The future of waste– a road to a circular economy, or the road to nowhere?

By: Dr. Calvin Lakhan

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State of waste

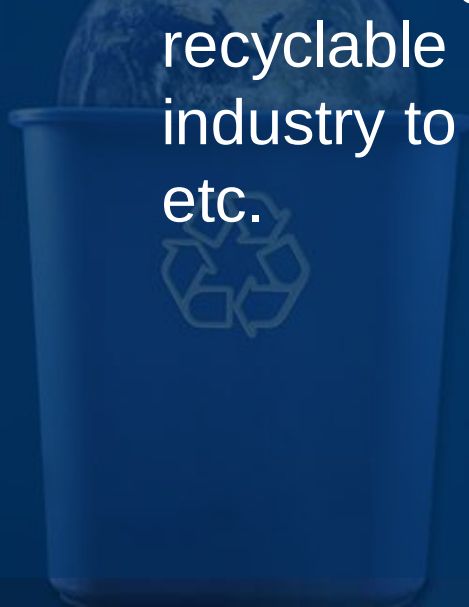
- Waste management has now become part of mainstream discussion
- People (both the public and policy makers), care now more than ever regarding what is happening to our waste
- Issues surrounding waste require our immediate attention
  - Critical component in the fight against climate change
  - We recognize that too much material is going to landfill

State of Waste Cont.'

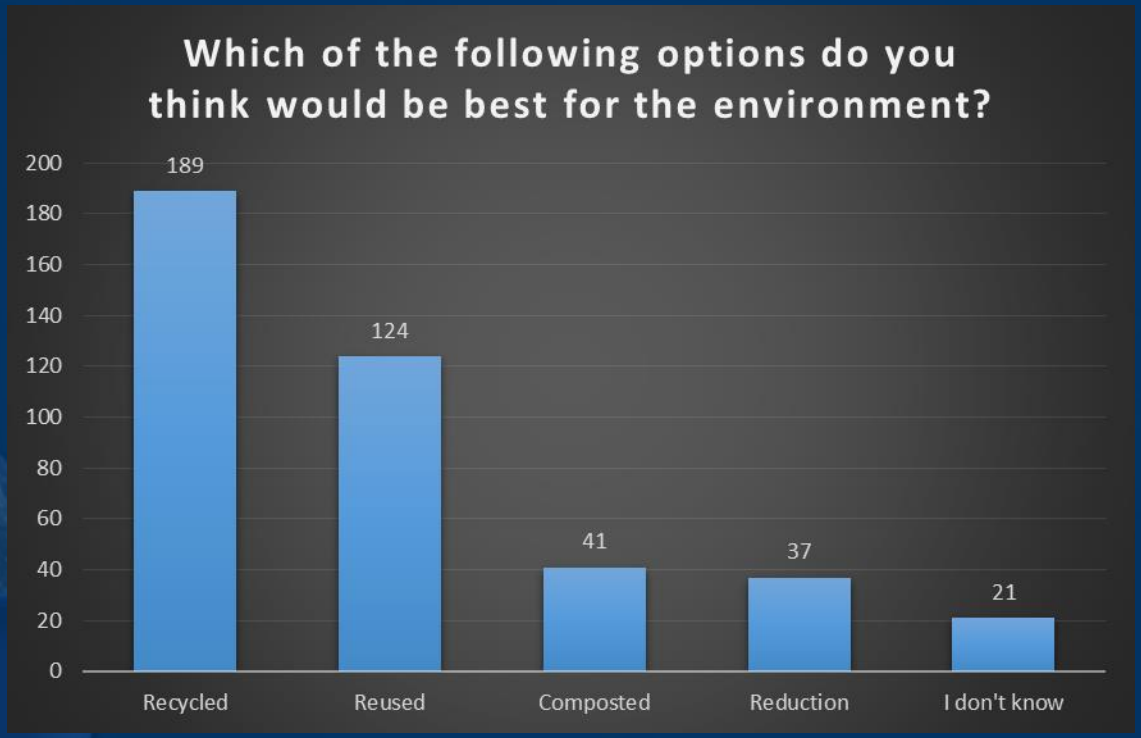
- Concerns surrounding waste management have manifested in:
  - Proposed single use plastics ban
  - A call for manufacturers to design for the environment
  - Innovation in the recyclability and reusability of products (TerraCycle and Loop)
  - **Increased adoption of Extended Producer Responsibility**

The Recycling Paradox

- Emphasis of waste management discussions tends to focus on recycling based solutions
- The “waste” problem is often framed as “We aren’t recycling enough, only 9% of plastics are recycled in Canada”
- Common goals include: We want to create more recyclable packaging, encourage households and industry to recycle, strive for higher recycling rates etc. etc.



