

Contamination – Will we ever win?



Recycling Contamination

Occurs when the wrong items, or the right items prepared the wrong way, are placed in curbside recycling bins

#RecycleRightNJ



Why do residents put the wrong things in their recycling bin?

- Deliberate v Non- Deliberate
- Lazy or Confused
- Some may have moved from different area which recycles different things
- Sometimes they are not sure or don't know despite leaflets, advertising and access to websites and social media
- Some just cannot be bothered
- Some have more important priorities

What have we done so far

- We send leaflets
- We hold roadshows
- We put stickers on bins
- We make videos
- We send lists and lists with pictures
- We have panels on side of lorries
- We remind frequently

What else can we do?

Whilst recycling has increased, WRAP research shows that 80% (4 in 5) UK households put things that are not collected locally in their bin especially plastic film and wrapping, toothpaste tubes and cooking glassware.

WRAP's feedback is that the information provided still isn't clear enough to 44% of their respondents.

In some areas contamination has increased from less than 4% to over 25%, more than half a million tonnes of household recycling was rejected in 2019/20, this equates to £48 million.

Wrong Thing Wrong Bin!



DO NOT put Refuse Sacks / Bags next to your blue bin



DO NOT put Refuse Sacks / Bags inside your blue bin

STOP & THINK
ALL ITEMS SHOULD BE LOOSE NOT IN BAGS



Your blue bin will not be emptied if any refuse sacks / bags are found inside or placed next to your blue bin

We were unable to empty your green or brown bin because it contained:

	PLASTIC BAGS	<input type="checkbox"/>
	POLYSTYRENE	<input type="checkbox"/>
	GENERAL WASTE	<input type="checkbox"/>
	NAPPIES	<input type="checkbox"/>
OTHER		<input type="checkbox"/>

We were unable to empty your green bin because it contained:

	FOOD WASTE	<input type="checkbox"/>
	SOIL	<input type="checkbox"/>

The material should be removed before your next scheduled collection.

Sorry!

We were unable to empty your bin today because it contained the wrong materials.

Please see details overleaf.

Download the Bin-Ovation app to find out what materials you can put in your bin

For further information please call:
 Armagh 028 3752 0626
 Banbridge 028 4466 0604
 Craigavon 028 3833 9031



Main Contaminants

- Nappies
- Food Waste
- Dirty food/drink containers
- Plastic bags/sacks
- General waste
- Polystyrene
- Textile
- Wood
- Hard plastics

Are we doing enough and how do we reduce contamination?

UK-wide effective recycling is associated with the following scheme characteristics:

- A restricted/limited capacity for general rubbish
- A higher number of materials collected for recycling
- A food waste recycling service
- A “multi-stream” recycling scheme where residents sort recycling into different containers
- A service that collects small waste electricals and textiles.
- The best performing households live in Welsh “Collections Blueprint” areas that provide a clear and consistent recycling service.

Kerbside Sort v Co-mingled?

Is it time to change? Funding? One council paying £208,000 a month due to contamination last year



Why now?

Constricting markets and legislation has resulted in tighter controls at MRFs

Less “recycling” staff to encourage and educate

More rejected loads so increase in collection and disposal costs

The change to definition – output from sorting facility rather than input – impact on 2025 targets

Other Actions

Several councils are reminding residents about putting the wrong thing in the wrong bin

Some are using technology to generate reminder letters after tagging contaminated bins, some offer to empty for a charge, most won't empty unless wrong items removed.

Some are even threatening to take bin away

Enforcement?

Advise, Support, not Punish

Recommendations and lessons from others

- WRAP recommends using Recycle Now assets, promote Britain Recycle/Does and Recycle Week - these apparently work with 18-34s, urbanites, and those disposing incorrectly.
- Provide clear information what can and can't be recycled locally
- Using Recycling Locator so people know where to recycle what
- Councils should work towards collecting a common set of dry recyclables and food waste.

What next?

- UK Government make manufacturers of non-recyclable packaging pay for extra sorting and disposal.
- It is considering a surcharge on single use plastic.
- It is consulting on extended producer responsibility
- It is consulting in consistency in recycling
- It is consulting again on the deposit return scheme and hope to implement in 2024! It's 2 years since I completed last consultation and 11 years since they announced their waste review
- Fines?
- More sharing of best practice which I am sure APSE can help with

Thank you

Any questions or suggestions?

Caroline McKenzie, Interim Waste Manager

London Borough of Haringey

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**KEEP
BRITAIN
TIDY.**

LITTER ACTION PLAN



THERE IS LOTS GOING ON...



Four current Defra Consultations:

- Extended Producer Responsibility
- Deposit Return Scheme
- Harmonised Waste and Recycling Collections
- Waste Prevention Plan for England

Plus the Environment Bill – which is about to go to the Lords – ahead of Royal Assent – hopefully in Autumn







National litter survey



Figure Three: Top ten types of litter found on the highest percentage of sites in 2017/18



Composition survey



Litter/binned waste item type – by count

Item type	LITTER		BIN	
	Count	% of total litter	Count	% of total binned
Cigarette stubs	50,088	66.3%	2,838	6.9%
General litter – other	11,652	15.4%	7,569	18.4%
Paper – other	2,350	3.1%	5,066	12.3%
Smoking litter (not stubs)	1,511	2.0%	773	1.9%
Drinks: Cans – non-alcoholic	1,188	1.6%	1,944	4.7%
Sweet and mint packaging	1,177	1.6%	970	2.4%
Drinks: Plastic bottles – small, non-alcoholic	1,049	1.4%	2,193	5.3%
Chocolate wrappers	916	1.2%	1,255	3.1%
Unsure (litter type cannot be determined)	801	1.1%	6	<0.1%
Fast food – inner packaging	613	0.8%	3,873	9.4%
Straws	537	0.7%	727	1.8%
Drinks: Cans – alcoholic	417	0.6%	1,075	2.6%
Chewing gum packaging	379	0.5%	84	0.2%
Fast food drink container (not coffee)	307	0.4%	671	1.6%
Plastic cutlery	300	0.4%	437	1.1%
Drinks: Coffee cups	285	0.4%	1,515	3.7%
Crisp packets	273	0.4%	1,131	2.7%
Napkins	272	0.4%	2,724	6.6%
Snack pack	264	0.3%	1,846	4.5%
Fast food – outer packaging	208	0.3%	697	1.7%
Drinks: Glass bottles – small, alcoholic	146	0.2%	413	1.0%
Cardboard box	111	0.1%	391	1.0%
Drinks: Other cold drink containers (not bottle)	98	0.1%	346	0.8%

Litter/ binned waste item type – by volume⁴⁰

	Average volume per item (litres)	Total volume - litter	% total litter volume	Total volume - bin	% total bin waste
Drinks: Plastic bottles – small, non-alcoholic	0.60898	638.8	24.4%	1335.5	19.7%
Drinks: Cans – non-alcoholic	0.41088	488.1	18.6%	798.8	11.8%
Smoking litter (not stubs)	0.21582	326.1	12.4%	166.8	2.5%
Drinks: Coffee cups	0.71996	205.2	7.8%	1090.7	16.1%
Drinks: Cans – alcoholic	0.42984	179.2	6.8%	462.1	6.8%
Fast food drink container (not coffee)	0.43098	132.3	5.0%	289.2	4.3%



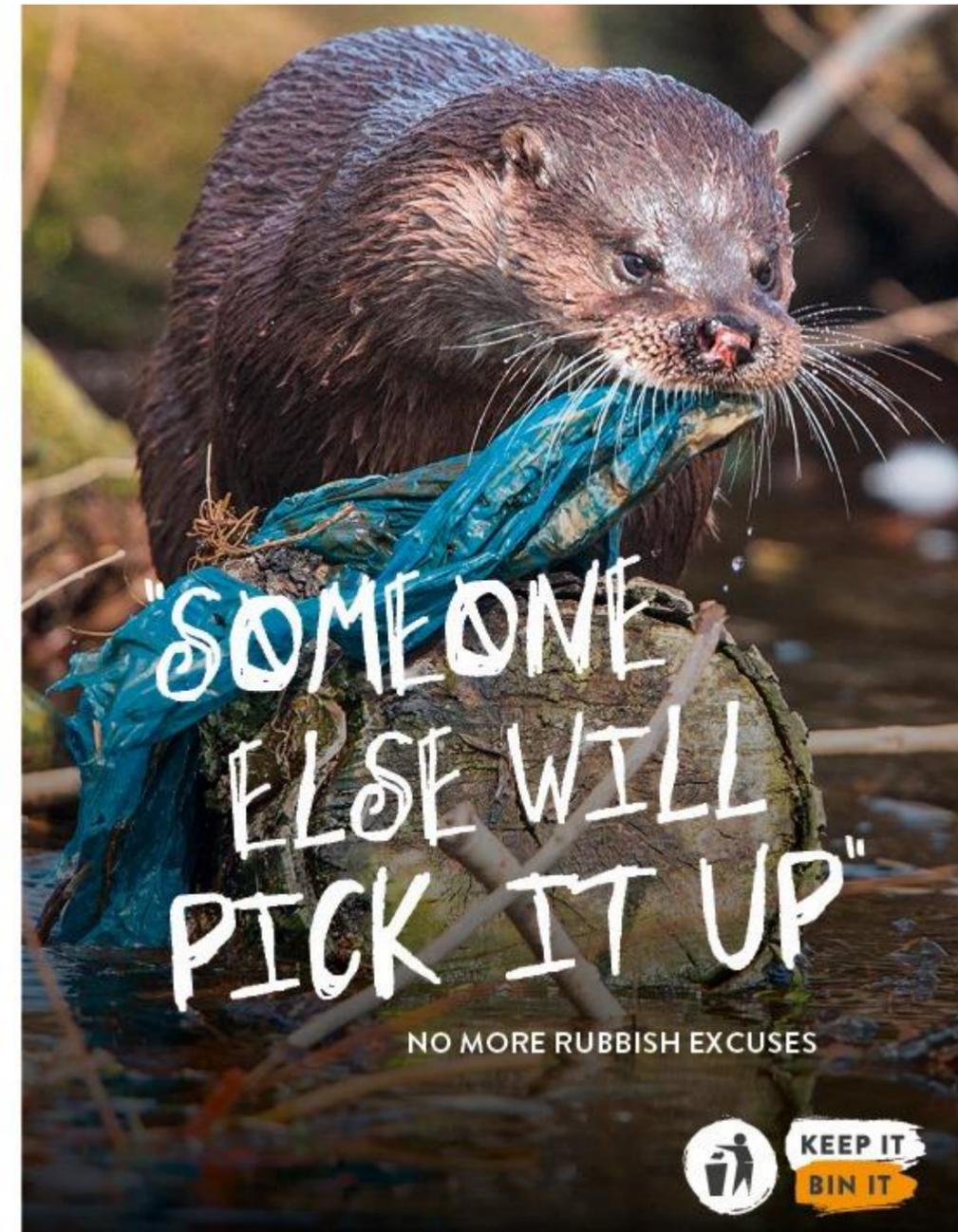
TURNING THE TIDE ON LITTER



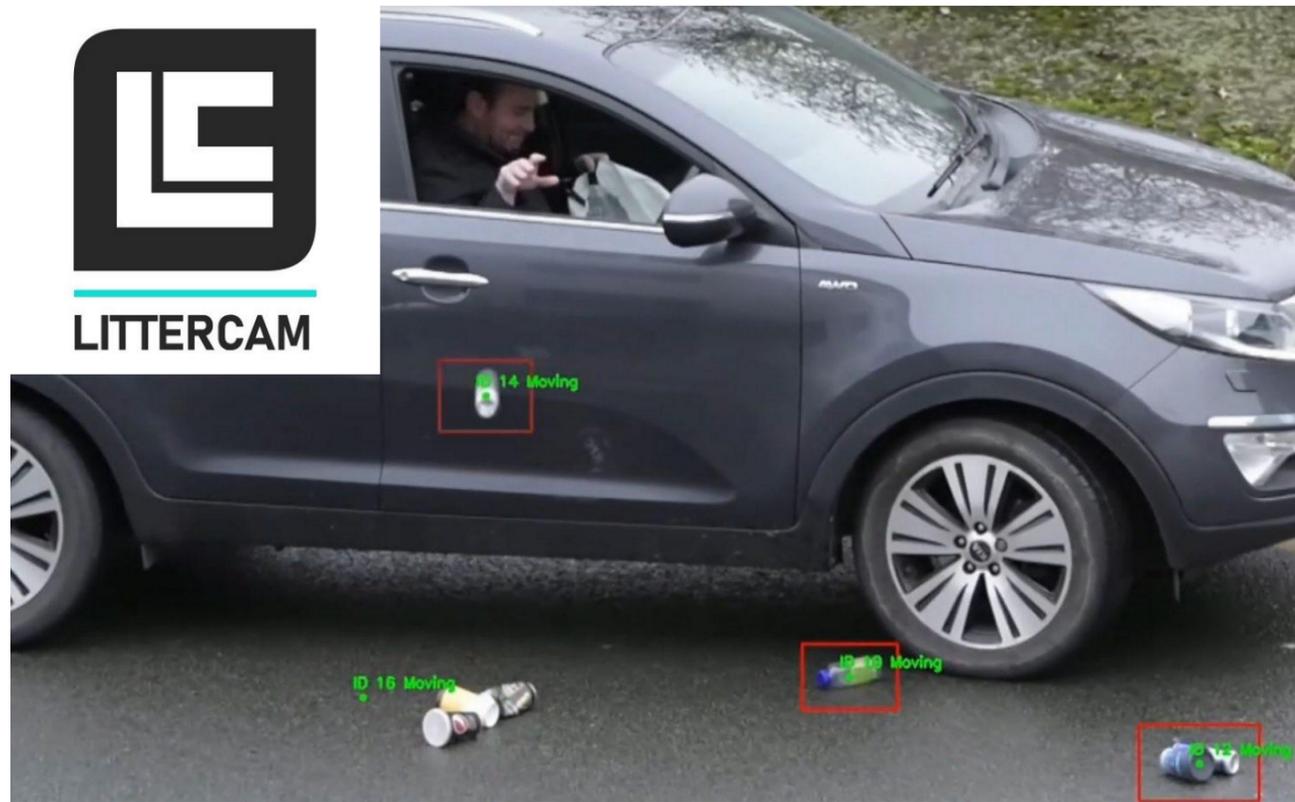
A Plan which hopefully provides focus for efforts to tackle littering over the next ten years



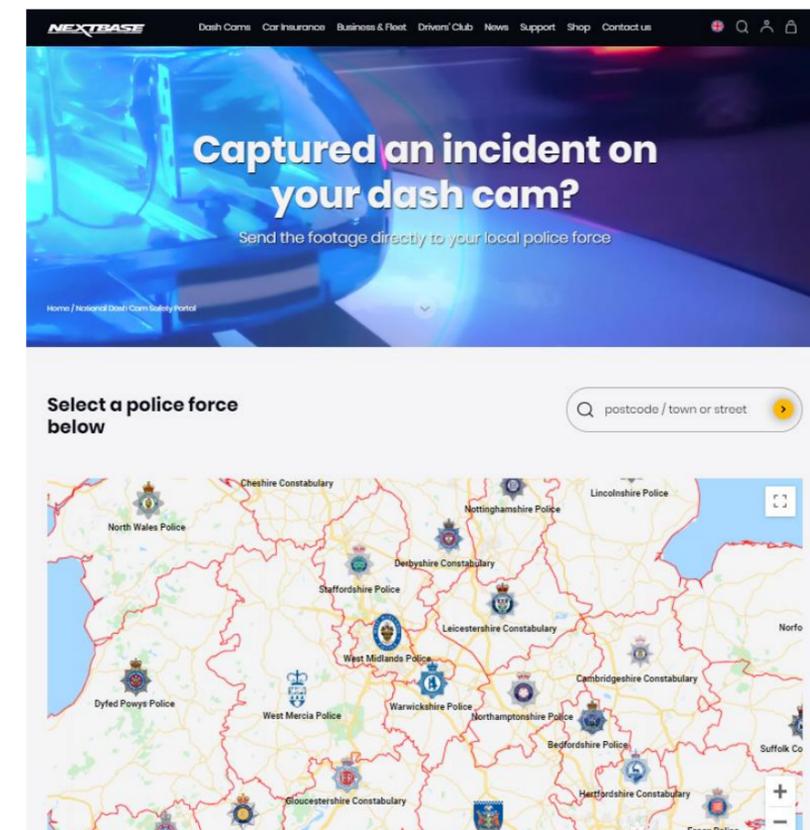
NATIONAL CAMPAIGN



ACTIVE ENFORCEMENT



Extended Producer Responsibility should support local authorities to provide widespread, consistent enforcement



DEPOSIT RETURN SCHEME



Drinks containers make up 75% of litter by volume

Over 200 million bottles littered every year

Plastic, glass and aluminium

Between 6 and 13% are > 750ml

Over 90% collection rates in a well-designed DRS

An 'all-in' DRS must be urgently introduced



END OUR CULTURE OF SINGLE USE



Most litter is food and drink packaging

Focus on:

- Preventing packaging
- Reusable packaging

EPR – fees to drive up use

Charges for single use items



SUPPORT FOR COMMUNITY ACTION



THE GREAT BRITISH SPRING CLEAN IS BACK!

