PACKAGING AND THE ENVIRONMENT

An industry perspective on waste, recycling and other issues.

Written by John Mullinder for the Paper and Paperboard Packaging Environmental Council (PPEC)

The following is a selection of blogs written while I was executive director of the Paper and Paperboard Packaging Environmental Council (PPEC) between 2013 and 2018. PPEC represents the Canadian paper packaging industry on environmental issues.

The blogs cover a wide range of interests: from false public perceptions of packaging itself to the performance of residential Blue Box recycling systems and the introduction and development of what's called Extended Producer Responsibility (EPR) or industry-pay schemes across Canada; from the changing composition of our waste streams and who the best recyclers are to the debate over whether paper or plastic bags are 'better' for the environment; and to questions about re-use and recycling and whether the sanitization of reusable packaging systems adequately protect consumer food safety.

The blogs are grouped under five broad headings and placed in chronological order (earliest first) so that readers can more easily follow some of the stories as they developed over time.

All are available on PPEC's website www.ppec-paper.com in both English and French.

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#1. Packaging waste in Canada

Packaging would have to be one of the most maligned objects in history, with public perception of it being focused largely not on what it *does* (protect and deliver products) but rather on how much of it ends up in the dump.

And there's no shortage of people who have opinions on this matter. Whether they have credible information or not.

This series of blogs begins with a background article written in 2010 that explores three common misrepresentations: that packaging is a huge chunk of the waste stream; that Canada is performing abysmally compared to the Europeans; and that 'industry' is doing a lousy job of diverting packaging waste compared to municipalities.

The blogs that follow the backgrounder question various more recent statements and claims made by governments and individuals and end up with a call for better and more current national data.

The inconvenient truth about packaging waste in Canada

July 22, 2010

What bugs the packaging industry more than anything else in the continual debate over the role of packaging in society is the virtual lack of recognition of packaging's overall purpose (to safely and efficiently deliver product) and the fact that *most* (but not all of it) is perfectly recyclable and/or compostable. What we get instead from the critics is how many tonnes of it (pick a number) are in the waste stream.

Weight is certainly a useful measuring stick for disposal and recycling, but it does not actually measure environmental performance. It measures weight. It was the re-use of wooden pallets and the recycling of corrugated boxes (both heavier materials) that largely determined that Canada's national packaging diversion target of 50% was met[1].

In the absence of more credible and recent data, that 1996 Statistics Canada national packaging survey remains the best packaging snapshot we have. It provided a reasonable picture of packaging consumption, re-use, recycling and disposal over a wide range of industry sectors, and Canadian households[2]. Unfortunately, we don't have any more national packaging statistics because the funds set aside for a subsequent survey were swiped by the Canadian Council of Ministers of the Environment (CCME) for other purposes. Instead, we have biennial waste surveys commonly called WMIS (*Waste Management Industry Survey: Business and Government Sectors*), conducted by Statistics Canada.

What's wrong with WMIS? Well, number one is that it doesn't cover "packaging" per se,

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[1] Canada's National Packaging Task Force acknowledged in its *Final Report* to the Canadian Council of Ministers of the Environment (CCME) that "the diversion of *heavier* packaging materials (wood, paper, glass and steel) can have a *disproportionate effect* on the overall (packaging waste diversion) result" (Chapter 5, *Shortcomings of the Protocol*, page 30, italics added). According to Table 1 of the National Packaging Monitoring System (NPMS) Results reported to CCME in February 1998, the re-use of wooden pallets (1.7 million tonnes) and the recycling of paper packaging, principally corrugated boxes (1.3 million tonnes), accounted for 48.4% of total packaging diversion (re-use and recycling) in 1996.

[2] This Statistics Canada monitoring exercise over 10 years, and its final results, while now somewhat dated, covered 31 separate industry sectors of the economy and 32 different packaging material types, using surveys as well as information derived from Statistics Canada's international trade merchandise data and a national study of household packaging recycling. Some 10,000 surveys representing a total survey frame of almost 400,000 businesses were sent out, with the 61% response rate regarded by Statistics Canada as "consistent with other similar surveys." (*Milestone Report,* CCME, pages 6-7). Two significant findings of the NPMS were that over 70% of all packaging consumed in Canada was re-used or recycled; and that industrial recycling of packaging accounted for almost 75% of all packaging recycling (Tables 1 and 29).

so it's hard to conclude anything credible about packaging. Rather it covers broad groups of wastes such as organics, tires, construction, renovation and demolition debris, electronics, white goods, mixed paper and newsprint, and a bunch of recyclable streams some of which do include packaging materials (corrugated and boxboard, glass, plastics, ferrous metals, mixed metals, and copper and aluminum). But it is not clear how much of the glass, metals, aluminum or plastics is actually packaging and how much is non-packaging.

And if we were hoping to make reasonable conclusions about packaging's overall diversion performance, there is a significant omission: wooden pallets, boxes and crates. The WMIS survey forms do ask for information about wood but no specific results are given in the statistical tables published. Wooden pallets were the single-largest packaging material consumed in 1996 (at 2.5 million tonnes) and had the highest re-use rate (69%)[3]. Indeed, the WMIS data virtually excludes the second of the three Rs (re-use) entirely. There is no recognition of the re-use of wooden pallets or glass beer and beverage bottles collected through Canada's many deposit/return systems[4].

Nor can we conclude from the WMIS results how much packaging is actually consumed by Canadians in the first place; how much is re-used; or sent to landfill. The only information we get is an estimated breakout of a limited number of perhaps packaging materials that are "prepared for recycling", and an estimate of how much of these materials (in total) came from industrial versus residential sources.
Statistics Canada freely acknowledges other methodological limitations in the WMIS surveys. Unlike the national packaging survey of 1996, the WMIS surveys go to haulers in the waste management industry rather than to the actual industry generators of potential waste packaging materials (such as a factory or a supermarket, for example). Statistics Canada recognized way back in 1996 that as a consequence, "much of the recycling that is performed by the industrial sector is underestimated." And as WMIS notes in its latest survey: "These data do not include those materials transported by the generator directly to secondary processors, such as pulp and paper mills, while bypassing entirely any firm or local government involved in waste management activities[5]."

The Paper & Paperboard Packaging Environmental Council (PPEC) has demonstrated how enormously significant that missing data can be. The council claims that just one large Ontario supermarket chain sends over half a million tonnes of old corrugated containers (OCC) through a paper processor direct to a recycling mill every year. Half a million tonnes was *four times more* OCC than all Ontario municipalities combined sent for recycling

[3] NPMS, *ibid*. Table 1.

[4] "These data do not include materials that were processed for re-use and resale for example, wholesale of scrap metals or used clothing or those materials that are collected through deposit return systems and which are not processed at a material recovery facility." Data coverage WMIS (2006) page 35.

[5] Statistics Canada WMIS Survey, 1996, Text Box 2.1 Notes on Recycling Data, and WMIS 2006, Table 4-2.

in 2006[6]. But this tonnage is not counted in the WMIS surveys. And this is just one supermarket chain, in one province.

While the quality of *residential* packaging data has improved immensely in some provinces over the years, the absence of credible and comprehensive national and provincial packaging data from the *IC & I sector,* in particular, has given rise to several common misrepresentations about packaging waste in Canada. Here are three of them:

Misrepresentation # 1: That packaging is a huge chunk of the waste stream.

The National Packaging Task Force noted approvingly in its *Final Report* to CCME that packaging represented only 13% of solid waste in 1996[7]. But here we have Ontario Minister of the Environment, John Gerretsen, claiming publicly on at least two recent occasions, that "one-third" of what Ontarians send to landfill is packaging[8].

The minister, or the staff who prepared his speech, have absolutely no basis in fact for concluding any such thing. The 2006 WMIS survey, upon which the minister appears to be basing other parts of his statement[9], does not even break out disposal by broad material group, let alone packaging. And if you follow the tonnage trail, the minister's claim would mean that Ontario by itself sent 30% more packaging to waste in 2006 than the whole of Canada did ten years earlier[10]. Further, if you back out the 2006 Blue Box packaging tonnages sent for disposal, then packaging alone, according to the minister, would represent almost 45% of all the industrial wastes sent for disposal in Ontario that year (including organics, printing and writing paper, white goods, electronics, tires, and construction and renovation debris). Sorry, that's not credible[11].

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[6] Stewardship Ontario Fee Setting, Table 1 Generation and Recovery (2008). Ontario municipalities sent 126,807 tonnes of old corrugated containers (OCC) for recycling in 2006.

[7] The Task Force's *Final Report* to CCME (*ibid,* Executive Summary, page 2 and Chapter 4, *Major achievements of the Protocol,* page 27). The NPMS estimated packaging disposal at 2.6 million tonnes. This represented only 13% of total solid waste (reported as being 20.6 million tonnes by Statistics Canada WMIS 1996, Table 2.1, Catalogue Number 16FOO23XIE).

[8] Recycling Council of Ontario reception: An Update on Waste Diversion Act review, October 19, 2009 and before 700 consumer packaged goods and packaging industry professionals at the fourth annual Walmart Canada Sustainable Packaging Conference, April 22, 2010 at the Toronto Congress Centre.

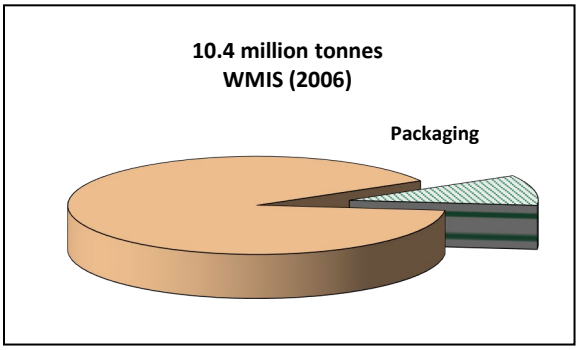
[9] The minister said that " Ontarians generate close to one tonne of waste per person per year" which is in line with Ontario's generation of 12.8 million tonnes of waste (or the 0.94 tonnes per capita estimated by combining disposal and recycling tonnages in WMIS 2006, Tables 1.2 and 3). He then added that "close to 80%" of that 12.8 million tonnes (or 10.2 million tonnes) "is going to landfill", and that "one-third of that (i.e. 3.4 million tonnes) is packaging."

[10] All of Canada sent 2.6 million tonnes of packaging waste to landfill or incineration in 1996 (*NPMS,* and *Milestone Report,* National Packaging Protocol, 1996, CCME, January 1998, page 4).

[11] From the minister's claim of 3.4 million tonnes of total packaging waste we deduct 0.4 million tonnes coming from the residential Blue Box program (*Stewardship Ontario Fee Setting 2008, Table 1: Generation and Recovery* for 2006), to leave the balance, approximately 3.0 million tonnes, supposedly coming from industrial sources. WMIS 2006 (Table 1-2) puts all waste disposal from Ontario IC & I sources at 6.7 million tonnes, so IC & I packaging waste at the minister's derived 3.0 million tonnes would represent

In the absence of good data, a more acceptable approach might be to assume the same national *disposal* rate for packaging that Statistics Canada determined back in 1996, and then apply it to Ontario's 2006 population. This would give an Ontario packaging *disposal* in 2006 of just over one million tonnes, a far cry from the minister's 3.4 million tonnes[12]. And if that one million tonnes of packaging disposal is a reasonable "guesstimate", we can further estimate that packaging may have represented just over 10% of all wastes disposed of by Ontario in 2006[13]. That 10% is not too far from the 13% of solid waste that packaging represented nationally back in 1996, and it's certainly far more credible than the minister's mystery 33% claim.

Does packaging represent only 10% of Ontario's waste stream?



Misrepresentation # 2: Canada is doing abysmally compared to the Europeans.

Canadians are suitably impressed when they hear European packaging "recovery" rates of 70, 80 or even 90 per cent. What they frequently don't realize is that the high "recovery" numbers from Europe usually include packaging materials sent to energy-from-waste plants as well. But the countries of the European Commission (EU) also have separate "recycling" data, which while not sometimes comparable among its member states, is more appropriate for comparing Canada's relative recycling performance.

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almost 45% of all IC & I wastes disposed of (including organics, printing and writing paper, white goods, electronics, tires, and construction and renovation debris).

[12] The NPMS used a Canadian population number for 1996 of 29,969,000. By dividing the tonnages consumed, re-used, recycled and disposed by population it is possible to derive per capita rates (i.e. 297 kg for packaging consumption, 136 kg per capita re-use, 73 kg per capita recycling, and 88 kg per capita disposal). These rates are then applied to Ontario's 2006 population from the 2006 Census (12,160,282 people). Assuming that Ontarians acted similarly to other Canadians, this would put packaging disposal in Ontario in the million tonne range (1.07).

[13] If packaging disposal totalled 1.07 million tonnes and waste disposal as a whole for Ontario was 10.4 million tonnes (WMIS 2006, Table 1-2) then packaging's estimated contribution to the Ontario waste stream would be just over 10 per cent.

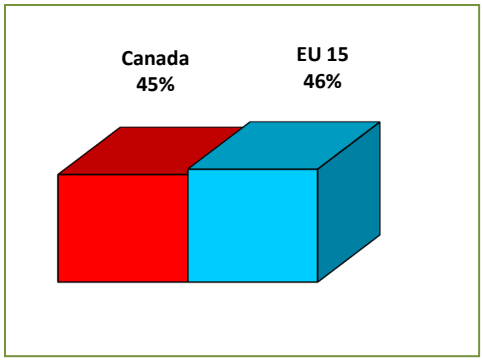
In 1997, the closest we can get to comparable Canadian data, the average packaging recycling rate for the 15 countries of the European Commission (EU 15) was 46 per cent. Canada's recycling rate from a year earlier was basically the same (45%)[14].

The EU has continued to collect and analyse packaging data since 1997, and while there are various disclaimers about its quality[15], recycling rates have steadily improved. By 2006, the average packaging recycling rate for the EU 15 had risen to 58 per cent. However, if you take all of the countries of the expanded EU into account (EU 27), the 2006 average was 49 per cent[16].

Unfortunately, Canada, or more precisely CCME, has chosen not to collect packaging data since 1996 so we have no national data on the generation or recycling of Canadian packaging that we could use to determine progress or even comparisons. There are bits and pieces of data but they are either not packaging per se, not national, or cover residential packaging only.

So there is no proof that we are doing "abysmally" compared to the Europeans (whichever Europeans we choose to compare ourselves to) and no proof that we might, in fact, be doing better.

Average Packaging Recycling Rates



Sources: NPMS Canada (1996), European Commission (1997).

[14] European Commission, Packaging Recycling 1997 – 2002 at http://ec.europa.eu/environment/waste/pdf/1997-2002xls Canada's average packaging recycling rate is derived from the 1996 NPMS results (Table 1) where generation (consumption minus re-use) was 4.84 million tonnes and recycling 2.20 million tonnes.

[15] These are to the effect that national data on packaging waste is not always comparable across the EU. If generation numbers do not include all packaging materials, then the recycling rate can often look better.

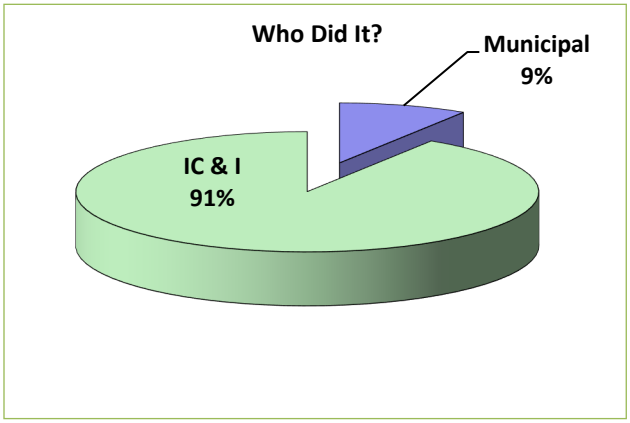
[16] *A Report on the Implementation of Packaging and Packaging Waste Directive 94/62/EC* by the Institute for Environmental Policy/Ecologic, May 2009, Annex Table 2: Total recovery and recycling (% of packaging waste generated) at http://ec.europa.eu/environment/waste/reporting/pdf/Packaging%20Directive%20Report.pdf The average rate for the EU 27 in 2006 was 48.7% (ranging from 10.8% for Malta up to 79.0% for Belgium). If the EU 15 countries are broken out from the EU 27, the average in 2006 was 58 per cent.

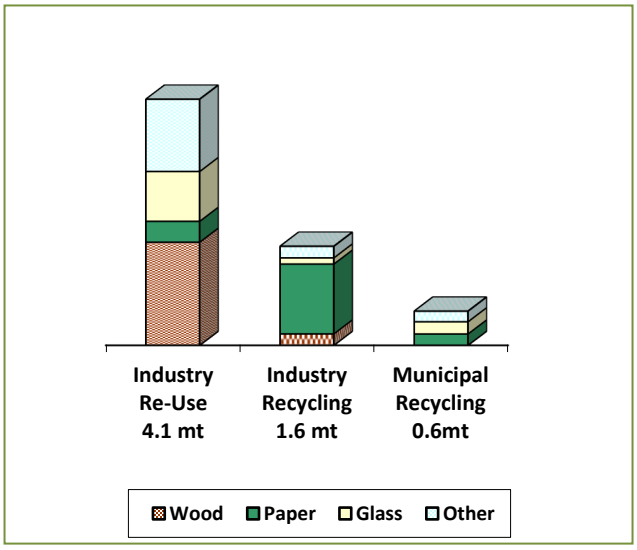
Misrepresentation # 3: "Industry" is doing a lousy job in diverting packaging waste compared to municipalities.

The genesis for this claim or implication is again suspect interpretation of the WMIS data. According to the WMIS 2006 survey, Ontarians, for example, diverted only 19% of the wastes they generated (industry achieving a diversion rate of 12% and municipalities 29 per cent)[17]. But, of course, *this is all wastes, not packaging wastes.* And we have already pointed out the flaws and limitations of the WMIS surveys as far as packaging goes. So to claim or imply, as some municipal representatives have, that industry is diverting only 12% of its *packaging* waste is clearly false and misleading. Besides: 12% of what? WMIS doesn't tell you how much packaging is used in the first place.

In fact, according to the national packaging survey, over 70% of all packaging consumed in Canada in 1996 was either re-used or recycled. "Industry" was responsible for 91% of this: all of the packaging re-use (mainly wooden pallets and glass bottles) and 74% of the packaging recycling (principally corrugated boxes)[18].

Packaging Re-use and Recycling (1996)





Source: NPMS Tables 1,

[17] WMIS 2006 Tables 1-2 and 3. Ontarians recycled 2.4 million tonnes (or 19%) of all wastes generated in 2006 (12.8 million tonnes). "Industry" was estimated to have recycled 0.9 million tonnes (or 12%) of 7.6 million tonnes of all wastes generated, and householders 1.5 million tonnes (or 29%) of 5.2 million tonnes of all wastes generated.

