

# Curbside collection

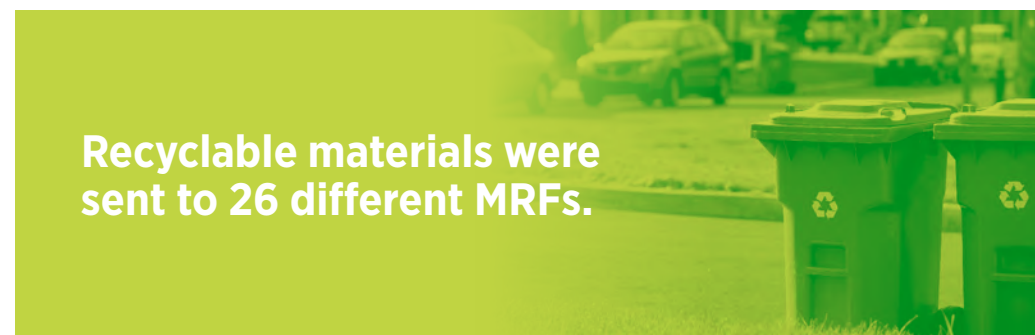
Year 2018 marked the start of a transition for curbside collection in Quebec. China closed its market and stopped buying certain products as of 2017, sending various material recovery facilities (MRFs) scrambling to find new markets for their main outgoing materials, including mixed paper and plastics. As export markets for certain materials shut down, prices for such materials also went into a nose dive, weakening the financial viability of most MRFs, regardless of whether they are private or public operations or managed by non-profit agencies.

## Origin of materials

In 2018, recyclable materials from municipalities or private collections specific to the industrial, commercial and institutional (ICI) sector were directed to 26 different MRFs, i.e., 23 taking in materials from municipal collections and 3 that only took in and treated materials from ICI collections.<sup>1</sup>

## Materials received by MRFs

Although quantities of recovered materials from the residential sector has dropped over the past few years, especially due to the decline of newspapers on the market and the reduced weight of a number of containers and packaging, quantities received by MRFs have remained relatively stable. This can be mainly attributed to the fact that several municipalities now offer recyclable material collection at various ICI sites on their territory.



<sup>1</sup> However, during the year, a MRF that was treating material from municipalities had to shut down its operations while a MRF for ICI collections was unable to treat any material in 2018 due to a fire.

**Table 1.1**

### QUANTITY OF MATERIALS RECEIVED BASED ON ORIGIN

(in tonnes)

ORIGIN	2012	2015	2018	2015-2018 VARIANCE
Materials from municipal collections	805,000	774,000	772,000	-0.3%
Materials from ICI collections	290,000	222,000	221,000	-0.5%
<b>TOTAL</b>	<b>1,095,000</b>	<b>996,000</b>	<b>993,000</b>	<b>-0.3%</b>

## MRFs rejects

In 2018, the quantity of materials rejected by MRFs went up compared to 2015. In fact, 114,000 tonnes of materials were rejected, i.e., 11.4% of materials received, compared to 91,000 tonnes (or 9.1% of materials received) in 2015.

In addition to the usual reasons for these rejects (processing operations resulting in recyclable materials being rejected; presence of non-recyclable paper or cardboard, plastic, glass or metal; or other residual materials that simply should not be included in curbside collection), the crisis rocking MRFs might explain this hike. Some facilities have to reject materials during sorting operations, as they were simply unable to clear the supply after treatment, whether towards recycling or recovery. In order to tailor to the quality specifications of buyers, MRFs must pay special attention to reducing contaminants in their bundles, which can also drive up the amount of rejects.

## The glass situation

The problem with glass has been around for several years, as most recovered glass cannot be properly treated by MRFs and most end up in engineered landfills. It is mainly used for daily cover or other uses, such as building access roads. After peaking in 2015 with over 86,000 tonnes of glass sent to engineered landfills by MRFs, various measures have been implemented to reduce that quantity. Although these measures have helped raise the amount of glass MRFs sent to recycling (see Table 1.2 on the matter), these facilities continue to send significant quantities of glass to engineered landfills.

