



What is the goal of the Blue Box? Why recycling isn't always what's best for the environment or our wallet

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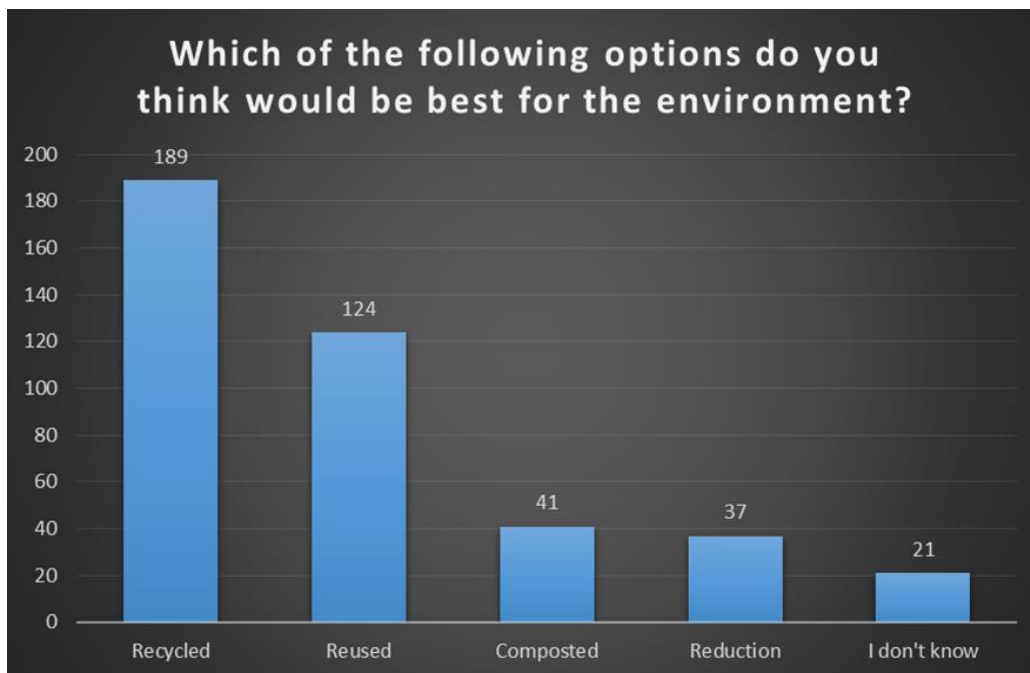
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Introduction: Ontario (and Canada) has a recycling problem

Historically, the emphasis of waste management has been on residential recycling. The Blue Box, a ubiquitous symbol of recycling that has been a fixture in our homes for the better part of four decades in Ontario. For many Ontarians, the Blue Box is symbolic of recycling and sustainability, and it is something that we have been extraordinarily good at – which as it turns out, is actually a really bad thing.

During the summer of 2019, York University conducted a study to gauge what the public thought about various waste management initiatives. Participants were asked to rank, from best to worse, which end of life scenario resulted in the greatest environmental impact (shown in figure 1)



From the above graph, recycling was seen as the most environmentally preferred option, with reuse second and waste reduction a very distant fourth place. Why does this matter? Because reduce, reuse, recycle isn’t just a catchy phrase – it is the order in which we are supposed to things. Recycling is our third most preferred option.

WASTE HIERARCHY



Canada has become a victim of its own success – both households and policy makers now conflate recycling with sustainability. If it can't be recycled, it is characterized as being “bad”. The “waste” problem is often framed as “We aren't recycling enough”. Just last year, Deloitte made international headlines when they published a report indicating that Canada was only recycling 9% of its plastics. The response from the public was almost visceral – Households and government demanded change, with consumers even going so far as to say that they would be less likely to buy a product if it could not be recycled at the end of its life. Canadians are voting with their dollars and the message is loud and clear “We want recyclable products”.

