

Part 4: Financing

Consumer Fees

In many jurisdictions with deposit-return programs in place, it is the beverage industry that is responsible for paying the bulk of the system costs. In Canada, however, our programs have been designed in such a way to minimize or eliminate the industry's financial obligation by passing it on to customers in the form of a front-end or back-end fee. There are several examples of different fees being charged to consumers to finance the collection and recycling of beverage containers. Table 4.1 presents a summary of consumer fees charged in each province, by container type, as of January 2014.

Container Recycling Fee (CRF)

The Container Recycling Fee (CRF) is levied on the purchase of certain beverage containers in British Columbia and Alberta. It represents the net cost (of recycling) per unit, and fluctuates annually based on actual system costs. Typically, the CRF is paid by beverage distributors and passed down to retailers, who in turn pass it on to consumers. CRFs are charged in addition to the deposit and are non-refundable.

Unlike deposits, the CRF varies depending on the value of the material collected and the container's collection rate. Higher collection rates generate less unredeemed deposit revenue and therefore require a higher CRF. In contrast, lower collection rates generate greater unredeemed deposit revenue and therefore allow for lower CRFs.

As of 2013, CRFs range from 0 to 25-cents per unit in B.C., depending on the size and material of container. The fees in Alberta are somewhat lower, ranging from 0 to 11-cents per unit. Some containers (e.g. gable top cartons) do not carry a CRF because the revenue they generate from unredeemed deposits is high enough to cover the costs of recycling.

In Manitoba, the 2-cent (per unit sold) CRF (instituted April 1, 2010) is pooled and used to finance municipal and away-from-home recycling initiatives.

Environmental Handling Charge (EHC)

Used in the province of Saskatchewan, the Environmental Handling Charge (EHC) is a fee collected from the consumer on every non-refillable beverage container sold. The retailer remits the EHC to the provincial government who uses the fees to pay for the operation of the program. The EHC usually generates far more revenue than is needed to fund the system. Any surplus funds are placed directly into provincial government coffers.

As of 2013, EHCs range from 3- to 7-cents per unit, depending on the size and the material used for the container.

The Half-Back System

The Atlantic provinces of Nova Scotia, New Brunswick, and Prince Edward Island operate a half-back system, where half of the deposit paid on non-refillable beverage containers is not refunded to the consumer. Fifty-percent of this half-back revenue, plus the revenue generated from the sale of containers is used to pay for the program, which includes the handling fee per unit to redemption centres. The remaining 50% of the half-back revenue is typically used to support provincial recycling initiatives, such as beautification and conservation.

In Newfoundland and Labrador, the system is similar to a half-back program in principal, but it provides 5-cents for non-alcohol containers returned based on an 8-cent deposit (a true half-back system would provide a 4-cent refund), and 10-cents for alcohol containers returned based on a 20-cent deposit.

Recycling Fund Fee (RFF) and Container Handling Fee (CHF)

The recycling fund fee (RFF) and container handling fee (CHF), which are charged in Yukon and the Northwest Territories, respectively, are modeled after the half-back system in that they both refund only a portion of the initial deposit paid on designated beverage containers. In the case of Yukon, 5-cents is refunded on a 10-cent deposit (true half-back) and

Table 4.1 Consumer Fees in cents per unit sold

Consumer Fees in Cents per Unit Sold (as of April, 2014)												
Province	BC	AB	SK	MB	ON	QC	NS	NB	NL	PE	YT	NT
Type of Fee	CRF	CRF	EHC	CRF	-	-	Half-Back	Half-Back	Half-Back	Half-Back	RFF	CHF*
Aluminum Cans	1	0	5	2			5	5	3	5	5	5
PET up to and including 1L	3	3	6	2			5	5	3	5	5	5
PET over 1L	6	7	6	2			5	5	3	5	10	10
PVC or HDPE up to and including 1L	3	3	6	2			5	5	3	5	5	5
PVC or HDPE over 1L	6	7	6	2			5	5	3	5	10	10
HDPE Milk up to and including 1L		3										5
HDPE Milk over 1L		7										10
Plastic up to and including 1L		3	6	2			5	5	3	5	5	5
Plastic over 1L		7	6	2			5	5	3	5	10	10
Polystyrene Cups (with sealed foil lid)	3	3		2			5	5	3	5		
Polypropylene up to and including 1L	3	3	6	2			5	5	3	5	5	5
Polypropylene over 1L	6	7	6	2			5	5	3	5	10	10
Pouch up to and including 1L	0	2		2			5	5	3	5		5
Glass up to and including 1L	12	8	7	2			5	5	3	5	5	10
Glass over 1L	25	11	7	2			5	5	3	5	10	10
Drink box up to and including 500ml	2	2	3	2			5	5	3	5	5	5
Drink box 501ml to 1L	7	2	3	2			5	5	3	5	5	5
Drink box over 1L	0	6	3	2			5	5	3	5	10	10
Gabletop up to and including 500ml	0	2	3	2			5	5	3	5		5
Gabletop 501ml to 1L	0	2	3	2			5	5	3	5		5
Gabletop over 1L	6	5	3	2			5	5	3	5		10
Gabletop Milk up to and including 1L		2										5
Gabletop Milk over 1L		5										10
Bi-metal up to and including 1L	6	7	5	2			5	5	3	5	5	5
Bi-metal over 1L	0	0	5	2			5	5	3	5	10	10
Bag-in-the-Box over 1L	0	0		2			5	5	3	5		10
Wine/Spirits under 500ml							5	5	10	5	5	10
Wine/Spirits equal to or greater than 500ml							10	10	10	10	10	10



category not applicable
material covered under another category

* In NWT, the 1 litre container for non-dairy product is included with the over 1 litre containers.