Join us for the bigger and better Great British Spring Clean - 28 May to 13 June 2021

Brought to you by



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USE BEHAVIOURAL INSIGHTS



Are you doing the right thing with your waste? Find out or you could end up with a criminal record.
www.keepbritaintidy.org



START YOUNG



LITTER LESS
CAMPAIGN



THANK YOU



GLOBAL DEPOSIT BOOK 2020

AN OVERVIEW OF
DEPOSIT SYSTEMS FOR
ONE-WAY BEVERAGE
CONTAINERS



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SHARING A COMMON VISION FOR A **CIRCULAR ECONOMY**

Circular Economy: a system where resources remain resources

OVERVIEW

There's no denying it; the last decade has witnessed an explosive growth of deposit return systems (DRS) across the globe. By the end of 2018, when the last version of this report was published, nearly 290 million people worldwide had access to DRSs. Since then, several new programs have been implemented or announced, including Malta (2022), Western Australia (2020), Victoria (2023), Turkey (2023), Tasmania (2022), Portugal (2022), Scotland (2022), Romania (2022), Slovakia (2023), Latvia (2022), Singapore (2022), Jamaica (2021), New Zealand (2022), and England, Wales and Northern Ireland (2023)¹. By the time all of these programs are implemented over the next two to three years, it's estimated that nearly 500 million people will have access to DRSs for recycling their empty beverage containers, doubling the number of individuals covered from 2005.

In a nutshell, DRS – also referred to as container refund schemes (CRS) (in Australia) or 'bottle bills' in the U.S. – is a proven tool to collect high quantities of beverage containers for reuse and high-quality recycling. These systems see customers pay a small deposit when they purchase a can or bottle, which they get back when they return the container to a collection point for recycling.

Contrary to what the beverage industry might want us to believe, DRS has historically enjoyed widespread public support. New laws receive much public fervour, and most respondents to public opinion polls support expansion of existing deposit laws or introduction of new ones. A recent (2020) opinion poll showed that 83% of Austrians want a DRS, and a full 93% agreed that

the producers of plastics should contribute to managing plastic waste. A similar poll conducted in August 2020 showed that 96% of people in Romania support the introduction of DRS.

Some DRSs operate nationally (as is the case in Europe), while others operate on a state or provincial level (as is the case in the United States, Canada, Australia, Israel, and Oceania/Caribbean).

Because of the economic incentive to recycle, DRSs typically result in beverage container recycling rates that are two to three times higher than the rates achieved by jurisdictions that rely on curbside recycling programs, particularly if the deposit is set at an effective level.

In addition to higher recycling rates, DRS has shown to result in cost savings for municipalities, as well as avoided greenhouse gas emissions. They are also effective at reducing litter. According to a 2018 study by Australia's national science agency, CSIRO, "the proportion of containers found in coastal debris surveys in states with [DRS] was approximately 40% lower than in states without [DRS]." DRSs also have a positive impact on job creation, which is particularly relevant today as governments around the world emerge from the acute phase of the health crisis and invest trillions in post-COVID economic recovery efforts.

In June 2019, the Single-Use Plastics Directive (Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic prod-

ucts on the environment) was published in the Official Journal of the European Union. The Directive stipulates that Member States achieve a 90% collection for recycling target of single-use plastic bottles by 2029 (and an interim target of 77% by 2025). DRS is suggested as a method to achieve this objective. This legislation, combined with commitments by international brands to increase their use of recycled content, means that deposit programs are likely to continue to expand over the next decade, in both Europe and elsewhere. According to Container Recycling Institute (CRI), it's reasonable to predict worldwide coverage of at least 1 billion people by 2030.

As DRSs become more widespread over the next decade, it's more important than ever for industry, government agencies and other stakeholders to understand how these programs work. In this context, Reloop Platform is pleased to release the *Global Deposit Book 2020: An Overview of Deposit Systems for One-Way Beverage Containers*, which provides a comprehensive summary of over 40 deposit systems in place around the world. This edition also includes a new chapter on "upcoming programs" to highlight some of the key features of deposit systems that will be implemented in the near future and for which sufficient information is available.

¹ The latest country to announce plans for implementing DRS is Austria; in September 2020, the country's environment minister announced its plans to impose a deposit on one-way plastic beverage bottles and metal cans. The details of the DRS, including implementation date, are currently being worked out between the ministry and stakeholders involved.

Each deposit market profiled in this review is structured along the following key parameters (where information is available):

Legislative Framework
(legal basis for the system)

Program Scope
(beverages and container types included in the system)

Deposit and Fees
(deposit values and different fees)

System Operator
(entity responsible for operating the system)

Redemption System
(beverage container take-back system)

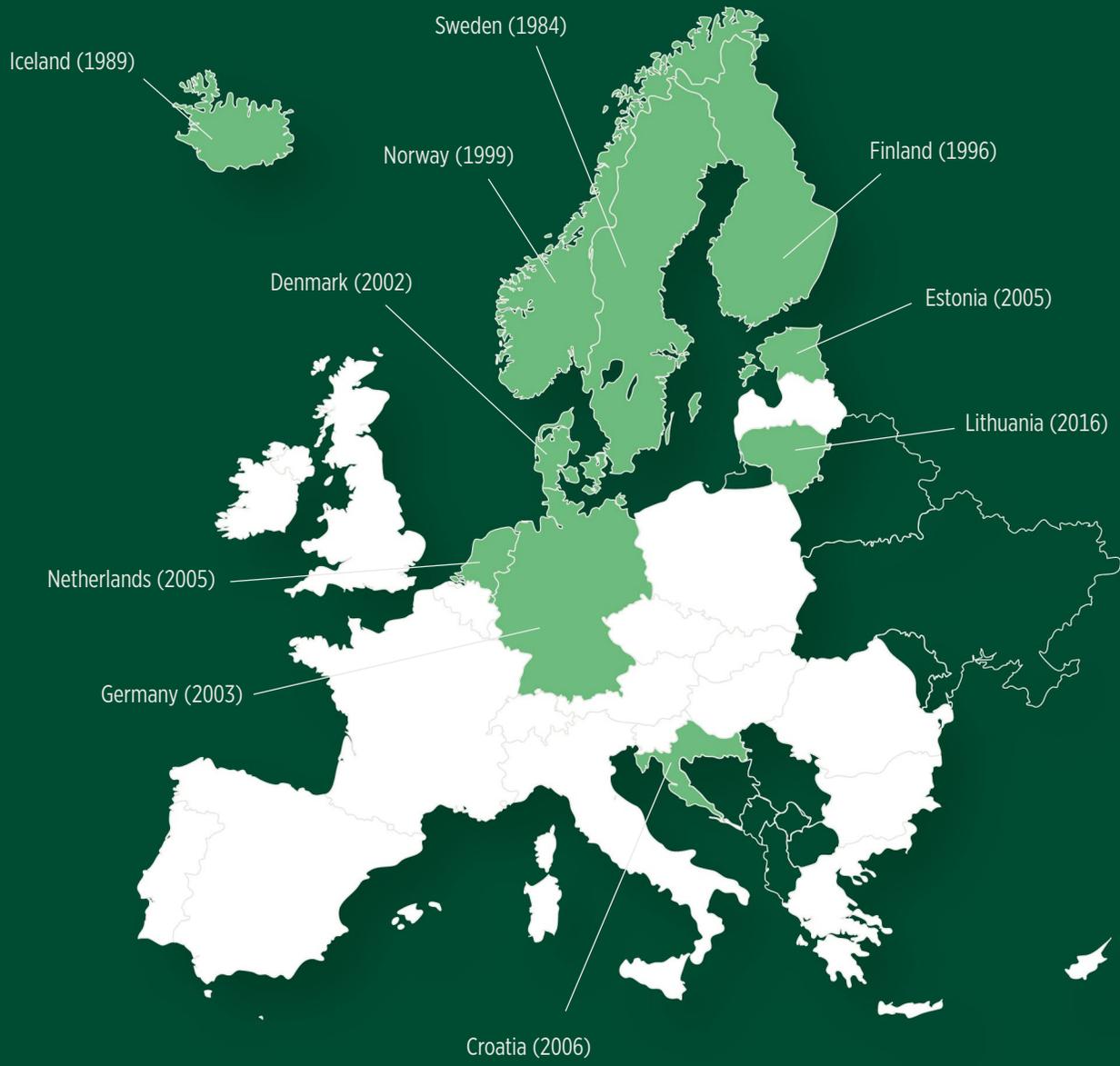
System Results
(return rates)

Money Material Flow
(visual flow schematic)

It is worth noting that all systems, with the exception of California (USA) and most Canadian provinces (Saskatchewan, Yukon, New Brunswick, Nova Scotia, Newfoundland, Northwest Territories, Ontario and Prince Edward Island) have barcode-based recording systems. 'Barcode-based' means that the containers are recognized by the barcode and the information is recorded. This makes every container traceable and provides a clear picture on what is returned.

In terms of system results, it is important to point out that the way in which program performance is measured or reported on can vary between jurisdictions. While some system operators may report out a 'collection rate', others report a 'recycling rate' or 'redemption rate.' For the purpose of consistency and because it is not possible to know for certain how performance is measured in each jurisdiction, this report uses 'return rate' as a catch-all term. It is understood that the return rate represents the amount of beverage container material that is collected (by weight or unit) expressed as a percentage of the amount of beverage container material placed on the market, excluding exports.

Information for this report was obtained from a number of sources, including personal correspondence with DRS operators, annual reports published by DRS operators, internal documents, government reports, and consultancy reports. A full list of references by jurisdiction is provided at the end of this document.



EU 28 + EFTA (NORWAY / ICELAND)

135.1 million have access to DRS

<i>Country</i>	<i>Population 2019 (million)</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
Croatia	4.1	2005	2006
Denmark	5.8	2000	2002, 2020 (Juices)
Estonia	1.3	2004	2005
Finland	5.5	N/A	1996, 2008 (PET), 2012 (Glass)
Germany	82.9	1991	2003
Iceland	0.3	1989	1989
Lithuania	2.8	2014	2016
Netherlands	17.1	2003	2005
Norway	5.3	1997	1999
Sweden	10.0	1982, 1991 (PET)	1984, 1994 (PET)

CROATIA

Population: 4.1 m

Website: <http://narodne-novine.nn.hr/clanci/sluzbeni/dodatni/437306.pdf>



LEGISLATIVE FRAMEWORK

- Mandate:** Ordinance on Packaging and Packaging Waste (88/2015) and Regulation on management of waste packaging (97/2015)
- Enacted:** 2005
- Implemented:** 2006
- Last updated:** 2015 (Comprehensive Amendment Act)
- Authority:** Ministry of Environment
- Targets:** In total, a minimum of 60% of packaging shall be separately collected and recovered, of which at least 55% and up to 80% shall be materially recycled. Material-specific recycling targets are the same as the European targets, and there are no targets specifically applicable to packaging covered by the DRS.

PROGRAM SCOPE

- Material:** Plastic (predominantly PET), metal (aluminum and tinplate), glass
- Beverage type:**
- Containers > 0.2 L (0.05 gal):** Alcohol (beer, wine, hard liquor) and non-alcohol beverages including juices, waters, soft drinks.
- Containers < 0.2 L (0.05 gal):** Milk drinks
- Excluded:** Milk and milk-containing beverages > 0.2 L (0.05 gal)

DEPOSITS AND FEES

- Deposit initiator:** Producer/Importer
- Deposit value:** 0.50 HRK (€ 0.06, USD\$ 0.07)
- Unredeemed deposits:** Environmental Protection and Efficiency Fund (FZOEU)
-
- Handling fees (2020):**
- Manual collection:** 0.05 HRK (€ 0.01, USD\$ 0.01) (25% VAT included)
- RVM collection:** 0.18 HRK (€ 0.02, USD\$ 0.02) (25% VAT included)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Environmental Protection and Efficiency Fund (FZOEU)

FZOEU, a public authority, is responsible for activities related to management of packaging and packaging waste more generally and the DRS in particular. The responsibilities of FZOEU related to the management of the DRS include returning to the retailers the deposit paid to the customers; paying out handling fees to retailers; collecting data and deposit amounts from the producers; entering into agreements with authorized collectors and agree on the manner of payment of collection and transport costs; entering into agreements with authorized recyclers and agree on the manner of selling collected packaging; and checking and approving compatibility of the packaging to be collected via RVM.

System finance:

Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

Return-to-Retail:

Retailers $\geq 200 \text{ m}^2$ are obliged to take back. Retailers whose sales area is less than 200 m^2 may decide to participate in the DRS provided they are approved by FZOEU. Over 90% of collection is done manually.

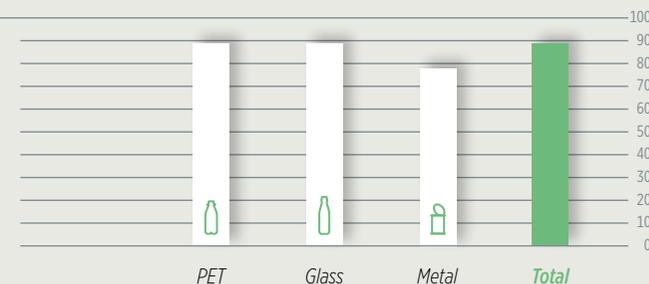
Material owner:

Environmental Protection and Efficiency Fund (FZOEU)

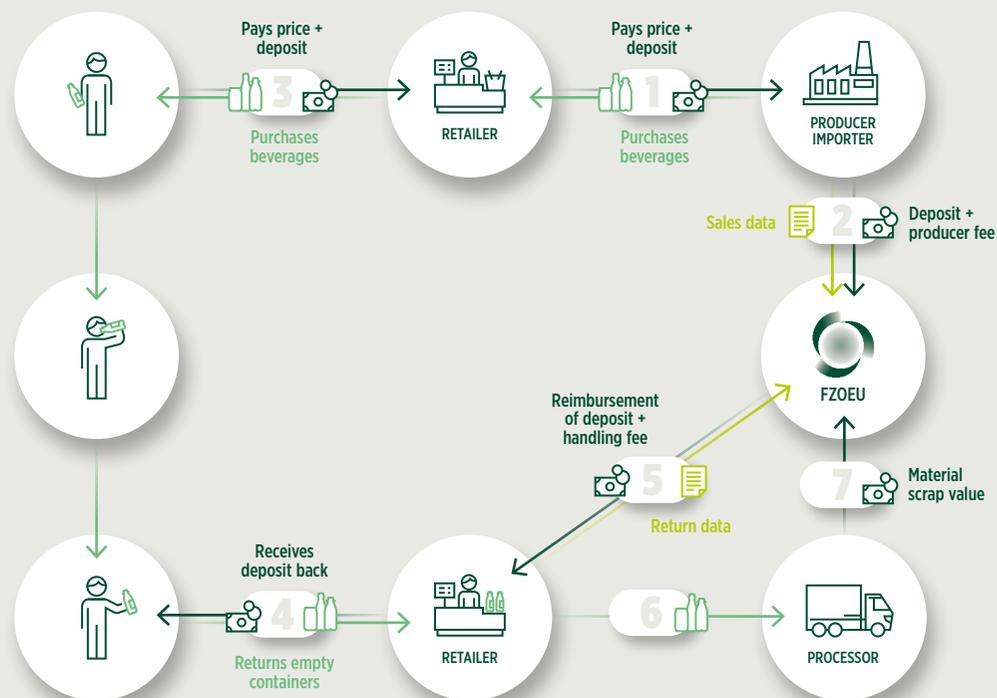
SYSTEM RESULTS (2019)

PET	89%
Glass	89%
Metal	79%

Total Return Rate: 89%¹



MONEY MATERIAL FLOW



¹ Due to the fact that Croatia's DRS is not based on the domestic bar code, the amount of collected packaging might include foreign beverage containers.