In 2018, 78,000 tonnes of glass were so disposed by MRFs, a mere 9% decline compared to 2015.

## MRF outgoing materials

In 2018, MRFs sent 786,000 tonnes of materials to various markets, which is a 3% drop compared to 2015.

**Table 1.2**

### QUANTITY OF OUTGOING MATERIALS

(in tonnes)

MATERIAL	2012	2015	2018	2015-2018 VARIANCE
Paper and cardboard	810,000	707,000	642,000	-9%
Metal	29,000	30,000	39,000	28%
Plastic	41,000	46,000	59,000	28%
Glass	66,000	23,000	45,000	97%
Mixed materials and others	24,000	2,000	1,000	-44%
<b>TOTAL</b>	<b>970,000</b>	<b>808,000</b>	<b>786,000</b>	<b>-3%</b>

The only decline in outgoing materials is the paper and cardboard category. Between 2015 and 2018, it decreased by 9%, but since 2012, it has been down 21% and it is certainly notable for newspapers, magazines, and even mixed paper. The quantity of cardboard sold keeps rising, except for paperboard, which is now often bundled with mixed paper and cardboard, as buyers' needs have changed for paperboard.

The uptick in plastic was notable in all grades of plastic, except for bags and films, where MRFs had to store large quantities due to the lack of end-uses. In 2015, the export market made up 80% of sales of plastic bag and film bundles, but the closure of China's market has significantly limited the market potential for bags and films.

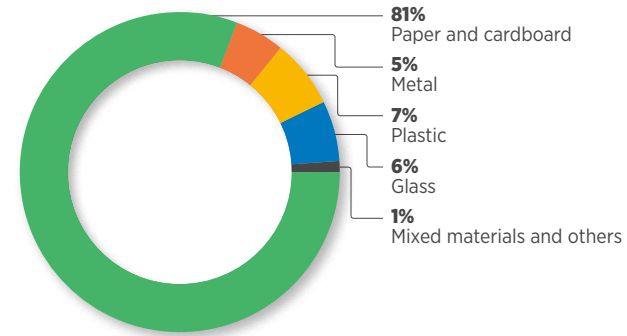
Metal also reached a peak. The robustness of Quebec's metal market is definitely a factor, but we also noted a very high spike in metals sold by MRFs that process ICI materials.

Lastly, the amount of glass sent to recycling has nearly doubled compared to 2015, but it still lags far behind the amounts that MRFs had sent to recycling at the start of the decade.<sup>2</sup>

According to the breakdown of outgoing materials, paper and cardboard still account for over 80%, but we noticed a slight decrease compared to 2015 (87.5%). Other materials went up, in particular glass, which almost doubled from 2.8% in 2015 to 6% in 2018.

**Figure 1.1**

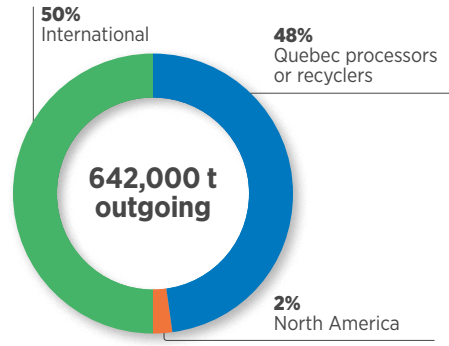
### BREAKDOWN OF OUTGOING MATERIALS



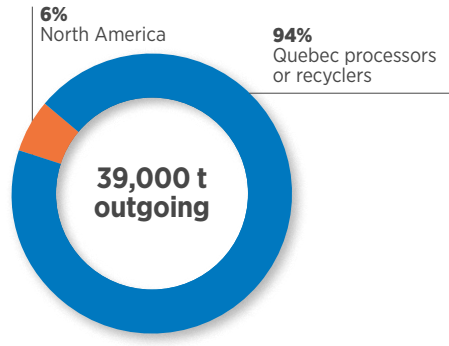
<sup>2</sup> See the [2015 Report](#) p. 11 for 2010 and 2012 data (in French)