For dairy products, a one-litre container is included with the under 1 litre containers

25-cents on a 35-cent deposit. In the Northwest Territories, 10-cents is refunded on a 15- or 20-cent deposit, and 25-cents on a 35-cent deposit.

Both the RFF and CHF are remitted to the provincial government who uses the funds to pay for program operation (handling, processing and transportation) and to develop and implement promotional and educational initiatives related to the program. In general, these schemes generate far more revenue than is needed to pay for the system. Surplus revenues are placed into a special fund that is kept separate from general revenues. These funds are used to subsidize the municipal curbside recycling program and other provincial environmental initiatives.

How Have Consumer Fees Changed Over Time?

For the most part, Canadian consumer fees on beverage containers have remained relatively constant from 2003 to 2014. The two exceptions are British Columbia and Alberta. The reason why rates have fluctuated in only these provinces is that consumer fees are charged in B.C. and Alberta according to how much is needed to finance the deposit program. Any surplus revenues generated by one container type cannot be used to make up the shortfall for another container type, but are used instead to lower any future CRF on that container type.³⁰ Elsewhere in Canada, CRFs are fixed and support a wider range of provincial recycling initiatives.

Consumer fees may increase for a variety of reasons; for example, decreased revenues from the sale of materials (due to decreased market value for the material, or less material available to sell), or increased costs of collection (which can be affected by, for example, higher transportation costs). However, they can also go down if collection costs drop or if the revenue from unredeemed deposits increases as a result of a lower collection rate.

Table 4.2 provides a historical perspective on consumer fees for various beverage container types from 2003 to 2014. Entries of "-" indicate that a province does not charge consumer fees on that

particular container type, or that there were insignificant data for the category in that program year.

Deposits

In provinces with deposit-return programs, retailers are required to collect and remit a deposit from consumers on all applicable beverage containers. Intended to act as an incentive to recycle, deposits are charged on containers when they are purchased and refunded when the consumer returns the container to an authorized redemption centre or retailer.

In some jurisdictions for certain containers, depots keep part of the refund as their handling fee, thus reducing the refund for consumers. In the North and in the Atlantic Provinces, only a portion of the deposit is refunded when a non-refillable container is returned (see section on 'The Half-Back System' above). The portion of the deposit not returned, in addition to any unredeemed deposits, is used to help fund the system and subsidize other provincial environmental initiatives. Typically, these deposits are indicated separately on the sales receipt. They are not a government tax and no funds from the fees are paid to government.

As of January 2014, deposits range from a low of 5-cents to a high of 35-cents. Table 4.3 shows the deposits charged on various types of beverage containers in each province, as well as the refund that is provided to consumers upon return of the container.

Effect of Inflation on Deposit Values

Despite several decades of inflation, beverage container deposits – for the most part – have barely changed. Consequently, the relative value of the deposit against the overall purchase price of a beverage has declined substantially over the years.

For instance, consider the province of British Columbia. When the program was established in 1970, the refundable deposit on carbonated soft-drinks was set at 5-cents. Forty-four years later, it is still 5-cents. While the value of the deposit hasn't

Table 4.2 Historic Consumer Fees (2003-2014)

Historic Consumer Fees (2003-2014)										
Aluminum cans	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	0	0	5	2	5	5	3	-	n/a	n/a
2006	0	0	5	2	5	5	3	-	n/a	n/a
2008	0	0	5	2	5	5	3	-	n/a	n/a
2010	2	0	5	2	5	5	3	5	5	5
2012	1	0	5	2	5	5	3	5	5	5
2014	1	0	5	2	5	5	3	5	5	5
PET over 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	4	7	6	2	5	5	3	-	n/a	n/a
2006	4	2	6	2	5	5	3	-	n/a	n/a
2008	3	3	6	2	5	5	3	-	n/a	n/a
2010	5	6	6	2	5	5	3	5	10	10
2012	6	5	6	2	5	5	3	5	10	10
2014	6	7	6	2	5	5	3	5	10	10
PET under 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	1	3	6	2	5	5	3	-	n/a	n/a
2006	1	1	6	2	5	5	3	-	n/a	n/a
2008	3	2	6	2	5	5	3	-	n/a	n/a
2010	4	2	6	2	5	5	3	5	5	5
2012	3	0	6	2	5	5	3	5	5	5
2014	3	3	6	2	5	5	3	5	5	5
Glass 0-500 ml	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	3	5	7	2	5	5	3	-	n/a	n/a
2006	4	5	7	2	5	5	3	-	n/a	n/a
2008	5	3	7	2	5	5	3	-	n/a	n/a
2010	10	6	7	2	5	5	3	5	5	10
2012	12	6	7	2	5	5	3	5	5	10
2014	12	8	7	2	5	5	3	5	10	10
Glass over 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	5	8	7	2	5	5	3	-	n/a	n/a
2006	5	7	7	2	5	5	3	-	n/a	n/a
2008	5	4	7	2	5	5	3	-	n/a	n/a
2010	10	9	7	2	5	5	3	5	10	10
2012	20	10	7	2	5	5	3	5	10	10
2014	25	11	7	2	5	5	3	5	10	10

Table 4.3 Deposits and Refunds by Province as of May 20, 2014.