The Recycling Paradox: Canadian Environmentalism



The Recycling Paradox: The Waste Management Hierarchy

- Reduce, Reuse, Recycle is not just a clever catch phrase – it's the order of preference for waste management options

Recycling Paradox: Too much of a good thing

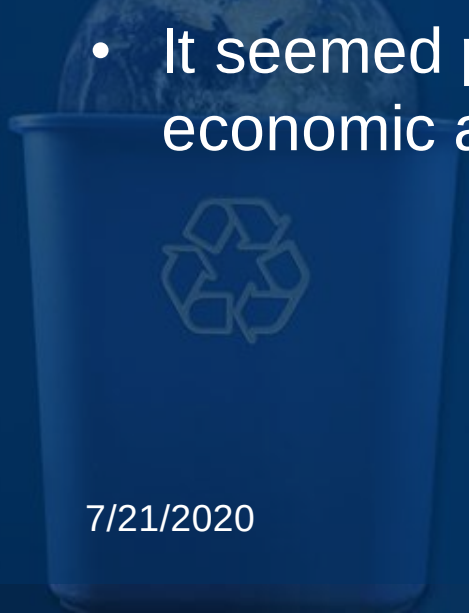
- Canada has become a victim of its own success – both households and policy makers now conflate recycling with sustainability
- If it can't be recycled, it is characterized as being "bad"
- We must develop recycling infrastructure, and end markets so that we can "recycle" the new types of packaging being generated into the market
- The premise of our EPR programs for packaging waste emphasize "recycling" as being the desired outcome for packaging waste

Recycling Paradox: Too much of a good thing Cont.'

- Conceptually this seems to make sense – ensure that producers create recyclable packaging, and have them bare the physical and financial costs of recycling those materials to keep it out of landfills
- What has been the outcome of this approach? An enormous bill, and questionable environmental outcomes
- York University undertook a study examining the economic and environmental performance of Recycle BC and Stewardship Ontario's recycling program for printed paper and packaging

Recycle BC – A deeper dive into the data

- The Recycle BC program is often touted as a “best practice” model of steward lead extended producer responsibility
- It is seen as a potential model to be replicated in Ontario and other jurisdictions across the United States
- It seemed prudent to undertake an examination of economic and environmental performance

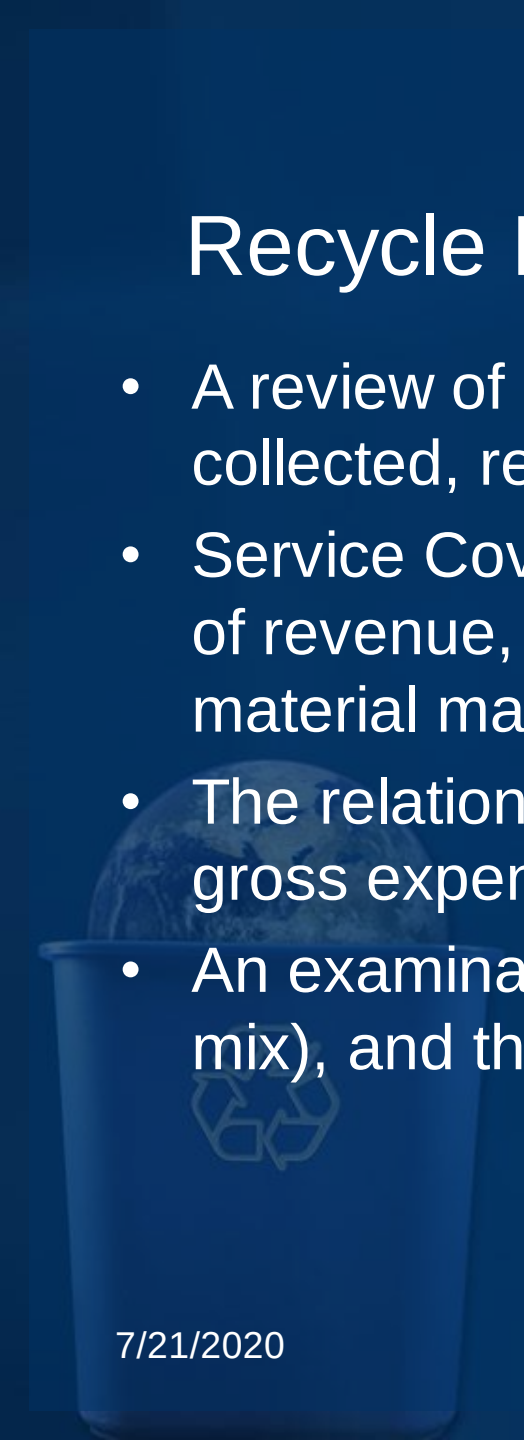


Recycle BC – A deeper dive into the data

- Used publicly available from Recycle BC's annual reports
- No data manipulation what so ever – only organized in a way to facilitate year over year comparisons, or calculate a correlation coefficient
- Requests for additional data, or clarity surrounding existing data were not returned
- A comprehensive examination of the program requires full sharing of all diversion and cost data collected by Recycle BC (similar to RPRA and the Municipal Data Call in Ontario)