[18] NPMS, *ibid.* Table 1. Total consumption was 8,905,760 tonnes of which 70.3% was either re-used (4,066,284 tonnes) or recycled (2,200,640 tonnes). The re-use tonnes were allocated to "industry" as were 1,636,353 tonnes of the 2,200,640 tonnes of packaging recycling. "Industry" was therefore responsible for 5.7 million of the 6.27 million tonnes re-used or recycled (91%).

It is somewhat hypocritical to discount the re-use tonnes when there was so much pressure from government and environmental groups to include them as a means of "forcing industry to move up the 3Rs hierarchy." But even if we exclude re-use, "industry" had a good story to tell about packaging recycling back in 1996.

We suspect, but we do not know, that "industry" had an even better story to tell in 2006 (and does so today, just as municipalities do of their more recent efforts in residential recycling), but the absence of current Canadian data on packaging consumption, re-use, recycling and disposal (both IC & I and residential) is a major (and frustrating) handicap. Until we get a comprehensive national database that includes data on packaging, the debate will go on and packaging in general will continue to be bad-mouthed by the ill-informed.

Finding taxpayers' money for establishing such a database is clearly not a problem when we can spend $1.2 billion on security for the three-day G8/20 summits; $1.9 million for a "fake lake" media centre so that foreign journalists can experience Ontario cottage country from Toronto; $1.2 million to keep the delegates sandwiches safe; and a provincially-run casino and lottery monopoly (Ontario Lottery and Gaming Corp.) can splurge over half a million dollars by sending 250 of its senior staff to a gaming conference. *No, we have the money, just not the right priorities.*

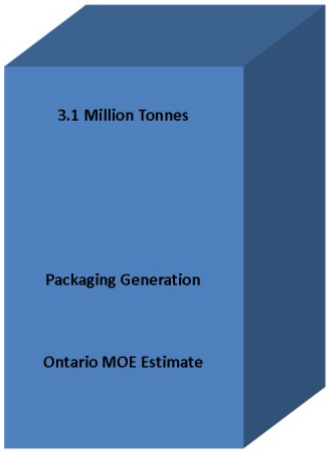
John Mullinder represented the paper packaging industry on Canada's National Packaging Task Force for 10 years as Executive Director of PPEC and is currently President and CEO of Paper Packaging Canada. PPEC's full report, with all references and footnotes, is available at www.ppec-paper.com. John can be contacted at ppec@ppec-paper.com

There's something fishy about Ontario's packaging numbers

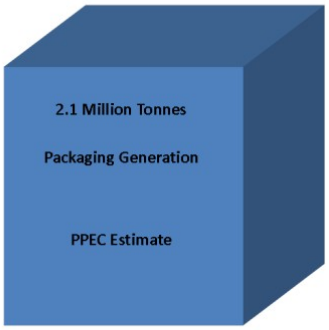
MARCH 14, 2014

There's a pie-chart in the Ontario Ministry of Environment's *Waste Reduction Strategy* document that's been bugging us for several months now, and although we've tried to get an explanation from the MOE both verbally and in writing, we have received nothing to date[1].

Is the Ontario MOE out by a million tonnes?



The MOE claims packaging represents 25% (or 3.1 million tonnes) of Ontario's 12.4 million tonnes waste stream (WMIS, 2008). The WMIS surveys do not, however, break out packaging by generation, recycling, or disposal. There are other reasons to question the claim.



PPEC uses packaging generation rates in Statistics Canada's 1996 National Packaging Survey and Ontario 2008 population numbers to derive a "what could be expected" scenario for the same data year that MOE uses (2008). This assumes no changes in the packaging marketplace since 1996 (for example, no light-weighting or switch to lighter materials).

The pie-chart is titled "*Ontario's Waste Stream*" and claims that packaging is a whopping 25% of it. No specific source is given for this claim, although there are various references in the text to the 2008 Waste Management Industry Survey (WMIS) undertaken by Statistics Canada. The problem is that the WMIS surveys do not break out "*packaging*" specifically[2]. Nor do they cover *all* sources of waste generation (the packaging used in deposit/return systems such as the Beer Store, for example, or the used packaging that's shipped directly from retailers back to paper recycling mills)[3].

Unless they are buried in the "*Other*" category, significant waste streams also seem to be *missing* from the MOE's pie-chart (asphalt, concrete, bricks, clean sand and gravel). These wastes still exist. *Excluding* them would

[1] *Waste Reduction Strategy,* Ontario Ministry of Environment, June 2013, page 8.

[2] Several categories in the WMIS questionnaire do not distinguish between packaging and *non-packaging* uses of the material (for example, "glass", "mixed fibre/boxboard", "all other plastics" includes pipes and furniture). There is no category specifically for wooden pallets, one of the most widely used (and re-used) of packaging materials in the industrial sector.

[3] "These data do not include those materials transported by the generator directly to secondary processors, such as pulp and paper mills while bypassing entirely any form of local government involved in waste management activities." (*WMIS 2008*, Note at bottom of Table 3). "It is acknowledged that data from a large portion of the "re-use" category are not included in these tables … Deposit- return materials, such as beer bottles, are considered to be re-use and are not included in these tables unless they have been processed at a materials recovery facility" (*p. 33*). Also see discussion of this issue in *The Inconvenient Truth about Packaging Waste in Canada*, PPEC Special Report, July, 2010.

obviously inflate the packaging percentage[4].

There are other valid reasons to question the 25% claim. The MOE's generation estimate is *one million tonnes higher* than what one could expect from the per capita generation rates reported by the National Packaging Survey that was commissioned by the Canadian Council of Ministers of the Environment (CCME) several years ago. It would also imply that the weight of packaging has increased by 72% over a period when industry has been light-weighting materials, and in some cases, switching from heavier glass to lighter plastics[5]. In short, we find the 25% claim not to be credible[6].

We are also very concerned at the misleading impression this pie-chart leaves. Using the words "Waste Stream" to describe *overall generation* is fine among people who know that generation means adding two numbers together: the amount of packaging sold to consumers (*and later diverted from waste*), and the amount of packaging sent to landfill. We would argue, however, that most people don't bother with such technical distinctions and would assume that "*waste stream*" simply means waste, or what ends up in the dump[7].

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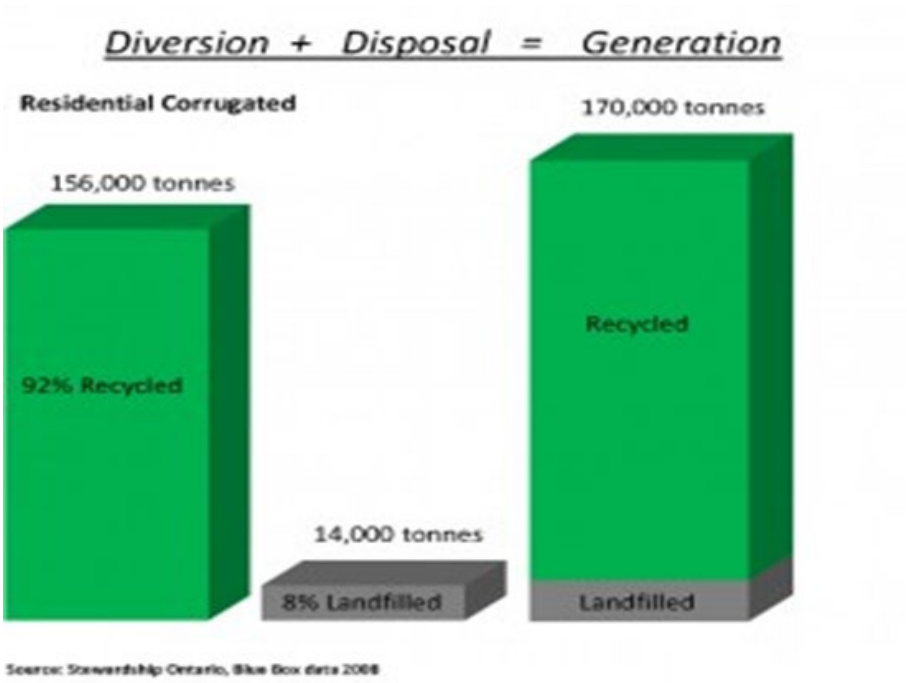
[4] The WMIS 2008 survey *excludes* materials from land clearing on areas not previously developed as well as materials that include asphalt, concrete, bricks and clean sand or gravel (*Notes to Table 1-2*). It's not clear whether the MOE factored these wastes into its "*Ontario's Waste Stream*" pie-chart. What's included or excluded clearly makes a difference to the size of packaging's "contribution". Also apparently excluded from "*Ontario's Waste Stream*" are farm manure, market garden waste, mine tailings, liquid effluents, landfill cover, and contaminated soil (*page 15*).

[5] Overall packaging generation in Ontario households, for example, remained relatively unchanged between 2003 and 2012 (plus 0.6%), according to Stewardship Ontario Blue Box data for those years. Plastic packaging's tonnage, however, is up 32% and glass packaging tonnage down 49 per cent. Glass's share of household packaging generation by weight has gone from 23% in 2003 down to 12% in 2012.

[6] According to the National Packaging Survey of 1996, *per capita generation* was 0.161 kilograms/person. Assuming that Ontarions generated packaging in a similar fashion to other Canadians, Ontario's share of Canada's generation back then would have been about 1.8 million tonnes. By 2008, assuming no changes in packaging usage and an increase in Ontario's population to 12.9 million people, packaging generation could have been expected to increase to 2.1 million tonnes. The MOE claims, however, that packaging generation was a full million tonnes higher in 2008 (3.1 million tonnes or 25% of Ontario's waste stream of 12.4 million tonnes, WMIS, 2008).

[7] A more accurate and publicly understandable title would be "*What We Use"* or *"What Ontarions Use."*

Ontario households, for example, recycled almost 156,000 tonnes of old corrugated boxes in 2008 and sent another 14,000 tonnes to landfill for an *overall generation* of 170,000 tonnes. While labelling this 170,000 tonnes as the residential corrugated "*waste stream*" would be *technically* accurate, to the general public it implies that *all* of this "waste" (170,000 tonnes) went to the dump. In fact, in this case, 92% was recycled and only 8% was sent to landfill[8]. The MOE's mysterious pie-chart together with its ambiguous title suggests quite the opposite and adds to the widespread ignorance of just how much packaging is actually being re-used and recycled. But that deserves a blog all by itself.



[8] Table 1: Generation and Recovery, Stewardship Ontario Blue Box, 2008 data.

News Flash! Over 70% of packaging is being re-used or recycled, most of it by industry

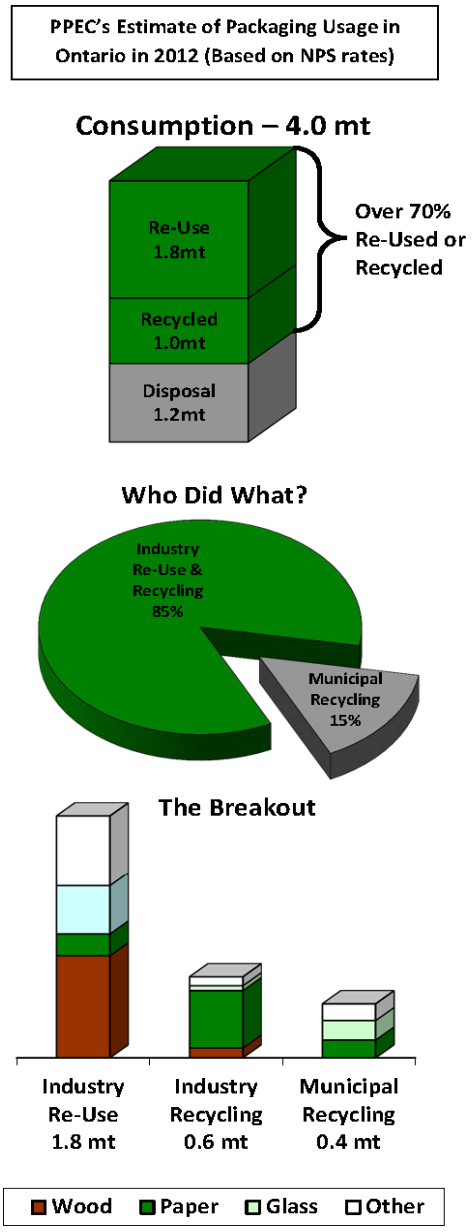
MARCH 25, 2014

You hear it all the time from provincial and municipal politicians. "Industry" is dragging the chain on waste diversion, lagging way behind municipal efforts. This politically charged claim may be true for some waste streams, we don't know. But there's strong evidence that it's certainly not true when it comes to packaging.

Packaging is one of those things that people love to hate, and it's a soft political target, which is why it's been the subject of various surveys, studies and task forces. Canada created a National Task Force on Packaging in the 1990s. It was disbanded after a 50% diversion of packaging waste from landfill was achieved, four years ahead of time.

It is useful today to revisit the findings of the last National Packaging Survey (NPS) that was undertaken, for the *broad snapshot* it reveals of packaging consumption, re-use, recycling and disposal. The survey was comprehensive, covering 31 separate industry sectors of the economy and 32 different packaging material types, using surveys as well as information derived from Statistics Canada's international trade merchandise data and a national study of residential recycling. While this 1996 survey is now obviously dated, the NPS *still* remains the most comprehensive data on packaging this country has[1].

What did it find? It found that over 70% of the packaging



[1] Some 10,000 surveys representing a total survey frame of almost 400,000 businesses were sent out, with the 61% response rate regarded by Statistics Canada as "consistent with other similar surveys." (*Milestone Report*, CCME, pages 6-7). Subsequent surveys unfortunately do not break out packaging specifically by consumption, re-use, generation, recycling or disposal. See earlier blog: *There's something fishy about Ontario's packaging numbers* and PPEC's July 2010 Report: *The inconvenient truth about packaging waste in Canada*.

consumed in Canada was being re-used or recycled[2]. "Industry" was responsible for 91% of this: all of the packaging re-use (mainly wooden pallets and glass bottles) and 74% of the packaging recycling (principally corrugated boxes)[3].

Has anything substantially changed since 1996? We would argue that little has changed on the re-use front: that wooden pallets and glass bottles remain the major packaging materials re-used. Nor has much changed on the recycling side: with corrugated boxes still being the most recycled of all packaging materials.

There has been a significant increase in the recycling of packaging by municipalities.

Given that we don't have better and more recent data, PPEC has used the NPS as a *benchmark* to develop a "*what we could expect"* picture of Ontario in 2012. There are statistical cautions in doing so, of course. The NPS was a national survey without provincial breakdowns and covered both industrial and residential waste streams. The data is also now old with per capita consumption, re-use, generation, recycling and disposal rates reflecting conditions in 1996. They therefore do not take into account changes in the packaging marketplace such as the light-weighting of materials, for example the switch from heavier glass to lighter plastics. The data also excludes paper packaging materials sent for composting. PPEC's use and extrapolation of the NPS numbers do recognise, however, that packaging consumption generally rises (or falls) in line with population numbers.

It is possible, while recognising these limitations, to apply the NPS per capita rates to *current* populations to get a *snapshot view*, supplementing this data with more recent information from residential recycling programs such as Ontario's Blue Box.

The graphics show *what we could expect* Ontario's packaging usage to have looked like in 2012 (based on the NPS rates)[4]. Overall consumption would have been about 4 million tonnes with 1.8 million tonnes re-used (mainly wooden pallets and glass bottles); 1.0 million tonnes recycled (mostly corrugated boxes); and 1.2 million tonnes sent to landfill. Packaging genera on would have therefore been about 2.2 million tonnes (consumption minus re-use, or diversion plus disposal).

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[2] "Over 70% of all packaging consumed in Canada was re-used or recycled"(Table 1, NPS). Consumption was reported as 8.9 million tonnes; re-use and recycling as 6.3 million tonnes (therefore 70%).

[3] "*Industry was responsible for 91% of this."* The re-use tonnes (4.1 million) were allocated to industry as were 1.6 million tonnes of recycling. Industry was therefore responsible for 5.7 million tonnes of the 6.27 million tonnes re-used or recycled (91%). "*Industry was responsible for 74% of the packaging recycling."*1.64 million tonnes of a total 2.2 million tonnes recycled (Table 29).

[4] The expected 2012 packaging generation in Ontario (2.2 million tonnes) was derived by multiplying Ontario's 2012 population (13,412,000) by the NPS packaging generation rate (0 .161 kilograms/person). The re-use and disposal rates were calculated in a similar fashion using the NPS re-use and disposal rates of 0.136 kgs/capita and 0.088 kgs/capita respectively. The NPS recycling rate of 0.073 kgs/capita was also used with the industrial recycling number derived by backing out the 2012 residential recycling total of 0.4 million tonnes (Stewardship Ontario, Blue Box data, 2012).

This would mean that over 70% of the packaging used in Ontario in 2012 would have been either re-used or recycled[5]. *Not quite the opinion that various politicians are advancing!* And it would also mean that much maligned *"industry"* would have done most of the work (85% of it)[6]. *Tell that to your local city councilors.*

Our estimates may be just that (*estimates*), but at least they are based on reasonably credible numbers from the most comprehensive data on packaging that Canada currently has. What we *really* need today are more *facts* on packaging issues, and a lot less *fiction*.

5 1.8 million tonnes re-use plus 1.0 million tonnes recycled divided by 4.0 million tonnes consumed (70%)

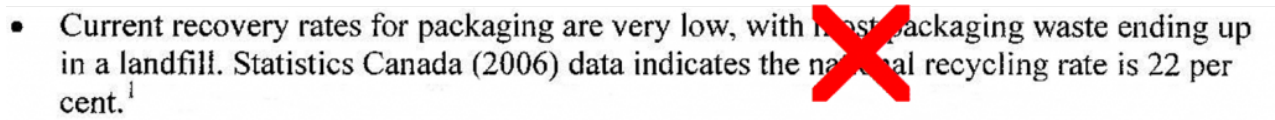
6 Industry re-use (1.8 million tonnes) plus industry recycling (0.6 million tonnes) as a percentage of total packaging diversion (re-use plus recycling or 2.8 million tonnes) equals 85 per cent.

CCME's false claims perpetuate packaging myths

APRIL 17, 2014

We were recently invited by the Canadian Council of Ministers of the Environment (CCME) to comment on various aspects of extended producer responsibility (EPR) programs that have been or are being introduced across the country. In the course of preparing our response, we re-read CCME's *Canada-Wide Strategy for Sustainable Packaging.* While we have no problems with most of this interesting document, we were stunned to discover some factual errors that could help explain why packaging in particular, and industry's waste management performance in general, continue to be held in such low regard in certain government circles.

In setting the context for this 2009 strategy document, CCME makes two claims: that *"Current recovery rates for packaging are very low"* and that *"Statistics Canada (2006) data indicates the national recycling rate is 22 per cent[1]."* It gives the source for these claims as Statistics Canada's WMIS survey of 2006[2].



- Current recovery rates for packaging are very low, with most packaging waste ending up in a landfill. Statistics Canada (2006) data indicates the national recycling rate is 22 per cent.[1]

Unfortunately for CCME, neither of these claims was true then, or is true now. Statistics Canada's WMIS surveys do *not* break out recovery rates for packaging, and never have, so how could they be "*very low*"? Nor do WMIS surveys break out national packaging recycling rates. CCME has totally misread what the WMIS surveys say. The supposed 22% national "recycling" rate for packaging that CCME claims is actually the diversion rate for all of the following wastes *added together* (paper, glass, metals, plastics, electronics, tires, construction renovation and demolition materials, and organics)[3].