Province	BC	AB	SK	MB	ON	QC	NS	NB	NL	PE	YT	NT
Container Type	Deposit/Refund (in Canadian Cents)											
Containers up to 1L	5/5	10/10										
Containers over 1L	20/20	25/25										
Carbonated beverage containers						5/5						
Non-alcohol							10/5	10/5	8/5	10/5		
Metal cans under 1L			10/10								10/5	15/10
Metal cans 1L and up			20/20								35/25	20/10
Milk up to 1L		10/10										15/10
Milk over 1 L		25/25										35/25
Glass Bottles up to 300ml			10/10								10/5	20/10
Glass Bottles 301ml-999ml			20/20								10/5	20/10
Glass Bottles 1L and up			40/40								35/25	20/10
Plastic bottles less than 1L			10/10								10/5	15/10
Plastic bottles 1L and up			20/20								35/25	20/10
Juice box and Gabletop			5/5									15/10
TetraPak up to 1L											10/5	
TetraPak 1 L and up											35/25	
Wine & Spirit Containers up to 500ml	10/10	10/10					10/5	10/5	20/10	10/5	15/10	35/25
Wine & Spirit Containers 501ml to 1L	10/10	10/10					20/10	20/10	20/10	20/10	35/25	35/25
Wine & Spirit Containers over 1L	20/20	25/25					20/10	20/10	20/10	20/10	35/25	35/25
Wine & Spirit Containers up to 630ml					10/10							
Wine and Spirit Containers over 630ml					20/20							
Beer cans & bottles up to 1L	10/10	10/10		10/10	10/10		10/5	10/5	10/5	10/5	10/5	
Beer cans & bottles over 1L	20/20	25/25		20/20	20/20		20/10	20/10	20/10	20/10	10/5	
Beer cans up to 450ml (In QC)						5/5						
Beer bottles (glass) 450ml and over (QC)						10/10						
Beer containers over 450ml (QC)						20/20						
Refillable beer bottles	10/10	10/10	10/5*	10/10	10/10	10/10	10/10	10/10	10/5*	10/10	10/10	10/10

* In SK 5-cents and NF 5-cents, is retained by bottle depots in lieu of an official handling fee.

changed, the incentive to recycle is much smaller than it used to be. This is because 5-cents in 1970 was worth a lot more than a nickel today. In fact, according to the Bank of Canada's Inflation Calculator, a nickel in 1970 is equivalent to 30-cents in 2014.

To illustrate this point, if deposits on beverage containers in B.C. had kept up with inflation, the deposit paid on a six-pack of soft drinks in B.C. would be about \$1.50 today, as opposed to the 30-cents currently being charged.

The effect of deposit level on a consumer's incentive to recycle is clear when one considers the province of Alberta. In 2008, Alberta raised its 5- and 20-cent deposits to 10-cents and 25-cents, respectively. After only four years, collection rates for the three largest beverage container categories increased by approximately 7-percentage points. Rates for aluminum cans have increased from 80% to 88%, PET from 70% to 76%, and non-refillable glass from 86% to 90%.

Container Handling Fees

Container handling fees (CHF) are fees paid per unit by beverage distributors to redemption centre (depot or retail) as compensation for receiving, paying out refunds for, sorting, and storing returned beverage containers. These non-refundable handling fees are paid directly to the redemption centres without any government involvement.

CHFs can vary by container type and depot agreement. In Alberta, for example, CHFs range from a low of \$0.0302 for aluminum cans to a high of \$0.1975-cents for Tetra Pak containers over 1-litre. These fee ranges are based on the different costs of handling and storage associated with different types of beverage containers. In British Columbia, handling fees paid to grocers are privately negotiated and proprietary, and so are not publicly available.

In other provinces, the same CHF is charged on all container types. This is the case in the Atlantic Provinces. In New Brunswick, for example, all beverage containers except for beer containers are charged a CHF of \$0.4059.

Table 4.4 presents CHFs by province and container type as of 2014. It is important to note that the fees presented for B.C. are those awarded to depots only. Shaded areas of the table represent container categories that are not applicable to that particular province.

How Have Handling Fees Changed Over Time?

In the Atlantic Provinces, CHFs increased slightly from 2004 to 2012. Specifically, fees in Nova Scotia increased from 3.1-cents to 3.9-cents. New Brunswick's fees have gone from 3.3-cents to 4.06-cents. In Newfoundland and P.E.I., CHFs increased from 3.0-cents and 3.6-cents, to 4.15-cents and 3.98-cents, respectively.

In the western provinces, where the amount of the fee has been pegged to the actual cost to recycle the material, fees have fluctuated depending on the cost to collect and process each individual material.

In Québec, handling fees have remained constant at 2-cents since the program began.

