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Curbside recycling in Quebec

Annie Lalonde
Research and Planning Officer

Recycling

Curbside recycling is ...

A **door-to-door collection** or **voluntary deposit** system for containers and packaging made of paper, cardboard, glass, plastic or metal, as well as printed matter and newspapers, deposited by citizens in their blue bins



Today:

99% of Quebec's population has access to a municipal curbside recycling service



Brief history

1977

- Victoriaville: implementation of a recycling service based on voluntary deposits

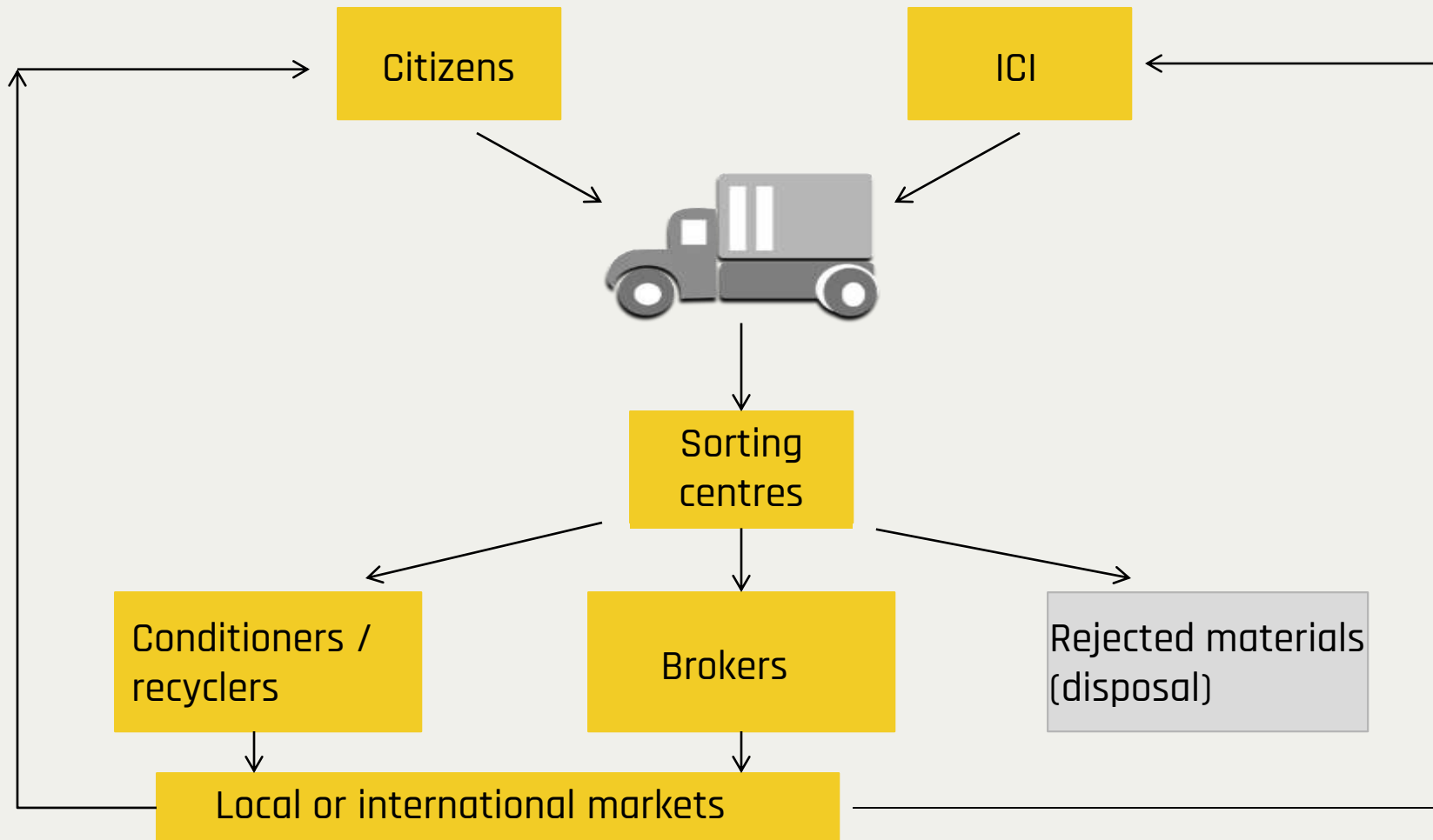
1984

- Victoriaville and Ancienne-Lorette: transition to door-to-door collection
- Publication of the first studies and analysis by the government