DENMARK

Population: 5.8 m

Website: <https://danskretursystem.dk>



LEGISLATIVE FRAMEWORK

Mandate:	Statutory Order on Deposits and Collection of Packaging for Beer and Certain Soft Drinks
Enacted:	2000
Implemented:	2002
Last Updated:	2020 (expansion to juices)
Authority:	Ministry of Environment
Targets:	None

PROGRAM SCOPE

Material:
Plastic (predominantly PET), metal (aluminum), glass

Beverage type:
Beer, carbonated drinks (soft drinks with an alcohol content of 0–0.5%), fermented drink products other than wine and alcohol beverages made from fruit (such as cider with an alcohol content < 10%), mixer products (spirits, wine or other fermented products mixed with other beverages such as soft drinks, cider or juice), mineral water, water, lemonade, iced tea, syrup, juice

Excluded:
Milk products and milk-based products, cocoa, wine and spirits, packaging containing >20 L (5.28 gal) as well as plastic containers > 10 L (2.64 gal) containing non-carbonated water, certain types of barrels or casks

DEPOSITS AND FEES

Deposit initiator:
Producer/Importer

Deposit value:

Metal, glass < 1 L (0.26 gal):	1 DKK (€ 0.13, USD\$ 0.15)
Plastic < 1 L (0.26 gal):	1.5 DKK (€ 0.2, USD\$ 0.22)
Metal, glass, plastic ≥ 1 L (0.26 gal):	3 DKK (€ 0.4, USD\$ 0.45)

Unredeemed deposits:
Dansk Retursystem A/S

Handling fees (2020):

Manual collection:

Metal:	6.2 øre (€ 0.008, USD\$ 0.009)
Plastic < 1 L (0.26 gal):	6.7 øre (€ 0.009, USD\$ 0.0097)
Plastic > 1 L (0.26 gal):	10.4 øre (€ 0.014, USD\$ 0.015)
Glass:	14.8 øre (€ 0.019, USD\$ 0.0214)

RVM with compaction:

Metal:	1.4 øre (€ 0.0019, USD\$ 0.0020)
Plastic < 1 L (0.26 gal):	1.8 øre (€ 0.0019, USD\$ 0.0026)
Plastic > 1 L (0.26 gal):	2.4 øre (€ 0.0032, USD\$ 0.0035)
Glass:	7.1 øre (€ 0.0095, USD\$ 0.0103)

Producer producer fees (2020):

Plastic:	€ 0.0093 (USD\$ 0.01) – € 0.0684 (USD\$ 0.0072)
Metal:	€ 0.0000 (USD\$ 0.00) – € 0.0067 (USD\$ 0.06)
Glass:	€ 0.0536 (USD\$ 0.058) – € 0.1986 (USD\$ 0.21)

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator: Dansk Retursystem A/S

Founded in 2000, Dansk Retursystem is a private non-profit organization that has been granted the exclusive right to operate the Danish DRS until 2022 (subject for renewal every 6 years), on the conditions laid down in the Statutory Order no. 1129. The company was established by a number of breweries together with the Danish retail trade and is owned by the producers:

Dansk Retursystem Holding (85.62%),
owned by Carlsberg, Royal Unibrew, Thisted Bryghus and Bryggeriet Fuglsang

Harboes Bryggeri
(14.27%)

Bryggeriet Vestfyen
(0.1%)

Mineralvandsfabrikken Frem
(0.01%)

System finance: Material revenues, unredeemed deposits and administration fees

REDEMPTION SYSTEM

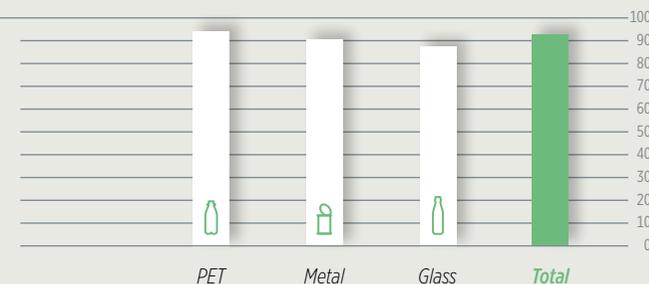
Return-to-Retail: Retailers with RVMs are required to accept all types of one-way packaging with the Danish deposit label. Stores without RVMs that sell beverages are required to accept the same types of packages as the ones they sell regardless of the brand. Ninety-five percent of collection is done through RVMs. In addition to returning containers to retailers, consumers can use a deposit return bank called "Pantstation" – a building designed for the sole purpose of accepting empty containers. Consumers can return a bag of up to 90 eligible bottles or cans (max 15 kg) at a time. The special deposit bags can be purchased at the Pantstation for a refundable deposit of 6 DKK per bag.

Material owner: Dansk Retursystem A/S

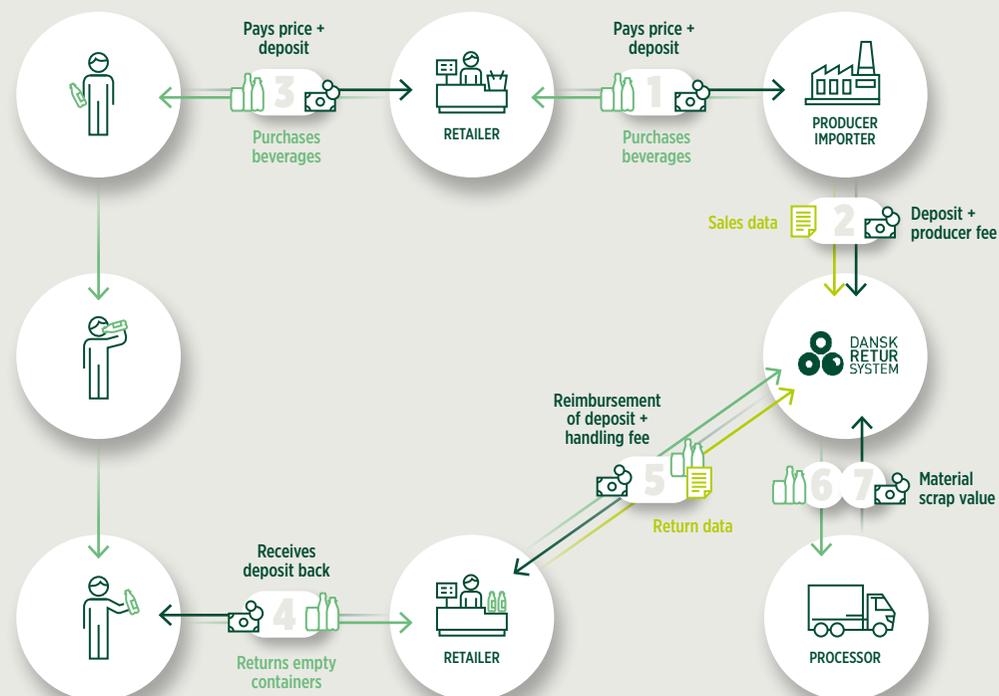
SYSTEM RESULTS (2019)

PET	94%
Metal	90%
Glass	88%

Total Return Rate: 92%



MONEY MATERIAL FLOW



ESTONIA

Population: 1.3 m

Website: www.eestipandipakend.ee



LEGISLATIVE FRAMEWORK

Mandate:	Packaging Act and Packaging Excise Duty Act
Enacted:	2004
Implemented:	2005
Authority:	Ministry of Environment
Targets:	Regarding general targets for all packaging, at least 60% of the total mass of packaging waste in a calendar year shall be recovered and 55–80% should be recycled. Material-specific targets: 70% recycling for glass; 60% recycling for metal; and 55% recovery, 45% recycling, and 22.5% reprocessing for plastic. A much higher target of 85% applies to PET and one-way glass covered by the DRS. For metal cans subject to the DRS, the recycling target is 50%.

PROGRAM SCOPE

Material:	Plastics (predominantly PET), metal (predominantly aluminum), one-way glass
Beverage type:	
Containers 100 ml to 3 L (0.02 gal to 0.79 gal):	Soft drinks, water, juice, juice concentrates, nectars, beer, cider, perry, low-alcohol ($\leq 6\%$ alcohol content) beverages
Excluded:	Strong alcohol beverages (vodka, wine, etc.), dairy products, glass jars, cartons (i.e. Tetra Pak)

DEPOSITS AND FEES

Deposit initiator:
Producer/Importer

Deposit value:
€ 0.10 (USD\$ 0.11)

Unredeemed deposits:
Eesti Pandipakend OÜ

Handling fees (2020):

Manual collection:
PET and Metal: € 0.0115 + VAT
One-way Glass: € 0.0130 + VAT

RVM without compaction (PET and Metal):
€ 0.0215 + VAT

RVM with compaction (PET and Metal):
€ 0.0331 + VAT

RVM collection (One-way Glass):
€ 0.0250 + VAT

SYSTEM OPERATOR

Clearing system: Centralized
System operator & administrator: Eesti Pandipakend OÜ



- The Estonian Association of Brewers – 25%
- The Association of Producers of Soft Drinks – 25%
- The Association of Importers of Soft Drinks and Beer – 25%
- The Estonian Retailers Association – 25%

Founded in 2005, Eesti Pandipakend is a state-accredited (by MoE), non-profit organization that was created to organize the activities related to the DRS and the recycling of one-way beverage containers subject to deposit. It is responsible for organizing the recovery of the collected packaging in Estonia; acceptance of returned packaging from retailers; and performance of packaging companies' obligations under the Packaging Excise Duty Act, including payment on behalf of the packaging company of excise duty on the packaging.

System finance: Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

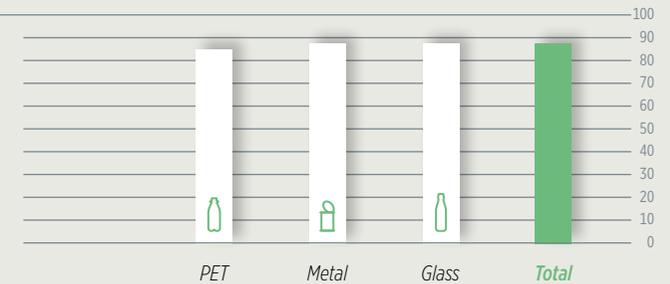
Return-to-Retail: Consumers can return containers subject to deposit and marked with deposit symbol to all locations where those are sold or to a collection point situated on retailer servicing ground. It is a requirement for retailers whose sales area is over 200 m² to take back the containers on their premises. If the sales area is between 20 – 199 m², the retailer can apply to its local municipality to be exempt from that obligation. All vendors under 20 m² of sales area are not obligated to take back deposit containers. Collection system is 94% automated / 6% manual. As of 2019, there were a total of 903 collection points, including 717 RVMs. There are also an additional 430 pick-up points at HoReCa locations.

Material owner: Eesti Pandipakend OÜ

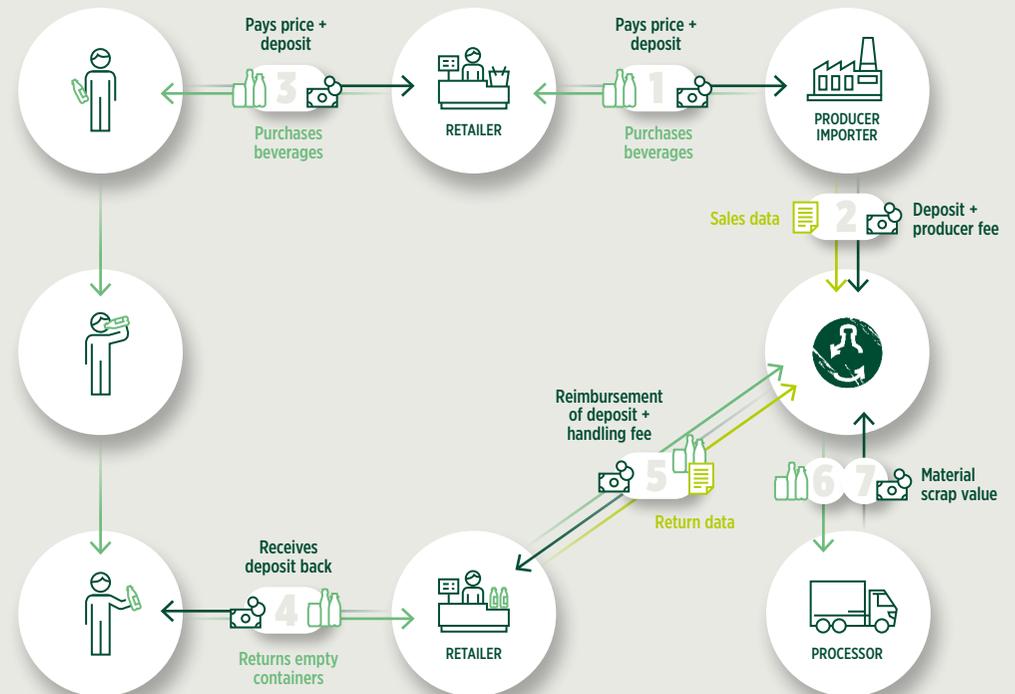
SYSTEM RESULTS (2019)

PET	86.9%
Metal	88.0%
Glass	87.3%

Total Return Rate: 87.2%



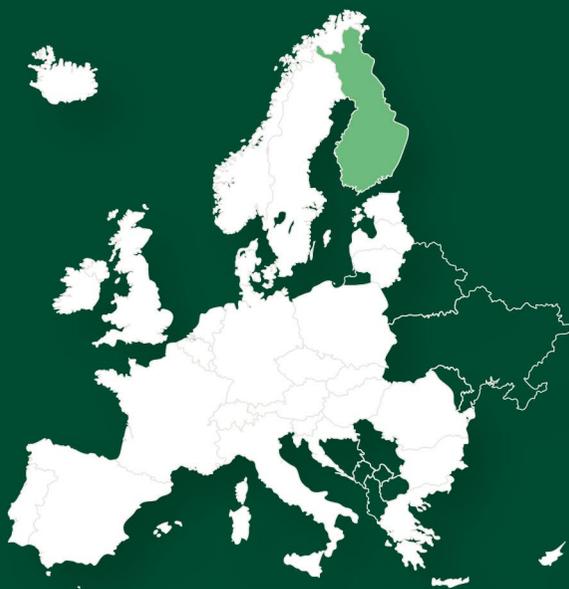
MONEY MATERIAL FLOW



FINLAND

Population: 5.5 m

Website: www.palpa.fi



LEGISLATIVE FRAMEWORK

Mandate: Decree 526 / 2013 (Government Decree on a return system for beverage containers), Waste Act 646 / 2011, and Act on Excise Duty on Certain Beverage Packaging 2037 / 2004

Enacted: Unknown

Implemented: 1996 (Cans) / 2008 (PET) / 2011 (Glass)

Authority: Ministry of Environment

Targets: Recycling of 90% by weight

PROGRAM SCOPE

Material: Plastic (predominantly PET), metal (aluminum), glass

Beverage type: Almost all soft drinks; water; beer; cider; sport drinks; juice and beverage concentrates; liquor / spirits / wine sold by Alko

Excluded: Milk

DEPOSITS AND FEES

Deposit initiator: Producer/Importer

Deposit value:

Plastic < 350 ml (0.09 gal): € 0.10 (USD\$ 0.11)

Plastic 350 ml to 999 ml

(0.09 gal to 0.263 gal): € 0.20 (USD\$ 0.22)

Plastic ≥ 1 L (0.264 gal): € 0.40 (USD\$ 0.45)

Metal: € 0.15 (USD\$ 0.17)

Glass: € 0.10 (USD\$ 0.11)

Unredeemed deposits: Suomen Palautuspakkaus Oy (PALPA)

Handling fees (2020):

Manual collection or RVM without compaction:

Plastic and Metal: € 0.01930 (USD\$ 0.021)

RVM with compaction:

Plastic: € 0.02850 (USD\$ 0.031)

Metal: € 0.02300 (USD\$ 0.025)

One-way Glass: € 0.01930 (USD\$ 0.021)

Producer fees (2020):

Plastic: € 0.017 (USD\$ 0.02) – € 0.116 (USD\$ 0.13)

Metal: € 0.005 (USD\$ 0.005)

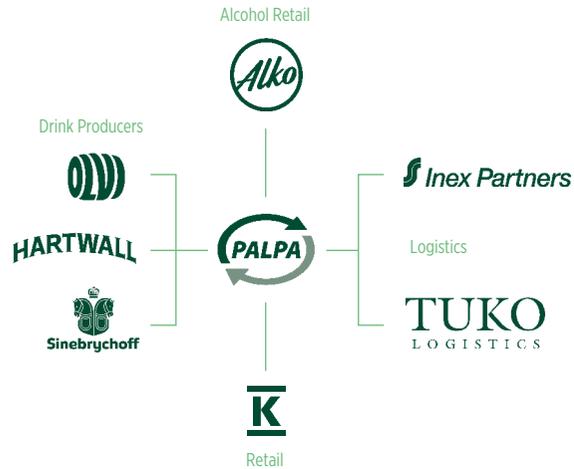
Glass: € 0.09 (USD\$ 0.10) – € 0.14 (USD\$ 0.15)

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator: Suomen Palautuspakkaus Oy (PALPA)

PALPA is a not-for-profit company responsible for managing the DRS. Its responsibilities include the collection, recycling and / or reuse of the packaging covered by the system, and for managing the administration of the deposits, the development of their systems and the communications concerning their operations. The company is owned by retailers (50%) and beverage producers (50%), including Alko Oy, Inex Partners Oy, Kesko Oyj, Oy Hartwall Ab, Olvi Oyj, and Oy Sinebrychoff Ab.



