of the plastic packaging
put on the Canadian market

4.2% growth
year-over-year

Great sustainability advantages
but end-of-life challenges

Regulatory pressures

- ECCC Recycled Content and Labelling
- EPR Recycling performance targets (40% by 2027 in Québec, and 25% by 2026 in Ontario)

Voluntary commitments

- Canada Plastics Pact 5-year Roadmap for Flexible Plastic Packaging

PRFLEX



Gathering baseline data

to determine the percentage of FPP currently being collected, sorted and recycled, according to format and type, across the country.



Identifying infrastructure gaps

in material recovery facilities (MRFs) and at reclaimers.



Proposing new technologies

and optimizing processes to increase capture rates, improve sorting and produce higher quality post-consumer recycled resins.



Work conducted from
March to June 2023

The Current State of FPP Recycling in Canada

Most curbside collection systems in Canada accept some FPP

- Majority only accept polyethylene films (#4)
- Only BC accepts all types of FPP in depots

Significant volume of high-value FPP in ICI sector

- Lack of a widespread dedicated collection system

46 000 to 59 000

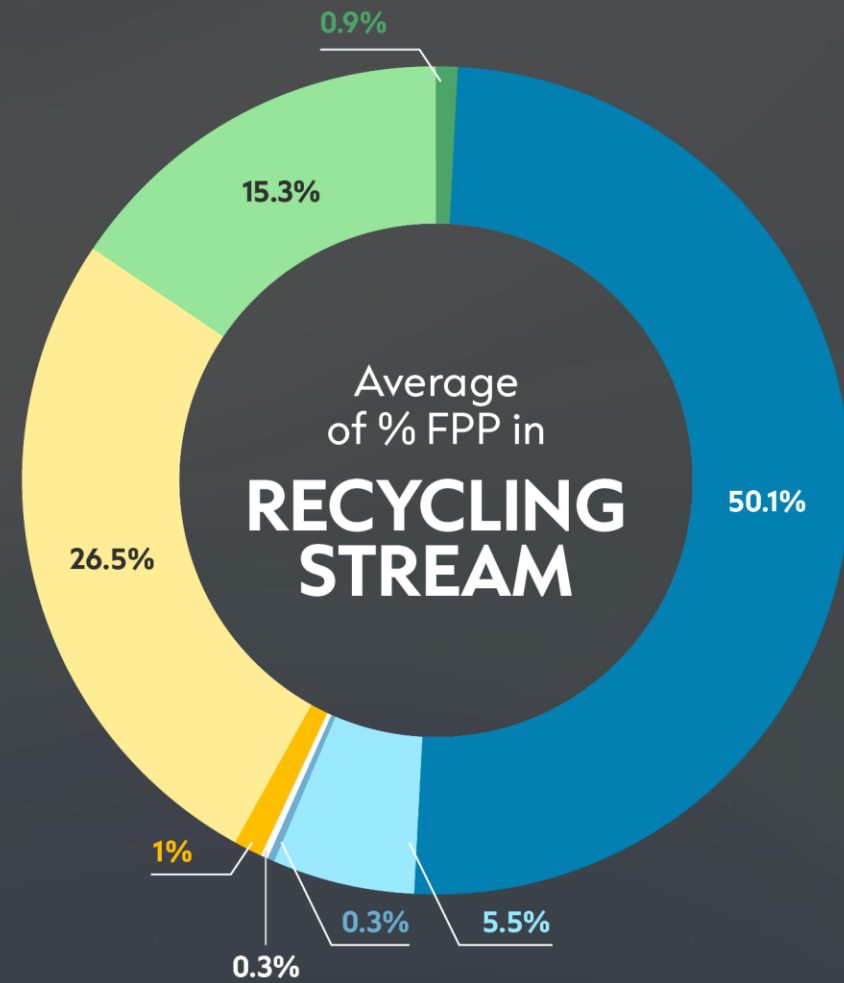
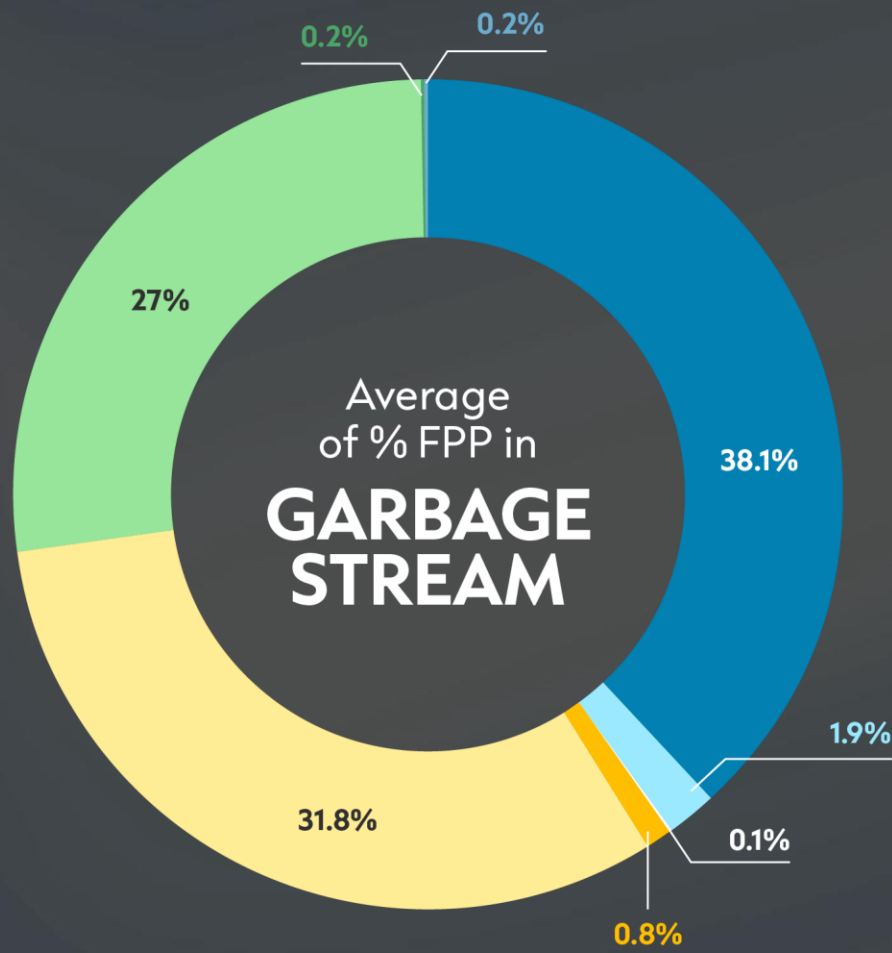
TPY collected