Recycle BC – A deeper dive into the data

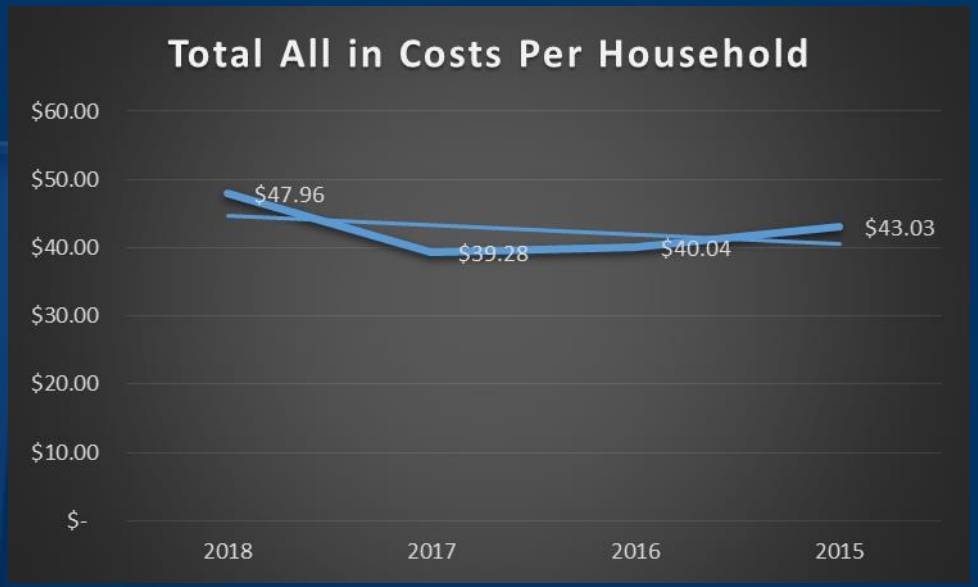
- A review of historical recycling performance (tonnes collected, recovery rate, recovery rate per capita etc.)
- Service Coverage and Cost (Including an examination of revenue, fee revenue, investment income and material management costs by activity type)
- The relationship between recovery rates, and P&E, gross expenditure, service rate etc.
- An examination of what is being recovered (material mix), and the subsequent environmental impact



Recycle BC – Program Costs

- Program costs have increased by approximately 26%, while program performance (measured as % tonnes diverted) has increased by 1%
- The most significant driver of increase in costs can be traced to increase in per tonne material management costs (which increased by 20.5% year over year between 2017 and 2018).
- The rate of year over year cost increases is greater in British Columbia (26.5%) than it is in Ontario (18.25%), when compared over the same time period

Recycle BC – Program Costs Cont.'



Recycle BC – Accessibility, Outreach and Recovery

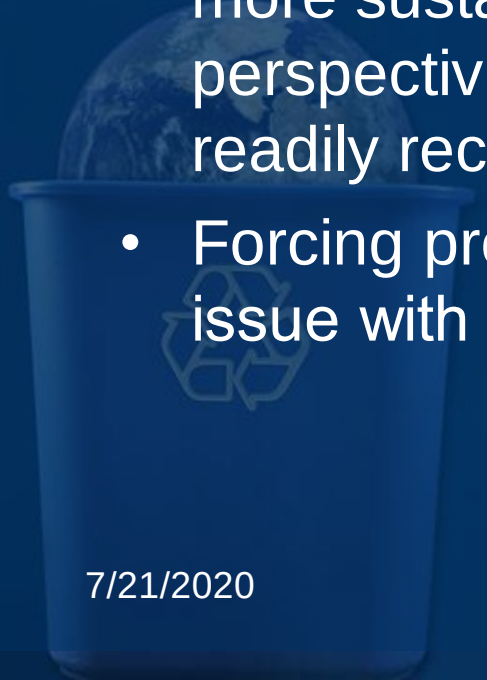
- Despite a 7% increase in service coverage (measured as # households with access to curbside/depot collection), total collected recycled tonnes remains unchanged, while tonnes of material being sent to landfill disposal is increasing.
- Overall, tonnes being collected by Recycle BC (including recycling, recovery, energy from waste and disposal) is trending downwards
- There is no statistically significant correlation between P&E and diversion rates (the opposite is actually observed)

Recycle BC – Environmental Performance

- Based on the types of material RCBC is recovering, a significant % of year over year increases in diversion can be attributed to increased recovery of glass.
- The overall carbon impact attributable to Recyclable BC has potentially decreased year over year, given the types of materials being recovered.
- A fall in the recovery of metals, results in a lower overall carbon impact from recycling, despite the increased recovery of glass cullet, paper and plastics.
- This preliminary finding points to the fact that the total amount being recycled matters less than what is actually recycled.