We pointed out these factual errors to CCME staff, expecting that they would check to see if we were correct, and then, if we were, amend and/or remove the claims from the document. This after all is an official publication available on the CCME website that is used as a current source of information by researchers and students, among others. As long as these false claims are there, they will *continue* to damage public perceptions of the packaging industry and its customers, and they will *continue* to colour government policy and claims on packaging issues.

The CCME staff response to date has been to fob us off, to claim that we have "differing interpretations" of "decade-old data" that was used to provide a portion of the context for CCME's work on EPR. We disagree. The claims that the CCME is

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[1] *A Canada-Wide Strategy for Sustainable Packaging*, CCME, October 29, 2009, page 3.

[2] Statistics Canada, Waste Management Industry Survey: Business and Government Sectors (WMIS 2006). Catalogue no. 16F0023X.

[3] Table 2, WMIS 2006.

making in this document are either right or wrong. Whatever happened to "fessing up", making the appropriate corrections, and moving on? This does not look good on the CCME. Canadian public policy should be based on accurate data, not false claims that perpetuate myths[4].

[4] Ironically, a survey that CCME commissioned specifically on packaging many years ago would have set a more accurate context for discussion of EPR. The 1996 National Packaging Survey conducted by Statistics Canada did establish recovery rates for packaging (over 70% re-use and recycling); and did establish a national recycling rate (45%). But one gets the distinct impression that CCME prefers not to talk too much about this study, partly because its data is now old, but also because it found that "industry" (bad guy that it is), was performing quite well thank you very much.

Getting the facts straight on packaging diversion in Canada

NOVEMBER 6, 2015

In the course of an otherwise interesting article on Individual Producer Responsibility (IPR), Tom Chervinsky makes a statistical boo-boo. See, I am mellowing. I didn't call it package bashing.

Chervinsky is certainly not the first, and won't be the last, to play footsie with the facts. He starts out well, observing that the percentage of waste that Ontario diverts from landfill has remained stagnant for the last 20 years. The most recent Statistics Canada survey (2012) pegged it at 24 per cent.

You have to compare packaging rates with packaging rates.

But then he asks us to compare Ontario's low number with the claimed *packaging* recycling rates for Germany, the Netherlands, and the United Kingdom. *Whoa already!* You can't compare the Ontario diversion rate for *all* wastes (paper, organics, white goods, electronics, construction, renovation, and demolition materials, plus tires and other stuff) with some countries' claim for a single category such as packaging. You have to compare packaging rates with packaging rates.

And there, Ontario, and Canada, have a problem. Because we don't know the current diversion or recycling rates for packaging in this country. The most comprehensive survey ever conducted specifically on packaging in Canada is now almost 20 years old. We can debate its validity today, and certainly there have been changes in packaging usage over the years (less glass and more plastics). In fact, this issue of packaging recycling rates in Canada is a well-travelled road. We have taken both Ontario and Canada's Ministers of the Environment to task for similar misuse of available data in the past.

So what *can* we say about packaging recycling rates in Ontario or Canada? Our alternatives seem to be to quote the 1996 National Packaging Survey which estimated that over 70% of packaging was being re-used or recycled, and that industry (not households) was doing most of it (91%). Or we can apply those 1996 per capita rates to current populations while recognising the statistical cautions that arise in doing so.

But what we *cannot* do, as Mr. Chervinsky has done, is blindly assume that packaging's recycling rate is the same as that of all other materials in the waste stream (white goods, organics, tires). Besides, some data, and admittedly anecdotal evidence, suggests that Canada may, in fact, be doing as well as, if not better than, many of its European cousins on the packaging recycling front. But that's a whole other blog.

Packaging is the villain again (sigh)

SEPTEMBER 12, 2016

There is no doubt that some goods are over-packaged and that more can be done to reduce the amount of paper, glass, metal and plastic packaging that ends up in consumers' homes. But blaming packaging all the time is only part of the story. To put it bluntly, we in the so-called developed world eat, drink and buy far too much stuff.

Consumption is the real issue, not the packaging that delivers it. As consumers, however, we find it difficult to limit what we purchase. It's so much easier to point the finger at the packaging that's left behind.

For example, a recent anonymous letter to the editor of *Solid Waste & Recycling* magazine outlines the increase in convenience packaging of produce (plastic bags for peppers, a bundle of herbs in a plastic case, fresh grapes in a plastic bag with grab-and-go handles). The writer complains that the increased packaging waste from this new convenient shopping trend means higher costs for municipalities dealing with it down the line. A reasonable argument.

It's when the letter writer rather loosely broadens the attack to packaging in general that we get concerned. "Our waste streams are clogged with unnecessary packaging at every turn," he/she writes, "and most of it is neither recyclable nor compostable."

Now hang on a minute there! If you are talking about convenience packaging of fresh produce (the peppers, herbs and grapes above) then you might have a point, although we suspect there will be debate over exactly what "*necessary*" means.

But when you broaden the issue to all packaging, you are lumping all packaging together in the same boat. Setting aside the argument over what might be deemed necessary or unnecessary, packaging is definitely not "clogging" our waste streams "at every turn." In the most comprehensive national survey of packaging ever done in Canada, packaging represented only 13% of total solid waste. Significant, but not exactly "clogging."

This survey was conducted by Statistics Canada for the Canadian Council of Ministers for the Environment (CCME) and is admittedly now some 20 years old, but there's no obvious reason why the percentage would not be hugely different if measured today. Some people (including the Ontario Ministry of Environment and Climate Change) claim a higher percentage, but that's because they change the denominator, they use a much narrower definition of solid waste.

> ***"In 1996, packaging represented only 13% of total solid waste."***
>
> *Canadian Council of Ministers of the Environment, National Packaging Protocol 2000 Final Report, page 27.*

It's the claim that "*most of it is neither recyclable nor compostable*" that really gets us

going though. Again, if the writer is talking about specific convenience packaging for produce, he/she might have a case. But by far most packaging used in Canada is able to be recycled (recyclable). And a fair chunk of it (mostly paper-based) is compostable.

Whether it is actually being recycled and composted is an issue for another day, and an argument for better and more current national data.

#2. The control and performance of the Blue Box

The ‘elephant in the room’ (the subject of the first blog in this series) is who gets to control how the residential Blue Box recycling system is operated. This is an especially important subject when governments introduce what’s called Extended Producer Responsibility (EPR) or industry-pay schemes. It’s not widely known by Canadian consumers, for example, that industry currently pays 100% of the net costs of British Columbia and Quebec’s Blue Box programs, 80% of Manitoba’s, 75% of Saskatchewan’s and 50% of Ontario’s (moving soon to 100%). What are the future respective roles of industry and municipalities in this mix of residential programs, and how are economies of scale achieved when meshed with the larger universe of industrial recycling activity?

These blogs also analyze the actual performance of Ontario’s Blue Box system (the good, the bad, and the ugly).

The elephant in the room

DECEMBER 19, 2013

Waste management policy is a hot topic at the moment as various provinces grapple with introducing or modifying what they are calling "Extended Producer Responsibility" or EPR programs on residential printed paper and packaging. The real elephant in the room, however, is the future role of municipalities in Blue Box waste management.

In our view, there are two key elements that need to be addressed in this ongoing, sometimes rancorous debate. The first is: **Who's driving the Blue Box truck?** It's a control issue. We suspect that few would argue against the provinces determining the *"rules of the road"* since solid waste management is clearly a provincial jurisdiction. This means establishing the framework, setting policy, and monitoring performance.

The *"driver"* in this somewhat imperfect analogy should be the "producers" since they have the most impact on designing what materials end up in Canadian homes and are the ones to whom responsibility (financial and/or operational) has been, or is being extended. And we shouldn't forget that the producers are very much *learner* drivers who are now having to deal with material design issues at the same time as they dodge the various stewardship potholes and loose gravel in their path.

The rest of us (municipalities, recyclers, processors, material suppliers and consumers) are really *"passengers"* of one kind or another, sometimes scrambling over each other to get closer to the wheel while suggesting different ways of getting "there."

What we are witnessing in Canada at the moment is the changing dynamic and tension between these various players as the country transitions to full or partial producer funding of Blue Box programs. "Producers" are quite rightly resisting signing blank cheques for something they have little or no control over. Since they are paying up to 100% of the freight, they want to make sure it's the most efficient and effective Blue Box system possible. British Columbia, to its credit, has allowed the producers to devise a program that looks to be far more comprehensive, effective and efficient (same materials right across the province), than the current one. BC has determined the framework and has stood back and *enabled* EPR to happen: *allowed* the producers to be drivers of the Blue Box truck, as long as they follow the "rules of the road."

Ontario, on the other hand, in Bill 91, The Waste Reduction Act, has deliberately handed the keys to municipalities. In Ontario, producers currently do not control *what* materials are collected and have to wait for and lobby more than 200 different

municipalities if they want to add something new. The producers neither control *how* the materials are collected (boxes, carts, bags, two-stream or single-stream, weekly or bi-weekly, or alternating weeks) nor *how* they are processed. Nor do they control the educational messages required to encourage greater recycling. They *do* get to pay (under Bill 91) up to 100% of the net program costs though! This is nothing less than a thinly disguised "taxation without representation" scheme that panders to municipal interests. It is a perversion of EPR principles because it enforces a financial responsibility on producers while giving them little or no control over their costs.

This is not to say that some municipalities have not done a good job. Many have. And local governments clearly have a role, and will continue to have a role, in Blue Box management. But it should be a *diminished* one, if EPR is to be an effective public policy tool. Municipalities should be passengers *along with the rest of us*, not driving the truck. Some of them may end up collecting or processing Blue Box recyclables, but they should *only* be allowed to do so, in our view, when they have won a contract bid in a fair competition with private sector service providers.

The underlying question here is whether local governments should be involved in processing and selling commodities into global spot markets with taxpayers' dollars. Is this *really* the role of local government, especially when producers are being regulated to pay more and more of Blue Box financial and operational costs? The argument that taxpayers' money already invested in collection and processing equipment will go to waste if municipalities are denied a lead role, is misguided at best. Material recycling facility (MRF) equipment has a life span of maybe 10 years, collection vehicles perhaps seven, after which they have to be replaced. There clearly has to be a transition period for local government to adjust to its new and lesser role.

Which brings us to the second key element that needs to be considered in this debate: **How best to achieve economies of scale?** The fact of the matter is that material recycling is primarily an *industrial* activity not a municipal one. Toronto's Blue Box program, the largest in the province, supplies only 8% of the total tonnage of paper recycled in Ontario. If we limit ourselves to packaging alone, almost 60% of it (mainly old corrugated boxes) is estimated to be sent for recycling by Ontario industry, not by local governments. To achieve this, the private sector has a long history of building transfer stations and MRFs. There are economies of scale in modifying these already existing industrial MRFs to accept Blue Box materials. Many have already done this.

So a key question that government policy makers and producers regulated under EPR schemes need to consider is whether municipalities should actually be involved in Blue Box material processing at all. Given that most printed paper and packaging is already being processed in private sector MRFs, why do we need brand spanking new municipal ones, funded by taxpayers' dollars that are then later reimbursed by producers under some EPR scheme? It doesn't make a lot of sense, environmentally or economically.

We face some interesting times/battles ahead. Stay tuned!

BC's new Blue Box program a good model of real EPR

MAY 19, 2015

British Columbia's new full producer responsibility program for the Blue Box is getting a bad rap, certainly in Ontario where some waste haulers, municipalities, and even a few provincial government people are calling it a disaster. Here are some of the claims we are hearing.

Claim #1: That many municipalities are excluded from the program.

BC's new EPR model for the Blue Box has a lot more going for it than its detractors are willing to admit, and is worthy of application, with some adjustments, in other provinces.

In fact, BC municipalities had a *choice* on whether to belong to the stewardship program or not. Some 76 municipalities, regional districts and First Nations chose to join, while another 10 communities asked steward body Multi-Material BC to provide curbside service directly to their residents through private collectors, with no involvement from the municipality and at no cost to taxpayers. Together the local government and private collectors within the MMBC program provide service to 1.24 million curbside and multi-family households (72.3% of the provincial total). A further 20 municipalities initially chose not to join, but then reconsidered after the launch deadline and were placed on a waiting list. MMBC wants to add these latecomers as soon as possible, but it needs more steward funds (that is, fewer free-riders) before it can do so.

So the quick answer to the exclusion claim is that the municipalities currently not in the program *excluded themselves.*

Claim #2: That there is no enforcement and no method of performance monitoring or verification.

Membership of MMBC is *voluntary*. Stewards can choose to join MMBC or another body or meet their provincial obligations by themselves. MMBC has no control over stewards such as newspaper publishers or small business owners who have chosen not to join MMBC. *It is up to the province* to cajole, coerce, or take free-riders to court for not meeting their provincial obligations[1].

As for monitoring and verification of MMBC program performance, this is currently

[1] BC passed a regulation last June that allows the Ministry of Environment to implement administrative monetary penalties (AMPs) on companies not in compliance with the regulations. We are not aware that any have been applied to date.

being done by independent auditors prior to the release of a report on the first seven months of the program on July 1st. Word on the street is that MMBC has met its 75% collection rate target.

Claim #3: That municipalities were given a "take-it-or-leave-it" price for doing collection.

MMBC was under no obligation to offer municipalities *any* collection contracts. For political and ease-of-transition reasons, however, it chose to offer them the right-of-first-refusal on collection. The collection prices offered by MMBC were based on an analysis of the cost data that existed in 23 BC programs. Some municipal programs cost more, some cost less. The few municipalities that chose not to accept the MMBC offer had the option of collecting at their own taxpayers' expense or getting out of the collection business entirely and letting MMBC do it. Ten communities chose the latter option and MMBC contracts out the provision of direct service itself[2]. Most municipalities and regional districts (the 72% of BC households mentioned above) chose to accept MMBC's price offer.

Claim #4: That MMBC has created a monopoly on the processing of BC residential recyclables.

First, MMBC is a *voluntary* program which covers only its own members' obligations. There is an opening for other steward bodies to form (and one is trying to). Second, MMBC issued a request for post-collection proposals that covered 10 geographic zones, offering respondents the opportunity to bid for each zone, a bundle of zones, or all of them collectively.

Several companies bid. The winner, which bid in each zone and was also able to offer a collective bundle, brought three separate partners together[3] and included 26 sub-contracted companies. Its plan to *centralise* plastic, glass and metal processing for the province in one new facility[4] was possibly the clinching factor, since it avoided the cost of each separate container processing plant in the province having to install the same expensive bells and whistles to sort materials. This promised to be a big money-saver for the system *as a whole.* Most of those 29 companies were involved in managing residential recyclables in the province *prior* to the May 2014 launch of the full producer responsibility program. They *continue* to be involved, but instead are now being paid by producers, rather than by municipalities.

While BC's new EPR model for the Blue Box is not perfect, it clearly has a lot more

[2] Regional District of North Okanagan, Regional District of Central Kootenay (areas H, I, J), Regional District of Kootenay Boundary (East Sub-region), Coquitlam, Anmore, Quesnel, Prince George, University Endowment Lands, Revelstoke, and City of Langley.

[3] Green by Nature partners include two PPEC-member companies, Cascades Recovery and Emterra Environmental, plus Merlin Plastics.

[4] Paper-based packaging containing liquids is included in the container stream processed at this facility.

going for it than its detractors are willing to admit, and is worthy of application, with some adjustments, in other provinces. A key challenge for both stewards and provinces going forward, however, is the sticky issue of free-riders, and how provinces act to effectively discourage them. Everyone wants a level playing field.

Pot calling the kettle black?

JANUARY 12, 2016

The Toronto *Star* ran a front page story over the weekend lambasting Ontario's tire stewardship body (OTS) for spending "thousands of dollars on wine tasting, meals at fine restaurants, a boat cruise, luxury hotels, and donations to political (parties)." The newspaper huffed in its "little piggies at the trough" depiction that OTS was operating without public oversight.

Now we are no fan of unreasonable administrative expenses. And if, in fact, they were unreasonable in this case, then Waste Diversion Ontario, which is supposed to monitor OTS, and the Minister of Environment and Climate Change to whom the WDO ultimately reports, should do something about it.

But it seems to us that the *Star's* real target, clear in previous articles it has carried, is the existence of provincial industry funding organisations (IFOs) themselves. These, it recently thundered, are essentially "industry cartels" that pluck "tens of millions of dollars from consumers' pockets every year."

The Toronto *Star* should tread carefully because what applies to tires and used electronics equally applies to Blue Box materials, including newspapers

The *Star* should tread carefully here because what applies to the IFOs for tires and used electronics equally applies to Blue Box materials, including newspapers. In the case of tires, the tire producers and retailers pay for the recycling of tires. In the case of newspapers, the newspaper publishers contribute to an industry Blue Box fund that helps pay for the costs of recycling newspapers.

In the case of tires, the fees are passed on to the consumers of those tires. In the case of newspapers, we assume that the newspaper stewards pass along their fees to the consumers of newspapers as part of their costs.

The *Star* claims that OTS made contributions to political parties. We don't know whether Stewardship Ontario (the Blue Box IFO) has made similar political contributions, but we do know that individual newspaper publishers, including the *Star*, frequently throw their editorial weight behind one political party or another.

The only difference that we see, then, between how the newspaper publishers and the tire retailers manage the costs of their respective recycling programs, is that the tire fee is visible at retail. Tire consumers see what they are being charged for. Newspaper consumers, on the other hand, do not see any of their Blue Box eco-fees highlighted. They are hidden, but still passed on (or "plucked from consumers' pockets", as the *Star* would say). In the interests of public transparency and editorial integrity then, we would suggest that before the *Star* rushes out to loudly denounce eco-fees and IFOs again, that perhaps it should check what's going on in its own house first. It would be nice to know the difference between the plucker and the plucked.

The end-markets get no love!

FEBRUARY 19, 2016

We were struck by a sentence in the recently released draft *Strategy for a Waste Free Ontario.* Not by what was said, but rather by what was *not said.*

In a chapter titled *Transforming Ontario into a Leader*, the Ministry of Environment and Climate Change pays tribute to the Blue Box: "an internationally recognised recycling program (that's) available in 97% of households and (that) keeps approximately 66% of residential printed paper and packaging from landfills." All good and true. Then it gives the credit: *"Residents, municipalities, businesses, and waste management companies are responsible for its ongoing success."*

What! No mention of end-markets? Where does the ministry think all this material goes to? Where's the credit for companies like Atlantic and Abitibi/Resolute that pioneered the recycling of old newspapers in this province?
Where's the credit for Cascades/Norampac, Strathcona Paper and others, that pioneered packaging recycling in Ontario back in the 1990s, including being the first mills in the whole of North America to use and develop a market for old boxboard?

Every single packaging mill in Ontario now uses old corrugated boxes from industrial and/or residential sources to make new packaging, most of it 100% recycled content. All provide jobs to Ontarions. All pay municipal taxes. As for the Blue Box, paper materials represent 75% of what's collected and 50% of total Blue Box revenues. And that's just the paper end-markets. There have been end-market innovations with other materials as well.