Beverage Container Packaging Fees

The provinces of Ontario, Québec, and Manitoba have legislation in place mandating that a percentage of funding for municipal recycling programs come from industry. This funding comes in the form of packaging fees, or "steward" fees. In these provinces, each designated packaging material is associated with an annual fee rate. Fees vary by material type and range from 1.77-cents per kilogram for aluminum in Ontario to 36.4-cents per kilogram for mixed plastics in Québec.

The fees represent the net cost by weight of managing each material from collection through to final disposition (net of material revenues). In addition, lower performing materials tend to have a proportionately higher share of the costs. The fees act as an incentive for industry to change the type, size, and weight of printed paper and packaging (PPP) at the front end of the system.

The responsible agency collects these fees from "stewards" – the first importers, manufacturers or

Table 4.4 Handling Fees, by Province, by Material

Province	BC	AB	SK(2)	MN	QC	NS	NB	NL	PE	YT	NT
Aluminum Cans	3.26	3.05			2.00	4.03	4.06	4.15	3.98	2.50	2.20
PET up to 1L	4.90	4.10			2.00	4.03	4.06	4.15	3.98	4.00	2.20
PET over 1L	7.61	8.83			2.00	4.03	4.06	4.15	3.98	7.50	4.50
PVC up to 1L	4.90	5.85				4.03	4.06	4.15	3.98	4.00	2.20
PVC over 1L	7.61	11.47				4.03	4.06	4.15	3.98	7.50	4.50
HDPE up to 1L	4.90	5.85				4.03	4.06	4.15	3.98	4.00	2.20
HDPE over 1L	7.61	10.71				4.03	4.06	4.15	3.98	7.50	4.50
Polypropylene up to 1 L	4.90	5.85				4.03	4.06	4.15	3.98	4.00	2.20
Polypropelene over 1 L	7.61	11.47				4.03	4.06	4.15	3.98	7.50	4.50
Sealed Polystyrene Cups											
Polystyrene up to 1L	4.90	5.85				4.03	4.06	4.15	3.98	4.00	2.20
Polystyrene over 1L	7.61	11.47				4.03	4.06	4.15	3.98	7.50	4.50
Pouch (Up to 1L in AL)	4.35	4.12				4.03	4.06	4.15	3.98	4.00	2.20
Plastic up to 500ml	4.90					4.03	4.06	4.15	3.98	4.00	2.20
Plastic 501ml to 1L	4.90					4.03	4.06	4.15	3.98	4.00	2.20
Plastic over 1L	7.61					4.03	4.06	4.15	3.98	7.50	4.50
Glass bottles up to 1L	6.53	6.54			2.00	4.03	4.06	4.15	3.98	4.00	3.50
Glass bottles over 1L	7.61	10.50			2.00	4.03	4.06	4.15	3.98	7.50	3.50
Drink box up to 500ml	4.90	4.58				4.03	4.06	4.15	3.98	4.00	2.20
Drink box 501ml to 1L	5.98	4.58				4.03	4.06	4.15	3.98	4.00	2.20
Drink box over 1L		19.95				4.03	4.06	4.15	3.98	7.50	4.50
Gabletop up to 1L	6.53	5.69				4.03	4.06	4.15	3.98		2.20
Gabletop over 1L	10.65	9.51				4.03	4.06	4.15	3.98		4.50
Bag in the Box over 1L	10.88	20.20				4.03	4.06	4.15	3.98		3.50
Bi-metal up to 1L	4.90	6.83				4.03	4.06	4.15	3.98	4.00	2.20
Bi-metal over 1L	10.88	12.47				4.03	4.06	4.15	3.98	7.50	4.50
Imported beer bottles	4.90	6.54				4.03	4.06	4.15	3.98	4.00	3.50
Liquor and wine ceramic						4.03	4.06	4.15	3.98		
Sleeman bottles		5.05				4.03	4.06	4.15	3.98		
Moosehead Green Bottle						2.57					
Import beer up to 1L		6.54				4.03	4.06	4.15	3.98		
Import beer cans bi-metal		6.82				4.03	4.06	4.15	3.98		
Refillable Beer (ISB)	[1]	4.01	2,6 [4]	2.67	0.50	2.74	2.90	5 [4]	2.81	2.50	
Beer Cans		3.05		2.04							
Milk up to 1 litre											2.00
Milk over 1 litre											3.50
Milk jugs	N/A		N/A			N/A					
Milk cartons	N/A		N/A								
N/A = Not available			Container included in another category								
			Category not applicable								
[1] In BC bottle depots independently negotiate handling fees directly with the beer industry.											
[2] Saskatchewan does not charge handling fees. SARCAN depots are paid a contracted rate per year, which is generated through the Environmental Handling Charge (EHC).											
[4] In Saskatchewan and Newfoundland a handling fee charged on refillable beer is charged at the back-end from the refund. In SK it is 5 cents at Sarcan depots and 2 cents at SLGA stores who also receive an additional subsidy of 2.6 cents per ISB bottle from BDL. In NL it is 5 cents											

brand owners of the packaging and products that end up in curbside recycling systems – based on the amount of packaging their products contribute to the province's waste stream. The fees are typically paid out four times per year, and help to pay for the costs of collecting, transporting, recycling, and safely disposing of producer's end-of-life packaging.

