



Policy Best Practices that Support Harmonization

SUMMARIES OF ELEVEN GLOBAL EPR PROGRAMS

March 2014

With special thanks to the excellent project leadership of
Product Stewardship Institute and O-I



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PAC NEXT, Executive Director

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Product Stewardship Institute, Chief Executive Officer/Founder
Policy Best Practices that Support Harmonization Committee Co-Chair

POLICY BEST PRACTICES THAT SUPPORT HARMONIZATION COMMITTEE MEMBERS

BC Ministry of the Environment	Paper & Paperboard Packaging Environmental Council
Canadian Plastics Industry Association (CPIA)	Paperboard Packaging Council
City of Hamilton	Product Stewardship Institute
City of Toronto	Recycled Paperboard Alliance
Coca Cola	Region of Halton
County of Wellington	Regional Municipality of York
Éco Entreprises Québec (ÉEQ)	Region of Peel
Emterra Environmental	Retail Council of Canada
Glenda Gies & Associates	StewardEdge
GreenBlue	Stewardship Ontario
Kraft Foods	Tetra Pak
MolsonCoors	Tim Hortons
NAPCOR	VisionQuest Environmental
Northwest Product Stewardship Council	Walmart
Owens-Illinois	Waste Diversion Ontario

Disclaimer

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EXECUTIVE SUMMARY

The purpose of this report is to share the work of the PAC NEXT *Policy Best Practices that Support Harmonization* Committee (“the Committee”). The primary goals of this work have been to: (1) develop an understanding of global best practices related to extended producer responsibility (EPR) for packaging; and (2) identify agreed-upon best practices that would support industry and government collaborative efforts to create harmonized solutions for managing packaging waste.

Committee members were particularly interested in discovering ways to reduce cost and regulatory complexity in existing EPR programs in Canada. Ultimately, the Committee was able to identify a series of attributes that define a high performing EPR program—information that can, with further analysis, lead to program best practices.

SCOPE OF WORK

The Committee agreed to research and benchmark the following 11 global packaging EPR programs¹:

- Canada: Ontario, Quebec, Manitoba, British Columbia (4 total)
- Europe: Belgium, France, Austria, Germany, Netherlands, United Kingdom (6 total)
- Australia² (1 total)

To compare these programs, the committee then agreed to use the following quantitative and descriptive criteria³:

Quantitative criteria:

- Performance target(s) (recycling rates)
- Rate at which households set out their curbside recyclables for pickup (“set-out rate,” or rate of participation)
- Cost effectiveness (e.g., cost/ton)
- Performance measurements (e.g., Kg/capita diverted)
- Administrative burden

Descriptive criteria:

- Program scope (i.e., what types of material are covered and which sectors are covered)
- Level of service offered (relates to convenience and available collection services)
- Ease of use (relates to convenience)
- Quality of materials
- Data tracking and integrity
- Transparency and accountability

Next, the Committee identified approximately 45 key performance indicators to allow for streamlined data collection and, to the extent possible, comparison among each of the 11 EPR programs. However, obtaining and comparing financial data proved quite difficult—a corollary of the highly competitive business environment in which many EPR programs operate.

¹ See Program Summaries.

² Australia’s program includes elements of producer responsibility, but differs from a traditional EPR program. The committee decided to research the Australian Packaging Covenant because of its unique model of joint industry/government funding that provides grants to implement specific recycling projects.

³ See Appendix.

PRELIMINARY FINDINGS

Based on a preliminary assessment of the collected data, PAC NEXT and PSI—independently of the rest of the Committee—conditionally identified a series of attributes that, when present together, constitute a high performing program. We are publishing them to promote further research and discussion, and we recommend that government and industry collaboratively explore them as a way to reduce packaging use, influence package design, and increase packaging material quality, collection, and recycling:

- Covers residential, public, as well as industrial, commercial and institutional (IC+I) sources
- Covers all material types (including printed paper)
- Low cost/ton
- High collection and recycling rates
- High-value materials/high material quality
- Program convenience
- Full producer responsibility

While preliminary data analysis focused primarily on EPR programs, PAC NEXT and PSI identified the following policies as complementary, playing an important role in increasing the performance of packaging collection and recycling systems:

- Pay-as-you-throw (PAYT) programs
- Mandatory recycling requirements
- Landfill bans for recyclable materials
- Container deposit programs

OVERVIEW OF WORK DONE - COMPARISON OF GLOBAL EPR PROGRAMS

The following tables compare the performance of the 11 EPR programs.

Table 1 – Comparison of European Programs:

Europe EPR Program Comparison					
Organization	Austria Altstoff Recycling Austria	Belgium Fost Plus	France Eco Emballages	Germany DSD (10 schemes)	Netherlands* Nedvang
Program Scope	Residential IC+I	Residential IC+I ¹	Residential Some away from home	Residential Some IC+I	Residential IC+I
Material Types Covered²	All packaging materials	All packaging materials (only PET & HDPE plastics recycled)	All packaging materials (only PET, HDPE & PP plastics recycled)	All packaging materials	All packaging materials
100% Producer Responsibility	Yes	Yes	No – 80%	Yes	Yes
Producer Contribution Per Capita (USD)	\$22.72 (2012)	\$7.03 (2012)	\$13.69 (2012)	\$15.97 (estimate)	\$12.30 (estimate)
Recycling Rate³ (2010)	67%	80%	61%	73%	74%
Source Separation⁴	Yes	Yes	Yes	Yes	Yes
High Convenience⁵	Yes	Yes	Yes	Yes	Yes




¹ Another organization, Val-I-Pac, manages waste from IC+I sector.

² “All packaging materials” includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7). Note that these EPR programs do not include printed paper.

³ Eurostat 2010 data. Note that some stewardship organizations report their own data, which may differ from national Eurostat data.

⁴ Paper & board, PMD (Plastic, Metal, Drink Cartons), Glass

⁵ Programs have a combination of curbside and drop-off location and >75% participation rate in curbside collection.

* Transitioned from tax based system to EPR in 2013. Data from new EPR program not yet available.

European programs, including those for residential and industrial, commercial, and institutional (IC+I) materials, are typically broad in scope and provide frequent, convenient access to curbside and away-from-home collection systems. It is important to note that all European programs surveyed require *consumers* to separate packaging materials at home, as collection is generally separated into paper and board bundles, PMD (plastics, metals, and drink cartons), and glass (which is often also separated by color). Overall recycling rates in the countries surveyed are at or above 60%, with Belgium leading at 80%. All surveyed countries also have landfill bans focused on minimizing the amount of recyclable

material going to landfill. Belgium and France, among others, supplement and reduce producer fees through revenue generated from collected recyclables.

Table 2 – Comparison of Canadian Programs:

Canada EPR Program Comparison				
Organization	British Columbia MMBC	Manitoba MMSM	Ontario SO	Quebec EEQ
Program Scope	Residential Streetscapes	Residential	Residential	Residential Municipal
Material Types Covered¹	All packaging materials + printed paper			
100% Producer Responsibility	Yes	No – 80%	No – 50%	Yes ²
Producer Contribution Per Capita (USD)	N/A	\$9.21 (2012)	\$6.31 (2012)	\$13.00 (2012)
Recycling Rate	N/A	52% (2011)	64% (2011)	65% (2010)
Primary Collection Method	Single Stream	Single Stream + Multi-Stream	Single Stream + Multi-Stream	Single stream
High Convenience	N/A	Yes – 93% access to curbside	Yes – 95% access to curbside	Yes – 99% access to curbside




¹ “All packaging materials” includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7).

² Recycling programs are designed and managed by local municipalities.

The 2009 Canada-Wide Action Plan for EPR, developed by the Canadian Council of Ministers of the Environment (CCME), estimated that over \$1 billion of packaging material is disposed of every year. As a result, CCME set the expectation for all 13 Canadian provinces and territories to implement an EPR program for packaging and printed paper by 2015—and to do so in a harmonized manner.

As Table 2 shows, the current programs in Manitoba, Ontario, and Quebec have recycling rates at over 50%. They also have predominantly residential and single stream (co-mingled) curbside programs, in part because multi-stream (source separation) efforts have been scaled back. Indeed, there is a clear need for a waste management solution for the IC+I sector, which continues to be a major source of packaging waste and, consequently, untapped recyclable materials.

In Ontario, producers reimburse municipalities 50% of the cost to collect and recover packaging waste (although, proposed changes to the Waste Reduction Act may eventually change the implementation of the law). In Quebec, as of 2013, producers must fund 100% of the collection and recovery of their products' packaging waste; however, it is the municipalities that operate the system. And in British Columbia, beginning May 2014, producers will have to design, operate, and fund 100% of the collection and recovery of their waste—an EPR program with a 75% recycling rate target.

Although this report does not include a program summary for Saskatchewan, the province is in the process of implementing a shared producer responsibility program for PPP whereby manufacturers are responsible for funding 75 percent of program costs. The Saskatchewan Ministry of Environment approved the stewardship plan submitted by Multi-Material Stewardship Western in December 2013, and program implementation will begin on January 1, 2015. However, CCME's expectation, as outlined in the Canada-Wide Action Plan for EPR, is that all provinces and territories will progress toward 100% producer funding.

Finally, it is important to note that, in Table 2, *funding* per capita does not equate to *program costs* per capita in Ontario and Manitoba (for example, in Ontario, where producers pay 50% of program costs, the amount of funding per capita is \$6.31).

Table 3 – Comparison of Australia and UK programs:

Australia and UK Comparison		
Organization	Australia Australian Packaging Covenant	UK ValPak (29 schemes total)
Program Scope	Residential Away from Home IC+I	Residential IC+I
Material Types Covered¹	All packaging materials eligible for grant-funded recycling projects	All packaging materials
100% Producer Responsibility	No 50/50 Industry + Government matching grant fund for recycling projects (Local taxes support recycling)	No Purchase Packaging Recovery Notes (PRNs) or Packaging Waste Export Recovery Notes (PERNs)
Producer Contribution Per Capita (USD)	\$0.12 ²	N/A
Recycling Rate	64% (2012)	61% (2010)
Primary Collection Method	Single Stream	Single Stream, some drop-off locations for glass
High Convenience	Varies by locality	Varies by locality




¹ "All packaging materials" includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7).

² Contributions from the Australian Packaging Covenant do not include government funds to support curbside recycling.

Packaging EPR programs in Australia and the UK are markedly different from those in Canada and other European countries. In Australia, local governments fund curbside recycling programs through household property taxes. Additionally, shared industry and government funding is distributed as grants to municipalities and other signatories of the Packaging Covenant to implement specific recycling projects. These grants focus mainly on residential and away-from-home collection, although some pilot projects in IC+I collection are also receiving funding. In the UK, the system is based on tradable recycling credits. Environmental agencies grant accreditation to recyclers, who, in turn, issue Packaging Waste Recovery notes (PRNs), or Packaging Waste Export Recovery notes (PERNs), based on the tonnage of material they recycle. Obligated producers under the UK’s packaging waste regulations are required to purchase PRNs and PERNs based on the amount of packaging material they put on the market. Producers that do not wish to manage their obligations directly may join one of 29 “compliance schemes,” which purchase PRNs and PERNs on behalf of their members. The UK system covers both residential and IC+I packaging. Both the Australian and UK programs favor predominantly single stream collection and achieve recycling rates around 60%.

PREFACE TO PROGRAM SUMMARIES

The following program summaries provide a general overview of packaging EPR programs in seven countries and four Canadian provinces. To gather the data presented within this document, the Product Stewardship Institute (PSI), along with other members of the PAC Next *Policy Best Practices that Support Harmonization* Committee, conducted extensive quantitative and qualitative research, including interviews with program experts from each of the seven countries and four provinces. The Committee is publishing these summaries so that governments, brand owners, and other stakeholders might learn from them and use them to help improve the recovery, recycling, and value of packaging materials. We welcome and appreciate any feedback you may have.

EUROPEAN EPR PROGRAM SUMMARY TABLES

The following three tables provide a high-level overview of the EPR programs for PPP that are currently operating in Belgium, German, France, Austria, and the Netherlands. Complete summaries for each of the province’s programs immediately follow the tables.

Europe EPR Program Comparison					
Organization	Austria Altstoff Recycling Austria	Belgium Fost Plus	France Eco Emballages	Germany DSD (10 schemes)	Netherlands* Nedvang
Program Scope	Residential IC+I	Residential IC+I ¹	Residential Some away from home	Residential Some IC+I	Residential IC+I
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Source Separation⁴	Yes	Yes	Yes	Yes	Yes
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¹ Another organization, Val-I-Pac, manages waste from IC+I sector.

² "All packaging materials" includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7). Note that these EPR programs do not include printed paper.

³ Eurostat 2010 data. Note that some stewardship organizations report their own data, which may differ from national Eurostat data.

⁴ Paper & board, PMD (Plastic, Metal, Drink Cartons), Glass

⁵ Programs have a combination of curbside and drop-off location and >75% participation rate in curbside collection.

* Transitioned from tax based system to EPR in 2013. Data from new EPR program not yet available.

Europe EPR Program Performance: 2010

	Austria	Belgium	France	Germany	Netherlands*
Recovered Tonnes (for recycling)	819,217	1,344,669	7,645,844	11,627,900	2,014,000
Overall Recycling Rate ¹ (excluding Energy, Wood)	67%	80%	61%	73%	74%
Glass	83%	100%	70%	86%	91%
Aluminum	61% Metals	95% Metals	48%	88%	88% Metals
Steel			78%	93%	
Plastic	35%	42%	23%	49%	36%
Paper + Board	85%	90%	92%	90%	90%
Waste to Energy	✓	✓	✓	✓	✓
Fee Calculation	Material Type + Weight	Material Type + Weight; Credits for Recycling	Material Type + Weight; Penalties + Credits	Material Type + Weight	Material Type + Weight



¹ Eurostat 2010 data. Note that some stewardship organizations report their own data, which may differ from national Eurostat data.
*Transitioned from tax based system to EPR in 2013. Data from new EPR program not yet available.

Europe Collection Infrastructure

	Austria	Belgium	France	Germany	Netherlands*
Access to Curbside	High	High	High	High	High
Collection Systems	25% PAYT Source Separation	PAYT Source Separation	PAYT Source Separation	PAYT Source Separation	Source Separation
PMD ¹	M separate	✓	✓	✓	M in garbage
Paper / Board	✓	✓	✓	✓	✓
Drop-Off	✓	✓	✓	✓	✓
Public Space	✓	✓	X	X	X
Glass		✓			
Bottle Deposit Scheme	Some Beverage Containers	Beverage Containers		Beverage Containers	Large PET Beverage Containers



¹ PMD = Plastic, Metal, Drink Cartons

*Transitioned from tax based system to EPR in 2013. Data from new EPR program not yet available.

BELGIUM PROGRAM SUMMARY

Reviewed by Steve Boussemaere, *Fost Plus*

Country Name:	Belgium
Population	11,035,948 (as of 2012)
Population Density	362 people/km ²
Key Documents	Fost Plus website: https://www.fostplus.be/Pages/default.aspx
Stewardship Organization:	Fost Plus
Financing	Producers, importers and distributors of private labels finance the collection, sorting and recycling of packaging waste, but legal responsibilities are delegated to Fost Plus. Financing occurs via the Green Dot licensing program, which requires companies to declare the amount of packaging that they put on the market. The company is then assessed a fee proportional to the quantity of packaging and the material type, which contributes to the net cost of recycling. 50% of Fost Plus revenue is coming from the green dot fees, 50% from material revenue (situation in 2012).
Date Established	Fost Plus was founded in 1994 by major Belgian producers and importers of packaged products or packaging materials, distributors and trade organizations (private sector) in response to EU Packaging Waste Directive
Program Scope [i.e. Residential Only, or Including IC+I]	Fost Plus manages packaging from the residential sector.
Legal Authority and Governance	Fost Plus applies every 5 years for a new accreditation. For the moment it operates as the only accredited body for household packaging waste. Fost Plus cannot organize collection and sorting in the field as Belgian law defines that this is the responsibility of the municipalities. Fost Plus signs contracts with inter-municipal authorities, defining how collection and sorting should be organized. If the inter-municipal authorities do not have their own infrastructure, collection, sorting and reprocessing requirements are competed for amongst waste management companies via tender.
Number of Members	In 2011, there were 5,233 members and in 2012, there were 5,217 members. De minimis rule: A company is exempt from participating in Fost Plus, and consequently doesn't have to pay any fees, if they put less than 300 kilograms of packaging on the market annually.
Annual Contributions	In 2012, 5,217 members contributed 58.3 million Euros, which is an average of 11,175 Euros per member.
Revenue from Materials	Revenues for materials were 41.0 (2007), 43.5 (2008), 26.2 (2009), 44.7 (2010), 64.0 (2011) and 61.5 (2012), expressed in millions of Euros.
Free Riders	As of 2010, 8% of producers were deemed to be free riders.
Administration Required	<i>Number of employees:</i> As of 2012, there were 56 employees. <i>Operating costs:</i> Operating costs were 185,400,873.74 Euros (2011) and 154,424,590.12 Euros (2012). As Fost Plus has to return the value of the non-packaging paper/cardboard, collected together with packaging paper/cardboard, to the municipalities, these figures include the value of this non-packaging material. The net-cost for the management of packaging waste in 2012 was 129.5 million of Euros.

Transparency and Accountability	Fost Plus recently launched a website which enables companies to perform a simplified lifecycle analysis of their packaging. The diagnostic provides a reference with tips for companies to optimize their packaging. With assistance from various companies, Fost Plus designed a seminar to educate the corporate sector with respect to packaging optimization. In addition, Fost Plus provides training sessions for waste management employees to efficiently and correctly sort packaging materials.
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Legal Basis

Enabling Legislation	The EU Packaging Waste Directive has been transposed into the Cooperation Agreement in 1996, which was revised in 2008. The revision is effective since January 1, 2009. The Cooperation Agreement mandates that parties responsible for packaging comply with the three obligations: (1) the take-back obligation requires that a certain percentage of the packaging material brought to the market be recycled or recovered, with minimum requirements of 80% recycling and 90% recovery; (2) the information obligation requires companies to report not only the nature of packaging, but also the recycled percentages that were achieved to the Interregional Packaging Commission; and (3) the prevention plan obligation where companies must develop a plan to reduce the quantity of packaging used and the objectives they wish to achieve every three years.
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Scope of Materials Covered	The scope of materials covered by the household collection scheme includes glass, paper and cardboard, metal packaging (aluminum and steel), plastic bottles and flasks (HDPE and PET), and beverage cartons.
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Performance Targets	<p>EU Packaging Waste Directive – Material-specific recycling targets:</p> <ul style="list-style-type: none"> • 60% for glass • 60% for paper and cardboard • 50% for metals (aluminum and steel) • 22.5% for plastics • 15% for wood <p>The Cooperation Agreement recycling targets for household packaging waste are:</p> <ul style="list-style-type: none"> • 60% for glass • 60% for paper and cardboard • 60% for beverage cartons • 50% for metals (aluminum and steel) • 30% for plastics • 15% for wood
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Program Performance

Of Amount Collected:

—Amount recycled	For 2012:						
	Material	Market tons (est.)		Recycled tons		Recycling vs. market	
	Paper Cardboard	188.803		178.290		94.4%	
	Beverage cartons	19.993		15.988		80.0%	
	Glass	322.218		332.406		103.2%	
	Plastic	214.458		74.240		34.6%	
	Metals	86.121		84.112		97.7%	
Recycling rates 2010 / 2011 Eurostat data:							
	Paper & Board	Glass	Plastic	Metals	Wood	Total	

	2010	89.8%	100%	41.5%	94.7%	63.3%	79.8%
	2011	90.4%	100%	41.4%	97.1%	63.4%	80.2%
—Amount Used as Alternative Fuel	23,169 tons						
—Amount Disposed as Residue in Landfill	0 tons						
—Amount Reused	0 tons						
Kilograms/Capita Captured	112 kg/inhabitant/year (2012): <ul style="list-style-type: none"> • 30 kilos of glass • 67 kilos of paper and cardboard of which 25% packaging • 15 kilos of PMD (plastic bottles and flasks, metal packaging and drink cartons) 						
Net Cost/Kilogram Captured	Not provided						
Amount of Greenhouse Gas Emissions Avoided	Calculated on a per member basis. In 2011, Fost Plus offered its members an opportunity to request an attestation quantifying the amount of CO ₂ saved as a result of recycling their packaging. Each company would be provided with an individual assessment documenting the amount emissions avoided. Total amount of greenhouse gas emissions avoided was 670000 T CO ₂ eq. in 2011.						
Cost Effectiveness							
Cost per Ton	Based on Green Dot tariffs for 2012 (cost per kilogram): <ul style="list-style-type: none"> • Glass: 0.0231 Euros/kg • Paper and cardboard: 0.0202 Euros/kg • Aluminum: 0.0654 Euros/kg • Steel: 0.0525 Euros/kg • Plastic bottles and flasks: 0.1387 Euros/kg • Drink cartons: 0.2848 Euros/kg 						
Cost per Capita	<ul style="list-style-type: none"> • (2012): 9.61 Euros/inhabitant (3.89 after sale of materials) • (2011): 9.62 Euros/inhabitant (3.88 after sale of materials) • (2010): 9.35 Euros/inhabitant (5.20 after sale of materials) • (2009): 8.85 Euros/inhabitant (6.40 after sale of materials) • (2008): 8.98 Euros/inhabitant (4.87 Euros sale of materials), 						
Cost per Household	Not provided						
Roles and Responsibilities							
Producers	<i>Legal:</i> Producers must comply with the Cooperation Agreement and adhere to the three obligations: take-back obligation, information obligation, and prevention plan.						
	<i>Financial:</i> The costs of the system are financed by the value of the materials, sold on the recycling market and by the Green Dot licensing fees. The system operates as a not-for profit organization: if the value of the materials is high, the Green Dot fees can be lowered. Producers must pay a Green Dot licensing fee, which subsidizes the recycling and recovery system. Fees are calculated based on the type of material (ease of recyclability) and weight of packaging.						
	<i>Management/Operations:</i>						
Stewardship Organization	Accredited by the Belgian government, Fost Plus operates as a government-accredited body. Fost Plus is responsible for overseeing the tender process for material collection and recycling. Fost Plus communicates with all stakeholders along the supply chain (e.g., producers, residents, waste management companies, etc.) and conducts education and outreach						

	campaigns.
Government – Local	Municipalities have preference in the tender process and therefore may decide to provide collection services to residents. However, municipalities are then responsible for transporting materials to specified recyclers. In addition, all municipalities assume costs associated with the printed paper portion of paper collection as for this material, packaging and non-packaging are collected in one single flow.
Government – Country/Province	The Interregional Packaging Commission, which is comprised of members from each of the three regions, oversees the Cooperation Agreement. The Commission has the authority to grant, suspend, and revoke licenses of approved organizations, verify how member companies achieve minimum recycling and recovery targets, and verify other information reported by companies.
Waste Management Companies	Waste management companies must ensure that they adhere to quality standards and volume requirements for materials transported to recyclers; bonuses or penalties can be assessed based on these criteria.
Recycling and Processing Industry	Recyclers must maintain a database to track data on types of materials and quantities, which are validated by external sources.
Collection Infrastructure	
Quality of Materials Collected	Due to separation of glass, paper/cardboard and PMD (plastic bottles and flasks, metal packaging and drink cartons) by the consumer, contamination at MRFs is low, resulting in high quality materials. The PMD is the only mix of materials that require separation at the MRF and contaminants that are not detected by the optical sensors are primarily non-bottle plastic packaging (e.g., polystyrene, gardening containers, translucent blue plastic bags). Hand sorting is a technique used at the MRFs to reduce contamination that is not detected by the optical sensors. HDPE and PET bottles & flasks (PET is further separated by color) are the only types of plastic baled and sold on the market. The translucent blue bags cannot be recycled due to the moisture and residue present as a result of PMD materials and are therefore sent to a waste-to-energy facility. Overall, a rigorous MRF separation process with built-in quality control measures ensures that PMD are of high quality and adhere to domestic and international end-market specifications.
Residential – Curbside	Materials are separated at the source. Mixed paper and cardboard is bundled together and collected at curbside once per month. Plastic bottles and flasks, metal packaging and drink cartons (PMD) are collected together twice per month. Residents must purchase translucent blue bags from the supermarket and place their PMD at the curbside for collection. Concerning the plastics, only PET and HDPE plastic bottles are collected for recycling. In rather exceptional cases, large underground bins are being incorporated into the design of newly constructed collection facilities to accommodate multi-family dwellings. <i>Set out rate: N/A</i>
Residential – Drop-Off	Glass packaging is deposited in large glass igloos or bigloos by the resident, where it is separated into clear and colored glass. Each bottle bank is strategically located to service 700 to 1000 residents. On top of this collection system, residents can bring various types of packaging materials, but also household hazardous wastes, construction waste, garden waste and electronics to so called container-parcs, in principle available in every municipality.