It is therefore the actions of communities that led the political authorities to intervene in the field of curbside recycling



Recyclable materials value chain



Flexible recovery mode

The curbside recycling service can be modulated according to several factors:

- The geographic location
- The area, the number of residents and the density of the population
- The number and distribution of dwellings by type
- The number and distribution of industries, businesses and institutions (ICI)
- The location of the markets, their opportunities and their particularities
- The available budget



Markets

Markets

- In order for a residual material to be recycled and subsequently sold, **viable markets** must exist
- Demand for the products of recycled materials must therefore be **constant and sufficient**
- 2 elements to consider:
 - The **quality** of the materials recovered, in order to be competitive with available raw materials and ensure uniform product quality
 - The **quantities** of recyclable materials, to ensure sufficient, consistent and cost-effective supply



Price of materials

- The index for the price of materials is expressed as a **price per tonne** for the different materials recovered
- These indices can vary daily
- A recoverer can obtain a price from a recycler that is lower or higher than the price indicated according to various factors:
 - Supply and demand
 - The quality of the sorted material
 - The quantity of the sorted material



Fibers market

- Fiber: tissue paper, toilet paper
- Aluminum: window frames, automotive components
- Poly-aluminum: furniture, construction materials, energy recovery
- Ceiling tiles, wall panels
- Paraffin (converted polyethylene)
- Boxboard (cardboard packaging)
- Corrugated cardboard
- Newspaper
- Office paper
- Insulating panels



Fibers market

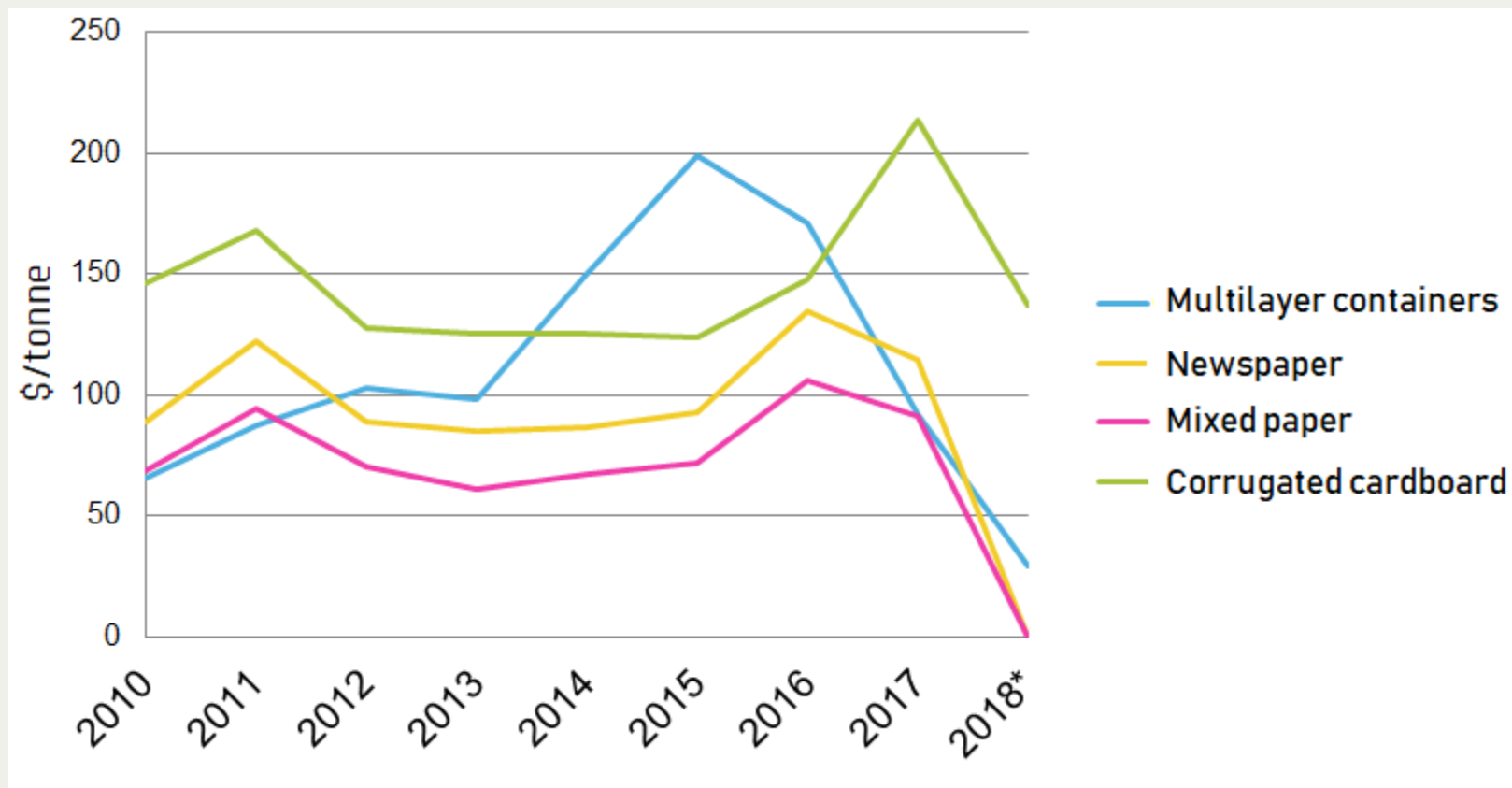
- Corrugated boxes
- Kraft paper packaging
- Construction materials



