



A package of responsibility

With Maine's recent passing of the nation's first stewardship framework legislation, all eyes may turn to Central Canada, specifically Ontario, to see how exactly such a law could play out, in terms of industry funding, costs and how it could improve the recycling of packaging and printed paper for municipalities.

By Clarissa Morawski

At the close of this past March, Maine Governor John Baldacci enacted Legislative Document 1631, making the Pine Tree State the nation's first to enact a product stewardship framework for certain products reaching the end of their lifecycles. The product stewardship act, scheduled to commence next January, also encourages manufacturers to seek a product design that simplifies re-use and recycling. For a state that already has five product-specific extended producer responsibility laws in place, what can Maine expect to experience once this framework program begins? And, as California did with respect to electronics recycling legislation, what kind of impact will Maine have in encouraging other states to follow, or not to follow, its lead?

As with most political matters these days, understanding the history and interests can provide the necessary context to clearly discern the situation at hand. For the purpose of this article, the Canadian province of Ontario – Canada's largest at over 13.1 million residents – and its five plus year experience with industry-financed recycling, provides an excellent working model of how a

framework program is likely to be structured in Maine.

A historical context

First, let's take a look back, to the late 1980s, when landfill space in Ontario was filling up fast and the provincial government was keenly looking for a solution. At the time, an industry group made-up of soft drink industry members and packaging suppliers provided nearly \$20 (\$Cdn) million of funding for the establishment of a municipal curbside recycling system, in exchange for a reduction of the provincially-regulated refillable bottle quota, from 75 percent to 40 percent.

By the early 1990s, residential recycling costs were increasing, diversion was still low, and the refillable market share declined to less than two percent. The newly elected left-leaning government proposed broad-based deposits to help improve recycling rates and reduce the costs of the recycling program. In response, fearing the introduction of a return-to-retail deposit system, in early 1993, the grocery industry convened the Canadian Industry Packaging Stew-

ardship Initiative (CIPSI), which would help fund the residential recycling collection effort as an alternative to an expanded deposit-return program.

In 1994, the province passed recycling regulations, mandating that municipalities provide curbside recycling services for collection of such materials as polyethylene terephthalate (PET) bottles, aluminum and steel cans, glass bottles and newsprint. This regulation effectively entrenched municipal responsibility for recycling.

CIPSI offered “top-up” funding to municipalities for the incremental cost increase between disposal and diversion. CIPSI was nearly through when, in June 1995, the Conservative Party of Ontario, known as a business friendly party, won the provincial election and rejected CIPSI outright. About a year later, the Conservative government cut all provincial subsidies to municipalities that helped support their recycling efforts.

During the late 1990s, Ontario municipalities led by Canada’s largest city, Toronto, began to examine their recycling costs and explore ways to reduce them. Ontario municipalities (making up 85 percent of the population) passed motions for the provincial government to implement a deposit return. Even the City of Toronto went as far as to write to the premier, informing him that Toronto had voted to institute a bylaw that mandated a citywide deposit return on wine and spirit bottles (mostly glass) sold through liquor stores controlled by the governmental entity the Liquor Control Board of Ontario (LCBO).

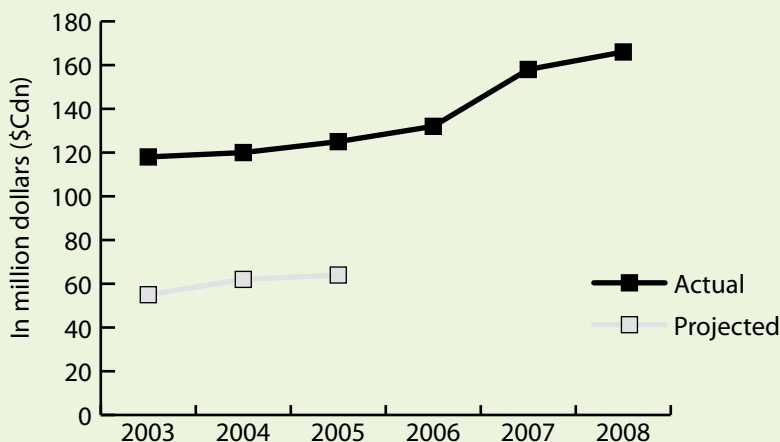
Not long after this, the Minister of Environment announced the formation of an interim waste diversion organization and offered municipalities \$8 million – from the LCBO – to manage wine and spirit packaging (mainly glass) over two years. The City of Toronto relented and took their share of money (\$1 million). This was the beginning of a new Ontario industry stewardship initiative, which, by 2002, led to stewardship framework legislation – the Waste Diversion Act (WDA). Less than six months later, the residential recycling stewardship program was approved.