While the sentiment and intent is in the right place, the approach is not. Not only is recycling not the most preferred outcome, it can actually have adverse economic, environmental and social impacts. Contrary to intuition – not everything that can be recycled, should be recycled. The decision to recycle everything, everywhere, is actually what is compromising the long term sustainability of the system.

Why the next diverted tonne will not (and should not) come from the Blue Box

As noted earlier, the residential recycling system (for printed paper and packaging) has been enormously successful, so much so that policy makers continue to put all of their eggs in one basket, and attempt to drive future diversion from this waste stream. The proposed Blue Box transition in Ontario, which shifts 100% of the physical/financial responsibility of managing the system on to producers, continues to emphasize and prioritize recycling based outcomes. Why this is problematic is threefold:

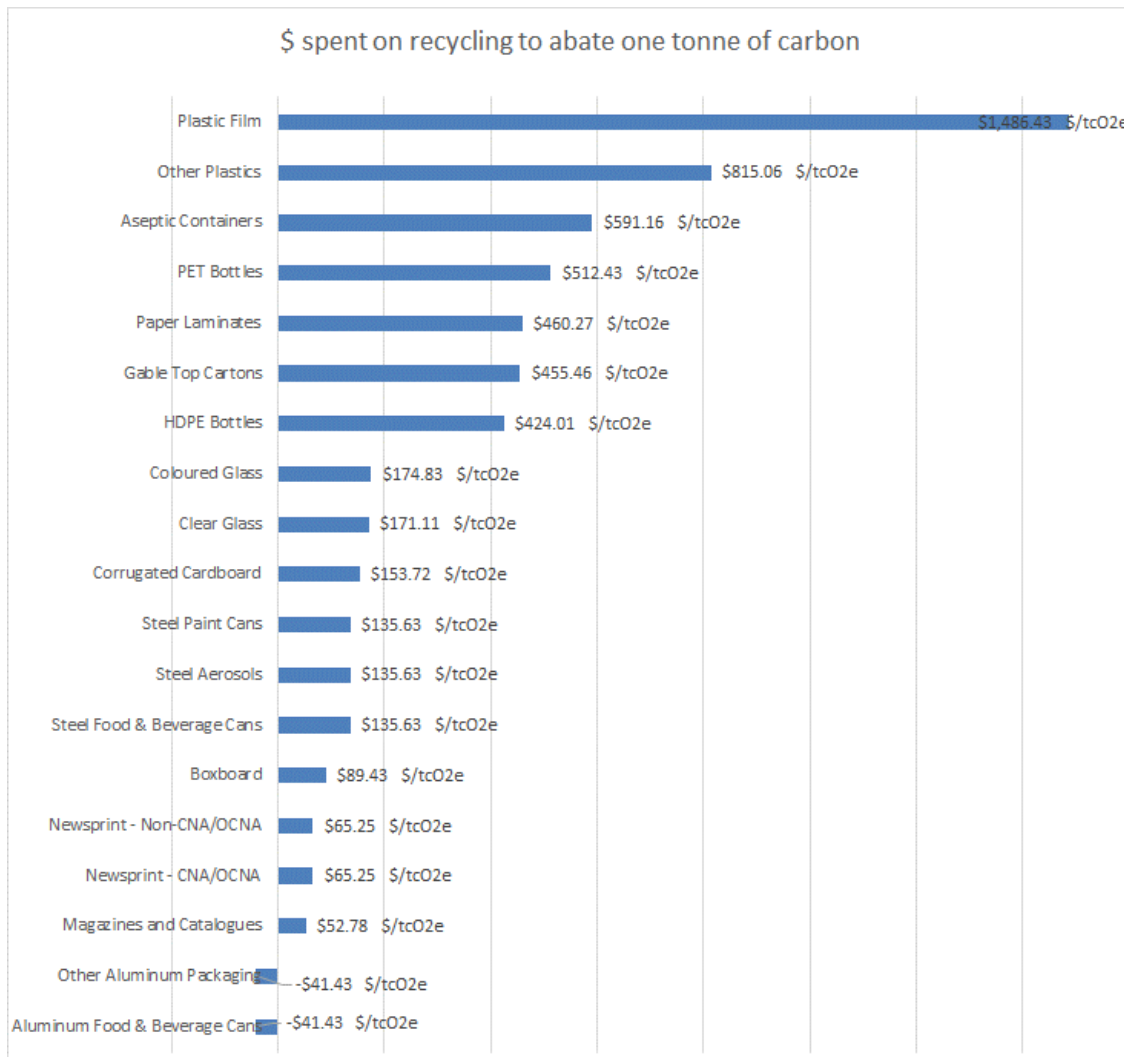
1) We are already doing a great job of capturing the “low hanging fruit”. Recycling rates for core Blue Box materials (newsprint/OBB/OCC etc.) are already well in excess of 80%, and future increases in diversion are not likely to come from these materials