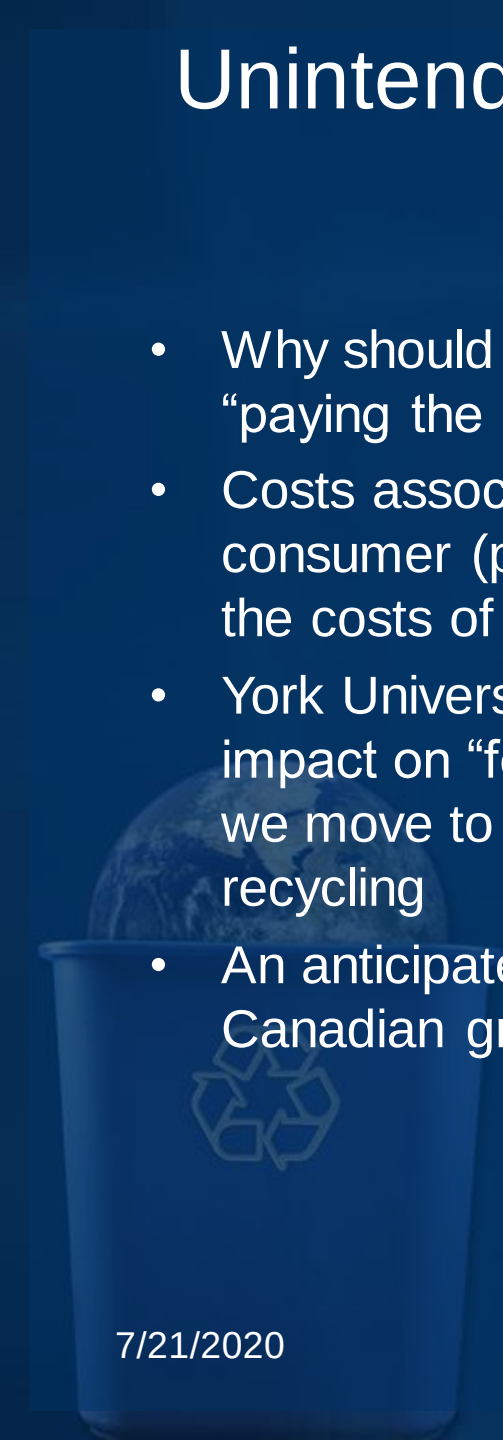
Recycle BC – Implications of Findings

- There is no evidence to date that shows a steward-led EPR program will lead to either increased recycling or cost containment (the exact opposite is actually observed)
- Stewards have demonstrated an ability to develop more sustainable packaging (from a life cycle perspective), but not necessarily material that can be readily recycled or diverted within the existing system.
- Forcing producers to find recyclable solutions is the issue with today's waste management systems



Unintended consequences: Who pays the bill?

- Why should the public or municipalities care if producers are “paying the bill” for recycling?
- Costs associated with recycling are ultimately born by the consumer (passed on through municipal taxation, or increases in the costs of good)
- York University conducted a study that attempted to quantify the impact on “food stuff and other basic consumer goods”, should we move to a 100% EPR model premised on paying the costs of recycling
- An anticipated increase of approximately 5-15% on the average Canadian grocery bill



Unintended consequences: Who pays the bill? Cont.'

- Minor inconvenience to some of us, catastrophic to others
- These costs are particularly acute among lower income groups, as :
- a) packaged goods makes up a proportionally larger share of their overall waste generation
- b) lower income households are more likely to be negatively affected by rising food costs (resulting from EPR fees being passed on to the consumer)
- Once again, I ask us to consider the question: "What is the goal of our waste management system", and "Does the sustainability of the system need to consider economic and social dimensions as well?"

Thinking outside of the “Blue Box”

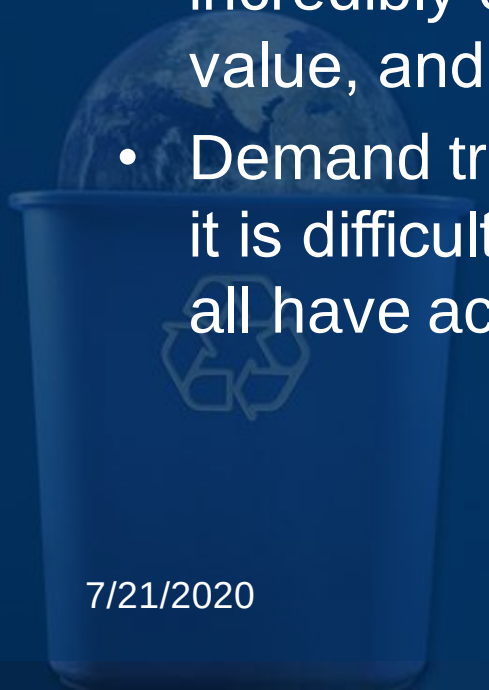
- It is important to recognize that we have more tools in our toolbox than “Just Recycling” (There are 3 other Rs to consider)
- Our goal should not be to recycle everything, as there is a fundamental difference between “Recycling and Recyclability”
- We need to be extremely cautious before expanding EPR legislation, at least in its current form, to other jurisdictions
- Conceptually a good idea, but extremely difficult to implement in practice… the stakes are enormously high if we get it wrong

Our path forward

- Life cycle thinking is critical when designing and implementing a waste management program
- Instead of looking at end of life as being separate from a product, think of it as being one part of a larger chain
- Accept that the recycling approach of the past, is no longer compatible with both the types of packaging being produced, and how it is managed
- We need to constantly question what we are being told – Decisions should be based on data, and not popular sentiment (i.e. Steward lead EPR programs is the best practice)

Our path forward Cont.'