We are not saying that municipalities and their residents, businesses (especially those that supported the early work of OMMRI, CSR and now Stewardship Ontario), or the waste haulers, have not played an important role in the Blue Box success story. They have. We just want some of the credit too! There is no great Circular Economy without us. Our importance needs to be recognised. Give us some love!

Over 75% of what the Blue Box collects is paper, and it has the highest recovery rates

JANUARY 10, 2017

When you crunch the numbers on Canada's various provincial Blue Box systems, one fact stands out more than any other. *The Blue Box is basically a Paper Box,* part of a larger feeder supply network for Canadian and other paper recycling mills.

Paper's overwhelming dominance is more obvious, of course, in the many "deposit" provinces where beverage containers are returned outside of the Blue Box system. But even in "non-deposit" Ontario, paper is king. Over 75% of all the material collected in Ontario's Blue Box is paper of some kind, whether printed paper like newspapers or packaging boxes and cartons. This has not changed over the last 13 years of data compiled by the province's Blue Box industry-funding organisation, Stewardship Ontario.

A huge chunk of that recovered paper goes to Ontario recycling mills to be turned into new newspapers, new corrugated boxes, or new boxboard cartons. A local and active circular economy. The mills, and the converters who turn that recycled fibre into new paper products, provide employment to many local communities and pay taxes to municipal governments.

Paper categories also have the highest individual recovery rates of all materials in Ontario's Blue Box. Used corrugated boxes top the bill at an amazing 98% recovery rate followed by old telephone books (96%) and old newspapers (92%). The paper or fibre stream overall has a very respectable 74% recovery rate. The recovery rate for the container stream (plastic, glass and metal packaging), on the other hand, is only 46%, dragged down by plastics' lowly 32 percent.

The good, the bad, and the ugly about Ontario's Blue Box

JANUARY 31, 2017

The good news is that the reported recovery rates for almost every single material category in Ontario's Blue Box have improved over the last 13 years, some by as much as 20 percentage points. The bad news is that several categories have made very little progress and lag way behind the others, and that the real recovery rates are much lower than those reported.

Here is our Report Card by material group, based on the latest recovery numbers from Stewardship Ontario. Please note that this is not a judgement on the merits of individual materials but rather an assessment of how well they are being recovered in Ontario's Blue Box system. There is clearly room for improvement.

The far uglier truth about all reported Blue Box recovery rates is that they don't tell the real story

PRINTED PAPER	A

Printed paper has been a consistent good performer, rising from 67% reported recovery back in 2003 to 82% today (2015). The recovery rate for old newspapers and old telephone books is in the 90s. Somewhat further back, and dragging the printed paper category down, is the recovery rate for printing and writing paper (Other Printed). This has ranged from 39% up to 59% and is currently at 55 per cent.

GLASS PACKAGING	B+

The reported recovery rate for clear and coloured glass is an impressive 80 per cent. Years ago, all we heard about was glass going to landfill or being used as road fill. Beyond talk of glass breaking in the collection process and contaminating loads of other materials, however, glass recovery is apparently in good shape. A lot of recovered glass these days goes into blast and filter media rather than higher end uses such as fibreglass and cullet which have more demanding quality requirements.

PAPER PACKAGING	B

Old corrugated containers (OCC) or boxes have the highest reported recovery rate of all Blue Box materials (98%). From there it's a drop back to paper-based gable top cartons which have surged from a 10% to a 61% recovery rate; boxboard at 43%; followed by aseptic cartons (made of paper, plastic and aluminum), and laminants. The relatively low recovery rate for old boxboard is a concern. It reached as high as

65% recovery in 2008 but has dropped back to 43% since. Stewardship Ontario did target boxboard toothpaste cartons, toilet paper roll tubes, tissue boxes and other toiletry packaging in an advertising campaign in 2015.

STEEL PACKAGING	B

The latest reported recovery rate for steel food and beverage cans is a respectable 71 per cent. Other steel packaging such as aerosols and paint cans drag the overall steel category down 10 per cent. In fact, paint cans are the only category in the Blue Box whose recovery rate has declined over the last 13 years.

ALUMINUM PACKAGING	D

The low reported recovery rate for aluminum food and beverage cans in Ontario (42%) has always been a bit of a puzzler and is frequently compared unfavourably with its far higher recovery rates in Canada's many deposit provinces where recovery ranges between 61% and 97 per cent. One reason offered for the difference is that the recovery rate for cans in Ontario is only for those that end up in the home. It doesn't include those used at public events, in offices, or factories. The aluminum stewards also reported residential sales some 13% lower in 2015 than what various waste audits used to provide a provincial total suggested was in the home. But even if you allow for this difference, the reported recovery rate only rises to 48 per cent. We doubt that Blue Box scavengers are grabbing the other 52 per cent.

PLASTICS PACKAGING	D

The reported recovery rate for plastics packaging reached 32% in 2015. The highest rate was for PET bottles (66%) and the biggest increase over the years was turned in by the "Other Plastics" category with one-third now being reported as recovered. Apart from PET and HDPE bottles, however, the plastic recovery rates are poor.

The far uglier truth about all reported Ontario Blue Box recovery rates, however, is that they don't tell the real story. They are basically "*sent for recycling numbers,*" in most cases, what was sent to an end-market from a material recycling facility or MRF. These reported "recovery" rates don't deduct the various yield losses that occur in remanufacturing that curbside material back into new products, or the contamination that must be removed (and is normally landfilled) before remanufacturing can actually take place.

For example, all reported paper numbers need to be shaved by at least 10% because paper fibres shrink in the re-pulping process. When a municipality sends 100 tonnes of paper to a paper recycling mill, only 90% of it will come out the other end. And with single-stream collection there is a lot more plastic, glass and metal contamination in the paper bales. This is usually sent to landfill. And you can chop maybe 30% off the reported PET bottle "recovery" rate since PET yields at the end-market range, at best, between 60 and 70 per cent.

A recent attempt by the Canadian Standards Association to grapple with this issue and come up with a definition of recycling, falls short in our view, and is one of the reasons why PPEC is developing a more accurate and real measurement of what paper materials are actually being recycled in this province.

P.S. In our last blog on the Blue Box, we claimed that "over 75%" of what the Ontario Blue Box collected in 2015 was paper of one kind or another. The "alternative fact" is 74.55%. Close but not correct.Sorry!

Printed Paper (Reported Recovery Rates)	2003	2015
Overall	**67%**	**82%**
Newspapers	75%	92%
Magazines	72%	81%
Telephone Directories	75%	96%
Other Printed Paper	39%	55%

Paper Packaging (Reported Recovery Rates)	2003	2015
Overall	**48%**	**64%**
Corrugated Boxes	72%	98%
Boxboard Cartons	42%	43%
Gable Top	10%	61%
Aseptic Cartons	10%	23%
Paper Laminants	1%	8%

Glass Packaging (Reported Recovery Rates)	2003	2015
Overall	**59%**	**80%**
Flint	57%	80%
Coloured	61%	81%

Steel Packaging (Reported Recovery Rates)	2003	2015
Overall	**49%**	**61%**
Food & Beverage Cans	53%	71%
Aerosols	23%	30%
Paint Cans	23%	14%

Aluminum Packaging (Reported Recovery Rates)	2003	2015
Overall	**38%**	**39%**
Food & Beverage Cans	41%	42%
Other Aluminum	12%	25%

Plastics Packaging (Reported Recovery Rates)	2003	2015
Overall	**16%**	**32%**
PET Bottles	50%	66%
HDPE Bottles	50%	51%
Plastic Film	6%	12%
Plastic Laminants	1%	4%
Polystyrene	3%	6%
Other Plastics	6%	33%

The big "hurry up" on the Blue Box in case the Liberals lose

AUGUST 31, 2017

When Ontario released the final version of its waste strategy six months ago, dealing with the future financing of the province's popular Blue Box program was at the backend of the queue. Sorting out the respective roles and responsibilities of municipalities and industry, not to mention the thorny issues of legal contracts and stranded assets, was considered so complicated and politically sensitive that the Ministry of Environment and Climate Change pencilled in 2023 (safely after the next provincial election) to complete its transition to 100% industry-pay and individual producer responsibility.

Now the ministry wants a new plan by February! What changed? The governing Liberals started to tank in the public opinion polls and industry and municipal leaders feared that not only would a great opportunity to move forward be lost, but also that an incoming government of different political stripes in 2018 would inevitably mean further delays and a possible fracturing of the current and welcome climate of common interest.

To their credit, municipal and industry leaders have been meeting over the last few months and cobbling together an accord, with the quiet blessing of ministry staff. In July, they asked then minister Glen Murray to buy into their plan to transfer the legal obligations and responsibilities of municipalities to collect and manage the Blue Box to industry stewards (brand holders and others with a commercial connection to the supply of printed paper and packaging into Ontario). This would be done through an amended Blue Box plan that would allow municipalities to opt in or out of providing collection services, and to have an opportunity to participate in processing Blue Box recyclables.

New minister Ballard wants plan by February

Newly appointed minister, Chris Ballard, leapt at this offering in August and has now directed the also new Resource Productivity and Recovery Authority and Stewardship Ontario to develop a proposal for an amended Blue Box Program Plan that will lead to individual producer responsibility down the road. But of course, he couldn't resist adding a bit of direction in an addendum to his approval.

The amended plan *shall* (not may) "use means to discourage the use of materials that are difficult to recycle and have low recovery rates" (*plastics be warned*); increase the diversion target to 75% for the material supplied by stewards in the municipalities where Stewardship Ontario collects and manages the printed paper and packaging (*the current Blue Box diversion rate is 64%*); and "establish material-specific management targets." *We*

are not quite sure where material-specific "management" targets differ from material-specific "diversion" targets, but guess we'll find out shortly.

If all goes well, Ontario will have a new Blue Box plan in February/March and the Liberals will be able to go to the polls saying they have saved the Blue Box (yet again)! Isn't politics fun!

Ontario Blue Box recovery rate slips, but paper steady

NOVEMBER 9, 2017

The reported recovery rate of Ontario's residential Blue Box system has fallen to its lowest level since 2005. The draft recovery rates, to be finalised by Stewardship Ontario in December, show a 2016 recovery rate of 62.4%, down 2% on the previous year. This will make the recent "request" by Ontario's minister of environment and climate change for a new Blue Box recovery rate of 75% rather interesting.

Ontario Blue Box Recovery Rates (draft) 2016	
Blue Box (overall)	62%
Paper (overall)	74%
Printed Paper	81%
Paper Packaging	67%
Aluminium Packaging	38%
Steel Packaging	63%
Glass Packaging	70%
Plastic Packaging	29%

Some 75% of what's currently being recovered is paper of one kind or another, the same as it was back in 2003. Printed paper (newspapers, magazines and catalogues, telephone books and printing and writing paper) has the highest recovery rate overall (81%), followed by glass packaging (70%), paper packaging (67%) and steel packaging (63%).

Paper packaging is the only material grouping whose recovery rate has either stayed at the same level or improved in every category (boxboard up 9%), with corrugated boxes again the recovery leader overall at a hard-to-believe 98 per cent.

The glass recovery rate has dropped significantly from 2015 but the Blue Box laggards continue to be aluminum and plastics packaging at 38% and 29% recovery respectively. Plastics packaging recovery has gone down in almost every category and now represents 43% of what ends up going to disposal (on a weight basis). It's also by far the most expensive material to recover (the net cost of recovering plastic film, for example, is listed at $2,646 a tonne).

Here are the latest (draft) numbers for 2016 with a comparison to 2015 and way back to 2003.

Printed Paper (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	67%	82%	81%	-1%
Newspapers	75%	92%	88%	-4%
Magazines	72%	81%	90%	9%
Telephone Directories	75%	96%	82%	-14%
Other Printed Paper	39%	55%	56%	1%

Paper Packaging (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	48%	64%	67%	3%
Corrugated Boxes	72%	98%	98%	0%
Boxboard Cartons	42%	43%	52%	9%
Gable Top	10%	61%	62%	1%
Aseptic Cartons	10%	23%	26%	3%
Paper Laminants	1%	8%	9%	1%

Glass Packaging (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	59%	80%	70%	-10%
Flint	57%	80%	73%	-7%
Coloured	61%	81%	63%	-18%

Steel Packaging (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	49%	61%	63%	2%
Food & Beverage Cans	53%	71%	69%	-2%
Aerosols	23%	30%	44%	14%
Paint Cans	23%	14%	21%	7%

Aluminum Packaging (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	38%	39%	38%	-1%
Food & Beverage Cans	41%	42%	42%	0%
Other Aluminum	12%	25%	19%	-6%

Plastics Packaging (Reported Recovery Rates)	2003	2015	2016e	% change from 2015
Overall	16%	32%	29%	-3%
PET Bottles	50%	66%	57%	-9%
HDPE Bottles	50%	51%	46%	-5%
Plastic Film	6%	12%	12%	0%
Plastic Laminants	1%	4%	5%	1%
Polystyrene	3%	6%	4%	-2%
Other Plastics	6%	33%	32%	-1%

Source: **analysis of draft 2016 Blue Box data from Stewardship Ontario, compared to 2015 and 2003 data.**

#3. Waste and recycling issues

This series of blogs analyses what ends up in the home (the paperless house is not going to happen anytime soon); looks at why we junk so much good stuff; argues for provincial bans on paper going to landfill; outlines changes in the composition of the waste stream over time (fewer newspapers but more boxes); says we need a combination of better education, convenience and landfill bans if we are to get even close to zero waste; and points out that while Nova Scotia has the best diversion record, people from Prince Edward Island and British Columbia are Canada's 'best recyclers.'

So much for the paperless house!

MARCH 12, 2015

You've heard of the paperless office. What about the paperless house? Not going to happen, at least, not anytime soon.

The weight of paper entering our homes these days is only slightly less than it was 10 years ago. But the types of paper products we use are definitely changing. As we embrace the digital world, we read far fewer newspapers and magazines. Glossy retail catalogues have been replaced by online alternatives, and those heavy paper telephone books have pretty much disappeared for good.

Making up the difference, however, has been a steady increase in the use of paper packaging or what is commonly called cardboard. What we are talking about here are the sturdy corrugated boxes used to deliver the new TV or kitchen appliance. You'll probably find one or two in your basement or garage holding something they never came with. Eventually, you'll put them out for recycling. Likewise your boxboard cartons (cereal and tissue boxes). The other changes you may have noted are fewer steel cans and glass bottles. These have both suffered from competition from plastics packaging which has grown substantially over the decade.

Fortunately, most of the paper products entering your home are high in recycled content and being recycled right across Canada. But that good story deserves a blog all of its own.

What's in Ontario Households (by weight)

Why do we junk so much good stuff?

APRIL 9, 2015

Recent studies have highlighted how much food we waste (both in preparation and in the disposal of scraps) but we are also throwing away some perfectly recyclable other stuff, like paper. Why is this, and what can we do about it?

Here's a look at what Ontario householders put in their trash, somewhat arbitrarily divided into the following three segments: recyclable material that should *not* be there; problem materials that could be redesigned for recyclability; and material that, at least in the short term, is unlikely to be recycled.

1. *Recyclable material that should not be in the garbage*

Almost 80% of the paper in Ontario households is recovered by the province's Blue Box system and sent on for recycling. This is great, but it still means that a lot of paper ends up in landfill: old boxboard cartons, printing and writing paper, even some old newspapers and magazines. You would think that after 30 years of the Blue Box in Ontario that we would be doing much better than this.

> Is it lack of education or convenience, or a combination of the two? Millions of dollars have been spent by individual municipalities on Blue Box promotion and education. "*We accept this.*" "*We don't accept that.*" "*Throw it all together.*" A common province-wide recycling message ("*These materials are collected in every single municipality across Ontario*") would certainly reduce the current confusion and hopefully boost recovery rates.

Many municipalities have tried to encourage better consumer behaviour by limiting the "*garbage opportunity*": by making recycling "free" relative to garbage, that is, by charging for garbage bags or bins; by reducing the number of garbage bags allowed at the curb and/or the frequency of garbage pick-up. We recognize that over 50% of Toronto residents now live in apartment buildings, and that this poses a significant recycling challenge. It's a lot easier to dump something down a garbage chute than to separate the recyclables and carry them in the elevator to a downstairs recycling room.

If three-quarters of the paper, cans and bottles now being trashed by Ontario householders were instead sent for recycling, the overall Blue Box recovery rate would jump from its current 66% to a very impressive 80%, a major achievement.

Another challenge is confidentiality. Householders are reluctant to place their bank/financial statements and bills in the Blue Box. We would suggest buying a good shredder, bagging the shredded paper, and then placing it either in or alongside the Blue Box. And then there's the human brain. A recent study suggests the human brain is wired to perceive flat paper as recyclable but crumpled up paper as trash. *So don't crumple*

your paper!

But it's more than just paper that's missing from Ontario's Blue Box. The recovery rates for aluminum and steel beverage cans, and PET and HDPE bottles, are significantly lower than those being achieved in provinces with beverage deposit/refund programs. The missing tonnes are important**. If three-quarters of the paper, cans and bottles now being trashed by Ontario householders were instead sent for recycling, the overall Blue Box recovery rate would jump from its current 66% to a very impressive 80%, a major achievement.**

2. *Problem materials that could be redesigned for better recyclability*

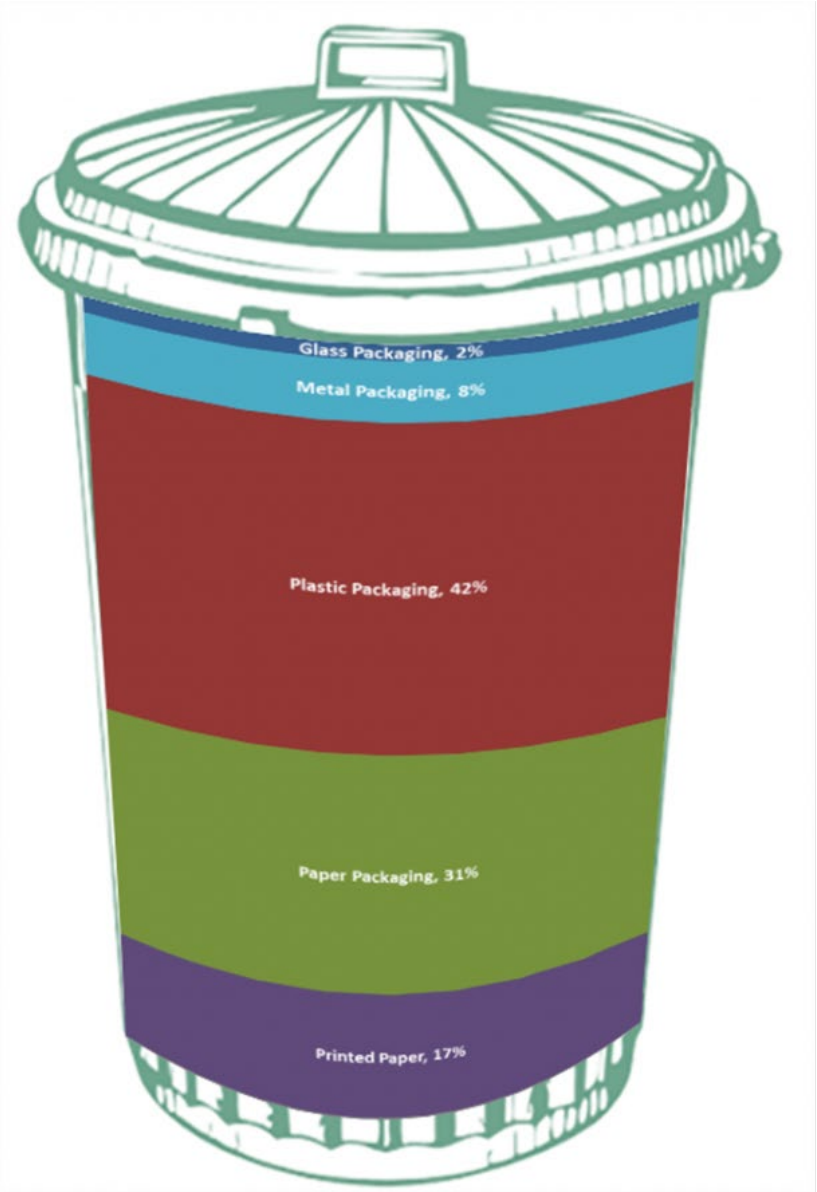
These are potentially recyclable items that pose technical challenges to processors because of their material composition. They include multi-layered laminates, compostable plastic containers and trays, black plastic takeout trays and nursery pots, full shrink wrap labels, metallized tubes, single serve hot beverage pods, coloured opaque PET, and non-PET clamshells. For a concise background document on the recycling challenges that these items pose to North American recycling programs, click here.