	Some of the igloos have been designed to store a large volume of materials underground, therefore requiring less frequent trips for collection.
Public Spaces/Streetscapes	Fost Plus introduced on-the-go collection services countrywide.
Other [e.g. events, IC+I, etc.]	Val-I-Pac collects packaging waste derived from the IC+I sector. Select municipalities have found markets for non-bottle plastics, which are collected at drop-off facilities. Entities such as Ivarem, a group of eleven municipalities, provide residents with pink bags for non-bottle plastics; however, these quantities are only financed by Fost Plus on a forfeit-basis.
Ease of Collection	Source separation of materials by consumers is required. Through continuous education and promotion campaigns, Fost Plus is focused on increasing user understanding. The collection system is convenient as curbside services are provided, depending on material type, either once or twice per month. The pay as you throw principle is widespread in Belgium, boosting of course the separate collection of different recyclable materials.
	<i>Participation rate</i> [if available]:
Data Tracking and Integrity	Collection, sorting, and recycling data are collected and monitored by Fost Plus via an internet-based reporting form, which facilitates auditing and verification. Data reported by recyclers is validated by cross-referencing the information with collection and sorting organizations and every recycling-contract is audited by an independent expert
	<i>Third party auditing:</i> The Interregional Packaging Commission acts the third part to verify information provided by companies. Every recycling-contract is audited by independent experts, reporting to Fost Plus and the Interregional Packaging Commission.
Additional Notes	Door-to-door initiatives, especially in large urban centers such as Antwerp, Brussels and Liege, provides direct contact with residents to rectify any confusion they may have with regards to sorting. In Liege in 2010, the leftover portion of plastic bottles and flasks, metals and drinks cartons (PMD) was reduced from 25% to 18%. Similarly in Brussels, the PMD leftover portion was reduced from 55% to 25%. The average PMD leftover portion (=residue) is 15% on average in Belgium.

Additional Collection Mechanisms – Beverage Container Deposit Legislation

Program Scope	Belgium has a voluntary deposit-refill system and a mandatory tax on beverage containers that are not refilled.
Collection Infrastructure	N/A
Quantity of Materials Collected	N/A
Recycling Rate	N/A
Value of Materials	N/A
Additional Notes	Certain brands still sell beverages, which include water, juice and soft drinks, in refillable containers with a deposit.

Funding Mechanism/Fee Calculation

Factors Included in Calculating Fee schedule	Fees are calculated based on the material type (ease of recyclability) and weight of packaging. If the sales of the material are high, the green dot fees can be lowered as Fost Plus is a not-for-profit organization.
Design for Recyclability Incentive	Materials that are easily recyclable get lower fees.

GERMANY PROGRAM SUMMARY

Reviewed by Joachim Quoden, *Extended Producer Responsibility Alliance (EXpra)*

Country Name:	Germany
Population	82,217,837 (as of 2008)
Population Density	235 people/km ²
Key Documents	Extended Producer Responsibility Alliance website: http://www.expra.eu DSD system website: http://www.gruener-punkt.de
Stewardship Organization:	Duales System Deutschland (DSD) and Competitors
Financing	The German system is a full producer responsibility program, where producers incur the total cost for collection and recovery of packaging as well as the organizational responsibility for organizing the system separate from the municipalities. Municipalities share some of the costs for paper collection as paper packaging and other paper are collected together (25/75). Currently, ten Dual Systems compete to offer packaging producers the lowest fees. These systems operate independently of municipal curbside collection systems (for garbage), but use the same collection infrastructure.
Date Established	DSD was founded on September 28, 1990 by 95 companies from the packaging and consumer goods industries, as well as the retailing sector. Business operations commenced on August 1, 1991.
Program Scope <i>[i.e. Residential Only, or including IC+I]</i>	Program scope is residential waste packaging. However, consumer packaging that ends up in small shops, hospitals, cafeterias, offices etc. is also captured in the waste management system. Transport packaging and commercial packaging/printed paper are not included.
Legal Authority and Governance	Prior to 2001, Duales System Deutschland operated as a monopoly and some companies operated under “self-compliance”. In 2001, the European Commission mandated that the collection system should be open to competition and that use of the Green Dot trademark should be separated from DSD’s recycling services. Competition was first introduced in 2005. Currently, there are ten dual systems which compete nationally with one another to fulfill producer’s take-back obligations for household packaging only. As of 2011, DSD was the market leader with a market share of around 50%. In order to qualify as a valid system, dual systems must obtain a license in each of the 16 German provinces. To receive such a license in each province they must have signed a special agreement with each local authority in this province (“Abstimmungsvereinbarung”).
Number of Members	DSD has approximately 18,000 members.
Annual Contributions	It is estimated that all dual systems together plus branch solutions have a turnover of about 1 billion €.
Revenue from Materials	N/A
Free Riders	When Duales System Deutschland (DSD) was the sole stewardship organization, free riders were a concern, representing 15 – 20 %of packaging. Since the inception of dual system competition and mandatory participation, producer compliance is said to have decreased. Given that producers can choose the ten dual systems as service providers and can also split their obliged materials to be managed by different systems; It is very difficult to track whether producers have reported all of their obliged materials. Current estimated free riding packaging amounts are about 40%.

Administration Required	<i>Number of employees:263 (DSD)</i> <i>Operating costs [if available]: N/A</i>
Transparency and Accountability	Due to the competitive structure of Germany’s stewardship organizations, financial data is not divulged by DSD or any of their dual system competitors.
Additional Notes	The fee for Green Dot label usage on packaging is separate from those paid to dual systems for collection and sorting. In order to use the Green Dot symbol, companies must pay a license fee to DSD, Germany’s Green Dot organization, even if they are using the compliance service of a competitor.
Legal Basis	
Enabling Legislation	Enabling legislation includes the EU Waste Framework Directive, EU Landfill Directive, EU Packaging and Packaging Waste Directive. Enacted in 1991 and amended 5 times thereafter, the Packaging Ordinance defines “producers” as manufacturers and distributors of sales packaging, which ultimately end up with the private consumer, including commercial entities which are defined as “similar to private consumers”. Such producers must enroll in a “dual system”, which operates independently of a traditional waste disposal system, to ensure that packaging is collected for recovery. In 2009, the fifth amendment, intended to limit free riding, mandated that producers participate in a dual system to satisfy their packaging take-back obligation. Nevertheless, it is still possible to participate in a so called “branch solution” (which is more or less identical to the former self-compliance) and to use packaging taken back at the point of sale to reduce the reported amounts to dual systems. Currently, the ten dual systems and other service providers offer more than 400 branch solutions. Therefore, only about half of the plastic packaging put on the market is licensed with one of the dual systems.
Scope of Materials Covered	The scope of materials covered includes glass, paper and cardboard, metals (aluminum and steel), plastics (all types), and wood, and a specific stream for composites (especially Tetra Briks).
Performance Targets	EU Packaging Waste Directive – Material-specific recycling targets: <ul style="list-style-type: none"> • 60% for glass • 60% for paper and cardboard • 50% for metals (aluminum and steel) • 22.5% for plastics • 15% for wood Under the Packaging Ordinance, Germany, in the mid to late 1990s, established and enacted higher recycling targets than those mandated by the EU: <ul style="list-style-type: none"> • 75% for glass • 70% for steel • 60% for aluminum • 70% for paper • 60% for composites • 36% for plastics (60% recovery rate)
Program Performance	
—Amount recycled	For 2008 (household and commercial packaging waste combined): <ul style="list-style-type: none"> • Glass: 82% (2,689,000 tonnes generated; 2,352,280 tonnes recycled) • Plastic: 47% (2,372,000 tonnes generated; 1,114,840 tonnes)

	<ul style="list-style-type: none"> recycled) Paper and Cardboard: 88% (6,940,000 tonnes generated; 6,107,200 tonnes recycled) Metal: 92% (921,000 tonnes generated; 839,040 tonnes recycled) Wood: 29% (2,571,000 tonnes generated; 745,590 tonnes recycled) Other (ceramics, textiles, etc.): 0% (380,450 tonnes generated) <p>In 2010 approximately 11,442,600 tonnes were recycled (material recycling), or 71% of packaging generated⁴. The recovery rates (recycling + incineration) for household packaging are higher⁵ (2010):</p> <ul style="list-style-type: none"> Glass: 86.5% Metal: 96.4% (Tin) and 90.4% (Aluminum) Plastics: 89.8% Paper: 87% Aseptic containers: 72.5%
—Amount Used as Alternative Fuel	Approximately 11% of packaging generated is recovered for energy. Packaging waste generated (2010): 16,002,000 tonnes Packaging used for energy recovery (2010): 1,819,000 tonnes
—Amount Disposed as Residue in Landfill	Not provided
—Amount Reused	Not provided
Kilograms/Capita Captured [and then diverted]	Not provided
Net Cost/Kilogram Captured [and then diverted]	This data is not publicly available.
Amount of Greenhouse Gas Emissions Avoided	Not provided
Cost Effectiveness	
Cost per Ton	Not provided
Cost per Capita	Not provided
Cost per Household	Not provided
Additional Notes	It is estimated that the turnover of all 10 dual systems are around 900 million € to 1 billion € per year.
Roles and Responsibilities	
Producers	<i>Legal:</i> Producers must comply with the Packaging Ordinance.
	<i>Financial:</i> Producers pay fees to dual systems for collection and sorting. However, the Green Dot fee is not mandatory and is separate to the aforementioned fee.
	<i>Management/Operations:</i> N/A
Stewardship Organization	DSD and its competitors act as coordinators between producers and waste management companies. Dual systems are directly responsible for overseeing the tender and contract process for collection, sorting and reprocessing. Education campaigns are funded by the dual systems at 1.25 Euros per capita.
Government – Local	Municipalities manage the collection of paper for recycling, including paper waste from packaging. Dual systems reimburse municipalities for 25% of the cost of paper collection to account for the portion of recycled paper that

⁴ <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

⁵ http://gvmonline.de/files/blickpunkt/2012-12-rb19_en.pdf

	comes from packaging. Education and consumer outreach about curbside recycling is performed by municipalities.
Government – Country/Province	Bin type, materials collected and frequency of collection are mandated by the municipalities in the Abstimmungsvereinbarung. The 16 provincial governments (“Länder”) are responsible for data tracking, auditing and verifying that producers participate in a dual system.
Waste Management Companies	Waste management companies are responsible for collection of curbside recyclables.
Collection Infrastructure	
Quality of Materials Collected	Materials are separated at source, where lightweight packaging, similar to Belgium’s PMD (plastic, metals, drink cartons), is placed in a designated yellow bin. Yellow bin items include all plastics, metals, drink cartons, and other composite packaging. Paper and cardboard are placed in a separate bin. Germany’s Oppin facility is outfitted with 14 Ti-tech brand sorters, capable of sorting packaging materials into specified streams, thus rendering high quality materials. All streams are diverted to the quality control check room, which is equipped with computers to oversee the optical sorters and cameras. Remaining aluminum or plastic is removed by hand. Yellow plastic film, after having been broken by a large screw to expose the contents, is removed by conveyor belt, where they are baled. Further refinement is achieved by separating materials based on weight and size. Overall, a rigorous Materials Recovery Facility (MRF) separation process with built-in quality control measures ensures that captured materials are of high quality and adhere to domestic and international end-market specifications.
Residential – Curbside	Materials are separated at the source. Mixed paper and cardboard is set out at curbside in a designated bin. Lightweight packaging (i.e., plastics, metals, and drink cartons) is collected at curbside in either yellow bags or bins.
Residential – Drop-Off	Only accepted at drop off facilities, glass is sorted by 3 colors, where it is deposited into clear or colored bins. Residents may also deposit paper and cardboard at drop off sites. Drop off sites and MRFs accept packaging, electronics, household hazardous waste, yard waste, and minor home construction waste.
Public Spaces/Streetscapes	N/A
Other [e.g. Events, IC+I, etc.]	DSD and its competitors also target sales packaging collected in the IC+I sector where similar sales packaging arises, including small shops, offices, hospitals etc.
Ease of Collection	Source separation of materials by consumers is required and is not particularly onerous as there are only two streams for collection: paper and lightweight packaging. The collection system is convenient as curbside services are provided. Since competition was introduced into the system, the stewardship organizations have stopped organizing education and promotion campaigns. Municipalities currently run education and promotion campaigns aimed at increasing user understanding. Through the use of a variety of media formats and multiple languages, Berlin has focused on educating new immigrants about how to recycle. <i>Participation rate [if available]: 95% of inhabitants.</i>
Data Tracking and Integrity	Producers must complete a Certificate of Compliance that is submitted to the German Chamber of Commerce, which runs a database for these certificates. The Certificate provides type of packaging and quantities that was put on the

	<p>market for a given calendar year, as well as proof of participation in a dual system. Dual systems report their data to each of the 16 Länder.</p> <p><i>Third party auditing?</i> As an additional requirement, obliged companies must also submit their data to an independent registry operated by the German Chamber of Commerce. The ten dual systems report their data to each of the 16 German provinces, although the reporting requirements are not standardized throughout the country. The reports are then audited by CYCLOS, a consultancy, on behalf of the German government on an annual basis.</p>
Additional Notes	<p>Yellow bags are financed by fees collected from fillers or retailers. Under new legislation, “same-material non-packaging” items such as kitchen implements and toys can be disposed of along with packaging in yellow bins. There is currently controversy between producers, dual systems, and municipalities about who is responsible for these “extended yellow bins” and how costs should be allocated. Municipalities would like to manage the “extended yellow bin,” as they do with paper collection, and to be reimbursed by the dual systems for their share. The dual systems, however, want producers of kitchen tools, toys, and other obligated materials to be added as obliged companies under the EPR system.</p>
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	<p>Fees are typically calculated based on the quantity of sales packaging sold on the market, material used and its weight. However, since the system became competitive these fees are not public and industry experts suggest that large companies may get a very competitive price for joining a system and some businesses may be subsidizing the packaging of another.</p>
Design for Recyclability Incentive	N/A
Other Incentives Included	N/A
Funding for Research and Development	<p>It is not common for fees to go toward research and development; however, it is up to each individual service provider. Prior to competition DSD is said to have conducted more research into new recycling techniques and applications.</p>
Additional Notes	<p>The government does not charge the companies or the dual system for compliance activities. However third party audits are required and there is a financial cost associated.</p>

FRANCE PROGRAM SUMMARY

Reviewed by Valerie Herrenschmidt-Munoz, *Eco Emballages France (EEQ)* and Mathieu Guillemette (*EEQ*)

Country Name:	France
Population	63,460,768 (2011)
Population Density	115,03 people/km ²
Key Documents	2012 Annual Report: http://www.ecoemballages.fr/actualite/rapport-annuel-2012
Stewardship Organization:	Eco-Emballages France (EEF)
Financing	The system is financed mainly by producers of household products who pay a compulsory license fee for the use of the Green Dot trademark. The Grenelle Law establishes that municipalities must be compensated up to 80 % of “reference costs” observed on national average, given that they meet certain obligations. Eco-Emballages provides financial and technical support to the local authorities who undertake the selective collection and valorization of household packaging waste. Eco-Emballages also provides a guaranteed recovery for all the secondary materials conform to the contractual quality standards.
Date Established	Eco-Emballages was created on 12 November 1992 on the initiative of industry and approved by the French Government. The shareholders of the company are product and packaging material manufacturers, importers and trading companies.
Program Scope [<i>i.e. Residential Only, or Including IC+I</i>]	Eco-Emballages is a private nonprofit company accredited by the French public authorities to install, organize and optimize sorting, selective collection and recycling of household packaging.
Legal Authority and Governance	Eco-Emballages S.A. is based on the Lalonde Decree No. 92-377 on Household Packaging Waste of 1 April 1992. It states that, a company should be established to take over the collecting and recycling of household packaging. Moreover, the filling industry, producers and importers should accept responsibility for their packaged products. At the same time, the local authorities retain their traditional responsibility for waste management.
Number of Members	23,038 licensees’ contracts representing 50000 companies in 2012. All companies responsible for marketing or introducing a packaged product may fulfill their legal requirement by joining Eco-Emballages.
Annual Contributions	The total amount of contributions reached 653 m€ in 2012 (584 m€ in 2011). This allowed an average cover rate for 70% of municipal costs. 549.2 million Euros were paid by Eco-Emballages to the local authorities.
Revenue from Materials	Revenues from the sales of materials were 238 million euro in 2011, but only 158 million euro in 2010. The difference in commodity prices is one of the reasons for the contrast.
Free Riders	The companies can either organize their own system, or contribute to a collective system which favors the implementation of the selective collection of domestic packaging by local authorities with a measure of autonomy, by subscribing to a society which have been approved by public authorities (at present Eco-Emballages or Adelphe which manages wine and spirits). 95% of the companies chose to contribute to Eco-Emballages.
Administration Required	<i>Number of employees: 199 (EEF only)</i> <i>(11 employees for Adelphe)</i> <i>Operating costs Eco-Emballages redistributes 95% of all the contributions</i>

	from the companies and keeps 5% for operating costs.
Transparency and Accountability	To be approved by French Ministry of Ecology, Eco-Emballages has to have a strong transparency policy. Few example: <ul style="list-style-type: none"> • A very clear website which enables companies to perform a simplified lifecycle analysis of their packaging. The diagnostic provides a reference with tips for companies to optimize their packaging. • The Law, Rules and Regulations, Gazette officielle, Guidelines, and other official documentation published on their website • An annual financial report of their activities, which provides performance details and associated costs of the program that you can find online (but in French).
Additional Notes	Adelphe is a subsidiary of Eco Emballages and manages packaging from the wine & spirits sector. Another organization, Ecofolio, is responsible for printed papers. EcoMobiliser is in charge of furniture and EcoDDS hazardous waste.
Legal Basis	
Enabling Legislation	The French Environment code applies to everything about the environment. The relevant language pertaining to EPR is: <ul style="list-style-type: none"> • <u>EPR (Extended Producer Responsibility) programmes:</u> As stipulated in the article of Law No. 541-10 and Decree No. 543-54 of the French Environment Code, any producer, any importer or anyone who is responsible for getting its products into the marketplace the first time must take both physical and financial responsibility for the selective collection and recycling or treatment of the waste produced by their products, if its packaging is one of those described in the Decree No. 543-55 of the Environment code, in compliance with the articles from Law No. 2224-13 to Law No. 2224-16 of the General code for regional authorities. <p>The EU Waste Framework Directive, EU Landfill Directive, EU Packaging and Packaging Waste Directive also apply.</p>
Scope of Materials Covered	The scope of materials covered includes glass, paper and cardboard, metals (aluminium and steel), plastics and bottles (HDPE, PP and PET).
Performance Targets	EU Packaging Waste Directive – Material-specific recycling targets: <ul style="list-style-type: none"> • 60% for glass • 60% for paper and cardboard • 50% for metals (aluminium and steel) • 22.5% for plastics • 15% for wood (not for household waste) <p>The Loi Grenelle established the recycling target for 2016 at 75%.</p>
Program Performance	
Of Amount Collected:	
—Amount Recycled	For 2012: <p>Recycling rate: 67% of the total volume (3.12 Mt). Recycling performance by material (as a percentage of the total volume):</p> <ul style="list-style-type: none"> • Steel: 97%

	<ul style="list-style-type: none"> Aluminium: 32% Paper-card: 67% Carton containers: 45% Plastic bottles: 49% Other plastic packaging : 1% Glass: 86%
—Amount Used as Alternative Fuel	Not provided
—Amount Disposed as Residue in Landfill	Not provided
—Amount reused	Not provided
Kilograms/Capita Captured [<i>and then Diverted</i>]	46.1 kg of household packaging diverted 588 Kg/inhabitant/year (2009) of total household waste collected by municipalities
Net Cost/Kilogram Captured [<i>and then Diverted</i>]	
Amount of Greenhouse Gas Emissions Avoided	2.03 million tons of CO2
Cost Effectiveness	
Cost per Ton	The official “reference costs” – a national average based on observed costs (not optimized)- are 515€/T of light packaging waste collected and sorted and 91€/T of glass.
Cost per Capita	Not provided
Cost per Household	Not provided
Roles and Responsibilities	
Producers	<i>Legal:</i> Producers must take responsibility for packaging waste recovery. They can either implement an individual waste control system for household packaging and have it accredited by French authorities, OR or pay a contribution fee to Eco-Emballages or Adelphe .
	<i>Financial:</i> If they choose the second solution, producers must pay an associated Green Dot licensing fee, which subsidizes the recycling and recovery system in its entirety. Fees are calculated based on the type of material (ease of recyclability) and weight of packaging.
Stewardship Organization	Eco-Emballages S.A. is a private company accredited by the French public authorities to install, organize and optimize sorting and selective collection of household packaging.
Government – Local	Municipalities and other municipal bodies provide curbside recycling services. According to the agreement signed with EEF, municipalities can choose between several options: they can either sell sorted materials to companies (Valorplast, Revipac, CSVMF, Arcelor, Far) at pre-established conditions (prices formulas for each material are public and apply to all municipalities), or they may negotiate directly with operators or recyclers.
Government – Country/Province	The Agency for the Environment and Energy Management (ADEME) is a public organisation under the direct supervision of the French Ministry of Ecology, and ADEME has to implement the law and it oversees Eco-Emballages.
Waste Management Companies	Private waste management companies are service providers to the municipalities.
Recycling and Processing	The recycling and processing industry are service providers to the