- Ask the difficult questions, and be prepared to accept unconventional answers, i.e. recycling can be bad for both the environment and economy, EPR may not be the best idea in all instances
- Stop trying to "force fit" a solution. The market is incredibly efficient at identifying what materials have value, and what doesn't
- Demand transparency from all relevant stakeholders – it is difficult to develop viable solutions, when we don't all have access to the same data



Our path forward Cont.'

- Evidenced based decision making – so much of the narrative surrounding waste is driven by political and emotional narratives
- Education and awareness among the public is critical – the desire to "do the right thing" is extremely high, but people can be easily misinformed (i.e. Loop)
- Stakeholders must work collaboratively – significant degree of antagonism and mistrust. We need to focus on a common goal, and figure out what we need to do to get there.

Questions

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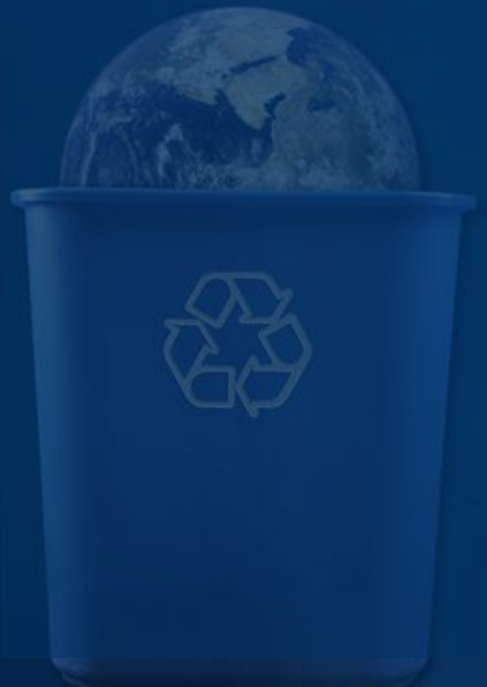

Questions from DEQ to Dr. Cal Lakhan – Sent by email July 6, 2020

"In the fall of 2019, York University undertook a study to quantify the average increase to a "basket of goods" for households should full EPR be implemented. This assumes that a) end of life material management costs remains unchanged and b) all costs are passed along to the consumer. In 2018, the average family of four spent $177 per week on groceries. If full EPR were to be to adopted (affecting prices of only packaged goods), our model estimates that grocery costs would increase by between $11 and $15 a week ($188 to $192 respectively)." **(pg. 14)**

1. DEQ finds philosophical alignment with your report in that it may not be "worth" it from a lifecycle perspective to recycle every type of packaging. With this is mind, do you think it might be more accurate to say "total recycling," "zero waste" or a "design for recyclability" model could cause the increases in consumer goods pricing mentioned in your report, rather than steward-led EPR?

While I would agree that "zero waste" and "design for the environment" is likely to increase the costs of consumer goods, it is not an inevitability. I think that packaging choices that are the result of market based forces (that also happen to be made of highly recyclable material) should not have a negative effect on costs. Using recycled aluminum is both cheaper and better for the environment – producers will use it irrespective of any sort of packaging legislation. I think the issue arises when you force producers to use a particular material, or use a certain % of recycled content.

2. Can you define "full EPR"? (Does it refer to total recycling of every item of PPP? Or the extent of the producer's role in the system?)

Within the context of this report, full EPR refers to packaging producers bearing 100% of the physical and financial responsibility for managing packaging waste at end of life. This distinction is often made in Canadian jurisdictions, as several provinces (Ontario and Manitoba) implement a shared producer responsibility models for packaging waste. In these instances, both producers and municipalities are each responsible for a certain percentage of system costs (although there is an expectation that over time, all provinces will adopt a 100% (Full) EPR Model.

3. Do you have additional information about this study? We could not locate anything online (besides this reference to it).
    - Resource Recycling Systems recently completed a similar study to the one you described, and "did not find any evidence of correlation between the existence of an EPR for PPP program and product prices" (pg. 3).

While this study is presently under review for publication in "Resources Conservation and Recycling", we can demonstrate a direct relationship between product prices and EPR costs by examining the Stewardship Ontario "Pay in" model. Note: The "Pay in" model is used to calculate the fee rates for all materials included in the residential Blue Box program. Obligated producers (referred to as Stewards in Canada) must collect and remit this fee for every product that is sold into a given market, with funds collected by an Industry Funded Organization (Stewardship Ontario, Recycle BC etc.). These funds are then used to reimburse waste management operators (most often municipalities) who are responsible for collecting, sorting and marketing recyclables for residential printed paper and packaging.

While this is a highly simplified description of what the fee model is intended to do, and who the participating parties are, it is useful for understanding how costs are ultimately transferred to households.