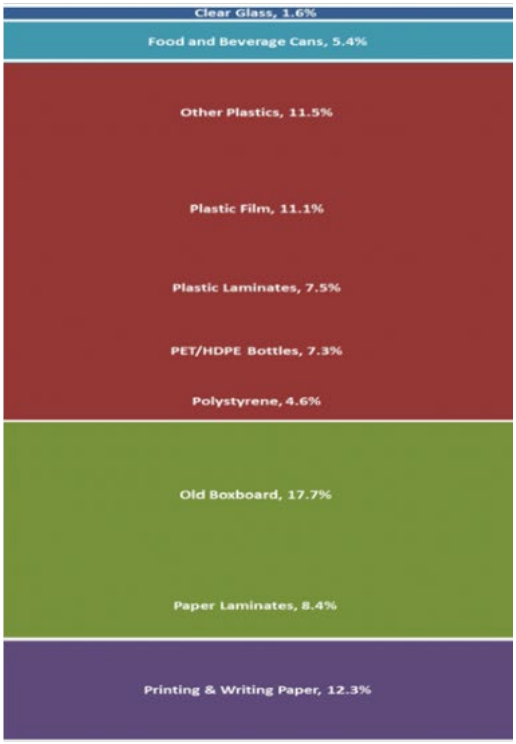
3. *Material that, in the short term at least, is unlikely to be recycled*

These are primarily multi-layered paper-based or plastic laminants that serve a packaging function that is not currently technically or economically achievable through the use of a single material type (and therefore likely to be more easily recycled). These and some of the problem materials noted above are often cited as candidates for energy-from-waste treatment rather than recycling.

So that's what's in our waste and where we're falling short. Now we just have to figure out what to do about it.

There's some good stuff in this trash





Source: PPEC analysis of Stewardship Ontario data for Ontario households (2013).

No good box should go to the dump!

APRIL 20, 2015

The paper packaging industry wants old corrugated boxes banned from landfill. A couple of provinces have already done so (Nova Scotia and PEI) but so far the others (including Quebec, Manitoba and Ontario) have only talked about it. *It's time for action!*

The environmental benefits are clear. We estimate a ban on old corrugated containers (OCC) would reduce Ontario methane and carbon dioxide emissions by up to 175,000 tonnes/year, the equivalent of taking up to 33,000 cars off the road or eliminating the carbon emissions of up to 70,000 homes. It's a move that's perfectly aligned with Ontario's climate change direction and would demonstrate much needed provincial leadership on the waste or resource recovery file.

A ban would also mitigate a looming provincial landfill crisis (80% of Ontario landfills will be full within 15 years), and create between 200 and 300 jobs (a conservative estimate). It could be extended to other paper grades (packaging and printed) for larger impact.

After hazardous wastes and organics, paper in general is the prime candidate for banning from landfill. And if the province is risk averse to banning *all* types of paper from landfill, then a pilot project banning OCC first would be a perfect "guinea pig." Corrugated is a widely recycled material and has been for decades. Its national recovery rate is estimated to be 85 percent. Some 93% of the corrugated that ends up in Ontario homes is captured by the Blue Box(1). Even so, some 200,000 tonnes slips through industry and residential hands every year to end up in Ontario or Michigan landfills.

It shouldn't be there. Every single packaging mill in the province uses old corrugated boxes collected from the back of factories, supermarkets, office buildings, or from curbside, to make new packaging, most of it 100% recycled content(2). We import OCC from the United States because we can't get enough here.

So how about it Ontario? We understand that banning organics from landfill would make a bigger splash in the greenhouse gas stakes than banning corrugated would, but it could take five years for the necessary organics processing infrastructure to be developed.

Why wait for corrugated? We have the infrastructure for recycling it *right now*. If nothing is done to ban corrugated from landfill for five years, that's over a million tonnes of OCC needlessly languishing in landfill when Ontario packaging mills could use it; at least $100 million in foregone recycling revenues; an earlier Ontario landfill crisis; and close to 900,000 tonnes of unnecessary GHG escaping into the atmosphere.

We don't care frankly whether it's a landfill ban on OCC or a disposal or generator-based levy. *Just get the stuff out of there!*

The reports of paper's death are greatly exaggerated

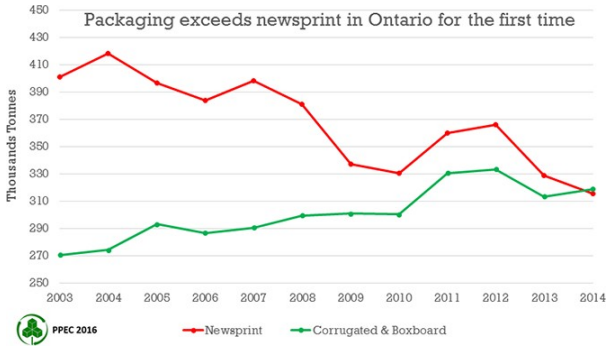
MARCH 28, 2016

We frequently hear and see comments about paper "*dying*" or being supplanted by other materials. It's not happening, or at least not happening in the way many people think.

While the *weight* of paper entering Ontario homes, for example, fell by 8% between 2003 and 2014,(1) at least part of the reason is the continuous light-weighting of paper products that's gone on over the years: newspapers and magazines with narrower pages, fewer flaps and layers of packaging, and a tighter fit between packaging and product. The introduction of lighter, high-performance board or micro-flutes has also displaced what some boxboard or paperboard used to do. Who could have predicted, for example, that a fast-food hamburger would one day be delivered in a lightweight corrugated box! Check out that distinctive corrugated ripple in the packaging next time you visit one of the chains.

Measuring generation by weight, of course, doesn't give a complete picture of what's going on in the marketplace, where volume and sales units rule. But it can be a useful indicator of changing market forces. Printed paper (especially newspapers), for example, has taken a severe hit from its electronic competitors. The weight of newspapers ending up in Ontario homes fell by 21% over the period, magazines and catalogs by 25%, telephone directories by a whopping 47% and "Other Printed Paper" by seven percent. This is the demise part of the paper story we mostly hear about.

But at the same time as printed paper generation declined by 20%, the use of paper packaging increased by 16%, basically offsetting any major changes to paper's overall share. In fact, for the first time in Ontario, more paper packaging (corrugated and boxboard) ended up in the home than newsprint. So paper products, whether printed or packaging, still represent two-thirds of the dry recyclables in Ontario households by weight.



The two main household packaging types (boxboard/paperboard and corrugated) are up 27% and 9% respectively, with the small market gable top and aseptic containers also making significant gains (up 24% and 118 percent).

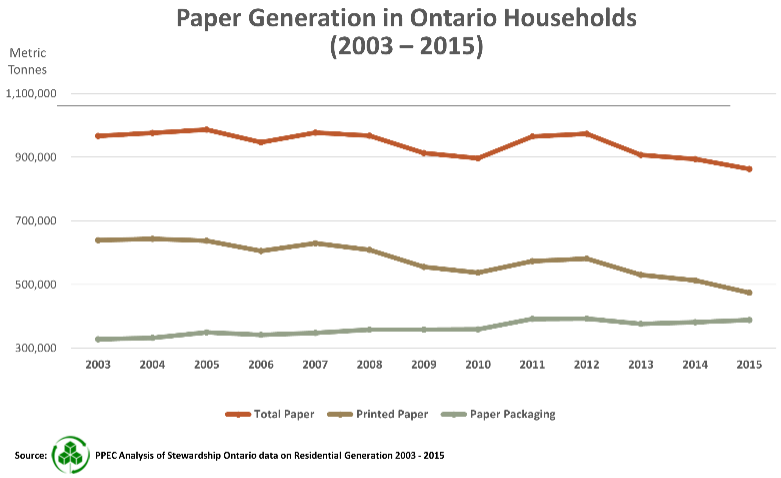
When you put these two changes together (newsprint down and paper packaging up), we pretty much have the status quo, although the trend line within the paper group seems to be clear. And as e-commerce distribution ramps up in Canada, more and more paper packaging (mostly corrugated) is expected to end up in the home. The good news is that most of it is 100% recycled content already, with almost all of it (98%) being collected for further recycling.

Fewer newspapers but more boxes in the home

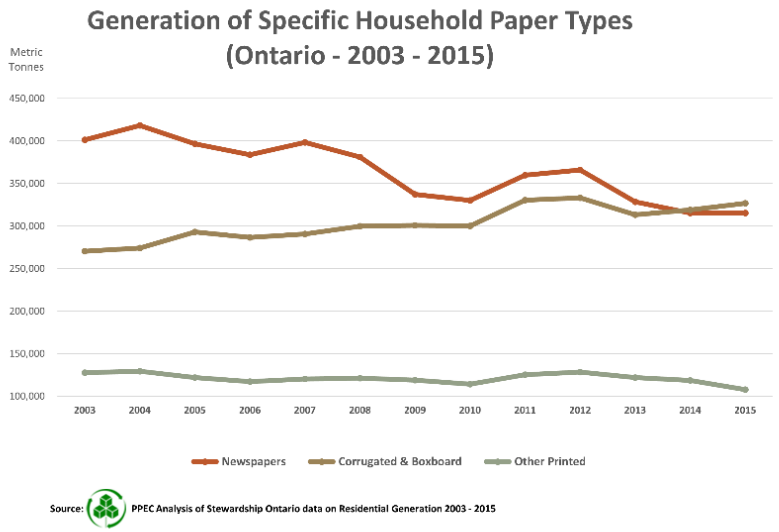
DECEMBER 15, 2016

There's just something about paper! Thirteen years of data on what ends up in Ontario homes tells us that Canadians, or at least those who live in Ontario, cannot or do not want to shuck their paper habit, despite all those urgent exhortations to do so. The paper-less home ain't happening. Well, not yet anyway.

Newspapers, corrugated boxes, boxboard cartons, and printing and writing paper are still the major paper items ending up in Ontario households, a PPEC analysis of residential generation since 2003 reveals. Paper materials today represent some 65% of the dry recyclables in the home, the same as they did back in 2003.



While there has been an 11% drop in overall generation of paper products over the period, some of this can be attributed to the light- weighting of paper and boxes (everything being measured by weight). But most of that lost tonnage has been on the newspaper side in losses to digital competition. It's more than just newspapers, though. Printed papers overall are down by 26% collectively.



The biggest hit by far has been taken by the publisher members of the Canadian Newspaper Association and the Ontario Community Newspaper Association (down 35%), but magazines and catalogues (down 31%) and telephone books especially (down 70%), have been savaged too.

On the paper packaging

side, however, everything except laminated paper is on the up. Corrugated boxes, likely buoyed by the development of e-commerce, and boxboard cartons are both up between 20 and 22%, and the minor grades, gable top and aseptic cartons, have made significant gains too.

The tables outline the generation changes over the 13-year period. The good news, of course, is that most of that paper packaging is made from 100% recycled content material that is widely recycled back into new packaging, an already existing local circular economy. But that's the subject of a future blog.

Paper, paper, everywhere, and not a scrap to waste

FEBRUARY 24, 2017

Every Tuesday night I come face-to-face with the twin issues of consumption and "sustainable materials management" or the latest buzzword favoured by governments, the "circular economy." For Tuesday night is Recycling Night.

From the bathroom and bedroom, I gather toilet rolls and tissue, envelopes and writing paper. From the kitchen and dining room, I grab the box of recyclables holding newspapers, cartons, cans, jars, and bottles; the special food scraps bag (made of compostable paper, of course) that's stored under the sink; and the small "garbage" bag of other stuff. Then I head for the big carts parked in the garage before wheeling the appropriate ones (this week, recycling and organics) out to the curb for the morning pick-up. All told, it takes me maybe five or ten minutes. And I feel good about it, doing my little bit for the circular economy.

What I have learned from this exercise is that education and convenience are key. It is very true, as someone has said, that waste diversion is all about a flick of the wrist, that crucial moment when the householder decides whether something goes into the recycling or into the garbage. If garbage is easier, that's where it goes, and generally, that's where it stays.

I have a special interest in enhancing the recovery of paper, and Ontario's Blue Box system is doing very well in this regard with almost three-quarters of it being sent on for recycling. ***But far too much paper is still slipping through the cracks:*** mainly old boxboard (such as cereal and shoe boxes) and printing and writing paper.

If most (say 85%) of that perfectly recyclable but dumped paper were instead captured and sent for recycling, provincial Blue Box paper recovery would jump to an amazing 96%, and the Ontario Blue Box overall from its current 64% to a very impressive 78 per cent. Folks, this is actually achievable, if only we set our minds to it!

It's not as if there are no steady markets for the various paper materials. There are. In fact, the packaging mills of Southern Ontario led North America in pioneering the recovery of old boxboard back in the 1990s. We have gone from boxboard not being collected at all to virtually all Canadians (94%) being able to recycle it in the space of 20 years. An impressive achievement.

No, the issue is not markets, as some government people will tell you, it is ***capture.*** We are not physically getting enough paper material out of the home because it's too easy for householders to flick the wrist. So how do we get them to flick in the right direction?
Education is key. We drool over British Columbia's new Blue Box program where there is a standard list of materials accepted province-wide. Imagine

We need education, convenience, and disposal bans to get even close to zero waste

that! One consistent recycling message across the whole province. Wouldn't that be great! Remove the confusion. Save money on promotion. Increase the capture rate.

But we also need to engineer the Blue Box system for greater convenience. Municipalities and their service providers have been very creative in this respect: encouraging recycling by charging for garbage bags or bins and by limiting the number of garbage bags allowed at the curb and/or the frequency of garbage pick-up. Restrict the "garbage opportunity" and encourage recycling. Great stuff. And we do recognize that multi-residential apartments represent a special problem. It's a lot easier to dump something down a garbage chute than to separate the recyclables and carry them in the elevator to a downstairs recycling bin.

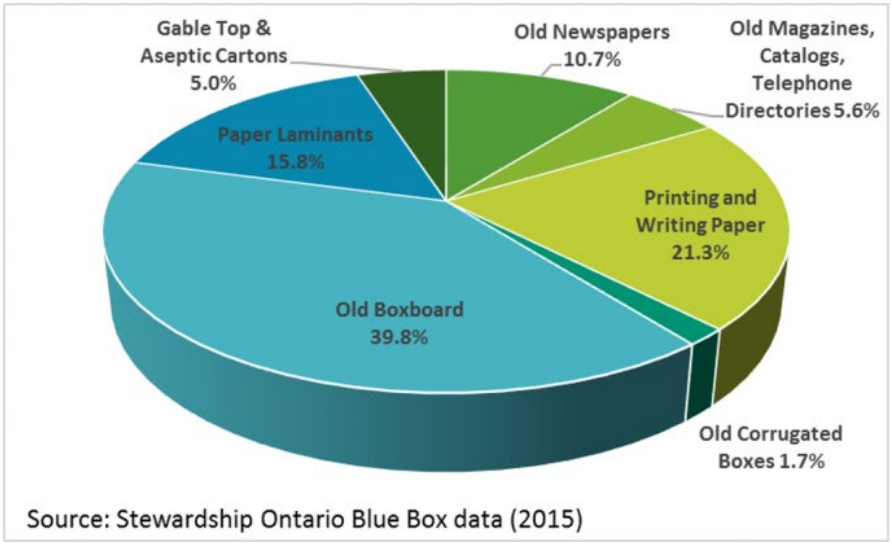
But somehow we have to educate Canadians that most paper materials are perfectly recyclable; that there are long-standing and sustainable markets for them; that most boxes and cartons made in Canada, for example, are *already 100% recycled content*, and that the industry needs this household paper as feedstock to make new packaging; that this ongoing recycling activity provides local jobs and taxes; and that paper recovery is a great example of the circular economy and the goal of zero waste that we all hopefully aspire to, and is in our collective best interests.

Provincial governments have a key role to play too, in getting more paper out of the waste stream. For years, governments have been telling the packaging industry to reduce, re-use, and recycle. And it's been doing that. But guess what, the provinces can do something too, something that industry can't. They can introduce disposal bans on materials headed to landfill.

How about it? It's not as if it hasn't been done before. Nova Scotia and PEI have had disposal bans on paper materials for years. Wouldn't a disposal ban send a great message to everyone that paper doesn't belong in landfill; that it's a valuable feedstock; that banning it from the dump would reduce the greenhouse gases released to the atmosphere and mitigate climate change? Isn't that what we're all supposed to be doing?

The English novelist Charles Dickens once described politics as the art of scurrying nowhere in a violent hurry. We wish some governments (OK, Ontario in particular) would scurry somewhere fast (hint: disposal bans) in more of a hurry! At the moment the province is not even *considering* disposal bans on paper until *"2019 and beyond."* Which just happens to be safely past the next scheduled elections. Shame on them! Hurry hard!

Household paper that shouldn't be in the garbage (the 26% that doesn't make it to the Blue Box



Canadians are dumping more, and less, at the same time!

