

Construction and demolition waste

This section provides an overview of the construction and demolition (C&D) recycling industry in Quebec. The end of this section also provides information collected from wood waste processors and recyclers. The waste-to-energy use of materials, including wood, is covered in another information sheet.¹

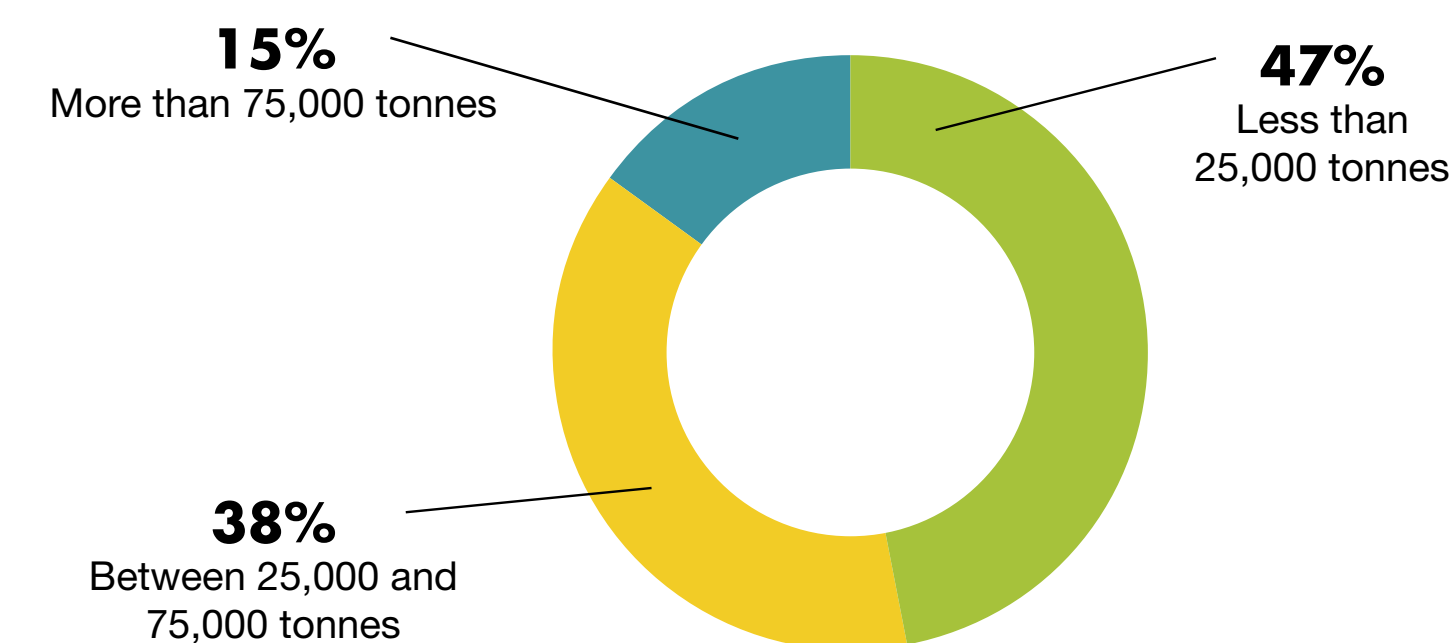
For ease of reading, results have been rounded off. It is therefore possible that the totals or percentages in the tables and the figures do not fully match the totalled results.

Materials received by C&D recycling facilities

C&D recycling facilities that responded to the Report treated 1,340,000 tonnes of materials in 2021. This tonnage would cover a bit over 70% of the total quantity of waste from the building industry,² therefore the estimated total quantity received at all C&D recycling facilities in Quebec is around 1,846,000 tonnes. This is an estimated 4% hike compared to the 1,781,000 tonnes received in 2018.

The figure on the right is a breakdown of C&D recycling facilities based on tonnage they receive annually. Note that a 44% increase in median tonnage was received by C&D recycling facilities, from 18,000 tonnes in 2018 to 26,000 tonnes in 2021.