2) The overall packaging mix is increasingly being made up of composite and light-weight materials that are extremely difficult to recycle given existing technology, infrastructure and end markets. If future increases in diversion come from these materials, the cost of recycling is potentially prohibitive.

3) The environmental benefits associated with recycling many light weight and composite materials are negligible given existing processing technology.

In short, not all recycling is created equal. Figure 3 below summarizes the amount of money you would have to spend on recycling a given material, to abate one tonne of carbon (\$/TCO2e).

Figure 3:



Using the above example, you would have to spend almost \$1500 on recycling to abate one tonne of carbon from plastic film, and only \$65 on recycling newsprint to achieve the same result. Film is 23 times more expensive than newsprint from a carbon to recycling expenditure ratio.

To further drive home this point, please refer to Figure 4 below:

Figure 4

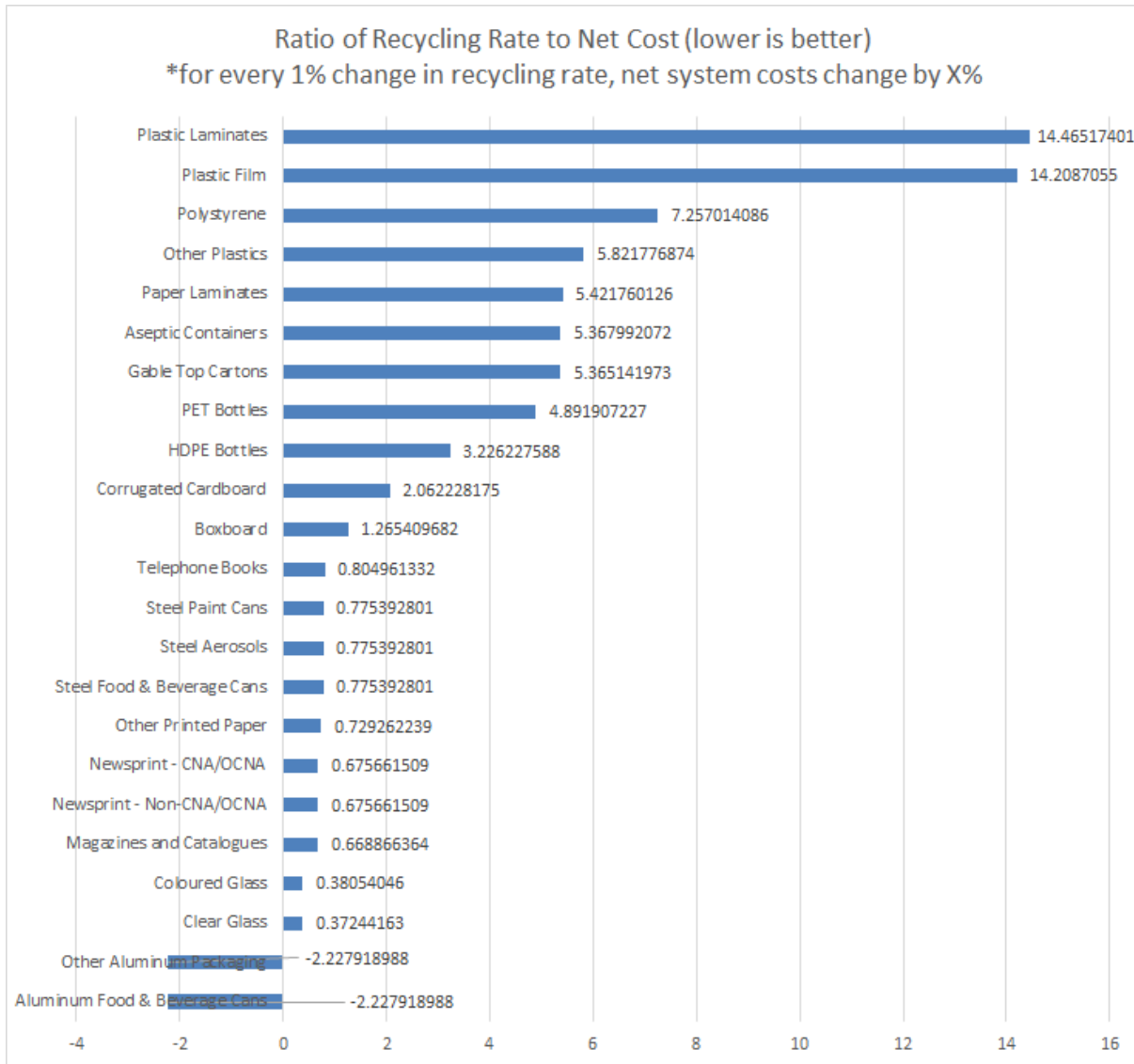


Figure 4 shows the change in net system costs that results in a 1% change in the recycling rate, on a material by material basis.

If Ontario wanted to increase the overall recycling rate of the Blue Box program by 1%, and the province had to achieve it by increasing the recovery of plastic laminates, overall system costs would increase by more than 14%.

Why this matters is that (as noted earlier), future increases in recycling rates are not going to come from core Blue Box materials. As a result of the changing nature of packaging over time, increasing the Blue Box recycling rate will involve trying to collect and recycle materials such as composite and light weight plastics. To increase Ontario's Blue Box recycling rate to 70% by recycling composite/light weight plastics (which is about 6% higher than Ontario's current recycling rate), the province would have to spend in excess of \$70 million dollars – and that is assuming that there is capacity within the existing system and end markets to accommodate increased recovery.