The Blue Box Program Plan

Created by the rulings of the Waste Diversion Act (WDA), the Blue Box Program Plan includes rules that industry must follow to be in compliance with the framework legislation. The program is administered by the non-profit, industry-funded organization, Stewardship Ontario (SO) and affects all Ontario-based brandowners, or first importers of packaging and printed paper. Known as stewards, these companies register with SO and pay the associated fee rates on a quarterly basis. The fees cover the company’s legal obligation under the plan and the act. Alternatively, the law provides stewards with an opportunity to opt out of the Stewardship Ontario program and apply to run their own program.

Prior to the passing of the WDA, and continuing to operate today, is a voluntarily-operated deposit return-to-retail program

Figure 1 | Ontario residential recycling net costs (in millions of Canadian dollars)



Sources: (Projected) Waste Diversion Organization, 2000; (actual) Stewardship Ontario, 2009

Chart 1 | Stewardship packaging and printed paper levies, in cents per kilogram (\$Cdn)

Newsprint	0.71
Magazines / catalogs / directories / paper	1.97
Gable top / aseptic / multi-laminates	19.65
Corrugated cardboard / boxboard	7.81
Aluminum	-2.20
PET	13.00
HDPE	12.50
Other plastics	24.70
Glass – clear	3.80
Glass – colored	4.10
Steel / bi-metal	5.50
Tetra Pak / gabletop	19.70

Source: Stewardship Ontario, 2010

for all beer, wine and spirits sold in Ontario. The Beer Store has been managing refillable and non-refillable beer containers for over 70 years and, today, accounts for more than two billion containers managed, most of those being refillable glass bottles.

In 2007, in a surprising move, the provincial government, which owns the LCBO, put a deposit on all wine and spirit containers (mostly glass bottles) as well. These containers, too, are returned at Beer Store locations. So, from that point on, wine and spirit bottles, and their stewards (e.g., vintners, brewers and distillers) were no longer participants in the Blue Box Program Plan.

How it works

Today, more than five years after its implementation, the program

Chart 2 | Gross/net costs of Ontario's residential recycling program, by material type

Category	Material	Gross cost per metric ton (\$)	Average revenue per metric ton (\$)	Net cost per metric ton (\$)
PRINTED PAPER				
	ONP	116	106	10
	Telephone books	175	106	69
	Other printed paper	179	103	77
Printed paper total		\$131	\$105	\$26
PACKAGING				
	OCC	483	113	370
	Gable top cartons	1,034	77	956
	Paper laminants	840	0	840
	Aseptic containers	1,096	77	1,018
	Old boxboard	437	72	365
Paper packaging total		\$478	\$98	\$380
	PET bottles	1,226	346	880
	HDPE bottles	1,122	557	565
	Plastic film	2,380	62	2,318
	Plastic laminants	2,380	0	2,380
	PS	2,657	53	2,604
	Other plastics	1,341	165	1,177
Plastics total		\$1,324	\$353	\$970
Steel total		\$306	\$191	\$115
Aluminum total		\$996	\$1,933	-\$938
Glass total		\$169	\$9	\$160
PACKAGING TOTAL		\$519	\$163	\$356
TOTALS		\$363	\$140	\$223

Source: Stewardship Ontario, 2008

operates as follows. Through an annual datacall process administered by an independent agency, municipalities provide the total tons of recyclables collected and their associated direct and indirect gross program costs. Using three-year rolling averages for material market value, revenues are subtracted from the gross costs to calculate a total net cost for the entire program. Industry is legally responsible for paying 45 percent of those costs directly to municipalities, with an additional five percent used specifically for projects that are aimed at continually improving the system. Industry must also finance program administration by SO, market development for more problematic materials, and promotion and education.

In the beginning, before the WDA was passed, it was estimated that the total system costs were about \$40 million per year, of which would increase to \$60 mil-

lion in the fifth year of the program. In reality, however, and to the dismay of industry, the costs were significantly higher (Figure 1)

Once Stewardship Ontario is provided the money required to finance the industry's share of the system (50 percent of the net costs), the organization undertakes a complex three-factor formula to determine how to fairly charge stewards accordingly. In short, the IFO must determine each material's share (e.g., cardboard, boxboard, aluminum cans, PET, glass, etc.) of the total system cost, so it can charge each steward a representative or fair set of fees, similar to a service fee.

The formula takes into account three factors:

1. The net cost – 35 percent of the financial obligation is allocated in direct proportion to the actual net cost to manage each material

2. Recovery rate – 40 percent of the financial obligation is allocated according to the relative percent recovery rate of each material
3. Equalization – The remaining 25 percent of the financial obligation is allocated based on both the cost to manage a material and the recovery rate as the incremental cost for each material to achieve a common threshold of a 75-percent recovery rate. This factor effectively acts as a penalization for poorer performing materials, such as plastics and multi-laminates.

Each year this information is provided to stewards, and their total financial obligation can be calculated based on what they sell into Ontario. More specifically, stewards must report all their sales by total weight of material sold into the municipal

or residential sector.