APRIL 18, 2017

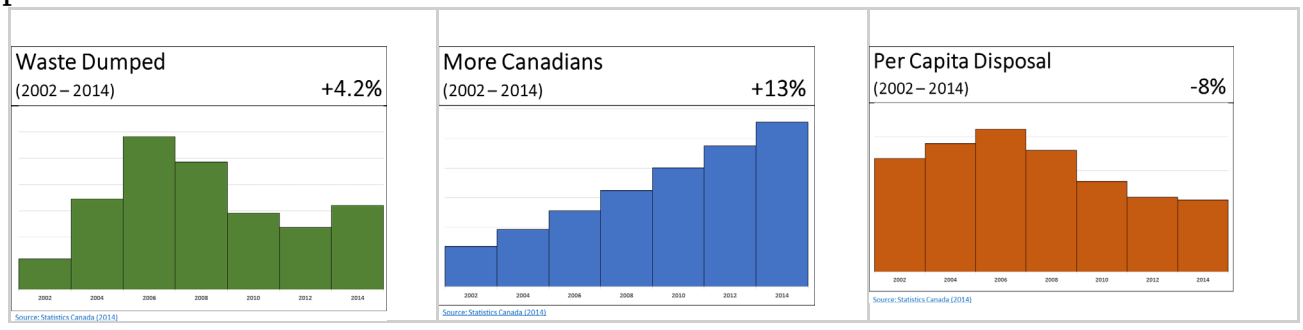
Call us multi-taskers. According to the latest waste disposal data from Statistics Canada, Canadians dumped 25.1 million tonnes of waste in 2014, a million tonnes more than we did 12 years ago. So on that score, Canada's waste pile is growing. Not good news.

Waste Disposal by Province Kilograms per Capita (2014)	
Nova Scotia	386
British Columbia	586
Ontario	670
New Brunswick	673
Quebec	696
Newfoundland and Labrador	786
Manitoba	801
Saskatchewan	839
Alberta	997

But because there are 13% more of us now than there were back in 2002, we get to spread that extra million tonnes among more people. What this means is that as individual Canadians, we actually sent 8% less to the dump today than we did before. Only statistics can make you look good and bad at the same time! It gets more interesting when you dive into provincial performance over the same period. *In tonnage terms*, Nova Scotia and Ontario have performed the best (down 6% and 5% respectively) with Alberta and New Brunswick standing out as the bad guys. Alberta's waste heap has increased by 42% since 2002 and New Brunswick's by 23 per cent, with Saskatchewan and Manitoba not far behind (up 18% and 15% respectively).

On a per capita basis, Nova Scotia is by far the best performer at 386 kilograms of waste per person. From there you jump to 586 kilograms (British Columbia), 670 kilograms (Ontario), 673 kilograms (New Brunswick), 696 kilograms (Quebec), 786 kilograms (Newfoundland and Labrador), 801 kilograms (Manitoba) and 839 kilograms (Saskatchewan). Alberta heads the pack at almost a tonne (997 kilograms) per person.

Clearly, Nova Scotia is the model to follow if Canada's bulging waste line is to be reduced. How much of Nova Scotia's success can be attributed to its longstanding disposal bans on organics and paper is unknown. No other provinces have yet followed its lead in this respect. As for laggard Alberta, it's got a long way to catch up.



Prince Edward Islanders and British Columbians are Canada's "best recyclers"

MAY 23, 2017

The people of Prince Edward Island and British Columbia are the "best recyclers" in Canada and "*Newfies"* and Manitobans the worst, according to PPEC's analysis of the latest data from Statistics Canada. The average Canadian recycles 255 kilograms of stuff a year, the equivalent of about 11 heavy suitcases.

Analysis of Statistics Canada Report (2014)

The data covers the industrial, commercial, and residential waste streams of paper, plastic, glass, metals, textiles, organics (food), electronics, white goods such as fridges and appliances, and construction, renovation and demolition materials like wood, drywall, doors, windows, and wiring. It excludes materials from land clearing and asphalt, concrete, bricks, and clean sand and gravel.

The diversion numbers from landfill and incineration are likely understated because they don't include beverage recycling in provincial deposit/refund programs or the mostly paper materials that go from a retailer, say, direct to a paper recycling mill, rather than through a waste hauler or local government.

The *weight* (or tonnes) of waste diverted or recycled by Canadians has increased by 36% since 2002. That's good, but our diversion efforts as individual Canadians (*per capita*) are less impressive (20% better over the same period). Several provinces

have done very well (Nova Scotia up 44%, Quebec up 38%, and Saskatchewan up 32%). But Manitoba and Alberta are going backwards, and Newfoundland and Labrador remains way at the bottom with the lowest diversion rate per capita in Canada.

Waste Diversion by Province

Kilograms per Capita (2014)

	2014	% Change 2002
Prince Edward Island	429	N/A*
British Columbia	358	+21%
Quebec	324	+38%
Nova Scotia	296	+44%
CANADA	**255**	**+20%**
Ontario	222	+19%
Alberta	195	-12%
New Brunswick	180	+3%
Saskatchewan	155	+32%
Yukon, NWT and Nunavut	153	N/A*
Manitoba	144	-23%
Newfoundland and Labrador	57	-2%

Analysis of Statistics Canada Reports

*** N/A Suppressed to meet the confidentiality requirements of the Statistics Act.**

There are explanations for why provincial diversion performance is so uneven. Stay tuned. For background, see our previous blogs in this series: Canadians are dumping more, and less, at the same time! (April 19) and Canada diverting only 27% of its waste (April 27).

#4. Paper versus plastic bags

The debate on the respective environmental merits of paper and plastic bags has been going on for decades. This series of blogs begins in 2013 when the Canadian plastics industry, threatened by a possible ban on single-use shopping bags in Toronto, launched a deliberate smear campaign against its competitors, the reusable bag and the paper bag.

The paper industry responded, forcing the plastic folks to remove "one dirty lie" from its website; pointing out the renewable nature of trees (compared to the use of non-renewable fossil fuels for plastics); and attacking "studies" that used incomplete life cycle inventory or select environmental indicators to make a questionable sales pitch whose aim was to denigrate competing materials.

One blog questions why the plastics' industry quotes European bag studies (that use old data, are of varying quality and relevance, and include no Canadian data on how bags are made in this country). Another shows how the plastic bag lobby embellished the credentials of a study it quoted. A third takes the plastic industry to task for blatantly misleading Montrealers about both paper and plastic bags.

One dirty lie removed from plastics' industry website …

FEBRUARY 11, 2013

The Canadian Plastics Industry Association (CPIA) this past weekend quietly removed a claim on its website about the use of trees to make paper bags, after mounting pressure from PPEC. So far, however, we have not received an apology from either CPIA or its consultant1.1

This was the CPIA claim: that kraft paper production "is very resource intensive because it uses only half of the tree. The other 50% of the tree ends up as sludge which is burned, spread on land or shipped to landfill." Leaves a nice image, doesn't it? If this were true, there would be no kraft pulp-making industry in Canada or anywhere else, as its balance from raw material to product (wood to pulp, to make paper and paperboard) would be ridiculously uneconomic.

Virtually 100% of any tree harvested for kraft paper production is used and/or re-used.

In fact, virtually 100% of any tree harvested for kraft paper production is used and/or re-used. Here are some quotes from the website of just one of the three Canadian mills that makes paper bag material: "Branches and needles (the most valuable parts of the tree for their nutrient value) are returned to the forest soil. Bark and other wood residuals are efficiently combusted to make electricity, or they are processed into wood pellets for energy systems. Logs are sawn into lumber. Wood chips and other residual material (from sawmilling) are used to produce not only pulp and paper but also the very energy that drives the kraft process."

A modern kraft mill, in fact, "operates as a large-scale bio-refinery, separating fibres from one another, using the non-fibrous components (such as lignin, hemicelluloses) as fuel, minimizing waste and ecological impact. Not unlike the efficient closed loop system of nature, the by-products of one part of the process become the fuel for another[2]." 2

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[1] Email from Sally Potter, PR Post, Consultant for CPIA, Feb.7, 2013 re: Substantiation of claims made on the "Allaboutbags" website.

[2] *Sustainability Report 2011*, Canfor Pulp Products, page 10. Canfor has the following certifications: Forest Stewardship Council Controlled Wood and Chain of Custody; Programme for the Endorsement of Forest Certification (PEFC); and the new EcoLogo Standard (CCD-003) for Renewable Electricity.

CPIA's research on this topic was incredibly sloppy. What's so hard about making three phone calls or searching just three mill websites? Not to mention a PPEC press release that clearly stated that all kraft pulp producing mills in Canada "generate steam and electricity from wood and process wastes (chips, shavings, sawdust) (and that) these are burned in the mills' recovery and power boilers to (generate process steam and electricity) and to recover the pulp-making chemicals[3]." 3

Willful ignorance or deliberate smear? You be the judge.

[3] PPEC press release of August 14, 2012 (before the launch of CPIA's website)

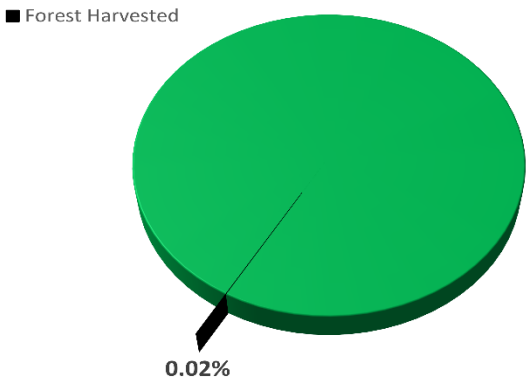
So where are all those trees we are 'killing'?

FEBRUARY 26, 2013

When retailers started dropping plastic bags in favour of paper a few years ago, the Canadian Plastics Industry Association (CPIA) responded by labelling paper bags as "*tree-hungry.*" More recently, the lobby against Toronto's proposed ban on plastic bags urged city councillors to "*Save a tree. Reverse the bag ban*." Today, the pattern continues, with CPIA claiming that the plastic bag was invented "to protect trees and prevent clear-cutting of our forests[1]."

So where are all those trees we are 'killing'? Check out the thin black line in the sea of green below:

The line represents just how little of Canada's commercial forest was actually harvested by the paper and lumber industries in the most recent year for which data is available. That's the *whole* industry: timber for housing and construction; pulp and paper for newspapers; office supplies; tissue; and a tiny little bit for packaging grades. In total: *less than 0.2%.*



These are not *our* numbers. They come from Natural Resources Canada, the federal government department that's charged with compiling an annual report on the state of Canada's forests[2]. Here are some more inconvenient facts to consider:

- Over 70% of Canada's forested area has *never* been harvested[3]
- Canada's forest cover and wooded area has remained fairly constant over the past 20 years[4]
- Canada's use of forest resources and protection of endangered species both received "A" grades in a recent comparative study of 17 countries[5] [
- Some 38% of the world's independent, third-party, certified forests are right

[1] Natural Resources Canada, *The State of Canada's Forests*, Annual Report 2012, page 11. http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/34055.pdf

[2] OECD, *Environmental Performance Reviews: Canada* (Paris: OECD, 2004) 85, quoted in Conference Board of Canada *How Canada Performs*, Use of Forest Resources, January 2013.

[3] Conference Board of Canada, *How Canada Performs*, Forest Cover Change,*ibid.*

[4] *How Canada Performs*, Use of Forest Resources, Threatened Species, *ibid.*

[5] Canadian Standards Association (CSA), Sustainable Forestry Initiative (SFI), Forest Stewardship Council (FSC).http://www.certificationcanada.org/english/status_intentions/status.php

here in Canada[6]

- One of the three Canadian mills that produces paper bag material uses predominantly recycled pulp (old corrugated boxes collected from the back of supermarkets and factories or from curbside) while the other two use wood chips and sawdust left over from sawmilling operations (for lumber production). For these mills, a fresh supply of tree material (to be shared with lumber) is only harvested when they can't get enough chips and sawdust. All three mills are certified by internationally recognised, independent, third-party sustainable forest management programs[7][7].

Oh, and we almost forgot to mention that we don't just "kill" trees, we also *re-grow* them. About 67% of the harvest is currently regenerated through tree planting and direct seeding (some 500 million seedlings per year or 1.4 million seedlings per day), while the remainder is regenerated naturally[8]. So basically the industry balances the harvest of the trees it needs, with the re-growth of the new forest. And according to Natural Resources Canada and the Conference Board, we're doing a pretty good job of it.

So we have to ask: how are the plastic guys doing? Where's *their* independent, third-party certification of how they extract *their* primary raw materials (crude oil and natural gas) from Alberta, China, or somewhere else? And how exactly do they plan to *re-grow* that oil and gas? Just asking.

Clear-cutting is not the evil CPIA makes it out to be. It is recognised as a harvesting method by sustainable forest management standards such as PEFC, CSA, SFI and FSC. In its latest *Sustainable Procurement* Guide, the World Resources Institute and World Business Council for Sustainable Development acknowledges that "Clear-cutti ng can accomplish the following: it mimics some of the natural disturbance dynamics of the forests (e.g. fire, wind blow-downs, insects); in some ecosystems, it allows regeneration and rapid growth of certain tree species; it costs less; making forestry more economically viable; (and) it provides safer working conditions for loggers." *Sustainable Procurement of Wood and Paper-based Products*, Version 3 Update December 2012, page 2.60 www.SustainableForestProducts.org

[6] CSA, Programme for the Endorsement of Forest Certification (PEFC), FSC.

[7] Natural Resources Canada, *ibid., National Forestry Database, 2010*

Stepping into the minefield of life cycle analysis (LCA)

APRIL 7, 2014

A few months back we reported a critique of a comparative life cycle study commissioned by reusable plastic crate company, IFCO, which is trying to displace its competitor product, the corrugated box, from the fresh produce market (blog July, 2013).

IFCO's LCA was roundly criticised by our US colleagues (who are about to release their own study) basically for its incomplete life cycle inventory; its selection of a limited number of environmental indicators; and its lack of robustness (i.e. it is good practice in LCA to crosscheck findings using alternative impact assessment methods to confirm or challenge the results and conclusions). IFCO got the point, and recently announced it would be funding more LCA work to fill the gaps.

Which brings us to the recent media blitz launched by the US and Canadian plastic industries to announce the conclusions of a new study they have commissioned: that replacing current plastic packaging with "substitute materials" will only increase energy use and emissions potential. The devil is always in the details of these studies and they take considerable time to fully analyse and review (which is what we are doing).

Impact on marine life not discussed We do note, however, that this particular study is *even more limited* in its approach than the IFCO study noted above: that it looks only at energy consumption and greenhouse gas emissions. You won't find anything here about the sustainability of exploiting oil and natural gas deposits and not being able to replace them, or the impact of plastic generally on marine life.

The authors (if not the promoters) acknowledge these limitations. "The study is limited to an assessment of energy and GHG impacts (only) and does not include an expanded set of environmental indicators." This is like being asked to buy a new car based on earnest entreaties that two of its features, say tires and brakes, out-perform all other models on the road.

The authors also acknowledge that their substitution analysis "does not meet the ISO 14044 criteria for requiring a panel peer review." The results, they say, are "not intended to be used as the basis for comparative environmental claims or purchasing decisions.[1]" Maybe the authors need to have a quiet word with the funders and promoters of their study on that one.

1 The results of the substitution analysis in this report are not intended to be used as the basis for comparative environmental claims or purchasing decisions for specific packaging products, but rather are intended to provide a snapshot of the energy and GHG impacts of the current overall mix of plastic packaging in several categories, and the energy and GHG impacts of the overall mix of alternative types of packaging that might be used as substitutes. While this study examines packaging impacts using a life cycle approach, the study is limited to an assessment of energy and GHG impacts and does not include an expanded set of environmental indicators. Because the study assesses only energy and GHG impacts, and because the study is not intended for use in making comparative environmental claims about specific packaging products, the substitution analysis does not meet the ISO 14044 criteria for requiring a panel peer review.

"Plastic still the future," according to Canadian Packaging magazine

JULY 8, 2015

The plastics industry is besieged on multiple fronts and widely depicted as the "archetypical eco-villain of the modern world," according to the editor of *Canadian Packaging* magazine. He then latches onto an American Chemical Council study that purports to show how much worse the world would be environmentally if plastics were replaced by competing materials such as paper, glass and metal.

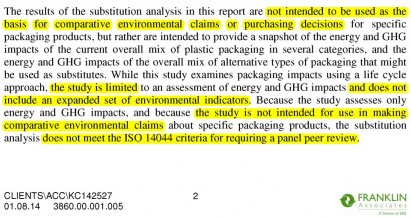
Whatever we say on this subject is bound to be construed by certain parties as biased and confrontational since we compete with our plastic colleagues on many fronts. The reality, however, is that many of our members have a foot in both camps, producing both paper and plastic packaging, the better to serve their customer base. And it's not as if we, as paper, do not have some empathy for the current disrepute the plastics industry generally finds itself in.

Let's not confuse credible, complete, peer-reviewed life cycle research with what amounts to a questionable sales pitch aimed as denigrating competing materials.

Remember the "forest wars" of the 1980s and 1990s and the dioxin threat? Paper was a dirty word. What we do find difficult to digest, however, is the editor's uncritical support for, and fulsome quotation from, the particular report he cites. This study, sponsored by the plastics industry, is far from being as "scientifically and empirically sound" as he claims. For starters, it looks only at *two* (just two) life cycle components (energy consumption and greenhouse gas emissions). You won't find anything here about air pollution, the sustainability of exploiting non-renewable oil and natural gas deposits, or the impact of plastic litter on marine life. So the study is not a complete life cycle analysis, it's a *partial* one.

The authors acknowledge this. The study "*does not include an expanded set of environmental indicators.*" Nor does it "*meet the ISO 14044 criteria for requiring a panel peer review.*" Its conclusions, the authors add, are "*not intended to be used as the basis for comparative environmental claims or purchasing decisions.*"

So why are they being used publicly for that very purpose? And why is *Canadian Packaging* repeating them unquestioningly as if to prove that plastics ain't that bad? Plastics have their place. And some good things come in plastic. But let's not confuse credible, complete, peer-reviewed life cycle research with what amounts to a questionable sales pitch aimed at denigrating competing materials.



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FRANKLIN ASSOCIATES

Authors of this report acknowledge its limitations

Old European "life cycle'' studies are of little use in Canadian bag wars

MARCH 7, 2016

When the plastics industry promotes and widely circulates false and misleading claims about the environmental impact of paper bags in Canada we have an obligation to defend ourselves, and to ensure that Canadians get *all* the facts, not just some of them.
What we find particularly offensive is the public parade of various European "life cycle" studies in support of the claim that paper bags are bad or worse for the environment than plastic ones. None of these studies, in fact, reflect the realities of *Canadian* paper bag production. They are old, of varying quality and relevance, and not one of them includes *Canadian* data on how bags are actually made in this country.

These studies are old, of varying quality and relevance, and not one of them includes *Canadian* data on how bags are actually made in this country.

1. The data is old

Accurate data is critical to life cycle conclusions. The respected not-for-profit Institute for Environmental Research and Education (IERE) says that all *primary* data (data gathered directly from actual bag-making operations, for example) "shall be no more than three years old."*Secondary* data (gathered from publications in the peer reviewed literature or grey literature such as government publications) "must be no more than 10 years old, unless it can be verified by an industry expert to be unchanged."