Industry	municipalities.
Additional Notes	After a two year consultation period with all stakeholders led by the Ministry for Ecology and Sustainable Development that included local authorities, consumer groups, companies and the packaging materials and recycling networks, Eco Emballages France was accredited by four supervising ministries in December 2011.
Collection Infrastructure	
Quality of Materials Collected	Simple plastic packaging, glass, papers, aluminum cans and green waste are separated at the source and collected separately. According to the 2009 annual report, the refusal rate was 23 % in 2009. The refusal rate is defined as “the proportion of sorted waste refused by sorting centres. Refusal is linked to sorting errors by residents and losses inherent in the process. The formula for calculations is the following: collected tonnes – recycled tonnes / collected tonnes x 100”
Residential – Curbside	Materials are separated at the source. 66% of French people are collected once a week. Light packaging (paper, cardboard, steel, aluminium and plastic bottles) are collected for recycling in a yellow bin or a bag.
Residential – Drop-Off	Glass packaging is deposited in large glass “igloos” by the resident. The glass is separated by colour by an automatic way in sorting plant. The cullet produced is flint or colored, in order to produce flint packaging or coloured bottles. This collection is restricted to glass packaging (soda-lime glass).
Public Spaces/Streetscapes	EEF supports some out-of-home recovery local initiatives.
Other [e.g. Events, IC+I, etc.]	EEF supports some out-of-home recovery local initiatives.
Ease of Collection	Source separation of materials by consumers is not required everywhere, but most of the local authorities push people to do so. Through continuous education and promotion campaigns, Eco-Emballages is focused on increasing user understanding. The collection system is convenient as curbside services are provided, depending on material type, <i>Participation rate:</i> While 84% of French people say that they regularly sort their packaging waste, 77% actually do, according to EEF’s 2011 Annual Report.
Data Tracking and Integrity	The European Statistical Waste Regulation (RSD in French) creates an obligation of biennial statistics on the production, the valuation, the elimination of waste in the countries of the EU.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	The French fee schedule is a combination of a fee per weight, a fee per unit and penalties/bonuses.
Design for Recyclability Incentive	For the 2013 fee schedule: <ol style="list-style-type: none"> 1. 10% credit for 50%+ recycled content in paper and carton containers 2. 50% penalty for disruptive materials 3. 100% penalty for non-recyclable materials 4. 2% credit for education initiatives 5. 2% credit for prevention (reduction, reusability)

AUSTRIA PROGRAM SUMMARY

Reviewed by Christoff Scharff, *Altstoff Recycling Austria (ARA AG)*

Country Name:	Austria
Population	8,443,000 (as of 2012)
Population Density	102 people/km ²
Links to key documents	ARA website: http://www.ara.at/
Stewardship Organization:	Altstoff Recycling Austria (ARA AG)
Financing	Altstoff Recycling Austria is the sole stewardship organization that manages Austria's full producer responsibility system for packaging. Collection and recovery costs are covered by license fees that partners pay ARA, for the reported volume of packaging materials they put on the market. License partners of ARA are granted the exclusive right to use the "Green Dot" logo on the packaged products they distribute on the Austrian market. (Note: in IC+I sector there are also some other collection and recovery systems on the market)
Date Established	ARA AG was established in 1993 by key Austrian companies committed to achieving their obligations under the Packaging Ordinance.
Program Scope [<i>i.e. Residential Only, or Including IC+I</i>]	ARA AG manages all packaging from both the residential and IC+I sectors.
Legal Authority and Governance	Recognized as a stock corporation under Austrian law, ARA AG's majority shareholder is the non-profit ARA association. Any company that imports or manufactures packaging or trades in packaged goods can become a member (and co-owner) of the ARA association. The ARA association is divided into three sections to ensure equal representation of three primary interest groups: manufacturers, packer/fillers/ importers, and wholesalers/retailers. ARA organizes the collection, sorting and recovery of packaging waste throughout Austria. Austria Glas Recycling GmbH (AGR) organizes the collection and recovery of glass packaging throughout Austria and is ARA AG's partner in providing compliance services for glass packaging.
Number of Members	In 2012, there were 15,550 members.
Annual Contributions	In 2012, 15,550 members contributed 144.1 million Euros; in 2011, 15,416 members contributed 158.8 million Euros; in 2010, 15,231 members contributed 179.8 million Euros; and in 2009, 15,135 members contributed 161.2 million Euros.
Revenue from Materials	Revenues generated are subsequently passed on by ARA to operative partners, disposal companies and communal waste cooperatives. Revenues from license fees were 161.219 (2009), 179.808 (2010), 158.780 (2011) and 144.1 (2012), expressed in millions of Euros. Because ARA operates as a non-profit organization, revenue surpluses are used to lower tariffs in subsequent periods.
Free Riders	Not provided
Administration Required	<i>Number of employees:</i> There are approximately 85 full-time employees. <i>Operating costs:</i> not published
Transparency and Accountability	Collection and recycling results are yearly published on province level in print and online (www.ara.at). In-house training is offered for employees of customers who are in charge of waste licensing and disposal. The courses focus on the Packaging Ordinance and on packaging compliance and disposal. The license partner forum, which is hosted by the ARA

	association, allows customers to obtain up-to-date information concerning ARA AG and address requests and recommendations (i.e. amendments to waste legislation) to the association and ARA AG.
Legal Basis	
Enabling Legislation	<p>The Austrian Waste Management Act is the legal basis for regulating waste management in Austria. It covers measures for avoiding, minimizing, recovering, and disposing of waste. Furthermore, it regulates the licensing of collection and recovery systems by Austrian Federal Ministry of Agriculture, Forestry, Environment, and Water Management. The Packaging Ordinance, established and enacted October 1, 1993, further revised on October 1, 2006, under the guise of the Waste Management Act, is intended to protect the environment by sending packaging waste for recycling so as to avoid landfilling. The Packaging Ordinance specifies the responsibilities of manufacturers, packers, importers, fillers, wholesalers, and retailers of packaging. Also, it delineates the responsibilities of collection and recovery systems. In detail, the Packaging Ordinance requires:</p> <ul style="list-style-type: none"> • An obligation for industry and trade to accept returned packaging • Full producer responsibility for packaging distributed on the market by either recovery through own collection schemes or participation in an authorized collection and recovery system for packaging (exclusive of own collection schemes) • Reuse or recycling of collected packaging in state-of-the-art facilities • A minimum recycling quota for each packaging type • Documentation to Ministry of the Environment <p>As an alternative, obligors have also the option to take part in an approved recycling and recovery organization (i.e. ARA) which takes over the legal take-back, recycling and reporting obligations</p>
Scope of Materials Covered	The scope of materials covered includes paper and board (cardboard and corrugated board), glass, lightweight packaging (plastics, composite materials, textile fibres, ceramics, wood and packaging comprised of biodegradable material), metals (aluminum and steel), and wood.
Performance Targets	<p>EU Packaging Waste Directive – Material-specific recycling targets in relation to market quantity:</p> <ul style="list-style-type: none"> • 60% for glass • 60% for paper and cardboard • 50% for metals (aluminum and steel) • 22.5% for plastics • 15% for wood <p>Austrian recycling and recovery targets for ARA are significantly above EU targets. For the residential system, this includes:</p> <ul style="list-style-type: none"> • 80% recovery (75% recycling) for paper, board and cardboard • 80% recovery and recycling for glass • 95% recovery (30% recycling) for plastic • 95% recovery (15% recycling) for composites • 65% recovery and recycling for metals • 15% recycling for wood
Program Performance	
Of Amount Collected:	

—Amount Recovered and Recycled	<p>No recycling rate reported by ARA. Out of 829,607 tons of materials collected, 667,648 tons were recycled, resulting in an 81% recycling efficiency. This is not an overall recycling rate since ARA does not publish amount of materials generated that are available for collection.</p> <p>The following recycling rates for Austria are reported by Eurostat and are not specific to the ARA program operations:</p> <table border="1"> <thead> <tr> <th></th> <th>Glass</th> <th>Plastics</th> <th>Paper & Board</th> <th>Metals</th> <th>Wood</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td>83%</td> <td>34.4%</td> <td>84.5%</td> <td>60.6%</td> <td>33.7%</td> <td>66.6%</td> </tr> <tr> <td>2011</td> <td>87.8%</td> <td>34.8%</td> <td>82.5%</td> <td>62.1%</td> <td>31.1%</td> <td>65.8%</td> </tr> </tbody> </table>		Glass	Plastics	Paper & Board	Metals	Wood	Total	2010	83%	34.4%	84.5%	60.6%	33.7%	66.6%	2011	87.8%	34.8%	82.5%	62.1%	31.1%	65.8%
	Glass	Plastics	Paper & Board	Metals	Wood	Total																
2010	83%	34.4%	84.5%	60.6%	33.7%	66.6%																
2011	87.8%	34.8%	82.5%	62.1%	31.1%	65.8%																
—Amount Used as Alternative Fuel	<p>For 2012:</p> <ul style="list-style-type: none"> 105,162 tonnes of lightweight packaging and 5,430 tonnes of wood were thermally treated or used for energy recovery. 																					
—Amount Disposed as Residue in Landfill	Not provided																					
—Amount Reused	Not provided																					
Kilograms/Capita Captured [<i>and then Diverted</i>]	<p>Per capita amount separately collected from households in 2012 (kilograms per year) by province:</p> <ul style="list-style-type: none"> Burgenland: <ul style="list-style-type: none"> 77.8 (paper), 31.4 (glass), 26.2 (lightweight packaging), metal (5.1) Carinthia: <ul style="list-style-type: none"> 72.3 (paper), 26.1 (glass), 12.8 (lightweight packaging), metal (3.3) Lower Austria: <ul style="list-style-type: none"> 70.9 (paper), 23.2 (glass), 16.1 (lightweight packaging), metal (3.4) Upper Austria: <ul style="list-style-type: none"> 70.5 (paper), 25.9 (glass), 18.3 (lightweight packaging), 3.3 (metal) Salzburg: <ul style="list-style-type: none"> 60.1 (paper), 29.5 (glass), 19.3 (lightweight packaging), 2.4 (metal) Styria: <ul style="list-style-type: none"> 78.3 (paper), 30.9 (glass), 22.9 (lightweight packaging), 4.4 (metal) Tyrol: <ul style="list-style-type: none"> 58.6 (paper), 38.8 (glass), 32.4 (lightweight packaging), 5.1 (metal) Vorarlberg: <ul style="list-style-type: none"> 81.6 (paper), 34.8 (glass), 27.4 (lightweight packaging), 6.1 (metal) Vienna: <ul style="list-style-type: none"> 71.4 (paper), 15.7 (glass), 3.9 (lightweight packaging), 1.8 (metal) <p>Note: different levels of collection quantity due to different regional collection systems.</p>																					
Amount of Greenhouse Gas Emissions Avoided	Greenhouse gas emissions avoided on an annual basis as a result of this initiative are 630,000 tonnes of CO ₂ (2012).																					
Cost Effectiveness																						
Cost per Ton	Estimated at €189.9 per tonne <i>recovered</i> in 2011. (2011 expenses/2011 waste recovered). €221.78 per tonne <i>recycled</i> (not including energy recovery) in 2011																					
Cost per Capita	Estimated at €17.64 per capita (2011 expenses/2011 population)																					

Cost per Household	Not provided
Roles and Responsibilities	
Producers	<i>Legal:</i> Producers must comply with the Austrian Waste Management Act and the Packaging Ordinance by either taking part in an approved collection and recovery system or by self compliance.
	<i>Financial:</i> If producers take part in ARA, they pay an associated licensing fee, which subsidizes the recycling and recovery system in its entirety. ARA's fees are determined by the quantity of packaging multiplied by the tariff for a specified material. Tariffs are calculated annually based on real costs for collection, sorting and recycling of each packaging material.
	<i>Management/Operations:</i> Offer convenient and tailored disposal solutions.
Stewardship Organization	ARA organizes the collection, sorting and recovery of packaging waste from households, businesses and industry nationwide to ensure member compliance with the Austrian Packaging Ordinance. In conjunction with municipalities, ARA organizes the public tendering process for the selection of contractors to collect and process packaging waste. Therefore, ARA becomes the owner of materials collected and assumes market risk. In addition, ARA makes changes to continually optimize the collection scheme according to local requirements (e.g. MSW treatment technology). ARA also conducts education and outreach campaigns, including a live and virtual recycling-for-kids program featuring a genie in a bottle (www.bobbybottle.at) and a mobile phone game called Recycling Heroes.
Government – Local	Provide the curbside collection infrastructure; provide fair compensation for services rendered; reduce waste quantities; and coordinate with municipal waste collection services.
Government – Country/Province	Fulfill national targets in accordance with the EU Packaging Directive.
Waste Management Companies	Maintain profitable business relations. Waste management companies are excluded from joining the ARA association.
Recycling and Processing Industry	Provide simple, convenient and reliable collection schemes as well as keep packaging tariffs and waste fees as low as possible.
Retailers	Provide compliance services at the lowest sustainable cost.
Additional Notes	Waste consultants are employed by local authorities to inform the public on waste and recycling issues. Depending on the number of inhabitants, local authorities receive financial contributions from ARA for informing the public about separated packaging collection.
Collection Infrastructure	
Quality of Materials Collected	Due to the separation of paper packaging at the source or facility, paper can be readily sorted by grade, which can then be transformed into new paper products. Due to system optimizations and public relations campaigns, ARA AG, municipalities, and disposal companies have helped to ensure that collected material is of high quality. Recycled PET is used to manufacture beverage bottles and food-grade packaging (which must comply with rigorous hygiene standards). Metal packaging is collected separately, sorted mechanically and shredded to remove other metals, impurities and contaminants. Aluminum is either separated manually or via eddy current, which separates conductive from non-conductive metal objects. Preservative-free wood is converted to wood chips, used in chipboard manufacture, as a renewable fuel in thermal recovery plants and as structural material in composting. Throughout the recovery process, impurities are removed to increase the quality of glass recovered. Following manual sorting, glass is

	passed through a magnetic separator, optical sensors and sieves. It is then combined with other constituents to form new glass bottles and jars.
Residential – Curbside	Materials are separated at the source. Paper packaging from small businesses and households, including newspapers, journals and other print products, is deposited in red containers for collection. Small businesses averaging 15 kg to 100 kg of waste paper per week are eligible for the shopping area scheme. Licensed paper packaging is collected at predetermined intervals at no charge. Lightweight packaging (plastics, composite materials, textile fibres, ceramics, wood and packaging comprised of biodegradable material) is collected by one of two methods. In 60% of Austria, the former are collected in yellow bags and bins; in the remaining 40% of the country, plastic bottles are collected separately. In some regions, metal packaging is collected in conjunction with lightweight packaging.
Residential – Drop-Off	Approximately 1,300 recycling centers countrywide accept licensed and sorted paper packaging from households and small businesses. 700 recycling centers (MRF) accept lightweight and other packaging from households and small businesses. Household metals are deposited in blue containers located in central collection points. Bottle banks are provided for both clear and colored glass, which are collected separately.
Public Spaces/Streetscapes	In addition to the aforementioned dedicated public collection bins for packaging and paper, waste and litter receptacles are strategically placed in public areas throughout the country.
Other [e.g. Events, IC+I, etc.]	ARA AG offers services for events where people are anticipated to consume large quantities of fluids in single-serve drink containers, such as festivals. The service targets disposable companies, event organizers, sponsors, and local authorities, includes the provision of collection infrastructure and the organization of collection and recovery activities.
Ease of Collection	Source separation of materials by consumers is required. The system is convenient as curbside collection is offered for certain materials, while the remaining materials are deposited at strategically located drop off sites. Through ongoing education and promotion campaigns, ARA AG is focused on increasing user understanding among all residents.
	<i>Participation rate</i> [if available]: According to opinion polls and market research, participation rates are between 81 and 90%, depending on the packaging material.
Data Tracking and Integrity	ARA is obliged to carry out annual analysis of all relevant packaging waste streams. Material flux can be fully tracked on truck level from collection to recovery/recycling. Full documentation of annual quantities is reported to the Ministry of Environment.
	<i>Third party auditing?:</i> ARA AG hire external auditing firms to examine the accuracy of packaging put on the market reported by licensed partners and to carry out analysis of collected packaging wastes. ARA is certified under ISO 9000 and 14000 and regularly checked by auditors on behalf of the Ministry of the Environment.
Additional Notes	The “Minimize Waste”, a series of projects aimed at implementing waste prevention measures, target businesses, government and health and education institutions.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	Fees are determined by the quantity of packaging multiplied by the tariff for a specified material. Tariffs are calculated annually based on real costs for

	collection, sorting and recycling of each packaging material. Cross subsidies between packaging materials or between household and commercial packaging is forbidden. Surpluses or deficits arising in one calculation period are considered in the calculation of tariffs for the subsequent period.
Additional Notes	Tariffs, prior to being implemented, are subjected to an external audit procedure. Following this, they are submitted to the Austrian Federal Ministry of Agriculture, Forestry, Environment, and Water Management.

NETHERLANDS PROGRAM SUMMARY

Reviewed by Paul Christiaens, *Nedvang*

Country Name:	Netherlands
Population	16,730,632 (2012)
Population Density	447,9/km ²
Key Documents	<p>Afvalfonds website: http://www.afvalfondsverpakkingen.nl/ Nedvang website: http://www.nedvang.nl/ NL waste management act: http://www.government.nl/issues/environment/roles-and-responsibilities-of-central-government/environmental-management-act http://kunststofhergebruik.nl/dualdev.com http://www.nederlandschoon.nl/publiek</p>
Stewardship Organization:	Stichting Afvalfonds Verpakkingen and Stichting Nedvang
Financing	<p>Full producer responsibility:</p> <ul style="list-style-type: none"> • 2008-2012: By means of a packaging tax, where a designated portion is transferred to a waste fund to capture the costs of EPR. • From 2013: by means of tariffs calculated and collected by the obliged industry itself.
Date Established	<p>Nedvang (Nederland Van Afval Naar Grondstof, Netherlands from Waste to Resource) is a non-profit organization established in 2005 by producers and importers as a way of collectively implementing the Dutch Packaging Decree. As of January 1, 2013, the role of primary stewardship organization passed from Nedvang to Stichting Afvalfonds Verpakkingen. Nedvang is now a subcontractor responsible for reporting, communication and contacts with municipalities and waste management companies</p>
Program Scope <i>[i.e. Residential Only, or Including IC+I]</i>	All packaging from both the residential and IC+I sectors.
Legal Authority and Governance	<p>Producers and importers of packed products are by law (Packaging Decree) responsible for prevention of packaging waste and to collect and recycle packaging waste. By law (waste management act), municipalities are responsible for the collection of all the waste that arises from the households in its territory, thus also packaging waste, creating a system of shared responsibility. Under a packaging agreement between the Ministry of Infrastructure and Environment, municipalities and producers/importers, municipal recycling collection is financed through an EPR system with a single stewardship organization. Municipalities collect packaging separately and are reimbursed by the stewardship organization (through contractor Nedvang) at full cost based on the amounts entered into the tracking system. From January 1, 2013, responsibilities within the Dutch EPR system are distributed as follows:</p> <p><u>Stichting Afvalfonds Verpakkingen</u> (primary stewardship organization) is an industry-funded non-profit organization responsible for:</p> <ul style="list-style-type: none"> • Collection of fees from customers (producers and importers putting more than 50 tons of packaging on the market per year) • Identifying additional customers and free riders • Inspection and enforcement

	<p><u>Stichting Nedvang</u> (subcontractor) a non-profit organization responsible for:</p> <ul style="list-style-type: none"> • Cooperation with municipalities and waste management companies • Research and documentation of procedures in protocols • Monitoring of packaging on the market and recycled packaging waste • Calculation and reporting of recycling results • Outreach and communication (except for plastics) <p><u>Kunststof Hergebruik B.V.</u> (subcontractor) a non-profit organization responsible for plastic recycling, including:</p> <ul style="list-style-type: none"> • Support to stimulate the collection of plastic (e.g. communication) • Logistics, sorting, sale of plastic packaging waste <p><u>Nederland Schoon</u> (subcontractor) a non-profit organization responsible for litter issues, including:</p> <ul style="list-style-type: none"> • Research • Outreach campaigns • Clean-up events • Election of cleanest cities/areas
Number of Members	2,853 companies paid the packaging tax in 2011 (which means that they put more than 50,000 kg of packaging on the Dutch market in 2011). Companies that put less than 50,000 kg of packaging on the market do not have to register and pay the packing tax. The current level of registration at Stichting Afvalfonds Verpakkingen is at the same level of companies that have previously registered.
Annual Contributions	Approx. € 150 million, consisting of: € 124,5 million for collection/recycling € 25,5 million for littering
Revenue from Materials	Break even.
Free Riders	Very little. Violation of tax laws is heavily penalized. Besides, the tax authority has put a lot of effort in tracing free riders. Now companies are used to the reporting procedure; they will tend to use the same procedure when reporting to a private organization. Data on free riders under the new EPR system is not yet available.
Administration Required	<p><i>Number of employees: 45</i></p> <p><i>Operating costs: ca. € 7 million</i></p> <p>Separate collection: approx. € 92,5 million</p> <p>Sorting of plastic packaging waste: approx. € 24 million</p> <p>Costs of littering: € 25,5 million</p>
Transparency and Accountability	<ul style="list-style-type: none"> • Municipalities collect packaging waste separately and are compensated by producers/importers at full cost for the amounts they enter in the monitoring system operated by Nedvang. • Figures on packaging collection/recycling from industry and business are collected as part of the certification of waste management companies. The certification guideline has been established together with industry to stimulate compliance.
Legal Basis	
Enabling Legislation	There are two laws that influence the governance: 1) Waste Management Act