This is both prohibitively expensive, and has questionable environmental benefits. Once again, we are forced to ask ourselves, what is the goal of our waste management system? Increasingly, that answer is not going to be about increasing recycling rates, particularly for printed paper and packaging.

This begs two questions: 1) If the next diverted tonne shouldn't come from the Blue Box, where should it come from? And 2) If light weight and composite packaging is so terrible, why do we continue to use it?

While it would be easy to fault producers for using difficult to recycle materials, we have to take a step back and ask why light weight packaging has become so popular.

A reduction in the amount of materials used, logistical efficiencies (more material can be transported per shipment), increased durability, longer shelf life (both in the store, and in the home), and allowing for discretionary consumption (you only use what you need). As an example, a laminate package for soup (in lieu of the conventional tin can) allows users to reseal the pouch, allowing it to be stored longer and avoiding waste.

When taking a life cycle approach, the environmental impact of light weight packaging is actually superior to conventional packaging in many instances. Much of the carbon savings is realized as avoided food waste and source reduction. In many ways, light weight packaging has revolutionized our food system, helping keep tens of thousands of organics out of provincial landfills.

This tension between designing a package that is recyclable, or designing a package that has a lower environmental impact, is an issue that the waste management sector must address. An EPR program should be centered around environmental outcomes, using a life cycle approach that prioritizes a packages impact on the environment. The approach being proposed under the Blue Box transition is designed to be a "one size fits all", and fails to capture the complexity of an evolving system – consumer packaging is likely to continue towards light weight, composite materials. This necessitates that we rethink our approach to producer responsibility, allowing for sector based solutions that go beyond "just recycling"

All things being equal, the recyclability of a package his historically ranked as a relatively low priority for producers.