**Figure 1.2**  
**DESTINATION OF OUTGOING MATERIALS IN 2018**

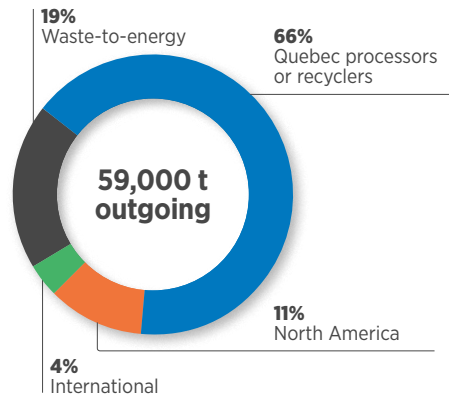
**Paper and cardboard**



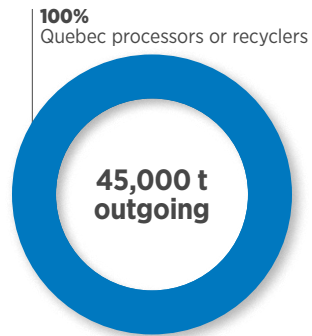
**Metal**



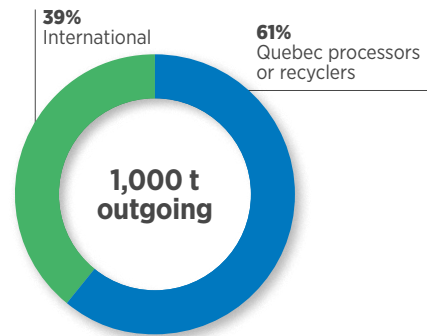
**Plastic**



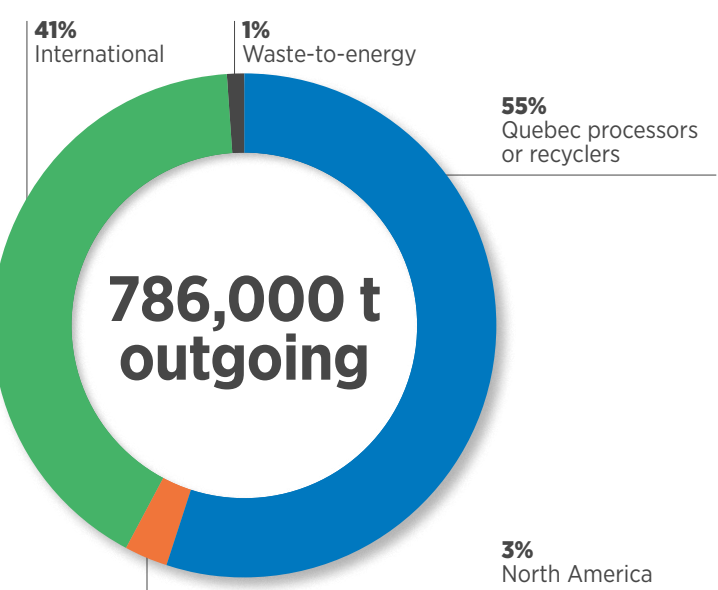
**Glass**



**Mixed materials and others**



**Total**



**Table 1.3**  
**DESTINATION OF OUTGOING MATERIALS FOR RECYCLING AND RECOVERY**  
(excluding use in engineered landfills)

	QUEBEC PROCESSORS OR RECYCLERS	NORTH AMERICA	BROKERS OR SHIPPED OUTSIDE QUEBEC	OTHER *
2018	55%	3%	41%	1%
2015	39%	N/A	61%	0%
2012	48%	N/A	52%	0.1%
2010	49%	N/A	49%	2%
2008	63%	N/A	30%	7%

\* The rates for 2008 and 2010 basically account for materials used as cover for landfilled materials at landfills. As of 2012, these materials were excluded from the quantities sold by MRFs for recycling and the percentages indicated represent the waste-to-energy ratio in Quebec.