	<p>2) Packaging Decree</p> <p>The Waste Management Act states that municipalities have to collect waste from their inhabitants. Specifically, glass, paper/board and plastic packaging have to be collected separately. Industry and companies must hire a waste management company to have their waste collected. The Packaging Decree, based on the EU Packaging Directive, states that a producer or importer of a packed product must collect the packaging waste and recycle it. Recycling targets are based on material type. Producers and importers of packed products must also take measures to: reduce the weight of packaging; make the packaging in such a way that it is recyclable; make the packaging from recycled materials; and design packaging in such a way that litter is minimized.</p>																																
Scope of Materials Covered	<p>Packaging is divided into three main categories: primary, or consumer packaging, secondary packaging, and tertiary or transport packaging. The following materials are covered: glass, paper/board, plastics (regular and bio-plastics), metals (aluminum and steel), wood, and other materials. There is no separate category for composites.</p>																																
Performance Targets	<p>The Netherlands must meet recycling targets set in the European Packaging Directive. However, the Netherlands has set more aggressive recycling and recovery targets.</p> <table border="1"> <thead> <tr> <th>Material</th> <th>EU target</th> <th>Dutch target</th> <th>Result 2011</th> </tr> </thead> <tbody> <tr> <td>Glass</td> <td>60%</td> <td>90%</td> <td>83%</td> </tr> <tr> <td>Paper/board</td> <td>60%</td> <td>75%</td> <td>89%</td> </tr> <tr> <td>Plastics</td> <td>22,5%</td> <td>2010: 38% 2012: 42%</td> <td>51%</td> </tr> <tr> <td>Metals</td> <td>50%</td> <td>85%</td> <td>91%</td> </tr> <tr> <td>Wood</td> <td>15%</td> <td>25%</td> <td>30%</td> </tr> <tr> <td>Overall recycling</td> <td>55-80%</td> <td>70%</td> <td>72%</td> </tr> <tr> <td>Overall recovery</td> <td>60%</td> <td>75%</td> <td>80%</td> </tr> </tbody> </table>	Material	EU target	Dutch target	Result 2011	Glass	60%	90%	83%	Paper/board	60%	75%	89%	Plastics	22,5%	2010: 38% 2012: 42%	51%	Metals	50%	85%	91%	Wood	15%	25%	30%	Overall recycling	55-80%	70%	72%	Overall recovery	60%	75%	80%
Material	EU target	Dutch target	Result 2011																														
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Additional Notes	<p>The former packaging tax led to cross subsidies for different materials in some cases. For example, based on environmental impact, the tax tariff for glass was lower than the tariff for paper. However, the actual costs for collection, transport and sale of glass were higher than for paper. This leads to a situation where the paper industry is paying toward the collection and recycling activities for glass. These are some of the reasons why the packaging tax was abandoned for a more traditional EPR scheme.</p>																																
Program Performance																																	
Of Amount Collected:																																	
—Amount Recycled	<p>Please see the following table for packaging on the market, collection and recycling (<i>Note: all numbers are mentioned in 1000 tons</i>):</p> <table border="1"> <thead> <tr> <th>Material</th> <th>On the market</th> <th>Collection</th> <th>%</th> <th>Recycling</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Glass</td> <td>516</td> <td>427</td> <td>83%</td> <td>427</td> <td>83%</td> </tr> <tr> <td>Paper/board</td> <td>1144</td> <td>1014</td> <td>89%</td> <td>1014</td> <td>89%</td> </tr> <tr> <td>Plastics</td> <td>444</td> <td>247</td> <td>56%</td> <td>225</td> <td>51%</td> </tr> </tbody> </table>	Material	On the market	Collection	%	Recycling	%	Glass	516	427	83%	427	83%	Paper/board	1144	1014	89%	1014	89%	Plastics	444	247	56%	225	51%								
Material	On the market	Collection	%	Recycling	%																												
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Plastics	444	247	56%	225	51%																												

	Bioplastics	1					
	Metals	493	176	88%	176	91%	
—Amount Used as Alternative Fuel	There is no reported information on the use as alternative fuel. Nedvang reports on recovery in general and doesn't have to specify this further. However, the Dutch environment agency has reported a total weight of recovery of 2636880 tons in 2010. This means that the total recovery rate (including recycling) in 2010 was 97%. From this, the weight of alternative fuel usage could be estimated: 2636880 tons recovery - 2013000 tons recycling = 623880 tons, or 22%						
— Amount Disposed as Residue in Landfill	4%						
—Amount Reused	Not available						
Kilograms/Capita Captured	Please see the following table. Weight of packaging on the market, collection and recycling are in 1000 tons. <i>All weights per capita are in kg.</i>						
	Material	On the market	per capita	Collectio n	per capita	Recyclin g	per capita
	Glass	516	30,8	427	25,5	427	25,5
	Paper/board	1144	68,4	1014	60,6	1014	60,6
	Plastics	444	26,5	247	14,8	225	13,4
	Bioplastics	1	0,1				
	Metals	493	29,5	176	10,5	176	10,5
	Wood	442	26,4	74	4,4	135	8,1
	Other materials	8	0,5				
	Total	2748	164,2	1938	115,8	1977	118,2
Net Cost/Kilogram Captured	Not available						
Amount of Greenhouse Gas Emissions Avoided	Not available.						
Cost effectiveness							
Cost per Ton	€ 54,58 (per ton on the market), € 75,80 (per recycled ton)						
Cost per Capita	€ 8,97						
Cost per Household	€ 20,62						
Roles and Responsibilities							
Producers	<p><i>Legal:</i> Producers are responsible for packaging waste prevention, packaging collection, and recycling. As agreed in the packaging agreement, there is one organization (Stichting Afvalfonds Verpakkingen) taking over the management of packaging waste collection. However, Stichting Afvalfonds Verpakkingen is allowed to outsource some of the activities. For the collection and recycling of packaging waste, the operational tasks have been outsourced to Nedvang.</p> <p><i>Financial:</i> Until 2012 producers have to pay a packaging tax, from 2013 onward they have to pay a fee to the EPR scheme.</p>						
Stewardship Organization	Stichting Afvalfonds Verpakkingen is the stewardship organization responsible for collecting fees from packaging producers and for enforcement. Nedvang (meaning Nederland van Afval naar Grondstof, Netherlands from Waste to Resource): Has transitioned from the primary stewardship organization to a sub-contractor to Stichting Afvalfonds Verpakkingen. Nedvang is responsible for research, monitoring, and						

	reporting. Nedvang is also responsible for coordinating with municipal governments to enhance the separate collection of packaging waste (except plastic—see below). Stichting Afvalfonds Verpakkingen also sub-contracts with 2 other organizations: <u>Kunststof Hergebruik B.V.</u> for collection and recycling of plastic packaging and <u>Nederland Schoon</u> for litter prevention.
Government – Local	Has the legal obligation to collect packaging waste from their households. Glass, paper/board and plastics have to be collected separately, metals are collected with the residual waste and recovered from the bottom ash after incineration. Collection can be done by the government itself or may be outsourced to waste management companies or public private partnerships.
Government – National	National: The Ministry of Infrastructure and Environment controls the reporting provided by Nedvang, and ensures municipalities and waste management companies act in accordance with the relevant legislation. Provinces: provide waste management permits to waste management companies and has the right to suspend these permits.
Waste Management Companies	Collect packaging waste from municipalities and/or industry and companies. Waste management companies have a permit and have to act in accordance with the Waste Management Act and (if they have a packaging waste certification) in accordance with the packaging waste certification directive.
Recycling and Processing Industry	Sorting and/or recycling companies have contracts with Nedvang (plastic packaging only) or municipalities. This is in accordance with the waste management act and (if they have a packaging waste certification) in accordance with the packaging waste certification directive.
Retailers	If a retailer is an importer of packed products or produce products in a private label, the retailer is seen as obliged industry and has to comply with the packaging decree and to finance the EPR system.
Other [e.g. Suppliers, Other Government Agencies, etc.]	The Dutch environment agency and the Dutch environmental inspection organization cooperate with the ministry of infrastructure and environment and assist in the control of the reporting that we provide.
Collection Infrastructure	
Quality of Materials Collected	<p>Packaging materials are not collected together. The only exception is metals. Due to the physical aspects, metals can be recovered after incineration of residual waste. This is very cost efficient and also effective, as hardly any waste is landfilled. About 25% of the municipalities have a pay-as-you-throw-system for residual waste. This leads to a significant higher amount of packaging separated from garbage for collection.</p> <p>The collection of household packaging waste is organized as follows:</p> <p>Glass: almost 100% drop off. Paper/board: combination of curbside (1x/month) and drop off (mainly in cities). Plastics: curbside and drop off collection (the more rural, the more likely curbside collection is offered). Metals: very few separate collection (only packaging containing chemical substances and have collection in some municipalities), mostly collection with residual waste and recovery of bottom ashes of incineration plants. Wood: No separate collection, as the amounts used are very low.</p> <p>In addition, each municipality has a waste park, where citizens can bring their waste, including packaging and bulky waste (which sometimes also</p>

	contains packaging).
Residential – Curbside	See above. For plastics, curbside collection leads to a significant higher weight of collected materials when compared with drop off containers.
Residential – Drop-Off	See above.
Public Spaces /Streetscapes	No packaging collection, the entire stream is incinerated.
Other [e.g. Events, IC+I, etc.]	Industry: guidelines and incentives to contract waste management companies with a packaging waste certification. Events: Up to the organizer of the event. Nedvang sponsors certain events and provides for the separate collection of plastics.
Ease of Collection	High access to curbside collection, drop off centers.
Data Tracking and Integrity	Nedvang operates a central online reporting system for municipalities and waste management companies and provide guidelines on what has to be reported. Each year, a representative sample of the municipalities is audited in order to control the quality of the reported data. Also, waste management companies are accredited by independent bodies and can be controlled/audited at all times. <i>Third party auditing:</i> Nedvang’s yearly report is analyzed and verified by the ministry of infrastructure and environment with the help of the Dutch environment agency and the environmental inspection organization.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	Packaging tax: environmental impact of the materials. From 2013: Activity-based costing of collection, transport, sorting and sale of the material to recyclers for each packaging material (including communication and campaign costs.
Design for Recyclability Incentive	Companies are individually responsible for prevention. Nedvang’s role is to build awareness and to provide consulting. There is no incentive built into the fee structure to further develop recycling markets or the design of more recyclable packaging (apart from potentially the greater cost to recycle the material). Although campaigns to improve recycling of certain materials are directed at specific materials and these costs can mean that fees are greater for these materials as a result.
Other Incentives Included	N/A
Additional Notes	There are no financial instruments to stimulate recycled content. Instead, recycled content is a part of the prevention policy towards packaging. According to the packaging decree, producers have the obligation to try to make their packaging with recycled content. The Ministry of the Environment can individually control and fine them. Certain industries have made a commitment to include a minimum amount of recycled material in their packaging. The beverage industry has committed itself to have 28% of recycled content in their bottles in 2015. Large Polyethylene terephthalate (PET) soda bottles carry a 25-cent deposit. Discussion about this deposit is on-going in Dutch politics. The deposit might be lifted in 2015 but some political parties on the other hand want to extend the system. Beer bottles carry a 10-cent deposit, and beer crates €1.50. (Source: Wikipedia)

CANADIAN EPR PROGRAM SUMMARY TABLES

The following three tables provide a high-level overview of the EPR programs for PPP that are currently operating in Ontario, Quebec, and Manitoba. The tables also provide information on the EPR program for PPP that will launch in British Columbia in May 2014. Complete summaries for each of the province’s programs immediately follow the tables.

Canada EPR Program Comparison

Organization	British Columbia MMBC	Manitoba MMSM	Ontario SO	Quebec EEQ
Program Scope	Residential Streetscapes	Residential	Residential	Residential Municipal
Material Types Covered¹	All packaging materials + printed paper			
100% Producer Responsibility	Yes	No – 80%	No – 50%	Yes ²
Producer Contribution Per Capita (USD)	N/A	\$9.21 (2012)	\$6.31 (2012)	\$13.00 (2012)
Recycling Rate	N/A	52% (2011)	64% (2011)	65% (2010)
Primary Collection Method	Single Stream	Single Stream + Multi-Stream	Single Stream + Multi-Stream	Single stream
High Convenience	N/A	Yes – 93% access to curbside	Yes – 95% access to curbside	Yes – 99% access to curbside



¹ “All packaging materials” includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7).

² Recycling programs are designed and managed by local municipalities.

Canada EPR Program Performance

	Ontario	Quebec	Manitoba
Recovered Tons (for recycling)	904,850 (2011)	656,000 (2010)	70,600 (2011)
Overall Recycling Rate	64%	65%	52%
Glass	87%	82%	52%
Aluminum	38%	53% ¹	36%
Steel	55%		54%
Plastic	26%	33%	23%
Paper Packaging	56%		42%
Printed Paper	85%	71% ²	79%



¹Average for aluminum and steel

²Average for paper and cardboard

Canada Collection Infrastructure

	Ontario	Quebec	Manitoba
% Access to Curbside	95%	99%	93%
Blue Box Wheeled Carts Blue Bags			
Multi-Stream	✓	X	✓
Single Stream	✓	✓	✓
Depots	✓	X	✓
Public Space	X	✓	✓
Bottle Deposit Scheme (Separate from EPR)	✓	✓	✓
	All Alcoholic Beverages	Soft Drinks + Beer	Beer Only



ONTARIO PROGRAM SUMMARY

Reviewed by Chris Van Rossem, *Stewardship Ontario (SO)*

Province Name:	Ontario, Canada
Population	13,372,996 (as of July 1, 2011)
Population Density	Ontario is Canada's second largest province, covering more than one million square kilometres (415,000 square miles)—an area larger than France and Spain combined.
Key Documents	http://www.stewardshipontario.ca http://www.stewardshipontario.ca/download/the-story-of-ontarios-blue-box/ (Story of Ontarios Blue Box)
Stewardship Organization:	Stewardship Ontario (SO)
Financing	Stewardship Ontario is responsible for raising industry financing to compensate municipalities for half of the total net cost of collecting and recycling residential Blue Box materials in Ontario. In addition to financing, Stewardship Ontario works with Ontario's municipalities to promote improvements to the recycling system and invests in the development of markets for recycled material.
Date Established	Stewardship Ontario was incorporated in 2003 and was the first not-for-profit Industry Funding Organization established under Ontario's Waste Diversion Act.
Program Scope <i>[i.e. Residential Only, or Including IC+I]</i>	Stewardship Ontario scope applies to packaging and printed paper from the residential sector.
Legal Authority and Governance	Regulatory authority for waste diversion programs in Ontario begins with the Ontario Waste Diversion Act (WDA) which became law on June 27, 2002. The WDA and subsequent Regulations identified the obligated stewards for Ontario's Blue Box Program, identified the designated Blue Box materials and recognized Stewardship Ontario as the Industry Funding Organization (IFO) mandated to develop, operate and fund the Blue Box Program, on behalf of the Ontario-based companies that supply the designated material into the Ontario marketplace. Waste Diversion Ontario (WDO), a permanent non-government agency, was established by the WDA to work with IFOs in Ontario on the development, implementation and operation of waste diversion programs.
Number of Members	There are approximately 1,500 stewards that contribute to the Blue Box Program. De minimis thresholds: The Blue Box Program has two de minimis thresholds—one that a steward must meet in order to be required to report their tonnage to Stewardship Ontario and the second threshold that must be met in order to be required to pay fees. The reporting threshold is revenue based. A steward is exempt from collecting and reporting data to Stewardship Ontario if it has less than \$2 million gross revenue into Ontario from the combined sale of all of its products and services in a calendar year. The fee payment threshold is tonnage based. Stewards that supply less than 15,000 kilograms of designated material for use in Ontario in any calendar year are exempted from paying fees.
Annual Contributions	In 2012, the Blue Box Steward's contribution to municipalities totaled

	\$93,449,345 ⁶ . \$85,427,117 ⁷ was transferred directly to over 400 municipalities in cash payments to cover the costs of recycling for 95% of all Ontario residents.
Revenue from Materials	Revenue (3 year rolling average, including prior year adjustments ⁸) from materials totaled \$85,778,577 ⁹ .
Free Riders	There are over 1,500 reporting Blue Box stewards, but Stewardship Ontario is constantly monitoring for non-compliant organizations. Our best source of information is from the stewards themselves. Blue Box stewards are encouraged to periodically scan our list of registered stewards to ensure none of their competitors are missing. However, the maturity of the Blue Box Program and the number of participants provides us with confidence that in general free-ridership is not an issue.
Administration Required	Of Stewardship Ontario's total 2012 Blue Box expenses (\$95,963,969 ¹⁰), four percent (4%) was dedicated to program management costs; one percent (1%) or was attributed to regulatory costs, including the operation of the WDO and Ministry of Environment enforcement; and one percent (1%) was used for promotion and education. There were 38 employees in 2011: Stewardship Ontario operates 2 stewardship programs, one for printed paper and packaging & one for household hazardous waste. Approximately 40% of staff time, or 15.2 FTE is devoted to printed paper and packaging.
Transparency and Accountability	Each year Stewardship Ontario publishes an annual report which provides performance details and associated costs of the program. See website for copy of 2012 Annual Report. Each year, Stewardship Ontario sets material specific fee rates that correspond directly to the costs of recycling each material. The fee setting methodology and calculations are posted each year on our website. For example, the 2012 fee calculation can be found at: BB fee calculation model - 2012 . These comprehensive tables set out the recovery rates for each material, tonnages generated each year, the gross and net costs of the program, (net costs are calculated by subtracting revenues generated from municipal sales of collected materials) and the method by which these and the program's common costs (costs applicable to all materials) are allocated to stewards in the form of fee rates. Regulators: Each quarter Stewardship Ontario provides a Blue Box Performance Report to Waste Diversion Ontario, the organization charged with overseeing Ontario's stewardship programs.
Legal Basis	
Enabling Legislation	<ul style="list-style-type: none"> The Environmental Protection Act (EPA) requires that all waste managers (i.e., those involved in the generation, collection, transfer/processing or disposal of waste, unless exempted) obtain

⁶ Source: Waste Diversion Ontario: 2012 Municipal Blue Box Funding Distribution. The steward obligation to municipalities is based on 50% of the net system costs in 2010.

⁷ Source: Waste Diversion Ontario: 2012 Municipal Blue Box Funding Distribution. The steward obligation to municipalities is based on 50% of the net system costs in 2010.

⁸ As used in the methodology to determine steward's annual contribution to municipalities

⁹ Source: Waste Diversion Ontario: 2012 Municipal Blue Box Funding Distribution. The steward obligation to municipalities is based on 50% of the net system costs in 2010.

¹⁰ Source: Stewardship Ontario's 2012 Annual Report

	<p>approval from the Ministry to ensure waste is appropriately managed. The Act also provides authority for the Minister to inspect and enforce the regulated community's compliance with the Province's rules and regulations.</p> <ul style="list-style-type: none"> • O.Reg. 101/94: Requires municipalities with 5,000 or more people to implement and operate curb-side recycling programs (i.e., pick-up from each household) and to implement programs for home composters. Municipalities with 50,000 or more people must operate a program that collects or accepts leaf and yard waste and diverts this material. • Waste Diversion Act 2002 (WDA), allows the Minister to make regulations to designate wastes for which a diversion program must be established and for which stewards pay fees to finance the development, implementation and operation of the program. • The WDA prescribes that industry must finance 50% of the net municipal program costs; municipalities pay the other 50%.
Scope of Materials Covered	Ontario Regulation 273/02 under the Waste Diversion Act defines designated Blue Box materials as waste consisting of glass, metal, paper, plastic and textiles. This definition is broad in scope and encompasses printed paper and packaging as well as a wide range of consumer products. The Blue Box Program limits the definition of Blue Box materials to consumer packaging material and printed materials that are commonly found in the Ontario residential waste stream – both the garbage and the blue box.
Performance Targets	The WDA mandates a 60% general target for all designated blue box materials. Stewardship Ontario has consistently exceeded its mandated targets and in 2010 recycled 67.6% or 887,242 tonnes of material.
<p>Program Performance: As the 2012 Steward contribution to the Blue Box Program is based on 2010 net system costs, performance figures reflect 2010 performance for the Blue Box Program.</p>	
Of Amount Collected:	
—Amount Shipped to Recycling End Markets	<ul style="list-style-type: none"> • Glass: 84.4% or 85,071 tonnes • Aluminum packaging: 43.5% or 10,843 tonnes • Steel Packaging: 54.7% or 31,237 tonnes • Plastic Packaging: 25.2% or 58,621 tonnes • Paper Packaging: 63.1% or 226,502 tonnes • Printed Paper: 88.3% or 474,969 tonnes
—Amount Used as Alternative Fuel	Not available
—Amount Disposed as Residue in Landfill [<i>includes Amounts Used as Alternative Fuel¹¹</i>]	Not available
—Amount reused	Not applicable
Kilograms/Capita Captured [<i>and then Diverted</i>]	<ul style="list-style-type: none"> • Glass: 6.36 kg/cap • Aluminum packaging: 0.81 kg/cap • Steel Packaging: 2.34 kg/cap • Plastic Packaging: 4.38 kg/cap

¹¹ Includes all Material Recovery Facility Residues (packaging and printed paper) and printed paper and packaging not collected through the Blue Box Program and assumed to be disposed.

	<ul style="list-style-type: none"> • Paper Packaging: 16.94 kg/cap • Printed Paper: 35.52 kg/cap
Net Cost/Kilogram Captured	See below
Amount of Greenhouse Gas Emissions Avoided	Not provided
Cost Effectiveness	
Cost per Ton ¹²	Net system cost (100%) per tonne <ul style="list-style-type: none"> • Glass: \$132.25 • Aluminum packaging: \$ (293.03) • Steel Packaging: \$140.58 • Plastic Packaging: \$1,105.76 • Paper Packaging: \$371.91 • Printed Paper: \$53.42
Cost per Capita ¹³	\$13.98
Cost ¹⁴ per Household ¹⁵	\$37.87
Roles and Responsibilities	
Stewards	A steward is any organization or company that is a resident in Ontario, and a brand owner/first importer/franchisor that supplies any of the designated printed paper and packaging (Blue Box materials) into the Ontario residential market. Steward Reporting: Each year stewards are required to report the quantity by weight (kilograms) of printed paper and packaging that they supply into the Ontario market. Stewardship Ontario has prepared guidebooks for stewards to help them determine the extent of their obligation and to develop accurate reports. The Guidebooks are available at http://www.stewardshipontario.ca/download/blue-box-guidebook-volume-one/ . Steward Payment of Fees: Stewards are invoiced on a quarterly basis for the costs of recycling their materials.
Stewardship Organization	Stewardship Ontario is Ontario's first not-for-profit industry funding organization (IFO). Incorporated in 2003, under the Waste Diversion Act, our mandate is to develop, implement and operate waste diversion programs for printed paper and packaging and municipal hazardous or special waste (MHSW).
Government – Local	Municipalities design and manage their own programs.
Government – Country/Province	The Ministry of the Environment (MOE) sets waste diversion policy for the province. Waste Diversion Ontario (WDO) was created under section 24 of the Waste Diversion Act to oversee stewardship programs in Ontario. The WDO's responsibilities include: approving IFO's waste diversion plan; monitoring the effectiveness and efficiency of diversion programs; approving or amending IFO's budget (and steward fees); requiring public awareness programs to be established; ensuring the marketplace is affected in a fair manner under waste diversion programs in operation; and advising the Minister of Environment on matters relating to programs and/or IFOs.
Waste Management Companies	Private waste management companies are service providers to the municipalities.
Recycling and Processing	The recycling and processing industry are service providers to the

¹² 100% of the 2010 net system costs incurred by reporting municipalities

¹³ 100% of the 2010 net system costs incurred by reporting municipalities

¹⁴ 100% of the 2010 net system costs incurred by reporting municipalities

¹⁵ Total households served in 2010: 4,935,182

Industry	municipalities.
Retailers	Many retailers, as first importers, are stewards of the Blue Box Program.
Collection Infrastructure	
Quality of Materials Collected	The quality of materials collected differs across the Province as all programs are designed and managed by the host municipality. The collection types include (but are not limited to): five-stream curbside sort; two-stream (containers and fibres) collected weekly or alternate weeks; single stream comingled which can be done using blue boxes, wheeled carts or clear blue plastic bags. The majority of the tonnage in Ontario comes from single stream programs. While contamination levels from the five-stream sort is much lower than those of the single-stream, collection costs and efficiencies are lost at the curb. Contamination levels resulting from single-stream collection are offset by the higher level of participation by residents (due to the ease of use).
Residential – Curbside	95% of all Ontarians have access to curbside collection. As noted above, the host municipality determines their method of collection and frequency but Ontario residents are primarily serviced weekly utilizing blue boxes or wheeled carts (e.g., City of Toronto).
Residential – Drop-Off	Many municipalities offer drop-off depots for their residents which usually combine blue box recyclables with other materials that can be diverted from landfill (i.e. waste electronics, municipal hazardous and special waste).
Public Spaces/Streetscapes	Public spaces/streetscapes are included in the scope of the Blue Box Program. Some urban centres provide both garbage and recycling containers for residents to use. These are at the discretion of the municipality and the material generated from these bins is usually highly contaminated and does not always make it through the recycling system. As these systems are put in place by the individual municipality, the efficacy of them varies dramatically across the province depending on the public education and the resources provided to service them.
Other [e.g. Events, IC+I, etc.]	ICI waste is not included in the scope of the Blue Box Program. Events are managed much the same as public spaces noted above. IC+I services varies across the province. In some areas the municipality will provide a set level of service to all of its IC+I ratepayers (especially institutional such as schools, nursing homes etc.) and in some areas these services are only provided within the DBIA (downtown business improvement area) as a measure to keep things looking tidy. In Ontario, the majority of all industrial and commercial recyclables are managed by private sector waste haulers and processors as a for-profit service.