In Ontario, industry began funding 50% of the costs of municipal recycling programs in February 2003. In Québec, industry's share of the program began at 50% in March 2005, and has increased yearly. By 2013, it will have reached 100%. Industry funding for municipal recycling programs in Manitoba began in April 2010 at a fixed rate of 80%.

In Ontario, through an annual municipal data call, information on both the costs of municipal recycling programs and tonnages collected is gathered. From that, Stewardship Ontario (SO) (the industry funding organization representing affected stewards) determines how much each steward is required to pay for that year. The formula used to calculate the fees takes into account a number of factors, such as collection rates, net costs, as well as a penalization factor for lower performing materials. Each year, as the costs and tonnages change, SO submits a new fee schedule that requires approval from the Minister of Environment. In 2012, approximately \$100 million was distributed to municipalities, plus an additional amount that was used for research, market development, and program management costs.

Manitoba's funding model is a little different. In Manitoba, most non-alcoholic beverage distributors pay the 2-cent CRF, which is typically passed down the recycling chain to consumers. These funds are used to finance 80% of the costs of the municipal recycling system, in addition to buying recycling bins and for promoting the away-from-home recycling program.

In Québec, negotiated net costs are determined by both the Association of Municipalities and Éco-Entreprises Québec (ÉEQ). For 2012, the contribution

was up to \$115 million (Note: There is another contribution for printed paper, which is "in-kind" and therefore not reported as a financial contribution.).

Table 4.5 shows beverage container packaging fees in Ontario, Québec, and Manitoba for 2014. It should be noted that the fees in Manitoba apply only to those beverage containers that are not subject to the 2-cent CRF.

In Ontario, all container types carry a fee, including those made from aluminum. Up until 2010, the market value for aluminum was so high that instead of being charged a fee for each aluminum container placed on the market, brandowners would actually receive a credit for this material. This credit could be used by brandowners to offset their total amount of fees payable.

Québec is similar to Ontario in that packaging fees are levied on almost all types of containers. The exception is for aluminum beverage cans, which are subject to deposits and are therefore exempt from the municipal funding program (only the aluminum used in non-beverage packaging such as cat food cans, tins of canned fish, foil, and pie plates, is subject to packaging fees). Consequently, aluminum in Québec carries a higher fee than it does in Ontario and Manitoba.

Table 4.5 Packaging and Printed Paper Stewardship Fees, Manitoba, Ontario, and Québec

Package Type	Ontario	Quebec	Manitoba
Aluminum	2.56	18.75	-0.83
PET	14.70	21.96	19.82
HDPE	13.52	21.68	18.68
Other Plastics	23.27	26.53	26.31
Glass - Clear	2.84	9.69	6.56
Glass - Coloured	4.84	9.42	6.56
Steel / Bi-metal	5.51	11.47	9.02
Tetra Pak	18.22	28.39	27.59
Gabletop	18.19	16.25	27.59

Table 4.6 Expression of Fees by Beverage Container Type for Select Containers (in CAD cents per unit sold)

Beverage Container		Weight (g)	Ontario	Quebec	Manitoba
<i>Gabletop</i>	<i>2-litre</i>	<i>63</i>	<i>1.15</i>	<i>1.79</i>	<i>1.74</i>
<i>Gabletop</i>	<i>1-litre</i>	<i>41</i>	<i>0.75</i>	<i>1.16</i>	<i>1.13</i>
<i>Gabletop</i>	<i>Small</i>	<i>14</i>	<i>0.26</i>	<i>0.40</i>	<i>0.39</i>
<i>Tetra Pak</i>	<i>Small</i>	<i>10.6</i>	<i>0.19</i>	<i>0.30</i>	<i>0.29</i>
<i>Bi Metal</i>	<i>Small</i>	<i>46.7</i>	<i>0.26</i>	<i>0.54</i>	<i>0.42</i>
<i>Glass</i>	<i>473ml clear bottle</i>	<i>228</i>	<i>0.65</i>	<i>2.21</i>	<i>1.50</i>
<i>Glass</i>	<i>Over 1 L clear Liquor</i>	<i>737.2</i>	<i>2.09</i>	<i>7.14</i>	<i>4.84</i>
<i>Plastic</i>	<i>2-litre PET bottle</i>	<i>58</i>	<i>0.85</i>	<i>1.27</i>	<i>1.15</i>
<i>Plastic</i>	<i>Small Plastic</i>	<i>23</i>	<i>0.34</i>	<i>0.51</i>	<i>0.46</i>
<i>Plastic</i>	<i>outer milk bag - LDPE film</i>	<i>8</i>	<i>0.19</i>	<i>0.21</i>	<i>0.21</i>
<i>Aluminum</i>	<i>355ml aluminum can</i>	<i>14</i>	<i>0.04</i>	<i>0.26</i>	<i>-0.012</i>
<i>Italicized materials are based on Stewardship Ontario Blue Box Program Plan 2003</i> Non- italicized materials are based on Encorp Data					

Because steward fees depend on material type and weight, per container fees can be calculated when the weight of each unit is measured. Table 4.6, shows 2012 fee rates for various types and sizes of containers that are commonly found on store shelves.

Overview of System Costs and Revenues

In order to determine the costs of deposit-return programs in Canada, we must review income statements from the various operating agencies. In general, this income includes revenue from the sale of empty containers collected, unredeemed deposit revenue, and revenue from a consumer fee charged up front or as an un-refunded portion of a deposit.