Using Ontario as an example, a transition to a 100% EPR Model will increase the steward obligation by approximately $150-$175 million dollars annually. This obligation increases to more than $400 million dollars if the province chooses to implement a model that forces producers to pay for the costs of recycling all residential PP&P generated into the province (or face a penalty if a material is landfilled). This approach is currently being proposed under the Blue Box transition plan. Based on the existing "Pay in" model that is used to calculate steward fees, this increased obligation is simply redistributed to Blue Box materials sold in Ontario.

The York University study then analyzed how this increase in fee rates ultimately affected consumer purchasing power and cost of living for a "basket of goods" comprised of commonly used packaging products (using actual purchasing data maintained by Statistics Canada). While the "basket of goods" changes depending on locality and income levels, what we observed is that the cost of this "basket" would increase by anywhere from 6-12%. An unexpected (but salient) finding is that lower income families are disproportionately affected, as they purchase more prepackaged goods as part of their weekly groceries.

What is important to note is that while EPR certainly does contribute to an escalation in costs, the primary issue is the fixation on recycling based solutions. Increased recycling rates is no longer an appropriate goal given changes in the packaging mix and end markets, and as a result, the decision to recycle more is what is driving the unsustainable increase in costs observed in multiple Canadian jurisdictions.

I am attaching a brief white paper that describes this issue in greater detail, and why EPR has not achieved its intended purpose in Canada.

4. Can you explain why the study referenced assumed that "all costs are passed along to the consumer"? (It is our understanding that most costs in such a system would be internalized.)

As detailed in the description of the fee model above, by definition, the way in which waste management costs are recovered for residential packaging waste in Canadian jurisdictions is passed directly onto the consumer. Increased waste management costs (resulting from either EPR legislation, falling commodity prices, or increases in difficult to manage material) translate directly into higher fee rates that are built into the price of all packaged goods sold into the market.

While I suppose producers could choose to offset this cost increase by lowering the overall price of the good in question, I have yet to come across any examples of this happening, particularly for packaging waste. In fact, a common refrain from waste electronics producers is that they will sometimes try and explain away cost increases by blaming governments for onerous eco-fees and penalties (even when that isn't the case).

The attached white paper goes into greater detail about how and why cost increases are most often born by consumers.

5. Is there a reason that the study did not assume any accompanying decrease in the rate base? That is, a reduction in rate costs that may offset any increases in the price of consumer goods.

I'm not sure I understand what rate base you are referring to. Is this a decrease in municipal property tax that supposedly accompanies the transition to a full EPR model?

"3) The most significant driver of increase in costs can be traced to increase in per tonne material management costs (which increased by 20.5% year over year between 2017 and 2018). While the specific cause for this increase is difficult to isolate, a potential explanation is that the proliferation of light weight and composite materials cannot be readily managed in existing recycling systems." **(Executive Summary)**

6. Is it more likely that National Sword's affect on global recycling markets caused the increase in material management costs, especially between 2017 and 2018?
    - Light-weighting and other packaging format changes are happening, but it seems unlikely that their pace would be rapid enough to cause such a large cost increase over the course of a single year. As we understand it, Recycle BC programs were able to maintain their collection lists better than other programs, including many in Oregon, and National Sword impacted the price that recyclers received – or very often, paid – for getting recyclables to end markets. For more, see RRS's recent memo on recycling market stability.

The way Recycle BC reports the data in their annual reports is with a two year time lag. That increase in costs is actually PRIOR to the Chinese National Sword. The general expectation is that these costs are going to increase even further once the full effects of deteriorating commodity markets are reflected in the data. For context, it is helpful to compare the situation to Ontario – even during years where markets for recyclables were extremely healthy, year over year cost increases were in the double digits.

As to whether the totality (or even the majority) of these cost increases can be attributed to light weighting and composite packaging is a subject of debate. Based on my interpretation of the data, I would argue that most cost increases are due to infrastructure being unable to keep pace with the way in which packaging has changed. However, many stewards/producers have argued that increases in recycling system costs should be blamed on the municipality (or service provider). In fact, that is the premise behind Ontario's "Best Practice Negotiated Cost"- our legislation actually assumes that municipalities are inherently inefficient, and are not entitled to receive reimbursement of their reported costs.

The magnitude of this inefficiency, and whether it even exists in the first place, is something that I don't think has been credibly quantified or measured.

11) …There is no evidence to date that shows a steward-led EPR program will lead to either increased recycling or cost containment. **(Executive Summary)**

7. According to data we have seen, there is evidence that such programs lead to increased recycling. Can you explain the reasoning behind this statement?
    - RRS recently studied the impacts on EPR for PPP recycling rates and found "that all programs showed positive change in the recycling rates following the implementation of EPR for PPP." RRS found that British Columbia's pre-EPR recycling rate for residential

PPP was 51-59% (2012), and its post-EPR rate was 76.1% (2018) – an improvement of 17.1 to 25.1 percentage points. Other Canadian EPR programs had similar or better improvements – Ontario improving by 17 percentage points and Quebec by over 44 percentage points. European EPR for PPP programs in Greece and Malta showed pre- and post-EPR improvements of 9.5 percentage points and 20.4 percentage points, respectively.