Ease of Collection	<p>Each municipality provides their own curbside and depot collection services which vary. The majority provide weekly service of all blue box recyclables. However, not all municipalities collect the same list of materials because Regulation 101/94 specifies that municipalities with populations over 5,000 residents must collect the following materials: aluminum food or beverage cans; glass bottles and jars for food or beverages; newsprint; PET bottles for food or beverages; and steel food or beverage cans. In addition municipalities must choose at least two categories from a supplementary list to collect. The result is inconsistent collection across Ontario municipalities and causes Ontarians much confusion. Promotion and education of each program is done by municipalities. It is the goal of Stewardship Ontario to work with Ontario municipalities to create a “standardized basket of goods” across the province and thus allow promotion and education to be clear and consistent. When surveyed the majority of Ontarians state that weekly collection of their blue box is easy, convenient and a service they appreciate.</p>
Data Tracking and Integrity	<p>Each municipality in Ontario that provides a blue box collection program (mandatory for those with a population over 5000) must report their program cost to Waste Diversion Ontario via an on-line annual datacall. All costs from the previous year’s blue box collection, processing and administration must be provided (ensuring that costs related to other diversion or waste management programs are deducted). All submissions are run through a battery of integrity testing. Those with anomalies are further studied and more in-depth verification process is used. On an annual basis, Stewardship Ontario through Waste Diversion Ontario has a professional financial auditing firm carry out 20 (roughly 10% of all programs) full-scale financial audits of the municipal programs that have submitted for funding. The programs for audit are selected based on previous history (of over or under-reporting), dramatic changes in their costs and through a random selection. Those programs who have over-reported beyond a threshold are required to pay for the audit costs and have the over-payment deducted from future funding. Those who have under-reported are provided the difference on future payments.</p>
Additional Notes	<p>While the Ontario system is documented as being one of “shared responsibility” this primarily relates to the cost of operating the system. The stewards share responsibility for the costs. Stewardship Ontario through the Municipal Industry and Program Committee (the program negotiating body) and on-going relationships continues to work diligently on assisting municipalities in making their programs more efficient and effective. The Blue Box Program in Ontario is a very mature program and one that allows its residents to “feel good” about what they are doing for the environment. Both the stewards and the municipalities in Ontario know the popularity and potential of this program and are working together to make changes that will further increase its efficacy.</p>

Additional Collection Mechanisms – Beverage container deposit legislation	
Program Scope	Beverage alcohol containers are on deposit in Ontario.
Collection Infrastructure	Some Ontario residents return them to The Beer Store, others continue to put them in their blue boxes. In Ontario The Beer Store and the LCBO are the primary distributors of beverage alcohol. The Beer Store is exempt from the Waste Diversion Act. The LCBO is a blue box steward and its portion of the costs for material collected and processed through the Blue Box Program.
Quantity of Materials Collected	N/A
Recycling Rate	N/A
Value of Materials	N/A
Additional Notes	
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	<p>Each year Stewardship Ontario calculates material specific fees rates for the following year in accordance with the following process:</p> <ol style="list-style-type: none"> 1. Recycling Rate for each blue box material is calculated by dividing the total tonnes of each material as reported by municipalities by the total tonnes of material available for collection. Data sources include municipal data provided through the annual WDO Datacall and information gathered by Stewardship Ontario from the frequent material composition studies, both curbside and bales (waste audit data) that is adjusted using economic data and trends in each material supplied for use by consumers as reported by stewards. 2. The net cost of recycling each material is calculated by subtracting the revenue from the sale of each material type from the gross costs of managing each type of material. Data sources for the aggregated data on the gross cost are provided by the Datacall. Data for determining the gross cost to manage each tonne of each material is determined through activity based cost allocation studies conducted by Stewardship Ontario. Municipalities report their material-specific revenue through the Datacall. Revenue numbers are adjusted to reflect revenue-sharing agreements between municipalities and their contractors. 3. Allocate cost to each material by using the three factor formula Net Cost Factor: 40% of the total cost of the program is assigned to each material category based on how much it costs to manage each material in the system. Higher cost materials assume a larger proportion of this factor than lower cost materials. Recovery Rate Factor: 35% of the cost of the program is assigned based on the recovery rate achieved by each material. Materials with lower recovery rates assume a larger proportion of this factor than materials with higher recovery rates. Equalization Factor: 25% of the total cost is assigned based on how much it would cost to manage the material if it recovered at a rate of 60% (the provincially mandated target). Data sources for calculating the three factor formula include the recycling rate as calculated in step 1 and the net costs as calculated in step 2, and the equalization factor using the recycling rate, the net cost, the threshold for recycling (60%) and the above relative ratings of net

	<p>cost, recycling rate, and equalization.</p> <ol style="list-style-type: none"> 4. Add any material specific market development fees that may be required to support investments to assist in the development of markets for those materials that encounter barriers to recycling. 5. Add a share of the direct Stewardship Ontario Blue Box Program deliver costs, Waste Diversion Ontario and Stewardship Ontario administration costs to each material based on a calculation of the relative number of stewards reporting packaging and printed paper supplied of each material and the relative quantity of each material of generated (based on Stewardship Ontario’s calculation of available for collection described in Step 1). 6. Add a share of any shortfall or surplus in total fees collected in previous years of the program to be recycled or credited in the next program year fees based on a combination of the amount of fees either underpaid or overpaid by each material and the same basis used to determine allocation of common costs (described in step 5). 7. Calculate the total fee applicable to each individual material type by summing the allocated share of costs and fees for each material as determined through steps 3-6. 8. Calculate the fee rates for each individual material type by dividing the total fee (step 7) for each material by the quantity, in tonnes, of that material supplied for use in Ontario as determined by Stewardship Ontario from steward reports. 9. Aggregate fees for some material categories for the purposes of setting fee rates.
Design for Recyclability incentive	Materials that have a high recovery rate, i.e., that are easy to recycle attract a comparatively lower fee rate than materials that are difficult to recycle.
Other Incentives Included	Since fees are set on a per-kilo basis, stewards are incented to reduce the amount of packaging they use per unit of sale.

QUÉBEC PROGRAM SUMMARY

Reviewed by Mathieu Guillemette, *Éco Entreprises Québec (EEQ)*

Province Name:	Québec
Population	7,977,989 (2011)
Population Density	6.0 people/km²
Key Documents	EEQ website: http://www.ecoentreprises.qc.ca/home 2012 Annual Report: http://www.ecoentreprises.qc.ca/documents/pdf/AGA/2013/rapportannuel2012_eeq_engl_simple.pdf
Stewardship Organization:	Éco Entreprises Québec
Financing	Éco Entreprises Québec (ÉEQ) is a private non-profit organization responsible for financing municipal services for the collection, transportation, sorting and conditioning of containers, packaging and printed matter in Quebec in a sustainable development perspective. In addition to its perceived role, EEQ is also a first plan stakeholder with regard to the curbside value chain. It fills an optimization role amongst companies, with its Voluntary Code, National Guide on containers, packaging and printed matter and amongst the municipalities with its municipal best practices project. This makes it an acknowledged leader by stakeholders.
Date Established	Éco Entreprises was founded in April 2003 and certified by RECYC-QUÉBEC in June 2005.
Program Scope [i.e., Residential Only, or including IC+I]	Éco Entreprises Québec's scope applies to containers, packaging and printed matter from municipal curbside recycling programs Note: Québec legislation includes non residential materials recovered through municipal curbside recycling programs, such as: shops, schools, offices, etc.
Legal Authority and Governance	The <i>Environment Quality Act</i> and the <i>Regulation Respecting Compensation for municipal services provided to recover and reclaim residual materials</i> establish compensation plan rules and set out the operational framework for funding organizations, such as ÉEQ, that have been certified by the Government of Quebec to represent companies subject to compensation obligations. Company contributions are established in a <i>Schedule of Contributions</i> developed by ÉEQ after consultation with targeted companies. This proposed Schedule, adopted by the Board of Directors of ÉEQ, must be sent to RECY-QUÉBEC for recommendations to the Government. The <i>Schedule of Contributions</i> comes into force after approval by the Members of Cabinet and its publication in the Gazette Officielle du Québec. ÉEQ's Board is made up of 14 members from sectors listed below: <ul style="list-style-type: none"> • Retailers and Distributors; • Food and Consumer Products Manufacturers; • General, Services and Durable Goods Manufacturers.
Number of Members	ÉEQ's contributors include over 3,000 companies and organizations that market containers, packaging and printed matter in Quebec. Any company that generates containers and packaging identified by a brand, a name or a distinguishing guise (brand owners) or packaging used for the

	<p>commercialization or marketing of a product or service in Quebec under a brand, a name or a distinguishing guise, is required by the law to compensate the net costs of municipal curbside recycling services. Some of those companies can pay according to a flat fee. Two levels of flat fees are available according to the quantity of materials generated:</p> <ul style="list-style-type: none"> • Quantity generated: > 1 t and ≤ 2.5 t; • Quantity generated: > 2.5 t and ≤ 5 t. <p>Companies may altogether be exempt by ÉEQ from paying a contribution if they meet at least one of the following three criteria:</p> <ul style="list-style-type: none"> • Have marketed one or more materials with a total weight of ≤ 1 t during the reference year; • Have revenues, receipts or sales in Quebec ≤ \$1M during that period; • Have only one point of retail sale and are not supplied or operated as part of a franchise, a chain or under a banner.
Annual Contributions	<p>For 2012, compensatable costs to municipalities are 114.9 M CAD. Those represent 90% (industry's share according to the law) of the 2011 effective and efficient municipal net costs, as calculated by RECYC-QUÉBEC following the Regulation, and considering a 8.55% lump sum for recycling container costs and management costs. This amount is transferred to 598 municipalities or municipality groupings or municipal agencies that cover collection for 99 % of Québec's population. Previous years (with corresponding industry's share):</p> <p>2011: 99.1 M CAD (80%) 2010: 86.7 M CAD (70%) 2009: 54.6 M CAD (50%)</p>
Revenues from Materials	<p>Revenues from materials are considered in the municipal net cost. For 2010, those revenues represent 33 % of the total curbside recycling gross costs.</p>
Free Riders	<p>ÉEQ's contributors include over 3,000 companies and organizations that market containers, packaging and printed matter in Quebec. Every day, the Company Services Team continuously monitors for non compliant companies and organizations. ÉEQ is confident that major companies comply with their obligation in Québec. The Audit and Compliance Team assists companies in reporting properly designated materials. Imposed invoices are sent in some rare cases. As a final resort, free riders can be prosecuted.</p>
Administration Required	<p>Based on 2012, Program, ÉEQ's administrative costs are limited to three percent (3 %). Dedicated to improving the value chain, ÉEQ also finances and participates in many studies and programs (2 %) which include the Table pour la Récupération Hors Foyer (out of home recycling program). 2012: 21 employees.</p>
Transparency and Accountability	<p>Each year, ÉEQ publishes its Annual Report on its website. Alongside with financial data, it presents information on ÉEQ's activities and projects, while providing paramount information about the compensation plan and curbside recycling performance in Québec. Also, for every compensable year, ÉEQ puts in place technical or consultative committees and holds consultations with contributing companies about the Schedule of Contributions, including the rules, in Montreal and Toronto, and via webcast. The results of the webcast and the extensive Consultation Report are then published on ÉEQ's website. Other documents and information are made accessible by ÉEQ:</p> <ul style="list-style-type: none"> • The Law, Rules and Regulations, Gazette Officielle, Schedule of Contributions, Stewards Guidelines, and other official documentation

	<ul style="list-style-type: none"> • Regular communication with contributing companies, partners, associations, manufacturers, etc., through different channels, such as technical committees, newsletters, on-demand meetings, etc. • Financing and involvement in different taskforces on law enforcement, curbside recycling best practices, problematic materials, ecodesign, etc.
Additional Notes	Producer contributions were increased to 100% in 2013
Legal Basis	
Enabling Legislation	<p>In Québec, the <i>Municipal Powers Act</i> gives municipalities jurisdiction in the field of environment, and more specifically regarding residual materials management. The <i>Environment Quality Act</i> (EPR obligation introduced in 2002, modified in 2011) and the <i>Regulation respecting compensation for municipal services provided to recover and reclaim residual materials</i> (adopted in 2004, modified in 2011) establish the obligation for the industry to financially compensate municipalities for the cost of curbside recycling. Also, the Act and Regulation prescribe that:</p> <ul style="list-style-type: none"> • A Schedule of Contributions must evolve over the years to consider more environmental criteria, such as recycled content; • Cost for municipal – not only residential – curbside recycling must be compensated for (thus including cost for IC+I collection provided by the municipalities); • Although compensable costs cover only those related to curbside recycling, companies must report their complete generation sent to a final consumer, irrespectively of whether their material ends up in recycling or garbage. • From a shared financial producer responsibility for the years 2005 to 2012, it has grown to a full financial producer responsibility in 2013. <p>ÉEQ’s Schedule of Contributions comes into force after approval by the Members of Cabinet and its publication in the Gazette officielle du Québec.</p>
Scope of Materials Covered	<p>The Regulation respecting compensation defines designated materials. The 3 classes of materials to which the compensation plan applies are:</p> <ul style="list-style-type: none"> • containers and packaging • printed matter • newspapers <p>ÉEQ is the non-profit organization that is certified to represent companies and organizations required to compensate municipalities for the cost of recycling materials in the “containers and packaging” and “printed matter” classes. A separate organization, RecycleMédias represents companies required to compensate for materials in the “newspapers” class. The “Containers and packaging” class includes all types of flexible or rigid material, including paper, carton, plastic, glass or metal, used alone or in combination with other materials to contain, protect, wrap or present a product or a set of products at any stage in the movement of the product or set of products from the producer to the ultimate user or consumer. However, this class excludes pallets designed to facilitate the handling and transport of a number of sales units or grouped packaging. The “Printed matter” class includes paper, magazines and other cellulosic fibers, whether or not they are used as a medium for text or images, except books and materials in the newspapers class of materials. While the Regulation establishes the general type of materials designated,</p>

	ÉEQ defines which materials must be reported.
Performance Targets	<p>The Residual Materials Management Policy, supported by a 5-year action plan, is geared towards one overriding objective: that end-waste be the only waste sent for disposal in Quebec. The action plan sets out 36 actions focused on 3 main issues:</p> <ul style="list-style-type: none"> • Stop resource waste • Contribute to the objectives of the action plan on climate change and those of Quebec's energy strategy • Make all players involved in residual materials management accountable <p>The government of Quebec has also identified a 70% recycling target for 2015 for paper, cardboard, plastics, glass, and metal waste. Although ÉEQ is not accountable to meet this target, it gets involved both upstream and downstream of packaging and printed material curbside recycling. That is why the organization provides significant funding to support the system and, ultimately, the sustainability of curbside recycling as the most efficient and effective system to manage materials marketed by the companies it represents. In 2010, curbside recycling already achieved a 64.8 % recovery rate.</p>
Additional Notes	In Quebec, all types of printed matters, containers and packaging are designated, except books and those that are already designated by another regulation or formal program, such as a deposit program.
Program Performance	
Of Amount Collected:	
—% Recovered [<i>residential materials targeted by curbside recycling only</i>]	<p>Data show that amount recovered and recovery rates are constantly growing in Québec. In 2010, 656,000 tonnes of designated materials were recovered by municipal curbside recycling. Québec has one of the highest recovery rates for curbside recycling in North America. For the year 2010, the recovery rate for the residential sector was 64.8% on average for all materials. Rates by category of materials were as follows:</p> <ul style="list-style-type: none"> • Paper and cardboard: 70.8 % • Glass: 82.1 % • Metal (aluminum and steel): 52.7 % • Flexible plastics: 15.3 % • Rigid plastics: 43.8 % • Plastics overall: 32.6%
—Amount Recycled [<i>all materials in curbside recycling sent to recycling by sorting centers – i.e. minus the rejects</i>]	<p>Historical data show that citizens are now in the habit of recycling. More than 99% of citizens have access to recycling tools or collection and almost 80% of them participate in the system.</p> <p>2004: 379,000 tons 2006: 530,000 tons 2008: 608,000 tons 2010: 656,000 tons</p>
—% and Amount Used as Alternative Fuel	No information available (estimated to be very small, if any).
—% and Amount Disposed as Residue in Landfill	In 2010, the rejection rate at sorting centers for materials designated by curbside recycling only was at 4.1%.
—% and Amount Reused	No information available.
Kilograms/Capita Captured [<i>and</i>]	In 2010, 82.4 kg / capita were recovered through municipal curbside recycling

<i>then Diverted]</i>	programs. This represents a 25 % increase from 2006 results.
Net Municipal Cost/Kilogram Captured [<i>and then Diverted]</i>	In 2010, admissible effective and efficient net costs were 180 \$/t.
Amount of Greenhouse Gas Emissions Avoided	No information available.
Cost Effectiveness	
Cost per Ton	In 2010, admissible effective and efficient net costs was 180 \$CAD / ton (net municipal cost) which represents 16% improvement from 2009.
Cost per Capita	N/A
Cost per Household	N/A
Additional Notes	Access to curbside recycling 2010 was around 99 % according to RECYC-QUÉBEC.
Roles and Responsibilities	
Producers/Stewards	<p>A <u>steward</u> is a company or an organization that:</p> <ul style="list-style-type: none"> • Has a domicile, establishment or place of business in Quebec; • Is the owner of a brand, a name or a distinguishing guise, or is a first supplier in Quebec; • Produces designated materials ultimately intended for Quebec consumers. <p>The steward is required to register, file a Company Report with ÉEQ and pay its contribution for each obligation year for which it satisfies the three above criteria. Owners of a brand, a name or a distinguishing guise of one or more products or services who have a domicile or establishment outside Quebec may agree to become voluntary contributors to ÉEQ on behalf of suppliers of their products in Quebec. They must first sign an agreement with ÉEQ to confirm their agreement to become a voluntary contributor. Voluntary contributors may only shoulder the responsibilities on behalf of first suppliers subject to the Schedule of Contributions with regard to printed matter and product containers or packaging.</p>
Stewardship Organization	<p>Éco Entreprises Québec (ÉEQ) is the private non-profit organization responsible for financing municipal services for the collection, sorting and conditioning of containers, packaging and printed matter. In Quebec from a sustainable development perspective. ÉEQ's contributors include over 3,000 companies and organizations that market containers, packaging and printed matter. ÉEQ's mandate is to:</p> <ul style="list-style-type: none"> • Represent targeted companies with regard to their responsibility to finance their share of the net costs of efficient and effective municipal curbside recycling services with a view to supporting sustainable development • Establish an equitable fee structure to ensure program financing • In partnership with municipalities and RECYC-QUÉBEC, promote efforts to increase quantities of recovered materials through curbside recycling at the lowest possible cost. <p>As an organization founded by industry, ÉEQ is also concerned by each link in the curbside recycling value chain. Action is systematically taken to increase efficiency, optimize costs and recover increasing quantities of better quality materials as well as promote recycling.</p>
Government – Local	In Québec, the Municipal Powers Act gives local governments jurisdiction

	over residual materials management. Municipalities and other municipal bodies provide curbside recycling services.
Government – Country/Province	<p>RECYC-QUÉBEC is responsible for:</p> <ul style="list-style-type: none"> • Certifying the non-profit organization. • Verifying net costs declared by municipalities • Applying the Effective and Efficient formula to municipal admissible net costs, as stipulated by the Regulation • Calculating the municipal net costs that should be compensated • Recommending ÉEQ’s annual Schedule of Contribution to the Government • Recommending net costs share between classes of materials (Newspapers, Printed matter, Packaging). <p>The “Ministère du Développement durable, de l’Environnement, de la Faune et des Parcs (Ministry of Environment) is responsible for :</p> <ul style="list-style-type: none"> • Developing Residual Materials Policy, Regulation and Legislation • Approving ÉEQ’s Schedule of Contribution; <p>The Government is responsible for:</p> <ul style="list-style-type: none"> • Adopting and publishing ÉEQ’s Schedule of Contribution • Adopting the law and regulation.
Waste Management Companies	Provide services to local governments. In 2009, 89% of municipalities provided services through private haulers/sorting centers,
Recycling and Processing Industry	Recycle materials and sell directly to end markets.
Additional Notes	In 2011, the government agreed to ÉEQ’s request to formally include in the law the efficiency and effectiveness factor (E&E factor) that was applied through the negotiation process since 2007. This calculation factor cuts the compensation payable to municipalities that show high cost per ton and low recovery per person.
Collection Infrastructure	
Quality of Materials Collected	The majority of tonnage in Québec, comes from single stream programs. This collection type is more effective and efficient, from a transportation perspective, but has an impact on the quality of materials collected. This impact is balanced with the increase of quantity of the materials collected considering that this recycling process is easier and more convenient for the citizens. For the year 2010, materials not designated by the law (so-called “orphan materials”) represented 15 % by weight of all materials collected by curbside recycling.
Residential – Curbside	99% of residents have access to curbside recycling programs. Nearly 80 % of citizens participate actively (observed over a period of four weeks) in curbside recycling programs. Materials are mostly commingled, and are collected in 360 L rolling carts.
Residential – Drop-Off	There are few specific recycling drop-off bins but more and more municipalities offer eco-centers that accept electronics, construction and hazardous waste.
Public Spaces/Streetscapes	Through a voluntary initiative entitled, “Table for out-of-home recycling,” (out-of-home table) ÉEQ, RECYC-QUÉBEC and others have invested \$7.1 million from 2007 to 2011 to improve recycling in public spaces, hotels, bars,

	<p>and restaurants.</p> <p>Since the initiative began, more than 7,000 recovery bins have been installed in public spaces/streetscapes.</p>
Other [e.g. events, IC+I, etc.]	<p>There are many independent initiatives that focus on recovering materials <i>outside</i> of the municipal system.</p>
Ease of Collection	<p>99% of the population has access to door-to-door weekly curbside collection provided by municipalities.</p> <ul style="list-style-type: none"> • The majority of curbside collection programs is commingled (or single stream). • More than 90% of printed matter and packaging is accepted by municipal curbside recycling programs
Data Tracking and Integrity	<p>Curbside collection data: Each municipality or municipal body that has a curbside recycling program has the legal obligation to report, annually, their costs and quantity recovered into RECYC-QUÉBEC's database. As stipulated by the Law, only costs for collection, transportation, sorting and conditioning are admissible. To be formally accepted, each municipality must provide an independent audit report to RECYC-QUÉBEC. RECYC-QUÉBEC also validates the data and requests explanations if variation occurred. Every two (2) years, ÉEQ and RECYC-QUÉBEC collected information on residential generation and recovery through a province-wide waste characterization. 4,200 households were audited in 2012-13. ÉEQ and RECYC-QUÉBEC also developed an activity based costing model in 2012 that is used by RECYC-QUÉBEC to recommend new financial share repartitions amongst the three classes of materials and by ÉEQ for its 2013 Schedule of Contribution. Many other studies and information on curbside recycling are conducted by RECYC-QUÉBEC such as waste management analysis conducted every two years. Other studies include:</p> <ul style="list-style-type: none"> • Sorting center analysis conducted every other year. • Bale audits
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Schedule of Contribution	<p>EEQ is responsible for developing a Schedule of Contributions covering containers, packaging and printed material. Factors to be considered in determining these fees include:</p> <ul style="list-style-type: none"> • Recycled content • Use of natural materials • Volume of residual materials produced • Potential for recovery, recycling and reclamation <p>A cost distribution formula is used to allocate costs between the two classes (packaging and printed material) and between specific materials within each class. This formula was designed to respect cost shares established in legislation and to avoid cross subsidies between packaging and printed material. The three factors considered in this formula are:</p> <ul style="list-style-type: none"> • Recovery rate (using the data produced by the Characterization of Residual Materials in Quebec's Residential Sector) • Material net cost (using data from waste characterization study) • An Equalization Factor designed to penalize materials that have a low recycling rate and/or that are expensive to recycle. <p>Contribution table calculations are validated by the KPMG-SECOR</p>

	consultants with regard to the direction taken by the EEQ Board of Directors.
Design for Recyclability Incentive	Since 2009, ÉEQ has introduced a credit for recycled content for printed matter. This initiative has been implemented in order to recognize innovative companies. The credit for post-consumer recycled content is subject to receipt of acceptable supporting documentation
Additional Notes	Article 53.31.14 of the <i>Environment Quality Act</i> stipulates that the "Schedule of Contributions" governing company contributions must be presented during special consultation meetings. ÉEQ's consultation covers application rules and the contribution tables listing fees per material. This official process is to inform and consult the greatest number of companies, at every stage of Schedule development leading up to its adoption and coming into force for a given obligation year. ÉEQ's Board of Directors therefore develops a company consultation program for each Schedule of Contributions. Following consultation, ÉEQ submits to the government a report on the process for Schedule development and conclusions drawn from consultations.