- Newsprint
- Egg containers
- Cellulose for insulation
- Toilet paper
- Paper towels
- Paper napkins
- Insulating panels



Evolution of the selling price index for fiber bales from 2010 to 2018*



Glass markets

- High-pressure abrasives
- Filter material for water
- Ornamental and horticultural mulch
- Cement additive
- Insulating wool
- Cellular glass
- Road embankment
- New glass containers (bottles, jars)

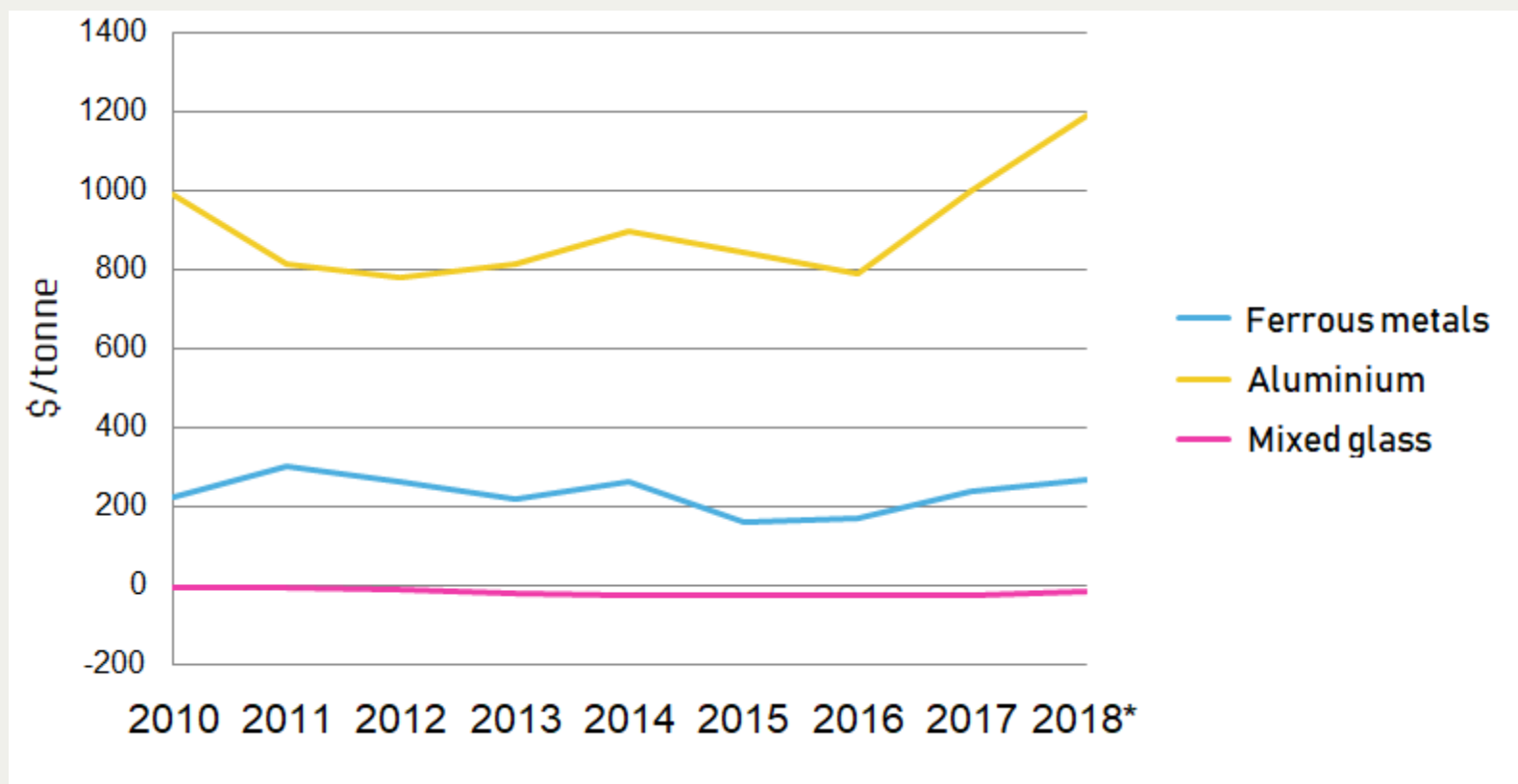


Metal markets

- Engine parts
 - Tools
 - Soup cans
 - Nails
 - Construction materials
- Soda cans
 - Construction materials
 - Auto parts



Evolution of the selling price index of mixed metal and glass bales from 2010 to 2018*



Plastic markets

- Bottles
- Thermoformed containers and packaging (e.g., transparent egg containers)
- Polyester fibers (e.g., carpets, fleece clothing)
- Containers of liquid laundry detergent
- Drainage pipes
- Recycling bins
- Garbage can
- Handling pallets
- Urban furniture
- Park benches
- Flower boxes
- Picnic tables
- Plastic boards (e.g., patios)
- Wood pallets
- Buckets, pails and lids