An issue of perception

In a 2017 study conducted by the university examining the relationship between packaging fee rates, and packaging recycling performance, there was no statistically significant correlation between the two. Even for products such as paper laminates and plastic film, where the corresponding fee was significantly higher than all other materials, recycling rates remained largely unchanged, or did so in response to broader macro market conditions. The price signal sent by the fee, was insufficient to change packaging choices.

With that being said, the optics surrounding whether a package can be recycled (and more broadly, diverted) has now become a key issue for producers, and increasingly, you are seeing brand owners talk about solutions for how to recycle their products. The rise in prominence of organizations such as Terracycle speak to just how important “recyclability” has become for consumers. We have spent the better part of 40 years inundating the public with the message “recycling is good for the environment” and attempting to change that narrative is extraordinarily difficult. This issue is exacerbated by the fact that the government is continuing to develop policy that prioritizes recycling as a preferred end of life option. Between consumer demand and government legislation, producers face the daunting task of trying to recycle the unrecyclable, and in doing so, incurring a bill that is experiencing double digit percentage increases in recycling system costs year over year.

What is Ontario Recycling? Why “more recycling” isn’t always a good thing

It is imperative that when we evaluate the effectiveness of a recycling system, particularly when looking to replicate that model across multiple jurisdictions, that we ask : “What is it that we are trying to achieve?”. Metrics rooted simply in overall diversion no longer capture the complexity and nuances of an evolving waste management system.

Ontario’s focus on increasing recycling and encouraging producers to develop “recyclable” packaging, ultimately loses sight of environmental and economic objectives. In short, recycling “more” is not always the best answer – in fact, in many instances, it can result in poorer environmental performance at a significant increase in the cost of material management.

As jurisdictions move forward with deciding "What should go in the bin", it is important to remember that certain materials are more suitable for recovery (in our existing system) than others. While it may not seem kosher to advocate for saying certain materials should be excluded from the program, it is an important consideration when we are looking to promote the long term sustainability and economic tenability of a residential recycling program. Not all recycling is created equal. In fact, recycling may actually result in a worse environmental outcome when compared to other end of life options if we consider the entire life cycle of a product.

While an examination of overall tonnages and costs is useful in providing an overview of how a program may be doing, it fails to tell the full picture. What a system is recovering is almost just as important as how much is being recycled, as both the costs and environmental impacts of materials vary significantly across categories.

Since 2016, Ontario's Blue Box program has seen overall paper recycling drop by more than 159,000 tonnes, a decrease of approximately 38%. Steel packaging and glass cullet have also seen their overall recovered tonnages drop, while aluminum, PET and HDPE have remained flat. Of particular interest, is that the share of plastics #3-7 (LDPE Film, Polystyrene, Plastic Laminates and Other Plastics) of all tonnes generated and recycled has increased significantly. This change in the mix of materials generated into the market and recovered through the Blue Box tells a story of a system that is increasingly being made up of expensive, difficult to recycle materials. As noted in figures 3 and 4 above, Ontario is recycling less of the low cost, high impact materials (where impact refers to overall carbon abated per tonne recycled), and as a result, the GHG impact of the Blue Box program is ***declining*** over the past 5 years. Essentially, Ontario is paying more to achieve a worse environmental outcome.

This finding highlights that the provinces fixation on recycling based goals and outcomes is no longer appropriate given how the packaging system has evolved over time. While counterintuitive, a higher recycling rate does not necessarily result in a superior environmental outcome – a system which prioritizes recovery of materials such as aluminum, newsprint etc. (low cost, high impact) can achieve greater carbon reduction, even in a scenario where overall recycled tonnes decreases. This decoupling of recycling and environmental outcomes points to the fact that the total amount being recycled matters less than what is actually recycled.