System finance:

Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

Return-to-Retail:

Any retailer selling deposit-bearing beverage containers is obliged to take back the empty containers. The law includes an exemption, whereby small retailers can refuse to accept packaging if the volume is disproportionately high in relation to its size. As of 2016, around 4,000 RVMs were in operation with 5,000 retail collection points for consumers and an additional 9,000 HORECA recycling points. Collection system is 95% automated / 5% manual.

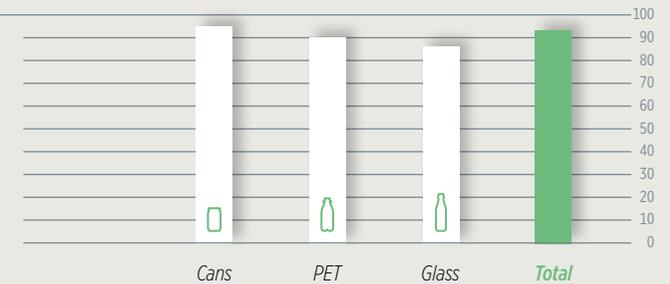
Material owner:

PALPA

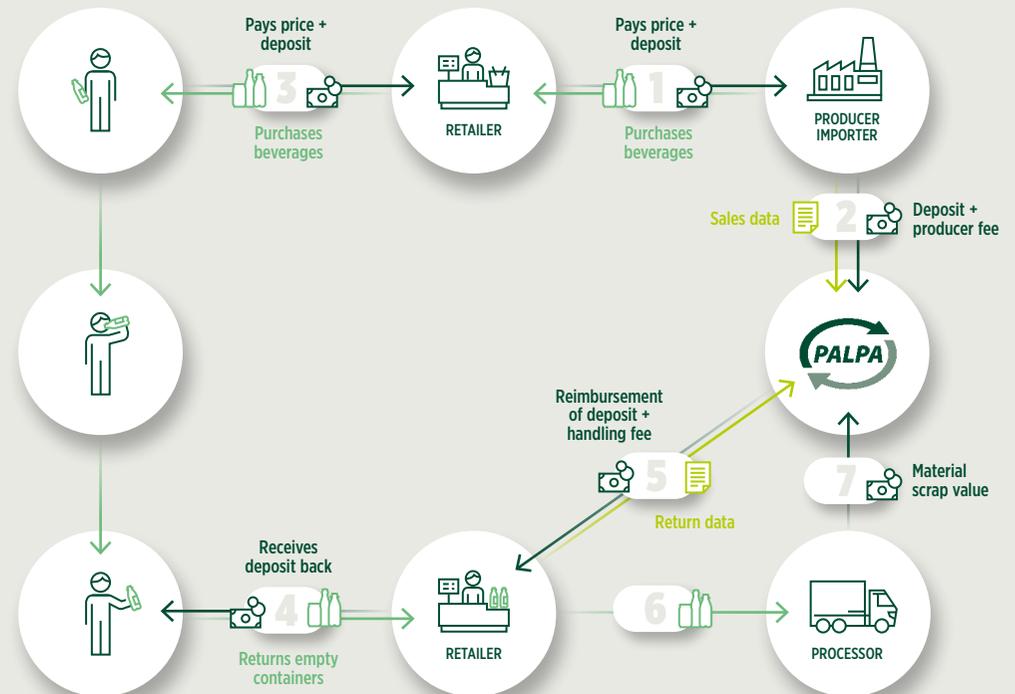
SYSTEM RESULTS (2019)

Cans	95%
PET	90%
Glass	87%

Total Return Rate: 93%



MONEY MATERIAL FLOW



GERMANY

Population: 82.9 m

Website: www.dpg-pfandsystem.de/index.php/en



LEGISLATIVE FRAMEWORK

Mandate:	German Packaging Law (VerpackG) (replaced the Packaging Ordinance)
Enacted:	1991
Implemented:	2003
Authority:	Ministry of Environment
Targets:	None

PROGRAM SCOPE

Material:
Plastic (predominantly PET), metal (aluminum), glass

Beverage type:
Containers 100 ml to 3 L (0.026 gal to 0.79 gal):
Water, beer and mixed drinks containing beer (incl. alcohol-free beer), carbonated/non-carbonated soft drinks, mixed alcohol drinks

Excluded:
Milk products (> 50% milk content), fruit and vegetable juices¹, products intended for child/baby consumption, wines, liquors, containers < 0.026 gal and > 0.79 gal), cartons, stand-up pouches

¹At the time of writing, enlarging the scope of the DRS to include juices is under discussion.

DEPOSITS AND FEES

Deposit initiator:
Producer/Importer

Deposit value:
€ 0.25 (USD\$ 0.28) (subject to VAT)

Unredeemed deposits:
Producers and retailers (for their private/white labels)

Handling fees:
None

SYSTEM OPERATOR

Clearing system:
Decentralized (There are several clearing service providers including CCR Clearing GmbH, Clearing Solution GmbH, Der Grüne Punkt – Duales System Deutschland GmbH, Intercycle GmbH, Interseroh Pfand-System GmbH, Reconsys Dienstleistungs-gesellschaft mbH, Remondis Recycling GmbH & Co. KG)

System operator:
Industry and retailers (in the case of private labels)

System administrator:
Deutsche Pfandsystem GmbH (DPG)²

²DPG is more of a standard setting organization than a system administrator. Established in 2005, Deutsche Pfandsystem GmbH (DPG) is a not-for-profit company that was founded to implement and organize the legally prescribed obligation of the DRS for one-way beverage containers. Its responsibilities involve operating a central database for deposit clearing and the management of the marking standards related to the deposit label (DPG security mark and barcode identification number). The company's shareholders include the German Retail Federation (50%) and the Federation of German Food and Drink Industries (50%).



50% German Retail Federation

50% Federation of German Food and Drink Industries



System finance:

Unredeemed deposits, material revenues, membership fees (every member of the DPG is required to pay a small annual fee which is dependent on the size of its operations)

REDEMPTION SYSTEM

Return-to-Retail:

Retailers and other final distributors of beverage containers subject to the deposit are required to take back one-way beverage containers, but only those of the same type that they sell, regardless of whether the packaging in question was sold by them or by another retailer (i.e. a retailer that only sells PET bottles is not obliged to take back aluminum or glass containers, but must accept all PET bottles regardless of their size or brand). Retailers with a surface area < 200 m² are exempt from this obligation; they only need to take back the packages of the products they are selling, without any cap. Retailers have the option of accepting containers via RVMs or automatically (collection is about 85% automated / 15% manual). There are approximately 135,000 collection locations.

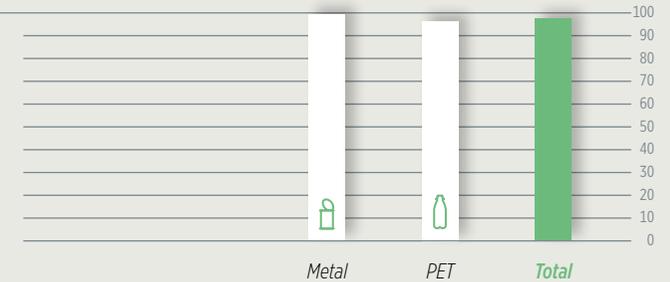
Material owner:

Retailers

SYSTEM RESULTS (2018)

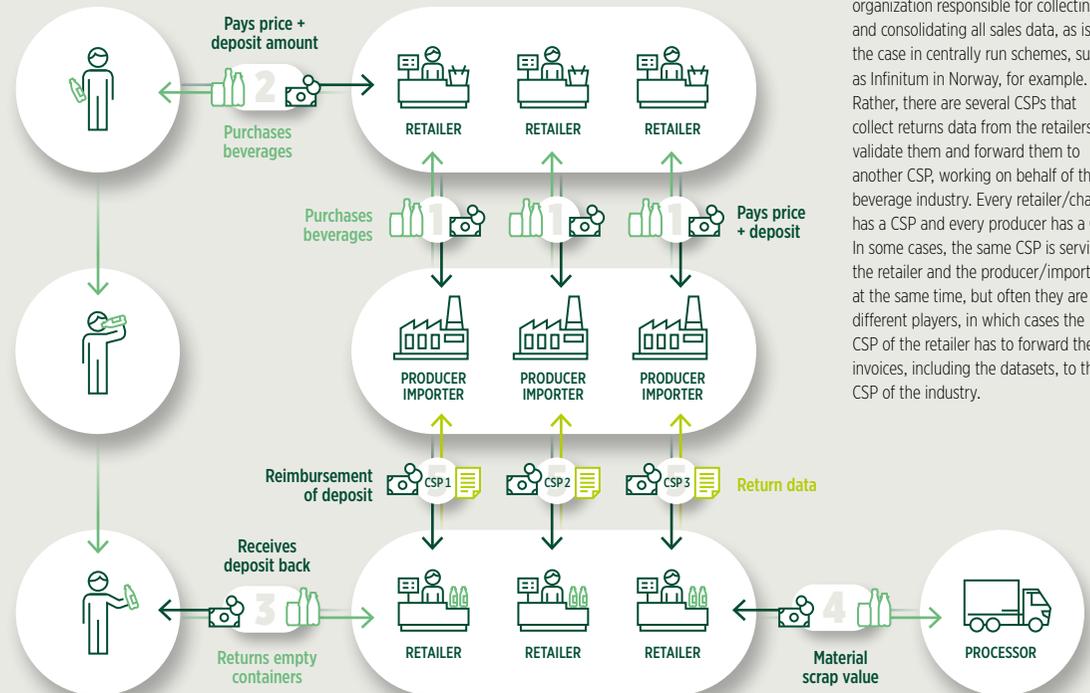
Metal	99.0%
PET	97.0%
Glass	unknown

Total Return Rate: 98.0%



MONEY MATERIAL FLOW

CSP = Clearing Service Provider



Note: In Germany, there is no central organization responsible for collecting and consolidating all sales data, as is the case in centrally run schemes, such as Infinitum in Norway, for example. Rather, there are several CSPs that collect returns data from the retailers, validate them and forward them to another CSP, working on behalf of the beverage industry. Every retailer/chain has a CSP and every producer has a CSP. In some cases, the same CSP is servicing the retailer and the producer/importer at the same time, but often they are different players, in which cases the CSP of the retailer has to forward the invoices, including the datasets, to the CSP of the industry.

ICELAND

Population: 0.3 m

Website: www.endurvinnslan.is



LEGISLATIVE FRAMEWORK

Mandate:	Law No. 52/1989 and Regulation 368/2000
Enacted:	1989
Implemented:	1989
Authority:	Ministry of Environment
Targets:	90% collection for aluminum cans and PET bottles and 85% for glass

PROGRAM SCOPE

Material:	Plastic (predominantly PET), metal (aluminum), glass
Beverage type:	All ready-to-drink beverages; wine and liquor
Excluded¹:	Milk and milk products, juice extract

¹ The government is currently pushing to remove these exceptions and add these products to the system.

DEPOSITS AND FEES

Deposit initiator:	Producer/Importer
Deposit value:	16 ISK (€ 0.11, USD\$ 0.12)
Unredeemed deposits:	Endurvinnslan Hf

Handling fees (2020):
3 ISK (€ 0.02, USD\$ 0.02)

SYSTEM OPERATOR

Clearing system:
Centralized

System operator & administrator:
Endurvinnslan Hf

Endurvinnslan is responsible for managing the collection of all one-way beverage containers, refunding the deposit to the consumer, preparing collected containers for export and selling it for recycling. The company is owned by the state (Ministry of Finance); the state alcohol and tobacco company of Iceland (Vín-búöin), the Icelandic association of local authorities (Samband íslenskra sveitarfélaga), two metal treatment companies (Alkan and Elkam), Icelandic scout association (Bandalag íslenskra skáta), Icelandic association of merchants (Kaupmannasamtök Íslands), and two Icelandic drink companies (Ölgeröin and Coca-Cola).



- Breweries and producers of Coca-Cola/Pepsi 20%
- Alcohol monopoly 20%
- Department of the Environment 18%
- Trade organizations 20%
- Other owners 22%

System finance:

Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

Return to Depot:

Consumers can return empty deposit-bearing beverage containers to 60 return facilities operated by Endurvinnslan. There are currently 10 automated locations and it is planned to expand the use of RVMs to other centers in the coming years. The remaining majority of return facilities are not equipped with RVMs so the returned containers must be counted and sorted manually.