Year 2018 is also marked by a shift in the usual destination of outgoing materials from MRFs as a direct consequence of China's market closing. Between 2010 and 2015, the materials were mainly sent to brokers or directly outside Quebec, but in 2018, these destinations accounted for 44% of outgoing materials compared to 55% for Quebec processors or recyclers.

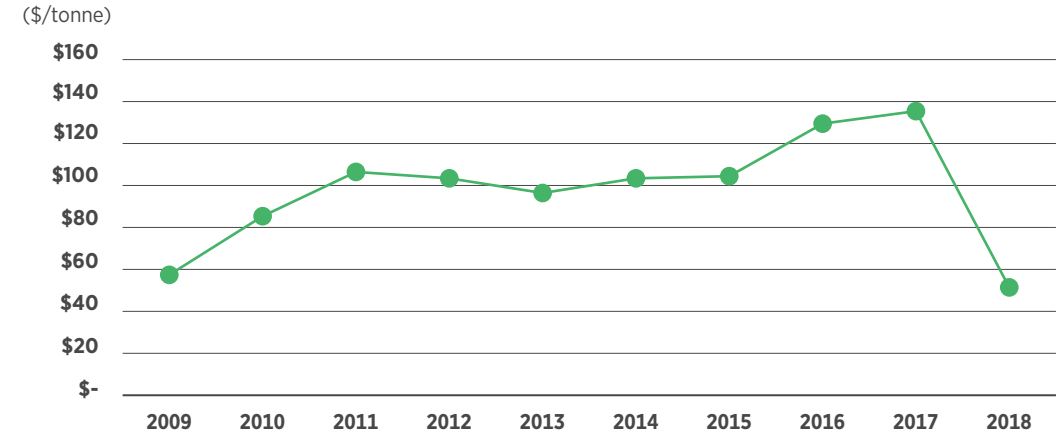
Aside from glass, for which 100% is still and always sent to Quebec processors or recyclers, there have been significant changes in the destination for all other materials. Nearly half of outgoing paper and cardboard were sent within Quebec in 2018, compared to less than 40% in 2015. As for metals, nearly 95% of outgoing materials were sent within Quebec compared to a little over half in 2015; while two-thirds of outgoing plastics in 2018 were sent within Quebec compared to less than half in 2015.

### Value of materials

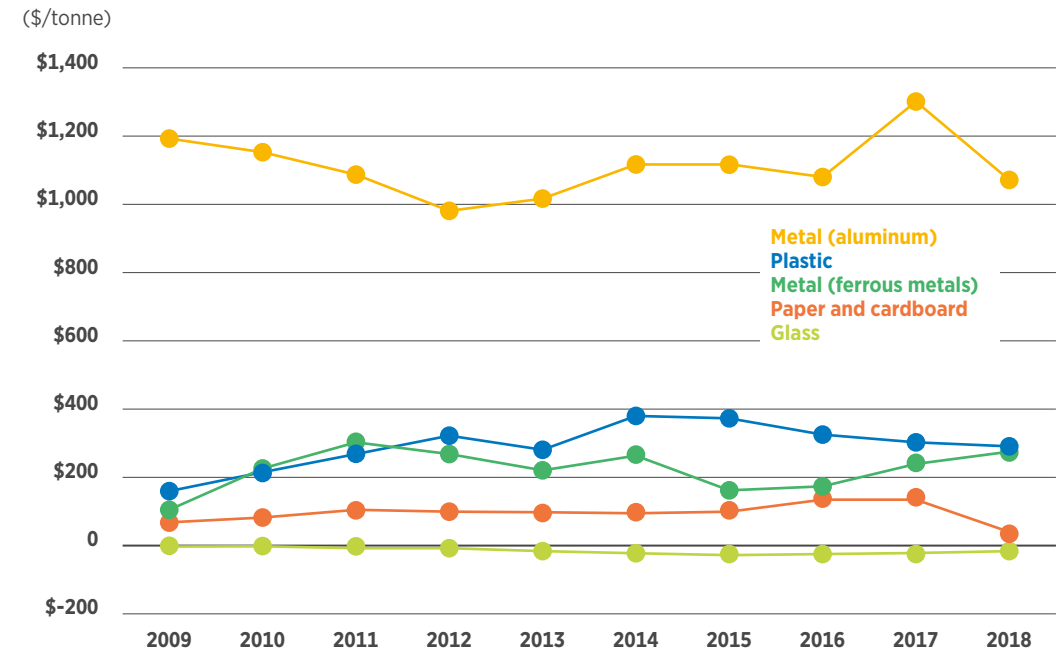
For a number of years now, RECYC-QUÉBEC has produced a materials price index, a calculation that shows the average value of materials sold by recyclable MRFs in Quebec. Figures 1.3 and 1.4 respectively show the change in value of the materials over the past few years. We can see price swings, but overall the average value in 2018 was the lowest in the last 10 years.



