

The recycling industry: A world to discover, a drive to build the future

Looking into recycling in Quebec leads to one discovery after another. For neophytes, recycling is about selective curbside collection at homes, at workplaces and in public spaces. This aspect of recycling could be called the “tip of the iceberg,” the part that can be seen. Many actions and concerns are allied with this activity; less apparent, they are the part of the iceberg that can’t be seen. Gauging the size of the industry is a challenge, although some of its operations can be measured. However, one thing that is very obvious is the drive inherent in those working in the sector. Their efforts deal with recovery, as well as with reduction at source, ecodesign, changing mindsets and research to find uses for what is now considered waste.

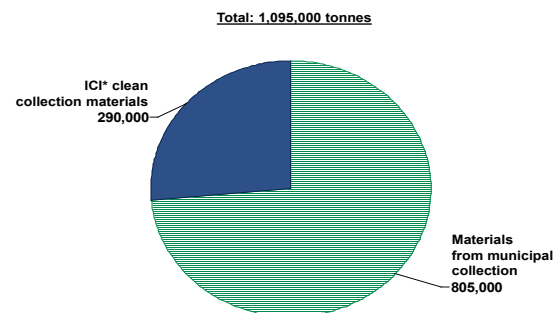
THE VISIBLE PART OF THE ICEBERG

Selective collection is one of the best-known aspects of the Quebec recycling universe because it has a strong impact on people. It requires daily actions from them. Then there’s the recycling of organic matter (e.g. leaves, grass clippings, food waste and so forth) and other recovery systems, such as instructions for one-use containers (cans, for example), and management of old tires, to name but a few. Here, the *Baromètre de la consommation responsable*¹ estimated that, in 2015, recycling was practised by 86.6% of Quebec respondents in the survey that was conducted to build this index.

For its part, RECYC-QUÉBEC, whose mandate is to “promote, develop and foster the reduction, reuse, recovery and recycling and reclamation of containers, packaging, materials, and products, with a view to conserving resources,” measures this visible part of recycling activity. In 2012, the estimate was that 724 kg of residual materials were disposed of per capita in Quebec, down 3% from the previous year. An estimated 1,095,000 tonnes of residual material were recovered at the different sorting centres (graph 1).

¹ UQAM, “Baromètre de la consommation responsable”, *Observatoire de la Consommation Responsable*, Édition Québec 2015, 25 p., consommationresponsable.ca/wp-content/uploads/2015/11/BRC_2015_Final_24nov_V2-1.pdf.

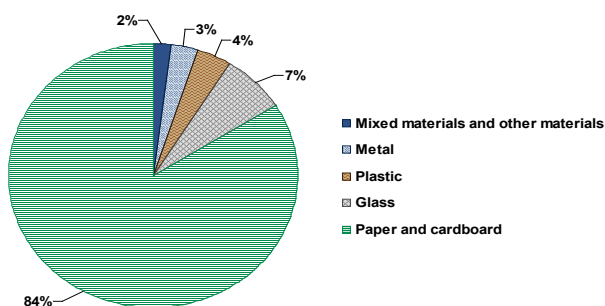
Graph 1 – Amounts of materials received by recycling centres in 2012



* Industrial, commercial and institutional.
Sources: RECYC-QUÉBEC and Desjardins, Economic Studies

At these establishments, the average discard rate was 7.9%. This is an average, so that it obscures many differences. Discard rate varies substantially among sorting centres. Their materials processing ability varies and they are not necessarily all at the same level of technology. There are three broad categories of sorting centres. There are those that get more than 90% of the materials they process from municipal collection, those whose materials come from both municipal and private collection (ICI: industrial, commercial and institutional sector), and those whose materials primarily come from ICI collection. There were 38 of these sorting centres in 2012; in a report tabled

Graph 2 – Breakdown of materials sold for recycling purposes by recycling centres in 2012



Sources: RECYC-QUÉBEC and Desjardins, Economic Studies

in 2014,² RECYC-QUÉBEC notes that two of them had since shut down.

The sorted materials are then sold and shipped to processors, recyclers or recycling brokers. However, a portion of it will be discarded because of the variable level of “purity” of the bales of sorted materials. In 2012, paper and cardboard accounted for 84% of the tonnage sold, followed by glass (7%), plastic (4%) and metal (3%); the remainder (2%) was comprised of mixed materials and other materials (graph 2).