Figure 1
Breakdown of C&D recycling facilities based on annual tonnage received



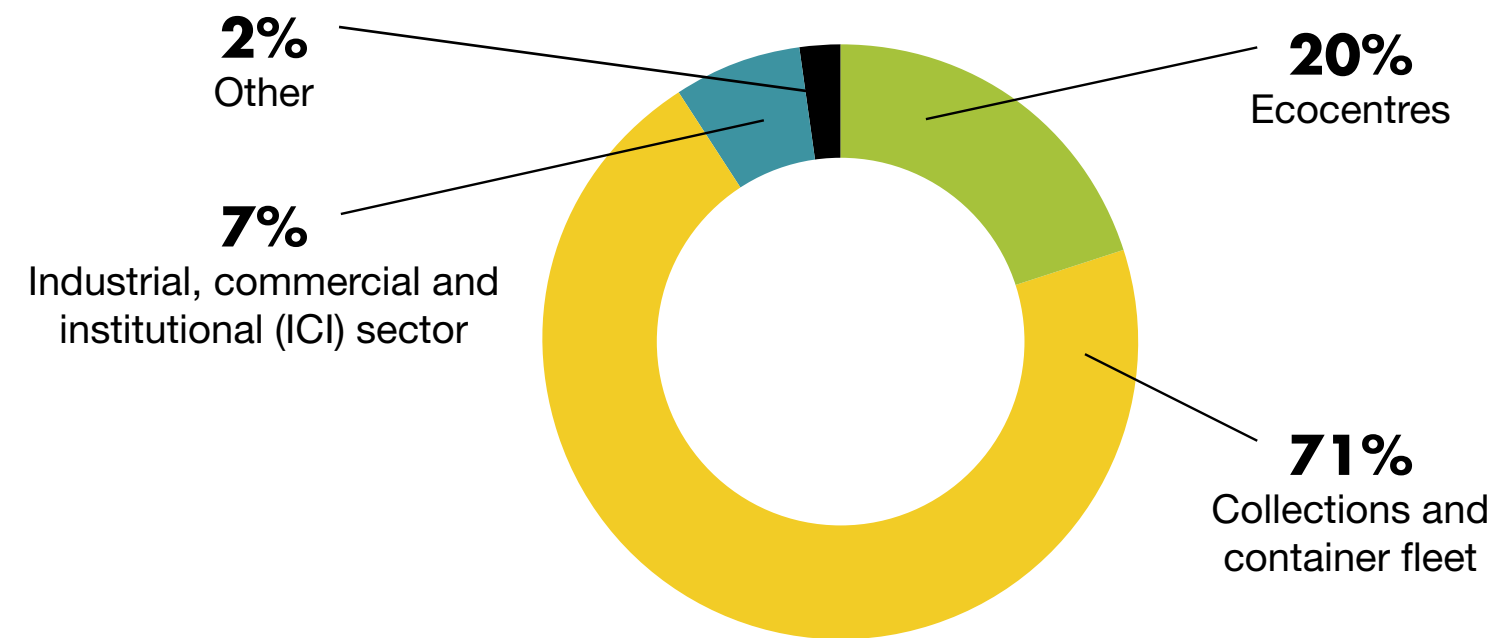
Origin of materials

As seen in the 2018 Report, most of the C&D waste received by the recycling facilities come from collections and container fleet rental (71%), although this is a decrease of 8 percentage points compared to 2018. Conversely, there is a 6 percentage points increase in quantities of materials from ecocentres.

¹ For more information, refer to the waste-to-energy information sheet (in French only).

² C&D waste are generated by two different industries: the building industry and the infrastructure industry. The information in this document primarily covers the building industry.

Figure 2
Origin of materials received by C&D recycling facilities



Proportion of C&D waste sent to recycling facilities

About half the C&D waste from the building industry generated every year is sent to a recycling facility, i.e., 1,846,000 tonnes in 2021. This proportion went from 55% in 2018³ to 53% in 2021.

The total quantity of C&D waste sent to disposal is estimated to be 1,666,000 tonnes in 2021. It includes:

- 1,018,000 tonnes of waste from the construction sector, sent by containers directly to a disposal site and coming from various worksites, whether they be residential or from the ICI sector.
- 197,000 tonnes of C&D waste that end up in municipal waste.
- 451,000 tonnes of C&D waste that end up in ICI waste.⁴

Rejected materials from C&D recycling facilities are excluded from this total.

Although we can see a 4% increase in tonnage sent to a recycling facility, we can also see a 12% hike in disposed C&D waste, which means C&D waste generators still seem to choose disposal over recycling.

Moreover, quantities shown do not take into account quantities of materials stored or disposed of at illegal sites. It is very hard to estimate the exact quantities sent to such sites.

Figure 3
Quantities of C&D waste sent to a recycling facility and quantities sent directly to disposal.
(in tonnes)



³ For 1,486,000 tonnes disposed. Data revised compared to those released in the 2018 Report.

⁴ Quantities of C&D waste contained in municipal waste and ICI waste were calculated using the rates determined in the [2019–2020 Waste Disposal Characterization Study](#).

Rejected materials

In 2021, C&D recycling facilities that responded to the Report sent 650,000 tonnes of rejected materials to a disposal site, which is a 32% increase compared to the 492,000 tonnes in 2018.

A portion of the rejected materials from C&D recycling facilities (sorted or not sorted) was used in engineered landfills for site development (e.g., road construction) or as an alternative daily cover material (particularly fine residue from the screening process at the recycling facility). Some 186,000 tonnes of residual materials, a 17% drop compared to the 224,000 tonnes in 2018, were used for both these applications: 104,000 tonnes for site development at engineered landfills and 82,000 tonnes as alternative daily cover. The remaining rejected materials (464,000 tonnes) were sent to disposal, mostly in Quebec.

In total, rejected materials sent to a disposal site accounted for 53% of the 1.2 million tonnes of outgoing materials from C&D recycling facilities, including 15% that were sent to a landfill to be used for another purpose (site development or alternative daily cover) and 38% were disposed of.