While this is discussed briefly in the original BC report, there is a body of academic literature that explores the topic of a "recycling equilibrium" – in a nut shell, a program with a relatively immature recycling system is likely to observe significant increases in program performance when investments are made in accessibility, promotion and education, and collection/processing infrastructure. However, once a program reaches "maturity" (which is generally characterized as more than 90% of residents having access to either curbside or depot collection), additional increases in recycling rates will likely require significant programmatic changes and policy intervention.

Policy makers often erroneously attribute those initial successes to supporting measures that were put in place while the program was maturing, i.e. the presence of EPR. However, I think a much more telling story is if we examine mature programs, and whether EPR policy could improve recycling rates beyond the "equilibrium state". Based on data from Manitoba, Ontario, Quebec and BC, if we shorten our window and look at the impacts of EPR on mature recycling programs, you see none. In fact, there is a pretty compelling argument that once a program reaches maturity, there isn't much you can do to drive marginal diversion without incurring significant costs.

The "low hanging fruit" analogy comes to mind – most jurisdictions are great at going after the easy stuff, but it becomes extraordinarily difficult to capture more difficult to recycle materials (both operationally and financially). It's at this point that the goal of a waste management program needs to be re-evaluated.

8. Regarding cost containment, if producers are paying the vast majority of recycling system costs and creating environmental benefits that ratepayers or government could not otherwise afford, what is the concern with containing such costs paid by producers?

I think it is important to recognize that many of the environmental benefits that producers are achieving are independent of a packages recyclability, not because of it (for light weight and composite materials). Design for the environment should ultimately espouse the principles of the waste management hierarchy, which prioritize waste reduction and reuse over recycling. Arguably, attempting to recycle these materials is not environmentally beneficial from the perspective of opportunity cost – how much money do you want to spend recycling something that is ultimately downcycled or has no viable end market?

With this matters from the perspective of cost containment is that existing EPR models (in Canada) ultimately punishes package light weighting – producers are being legislatively forced to pay for the costs of a recycling system that is not readily able to manage those materials. In fact, both Ontario and BC utilize an incentive based fee model that "rewards" materials with higher levels of recyclability and "punishes" materials that are difficult to recycle through a transfer of costs (the intention being to encourage design for the environment).

This may actually result in an economically and environmentally perverse outcome where producers abandon light-weight materials in favor of those with higher levels of recyclability. This is only a good thing if we define the success of a system as "recycling rates". As demonstrated in a study conducted by York University in 2016 "Optimizing Emissions Targets for the Ontario Blue Box Program", environmental performance has become decoupled from recycling rate performance. You can recycle less material and achieve a more sustainable outcome.

In my personal opinion, I also don't think costs are ever contained to any one group (producers or municipalities). Any additional costs resulting from a change to the system will be externalized to either the consumer base (in the case of producers) or the tax base (in the case of municipalities). With that being said, that is an anecdotal observation and has not been verified across multiple jurisdictions and scenarios.

"*This study, while still ongoing, conclusively demonstrates that the Recycle BC program has actually experienced year over year cost increases that exceed that of any other jurisdiction, and that recovery rate performance has stalled*." (pg. 15)

9. Can you explain how you arrived at the conclusion that RBC's costs "exceed that of any other jurisdiction" when the report compares Recycle BC to just one other program (Ontario)?

This statement probably only makes sense to Canadian stakeholders (and only a handful of them at that). Access to data is a significant challenge in Canada, particularly as it pertains to provincial EPR programs for household waste. Ontario is the only province that publicly discloses detailed operational and financial data related to program performance via the RPRA. When undertaking a comparison to other jurisdictions, Ontario is the only source that I can "officially" compare against (as the data is publicly available).

Anecdotally, I know relative levels of program performance for other provincial recycling programs based on internal documents and presentations, but it isn't something where I can cite an official source.

***"Perhaps most telling is that by all conventional metrics, 2015 was actually the best performing year of the program - this is atypical, considering program development costs exceeded $8 million dollars (compared to an average of $218,000 since). Essentially, despite the growing pains of a new program - the year of inception has been the most successful (unless it is measured it in terms of service coverage)."* (pg. 15)**

10. Can you explain which specific metrics were used to determine that 2015 was the "best performing year" of the RBC program? According to data in the report, 2018 had the highest recovery rate (pg. 4), most net tonnes collected (pg. 4), most access to depots (pg. 5), and most households served (pg. 5).

In *Ontario and other Canadian jurisdictions, program performance is often calculated using something called the effectiveness and efficiency formula. Without getting lost in the technical details, it is essentially a metric that looks at net cost per tonne measured against recycling rates. Over time, this has been expanded to include qualitative criteria that attempts to provide a more fulsome picture of program performance, but my statement reflected a situation where BC had the lowest net cost per tonne relative to the amount of material diverted.*

While I don't have the data infront of me, I also recall that while overall tonnages collected are increasing, it is coming from "low impact" materials such as cullet. Recovery of aluminum and steel has gone down over time. Once again, the question I want people to think about is "What is the goal of our system?" – tonnes diverted, carbon abatement, dollars spent etc. etc.