System Costs

Many factors can affect program costs, including the collection rate, convenience level (i.e. frequency of collection, number of depots, etc.), economies of scale, and population density. This is why costs of provincial programs should not be directly compared with each other, as each program may have different operating parameters.

Programs in Manitoba, Ontario, and Québec have a lower cost but collect fewer containers than the

deposit-return provinces. What is unknown is the cost of the away-from-home (AfH) programs. These costs must include collection and processing charges, the municipal share of recycling costs for beverage containers, and the incremental costs that would be incurred to achieve higher collection and recycling rates.

There may also be indirect costs associated with beverage collection programs, and these costs, which are seldom accounted for, may impact consumers or municipalities. Indirect costs might include the costs incurred by consumers when they drive containers to a depot or the costs incurred by municipalities for disposal and litter abatement. These costs are not currently part of this report's analysis.

Revenue from Material Sales

Material sales revenue plays an important role in helping to offset the gross costs of the system. This revenue will vary depending on a recycling program's level of performance, the types of containers that are being collected, and their respective market values.

In British Columbia and Alberta, where the deposit system covers all material container types (excluding those for domestic beer), program revenues generated by material sales paid for 16% and 23% of

total program costs, respectively. In Ontario, where only wine, spirits, and beer containers are included under deposit-return, the amount of revenue generated from material sales, as a percentage of total system costs, is lower. This is attributable to the fact that over 96% of material collected is glass bottles, which are worth significantly less than the materials that typical deposit-return programs manage. Conversely, Québec's non-refillable deposit-return program manages mostly PET and aluminum cans, with only a minor amount of material coming from the non-refillable glass bottles used for beer or for non-carbonated juices. In this case, revenue is relatively higher due to a high resale value for every container collected.

The Role of Surplus

As discussed above, several provinces charge consumer fees on the purchase of beverage containers as a means of generating additional revenue. Consider the EHC in Saskatchewan, the half-back schemes in the Atlantic Provinces, and the CRF in the Northwest Territories. While this revenue comes from the consumer, it is not necessarily used to offset the costs associated with operating the recycling program for that year. These funds may be used to subsidize other provincial programs or contribute to a province's general revenues.

For example, in New Brunswick, some of the half-back revenue generated is placed in the Environmental Trust Fund, which is used for beautification and conservation, among other things. In Nova Scotia, some of half-back revenue is distributed to municipalities to help offset the cost of their waste diversion initiatives.

In Saskatchewan and P.E.I., all excess funds accrue to the provincial treasury. In Yukon, funds generated by the recycling fund fee (RFF) go into a recycling fund administered separately from the government's general revenues and used solely for recycling purposes. In the Northwest Territories, funds generated by the program go into an environment fund that is separate from the government's general account.

In B.C. and Alberta, surplus revenues generated from the CRFs are used to offset the following year's recycling costs. In these provinces, surplus funds do not subsidize other programs and are adjusted regularly to reflect actual program shortfalls.

Who Bears the Share?

In previous editions of *Who Pays What*TM, the costs associated with beverage container recycling were presented in a way that compared them on a program-to-program basis. As pointed out above, the data does not warrant being presented in this comparative manner because programs vary greatly in terms of collection rates, convenience level, and other factors that affect costs. In recognition of this issue and in an attempt to provide a better understanding of how system costs are shared among different stakeholder groups, CM Consulting introduced a new approach called "who bears the share" in 2010. This approach is meant to provide insight into the equity or fairness of the different programs by identifying the share (percentage) of program costs that each stakeholder group is responsible for.

The share is simply a function of the stakeholder's contribution relative to total outside funding (excluding material revenues). The calculation is as follows:

$$\frac{\text{STAKEHOLDER CONTRIBUTION (\$)}}{\text{TOTAL PROGRAM FUNDING (\$)}}$$

Each group of stakeholders has a different role to play in the beverage container recycling system, from the point of distribution and sale, to the point of consumption and recycling. Understanding the roles each stakeholder group plays in the system and how economic incentives can drive system efficiency is critical to informing policy development. The following section provides an overview of the various stakeholders involved, and their roles and responsibilities when it comes to financing the system. Observations on the fairness of the funding scheme are also discussed.

Who Bears the Share: Stakeholders

Five (5) major stakeholder groups fund beverage container recycling in Canada:

The Wasting Consumer

The wasting consumer is the consumer who chooses not to redeem their containers for a refund. Likely, they put these containers into garbage bins from which even scavengers are not able to collect them so as to redeem deposits. By voluntarily forfeiting their deposits, the wasting consumer bears the direct costs of his actions.

The cost to the wasting consumer is equal to the value of the unredeemed deposit, which can be anywhere between 5- and 40-cents depending on the program and/or type of container. In general, wasting consumers pay a significant portion of program costs. This "cost of wasting" is determined by the following calculation:

$$\frac{\text{TOTAL UNREDEEMED DEPOSITS (\$)} + \text{NON RETURNABLE FEE ON UNREDEEMED UNITS}}{\text{TOTAL UNREDEEMED CONTAINER (UNITS) (\$)}}$$

Table 4.7 shows the average cost of wasting per beverage container.