Materials sent to processing and recycling

C&D recycling facilities that responded to the 2021 Report therefore diverted 47% of outgoing materials to recycling and waste-to-energy use. From the 1,219,000 outgoing tonnes from C&D recycling facilities, in addition to the rejected materials described above, 569,400 tonnes had been diverted to processing and recycling. From that tonnage, it is estimated that 46% had been diverted to recycling and 41% to waste-to-energy industry. The outgoing rate diverted to recycling decreased compared to 2018. There was also an increase in exports compared to 2018. Exported materials were sent to territories bordering Quebec, i.e., Ontario, Northeastern U.S. and New Brunswick.

Table 1

Destination of outgoing materials from C&D recycling facilities in percentage

	Recycling	Waste-to-energy	Other destination / storage	Export
2018	55%	44%	N/A	< 1%
2021	46%	41%	7%	7%

The following table shows various quantities of materials from the C&D sector based on their management channels, i.e., outgoing from recycling facilities or directed to disposal.

As in 2015 and 2018, wood still accounts for the largest portion of outgoing materials in 2021. It is also the only material that has similar tonnage, whether sent to recycling or waste-to-energy channels rather than to disposal. New recycling opportunities for fine residue from C&D waste were also developed and running at commercial capacity in 2021–2022. It is therefore likely that recycled quantities would further increase in the coming years.

Table 2

Quantities of outgoing materials based on destination (recycling, waste-to-energy and other channels) and materials from the C&D sector sent to disposal
(in tonnes)

	Recycling	Waste-to-energy	Other destination / storage	Export	Total	Disposal ⁵
Aggregate	129,000		22,000		151,000	174,000
Shingles	1,000	27,000		5,000	33,000	43,000
Wood	70,000	184,000		18,000	272,000	267,000
Treated wood		800			800	55,000
Combustible mix		21,000			21,000	
Gypsum	2,000				2,000	100,000
Cardboard	11,000				11,000	27,000
Metals	41,000				41,000	58,000
Plastics	600				600	28,000
Glass	5,000				5,000	3,000
Fine residue	1,000		2,000	16,000	19,000	
Non-sorted C&D waste			13,000		13,000	
Other C&D waste						187,000
Other residual materials sent with C&D waste E.g.: organic materials, textiles, etc.						78,000
Total	260,600	232,800	37,000	39,000	569,400	1,018,000

⁵ Excludes C&D waste disposed of among municipal waste and ICI waste. Breakdown of tonnage by type of material was calculated using rates determined in the *2019–2020 Waste Disposal Characterization Study*.

Sorting performance is variable depending on the facilities, as seen in the table below.

Table 3
Breakdown of C&D recycling facilities based on their individual recycling and waste-to-energy diversion rates

Recycling and waste-to-energy diversion rate	Number of C&D recycling facilities at this level
Less than 20%	6
Between 20% and 39%	14
Between 40% and 59%	9
Between 60% and 80%	5
Over 80%	1

Note that some factors, such as the local context, have an impact on the individual performance of C&D recycling facilities. The distance or proximity to markets and the financial impact, especially in terms of associated transportation costs, strongly affect the sorting effort for a given material.

Wood waste processing and recycling

In Quebec, the wood waste processing and recycling sector is split into three main categories:

1. Wood waste processors: These companies receive wood waste in various forms and process them so that they can then be used as input for wood recyclers, in agriculture, in horticulture or at waste-to-energy facilities. Processors get their supply from C&D recycling facilities or even directly from generators (specifically the industrial and commercial sector).

2. Wood waste recyclers: These companies receive wood waste, which they then integrate into their processes to manufacture a finished product, such as particle boards (melamine) or sound-proofing panels. Recyclers get their supply from processors, C&D recycling facilities or directly from generators.

3. Treated wood waste recyclers and processors: These companies specialize in transforming treated wood. They mostly receive products at their end of life, such as utility poles or railroad ties. Companies in this category may transform these products for reuse (e.g., other electrical poles, fence posts), into other wood products (e.g., planks) or even as wood chips for waste-to-energy.

Companies in the wood waste processing and recycling industry reported receiving 1.67 million tonnes of wood waste⁶ in 2021. The industry continues to be supplied from outside Quebec as nearly 17% of this quantity, i.e., 278,000 tonnes, was imported. This is a 58% hike in wood waste imports compared to the 176,000 tonnes imported in 2018.⁷ Note that wood waste from C&D recycling facilities account for the highest percentage, while 44% or 95,000 tonnes of the supply comes from outside Quebec. The variable quality of wood sorted by Quebec facilities and better pricing drive recyclers to get their supply from abroad.

A large quantity of wood waste is still sent to disposal. Based on the **2019–2020 Waste Disposal Characterization Study**, we can estimate a total 738,000 tonnes was sent to disposal in 2021. From that quantity, nearly two thirds, i.e., 476,000 tonnes of wood materials and packaging, had a good potential and could have been recycled, had they been recovered and properly sorted.

Reusing wood waste is still challenging, especially due to the quality and sometimes the quantity that companies receive is too low. Opting for the deconstruction of some buildings would provide greater opportunities for reuse.

⁶ Including post-consumer wood and waste from wood processing

⁷ Data revised compared to those released in the 2018 Report

⁸ Including all wood waste disposed of in municipal waste, waste from the ICI sector and waste from the C&D sector