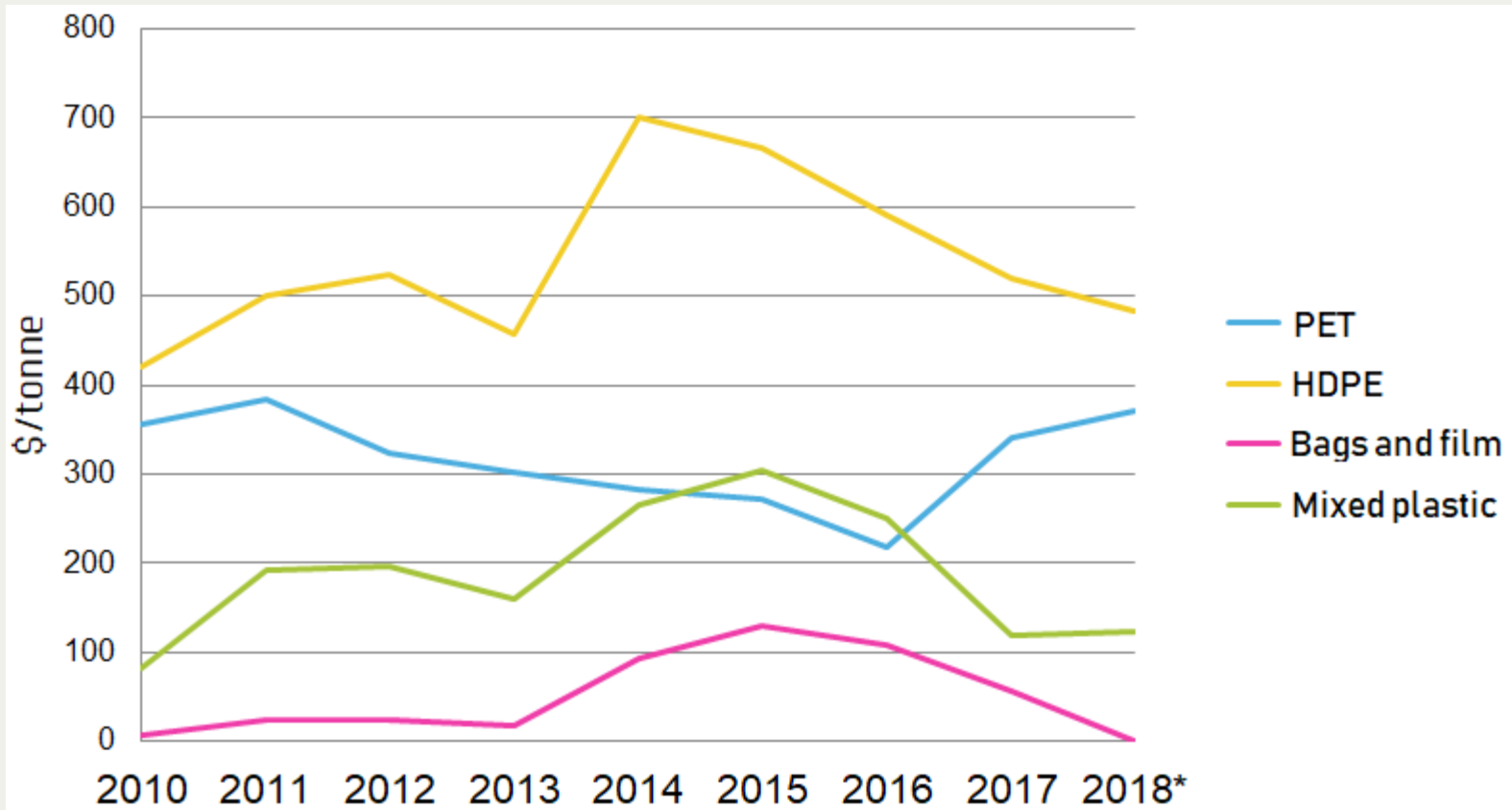


Plastic markets

- Laminate subfloors
- Floors
- Concrete slabs
- Garbage bags
- Various household items
- Components for industrial use
- Storage and handling bins
- Pallets
- Decorative frames
- Architectural moldings
- Horticultural products
- Hangers
- Office accessories
- Insulating panels for construction
- Food containers and packaging
- Gas
- Solid carbon (coal)



Evolution of the selling price index for plastic bales from 2010 to 2018*



Challenges

Quality of materials

- **Materials collected by citizens (sorting at source)**
 - Unwanted materials (ex: garden hoses, wires, toys)
 - Soiled materials
 - Confusion on what materials are accepted/rejected
- **Sorted material (by the sorting centre)**
 - Blockages, halts in production, equipment failure and wear
 - Average rejection rate of sorting centres in 2015: 9.1%
 - Contaminants in bales (e.g., glass in paper) - also found in recyclers



Containers or packaging that are difficult to recycle



- Ink
- Glue
- Labels
- Multi-materials
- New materials
- Etc.



Rarity or lack of (local) recycling outlets for certain materials



Plastic bags



Multilayer containers



Polystyrene



Decrease of newsprint



Loss of income for sorting centres:

- In 2015, out of the 808,000 mt of material sold by sorting centres, 707,000 mt were paper/cardboard (88% of materials sold)