Using the latest fee schedule as an example, if a bottled water brandowner were to sell one billion single-serve units, each weighing about 13 grams, they would have to pay about \$1.7 million, plus additional fees for associated consumer packaging, such as plastic film wrap, boxboard, etc. The most recent fee schedule for Ontario is provided (Chart 1). Note, aluminum offers a negative levy, or a credit, because aluminum is the only material that actually provides a net financial gain to the system, so brandowners of aluminum packaging (e.g., the soft drink industry) can significantly offset (lower) their total financial obligation.

Cost of residential recycling

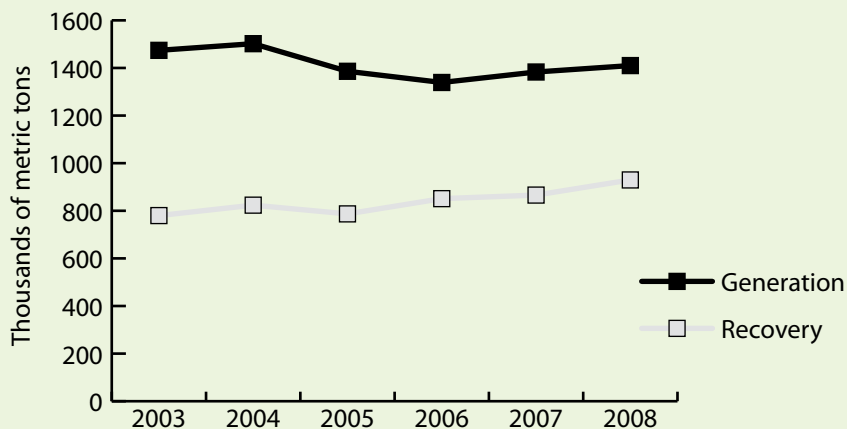
What makes the Ontario experience so interesting is the fact that, finally, there is actual ongoing cost data available. More specifically, each year, in a transparent manner, SO provides the analysis of how the system costs are broken down, by material, using activity-based costing. This is a costing system that identifies the various activities performed in the system and uses multiple cost drivers (e.g., volume and weight) to assign overhead costs (or indirect costs) to materials. In the realm of residential recycling cost summaries, these seem to be the most comprehensive available to date.

Chart 2 provides these costs. The material-specific costs prove that no material pays for itself, except aluminum. In fact, while some like to suggest that recycling PET bottles pays itself, the activity-based cost estimate of \$800 per metric ton (net) provides a very different picture. More specifically, the analysis breaks apart the curbside basket of goods to show that, while the Ontario basket costs \$225 per metric ton, it's the paper fraction (more than 50 percent of the total tonnage collected by weight), at an average of \$26 per metric ton, which lowers the overall basket cost. Packaging on its own costs \$356 per metric ton. These are extremely important distinctions to make when comparing different recovery systems, like comparing deposit return programs to residential recycling systems.

Recycling performance

After seven years of the Ontario shared-

Figure 2 | Estimated recovery rate for Ontario's residential sector



Source: Stewardship Ontario, 2003-2008

responsibility model, according to Stewardship Ontario, the recovery rate for printed paper is 80 percent, while packaging sits at 55 percent. Actual gains have been modest (Figure 2).

It should be noted that, during the seven-year period, the method of quantifying recovery changed in terms of estimating the amount generated (i.e., the denominator). Currently, estimated generation is based on steward reports, unlike the old method that was based on seasonal waste audits. It is reasonable to assume that the rates are inflated from stewards' under reporting (except in the case of aluminum), as well as from the missing generation data from stewards who do not report their material sold, and are far under the diminimus rule, which effectively exempts smaller stewards from reporting.

Performance experienced marginal gains from the previous program, where municipalities paid for the entire system. But, this should not be a surprise to most, as the primary goal of the program is to help offset municipal costs. In that regard, yearly industry contributions of over \$60 million certainly have helped municipalities with the high cost of the program.


The future

As the program moves forward in Ontario, Quebec, and more recently in Manitoba (beginning April 1, 2010), new changes are coming. For example, provincial governments in Ontario and Quebec have indicated shifting 100 percent of the program costs back to industry. The Manitoba program already gets industry to contribute 80 per-

cent of the net costs.

In addition, all programs will require material-specific or product-specific targets, which may have a significant impact on costs. For example, the Manitoba program requires that beverage containers be recovered at a rate of 75 percent. This will require additional efforts to collect beverage containers generated away-from-home.

Quebec has indicated a recovery rate target of 70 percent for beverage containers specifically, and the government of Ontario has suggested that the new program will require stewards to be responsible not only for residential recycling, but also for printed paper and packaging recycling from the commercial sector and public spaces. Both Quebec and Ontario are in the process of piloting programs to collect containers (mostly beverage containers) from away-from-home locations. Using industry funds to finance bins and, in some cases, collection and processing from away-from-home locations, these initiatives will also see stewards' costs rise.

The Ontario case study is extremely informative for industry and government, as they navigate stewardship policy being drafted in several states, but one question remains, how and will industry be able to improve the recovery rates? 

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