This quick overview does not look at organic matter and other recovery systems which, taken individually, are a world unto themselves. When we talk about recycling, we have to give up on the idea of homogeneity in materials processing, collection methods, and final disposal of the waste. It is a multi-faceted activity, making it that much more difficult to gauge. Added to that is the fact that the industry is present in many sectors, including collection, sales (wholesalers and distributors of recyclable materials), waste management, research, professional, scientific and technical services, and manufacturing. Government action and environmental protection organizations must also be included, some of whose work focuses on recycling. What is Quebec’s recycling payroll? The number given the most often is 10,000. In 2011³, the Institut de la statistique du Québec conducted a survey that put the number of jobs in “residual materials” environmental activity at 10,800.

However, all is not necessarily well. Some deplore the fact that recycling is not mandatory for citizens and businesses.

² RECYC-QUÉBEC, “Bilan 2012 de la gestion des matières résiduelles au Québec”, 2014, 32 p., www.recyc-quebec.gouv.qc.ca/sites/default/files/documents/bilan-gmr-2012.pdf.

³ Institut de la statistique du Québec, “Enquête québécoise sur l’industrie de l’environnement 2011”, 2013, 92 p., www.stat.gouv.qc.ca/statistiques/environnement/industrie-environnement-2011.pdf.

Making recycling mandatory would allow more to be recovered and ensure a minimum level of materials, to make recycling more profitable. Many deplore a lack of investment; investment would make it possible to recover more than is being recovered now. For businesses, the aim would be to see more and more use 100% recyclable containers. As for composting, the effort is seen as too tepid. Lastly, some of the materials recovered from local recycling bins are sold to foreign markets, meaning tonnage that cannot be processed here.

OTHER FACETS OF THE RECYCLING SECTOR ARE VISIBLE

Beyond what’s happening in homes and businesses, governments have a public influence that allows them to steer action. For example, as of 1989, the Quebec government had an integrated waste management policy which even then put the priority focus on source reduction. The *Quebec Action Plan for Waste Management, 1998–2008*, was the next incarnation. Many other actions followed (policies, action plans, etc.), with the concern for source reduction remaining a major thread throughout.

Lastly, in terms of actions that affect the public, the role of Éco Entreprises Québec (ÉEQ), an organization that reports to RECYC-QUÉBEC, is better known. This entity “collects company contributions, which are then redistributed to finance municipal curbside recycling services in Quebec.” In its 2014 annual report, ÉEQ reported that businesses had contributed almost \$1B toward funding selective collection in Quebec since 2005.

This brief overview shows that the recycling industry is not homogeneous and that it has ramifications in a multitude of economic sectors. Because they are more present in citizens’ daily lives, some actions are better known than others. However, this represents just one part of a world that is much bigger and more complex than it seems at first.

THE INVISIBLE PART OF THE ICEBERG

Beyond the public’s growing participation in recycling and the increase in the volumes of recyclable materials recovered through curbside collection, there is the question of assessing the success of such actions. Concretely, we may wonder whether the gains should be weighed based on the increase in the quantities collected or rather based on a decline that originates in a thriftier use of resources. A lot of reflection and discussion is focusing on different consumption methods. These ideas are making headway and are gaining a growing, although less apparent place in the general public than curbside recycling. The enthusiasm over the reflection process is, in a way, the submerged part of the iceberg that is the recycling industry.

The people who work on recycling matters actively promote the “4 Rs,” shorthand for four ways to decrease resource waste. The term refers to source reduction, reuse, recycling and recovery; (with recycling and reuse, the goal is to avoid throwing items in the trash). From this perspective, recycling takes on another dimension, becoming one link in a long environmental chain.

Upstream from recycling, the desire is to limit resource use. Here, ecodesign has a key place.⁴ It can be defined as follows: “designing a product (a good or a service) by improving its environmental characteristics for its full life cycle, without reducing its quality or its performance.” The ultimate goal is to reduce the quantity of raw materials used (resources and energy, in particular) from design to the end of the goods or services life cycle. This approach should also limit the volume of components that end up being recycled or discarded.