Additional Collection Mechanisms – Beverage Container Deposit Legislation

Program Scope	All non-refillable soft drinks and beer containers are managed through a deposit return program. (Note: Refillable beer glass containers are managed separately under a private system and are not included in the information below).
Performance Targets	Beer containers: <ul style="list-style-type: none"> • 75%% (2010) Soft drink containers: <ul style="list-style-type: none"> • 73% (2010)
Collection Infrastructure	There are over 40,000 redemption locations at grocery stores, service stations, pharmacies and other businesses that participate in the return-to-retail collection system.
Quantity of Materials Collected	43,000 tons of soft drinks and beer containers (non-refillables) were collected in 2008.
Value of Materials	
Recovery Rate	Overall: 68% (2011) (Source: RECYC-QUÉBEC) <ul style="list-style-type: none"> • Aluminum (5¢): 65% • Aluminum (20¢): 84% • Plastic (5¢): 69% • Glass (5¢): 39% • Glass (10¢): 85% • Glass (20¢): 50%
Additional Information	June 2012 deposits on beer cans, soft drinks and energy drinks were increased from 5 to 10 cents.

MANITOBA PROGRAM SUMMARY

Reviewed by Karen Melnychuk, *Multi-Material Stewardship Manitoba (MMSM)*, Ken Friesen, *Canadian Beverage Container Recycling Association (CBCRA)*, and Lanny McInnes, *Retail Council of Canada (RCC)*

Province Name:	Manitoba, Canada
Population	1,208,268 (2011)
Population Density	2.2 persons per square kilometer. (Land area is 552,329.52 km ²)
Key Documents	MMSM Website: http://www.stewardshipmanitoba.org CBCRA Website: http://www.cbcra-acrcb.org Packaging & Printed Paper Stewardship Regulation: http://www.gov.mb.ca/conservation/pollutionprevention/waste/packaging_paper.html MMSM 2012 annual report: http://stewardshipmanitoba.org/wp-content/uploads/2013/10/annual-report-2012.pdf
Stewardship Organization:	Multi-Material Stewardship Manitoba (MMSM)
Financing	Multi-Material Stewardship Manitoba (MMSM) funds the municipal residential recycling program by levying fees on a broad range of packaging materials and printed paper including: newspapers, magazines, coffee cups and aluminum cans. These levies are charged on a cents/kg or \$/tonne and covers 80 percent of the cost of residential recycling programs for packaging and printed paper; municipalities pay the remaining 20 percent.
Date Established	MMSM was incorporated in 2006 and launched its program April 1, 2010.
Program Scope [i.e. Residential Only, or including IC+I]	MMSM scope applies to printed paper and packaging that is managed through the residential recycling system in Manitoba.
Legal Authority and Governance	Multi-Material Stewardship Manitoba (MMSM) was established in response to the <i>Packaging and Printed Paper Stewardship Regulation</i> 195/2008 (“the Regulation”) enacted in December 2008 under the <i>Waste Reduction and Prevention Act</i> (WRAP) Act (“the Act”). This Regulation established requirements for a stewardship program for packaging and printed paper (PPP) materials made from paper, plastic, metal or glass, and sold for use in the province of Manitoba. On January 12, 2009 the Minister of the Environment sent a Program Letter to MMSM, which described the new Regulation and the program development process. In addition to the Program Letter, the Minister of the Environment published two guidelines. The first Guideline outlined additional requirements of the PPP Program and its operations; and the second Guideline established specific requirements for plastic bags.
Number of Members	There are approximately 550 stewards that report to MMSM. <i>De minimis rule:</i> Stewards with gross annual sales less than \$750,000 are exempt from reporting to MMSM. Additionally, stewards with gross annual sales greater than \$750,000 but with fees totaling less than \$250 are required to report to MMSM but are exempt from paying fees.
Annual Contributions	In 2012, MMSM steward fees were estimated to raise \$12,330,282 to cover municipal payments and its operational costs for recycling services.
Revenue from Materials	MMSM is unable to provide the total revenue from materials due to revenue sharing agreements between municipalities and their contractors.
Free Riders	MMSM stewards pay annually for government enforcement and compliance
Administration Required	Number of employees: 1 plus contracted services which provides access to an

	additional 26 staff as required
	In 2011, MMSM program cost totaled \$1,200,000.
Transparency and Accountability	<ul style="list-style-type: none"> - Fee calculations and comments on consultation posted on website - Annual report made public - Strong social media platform to engage consumers - Transparent Board composition and structure - Municipal and industry projects committee to engage with municipalities
Legal Basis	
Enabling Legislation	<ul style="list-style-type: none"> • Waste Reduction and Prevention Act (1990) • Packaging and printed paper regulation (2008)
Scope of Materials Covered	All packaging and printed paper that is sold into the province for consumer use and discarded in residential sources only.
Performance Targets	No defined recycling target for all printed paper and packaging; however the government has set a recycling target of 75% for all sealed beverage containers.
Additional Notes	In response to the 75% target for all sealed beverage containers, producers and brand owners of sealed beverage containers formed the Canadian Beverage Container Recycling Association (CBCRA) to discharge their obligation through a 2 cent fee to be added to the sale price of all sealed beverage containers sold in Manitoba. CBCRA uses the 2 cents to discharge the obligation on behalf of their members to MMSM and to fund public space recycling (away-from-home).
Program Performance	
<i>All values in metric tonnes unless otherwise specified.</i>	
<i>Data represents only the residential materials that are tracked by MMSM</i>	
—Amount Recycled	2011: Overall 52.3% (70, 660 tonnes) <ul style="list-style-type: none"> • Printed Paper: 78.9% recycling rate (38,617 tonnes recycled) • Paper Packaging: 41.8% recycling rate (14,037 tonnes recycled) • Plastics: 23.3% recycling rate (7,131 tonnes recycled) • Steel: 54.1% recycling rate (3,234 tonnes recycled) • Aluminum: 35.7% recycling rate (1,191 tonnes recycled) • Glass: 51.6% recycling rate (6,449 tonnes recycled)
—Amount Used as Alternative Fuel	Not available
—Amount Disposed as Residue in Landfill	Not available
—Amount Reused	Not available
Kilograms/Capita Captured [and then diverted]	<ul style="list-style-type: none"> • 2011: 58.5 kg captured/capita
Net Cost/Kilogram Captured [and then diverted]	<ul style="list-style-type: none"> • 2011: \$172/tonne captured
Amount of Greenhouse Gas Emissions Avoided	Not available
Cost Effectiveness	
Cost per Ton	<ul style="list-style-type: none"> • 2011: Net cost per tonne for all PPP: \$172/tonne

	<p>Printed Paper: \$23/tonne Paper Packaging: \$371/tonne Plastics: \$790/tonne Steel: \$77/tonne Aluminum: (\$506)/tonne Glass: \$116/tonne</p>
Cost per Capita	<ul style="list-style-type: none"> 2011: \$10/capita
Cost per Household	<ul style="list-style-type: none"> 2011: \$26/household
Roles and Responsibilities	
Stewards	<p>MMSM defines a steward as a brand owner, first importer or franchisor that is a resident in Manitoba and supplies designated packaging and printed paper into the residential sector. <i>Financing:</i> Stewards pay annual fees based on the weight and type of PPP sold annually into the residential sector in Manitoba. Fees are updated annually as MMSM is responsible for 80% of the municipal costs to operate the residential recycling programs. Municipalities report their costs and tonnes recycled annually through MMSM’s municipal data call.</p>
Stewardship Organization	<p>Multi-Material Stewardship Manitoba (MMSM) is an industry-funded, non-profit organization that operates a province-wide recycling program for packaging and printed paper, in accordance with the Packaging and Printed Paper Stewardship Regulation.</p>
Government – Local	<p>It is up to the individual municipalities and municipal groups to design and implement their recycling program including the type of collection, frequency of collection, and materials collected.</p>
Waste Management Companies	<p>Municipalities have the option of contracting their collection, sorting and marketing of materials to private waste management companies.</p>
Recycling and Processing Industry	<p>Municipalities are responsible for either marketing or hiring a private company to market their recyclable materials. MMSM continues to work with municipalities to identify suitable end markets.</p>
Retailers	<p>Typically retailers are stewards of the MMSM program.</p>
Collection Infrastructure	
Quality of Materials Collected	<p>The quality of materials collected can vary significantly by municipality depending on the collection system in place and the range of materials collected. Residential recyclables are collected either through curbside or drop-off depots and can be co-mingled (single streams) or separated (multi-stream). Additionally, curbside programs can collect materials using blue boxes, bags or carts which can impact the quality of the materials. On average, the contamination rate in Manitoba is approximately 5%.</p>
Residential – Curbside	<p>The majority of programs have curbside collection along with some level of drop-off depot collection. The two largest cities, Winnipeg and Brandon represent approximately 60% of the population in MB and are predominantly serviced by a curbside program.</p>
Residential – Drop Off	<p>Less than 5% of the population receives recycling service entirely through drop-off depot collection. The majority of the programs have some level of curbside service along with drop-off depots.</p>
Public Spaces/Streetscapes	<p>Municipalities are responsible for collecting from public spaces and streetscapes; however, it is not an eligible cost under the MMSM program.</p>
Other [e.g. events, IC+I, etc.]	<p>Materials collected from events and IC+I are not eligible under the MMSM program but are covered under the Canadian Beverage Container Recycling Association (CBCRA) program.</p>

Ease of Collection	92.7% (2011) of Manitobans have access to either curbside or drop-off depot recycling programs.
Data Tracking and Integrity	Stewards of designated material are persons that have responsibilities under the Regulation. The Rules for Stewards are part of the legal framework that the program operates within. MMSM has established rules for stewards which include registration; rules for data reporting (i.e. dates for reporting); as well as compliance and payment schedules. Stewards use a web-based, on-line data reporting and management system. This secure online data management system is designed to assist stewards in managing their obligations. Obligated companies who do not follow the program rules are considered not in compliance.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	<ul style="list-style-type: none"> • Net cost (\$/t) • Recovery rate by material category • Producer sales (as reported into MMSM)
Design for Recyclability Incentive	The fee calculations take into account recycling performance, and therefore there is an incentive for producers to use packaging that has high recycling rates, low cost, strong and stable recycling markets.
Other Incentives Included	In addition to incentives for driving recycling, the fees charged to producers are weight based. As such, there is an incentive for producers to reduce their packaging weight.
Additional Notes	

CANADIAN BEVERAGE CONTAINER RECYCLING ASSOCIATION (CBCRA)

Name:	Manitoba, Canada
Population	1,208,268 (2011)
Population Density	2.2 persons per square kilometer. (Land area is 649,947 km ²)
Key Documents	http://www.cbcr-aacrb.org
Stewardship Organization:	Canadian Beverage Container Recycling Association (CBCRA)
Financing	CBCRA is funded through a container recycling fee (CRF) currently at 2 cents per container charged on all sealed beverages sold in the province.
Date Established	CBCRA was launched as a voluntary program on April 1, 2010. As of August 31, 2011, CBCRA has operated under a program plan that was approved by the Minister of Conservation
Program Scope <i>[i.e. Residential Only, or including IC+I]</i>	CBCRA provides funding for the cost of beverage containers recovered in the residential recycling channel (blue box) and provides recycling infrastructure for public space recycling for residential, IC & I and events throughout the province. Additionally, it provides a very extensive multi-media Promotion and Education programme throughout the province.
Legal Authority and Governance	The Canadian Beverage Container Recycling Corporation (CBCRA) was established in response to the Packaging and Printed Paper Stewardship Regulation 195/2008 (“the Regulation”) enacted in December 2008 under the Waste Reduction and Prevention Act (WRAP) Act (“the Act”). This Regulation established requirements for a stewardship program for packaging and printed paper (PPP) materials made from paper, plastic, metal or glass, and sold for use in the province of Manitoba. As part of the Guidelines

	accompanying the Regulation, the Government of Manitoba established a 75% recovery target for all used beverage containers supplied into Manitoba.
Number of Members	There are approximately 75 stewards that report to CBCRA
Annual Contributions	In 2012, CBCRA fees raised \$7,688,786 to cover the cost of recovering beverage containers in various channels including the residential (blue box), IC+I, municipal public space and events channels.
Revenue from Materials	\$0 received by CBCRA
Free Riders	By 2012 there were no known free riders with the exception of wine and spirit containers sold by the Manitoba Liquor Control Commission (MLCC)
Administration Required	Number of employees: full service management contract with Reclay StewardEdge who supplies all staff. Includes 6 f-t staff based in Winnipeg and an additional 15 staff that spend some part of their time on CBCRA tasks. Staff with the appropriate expertise are brought in when and where their expertise is required enabling efficient accomplishment of all CBCRA goals and tasks. In 2012, CBCRA program cost totaled \$4,842,358.
Transparency and Accountability	<ul style="list-style-type: none"> - Annual report made public - Strong public education campaign and social media platform to engage consumers - Transparent Board composition and structure - Total recovery percentages made public
Additional Notes	The budget for 2013 includes a greatly enhanced P&E campaign, budgeted revenue of \$6.5M and expenses of \$10.1M resulting in a \$3.8M reduction in the CBCRA accumulated surplus.
Legal Basis	
Enabling Legislation	<ul style="list-style-type: none"> • Waste Reduction and Prevention Act (1990) • Packaging and printed paper regulation (2008)
Scope of Materials Covered	All used sealed beverage containers supplied into the province.
Performance Targets	The government has set a recycling target of 75% for all sealed beverage containers.
Program Performance	
—Amount recycled	<ul style="list-style-type: none"> • 2012: CBCRA reported an overall 52% recovery rate in 2012, up from an estimated 42% recovery rate in 2010.
Additional Notes	The final numbers for 2012 are not yet available. It is anticipated that the overall recovery number has increased from 49% to 51% or 52% but can only be confirmed when all numbers are in. The goal for 2013 is to move the recovery above 60% and to achieve a 75% recovery rate by the end of 2016.
Roles and Responsibilities	
Stewards	CBCRA defines a steward as a brand owner, first importer or franchisor that is a resident in Manitoba and supplies sealed beverage containers into the province. CBCRA also has a category of Voluntary Stewards, stewards not resident in Manitoba who choose to voluntarily take on the steward obligations. <i>Financing:</i> The program is financed through a 2 cent container recycling fee applied to all sealed beverage containers sold in the province by participating companies (stewards). Containers of 1 litre or greater containing unflavoured milk are defined in the amended Regulation as not being beverage containers and are therefore not included. The dairy industry is still in discussion with the Manitoba Government regarding the management of

	other dairy beverages. Stewards remit fees on a monthly basis based on the number of units sold in that month. CBCRA has indicated in its Program Plan that it intends to move to a variable CRF at some point which would reflect more accurately the cost of each container type and size as well as provide the mechanism to decrease or increase the annual revenue.
Stewardship Organization	Canadian Beverage Container Recycling Corporation (CBCRA) is an industry-funded, non-profit organization that discharges participating stewards' obligations to achieve a 75% recovery rate in Manitoba. This includes funding its members' cost of recovering beverage containers in the residential, IC+I and public spaces and events channels in accordance with the Packaging and Printed Paper Stewardship Regulation.
Government – Local	CBCRA partners with local governments by providing recycling infrastructure at no cost to municipalities for use in public buildings, parks and other public spaces.
Waste Management Companies	CBCRA partners with waste management companies that service municipal and the IC+I sector to ensure that the waste management companies' IC+I customers have the appropriate recycling infrastructure to recover used beverage containers.
Recycling and Processing Industry	The very significant increase in public space recycling infrastructure has resulted in an increased amount of material available for recycling collectors and processors.
Retailers	Retailers that sell private label beverages or are importers of beverage containers are stewards of the CBCRA program.
Other [e.g. Suppliers, Other Government Agencies, etc.]	CBCRA partners with Government agencies including federal and provincial Parks as well as Green Manitoba a Special Operating Agency of the Manitoba Government.
Collection Infrastructure	
Quality of Materials Collected	The quality of materials (contamination level) collected can vary significantly depending on where it is collected. Collection from streetscape bins typically includes a much higher level of contamination than from curbside blue boxes. The contamination rate in Manitoba residential collection programs is typically below 5%.
Residential – Curbside	CBCRA provides funding to Multi-Material Stewardship Manitoba (MMSM) to cover the cost of recovering beverage containers in the residential collection channel. MMSM provides recovery data from the residential sector to CBCRA.
Residential – Drop-Off	Less than 5% of the population receives recycling service entirely through drop-off depot collection. The majority of the programs have some level of curbside service along with drop-off depots.
Public Spaces/Streetscapes	Municipalities are responsible for collecting from public spaces such as streetscapes, parks, arenas, etc.
Other [e.g. Events, IC+I, etc.]	CBCRA works with events to ensure they have contracted or volunteer collection services in place to service used beverage containers collected at event.
Ease of Collection	95% of Manitobans have access to curbside, drop-off depot, or public space recycling programs for used beverage containers.
Data Tracking and Integrity	CBCRA tracks the beverage containers collected at several points. MMSM provides data to CBCRA on beverage containers collected by municipalities. This typically includes all of the beverage containers collected in the residential collection stream as well as the beverage containers collected by

	municipalities from municipal public and open spaces.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	CBCRA takes into account the costs of recycling infrastructure provided to municipalities, IC+I partners and events as well as the cost of the extensive province-wide P&E efforts, and the cost of program management.
Design for Recyclability Incentive	At this time there is no incentive to use more recyclable packaging.