3% to 4%

recycling rate

**Without accepting all FPP in
the curbside collection systems,
it will be very difficult to reach
the ambitious voluntary and
regulatory performance targets.**

There is a significant variety of FPP on the market, which adds complexity to the recycling value chain. However, we lack reliable data on FPP composition and volume.



- MonoPE
- Other FPP
- MonoPVC
- Non-PPP flexible
- MonoPP
- Degradable resins
- MonoPET
- < 5 cm

Loose FPP is one of the most challenging and costly materials to sort for MRFs.

It overlaps with other materials

on conveyors and confounds recognition.

It tends to be contaminated by other materials of similar density (such as strings and twine, paper, etc.),

especially in presence of air classification and aeraulic transfer systems.

It accumulates on the rotating components of equipment

reducing their efficiency.

It can contain organic matter,

increasing the potential for contamination.

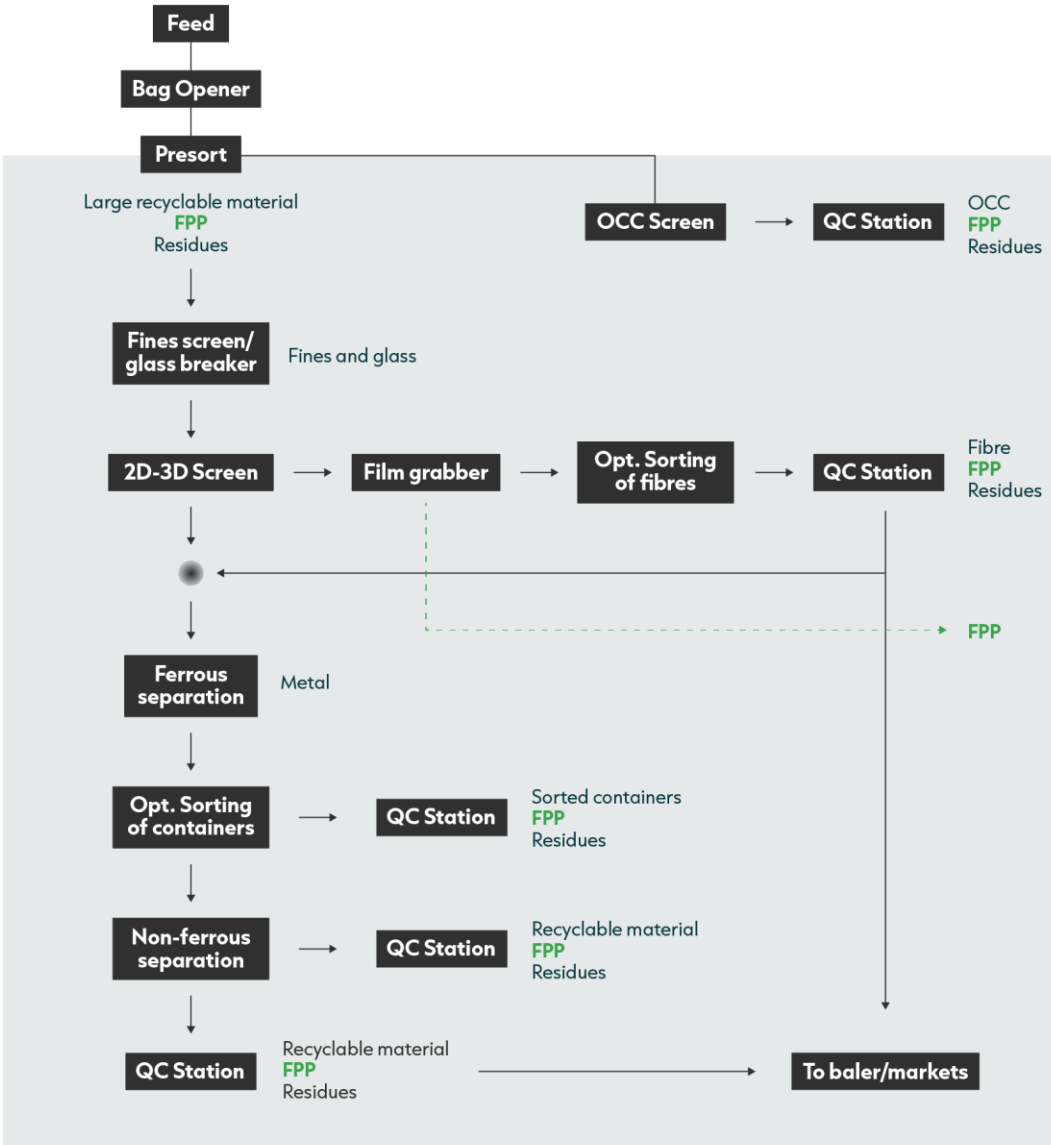
It is difficult to distribute evenly on a sorting belt,

due to turbulence and interference from other, heavier objects.