The percentage of program costs borne by the wasting consumer varies from province-to-province depending on a number of factors, including the level of the deposit and whether or not beverage containers are subject to any upfront, non-refundable

container fees. The higher the deposit is, the more expensive it is for the wasting consumer (higher cost of wasting), and therefore they will pay a greater share of the total program costs. Wasting consumers will also pay more when they are charged an up-front fee, as in British Columbia, Alberta, and Saskatchewan. The wasting consumer's share of financial responsibility can also vary from year to year depending on program performance. In years with higher collection rates, the share of costs borne by the wasting consumer will be lower since more containers will be returned for a refund.

The Recycling Consumer

The recycling consumer is the consumer who returns empty containers to an authorized redemption centre or places them in a designated recycling bin (whether at home or away-from-home). Regardless of whether the recycling consumer recycles his containers through a deposit program or curbside program, he still has to pay consumer fees (i.e. CRFs, EHCs, half-back deposit) on all applicable beverage containers. These fees, passed down by the beverage industry, are non-refundable and are used to offset system costs.

To determine the average cost per unit paid by the recycling consumer, the following calculation is applied:

$$\frac{\text{TOTAL CONSUMER FEES PAID OUT (\$)}}{\text{TOTAL NUMBER OF CONTAINERS SOLD}}$$

Table 4.7 Average Cost per Container paid by the Wasting Consumer, by Province.

BC	AB	SK	MB	ON	ON	QC	QC	NB	NS
wine /spirits / non-alcohol	all (excluding domestic beer)	all (excluding refillable beer)	all (excluding beer)	all non-alcohol	wine/spirits (mostly glass)	soft-drinks/non-refillalbe beer	all (excluding beer & soft drinks)	all (excluding refillable beer)	all (excluding refillable beer)
10.33	12.31	15	0	0	14	5.75	0	10.29	10.16

Table 4.8 Average Cost per Container paid by the Recycling Consumer, by Province.

BC	AB	SK	MB	ON	ON	QC	QC	NB	NS
wine /spirits / non-alcohol	all (excluding domestic beer)	all (excluding refillable beer)	all (excluding beer)	all non-alcohol	wine/spirits (mostly glass)	soft-drinks/non-refillalbe beer	all (excluding beer & soft drinks)	all (excluding refillable beer)	all (excluding refillable beer)
4.25	1.26	5.30	2	0	0	0	0	5.43	5.19

Table 4.8 shows the average cost per unit paid by recycling consumers in provinces where consumers help finance the system through consumer fees.

Municipal Government

Municipal governments are responsible for collecting and managing waste from homes and businesses for recycling, composting, and disposal. Their responsibilities also extend to litter abatement. The costs associated with providing these services are paid for directly by municipal taxpayers (i.e. property owners). The exception is when municipalities use a user-based system.

Most agree that using municipal taxes to pay for recycling and garbage disposal is inappropriate as it removes a powerful incentive to reduce waste and exhibit proper recycling behavior. When recycling is financed in this way, consumers are left with the impression that recycling is free, distorting costs and devaluing the service. A tax-based system is also unfair in that it forces those who generate little waste or recycling to subsidize those who produce a lot.

In Ontario, Manitoba, and Québec, municipalities are required by law to cover a portion of the costs of recycling beverage containers from residential, single-family and some multi-family residences. In Manitoba, this portion is 20% (the remaining 80% is financed by industry). In Ontario, the share borne by municipalities is much higher at 50%. If the proposed *Waste Reduction Act* is passed, however, the industry-funding cap for municipal blue box net costs will be removed to allow for greater than 50% producer funding. This, in turn, would decrease the share borne by municipal government. The municipal share in Québec has been on the decline since 2010. Specifically, the percentage of the net costs borne by municipalities for the multi-material recycling programs has decreased from 30% in 2010, to 20% in 2011, to 10% in 2012, and to 0% in 2013. As of January 1, 2013, industry is responsible for paying 100% of eligible net costs – nowhere else in North America is industry responsible for such a high share.

Provincial Governments or Liquor Commissions

In general, provincial governments bear no share of beverage container recycling costs. The province of Ontario is an exception to the rule. In Ontario, the costs of operating the deposit-return program for wine and spirit containers are split between the province's liquor commission – the Liquor Control Board of Ontario (LCBO) (a provincial crown corporation), and the wasting consumer. Specifically, the LCBO pays about 7-cents (net) on every unit sold.