BRITISH COLUMBIA PROGRAM SUMMARY

Reviewed by Julia Ratcliffe, *British Columbia Ministry of the Environment*

Province Name:	British Columbia
Population	4,622,573 (as of July 1, 2012)
Population Density	5.01/km ²
Key Documents	MMBC website: http://multimaterialbc.ca
Stewardship Organization:	Multi-Material British Columbia (MMBC)
Financing	100% producer responsibility
Date Established	British Columbia's Recycling Regulation (the Regulation) was amended on May 19, 2011 to add Schedule 5, the Packaging and Printed Paper (PPP) category. Obligated producers must submit a product stewardship plan by November 19, 2012 and implement a program by May 19, 2014.
Program Scope <i>[i.e. Residential Only, or Including IC+I]</i>	Currently the Regulation only mandates collection of PPP from residential premises and from municipal property that is not industrial, commercial or institutional property. Government intends to include IC+I in the future.
Legal Authority and Governance	This is a non-prescriptive and results-based regulation. For PPP, a producer must submit a product stewardship plan under Part 2 of the Regulation and comply with the plan. The plan is approved by the Director by assessing it against specified performance targets. The Regulation provides producers the option of appointing an agency to carry out their duties under an approved product stewardship plan. If a producer chooses to appoint an agency, the producer must notify the agency in writing before the agency begins to carry out the duties of the producer; and specify the duties under Part 2 that the agency will perform on behalf of the producer.
Number of Members	As the program will not be implemented until May 19, 2014, it is not yet known how many members there will be.
Annual Contributions	Currently unknown. Industry have estimated that the cost of running a program for PPP in B.C. will be anywhere from CAD \$60-100 million.
Revenue from Materials	Currently unknown.
Free Riders	The Regulation ensures marketplace fairness by mandating that all producers with product categories captured by the Regulation carry out their duties under an approved product stewardship plan. To maintain a level playing field, as well as ensure that producers assume their stewardship responsibilities, government monitors compliance and takes timely and effective enforcement action when necessary. Taking such action helps to ensure that, no party is able to gain competitive advantage by avoiding their product stewardship obligations. To be successful over time, the Ministry will take advantage of existing compliance and enforcement tools in addition to exploring and developing innovative new tools that create incentives for producers to voluntarily comply. The Ministry prefers that producers make the first effort in encouraging non-compliant producers to meet their regulatory obligations. After unsuccessful attempts, the producer(s) or their agency may refer the situation to the Ministry for compliance action. Compliance action is undertaken in accordance with Ministry policy, which calls for an escalating scale of compliance action (e.g., advisory, compliance promotion, enforcement). Under the Regulation, a person who commits an offence is liable to a fine not exceeding \$200,000.
Administration Required	<i>Number of employees:</i> Ministry of Environment staff of 4 (as of July 1, 2013)

Transparency and Accountability	Producers post their approved product stewardship plans on their websites. The Regulation mandates that a producer submit an annual report and post the report on the internet. The Ministry also posts approved plans, annual reports, including the audit of financial and non-financial information to its website at www.recycling.gov.bc.ca . Government stays out of business-to-business decisions; thus, does not interfere in fee setting. However, the producer must submit independently audited financial statements for deposits charged or for fees charged by the producer to the consumer that are shown on the consumer sales receipt. Submitting independently audited financial statements ensures financial transparency and accountability on the management of fees collected from the consumer.
Legal Basis	
Enabling Legislation	The Environmental Management Act (EMA) governs the way by which the ministry authorizes the introduction of waste into the environment. EMA provides a flexible authorization framework, increases enforcement options and uses modern environmental management tools to protect human health and the quality of water, land and air in British Columbia. EMA also enables the use of administrative penalties, informational orders and economic instruments to assist in achieving compliance.
Scope of Materials Covered	Under section 6(2) and 6(3) of EMA, only introductions of waste from “prescribed” industries, trades, businesses, operations and activities require authorization. Industries, trades, businesses, operations and activities are “prescribed” in the Waste Discharge Regulation . If an industry, trade, business, operation or activity is not “prescribed” by the regulation, it does not require an authorization to introduce waste into the environment; however, the discharge must not cause pollution (EMA section 6(4)). Further, the Recycling Regulation currently includes five schedules, which mandate which products must be managed. The Regulation can be amended as new product categories are designated. The product categories currently regulated are beverage containers, residuals, electronics, tires and packaging and printed paper. Packaging is defined in EMA as “a material, substance or object that is; (a) used to protect, contain or transport a commodity or product, or (b) attached to a commodity or product or its container for the purpose of marketing or communicating information about the commodity or product.” Printed paper is defined in the Recycling Regulation as “paper that is not packaging, but is printed with text or graphics as a medium for communicating information, and includes telephone directories, but does not include; (a) other types of bound reference books, (b) bound literary books, or (c) bound text books.”
Performance Targets	The Regulation states that an approved plan will achieve, or is capable of achieving a 75% recovery rate (% of product collected over product sold to the market) or another recovery rate established by the director. The 75% recovery rate specified in section 5(1)(a)(i) of the Regulation was chosen as a common, minimum performance target for all product schedules in an effort to be consistent for all products. The expectation is that all producers will commit to continuous improvement in performance.
Program Performance	
Of Amount Collected:	
—Amount recycled	Currently unknown as PPP EPR program does not launch until May 2014. Plan targets include from years 2014-2017: Direct 85% to 90% of collected

	PPP to recycling commodity markets.
—Amount Used as Alternative Fuel	Currently unknown as PPP EPR program does not launch until May 2014
—Amount Disposed as Residue in Landfill	Currently unknown as PPP EPR program does not launch until May 2014
—Amount Reused	Currently unknown as PPP EPR program does not launch until May 2014
Kilograms/Capita Captured [<i>and then Diverted</i>]	Currently unknown as PPP EPR program does not launch until May 2014
Net Cost/Kilogram Captured [<i>and then Diverted</i>]	Currently unknown as PPP EPR program does not launch until May 2014
Amount of Greenhouse Gas Emissions Avoided	Currently unknown as PPP EPR program does not launch until May 2014
Cost Effectiveness	
—Cost per Ton	Currently unknown as PPP EPR program does not launch until May 2014
—Cost per Capita	Currently unknown as PPP EPR program does not launch until May 2014
—Cost per Household	Currently unknown as PPP EPR program does not launch until May 2014
Roles and Responsibilities	
Producers	<i>Legal:</i> A producer of a designate product category in the Recycling Regulation must either have an approved product stewardship plan and comply with the plan (Part 2) or comply with prescriptive measures specified in section 9 (Part 3) in order to sell or distribute the product in British Columbia. However, in the case of Packaging and Printed Paper, producers must comply with Part 2 only, and do not have the option of complying with Part 3.
	<i>Financial:</i> Stewardship program funding is the responsibility of the producer. The Ministry of Environment's principle is that product management costs are borne by producers and consumers, not local governments or the general taxpayer. A producer that chooses to charge a separate, visible fee that is shown on the consumer's receipt, must submit an independently audited financial statement showing revenues and expenditures based on the fee as part of the annual report and in accordance with section 8(2)(f) of the Regulation.
	<i>Management/Operations:</i> Producers of PPP have had to consult on and submit a product stewardship plan to the Ministry of Environment by November 19, 2012, and will have to implement this plan by May 19, 2014. Section 2(2) of the Regulation provides producers the option of appointing an agency to carry out its duties under a product stewardship plan. If a producer chooses to appoint an agency, the producer must notify the agency in writing before the agency begins to carry out the duties of the producer.
Stewardship Organization	Section 2(2) of the Regulation provides producers the option of appointing an agency to carry out its duties under a product stewardship plan. If a producer chooses to appoint an agency, the producer must notify the agency in writing before the agency begins to carry out the duties of the producer. The governance structure, operational systems, and fee structures of an agency are determined by the producers as members of the agency. Such an organization should be a not-for-profit entity established under the B.C. <i>Society Act</i> or federal legislation.
Government – Local	Local governments individually or through a stakeholder advisory committee, may participate in or assist a product stewardship program by; <ul style="list-style-type: none"> • providing input during the consultation phase on draft Product

	<p>Stewardship Plans;</p> <ul style="list-style-type: none"> • providing facilities or operational services as a service provider at a landfill or other local site for product collection or processing; • helping to inform the public that the stewardship program is available; • assisting the producer or agency with local land use and business licence issues relating to collection and processing facilities; • imposing landfill disposal bans on regulated products; and • providing input on the operations of product stewardship programs.
Government – Country/Province	The Ministry of Environment's role consists of approving stewardship plans reviewing, providing assistance to producers in understanding the requirements of the Regulation, review of annual reports, and undertaking compliance and enforcement actions where necessary. The Ministry of Environment prefers that producers who are in compliance with section 2(1) of the Regulation, or their stewardship agency, make the first effort in encouraging a non-participating producer to comply with the Regulation. After unsuccessful attempts, the participating producer(s) or their agency may inform the Ministry of Environment of the situation for further action.
Waste Management Companies	Waste management companies will need to transition to marketing their services to producers. Producers will conduct public consultation with all stakeholders on the details of the proposed program.
Recycling and Processing Industry	Recyclers and processors will need to transition to marketing their services to producers. Producers will conduct public consultation with all stakeholders on the details of the proposed program.
Retailers	<p>A retailer may be a producer such as a brand-owner, as defined in the Regulation, and have a duty to comply as a producer. Even if not identified in the Regulation, retailers are important stakeholders. Producers should ensure that retailers are correctly informed about their program and can inform consumers of:</p> <ul style="list-style-type: none"> • the existence of the stewardship program; • the location of the nearest collection point for the product; • any deposits charged and refunds available in accordance with the Regulation; • any fee collected as a part of the stewardship program; and • the fact that producer fees are not government taxes.
Collection Infrastructure	
Quality of Materials Collected	Currently varies by community. The PPP program launches May 19, 2014, however the MMBC plan proposes to build on existing services in order to minimize economic dislocation for those currently operating the PPP system, to avoid confusion to residents, and to mitigate any potential temporary loss of environmental performance. Building on the current operating recycling system through development of commercial partnerships with existing economic players is considered the most responsible, economically efficient and environmentally prudent approach to maintaining and enhancing the recovery of residential PPP in BC.
Residential – Curbside	Currently, seventy-eight percent of single-family households receive curbside collection service and 79% of multi-family units have access to a PPP collection service within their building or complex. In May 2014, the MMBC program will provide an additional 102,000 households in BC with curbside collection of PPP, increasing the overall number of households with curbside recycling to 1,443,725.

Residential – Drop-Off	Currently, an estimated 18% of households have access only to a depot-style collection program.
Public Spaces/Streetscapes	Streetscape collection of PPP is currently limited to a small number of jurisdictions. PPP collection from streetscapes is legislated under the Regulation.
Other [e.g. Events, IC+I, etc.]	Currently varies by community. IC+I is voluntary and is not included under the Regulation at this point.
Ease of Collection	Currently varies by community. MMBC’s stewardship plan commits to expanding the materials collected at curbside, which will increase the convenience for residents. MMBC will require that a common harmonized list of PPP be collected from residents across BC. There will be no differences between what residents in one municipality can recycle compared to their neighbours.
Data Tracking and Integrity	Currently varies by community.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	The governance structure, operational systems, and fee structures of an agency are determined by the producers as members of the agency. Members of MMBC will contribute to the cost of collecting and recycling the PPP supplied to the residential marketplace. MMBC will be developing a methodology to allocate the costs of administering and implementing the PPP plan to producers. MMBC has stated they will work to ensure that the reporting obligation and fee payments for small businesses are appropriate for their size and contribution of PPP to the residential marketplace.
Design for Recyclability Incentive	The governance structure, operational systems, and fee structures of an agency are determined by the producers as members of the agency. The MMBC plan provides an incentive to manufacturers to redesign products to reduce the use of toxic substances and extend product life spans by making products more durable, reusable and recyclable by structuring the producer fees such that, producers that supply different types of PPP that are currently not recyclable will pay additional fees that are intended to cover research and development (R&D) to resolve technical and market capacity barriers so that the PPP that is currently not recyclable can be included in the collection system over time.
Other Incentives Included	MMBC will encourage redesign through cost allocation by rewarding companies who reduce the weight of PPP sold into the market, and provide guidance to producers on design for recyclability.

Additional Collection Mechanisms – Beverage Container Deposit Legislation	
Program Scope	Captured under Schedule 1 of the Regulation as a deposit-refund system. The Regulation defines "beverage" as “any liquid that is a ready-to-serve drink but does not include milk, milk substitutes, rice milk, soya milk, flavoured milk, infant formulas, meal replacements or dietary supplements”; and "container" as “a container made of aluminum, glass, paper, plastic, steel or other similar material, or any combination of them, that is or was sealed by its manufacturer.” The Schedule applies to a container that (a) may hold, holds or has held a beverage, (b) is offered for sale or sold in British Columbia, and (c) is not a refillable container having a capacity of 10 litres or more.
Collection Infrastructure	As of July 2013, BC has 171 deposit container return depots operated by

	Encorp Pacific, and approximately 20 not-for-profit recycling depots. BC Liquor Distribution Branch stores, Licensee Retail Stores and private retailers also act as collection points for beverage containers.
Quantity of Materials Collected	Sum of materials reported in 2012 Encorp Pacific Annual Report: Glass= 70,011/ tonnes PET= 10,884/ tonnes Other plastic (laminated pouches and plastic bag-in box)= 324/tonnes Aluminum= 5,026/ tonnes Steel= 258/ tonnes Polycoat (drink boxes and gable top containers)=1,934/ tonnes Sum of materials reported in 2011 BDL Annual Report: Glass=31,944/ tonnes Aluminum=5,918/ tonnes
Recycling Rate	Encorp Pacific – 78.7% (2012) Brewers Distributor Ltd - 94.5 % (2011)
Value of Materials	Encorp Pacific - Sale of Processed Containers in 2012 = \$13.6 million Brewers Distributor Ltd - unknown
Additional Notes	To jointly carry out its deposit-refund obligations within a common province-wide system, Brewers Distributor Ltd. (BDL) serves as a stewardship agency for most domestic beer and cider brands. For all other beverage types including wine, coolers, spirits, import beer and non-alcohol beverages, Encorp Pacific (Canada) serves as the industry's container stewardship agency.

AUSTRALIAN AND BRITISH EPR PROGRAM SUMMARY TABLES

The following three tables provide a high-level overview of the EPR programs for PPP that are currently operating in Australia and the United Kingdom. Complete summaries for each of the province’s programs immediately follow the tables.

Australia and UK Comparison

Organization	Australia Australian Packaging Covenant	UK ValPak (29 schemes total)
Program Scope	Residential Away from Home IC+I	Residential IC+I
Material Types Covered ¹	All packaging materials eligible for grant-funded recycling projects	All packaging materials
100% Producer Responsibility	No 50/50 Industry + Government matching grant fund for recycling projects (Local taxes support recycling)	No Purchase Packaging Recovery Notes (PRNs) or Packaging Waste Export Recovery Notes (PERNs)
Producer Contribution Per Capita (USD)	\$0.12 ²	N/A
Recycling Rate	64% (2012)	61% (2010)
Primary Collection Method	Single Stream	Single Stream, some drop-off locations for glass
High Convenience	Varies by locality	Varies by locality



¹ “All packaging materials” includes glass, paper & paperboard, aluminum, steel, and all plastic resins (1 – 7).

² Contributions from the Australian Packaging Covenant do not include government funds to support curbside recycling.

Australia and UK EPR Program Performance

	Australia	UK
Recovered Tons (for recycling)	2,811,838 (2012)	6,696,000 (2010)
Overall Recycling Rate	64%	61%
Glass	47%	61%
Aluminum	67%	56% Metals
Steel	39%	
Plastic	42%	24%
Paper + Board	77%	82%
Fee Calculation	N/A	Packaging Recovery Notes (PRNs) / Packaging Export Recovery Notes (PERNs)



AUSTRALIA PROGRAM SUMMARY

Reviewed by Edward Cordner, formerly at the *Australian Packaging Covenant*, and Russ Martin, *Global Product Stewardship Council (GPSC)*

Country Name:	Australia
Population	22,620,000
Population Density	2.9 per square kilometer
Key Documents	Australian Packaging Covenant website: http://www.packagingcovenant.org.au/
Stewardship Organization:	Australian Packaging Covenant (APC)
Financing	Joint industry/government funding based on cost sharing. Industry contributions to the APC fund are matched by the government. However, the program does not fund or manage any recycling operations. These funds are used for administration and distributed as grants to municipalities and other signatories to implement specific recycling projects (funding priorities are outlined on APC's website). Local governments fund and implement curbside recycling programs through household property rates.
Date Established	July, 1999
Program Scope <i>[i.e. Residential Only, or Including IC+I]</i>	APC grants have traditionally gone to improve residential curbside recycling as well as collection in away-from-home locations such as shopping centers. With funding from APC, pilot programs in IC+I waste collection have also been introduced in a number of states.
Legal Authority and Governance	Though the Australian Packaging Covenant is a voluntary program, non-signatory or non-compliant brand owners with more than AUD \$5 million in annual turnover can be regulated under the National Environment Protection Measure (NEPM), which can require these parties to establish and implement their own collection and recycling programs without the benefits of APC participation. Each state or territory can impose significant fines that vary by state, and can be imposed simultaneously on each state of non-compliance.
Number of Members	Membership in the APC is open to companies along the packaging supply chain, and also local, state, and federal government, industry associations, community groups, and NGOs. At the end of the phase 1 (2005): 580 industry signatories; the Federal and all state and territory governments except the Northern Territory; Victoria and Queensland local government associations as well as a number of individual local government signatories. At the end of phase 2 (2010): 764 industry signatories; the Federal and all state and territory governments except the Northern Territory; all state and territory local government associations except New South Wales and the Northern Territory. Current membership in good standing: 842 (Nov, 2012) the Federal and all state and territory governments except the Northern Territory; all state and territory local government associations except New South Wales and the Northern Territory.
Annual Contributions	Industry is committed to contributing a minimum of A\$3 million annually to the APC. Since state and territory governments together match these dues 1:1, approximately A\$6 million dollars is collected annually for grants, projects, and administration. State government funding commitments vary based on population. The more populous states (i.e., Victoria, New South Wales and Queensland) pay more.

	<p>Industry signatories contribute to the APC fund, based on annual company sales and their position in the packaging supply chain. Membership fees vary by member type, with the highest fees being paid by packaging manufacturers. Individual companies have a maximum annual contribution cap of A\$286,000. Other members of the APC (e.g., industry associations, community groups, NGOs) pay a flat fee annually of A\$110. The APC fund is not used directly to fund the collection and sorting of recycling, which is paid for through local taxes. Instead, these funds are used for program administration and provided as grants for specific recycling-related projects. In its first 10 years, the Covenant funded 86 grant projects worth a total of AUD \$83.5 million. Approx. AUD \$28 million of this came from joint industry-government funds.</p>
Revenue from Materials	Accrues to local governments implementing recycling programs.
Free Riders	<p>Free riders are regulated under the NEPM, which can require brand owners to establish mechanisms for the collection of their packaging products to produce an outcome equivalent to the Covenant targets and objectives. The goal is to ensure a level playing field between signatories and non-signatories.</p> <p>Industry is responsible for tracking free riders, but state government enforces the regulation.</p>
Administration Required	<p><i>Number of employees:</i> Administration is centralized as the Covenant Secretariat, comprising 8 employees.</p> <p>Signatories develop and implement their own Action Plans. Overall responsibility for policy, strategy and compliance arrangements lies with the 20-member Australian Packaging Covenant Council, comprised of senior representatives from government, industry associations, local government associations, and community organizations. State governments also allocate part of a nominated department officer's position description to Covenant administration. A separate body, the National Packaging Covenant Industry Association, made up of representatives from major industry associations, manages the finances.</p> <p><i>Operating costs</i> [if available]: For phases I and II (ending in 2010), the annual administration budget was AUD \$750k. The budget for the current phase is higher (in the order of AUD \$1.2m) but the exact figure is not known.</p>
Transparency and Accountability	<p>All signatory action plans and annual reports are independently assessed and approved, are subject to audits, and are made publicly available on the Covenant website.</p> <p>The APC Council is required to report annually on progress towards its objectives and targets. These reports are also made available through the website.</p> <p>Mid-way through each of phases I and II, the Covenant has undergone major independent reviews to determine whether satisfactory progress towards objectives and/or targets is being made.</p>
Additional Notes	A sample of signatories' annual reports is selected each year for a verification audit to ensure progress toward Action Plan goals.

Legal Basis

Enabling Legislation	<p>APC is a voluntary program. According to the APC, “the Covenant is a voluntary initiative by Government and Industry to reduce the environmental impacts of packaging. It is designed to minimize the environmental impacts arising from the disposal of used packaging, conserve resources through better design and production processes and facilitate the re-use and recycling of used packaging materials.”</p> <p>Non-signatory and non-compliant signatory brand owners with an annual turnover greater than AUD \$5 million are regulated under the NEPM, a broad framework-setting statutory instrument established under the National Environmental Protection Council (NEPC) Act. Under the NEPM, brand owners can be required to establish mechanisms to take back their own packaging products for recycling at end-of-life and report annually on the results. The NEPM is a federal law, which has been transposed into state laws in each Australian state.</p>
Scope of Materials Covered	<p>The Covenant applies to consumer packaging, which is defined as “all packaging products <u>made of any material, or combination of materials</u>, for the containment, protection, marketing or handling of consumer products.” (Australian Packaging Covenant 2010, Schedule 6: Definitions). This broad definition is intended to embody a holistic, life-cycle approach to packaging that does not discriminate based on material type.</p> <p>Signatories are required to implement the Sustainable packaging Guidelines (see APC website), whose broad principles include fit-for-purpose, resource efficiency, low-impact materials and resource recovery. Signatories agree to apply these guidelines to all new packaging and commit to review existing packaging in light of the guidelines. Implementation is by self-assessment, with random audits conducted by the Covenant Council to ensure compliance.</p>
Performance Targets	<p>Performance targets are laid out in the July 2010 – June 2015 Strategic Plan. These include:</p> <ul style="list-style-type: none"> • 70% overall recycling rate for used packaging materials. • Demonstrated increase in the diversity and scale of local markets for conversion of used packaging materials to new products. • 70% of signatories implementing policies and procedures to work with others to improve design, procurement and recovery of packaging. • Continued reduction of the amount of packaging materials that are littered. • Annual collection of high quality data.
Program Performance	
Of Amount Collected:	
—Amount Recycled	<p>The APC conducts an independent data collection process on a national basis each year. This data is collected in accordance with an approved methodology to ensure consistency from year to year.</p> <p>Overall: 63.8% recycling rate for 2012 (4,407,766 tonnes generated; 2,811,838 tonnes collected)</p> <p>By material type:</p> <ul style="list-style-type: none"> • Paper/cardboard: 76.8% (2,561,000 tonnes generated; 1,968,000

	<p>tonnes collected)</p> <ul style="list-style-type: none"> • Glass: 47.3% (1,164,000 tonnes generated; 550,000 tonnes collected) • Plastics: 41.5% (519,966 tonnes generated; 215,538 tonnes collected) • Steel cans: 38.9% (109,900 tonnes generated; 42,700 tonnes collected) <p>Aluminum cans: 67.3% (52,900 tonnes generated; 35,600 tonnes collected)</p>
—Amount Used as Alternative Fuel	No waste-to-energy facilities exist in Australia.
— Amount Disposed as Residue in Landfill	<p>Recycling (curbside and drop-off) sent to landfill as residual waste by state/territory (2010-2011):</p> <ul style="list-style-type: none"> • NSW: 56,387 tonnes • Vic: 77,159 tonnes • Qld: 19,071 tonnes • WA: 60,653 tonnes • SA: 60,726.6 tonnes • Tas: 629 tonnes (not reliable due to inconsistent reporting) • ACT: 324.81 tonnes • NT: 1070.5 tonnes • Total: 276,020.91 tonnes
—Amount Reused	Not provided.
Kilograms/Capita Captured	<p>2012 data: 124.3Kg / capita total</p> <ul style="list-style-type: none"> • Paper 87.0 • Glass 24.3 • Plastics 9.5 • Steel 1.9 • Aluminum 1.6
Net Cost/Kilogram Captured	Not provided.
Amount of Greenhouse Gas Emissions Avoided	Not provided.
<p>Cost Effectiveness: Not available. The cost of collecting, hauling, and sorting curbside recycling is borne by local and state governments and their taxpayers. Because of this, there is no centralized location for cost data. Determining cost effectiveness of the results of APC grants compared to APC dues is not possible.</p>	
—Cost per Ton	N/A
—Cost per Capita	N/A
—Cost per Household	N/A
Additional Notes	Keep Australia Beautiful National Litter Index (funded by APC) shows a decrease in litter volume from 8.86 litres/1000 square meters in 2005-2005 to 6.49 litres/1000 square meters in 2011.
<p>Roles and Responsibilities</p>	
Producers	<i>Legal:</i> Individual signatories (including producers) are required to develop their own action plans over a 3-5 year period outlining how their individual actions will contribute to Covenant goals and targets, including developing

and funding their own waste management requirements. Action plans are independently assessed and approved. Signatories are required to report annually on progress made toward achieving their action plan goals. While participation is voluntary, statutory NEPM regulations can require non-participating brand owners to develop their own mechanisms by which their packaging products are taken back at end-of-life for recycling.

Financial: APC signatory contributions are based on annual sales and place in the supply chain. Packaging manufacturers pay more (2.7X) than other industry signatories.

Producers develop and implement their own Action Plans in light of APC goals. In addition, the supply chain contributes money to the APC fund to be used for projects (industry is committed to a minimum of AUD \$3 million per year).

Examples of Action Plans:

Australian Industry Group commitments from 2011-2012 Action Plan:

- Conduct review of recycling services at major offices and investigate cost effective options to address gaps in service.
- Investigate options for “buy recycled” policy for office materials.
- Provide educational sustainability events for members and non-members.

BP Australia (2010-2015 Action Plan)

- Review existing product packaging and implement process for review of new product packaging against Sustainable Packaging Guidelines.
- Down-gauge (reduce thickness of) steel drums.
- Participates in Australian Institute of Petroleum Action Plan to increase recycling of packaging for lubricant containers.
- Develop an Environmental Policy which includes a “buy recycled” commitment. Track purchases of products with recycled content.
- Incorporate sustainability considerations into procurement process.
- Review and implement improvements to “plastic bag free” policy.