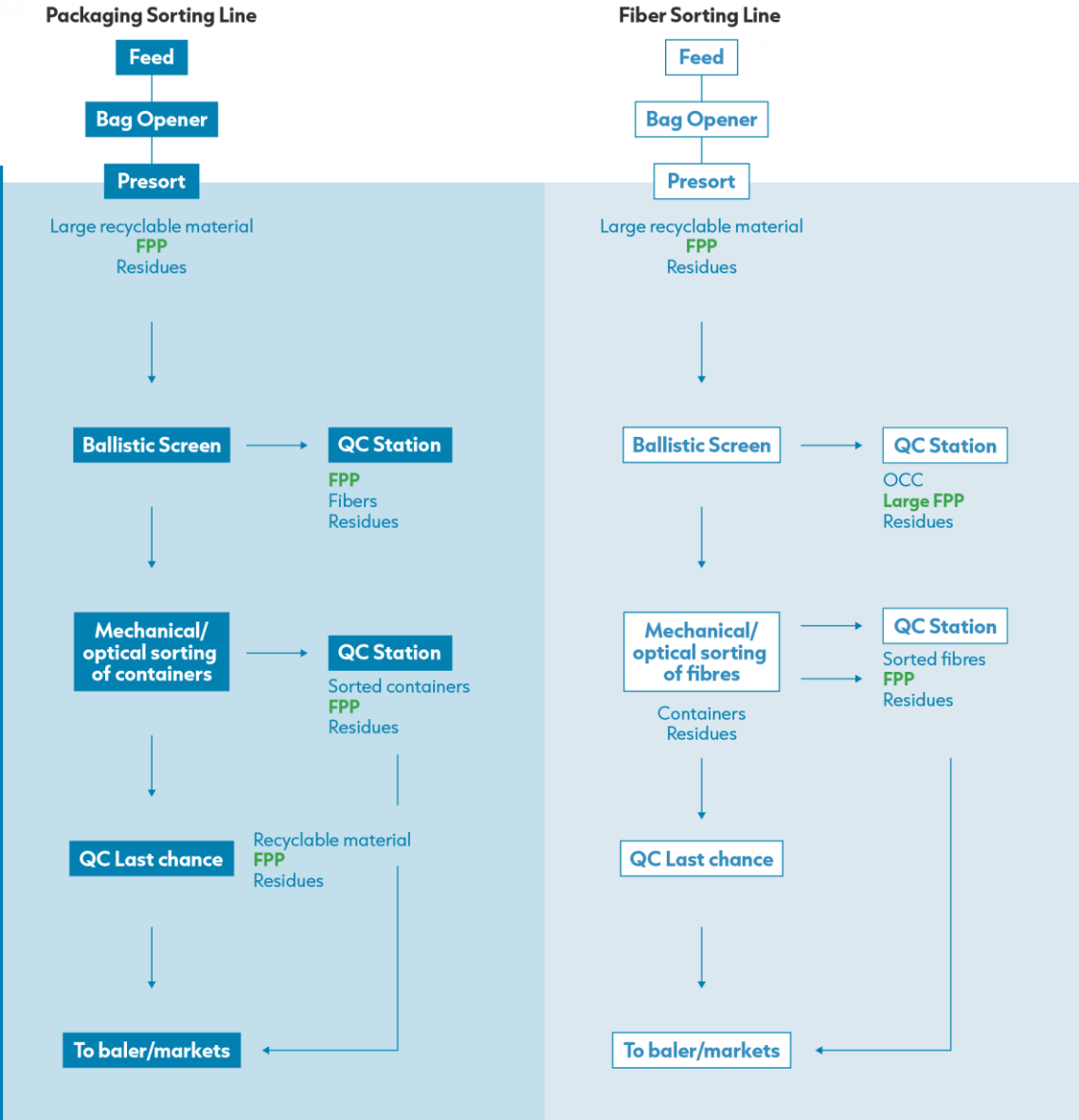
It involves a great deal of handling to produce a bale of FPP,

as a 750kg bale of FPP would contain between 75,000 and 225,000 single film units.

SINGLE STREAM



DUAL STREAM



A dual stream collection model is better for sorting FPP, and its feasibility should be evaluated.

The FPP Collection Hierarchy

01

Dual stream collection (fibers and containers or flexible plastics individually)

02

New single stream MRFs designed to handle FPP

03

Improved sorting capacities in existing single stream MRFs

04

Alternative FPP solutions in single stream collection (e.g. bags in bag, depots)

05

Single stream collection with loose FPP

↑
MOST PREFERRED
—

Reclaimer and End-Markets

Current

30 000
TPY

Focus on
LDPE/LLDPE

Mostly
ICI

Very limited
pre-sort

Mechanical
only

Limited end markets
(durables)