When we look at the European studies that the Canadian plastics industry loves to quote, however, and which it splashes all over its bag-specific website, we see that *every single one of them includes data that is over 10 years old.* The UK Environment Agency Report (Data requirements and data quality 3.5, and Annex C Description of Inventory Data) was published in 2011 for the data year 2006 but in fact uses life cycle inventory data that stretches back to 1999 (*17 years)*; and the Scottish Report adjusts data from an earlier French study (Carrefour) whose data was "*taken largely from the mid to late 1990s.*"

That's over 20 years ago! Around the time of the Million Man March in Washington DC or the murder trial of OJ Simpson; Jack Nicklaus winning the British Open or former US Vice President Al Gore helping push the internet from academia into schools for the first time!

2. The studies vary in quality and relevance

If you are going to quote life cycle assessments (LCAs) then at least quote the ones that are current (not old, as noted above) and ones that meet internationally acceptable standards for comparative analysis (ISO 14020, ISO 14021, ISO 14025, ISO

14040, ISO 14044, and ISO 14050).

Only two of the European studies cited were original LCAs. And both have problem areas which the authors and/or other life cycle practitioners have acknowledged. The Carrefour study was specific to France and how that country made and imported bags using data back in the 1990s; its relative treatment of greenhouse gas emissions at end-of-life has been questioned; and it used a different functional (measuring) unit than the other, later studies.

The UK study acknowledged that most plastic carrier bags were imported from Asia, but because no Chinese data-sets were identified, it modified average numbers supplied by the European plastics industry instead. Its Final Review statement also agreed that no clear comparison had been established based on the functional unit (thus not meeting a key ISO requirement).

And the Scottish Report, which the plastics industry says has "some of the most credible data," was neither an original LCA nor peer reviewed, and acknowledged that its findings "cannot be used for a precise quantification of environmental impacts. This would require a full life cycle analysis based on the Scottish situation, which is outside the scope of this study."

And here's the clincher!

3. **There is no Canadian data in these studies!**

We learn something about French, Spanish, Italian, Turkish, Malaysian and Chinese bags but nothing about *Canadian* bags from these studies. We learn about France's energy grid (highly nuclear) and China's energy grid (78% coal-burning at the time of one of the studies), but nothing about *Canada's* energy grid (which is quite different). And this is crucial, because energy consumption is the major environmental impact category for every type of bag.

Life cycle experts like IERE say that "wherever possible, the electric grid data should represent the electricity purchased or generated by the local entity." If that data is not available then you move to aggregated regional or national data.

So until *Canadian* energy data is used, as just one example, these studies have little relevance to Canada. The Canadian plastics industry tacitly acknowledges this when it rushes to point out that most Canadian plastic bags are not made from dirty coal or crude oil from China but rather from fossil fuel extraction in Alberta. But for some reason it doesn't extend the same Canadian-specific rights to the Canadian paper bag industry for its high use of leftover sawmill residues and r*enewable*, carbon-neutral biomass.

It's not as if we haven't told them this before, numerous times. We have. Maybe, just maybe, incorporating this science and these facts into their public messaging to Canadians would seriously impact their preferred story line of paper bags being worse than plastic.

Hopefully, for its own credibility if nothing else, the plastics industry will do the honourable thing and delete these old and irrelevant-to-Canada studies from its website. And while it's at it, maybe, just maybe, it will cover off one key factor that these studies and its bags website *don't*address, the impact of bag litter on marine life, a growing environmental concern.

Plastics industry makes false claims for bag study

APRIL 15, 2016

The Canadian plastics industry is embellishing the credentials of a study it says proves that plastic bags are more "environmentally friendly" than paper bags.

The industry's website claims that the ULS Report (2007) "*was completed according to ISO standards 14040- 14043, and was peer reviewed by North Carolina State University.*" In fact, the ULS study (or more correctly, its updated version of March 2008) was *never* an original life cycle assessment; *never* claimed to meet ISO standards; nor does it claim to have been peer reviewed by independent life cycle experts.

While they are correcting that sloppy and embarrassing error, perhaps the plastic folks will address some of the other false and misleading claims on their website. Here's two for starters:

False Claim 1: "That kraft paper grocery bags have to be made from virgin pulp, not recycled pulp, to be suitably durable for market use."

FACT: Paper grocery bags can be made from both virgin pulp and recycled pulp or a blend of the two. It all depends on the bag specifications of the customer (for strength, durability, printability and so on). A lot of the retail paper bags used in Canada today are 100% recycled content.

False Claim 2: "That post-consumer recycled paper cannot be used to carry heavy items. It is too weak. This often results in double bagging groceries, which doubles waste."

FACT: As noted above, a lot of paper retail bags today are made from 100% recycled content material (mostly from old corrugated boxes collected from the back of supermarkets and factories, office buildings or from curbside). Most paper packaging in Canada, in fact, is 100% recycled content and all of it performs to customers' specifications. As for double bagging, we suggest the plastic folks visit their local store to see firsthand what's going on with plastic bags. And then maybe check out the local trees, rivers and lakes where some of their products end up.

Plastic lobby tells a big whopper, continues to smear paper bags

OCTOBER 4, 2016

As whoppers go, this is a big one. The plastics lobby wants you to believe that *only 7% of plastic shopping bags are thrown away* in Montreal: *"ZERO WASTE – CLOSE TO IT,"* it proudly claims. *What a stretch!*

The claim is blatantly misleading and dishonest. What the plastics lobby has done is combine a re-use estimate with a recycling estimate to come up with an impressive 93% total. The problem is that *almost two-thirds* of that total is bags re-used for household garbage or pet waste. **Yes, bags that will shortly be in the dump or roaming the streets as litter.**

To claim that "*only 7% of the bags* (in Montreal) *are thrown away"* and that *"bag waste management is very close to zero waste"* when in fact *almost 70% of them end up in landfill*, is blatantly misleading. This claim shifts all of the environmental burden off of shopping bags and onto garbage bags.

It is also false accounting. Think of all those used corrugated boxes in your garage or basement holding stuff they didn't deliver in the first place. Are we going to count them as "re-use" now, as the plastics folks are doing, so that we can claim that virtually no corrugated boxes go to landfill? In fact, if we did what the plastics people are doing for bags and added the re-use number for corrugated to the recycling number for corrugated in Ontario households (98%), poof, we'd be over 100% easily! Yeah baby, we're even ***better*** than zero waste!

The recycled percentage is also questionable. It's for plastic bags *collected,* not *actually recycled*. Ask the operator of a material recovery facility (MRF) how many plastic bags have to be removed from their machinery and sent to landfill, or a paper recycling mill how much plastic film ends up as residue and has to be dumped at their expense, and you'll start to get more accurate numbers.

And, of course, facing bans on bags in various cities, the plastics industry can't resist having a go at plastic alternatives such as reusable bags and paper bags. It's been doing this for a while, mainly through a website that's rather ironically called *"all* about bags." Well, not quite all about bags. Its special section on litter somehow neglects to mention the fact that bags end up in our rivers, lakes and oceans.

And it gives an entirely false impression of paper bag production and environmental performance in Canada. We have previously pointed out one dirty lie and several factual errors on this site. There are also some major holes in the waste management comparison it tries to make. For starters, a typical paper bag carries more goods than a plastic bag (a fact recognised by life cycle experts). So you can't crunch numbers based on the assumption that one paper bag will replace just one plastic bag. It's more than that. And this, of course, changes any calculations of greenhouse gas impact.

Nor can you assume that all banned plastic bags will be replaced by paper bags. In reality, bans on plastic bags seem to achieve major reductions in plastic bag usage (straight reduction) and a significant increase in reusable bags. We don't see new *paper* bag mills springing up everywhere!

In the same vein, the net cost of recycling plastic film in the recycling system is more than six times the cost of recycling paper bags in a corrugated bale. So there are huge *avoided costs* (savings) that have to be taken into account when plastic bags are replaced.

And then there's the so-called life cycle studies (LCAs) that the plastics industry loves to promote. As we have pointed out before, most of these are old; of varying quality and relevance; and perhaps most significantly, incorporate no actual data on paper and plastic bag production in Canada. Assumptions and conclusions based on studies of how French, Spanish, Italian, Turkish, Malaysian, and Chinese paper and plastic bags were made up to 20 years ago, are of little value to us in Canada today!

The high amount of sawmill residues and *renewable* energy (carbon-neutral biomass) that are used to make bag material in Canada are *not taken into account* in the life cycle studies being promoted by the plastic folks. So making claims that solid waste management costs in Montreal and elsewhere will skyrocket and greenhouse gas emissions soar if plastic bags are replaced by paper bags, are spurious, to say the least.

Until these key paper production issues (the use of sawmill residues and renewable energy) and the impact of marine litter are factored into LCAs, we are not, however, going to claim that paper bags are *"environmentally friendlier"* (a phrase the Competitions Bureau cautions against using anyway). But we *will* continue to point out the false claims, the misrepresentations, and yes the big whoppers made by our less principled competitors.

#5. Re-use is not always the better alternative

Back in 2013, a University of Guelph food scientist raised serious concerns about plastic crates being re-used to ship fresh fruit and vegetables in Canada. They were insufficiently sanitized and dirty, and a "recipe for disaster," he said. A year later, in a more robust study, the results he found were even worse, with *E-coli* discovered on 13% of the crates tested. It was suggested that some crates were simply being hosed down and transferred between farm and retailer rather than being shipped to a dedicated washing and sanitization facility.

A separate study (by the University of Arkansas) then found that typical industry cleaning processes didn't kill off all cells of salmonella. They remained in niches and cracks in the crate after the cleaning process.

The blogs outline the facts and fiction over this contentious issue: the various studies both on crates and its competitor, the corrugated box; and the misinformation spread about waxed boxes all going to landfill. There's also the question of the increased environmental burden of the re-use option. Read the blog with the best title I've come up with yet: *A moving (and puzzling) story about dead Toronto chickens!*

Loblaw and IFCO need to clean up their act

OCTOBER 15, 2013

A just-released University of Guelph study has raised serious health concerns about reusable plastic containers (RPCs) being used to ship fresh fruit and vegetables in Canada. Crates pose significant risks of microbiological contamination, claims the author, Director of Food Safety and Quality, Dr. Keith Warriner. Human pathogens such as *salmonella, norovirus* and *cyclospora* could be transferred to produce, he warns. Plant pathogens could also be transferred, resulting in premature spoilage. Using RPCs to ship food, he concludes, is "a recipe for disaster." A full copy of the report and press release is available here

Admittedly this is a very limited (small sample) study. The Canadian corrugated box industry (which PPEC represents on environmental issues) also has a commercial interest in this matter since the traditional corrugated box and RPCs are duking it out for a share of the Canadian fresh produce market. The chief proponent of replacing corrugated with RPCs has been Loblaw and its crate rental partner, IFCO. Loblaw has been pressing Canadian growers to rent crates which are then shipped back to the United States for cleaning and re-use.

Dr. Keith Warriner, Director of Food Safety and Quality

The problem, according to the Warriner report, is that the crates are not being cleaned well enough, thus posing potential food safety and contamination issues for both Canadian consumers and crops. Warriner found the washing and sanitisation process for the crates to be inconsistent and insufficient. Many of the crates observed were damaged (providing niches for contamination) and visibly dirty (something Ontario and Quebec growers have been complaining about for a while). Several crates still had labels attached from their previous use, suggesting they were inadequately decontaminated or avoiding the re-wash cycle south of the border entirely.

Canadian growers have been somewhat reluctant participants in this Loblaw-driven enterprise, and for commercial reasons have not been willing to say too much publicly. Now that the growers have some independent proof of the concerns they have been voicing all along, it's time for Loblaw/IFCO to step forward and clean up their act. After all, if Canadians can't carry a fresh apple or an orange across the border (for plant and human health and safety reasons) why shouldn't the same principle (health and safety) apply to *crates* coming across the border, especially when, as Warriner points out, many of them are insufficiently sanitised and dirty?

Re-use is not always the better alternative

OCTOBER 27, 2014

A year ago, a food safety expert at the University of Guelph claimed that using reusable plastic crates (RPCs) to ship food in Canada was "a recipe for disaster[1]". The claim made headlines even as Dr. Keith Warriner, Director of Food Safety and Quality, freely acknowledged that the data he used to derive his conclusion came from a small sample size. Now, after completing a second, more robust study, he's sticking to his guns.

In his latest sampling of new and supposedly clean RPCs delivered to growers' farms in Ontario and Quebec, Warriner found a high proportion of crates to be in poor sanitary condition, even worse than in last year's study. Of particular concern was the high prevalence of food safety indicators, especially *E. coli* on 13% of the crates tested. While most strains of *E. coli*are harmless, some strains can make people sick, causing severe stomach cramps, diarrhea and vomiting. Serious complications of an *E. coli o157:H7* infection can include kidney failure[2]. *The key is the risk factor.*

Ontario crates wrapped in plastic film, suggesting they have been through a washing facility

Almost half (43%) of the crates arriving at the growers' farms failed basic sanitary standards; 73% exceeded bacteria loading levels; and 51% and 35% failed tests for *enterobacteriacea* and *coliform*respectively. The results also showed a clear geographical split between Ontario and Quebec, suggesting that the RPCs tested in Quebec had probably been given a quick hose down in Quebec and then simply transferred from farm to retailer and then on to another farm, rather than being shipped to the closest RPC wash facility, which is what is meant to happen in a re-use system. About 10% of the crates were visibly dusty or contained dried plant material, and 30% still had the previous label attached[3].

Brussels Sprouts label, Product of Mexico, still attached.

[1] Loblaw and IFCO need to clean up their act, PPEC blog October 2013

[2] E.coli fact sheet, Public Health Agency of Canada http://www.phac-aspc.gc.ca/fs-sa/fs-fi/ecoli-eng.php

[3] For the press release click here. For the study itself, click Microbiological Standards for Reusable Plastic Containers within Produce Grower Facilities within Ontario and Quebec, Dr. Keith Warriner, Director of Food Safety and Quality, University of Guelph. Both studies were commissioned by the Canadian Corrugated and Containerboard Association (CCCA) which PPEC represents on environmental issues. To protect the growers' commercial interests, only the author knows the farm locations used in the tests.

Plastic crate operator IFCO claims that its washing process "destroys 99.5% of bacteria" and that "RPCs are washed, sanitised and air-dried between every issue, without fail[4]".[4] This may be true, but clearly *the whole re-use cycle is failing to deliver sanitary crates for further use*. Bacteria such as *E.coli* was present in the latest test round, and Loblaws, as the major promoter of reusable crates for produce in Canada, should be very concerned.

Canadian consumers should be concerned too. What exactly are the microbiological testing standards being applied to the RPCs being used in Canada? What's a pass and what's a fail? And how is it, if the RPCs are being decontaminated in a washing plant, that the residual bacteria counts being reported are so high? And who exactly is tracking whether the crates sent to Canada are actually being shipped back to the US for washing, or whether they are just being hosed down locally and taking a short cut to the next farm?

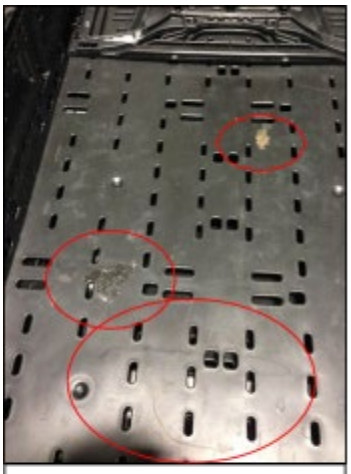
[4] IFCO RPCs and Food Safety (5 Things you Need to Know) page 4.

Retailers urged to "follow the science" on sanitisation

NOVEMBER 11, 2015

The corrugated box industry is just fear-mongering about food safety, according to the reusable crate lobby, which has obviously been stung by the release of yet another study questioning whether, and how well, crates are being cleaned between uses.

The latest study by Dr. Steven Ricke's team at the Department of Food Science at the University of Arkansas demonstrates that typical industry cleaning procedures don't actually sanitise the crates. *Salmonella* cells remained on the crates after cleaning. The authors suggest that bacterial biofilms hide in the cracks and crevices of the crate's surface, making it harder for industrial sanitizers to reach them. Dr. Ricke says industry claims that crates are "99.5%" clean after sanitisation *sound* impressive, but that the missing 0.5 % could hold a lot of cells that could cause a lot of trouble. All it needs is one cell to multiply, to spoil product, to transfer to the next batch of fresh produce, to make someone sick or cause premature spoilage.



Dirty crates: Are they bypassing the washing cycle or just not being cleaned properly?

Any promises to remove pathogens or micro-organisms from reusable packaging that's carrying food, he says, are not based on data. "The only guarantee that's valid from a scientific standpoint is (that) these cells cannot be removed using commercial methods or materials." To eliminate that risk of contamination, Ricke recommends shippers use single-use rather than multi-use packaging.

The crate industry has fired back at Ricke's latest work, saying that "laboratory experiments" and results are no indicator of real-world realities. Point taken. But that doesn't mean a problem doesn't exist. Dr. Keith Warriner's *real-world* studies in Ontario and Quebec in 2013-2014 strongly suggested that crates being re-used in Canada were either bypassing the washing facility in Chicago entirely or not being washed properly when they got there. *E. coli* was found on 13% of the crates tested. And here's another *real-world* experience. A PPEC-member company recently received an emergency call to supply corrugated boxes because the crates that had arrived were mouldy and unusable.

It's way past time for all the interested parties to agree to an independent study to establish a credible baseline for sanitisation testing. Is the crate lobby willing to participate?

A moving (and puzzling) story about dead Toronto chickens

DECEMBER 20, 2016

Chickens are not something we would normally write about. And, in fact, this little story has less to do with dead chickens than with how they journey across Toronto in the after-life before landing between our knives and forks. Let me explain.

Until very recently in Toronto, fresh cut-up chickens were placed on foam trays with stretch wrap then placed in a corrugated box with their unfortunate comrades and trucked from the processor or packer to a retailer's distribution centre. From there they were trucked to various retail outlets across the Greater Toronto Area (GTA) for us to pick up and take home.

Retailer's move causes big flap among processors

A truck can typically deliver about 12,000 knocked-down corrugated boxes to the chicken processor per trip. And the retailer ending up with the box receives revenue for sending that box on for recycling. Current revenues for old corrugated containers (OCC) are about $100 a tonne.

This circular loop system has been working very well, but now one major retailer has decided to change things up, forcing the chicken processors to do something different if they want to remain suppliers. We don't have a problem with change but are very puzzled at the logic, extra costs, and increased environmental burden that this new move seems to entail, especially when that same retailer is telling the public that it is cutting carbon and improving the efficiency of moving goods.

The chicken processors in this example are now being forced to use what are called reusable plastic crates (RPCs) to deliver chicken. The costs of the box and the crate are roughly equal but because the crates take up more space on a truck you now need not *one* (corrugated) truck but *four*(plastic) trucks to deliver the same quantity of containers. *More handling, more miles/kilometres, more burning of fossil fuels, more costs.*

And in the crate scenario, someone must pay the (extra) cost of returning not *one* but *four* truckloads of crates to a distribution centre (which may be within or outside the GTA, or even out of province). Then that same person or someone else pays for trucking the collected crates to a wash centre, also possibly outside the GTA, out of province, or even in the US, so that the crates can be used again*. More handling, more travel miles/kilometres, more burning of fossil fuels, more costs*. And unlike in the corrugated box scenario, the retailer gets no revenue for returning the crates.