**Figure 1.3**  
**VARIATION IN THE AVERAGE VALUE OF RECYCLABLE MATERIALS 2009 TO 2018**



**Figure 1.4**  
**VARIATION IN THE VALUE OF KEY RECYCLABLE MATERIALS CATEGORIES 2009 TO 2018**



## Materials sent to recycling from municipal curbside collection

A significant portion of outgoing materials from MRFs originates from municipal collections. Of the 786,000 tonnes of outgoing materials in 2018, we estimate 590,000 tonnes come from municipal collections, a 4% drop compared to 2015. The remaining 196,000 tonnes come from ICI collections, as their tonnage has remained fairly stable compared to 2015.

**Table 1.4**

### QUANTITY OF MATERIALS SENT TO RECYCLING FROM MUNICIPAL CURBSIDE COLLECTION

(in tonnes)

MATERIAL	2012	2015	2018	2015-2018 VARIANCE
Paper and cardboard	570,000	522,000	459,000	-12%
Metal	30,000	29,000	28,000	-3%
Plastic	35,000	40,000	58,000	45%
Glass	68,000	23,000	45,000	96%
<b>TOTAL</b>	<b>703,000</b>	<b>614,000</b>	<b>590,000</b>	<b>-4%</b>

This data provides a good assessment of the overall performance of MRFs at the municipal level. From the 772,000 tonnes of materials received from municipal collection (Table 1.1), we estimate 590,000 tonnes were sent to recycling, which is 76% of total incoming materials.<sup>3</sup>

Among these estimated outgoing materials from municipal collections, an increasing share may come from small businesses and institutions served by municipal curbside collection, as several municipalities have decided to expand their collection services into the ICI sector in the past few years. In order to determine the performance of curbside collection in the residential sector only, the quantity collected from small businesses must be deducted.

For 2018, this quantity is estimated at 104,000 tonnes, an increase of 6,000 tonnes since 2015. We estimate that now nearly 18% of outgoing materials from municipal collections come from the ICI sector served by municipalities. This data has constantly risen since the start of the decade.<sup>4</sup>

By subtracting these 104,000 tonnes from small businesses and institutions, we can estimate that 485,000 tonnes of recyclable materials from households were sent to recycling in 2018. This is the first data used to calculate the rate of household materials sent to recycling.



<sup>3</sup> Refer to the respective [diagram](#)

<sup>4</sup> The proportion was about 10% in 2010.

The other data used, i.e., amounts generated by households, represent total recyclable materials (containers, packaging, printed material and newspapers made up of paper/cardboard, plastic, glass or metal) generated by residents after consumption. Thereby, the amounts generated represent the amount of recyclable materials from residents, whether it was thrown out as waste or recovered from curbside collection. The most recent data available estimates this generated amount to be 926,000 tonnes, as indicated in Table 1.5.