***"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."* (pg. 13)**

11. Agreed! Do you have any recommendations or additional resources that DEQ should consider if Oregon were to pursue an EPR program centered on environmental outcomes and using life cycle thinking?
    - It is DEQ's position that with the right program design, the general model of EPR is compatible with lifecycle thinking and a more holistic design-for-environment approach.

    While I know my comments may be seen as being critical of EPR, I am actually in favor of having producers be responsible for managing waste at end of life. My biggest concerns are the highly prescriptive nature of EPR legislation that has been implemented in certain jurisdictions – in many ways, we have provided producers with limited options to pursue packaging solutions that achieve both economic and environmental goals. In my opinion, this is the result of our fixation on recycling.

    I am attaching a guidance document that the university had put together that describes an expanded life cycle analysis framework for things that should be considered when evaluating the merits of packaging (the emphasis was on plastics, but it applies to virtually all PP&P).

    With that being said, one thing that many stakeholders who are considering EPR don't often think about is the administrative challenges of developing, implementing, monitoring and adjusting an EPR program. The task at hand is enormous – I am attaching a short document we had prepared for a Canadian province who was considering developing an EPR audit plan. While not all of these will pertain to your state, it gives you a sense of just how many things need to be considered.

    I think people would be shocked to find out how little (good) data exists. Even in Ontario, where we have been operating an EPR program since 2002, information related to material specific costs, tonnes generated, tonnes diverted etc. are not real numbers – they are all modeled using best available data.

12. Do you see differences between our countries (and Oregon specifically, if you have familiarity with our system) that may impact the effectiveness of EPR? If yes, in what ways?

While I am still learning more about your state, based on some preliminary conversations, I would say that municipalities are not the primary party responsible for service delivery. In most provinces (BC is a little bit different), municipalities are responsible for collecting, sorting and marketing recyclables, and they submit their bill to an IFO to be reimbursed.

Hopefully after our call tomorrow, I can get a better sense of the differences and provide additional comments.

13. Also, you have stated that you do not think Ontario should move to Full EPR. Do you believe that Ontario's system was working well as it had originally been designed? Why? (*sent by follow-up email 7/10*)

In short, I do not think the shared producer responsibility model worked. That is probably the only topic you will find consensus on in the Canadian waste management sector - everybody, from producers/stewards to municipalities, recognize that the system is broken and needs to change. There are a number of issues with the model used in Ontario, but I'm not too sure if you want/need me to go into detail about each one, as they are very jurisdiction specific (and as a result, probably won't apply to Oregon). However, in a nutshell:

1) Since 2002, recycling system costs have more than doubled and recycling rates remain largely unchanged (and are trending downwards).

2) Who is to blame for increases in the cost of the recycling system is really at the center of the issue. Producers blame municipalities for running an inefficient recycling system, and municipalities blame stewards for making packages that can't be readily recycled in the existing system.

3) Given that it is a shared responsibility model, municipalities and stewards have historically never been able to agree on who should pay what. There is a complicated performance based model for determining how much municipalities should receive and how much producers owe. In Ontario, we do not use costs as reported. Instead, we have something called the "best practice model" which is a series of assumptions/conditions that calculates recycling system costs under an optimized system. While well intentioned, the model is based on some really faulty premises, so much so that we actually haven't used the number it has come up with for the past 5 years. Instead of using the "best practice cost", municipalities and stewards have gone to court ordered mediation, and a judge has decided how much the steward obligation should be.

4) The Ontario framework for shared producer responsibility is extraordinarily complicated - we use "incentive models" for how much stewards should owe, how fees are shared among stewards, and how the share of money owed to municipalities is divided among municipalities. It's difficult to describe how this all works to people outside of the province (and arguably, there are only a handful of people in Ontario who understand it), but the easiest way to capture the situation is with the following example. The city of Toronto has a recycling system cost of $100 million dollars and a recycling rate of 55% (not real numbers). The Region of Peel has a recycling system cost of $40 million dollars, but a recycling rate of 70%. Instead of Toronto and Peel receiving half of their funding under a shared producer model (so $50 million and $20 million dollars respectively), we "reward" Region of Peel for having a higher recycling rate, and take $10 million dollars away from Toronto, and transfer it to Peel Region (so now Toronto only gets $40 million and Peel gets $30 million). The underlying intuition is that these "incentives" will encourage improvements in recycling system performance over time, but it has literally had the exact opposite effect.

5) Data access and transparency is a huge problem in Ontario. While this is perhaps only peripherally related to the shared producer responsibility model, our current structure directly pits municipalities

against producers, municipalities against other municipalities, and producers against other producers (due to the incentive model). As a result, nobody wants to share data with one another - everything is considered sensitive, and even the province does not have the legislated authority to have unfettered access to his data.