Future

100 000
TPY

All FPP
Types

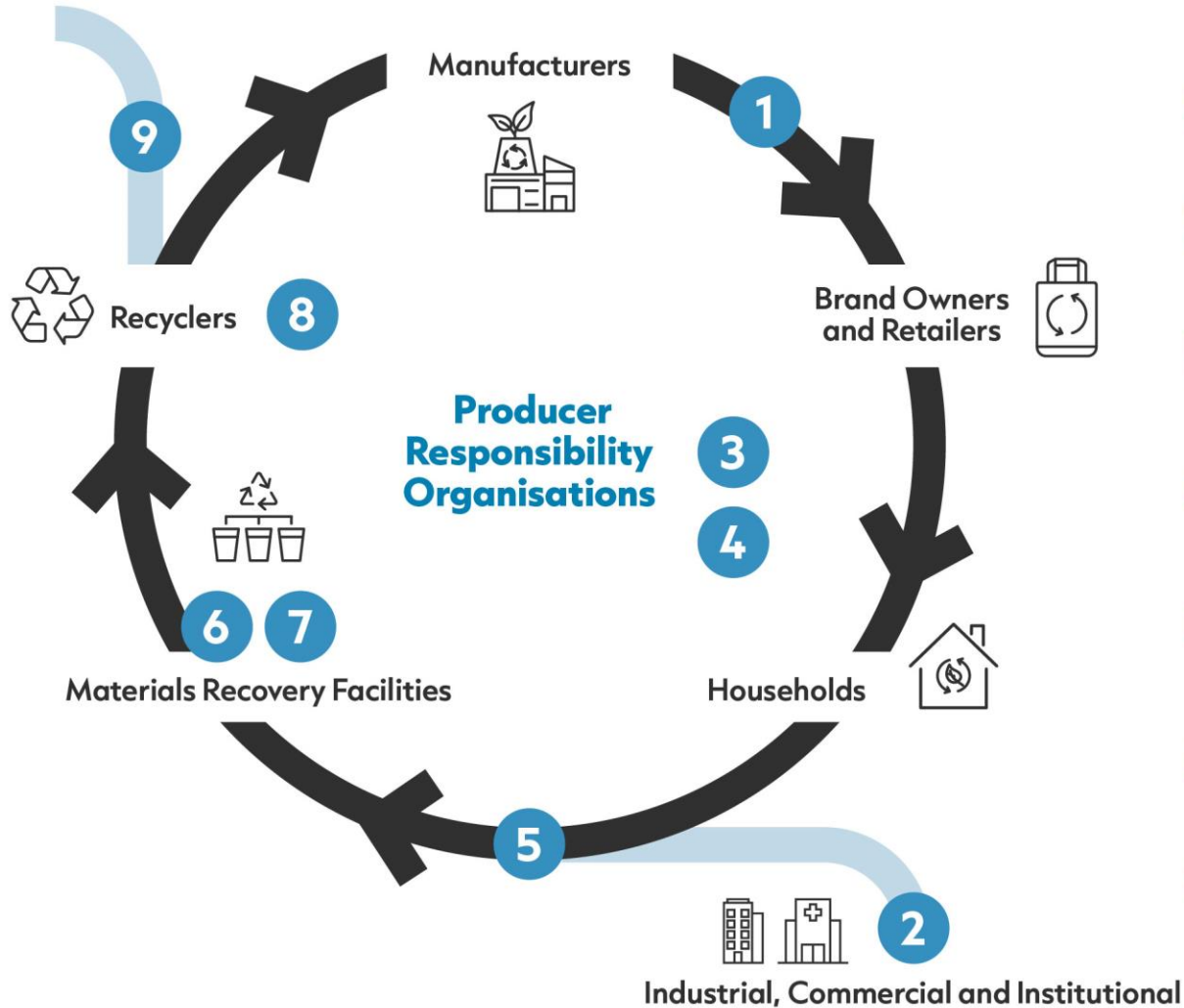
ICI
and curbside

Front-end
pre-sort

Mechanical
and chemical

Large range
of end markets

The Perfect Recycling System for FPP



- 1 AIM FOR BETTER HARMONIZATION OF FPP** through the implementation of design for recyclability measures
- 2 SET UP DEDICATED COLLECTION** of FPP in ICI
- Through regulatory reporting and waste studies, **3 IMPROVE THE UNDERSTANDING OF FPP COMPOSITION AND MARKET**
- 4 ACCEPT ALL FPP IN CURBSIDE COLLECTION AND MAKE MRFS RESPONSIBLE FOR CAPTURING FPP**, and not for separating FPP by resin or type
- Where not already implemented, **5 EVALUATE THE FEASIBILITY OF DUAL STREAM COLLECTION**
- When dual stream is not suitable, **6 EVALUATE THE FEASIBILITY OF BUILDING NEW SINGLE-STREAM MRFS** designed to sort FPP more efficiently.
- If building a new single-stream MRF is not feasible, **7 IMPLEMENT SOLUTIONS FOR REDUCING LOOSE FPP**, such as depots and bags-in-bag
- 8 DEVELOP NEW CAPACITIES FOR FPP SEPARATION AT RECLAIMERS** and implement emerging sorting and recycling technologies.
- Through supply chain collaboration, **9 SUPPORT THE BUILDING OF VIABLE END-MARKETS** for all types of collected FPP, including hard-to-recycle materials.