Recycling has benefits and many European countries have adopted laws to promote it, believing it has many economic advantages. Job creation, from collection to research into processing materials, is only one such advantage. Specialized research and development jobs in particular are more complex and better paid than jobs in landfill and incineration. Recycling makes it possible to limit waste, particularly of non-renewable materials such as metals. In some cases, moreover, it is becoming less costly to reclaim such materials than it is to extract them. For rare metals, in particular, recycling makes it possible to secure a supply. In many sectors, recycling makes raw materials more efficient and helps cut the production costs of goods and services.

Still with a view to curbing the quantity of resources used, and waste, the idea of “industrial ecology” has emerged. This approach sees industrial production as an ecosystem. Concretely, but perhaps simplistically, one of its manifestations is the recovery of waste from one type of production to be used as the raw material in that same sector or even in another type of production.

The “circular economy” is attracting more and more attention, although it is not widely known in North America. While no single definition has been agreed on, if we boil it down to basics, we could speak of a “closed circuit” economy in which ecodesign is the first phase. Some European nations have already enacted legislation on these matters, including Germany and the Netherlands. It is not

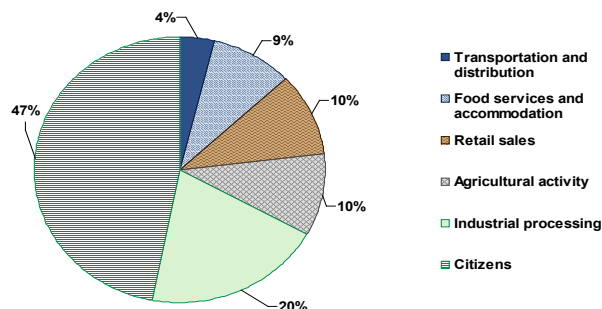
⁴ For more information, see: Desjardins, Economic Studies, *Perspective*, “Ecodesign: When the environment and the economy work together”, Volume 25 / June 2015, www.desjardins.com/ressources/pdf/per0615e.pdf?resVer=1433350219000.

the sole prerogative of European countries, as Japan and China have also passed framework laws on the circular economy.

The above-mentioned approaches primarily affect the business sector. There are developments among consumers, with many practices being promoted. “Deconsumerism,” i.e. a voluntary or involuntary reduction in consumption to avoid waste, is gaining popularity. According to the *Baromètre de la consommation responsable*, 71.7% of Quebec consumers were engaged in this behaviour in 2015. The *Baromètre* states that 43.2% composted to reclaim putrescible organic matter. Collaborative consumption—the inter-personal use of websites to buy, sell, trade, receive or give away used objects, or the use of systems to access goods through car rental companies based on car sharing, or bike sharing, to name just a few initiatives—was estimated to be 30.6%. Quite recently, the results of the Kijiji Second-Hand Economy Index were released, estimating that nearly 70% of Canadians had bought or sold used goods in 2015.

These approaches—which are not new—could gain popularity. Here, the data on food waste in Canada (graph 3) provide food for thought. It shows that responsibility for the losses is shared, true, but that the public carries a big share of the burden. Will behaviour change in response to the increase in food costs in the last few years and growing awareness?

Graph 3 – Breakdown of food waste in Canada



Sources: Value Chain Management International Inc. and Desjardins, Economic Studies

Note that waste reduction and the recycling issue reach well beyond individuals and the manufacturing sector. A growing number of businesses in all sectors of all areas of economic activity are adopting eco-responsible behaviour. Similarly, the construction sector is increasingly being called into action, particularly in relation to waste on sites.

There are some limits to recycling. Many facilities are behind technologically, limiting Quebec’s sorting and



recovery capability. The lack of outlets for some materials means that these materials are seen more as dead weight than resources (like coloured glass, for example).

Optimization is also the watchword in terms of recycling. The industry knows that the collection, sorting and recovery processes can be honed. Research into new uses for recyclable materials and materials that go into the dumpster now must be continued.

It is said that 90% of an iceberg's volume is below the surface. In light of the foregoing, it is premature to say that 90% of the work on recycling is yet to be done. However, intense, long-lasting effort is needed upstream from recycling to reduce the consumption of materials used in goods and services. Decisions must be taken and changes made in how we consume. Downstream, we need to be ingenious to minimize waste. The effort is akin to a marathon, which will call upon everyone to go the extra mile.

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