Source: Bilan 2015 de la GMR au Québec, RECYC-QUÉBEC



Gains

Environmental gains

- Reduction of the amount of energy and raw materials needed in manufacturing processes
- Reduction of the quantity of residual materials to dispose of
- Possible reduction of GHG emissions
- Integration of sustainable development into residual materials management



Economic gains

- Decrease in costs associated with materials disposal in addition to compensation costs for recycling
- Possible monetary benefits from the sale of recovered materials negotiated in contracts
- Job creation throughout Quebec (transport, sorting centres, recycling)



Questions?

THANK YOU!

Annie Lalonde, M. Sc.
Research and Planning Officer
RECYC-QUÉBEC
a.lalonde@recyc-quebec.gouv.qc.ca
Phone: (514) 352-5002, ext. 2437

Compensation plan for curbside recycling



Represents the companies that put containers, packaging and printed matter on the market

This plan requires companies to compensate (at 100%) municipal organizations for the costs of collecting, transporting, sorting and conditioning containers, packaging, printed matter and newspapers put on the Quebec market.



Charges for residual materials disposal

- In place since June 2006
- Enables us to:
 - Reduce the amount of buried or incinerated materials
 - Increase the life of disposal sites
 - Fund municipal residual materials management plans and programs
- In 2018: \$22.57/metric ton