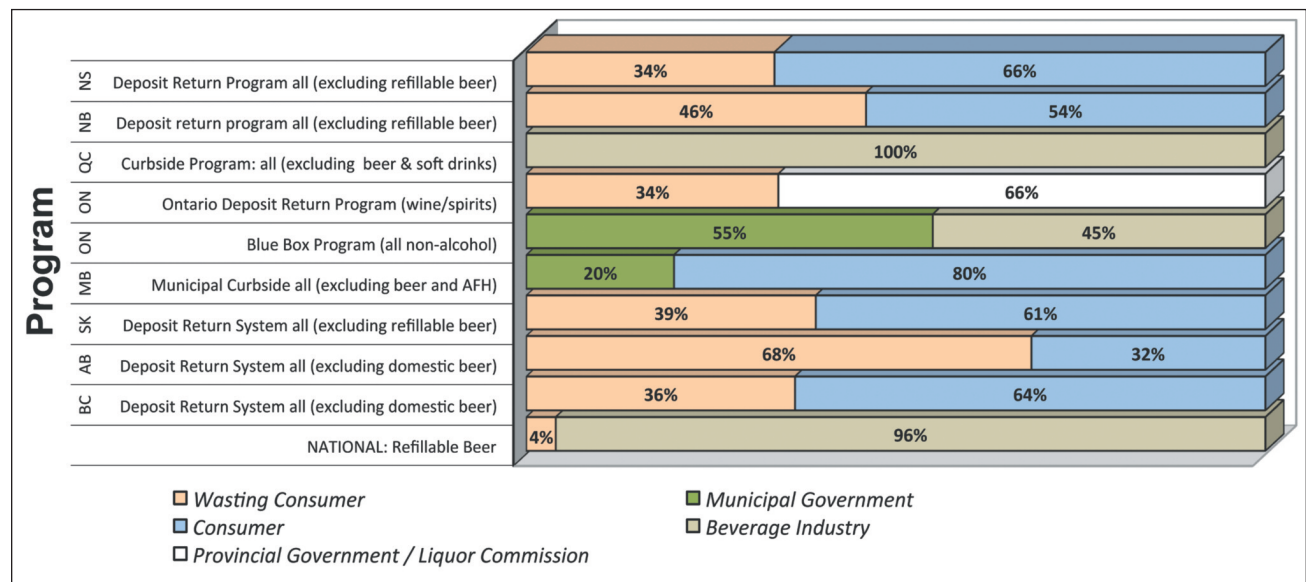
The Beverage Industry

Under regulations established by each province, industry is slowly being forced to take on an increasing share of financial responsibility for the end-of-life management of items such as beverage containers. Eventually, the ultimate goal is to achieve 100% industry responsibility. The idea behind this is sensible: beverage companies should be responsible for recovering and recycling the products they supply into the marketplace. This would be a positive development for local governments as they would be relieved of a significant economic burden.

Currently, Ontario, Manitoba, and Québec are the only provinces where industry is directly responsible for bearing a share of program costs. Beverage producers or first importers in these provinces (including milk but excluding soft drink and beer-brand owners) are required to pay levies on all their packaging (which vary by container type) sold into the residential stream. In addition, in Québec, soft drink producers bear a cost equivalent to about half a penny per container sold into the province.

In British Columbia, Alberta, Saskatchewan, Nova Scotia, Newfoundland, and New Brunswick (for liquor), the beverage industry bears no costs to run the provincial beverage recovery programs. This is because in deposit jurisdictions, the bulk of system costs are borne by consumers who choose not to return their containers. These unredeemed deposits are used to finance the programs. The only deposit jurisdiction in which industry bears a share – albeit a very small share – of recycling costs is Québec. This is because there is no CRF or half-back deposit system in this province, so recycling consumers pay

Figure 4.9 Who Bears the Share - Share of Financial Contribution by Stakeholder



nothing. In some years, the costs to the run the program are so low that it can actually run a profit because wasting consumers and material revenue make up the shortfall. It is assumed that at a collection rate of around 74%–76%, the program “pays for itself.” Actual program costs are not available, but reasonable estimates can be obtained.

The Domestic Beer Industry

The Canadian domestic beer industry is unique in North America. Set up as a voluntary initiative, its collection and reuse of refillable beer containers relies on the existence of industry standard refillable bottles (ISBs), a system that the brewers collectively manage. Founded on a deposit-return system managed by the retailer, the program allows brewers to share standard bottles and self-finance their distribution and reverse distribution. Although the industry receives some unredeemed deposits to help offset costs, this revenue is minimal because the return rates are so high.

Summary of Analysis

The “who pays what” analysis confirms that, in British Columbia, Alberta, Saskatchewan, Manitoba, Nova Scotia, Newfoundland, New Brunswick (for liquor), Yukon, and the Northwest Territories, the beverage industry bears no costs associated with running the provincial collection and recycling programs.

In most of these provinces, some of the system costs are borne by the consumer who chooses not to return containers—the “wasting consumer.” It is appropriate for wasting consumers to take on a larger share than the responsible consumers who ensure that their containers are being recycled.

Of these provinces, only in Alberta does the wasting consumer pay a larger share of the program costs (69%) than the recycling consumer. The higher deposit levels in Alberta mean that the wasting consumer is forfeiting more money by not recycling containers, which in turn provides more funding to offset total program costs.

Recycling consumers pay the rest of the program costs through consumer fees in British Columbia, Alberta, Saskatchewan, Nova Scotia, Newfoundland, and New Brunswick. Some portion of these consumer fees may also be used as surplus funds for other provincial initiatives, such as waste diversion and environmental enhancement.

In Ontario’s deposit-return program for alcoholic beverage containers, Québec’s program for beer and soft drink containers and all refillable beer return systems throughout Canada, the rest of the program costs are covered by industry or by provincial liquor commissions.

In Ontario and Québec, the producers or first importers of all beverages (including milk but excluding soft drinks and beer) are required to pay levies on all their packaging sold into the residential stream. In 2012, this revenue was used to finance about 45% and nearly 100%, respectively, of Ontario and Québec's total net costs of curbside recycling.