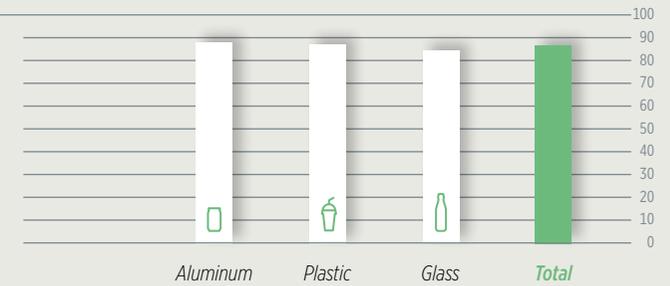
Material owner:

Endurvinnslan Hf

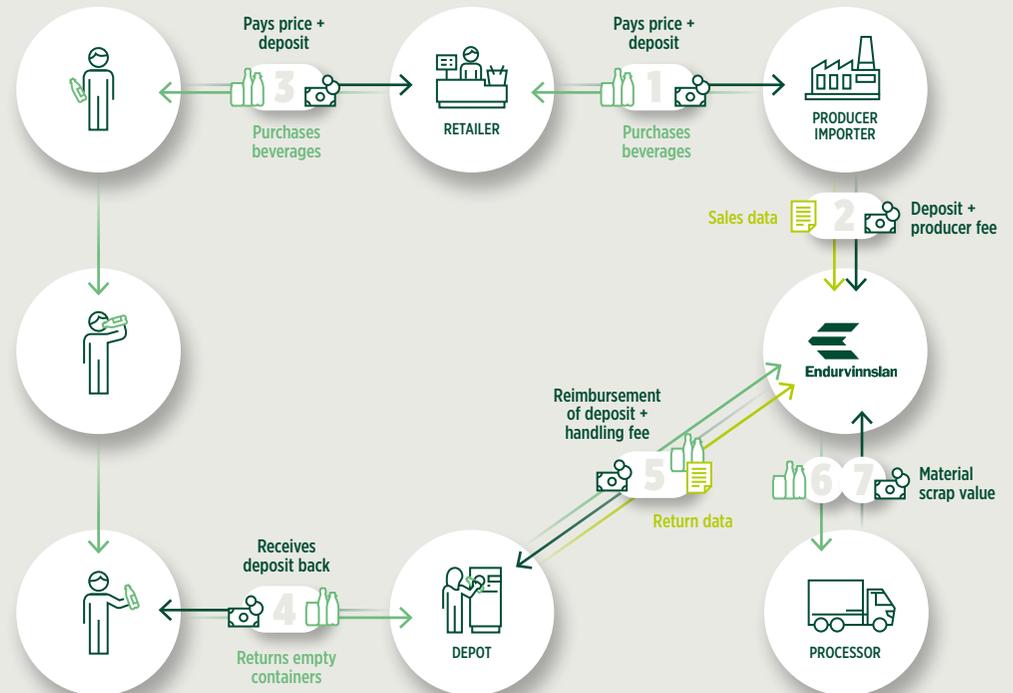
SYSTEM RESULTS (2019)

Aluminum	88.4%
Plastic	87.3%
Glass	83.8%

Total Return Rate: 87.4%



MONEY MATERIAL FLOW



LITHUANIA

Population: 2.8 m

Website: <http://grazintiverta.lt/en/for-business/#>



LEGISLATIVE FRAMEWORK

Mandate: The Law on Packaging and Packaging Waste
Enacted: 2014
Implemented: 2016
Authority: Ministry of Environment
Targets: The goal in 2016 was to collect 55% of all one-way containers introduced to the market. This target was increased for the following years: 70% by 2017, 80% by 2018, 85% by 2019, and 90% by 2020. The same targets apply to all container types.

PROGRAM SCOPE

Material: Plastic, metal, one-way glass

Beverage type:

Containers > 100 ml (0.026 gal) to < 3 L (0.79 gal):

Beer and beer cocktails, cider and other fermented beverages, mixed alcohol and non-alcohol beverages, all types of water, juice and nectars. Fruit wines and wine-product cocktails are included when sold in plastic and metal packaging.

Excluded: Milk, wine and spirits

DEPOSITS AND FEES

Deposit initiator: Producer/Importer

Deposit value¹: € 0.10 (USD\$ 0.11)

Unredeemed deposits: Užstato Sistemose Administratorius (USAD)

¹ Deposit is VAT-free in Lithuania

Handling fees (2020):

Manual collection or RVM without compaction:

PET: € 0.0159

Metal: € 0.0138

Glass: € 0.0199

RVM with compaction:

PET: € 0.0193

Metal: € 0.0144

Glass: € 0.0328

Producer fees (2020):

PET: € 0.027

Metal (aluminum): € 0.009

Metal (steel): € 0.029

Glass: € 0.029

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator: Officially there are two system operators, USAD and Užstatas. However, Užstatas has not yet initiated its activities and therefore USAD is de facto the only operator.

USAD is a not-for-profit organization whose founding members include large beverage producers: the Lithuanian Association of Breweries; the Association of Lithuanian Trade Enterprises; and the Lithuanian Natural Mineral Water Manufacturers' Association. Combined, the founding organizations are responsible for more than 80% of total beverage containers sold in Lithuania. USAD's main responsibilities include supplying the means of collection to

retailers; paying out handling fees to retailers; organizing the transportation of collected containers to the counting center; inspecting and preparing packaging for processing; selecting processors for recycling the packaging; acting as the centralized clearinghouse for deposits; and carrying out public information and awareness raising campaigns.



System finance: Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

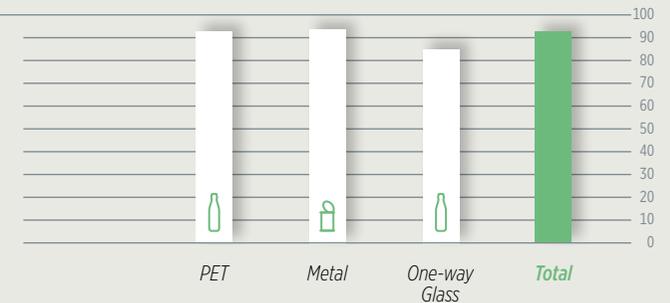
Return-to-Retail: Retailers of deposit-bearing beverage containers are required to accept empty containers and return the deposit, regardless of whether they sell the products in identical packaging. The law stipulates that collection shall be organized at the trading venues, or nearby sites that are no further than 150 m away. Retailers with a shop area up to 300 m² (in bigger cities) and up to 60 m² (in smaller cities and rural areas) are exempt from this obligation. All other retailers of beverage containers subject to the deposit are allowed to participate in the system on a voluntarily basis. At the beginning of 2018, there were a total of 2,713 collection points, of which 1,006 used RVMs (900 RVMs were owned by the manufacturer (compensated by USAD) and 106 were owned by the retailers themselves).

Material owner: USAD

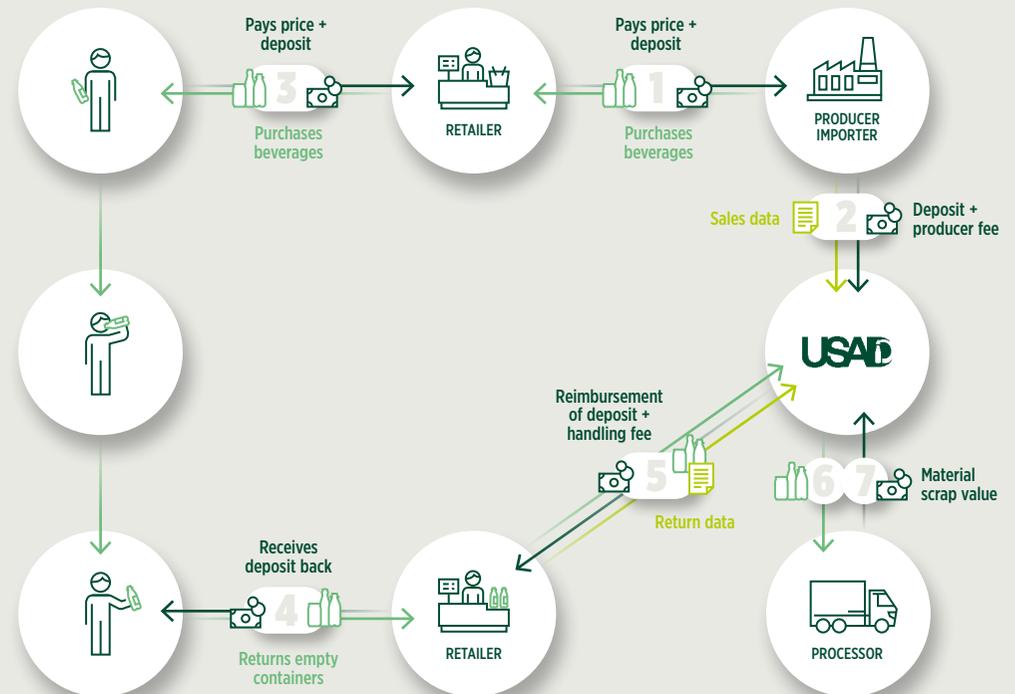
SYSTEM RESULTS (2019)

PET	92%
Metal	93%
One-way Glass	85%

Total Return Rate: 92%



MONEY MATERIAL FLOW



THE NETHERLANDS

Population: 17.1 m

Website: www.retourverpakking.nl



LEGISLATIVE FRAMEWORK

Mandate: Packaging Management Decree (Besluit Beheer Verpakkingen) and Generally Binding Declaration (Afvalfonds Verpakkingen)

Enacted: 2004

Implemented: 2005

Last updated: 2014/2017/2020

Authority: Ministry of Infrastructure and Water Management

Targets:

Initially, the Decree on management of packaging and paper and board of 2005 included a collection target of 95% for plastic beverage packaging > 0.5 L and 55% for plastic bottles ≤ 0.5 L. However, this was never enforced and at the end of 2010 the relevant articles were removed from the Decree. The 2014 Decree does not set specific targets for packaging collected through the DRS, however it sets national recycling targets for 2015 for packaging materials as follows: 45% of plastics, 90% of glass, and 85% of metal. The general targets for plastics (not DRS-specific) are increased each year by 1% until 2022, when the targets will be fixed at 52% for plastics.

PROGRAM SCOPE

Material¹:

Plastic (predominantly PET)

Beverage type¹:

Containers ≥ 0.8 L (0.21 gal):

Soft drinks, water

Excluded:

Medical drinks, wine (and fruit wine), spirits, moderately alcohol beverages, cartons (those intended for beverages and consist of at least 80% paper or paperboard), glass, metal cans, small plastic bottles, containers ≤ 100 ml (0.026 gal), beverage packaging in which the producer or importer can demonstrate on an annual basis < 500,000 units of consumer packagings be made available

¹In April 2020, the Dutch State Secretary for Infrastructure and Water Management announced that a DRS for small plastic bottles (< 1 L (0.26 gal)) would come into effect on July 1, 2021, with a minimum deposit value of € 0.15. The Dutch authorities are also working on deposit legislation for beverage cans.

DEPOSITS AND FEES

Deposit initiator: Producer/Importer

Deposit value: € 0.25 (USD\$ 0.28)

Unredeemed deposits: Producer/Importer

Handling fees: None

Producer fees (2020): € 0.01 plus € 0.02

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator:

Foundation Return Packaging Netherlands (Stichting Retourverpakkingen Nederland) (SRN)

For the majority of deposit-bearing containers, there is one system in which several supermarkets are connected. This is operated by SRN, which is a not-for-profit organization established by the soft drink and mineral water suppliers in cooperation with the food trade. In addition to SRN, Aldi and Lidl have established their own closed-loop systems where deposit bottles (around 110 million) from the SRN system are not accepted. Besides counting and sorting containers, the SRN handles the transfer of deposit and handling fees (VBR – Vergoeding Behandling extra Retouremballage) between producers and retailers.

System finance: Administration fees

REDEMPTION SYSTEM

Return-to-Retail:

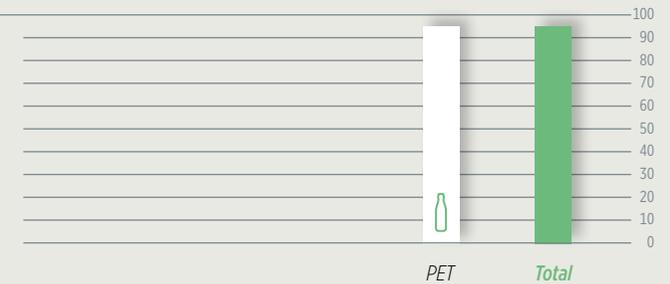
The take-back of empty beverage containers and the refund of the deposit must occur at the same place where containers of the same material are marketed (or in the “immediate vicinity”). Retailers with a surface area < 200 m² are exempt from this obligation as they can limit the take-back to containers of the same type as marketed by the point of sale. Collection system is 89% automated / 11% manual. In 2017, there was a total of 4,200 RVMs across the Netherlands.

Material owner: Producer

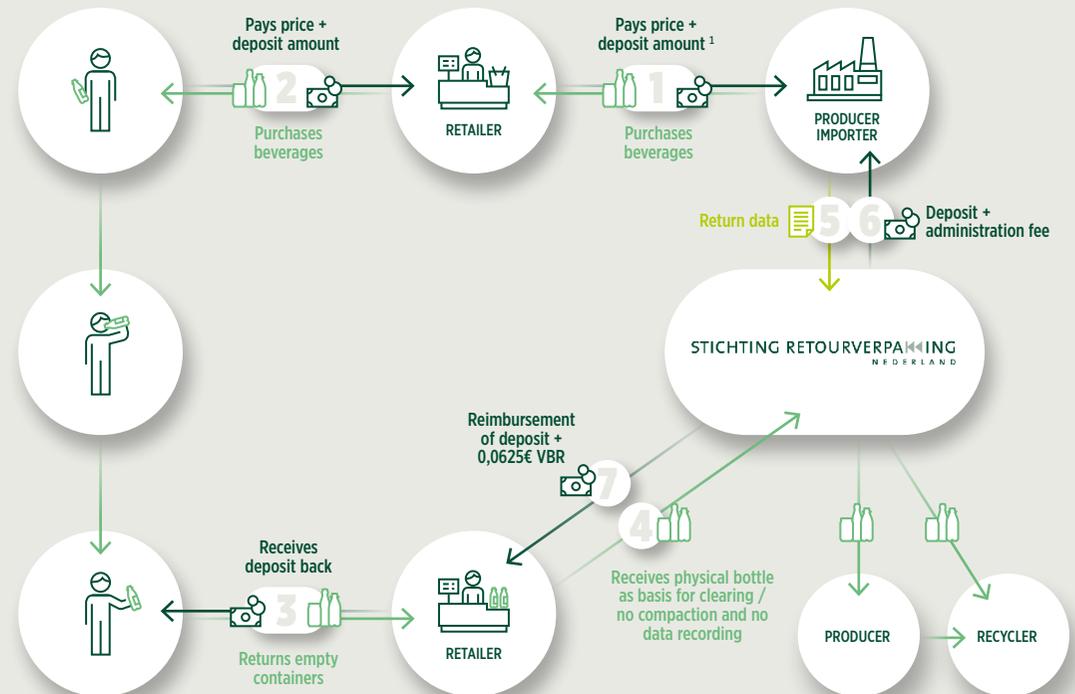
SYSTEM RESULTS (2018)

PET 95%

Total Return Rate: 95%



MONEY MATERIAL FLOW



NORWAY

Population: 5.3 m

Website: <http://infinitem.no/infinitem/>



LEGISLATIVE FRAMEWORK

Mandate: Regulations relating to the Recycling of Waste

Enacted: 1997

Implemented: 1999

Last Updated: 2018 (deposit increase)

Authority: Norwegian Environment Agency

Target: To be exempt from the environmental tax, the return rate for cans and plastic bottles must be 95%.

PROGRAM SCOPE

Material:

Plastic (predominantly PET, HDPE), metal (aluminum/tinplate)

Beverage type:

All (the regulation does not regulate the type of beverage product covered by DRS)

Excluded:

Glass

DEPOSITS AND FEES

Deposit initiator:

Producer/Importer

Deposit value:

Plastic, metal ≤ 0.5 L (0.13 gal): 2 NOK (€ 0.16, USD\$ 0.18)

Plastic, metal > 0.5 L (0.13 gal): 3 NOK (€ 0.25, USD\$ 0.26)

Unredeemed deposits:

Infinitem

Handling fees (2020):

RVM with compaction:

Plastic: 0.25 NOK

Metal: 0.20 NOK

Manual or RVM without compaction:

Plastic: 0.10 NOK

Metal: 0.05 NOK

Producer fees (2020):

Aluminum: 0.00 NOK (€ 0.00, USD\$ 0.00)

Steel: 0.21 NOK (€ 0.02, USD\$ 0.08)

PET: 0.18 NOK (€ 0.02, USD\$ 0.02)

HDPE: 0.18 NOK (€ 0.02, USD\$ 0.02)

In addition to the producer fees, above, producers wanting to join the Infinitem system are required to pay a one-time registration fee for the company and a fee for each new packaged product placed on the market.

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator: Infinitem

System finance:

Material revenues, unredeemed deposits, producer fees

Established in 1996 under the name Norsk Resirk, Infinitem began operations in 1999 and is owned by the beverage producers and Norwegian grocery producers. Infinitem's ownership is divided as follows:

- Virke Kiosk og Bensin (1.5%)
- Dagligvareleverandørens Servicekontor (7.5%)
- NHO Mat og Drikke (7.5%)
- COOP Norge AS (15.0%)
- Dagligvarehandelens Miljøforum AS (33.5%)
- Bryggeri- og Drikkevareforeningens Servicekontor AS (35%)

REDEMPTION SYSTEM

Return-to-Retail:

All retailers selling deposit-bearing beverages are required to take-back empty containers. Retailers must register with Infinitem but can decide how to organize the collection on their premises – either with a RVM or through manual collection. There are approximately 3,700 RVM collection points in Norway (97% of the total collection) and 12,000 manual collection points (3% of total collection).