**Table 1.5**  
**HOUSEHOLD MATERIALS SENT TO RECYCLING IN 2018**  
 (in tonnes)

	QUANTITIES GENERATED IN 2015–2017*	QUANTITIES SENT TO RECYCLING (HOUSEHOLD ONLY) 2018	RATE SENT TO RECYCLING	
			2018	2015
Paper and cardboard	511,000	363,000	71%	79%
Metal	56,000	27,000	48%	49%
Plastic	201,000	51,000	25%	18%
Glass	158,000	44,000	28%	14%
<b>TOTAL</b>	<b>926,000</b>	<b>485,000</b>	<b>52%</b>	<b>54%</b>

\* Data from results of the upcoming *Étude de caractérisation du secteur résidentiel 2015–2017* (2015–2017 residential sector characterization study) conducted by ÉEQ and RECYC-QUÉBEC

The resulting overall household rate, taking into account the amounts generated and sent to recycling, experienced a slight drop, from 54% in 2015 to 52%<sup>5</sup> in 2018. This rate is a good reflection of the current restrictions experienced by the curbside collection industry, with a stagnating performance in the past few years after 20 years of progress. While we see the rates for plastic and glass going up compared to 2015, the stability in metal and the noted decline in paper and cardboard have limited any possible overall improvement.

Amounts of household-generated paper and cardboard have considerably declined in the past few years, yet despite this reduction, MRFs are struggling more than ever to properly sort these materials to give them an added value. The makeup of incoming paper and cardboard is changing—more cardboard from online shopping, significant decline in newspapers, etc.—and market conditions to sell off the material are constantly changing. These factors directly impact performance and no doubt it is one of the main challenges of curbside collection in Quebec for the coming years.

5 Refer to the respective [diagram](#)

# Performance of material recovery facilities (MRFs)

## Recovery using the bin

$$A1 + A2 = A$$

**Total of 993,000 tonnes**  
Total amount received by MRFs



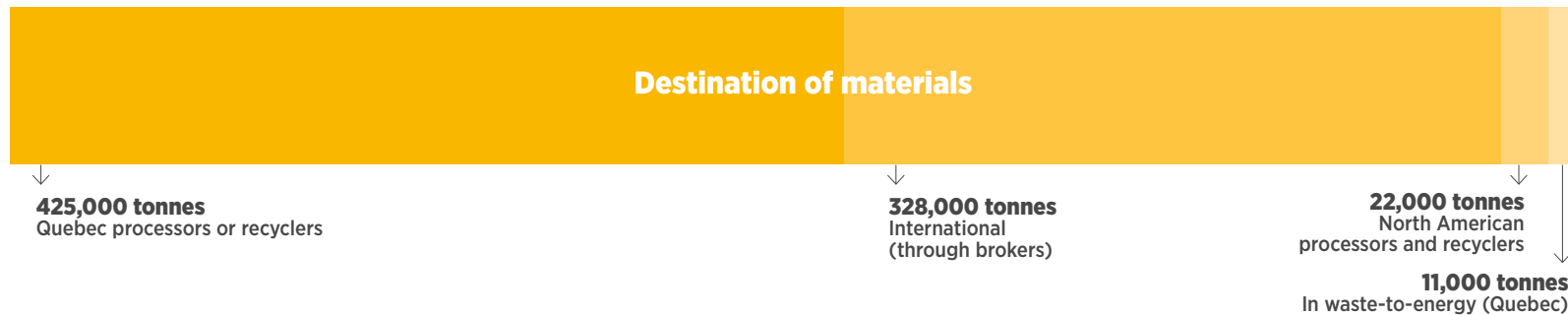
## Sorting

$$A - B = C$$

**Total of 786,000 tonnes**  
Total amount of materials sent to recycling or waste-to-energy



## Recycling and waste-to-energy



Profile of curbside collection in Quebec

**Combined performance**  
(material recovery facilities (MRFs) and residents)

# Over half of household-generated recyclable materials were sent to recycling



2018 DATA