Local Government Association of South Australia (2011-2013 Action Plan)

- Identify opportunities for cost savings and enhanced management of waste service delivery by local councils.
- Investigate opportunities for local governments to limit their exposure to fluctuations in international commodity markets for curbside recycling.
- Help local governments meet their needs with regard to state and national policies, including waste to landfill reduction.
- Enhance community education to improve the efficiency of curbside recycling programs.
- Represent local governments in discussions with state government about legislative improvements to the Zero Waste Act of 2004.
- Work with Zero Waste SA (state government organization) in identifying new service delivery and funding opportunities

Management/Operations: The National Packaging Covenant Industry

	Association (NPCIA) provides an incorporated legal entity to hold, disperse and report on industry and government funds which administer and manage the Covenant itself. This requires management and governance over funds, contracts and legal obligations including financial and other reporting.
Stewardship Organization	Australian Packaging Covenant Council (APCC) consists of representatives from government, industry, local government associations and community organizations. APCC oversees the implementation of the APC and meets quarterly to discuss issues related to packaging, communication, procedures, data collection and what individual sectors are doing to support the goals of the APC.
Government – Local	Provide residential curbside collection services, including contracting with waste haulers and educating residents. Participate as signatories and are responsible for good practice material collection at the local level as well as making financial aspects of this available to households and the general community. Receive funding from industry indirectly through approved Covenant projects.
Government – State	Participate as signatories, develop and implement action plans, contribute data and funding, ensure that waste management systems and initiatives are in line with Covenant goals. Manage jurisdictional Covenant projects. Also responsible as regulators under NEPM as discussed above. Have a management and oversight role as regulator and joint manager of Covenant projects.
Waste Management Companies	The Waste Management Association of Australia (WMAA) is a signatory and is a member of Council. Local councils, companies and other organizations negotiate directly with waste management and recycling contractors to provide appropriate services.
Recycling and Processing Industry	The Australian Council of Recycling (ACOR) participates as a signatory and as a member of Council. Several companies in Australia not only make packaging materials, but also convert, collect/haul, sort and reprocess them. Visy and Amcor are two examples of this vertical integration.
Retailers	The Australian National Retailers Association (ANRA) participates as a signatory and is a member of Council.
Collection Infrastructure	
Quality of Materials Collected	Recycling procedures vary by location, and are run by local councils. In general, commingled paper, glass, hard plastic, steel and aluminum are collected from households in large wheeled bins at curbside, which are taken to a Materials Recovery Facility (MRF) for separation. Difficult to recycle materials such as electronics are typically dropped off at local recycling depots. Some local council's collect yard waste and other organics as well. The quality of materials collected and contamination rates will vary by location.
Residential – Curbside	Collection of curbside recycling is typically automated. Households set out two wheelie bins, one of waste and one of commingled recyclables, which are generally collected on the same day. While waste wheelie bins are generally collected every week, a common practice is to alternate collections of commingled recyclables and organics so that each type is collected every two weeks. Details vary by location.

	<i>Set-out rate: Vary by council.</i>
Residential – Drop-Off	Drop-off centers are typically found in rural and remote areas and generally accept a range of items, including packaging. Some metro councils also operate transfer stations which accept drop-offs.
Public Spaces/Streetscapes	<p>Increased recovery and recycling of packaging from workplaces and public places is a focus of the APC. As mentioned above, APC provides funding for the Keep Australia Beautiful Litter Index, which has shown a reduction in litter from 2005-2011.</p> <p>Examples of projects funded by the APC in 2011 include:</p> <ul style="list-style-type: none"> • Placing recycling bins at Coles supermarkets in Victoria which will accept plastic bags and other flexible plastics not typically accepted by curbside recycling. • Installation of recycling bins in the central business district of Ararat, Victoria. • Establishing public place recycling programs in a number of municipalities in Queensland. • Installing and upgrading recycling facilities at 28 Colonial Mutual shopping centers nationwide.
Other [e.g. Events, IC+I, etc.]	APC has given grants to install Bottle Cyclers in bars and restaurants to crush glass on site.
Ease of Collection	<p>Many curbside recycling programs in Australia do not require consumers to sort the different packaging materials prior to recycling.</p> <p><i>Participation rate</i> : According to the Australian Bureau of Statistics, 91% of Australian households reported having used curbside recycling in 2009.</p>
Data Tracking and Integrity	<p>APC collects and publishes data on quantity of materials collected and recycling rates annually.</p> <p><i>Third party auditing?</i>: APC undergoes independent review midway through a 5-year cycle to determine if goals are being met.</p>
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	For industry signatories, annual contributions are based on a combination of annual (packaging-related) turnover and position in the supply chain. Maximum annual dues rate of A\$286,000 per company. See the APC Declaration Form for more information on how dues are calculated.
Design for Recyclability Incentive	<p>APC dues are not based on type or material of packaging. There is no financial incentive to design for recyclability via the APC. Improving design for recyclability should be included in a company's Action Plan.</p> <p>Some vertically integrated companies in Australia make, collect, and reprocess packaging. These companies have a commercial incentive to make packaging that they can later easily collect, sort, and reprocess.</p>
Other Incentives Included	Not applicable.

UNITED KINGDOM PROGRAM SUMMARY

Reviewed by Jane Bickerstaffe, *Incpen*, Alan Blake, *PAC NEXT*

Country Name:	United Kingdom
Population	62,231,336
Population Density	257ppl/sqkm
Key Documents	Valpak website: www.valpak.co.uk Producer Responsibility Regulations http://www.defra.gov.uk http://ec.europa.eu/environment/waste/framework/ http://www.environment-agency.gov.uk
Stewardship Organization:	Valpak
Financing	Members obligations
Date Established	Valpak was established in 1997 in response to UK Producer Responsibility Obligations (Packaging Waste) Regulations (1997, PROR). Valpak is one of 29 compliance schemes in the UK registered with the Environmental agencies. If they wish companies can register directly with the Environment Agencies (EA for England & Wales, NIEA for Northern Ireland, SEPA for Scotland). PROR was implemented to meet UK obligations under the European Commission Directive on Packaging and Packaging Waste.
Program Scope <i>[i.e. Residential Only, or Including IC+I]</i>	On a membership basis. Obligations apply to all Packaging – commercial, industrial and domestic. A party dealing with packaging in one of the following roles is obligated under the PROR: <ol style="list-style-type: none"> 1. Manufacturing raw materials used to produce packaging 2. Manufacturing packaging 3. Packaging a product or selling a packaged product 4. Importers of empty or filled packaging <p>Only parties with annual revenues exceeding £2 Million that handle at least 50 Tonnes of packaging are obligated. However, a party may also be obligated if part of a ‘group’ of generators who exceed this de minimis threshold.</p>
Legal Authority and Governance	The legal authorities are the EA (Environment Agency), SEPA (Scottish Environment Protection Agency), and the NEIA (Northern Ireland Environment Agency). Environmental Agencies grant accreditation to recyclers who must submit quarterly reports on tonnage recycled. Accredited Recyclers issue Packaging Waste Recovery notes (PRNs) or Packaging Waste Export Recovery Notes (PERNs) based on the tonnage of material they recycle. An obligated party/company can fulfill their PROR obligation by purchasing PRNs or PERNs. Companies can register directly with an Environmental Agency or join a compliance scheme that will manage their PROR obligation on their behalf. Valpak is not a legal authority, but the largest of the 29 compliance schemes registered in the UK. Valpak purchases enough PRNs to offset the obligations of their entire membership. Valpak’s Packaging Compliance Scheme is registered with all UK Environmental Agencies (EA – NPWD10881; SEPA – NPWD107099; NIEA – NPWD109339).
Number of Members	In 2003, there were 14,000 obligated parties in the UK.

	Valpak manages obligations for 4,000+ members.
Annual Contributions	Not published because compliance schemes compete with each other for members
Revenue from Materials	Difficult to separate value of “recyclate” from the PRN.
Free Riders	Because of the PRN system, individual compliance makes free-riding relatively easy. However, there has been more active enforcement of the producer responsibility regulation in the UK than in other European countries. Fines as high as 450,000USD have been ordered as compensation to the EA.
Administration Required	N/A <i>Operating costs</i> : N/A
Transparency and Accountability	<p>The objective of the compliance scheme is to outsource a packaging company’s obligation calculation, and purchase of the necessary PRNs. As part of the membership, Valpak calculates the members’ obligation, provides support and advice on packing data submissions, audit planning, has competitive PRN prices each year with reprocessors and insulates members against any peak in prices. Valpak provides an 8 stage process:</p> <p>Stage 1: Valpak members complete an annual submission, which is due on 28 February each year. This submission tells Valpak how many tonnes of packaging that each member handles, the material and the activity that they perform.</p> <p>Stage 2: Valpak checks and verifies the data.</p> <p>Stage 3: Valpak calculates packaging flow. This is the tonnage calculated when the activity percentage is applied to each material.</p> <p>Stage 4: Valpak applies UK Government targets for recycling and recovering packaging waste to the total packaging flow to work out members’ packaging waste obligations.</p> <p>Stage 5: Valpak calculates material specific recycling obligations. A company’s minimum recycling obligation must be met using a combination of the materials that the company has handled. Each material has its own material specific recycling targets, which Valpak applies to the packaging flow for that material.</p> <p>Stage 6: Valpak calculates companies’ general recovery and recycling obligation by subtracting the total of their material specific recycling obligations from their minimum recycling obligation.</p> <p>Stage 7: Valpak calculates companies’ recovery obligation by subtracting their minimum recycling obligation from their total recovery obligation.</p> <p>Stage 8: Valpak plans to purchase the right number of PRNs to meet their members’ combined obligations and to ensure that all members fully comply with the Packaging Waste Regulations.</p>
Additional Notes	Valpak is ISO14001, ISO9001, OHSAS18001, PAS2060, AQSIIQ certified.
Legal Basis	
Enabling Legislation	<p>Producer Responsibility Obligations (Packaging Waste) Regulations (PROR)</p> <p>The UK meets the Packaging Directive’s recycling and recovery targets for packaging waste through these regulations, which are based on the principle of the producer responsibility. Companies above the threshold of a £2million annual turnover and handling more than 50 tonnes of packaging a year pay for a certain proportion of the UK obligations to recycle packaging. Companies fulfill their obligation by buying Packaging Waste Recovery Notes (PRNs) or</p>

	<p>Packaging Waste Export Recovery Notes (PERNs). These have a market value which can fluctuate in relation to demand for the notes in relation to the supply of recycled material; the UK recycling targets set for that year; and the amount of PRNs/PERNs companies or compliance schemes already purchased. Companies can join a compliance scheme to deal with their obligation for them, or directly register with environment agencies. Further information is available on the Defra website. http://www.defra.gov.uk</p>																																																															
Scope of Materials Covered	All materials in the packaging chain – specific targets for: Paper and Box Board, Plastic, Glass, Metals, Wood. Applies to all residential and ICI sector packaging waste																																																															
Performance Targets	<p>The UK targets apply to businesses under the Producer Responsibility Regulations. They will ensure that the UK continues to meet EU Directive targets over the next 5 years.</p> <table border="1"> <thead> <tr> <th>Material</th> <th>2012 (%)</th> <th>2013 (%)</th> <th>2014 (%)</th> <th>2015 (%)</th> <th>2016 (%)</th> <th>2017 (%)</th> </tr> </thead> <tbody> <tr> <td>Paper/card</td> <td>69.5</td> <td>69.5</td> <td>69.5</td> <td>69.5</td> <td>69.5</td> <td>69.5</td> </tr> <tr> <td>Glass</td> <td>81</td> <td>81</td> <td>81</td> <td>81</td> <td>81</td> <td>81</td> </tr> <tr> <td>Aluminium</td> <td>40</td> <td>43</td> <td>46</td> <td>49</td> <td>52</td> <td>55</td> </tr> <tr> <td>Steel</td> <td>71</td> <td>72</td> <td>73</td> <td>74</td> <td>75</td> <td>76</td> </tr> <tr> <td>Plastic</td> <td>32</td> <td>37</td> <td>42</td> <td>47</td> <td>52</td> <td>57</td> </tr> <tr> <td>Wood</td> <td>22</td> <td>22</td> <td>22</td> <td>22</td> <td>22</td> <td>22</td> </tr> <tr> <td>Total recovery</td> <td>74</td> <td>75</td> <td>76</td> <td>77</td> <td>78</td> <td>79</td> </tr> <tr> <td>Of which recycling</td> <td>68.1</td> <td>69</td> <td>69.9</td> <td>70.8</td> <td>71.8</td> <td>72.7</td> </tr> </tbody> </table> <p>As these targets only apply to obligated businesses, the overall level of recycling and recovery will be lower. The UK Government sets performance targets annually, and Valpak applies the target to total packaging flow to calculate members’ packaging waste obligation. The minimum recycling obligation must be met in combination with the materials the member handles. Each material has specific recycling targets, which Valpak applies to packaging flow. UK government targets are set higher than those required by the Packaging Directive partly to compensate for the amount of material that is below the de minimis level.</p>	Material	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	Paper/card	69.5	69.5	69.5	69.5	69.5	69.5	Glass	81	81	81	81	81	81	Aluminium	40	43	46	49	52	55	Steel	71	72	73	74	75	76	Plastic	32	37	42	47	52	57	Wood	22	22	22	22	22	22	Total recovery	74	75	76	77	78	79	Of which recycling	68.1	69	69.9	70.8	71.8	72.7
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—Amount Recycled	<p>UK Key Statistics: Packaging waste rose between 2001 and 2010 to 10.82mt. At the same time, total recovery increased to 67% and recycling increased to 61% of all packaging waste in 2010. Recycling data from 2009 and 2010:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>All Pkg</th> <th>Glass</th> <th>Plastic</th> <th>Paper & cardboard</th> <th>Metals</th> </tr> </thead> <tbody> <tr> <td>2009</td> <td>61.8%</td> <td>61.7%</td> <td>24.1%</td> <td>83.9%</td> <td>54.9%</td> </tr> <tr> <td>2010</td> <td>60.6%</td> <td>60.7%</td> <td>24.1</td> <td>81.8%</td> <td>55.9%</td> </tr> </tbody> </table>	Year	All Pkg	Glass	Plastic	Paper & cardboard	Metals	2009	61.8%	61.7%	24.1%	83.9%	54.9%	2010	60.6%	60.7%	24.1	81.8%	55.9%																																													
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—Amount Used as Alternative Fuel	536, 787 tonnes incinerated (2009), 721,505 tonnes (2010)
—Amount Disposed as Residue in Landfill	3.5MT packaging to landfill 2010
—Amount Reused	N/A
Kilograms/Capita Captured	<p>The UK generated a total 32.5mt of local authority collected waste in 2009, of which 49 per cent was landfilled and 42 per cent had some value recovered. Since 2002/03, total waste generated per household has declined to 1036kg per year. Of this total, almost 40 per cent was recycled, composted or reused. Green recycling in particular has increased, and compost now comprises the largest component of recycled household waste, replacing paper and card. Packaging waste rose between 2001 and 2010 to 10.82mt. At the same time, total recovery and recycling has increased to 67 per cent of all packaging waste in 2010.</p> <p>Around half of packaging waste is derived from C&I waste and half from household waste. Total recovery and recycling of packaging in the UK has more than doubled from 3.3mt in 1998, 33 per cent of all packaging waste, to 7.3mt in 2010, 67 per cent of all packaging waste. Despite this, only 24 per cent of the UK’s plastic packaging is currently recycled.</p> <p>Data From 2010: Total Packaging Waste Generated: 173.9 Kg/Cap Packaging Waste Diverted: 117.1 Kg/Cap</p>
Net Cost/Kilogram Captured [and then Diverted]	N/A
Amount of Greenhouse Gas Emissions Avoided	N/A
Cost Effectiveness	
Cost per Ton	N/A
Cost per Capita	N/A
Cost per Household	N/A
Additional Notes	All 29 compliance schemes are competitive and do not share costs publicly.
Roles and Responsibilities	
Producers	<i>Legal:</i> Producers are legally responsible to report on their generation of packaging waste. They are permitted to outsource the obligation calculation and PRNs.
	<i>Financial:</i> Pay fees to the appropriate government agency, and if they choose to join a compliance scheme, are responsible for also paying a membership fee.
	<i>Management/Operations:</i> Responsible for completing an “annual submission package” detailing how many tonnes of packing that each member handles, the materials and the activities that they perform.
Stewardship Organization	Valpak sets membership fees based on the market value of PRNs/PERNs, which fluctuate depending on the value of raw materials. Valpak offers auditing and data checking services to obligated parties, and will handle the data submission on behalf of their members. Valpak is responsible for purchasing sufficient PRNs/PERNs to offset the PROR obligation of their members.

Government – Local	Local Council are responsible for collecting household waste. They have no legal responsibility for collecting recyclables at the moment.
Government – Country/Province	EA (Environment Agency) – England and Wales SEPA (Scottish Environment Protection Agency) – Scotland NEIA (Northern Ireland Environment Agency) – Northern Ireland EAs set the targets for each packaging material type, in consultation with industry/compliance organizations. EAs have the authority to fine non-compliant organizations and are responsible for verification of the data submitted. EAs are also responsible for granting accreditation to recyclers.
Waste Management Companies	Provide curbside collection services (residential) and waste collection services to IC+I sector and often collect household waste operating on behalf of local councils.
Recycling and Processing Industry	Recycling and Processing Companies must apply to an EA for accreditation under PROR. Recyclers submit quarterly reports on tonnes managed to EAs, and receive PRNs/PERNs based on this tonnage. Recyclers sell the PRNs to obligated companies and/or compliance schemes.
Retailers	Retailers may be obligated under the PROR to join a compliance organization or report on generation of packaging waste. Most large retailers are obligated, small corner shops seldom are.
Collection Infrastructure	
Quality of Materials Collected	Predominantly single stream collection.
Residential – Curbside	Most UK residents have access to curbside diversion programs. Three stream collection: organics, recycling and waste. Organics – most programs require the use of compostable bags or newspaper. Recycling – most programs use just a black box and a green box (there are a huge range of different colored boxes and bins). The recycling box is typically for newsprint, metal cans, plastic bottles. Some councils collect other types of plastics and some collect glass. Green box collects all the bottles and plastics. (Type 1 PET, Type 5 PP, Type 6 PS and Type 2 HDPE). The bulk of material collected for recycling is newsprint
Residential – Drop-Off	A decreasing number of councils provide banks for glass containers, sorted by color.
Public Spaces/Streetscapes	
Other [e.g. Events, IC+I, etc.]	
Ease of Collection	Varies widely but high access to curbside collection
Data Tracking and Integrity	See Valpak details above
Additional Notes	Some programs of recycling will do curbside collection of: <ul style="list-style-type: none"> • Clothes, blankets and material (put into untied carrier bags. If wet weather tie bags and clearly label recycling) • Pairs of shoes (tie shoes together, and keep them dry) • Household batteries, including rechargeable (keep together in a small, clear tied bag) • Spectacles • Engine oil (in a secure container)

	More usually these are delivered by householders to recycling centres.
Funding Mechanism/Fee Calculation	
Factors Included in Calculating Fee Schedule	<p>There are three sets of fees that producers need to pay in order to become compliant with the regulations:</p> <ul style="list-style-type: none"> • Agency fees – everyone has to pay a set environment agency registration fee each year • Annual Membership fee – this covers the administration costs of checking and verifying data submissions • PRN fees – this is the cost of procuring recycling evidence notes needed to meet the producer obligation <p>See agency websites for fee schedules.</p>

APPENDIX

QUANTITATIVE AND DESCRIPTIVE CRITERIA FOR COMPARING EPR PROGRAMS

List of EPR Programs: Ontario, Québec, Manitoba, British Columbia (evaluating the program approach), Austria, Belgium, Germany, Denmark, France, Netherlands, and the U.K. The following criteria will be used to evaluate select EPR and other recovery systems, and are divided into 2 categories: quantitative or numeric criteria, and qualitative or descriptive criteria.

I. Quantitative criteria

Performance target: What targets have been established and whether the program is meeting those targets

- Amount collected, of that...
 - amount recycled
 - amount used as alternate fuel (where applicable)
 - amount disposed as residue in landfill
 - amount reused (where applicable)

Set-out Rate: the percentage of households that put Blue Boxes (or specified collection containers) out for collection on a given collection cycle. It is calculated by dividing the total number of Blue Boxes set out for collection in the area by the total number of residential units in the area that could possibly have set out a recycling container.

Cost effectiveness:

- Cost/ton
- Cost/capita
- Cost/household

Measuring Performance

Two CCME publications - *Reporting Guidance Document for Performance Measurement and Reporting for EPR Programs* (2007) and *EPR Program Measurement and Tracking* (2008) – contain the Key Performance Indicators (KPIs) to measure the performance of the product and material EPR programs. The committee proposes to modify them slightly for our purposes, as follows:

- Kilograms/capita captured (amount of material collected divided by the amount generated)
- Kilograms/capita diverted
- Net Cost/Kilogram captured
- Net Cost/Kilogram diverted
- Per cent captured
- Per cent diverted
- Avoided greenhouse gas emissions

Administrative burden: whether the program can be delivered effectively with minimal bureaucracy and institutional complexity. A producer responsibility organization's overhead costs may be another method of calculation.

II. Descriptive criteria

Program scope: What types of materials are covered and whether the program manages materials generated by:

- the residential sector only;
- the industrial, commercial and institutional sector only; or
- both the residential and IC+I sectors.

Level of service offered: whether the program delivers collection services to:

- Households including
 - single family dwellings inhabited year round or seasonally, and
 - multi-family dwellings including rental, co-operative, fractional ownership, time-share, condominium and seniors residences
- Public space/streetscape areas including
 - sidewalks which adjoin buildings in an urban commercial area and which are used for pedestrian traffic,
 - plazas or town squares which are available to the public, and
 - parks which are owned by municipalities, provinces/states and/or the federal government
- Industrial facilities such as manufacturing facilities
- Commercial businesses such as
 - small and large retail stores and complexes
 - small and large office buildings
 - vacation facilities including hotels, motels, cottages, cabins
- Institutions such as
 - residences at which medical care is provided, such as nursing homes, long-term care facilities and hospices, are considered institutions
 - hospitals and other medical facilities
 - elementary, secondary and post-secondary educational facilities
 - municipal, provincial, and federal government offices and facilities

Ease of use: whether the program provides collection services that are equivalent to waste collection services in terms of convenience, simplicity, effort, and user understanding.

Quality of materials: whether the program is able to deliver materials that consistently meet domestic and international end-market specifications and does not result in a lower quality than previously collected.

Data tracking and integrity: whether the program

- Collects comprehensive data on the quantity of the material generated, collected, diverted, used as alternate fuel, and disposed by sector and by type of generator
- Collects financial data to support tracking of costs without cross-subsidization
- Is audited by a third party

Transparency and accountability: whether the program provides clear and credible information

- To producers about the services they receive for the fees they pay
- To regulators about the program's performance
- To the sectors receiving collection services about the program's performance