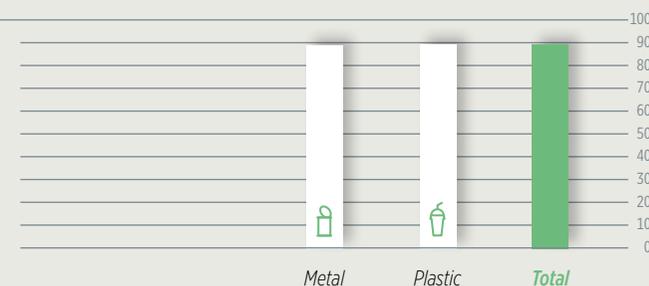
Material owner:

Infinitem

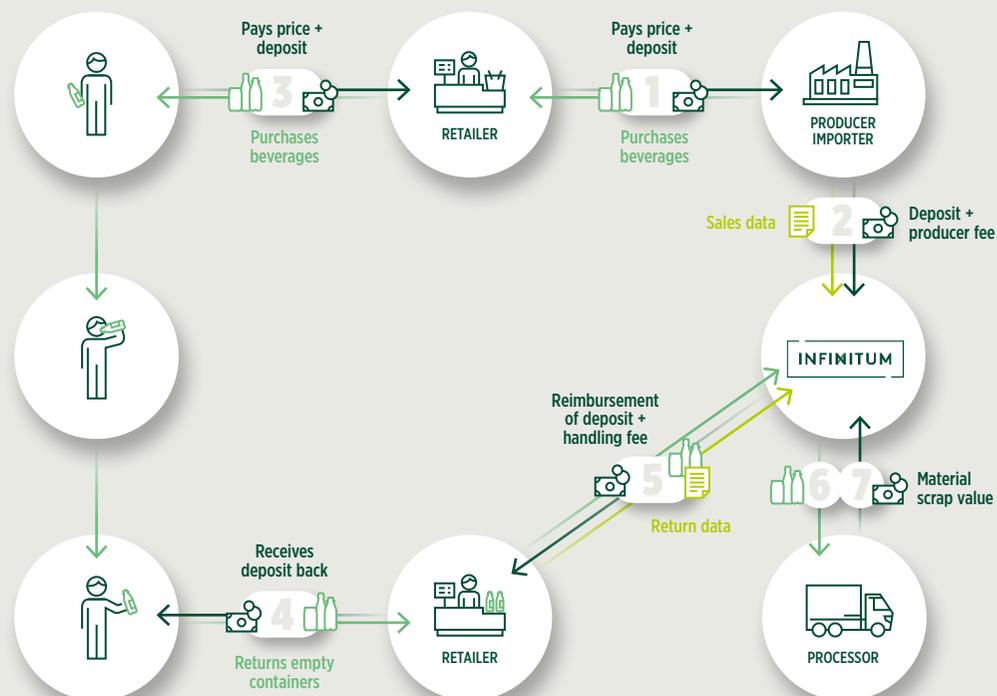
SYSTEM RESULTS (2019)

Metal 89.5%
Plastic 89.4%

Total Return Rate: 89.5%



MONEY MATERIAL FLOW



SWEDEN

Population: 10.0 m

Website: www.pantamera.nu



LEGISLATIVE FRAMEWORK

- Mandate:** Law on Recycling of Aluminum Beverage Containers, Law on Recycling of Certain Beverage Containers (PET), Ordinance on the Return System for Plastic Bottles and Metal Cans
- Enacted:** 1982, 1991, 2005
- Implemented:** 1984, 1994, 2006
- Authority:** Swedish Board of Agriculture
- Targets:** 90% collection target for all metal cans and PET bottles included in the DRS

PROGRAM SCOPE

Material: Plastic (predominantly PET), metal (aluminum/tinplate)¹

Beverage type: All ready-to-drink beverages including beer, soft drinks, cider, bottled water

Excluded: Drinks that contain ≥ 50% dairy products, vegetable/fruit/berry juice (since 2018, juice manufacturers can voluntarily join the Returpack system)

¹Note: The historical two laws governing aluminum can and PET bottle recycling had narrower definitions: drink packaging made of aluminum, and bottles that are made of polyethylene terephthalate. The definition in the new law (Ordinance 2005:220) that replaced the existing laws have broader definitions (packaging made of 'metal' and 'primarily of polymer material').

DEPOSITS AND FEES

Deposit initiator: Producer/Importer

Deposit value:

Metal: 1 SEK (€ 0.11, USD\$ 0.12)
Plastic ≤ 1 L (0.26 gal): 1 SEK (€ 0.11, USD\$ 0.12)
Plastic > 1 L (0.26 gal): 2 SEK (€ 0.22, USD\$ 0.24)

Unredeemed deposits: AB Svenska Returpack

Handling fees (2020):

Manual collection:

Metal: 0 SEK (€ 0.00, USD\$ 0.00)
Plastic: 0.2 SEK (€ 0.02, USD\$ 0.02)

RVM without compaction:

Metal: 0.174 SEK (€ 0.016, USD\$ 0.017)
Plastic ≤ 1 L (0.26 gal): 0.258 SEK (€ 0.023, USD\$ 0.025)
Plastic > 1 L (0.26 gal): 0.345 SEK (€ 0.031, USD\$ 0.033)

RVM with compaction:

Metal: 0.19 SEK (€ 0.017, USD\$ 0.018)
Plastic ≤ 1L (0.26 gal): 0.316 SEK (€ 0.029, USD\$ 0.031)
Plastic > 1L (0.26 gal): 0.503 SEK (€ 0.045, USD\$ 0.049)

Producer fees:

Plastic ≤ 1L (0.26 gal): 0.22 SEK (€ 0.020, USD\$ 0.021)
Plastic > 1L (0.26 gal): 0.52 SEK (€ 0.047, USD\$ 0.050)

Producers also have to pay an affiliation fee of 10,000 SEK (which goes directly to the Swedish Board of Agriculture), as well as sorting fees for each packaging marked with a company's barcode.

SYSTEM OPERATOR

Clearing system: Centralized

System operator & administrator: AB Svenska Returpack (Pantamera)

Returpack was established in 1982 to operate the DRS for aluminum cans which began in 1984. When a similar requirement for PET bottles was introduced, Returpack integrated these containers in the already existing system. Returpack is a privately-owned, not-for-profit company and is the only existing deposit system operator approved by the Swedish government. Its owners include representatives from the brewery sectors (50%) and retailer associations equally shared between small (25%) and large (25%) retailers.

System finance:

Material revenues, unredeemed deposits, administration fees

REDEMPTION SYSTEM

Return-to-Retail:

There is no legal obligation for retailers to take-back empty beverage containers; joining the system is voluntary. There are 14,000 collection points (including supermarkets, small cafes, restaurants, airports, etc.) and 95% of returns take place at food retail markets. In addition to returning empty containers to retailers, consumers can use a deposit return bank (Pantamera Express) to take back their bottles and cans. In 2018, there were 30 such machines. Returpack also uses a mobile collection station (Pant-o-Bil) to facilitate the return of beverage containers at festivals. The collection system is 96% automated/4% manual.

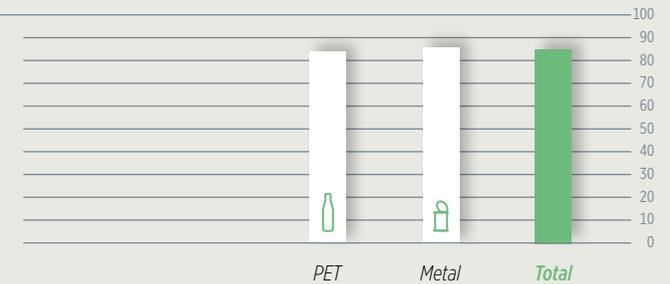
Material owner:

AB Svenska Returpack (Pantamera)

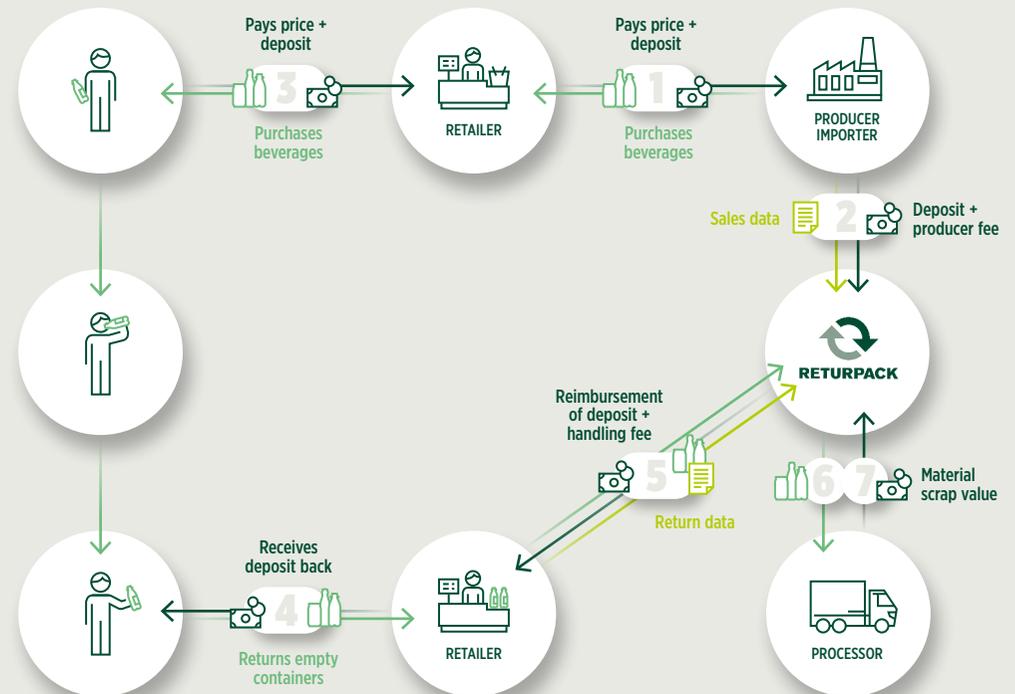
SYSTEM RESULTS (2019)

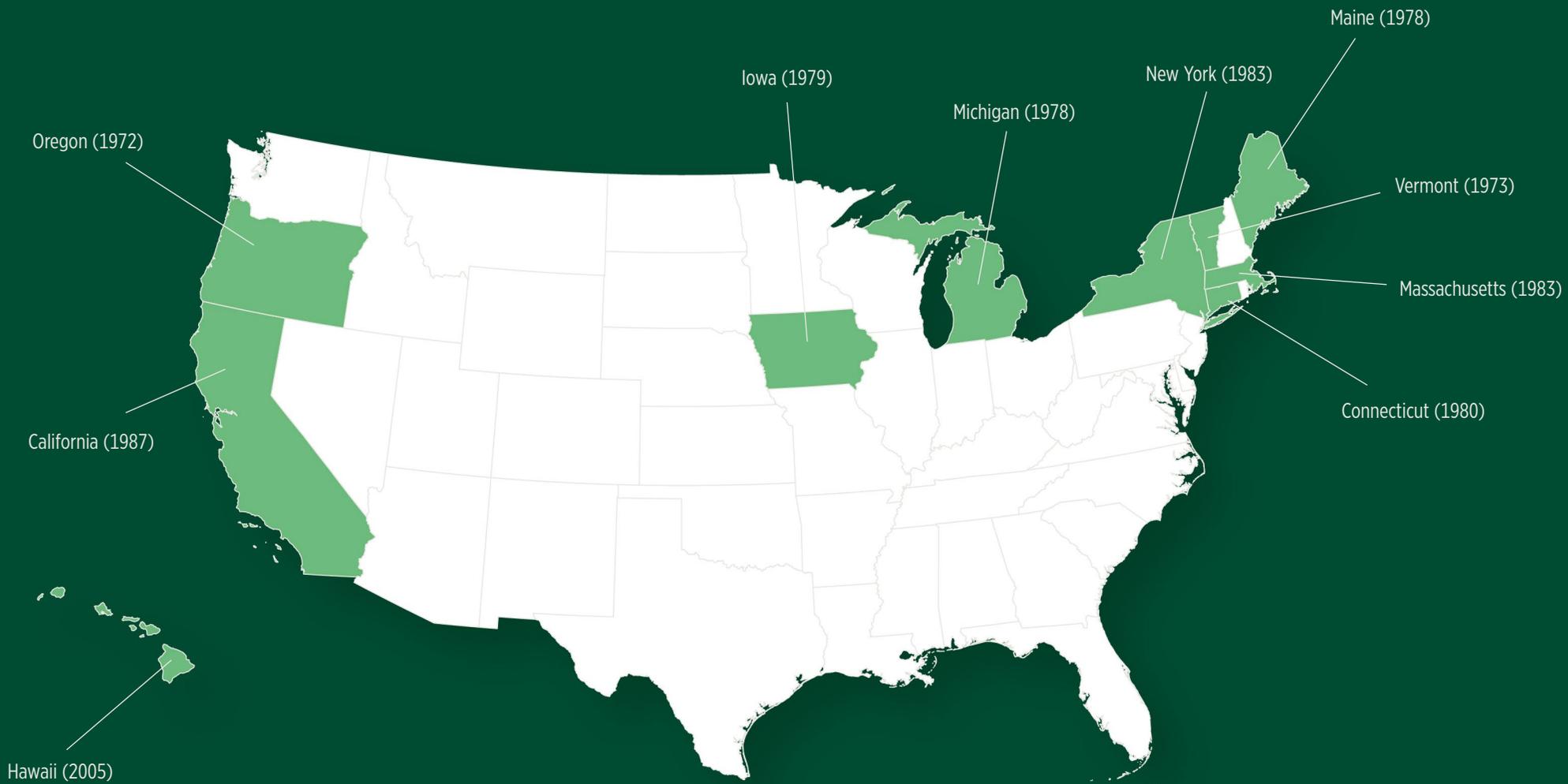
PET	84.1%
Metal	85.8%

Total Return Rate: 84.9%



MONEY MATERIAL FLOW





USA

90.3 million have access to DRS

<i>State</i>	<i>Population 2019 (million)</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
California	39.5	1986	1987, 2000 (all non-alcohol beverages, except milk)
Connecticut	3.6	1978	1980, 2009 (water)
Hawaii	1.4	2002	2005
Iowa	3.2	1978	1979
Maine	1.3	1976	1978, 1990 (wine, liquor, water and non-alcohol carbonated or non-carbonated beverages)
Massachusetts	6.9	1981	1983
Michigan	10.1	1976	1978
New York	19.5	1982	1983, 2009 (water)
Oregon	4.2	1971	1972, 2007 (non-carbonated water), 2018 (all beverages except wine, liquor, milk and milk substitutes)
Vermont	0.6	1972	1973

CALIFORNIA

Population: 39.5 m

Website: www.calrecycle.ca.gov/bevcontainer/



LEGISLATIVE FRAMEWORK

Mandate: California Beverage Container Recycling and Litter Reduction Act

Enacted: 1986

Implemented: 1987, 2000

Last updated: 2012 (Enforcement & Payments)

Authority: CalRecycle (government operated)

Targets: 80% collection rate (Includes containers collected at curbside and redeemed via MRFs)

PROGRAM SCOPE

Material: Plastic, metal (aluminum, bimetal), glass

Beverage type: Beer and malt beverages, wine coolers, distilled spirit coolers, all non-alcohol beverages (carbonated and non-carbonated fruit drinks/water/soft drinks, coffee and tea beverages, 100% fruit juice ≤ 46 oz., vegetable juice ≤ 16 oz.)

Excluded: Milk, infant formula, wine, spirits, 100% fruit juice ≥ 46 oz., 100% vegetable juice > 16 oz.