The chicken processors seem to be taking a major financial hit in this new arrangement. They now have not *one* truck in their yards delivering packaging but *four*, and those idling trucks must make it difficult to coordinate production flow at

the plant (increasing their labour costs). They also now have the added expense of buying a polybag liner to protect the contents of each crate from leaking. Salmonella poisoning through pathogen transference is a major health risk when processing chickens and packing in crates that are to be used again.

What's packaging got to do with the price of chicken? Maybe more than we think. Transportation and packaging are responsible for about 9% of the total greenhouse gas contributions of the poultry supply chain. If the crate transportation system outlined above costs more, and the environmental burden is greater, won't those extra costs eventually be passed on to you and I as chicken-loving consumers?

The chicken processors will almost certainly be forced to pick up the tab, and will no doubt try to pass on their new costs to their customers (meaning us, eventually). But the biggest victim in this puzzling trial would seem to be the environment. Whichever way you slice it, it's the planet that should be crying foul!

Fact and fiction in the fight to deliver your fruit and veggies

MAY 4, 2017

Most consumers don't see this but there's an intense battle going on right now in North America for the job of delivering food from the farm to the retailers who sell it to you. An old ding-dong fight between the traditional corrugated box with its colourful graphics showing who grew the produce, and the anonymous reusable plastic crate. Between a system that uses a fresh box every time (minimising the potential for undesirable pathogens and bacteria being carried forward to the consumer) and a crate that must be thoroughly washed and sanitised before it can be used again. An economic and environmental debate between paper and plastic, re-use and recycling.

A recent article in the Globe and Mail newspaper highlighted some of the issues. But it also added to the confusion. Here's our attempt to sort fact from fiction:

- *Claim (by major crate supplier IFCO) that the scientific studies showing food-safety risks with reusable crates are "flawed" and rely on "faulty methodology."*

FACT: Several independent studies by reputable food scientists have now been carried out over the last few years in both Canada and the United States, including by the Universities of Guelph, British Columbia, California (Davis) and the University of Arkansas. At least one has been peer-reviewed and published in a scientific journal. The studies range from a lab simulation that shows biofilms surviving common crate cleaning procedures to in-field tests revealing unacceptably high total aerobic and yeast and mould counts, and the presence of *E. coli* after the crates had supposedly been washed. In the *Globe* article, a food science professor at McGill University, Lawrence Goodridge, throws his support behind the latest University of Guelph findings.

FACT: IFCO by comparison has not funded any independent research or presented the results of any in-house studies for public review; has declined to provide details of the standards it deems to be acceptable; and has responded to the data in the above studies only with general and critical sound bites. If its crates are so clean why is IFCO unwilling to share publicly exactly how it draws those conclusions? And why aren't retailers like crate promoter, Loblaw, and government inspection agencies, putting more pressure on IFCO to share those testing procedures publicly so that food scientists and consumers can be confident that the crates meet acceptable sanitisation standards?

- *Claim (by the Reusable Packaging Association) that the corrugated industry has funded tests on the safety of its competitor's products but not its own.*

FACT: Not true. The corrugated industry has been very open in commissioning independent food scientists to do the crate studies noted above. It had hoped that

IFCO and government bodies might fund some joint research on both crates and boxes, but neither party came to the table. It has also tested its own product's performance. One independent box study shows that the heat of the process of making the box kills all bacteria. Another study tested 720 corrugated boxes in three different US states, and found that every single one of them met acceptable sanitisation levels.

- *Claim (by Loblaw spokesperson Catherine Thomas) that "each year, by using these reusable crates, we keep millions of wax-corrugate boxes out of landfill."*

FACT: Not true. "Millions" is a gross exaggeration for a start. Waxed boxes represent maybe 3% of all corrugated boxes produced and maybe 10% of boxes used for delivering fresh produce today. The waxes provide a moisture barrier so that ice, for example, can be added to the box to keep produce such as broccoli, fresh in transit. The paper industry has spurred development of alternatives to wax treatments and, in fact, sales of wax alternatives now surpass those of traditional waxes. Wax alternatives are perfectly re-pulpable and recyclable in packaging recycling mills throughout North America.

Loblaw and other grocers should check to see what's actually happening at the back of their stores. Many grocers today are being asked to separate the waxed boxes from the normal (non-waxed) corrugated boxes they receive. The waxed boxes are then baled and shipped to companies that make fire logs or extract the paraffin from them. ***Stores that take advantage of this opportunity obviously don't send any waxed boxes to landfill.***

#6. Miscellaneous Blogs

What do you mean “cardboard” doesn’t exist?

SEPTEMBER 27, 2013

To most of us, “cardboard” generally means a brown box that’s used to deliver stuff to our homes or workplaces. This word image is reinforced by recycling bins parked at strip malls with the word “cardboard” painted in big letters on the side, and by municipalities reminding their residents not to forget to put their “old corrugated cardboard” out to the curb. There is absolutely nothing wrong with *effective* communication to a target audience. And there is a reasonable argument to be made that the general public really doesn’t need to know any more, that there is enough clutter out there already. They *know* what a cardboard box is.

At the same time, however, use of the word cardboard creates confusion. For technically cardboard doesn’t exist. The box we are talking about is either a *corrugated box* or it is a *boxboard* or *paperboard* carton. What’s the difference, and why does it matter?

A *corrugated* box is made from strong paper fibres, primarily because it is used as a shipping container designed in most cases to deliver many similar products. It comprises several layers of paper fibre to give it that strength: a top and bottom layer (called linerboard) and a middle layer (called corrugating medium). The wavy, ripple-like shape of the medium in the middle gives the box its strength. Think of the Roman arch, or a corrugated tin roof. A corrugated box *always* has this ripple layer in the middle.

A *boxboard* or *paperboard* carton, on the other hand, does not require the same strength properties as a corrugated box because it normally holds only a single item. Here’s a good example to illustrate the difference. A cereal box is made from boxboard or paperboard, but 20 or 30 or more cereal boxes were delivered to the retailer in just one stronger corrugated box.

To the general public, both box types are simply cardboard. Why does the difference matter? It matters to recyclers who wish to turn the used “cardboard” into a new paper product. Like a chef, they need to know the properties of their various ingredients. They need to mix and match paper fibre strengths to be certain that whatever new product they are recycling it into, works. Too many thin used fibres by themselves might not be strong enough. So it’s important for recyclers to know how much of that bale of “cardboard” for recycling is actually corrugated (or old corrugated containers, OCC) and how much is old boxboard (OBB). They need to get their *furnish* (or recipe) right.

Making the distinction between corrugated and boxboard is also important from a waste management policy perspective. Lumping corrugated and boxboard into one category called cardboard in waste audits and other data gathering exercises makes

it a lot harder to determine actual recycling rates and to target recovery efforts at specific waste paper streams.

So when you go home tonight, or if you are already at home, check out that brown box in your basement, garage, kitchen. And remember, it ain't cardboard!

Some really deep thoughts on the meaning of life, and paper

MARCH 7, 2014

One of the interesting similarities between the life cycle of paper and that of the human species is that as we get older we become progressively weaker and wear out. Sorry for being the "bad news" guy today! But at some point, we need to be replaced by a fresh infusion of younger and stronger (virgin) material in order to perpetuate the species.

It's the same with paper fibres. The more they are recycled, and technically that's between four and nine times, the weaker they get, until eventually they have to be replaced.

This blending of young and old, of virgin and recycled, is necessary to keep the whole species (human and paper) going. You need both to survive. So while "recycled" is good, and should be extended for as long as possible, inevitably it must be replaced, somewhere in the system.

Governments and packaging users need to keep this in mind when pushing for higher and higher levels of recycled content in paper packaging. Not that this is a problem in Canada where most boxes and cartons are already 100% recycled content. But at some point, somewhere in the paper cycle, that recycled material has to be replaced with fresh virgin fibres. We can't ignore the fact that we need it, and that we must have it to survive. Just like humans.

The key is to strike a balance that works.

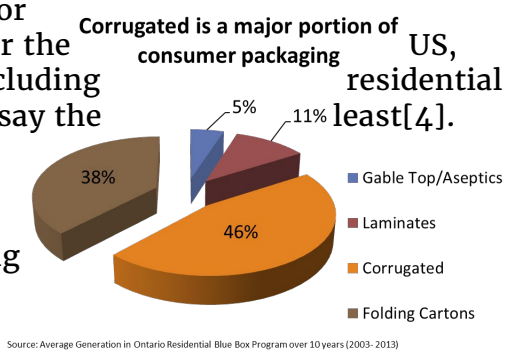
Upstream misses the boat

JUNE 11, 2014

There's no question that the folks at the US-based environmental group, Upstream, have their *hearts* in the right place. We just wish they would get all of their *facts* straight.

The group recently launched a wide-ranging campaign against packaging waste, including a section on what it calls paper-based "*consumer*" packaging. Upstream defines this as pretty much everything except corrugated boxes, and claims that only 25% of it is being recycled in the US[1].

The assumption that corrugated boxes should not be considered part of consumer packaging, however, directly contradicts the 10 years of detailed residential data we have here in Canada. In fact, corrugated boxes are the *single largest component* (on average 46%) of Canadian consumer paper packaging (containing everything from appliances through to electronics, wine and beer, pizza, even hamburgers)[2]. So it doesn't seem very honest to us for Upstream to exclude almost half of residential paper packaging from its calculations. We have no reason to believe that American and Canadian residential consumption patterns are significantly different. Excluding corrugated from one's definition of consumer packaging, of course, makes a *huge* difference in the recycling rate. In Canada, more than 80% of these "*consumer*" corrugated boxes are being recovered for recycling[3]. We don't know the equivalent rate for the US, but Upstream's claim of only 25% recovery (by excluding residential corrugated) gives a very misleading impression to say the least[4].



Source: Average Generation in Ontario Residential Blue Box Program over 10 years (2003- 2013)

This false impression is compounded when Upstream tries to calculate the supposed environmental impact of the "consumer" packaging that ends up in landfill, what it calls "*a waste of forests.*" For some reason, Upstream does not use the US EPA discard total for *non-corrugated* paper packaging (6.42 million tons), which would be consistent with its limited definition of consumer packaging.

Instead it uses a tonnage number that's almost 30% higher (the discard total for corrugated and non-corrugated packaging from both industrial and residential sources)[5]. In effect, what Upstream has done is *ignore* residential corrugated when discussing the recovery rate but *include* residential (and industrial-sourced corrugated) when it calculates waste. *You can't do that!* You can't change your definition of consumer packaging halfway through without inviting criticism that you are deliberately distorting the numbers to make your target (paper-based consumer packaging) look worse.

> You can't change your definition of consumer packaging halfway through.

Even if you buy Upstream's argument of a "waste of forests" (we don't, and will explain why in a later blog), correcting this statistical miscalculation would shrink the size of that "forest" by almost a third. We suggest that Upstream do the honourable thing and remove its "*Waste of Forests" piece from both its website and its campaign while it corrects these errors.*

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[1] Upstream's Make It, Take It Campaign, *A Waste of Forests*, claims that "*only 25% of paper-based consumer packaging is recycled*." This ties in with *Table 4*, Paper and Paperboard Products in Municipal Solid Waste in the United States: Facts and Figures, 2012 (US EPA) which cites a recovery rate for paper packaging (excluding corrugated boxes) of 24.7%.
[2] Stewardship Ontario data for Ontario's residential Blue Box program (2003 to 2012). Residential corrugated averaged 46% of all residential (consumer) paper packaging generation over a 10-year period.
[3] Stewardship Ontario, ibid. The recovery rate for residential corrugated over the same period averaged 81% (85% in the latest data year).
[4] Table 4 above (US EPA) cites a corrugated recovery rate in the US of 90.9% but there is no breakdown of recovery by consumer or industrial source.
[5] Upstream claims that "*only 25% of paper-based consumer packaging is recycled. The rest – 9.1 million tons is wasted each year….*" But according to the US EPA (Table 4 above), the discards of Upstream's chosen definition of "consumer" packaging (excluding corrugated) was only 6.42 million tons. Upstream inflated its waste calculation by 29 per cent.

Upstream misses the boat – part 2

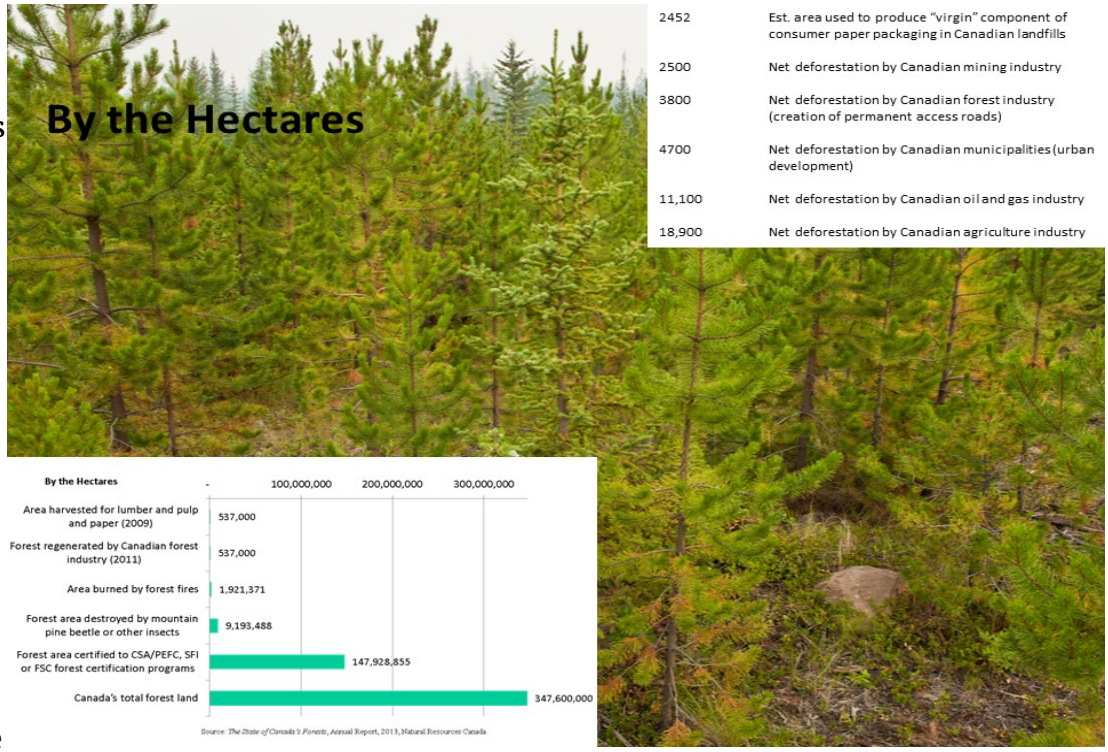
JUNE 23, 2014

There are two things that bug us about the recent packaging campaign launched by US-based environmental group, Upstream: its misleading use of data (outlined in an earlier blog) and its superficial and one-sided view of how the paper packaging industries in both Canada and the United States work.

Basically, what Upstream claims is that all the recyclable paper packaging thrown in the trash represents x million trees or so many thousand acres of forest land. Hence its tag line of "*A Waste of Forests*"[1]. Upstream argues that if we recycled all this paper "*instead of using virgin paper*," we could reduce carbon dioxide emissions, take millions of cars off the road, and save energy. It makes for a good sound-bite and is accompanied by the obligatory stark photo of a clear cut. *But is it true?* Or more appropriately for us, is it true in Canada?

The first point to make is that more than 70% of the consumer paper packaging that unfortunately ends up in Canadian landfills is *already* recycled content packaging[2]. It's been recycled at least once and maybe as many as nine times[3]. *It is not a question of racing into the forest with a chainsaw to find a virgin replacement for it.* Mills will simply seek alternative sources of *recycled* fibre, most likely from among the *millions* of tonnes of used packaging already being collected in North America and exported to Asia for recycling there[4].

The 30% of so-called "virgin" material left in Canadian landfills represents less than 2,500 hectares of forest land, less than the size of Port Coquitlam in British Columbia. How many Port Coquitlam's would fit into Canada? How about 342,000[5]! Four times more forest land is lost to oil and gas exploration, seven times more



to agriculture, not to mention the real biggies: losses to forest fires (consuming 1.9 million hectares) and insects/bugs (chomping their way through a whopping 9.2 million hectares)[6].

#1. And of course, Upstream fails to mention that the harvested forest is *regenerated* by both the US and Canadian forest industries. That virgin material in landfill is actually *replaced*, in Canada by a combination of natural regeneration and the *planting of over a thousand new seedlings per minute*[7].

So, no, we don't agree with the way Upstream exaggerates and characterises used consumer packaging as "a waste of *forests*." We *do* agree with Upstream, however, that *any* paper packaging that ends up in landfill is a *waste of resources* that could be further recycled or composted. It seems to us that instead of playing the emotional card of the clear cut and laying blame at the feet of the paper industry, that Upstream would be far more effective focusing more closely on *why* packaging actually ends up in landfill. *We don't want it there either. It's our feedstock.* But we as the paper industry don't have any control over the relative costs of sending stuff to landfill and recycling. State governments and provinces do. But that's a subject for a whole other blog.

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[1] Upstream's Make It, Take It Campaign, *A Waste of Forests.*

[2] It is substantially higher than 70% because we have not factored in *imported* packaging from countries like China where recycled content is known to be high. In Canada, most corrugated boxes and folding cartons are made from 100% recycled content, from old boxes collected from the back of factories and supermarkets or from curbside. The average recycled content of paper-based packaging *as a whole* is almost 80 per cent. There are only three packaging mills that actually use 100% virgin material, and these, plus a few that blend virgin fibres with recycled, do not use whole trees as such, they use wood chips and sawmill residues that are left over from logging trees for lumber (to make homes and hospitals). For further information see PPEC press release and document *Understanding Recycled Content.*

[3] Paper fibres can be recycled between four and nine times but progressively become weaker until eventually they wear out and must be replaced with a fresh infusion of longer and stronger virgin fibres (PPEC blog).

[4] For example, the US collects almost 9 million tons of old corrugated boxes and exports them for recycling in other countries, principally China.

[5] In the absence of national statistics on consumer packaging disposal, we extrapolated Ontario residential disposal data to Canada's 2012 population, assuming that other Canadians disposed of paper packaging in a similar fashion. From this total of 440,811 tonnes we deducted recycled content tonnes (303,291 or 69%) based on national average recycled content rates (81.1% for corrugated, 70% for boxboard/folding cartons, and assuming 80% for laminants) to get a total of 137,520 tonnes of so-called "virgin" material in landfill. We then converted this total to

short tons and used the same tons/acre ratio that Upstream uses (0.04 per acre) to derive a forest use number of 6,063 acres (which is 2,452 hectares when converted back to metric). Port Coquitlam is slightly larger than this at 2,917 hectares.

[6] PPEC blog on net deforestation using Environment Canada/Natural Resources Canada data, and *The State of Canada's Forests*, Annual Report, 2013, pages 16, 45.

[7] *More than a thousand new tree seedlings are planted every minute in Canada* (PPEC blog).