DEPOSITS AND FEES

Deposit initiator: Producer/Distributor/Importer

California Refund Value (CRV)¹:
Containers < 24 oz (0.19 gal): USD\$ 0.05
Containers ≥ 24 oz (0.19 gal): USD\$ 0.10

Unredeemed deposits: CalRecycle (placed into Beverage Container Recycling Fund)

¹If the product purchased is subject to sales tax, then the CRV applied to that product is subject to sales tax

Handling fees (2020):
USD\$ 0.00934
(Paid to Convenience Zone Recycling Centers)

Processing fees (2020):
USD\$ 0.00066 to USD\$ 0.13610
(Paid by beverage manufacturers to CalRecycle)

Processing payments (as of July 2020):
USD\$ 0.07662/lb to \$ 1.06438/lb
(Paid by CalRecycle to all recycling centers when the cost of recycling exceeds the value of material)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

CalRecycle (Government operated)

System finance:

Unredeemed deposits

REDEMPTION SYSTEM

Return-to-Retail/Return to Recycling Center/ Donate to Curbside:

There are approximately 1,253 state-certified recycling centers, which include redemption centers (supermarket redemption sites, rural redemption sites, and non-profit recycling centers) and retailers. Retailers that generate > \$ 2 million/year in revenue are obligated to help establish independently-run recycling centers in convenience zones (CZ). Retailers in CZs with no recycling center are obligated to accept empties in store, or pay a \$ 100 daily fee to the recycling program. Consumers can also donate their empties to a dropoff site or a curbside recycling program.

Material owner:

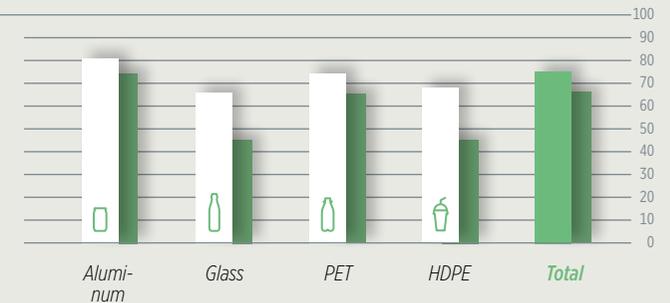
Recycling Centers and curbside (and other) program operators

² Other than Iowa, California is the only U.S. state that includes curbside collection in the "recycling rate" (all of the other states report a "redemption" rate), therefore the **left** rates include CRV containers collected through curbside collection and drop-off programs in addition to certified recycling centers. If these containers are excluded from the calculation, the estimated "redemption" rates for CRV containers are as **right**.

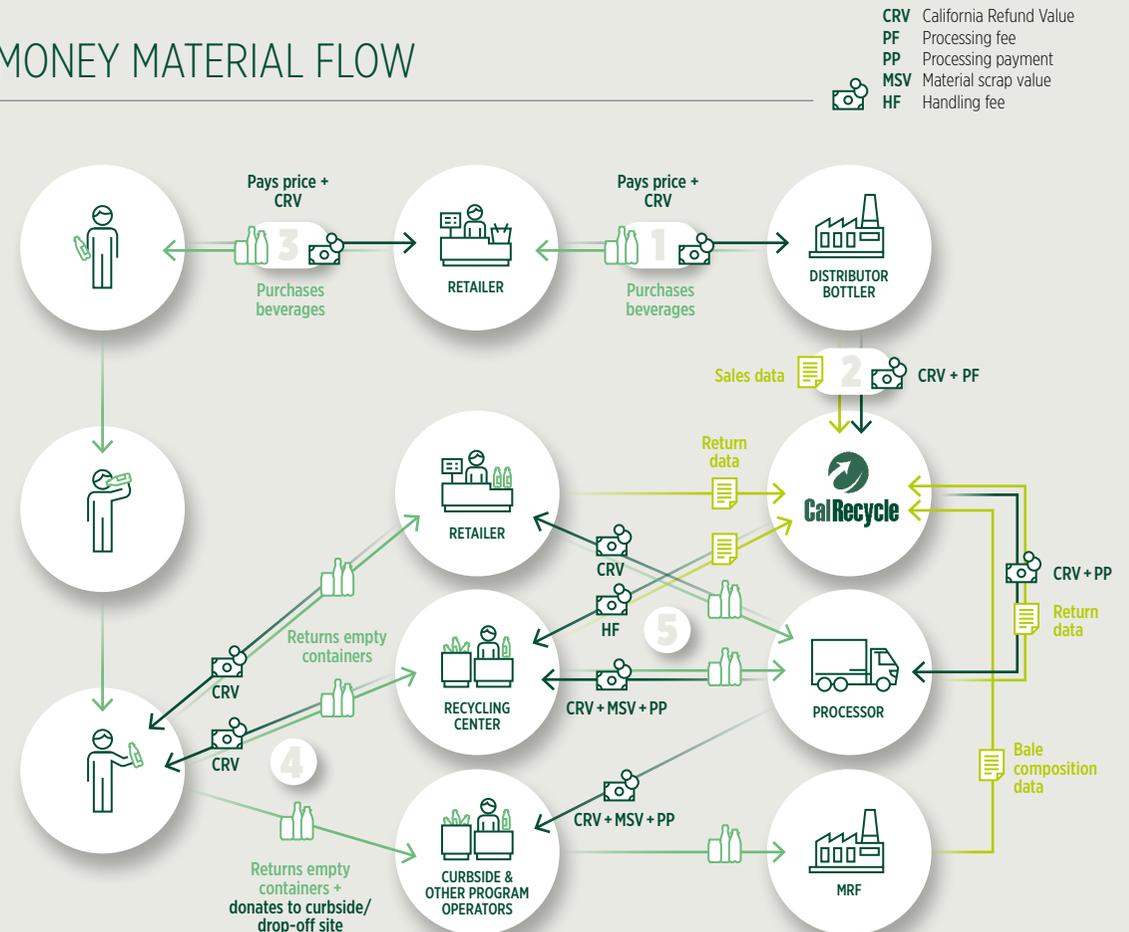
SYSTEM RESULTS (2019)

Aluminum	81%	74%
Glass	67%	45%
PET	74%	65%
HDPE	68%	47%

Total Return Rate: 75%² 67%



MONEY MATERIAL FLOW



CONNECTICUT

Population: 3.6 m

Website: www.ct.gov/deep/cwp/view.asp?a=2714&q=324834



LEGISLATIVE FRAMEWORK

Mandate: Beverage Container Deposit and Redemption Law

Enacted: 1978

Implemented: 1980

Last updated: 2009

Authority: Department of Energy and Environmental Protection

Targets: None

PROGRAM SCOPE

Material: Plastic (PET), metal (aluminum), glass

Beverage type:
Containers < 3 L (0.79 gal): Beer, malt, carbonated soft drinks (including mineral waters and soda waters), non-carbonated water

Excluded: Other non-carbonated beverages, juices, wine, liquor

DEPOSITS AND FEES

Deposit initiator: Producer/Distributor/Importer

Deposit value: USD\$ 0.05

Unredeemed deposits: Escheated to State

Handling fees (2020):

Beer or malt containers:	USD\$ 0.015
Other containers:	USD\$ 0.02

SYSTEM OPERATOR

Clearing system:

Decentralized

System operator & administrator:

Beverage industry

System finance:

System is funded directly by producers with privately arranged payments to contracted collectors, transporters, and processors.

REDEMPTION SYSTEM

Return-to-Retail / Return to Redemption Center:

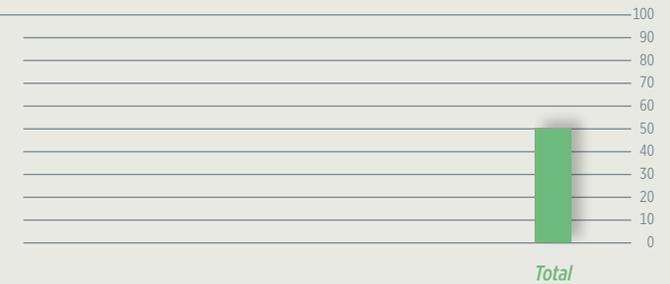
Stores are only required to take back the brands that they sell.

Material owner:

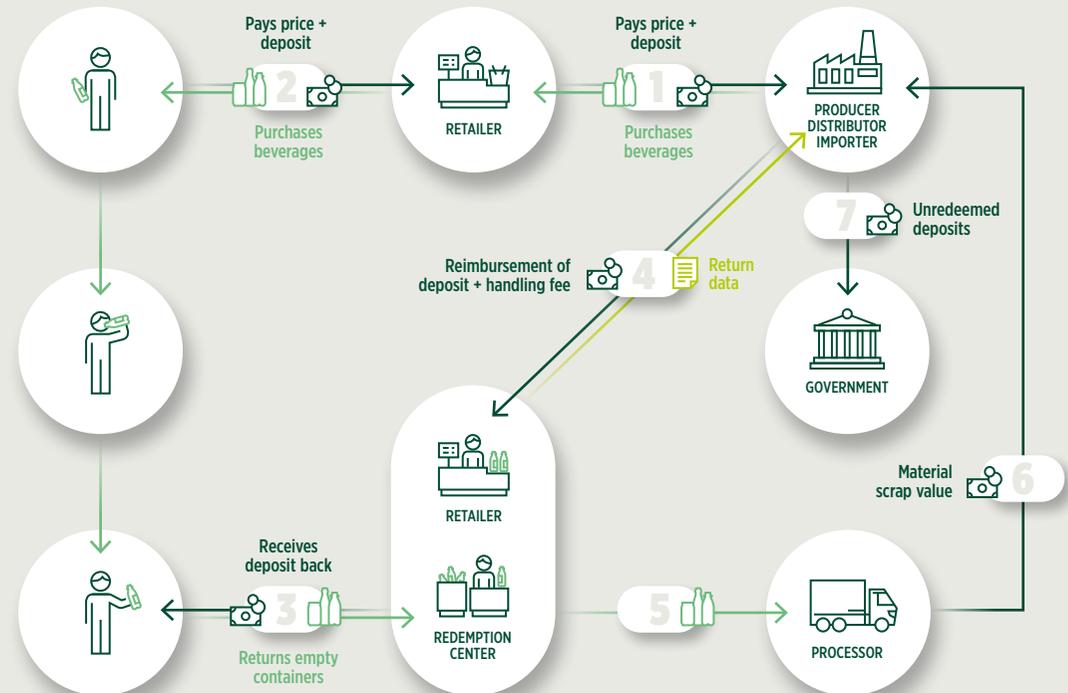
Producer/Distributor/Importer

SYSTEM RESULTS (2019)

Total Return Rate: 50%



MONEY MATERIAL FLOW



HAWAII

Population: 1.4 m

Website: <http://health.hawaii.gov/hi5/>



LEGISLATIVE FRAMEWORK

Mandate: Deposit Beverage Container Law (Act 176)
Enacted: 2002
Implemented: 2005
Last updated: 2013 (Energy Drinks & Dietary Supplements)
Authority: Department of Health (Government operated)
Targets: None

PROGRAM SCOPE

Material:
Plastic (PET, HDPE), metal (aluminum, bi-metal), glass

Beverage type:
Containers \leq 2 L (0.53 gal):
Beer, malt beverages, mixed spirits (< 15% alcohol content), mixed wine (< 7% alcohol content), all non-alcohol beverages (e.g. juice, tea, etc.)

Excluded:
Wine, milk and dairy products, hard liquor

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$ 0.05

Unredeemed deposits:
Placed into the HI-5 Fund (a state-managed fund)

Handling fees (2020):
USD\$ 0.03 to \$ 0.07

Container fees:
USD\$ 0.01
(Non-refundable fee paid by consumer on top of the deposit to fund redemption centers; the fee is \$ 0.015 when the redemption rate is above 70%)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Department of Health

System finance:

Unredeemed deposits, material revenues, and a non-refundable container fee

REDEMPTION SYSTEM

Return to Redemption Center

Persons who sell beverages in deposit containers to a consumer for off-premises consumption are required to operate redemption centers on-site, and must take back all empty beverage containers with a Hawaii refund value. Independent redemption centers are allowed by the law, but are subject to state certification. There are currently 67 redemption centers statewide.

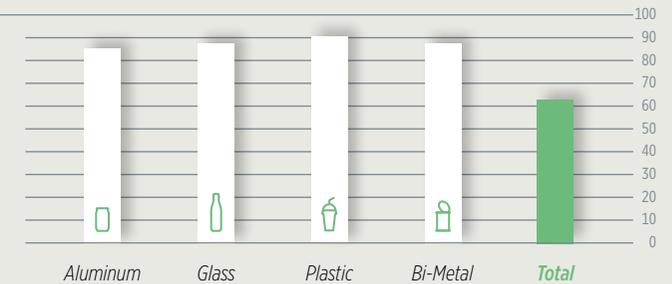
Material owner:

Redemption Center

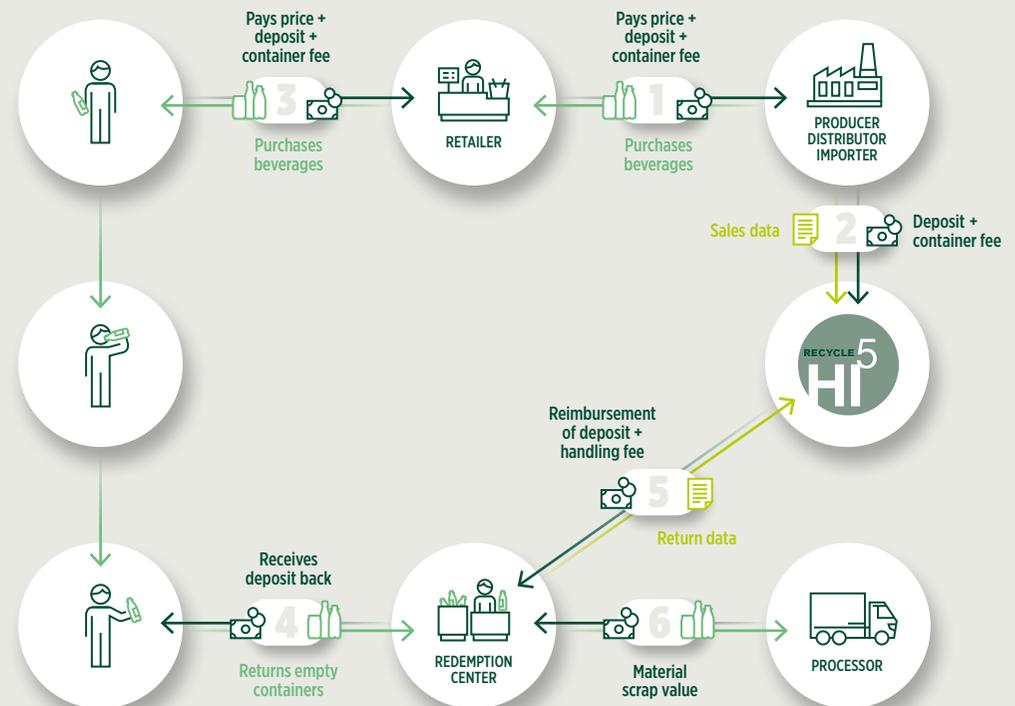
SYSTEM RESULTS (2018-19)

Aluminum	71.3%
Glass	62.9%
Plastic	53.7%
Bi-Metal	70.2%

Total Return Rate: 62.7%



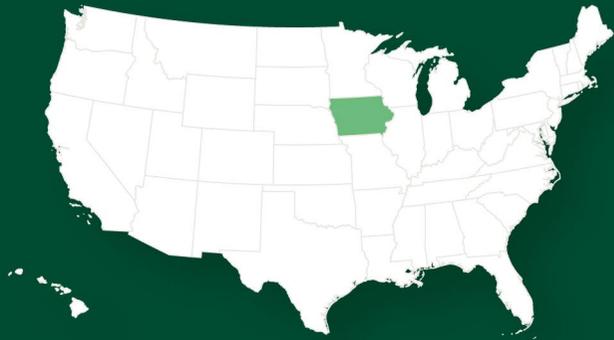
MONEY MATERIAL FLOW



IOWA

Population: 3.2 m

Website: www.iowadnr.gov/Environmental-Protection/Land-Quality/Waste-Planning-Recycling/Bottle-Deposit-Law



LEGISLATIVE FRAMEWORK

Mandate: Beverage Containers Control Law
Enacted: 1978
Implemented: 1979
Authority: Iowa Department of Natural Resources (DNR)
Targets: None

PROGRAM SCOPE

Material:
Plastic, metal, glass

Beverage type:
Beer, wine coolers, wine and liquor, carbonated soft drinks, mineral water

Excluded:
Non-carbonated, non-mineral water (bottled water), fruit and vegetable juices, fruit drinks, milk and milk products

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$0.05

Unredeemed deposits:
Producer/Distributor/Importer

Handling fees (2020):
USD\$ 0.01
(paid to retailers and redemption centers)

SYSTEM OPERATOR

Clearing system:

Decentralized

System operator & administrator:

Deposit initiators

System finance:

Unredeemed deposits, material revenues

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

Retailers are required to accept empties of the products they sell. However, a retailer can use an approved redemption center that is certified by the Iowa DNR in place of accepting empties at their store.

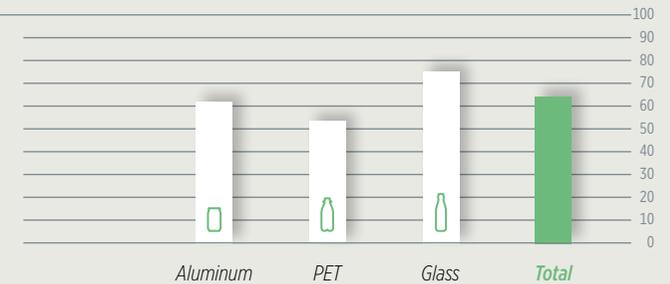
Material owner:

Producer/Distributor/Importer

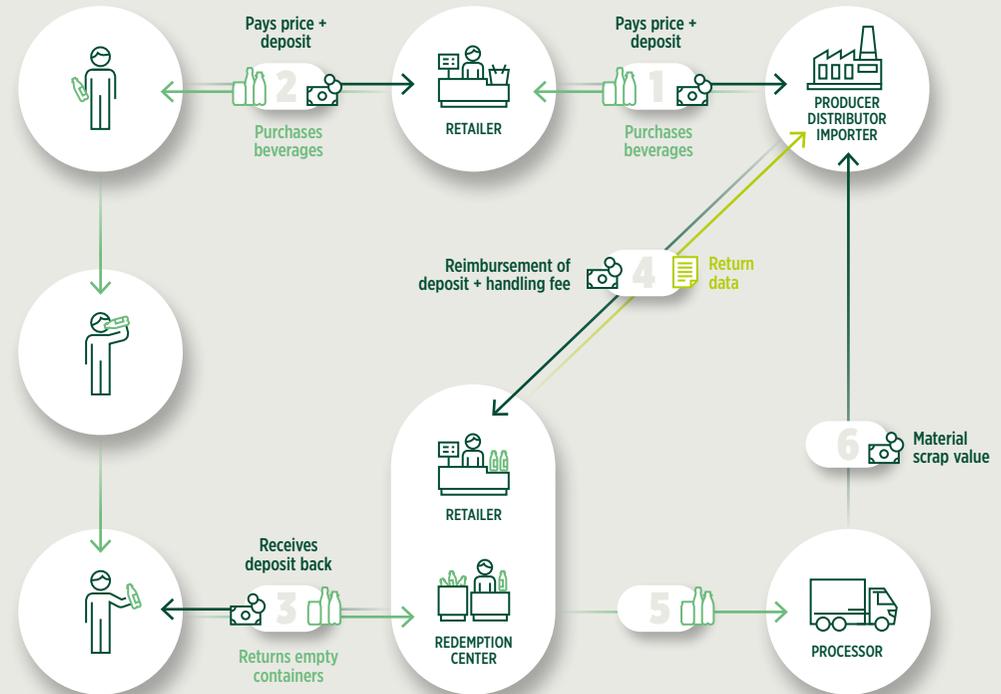
SYSTEM RESULTS (2016)

Aluminum	62%
PET	53%
Glass	76%

Total Return Rate: 64%¹



MONEY MATERIAL FLOW



¹ Note: The State of Iowa does not collect sales or returns data on deposit containers. Material-specific redemption rates were calculated by the Container Recycling Institute (CRI) and the DNR while analyzing "Final 2017 Iowa Statewide Waste Characterization Study," SCS Engineers for Iowa DNR, 12/28/17. The rates shown reflect deductions made for deposit containers recycled through curbside and dropoff programs, using curbside and dropoff percentages from California (2012 and 2016) as proxies. In other words, the rates shown above exclude CRV containers recycled through curbside and dropoff programs.

MAINE

Population: 1.3 m

Website: <http://maine.gov/dep/sustainability/bottlebill/index.html>



LEGISLATIVE FRAMEWORK

Mandate: Maine Returnable Beverage Container Law
Enacted: 1976
Implemented: 1978, 1990
Last updated: 2017
Authority: Maine Department of Environmental Protection
Targets: None

PROGRAM SCOPE

Material:
Glass, plastic, metal

Beverage type:
Containers ≤ 4 L (1.06 gal):
Beer, ale or other drink produced by fermenting malt, spirits (including 50 ml (0.01 gal) liquor known as ‘nips’), wine, hard cider, wine coolers, soda, non-carbonated water, non-alcohol carbonated or non-carbonated drinks in liquid form and intended for human consumption

Excluded:
Unflavoured milk and milk substitutes, certain containers composed of a combination of aluminum and plastic/paper filled with non-alcohol beverages, Maine-produced juices and cider, infant formula, nutritional supplements, products frozen at sale or intended for consumption in a frozen state, paper or cardboard containers

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
Wine and spirits > 50 mL: USD\$ 0.15
All other beverages: USD\$ 0.05

Unredeemed deposits:
Escheated to State, however deposit initiators that sell a majority of the deposit containers are allowed to form a ‘Commingling Group’ and recoup unredeemed deposits associated with the sale of their containers.

Handling fees (2020):
USD\$ 0.045
(\$ 0.035 for containers subject to a qualified commingling agreement; \$ 0.03 for containers for a brewer that produces no more than 50,000 gallons of product or a water bottler who sells no more than 250,000 containers of up to 1 gallon annually.)

SYSTEM OPERATOR

Clearing system:

Decentralized

System administrator:

Maine Department of Environmental Protection

System operator:

Beverage industry

System finance:

Material revenues

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

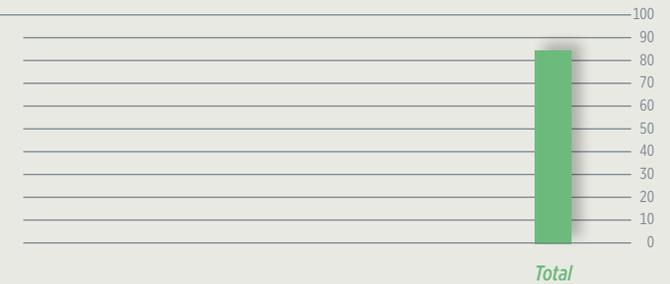
All retailers who sell beverages are required to take back the empty beverage containers they sell plus some redemption centers. There are currently 449 redemption centers licensed by the DEP. Retailers can opt-out if they have an agreement with a nearby redemption center.

Material owner:

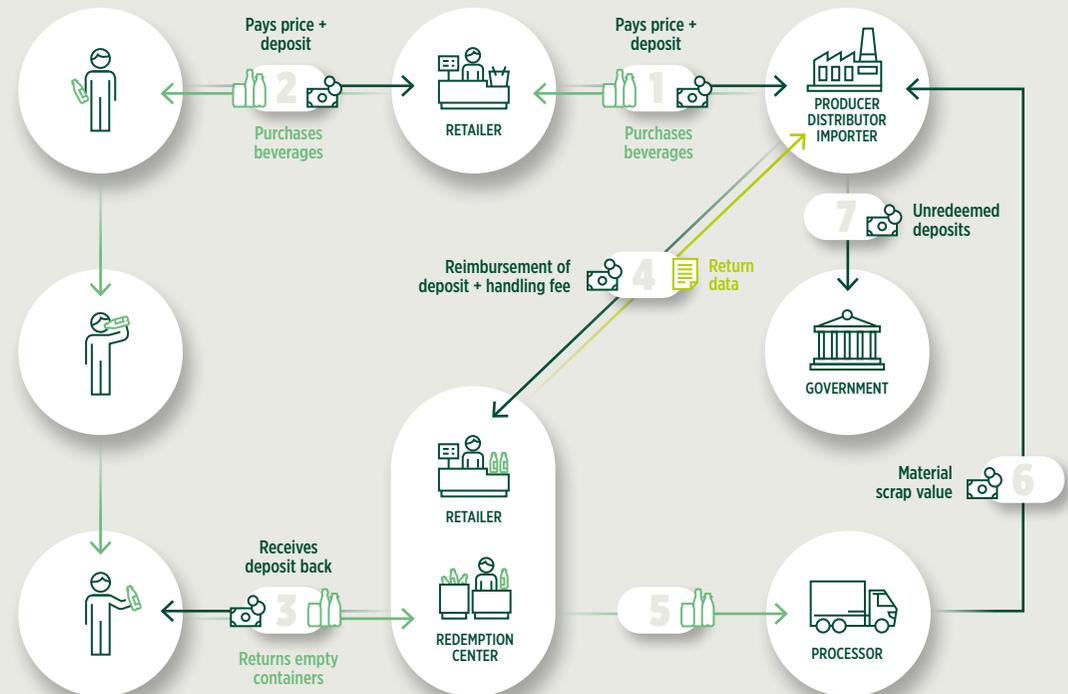
Producer/Distributor/Importer

SYSTEM RESULTS (2017)

Total Return Rate: 84%



MONEY MATERIAL FLOW



MASSACHUSETTS

Population: 6.9 m

Website: www.mass.gov/eea/agencies/massdep/recycle/reduce/bottle-and-can-recycling.html



LEGISLATIVE FRAMEWORK

Mandate: Beverage Container Recovery Law
Enacted: 1981
Implemented: 1983
Last updated: 2013
Authority: Massachusetts Department of Environmental Protection
Targets: None

PROGRAM SCOPE

Material:
Plastic, metal (aluminum, bimetal), glass

Beverage type:
Beer, malt, carbonated soft drinks, mineral water

Excluded:
Non-carbonated beverages other than mineral water (e.g., non-carbonated, non-alcohol water), wine, dairy products, liquor, natural fruit juices, non-carbonated alcohol beverages other than beer and malt

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$ 0.05

Unredeemed deposits:
Escheated to State

Handling fees (2020):
USD\$ 0.0225 for retailers
(receive free pick-up of containers by deposit initiators)

USD\$ 0.0325 for redemption centers
(RCs must deliver redeemed containers to central processing facility)

SYSTEM OPERATOR

Clearing system:

Decentralized

System operator & administrator:

Beverage industry, TOMRA

System finance:

Material revenues

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

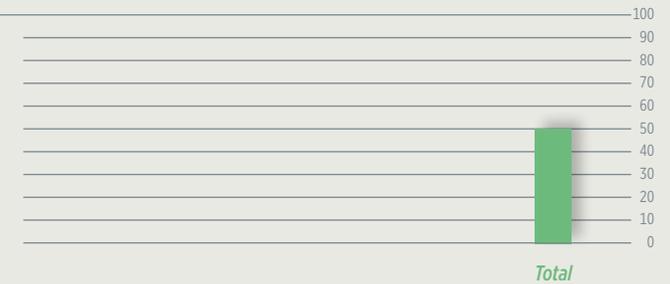
All retailers who sell beverages are required to take back the empty beverage containers they sell plus some redemption centers. There are currently 800+ retailers utilizing RVMs, and 900+ retailers redeeming manually. There are also currently 60+ redemption centers.

Material owner:

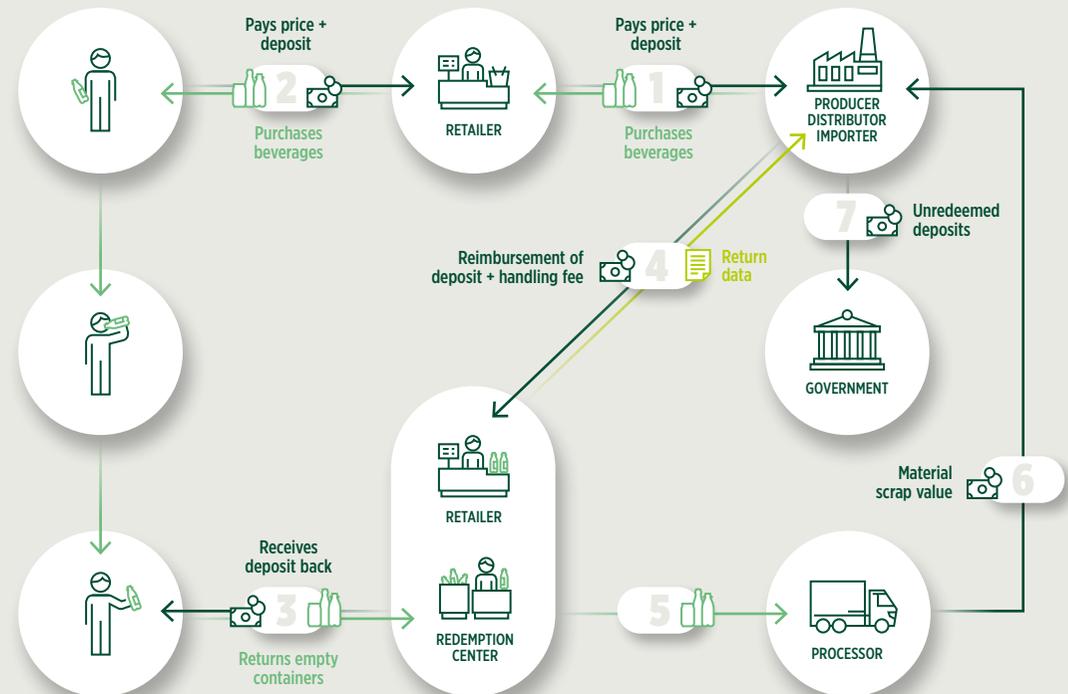
Producer/Distributor/Importer

SYSTEM RESULTS (2019)

Total Return Rate: 50%



MONEY MATERIAL FLOW



MICHIGAN

Population: 10.1 m

Website: <https://www.michigan.gov/treasury/>



LEGISLATIVE FRAMEWORK

Mandate: Michigan Container Law
Enacted: 1976
Implemented: 1978
Last updated: 2012
Authority: Michigan Department of Treasury
Targets: None

PROGRAM SCOPE

Material:
Plastic, metal (aluminum/tinplate), glass, liquid paperboard

Beverage type:
Containers < 3.78 L (1 gal):
Beer/ale, soft drinks, carbonated and mineral water, wine coolers, canned cocktails, malt drink of whatever alcohol content

Excluded:
Non-carbonated beverages other than mineral water (e.g. juice, coffee, tea, non-carbonated water), milk, sport drinks, wine, liquor, foil pouches

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$ 0.10

Unredeemed deposits:
75% escheated to State (to Clean-up and Redevelopment Trust Fund) / 25% available to retailers to cover handling costs

Handling fees:
None (there is technically no handling fee, however 25% of unredeemed deposits are paid out to retailers in proportion to the number of containers they redeem)

SYSTEM OPERATOR

Clearing system:

Decentralized (Michigan Soft Drink Association (MSDA), Michigan Beer & Wine Wholesalers Association (MBWWA))

System operator & administrator:

Beverage industry

System finance:

Material revenues

REDEMPTION SYSTEM

Return-to-Retail:

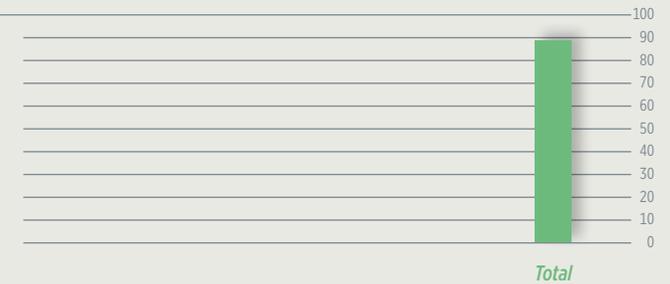
Stores only need to take back brands they sell. There are currently approximately 5,600 beverage dealers in the state.

Material owner:

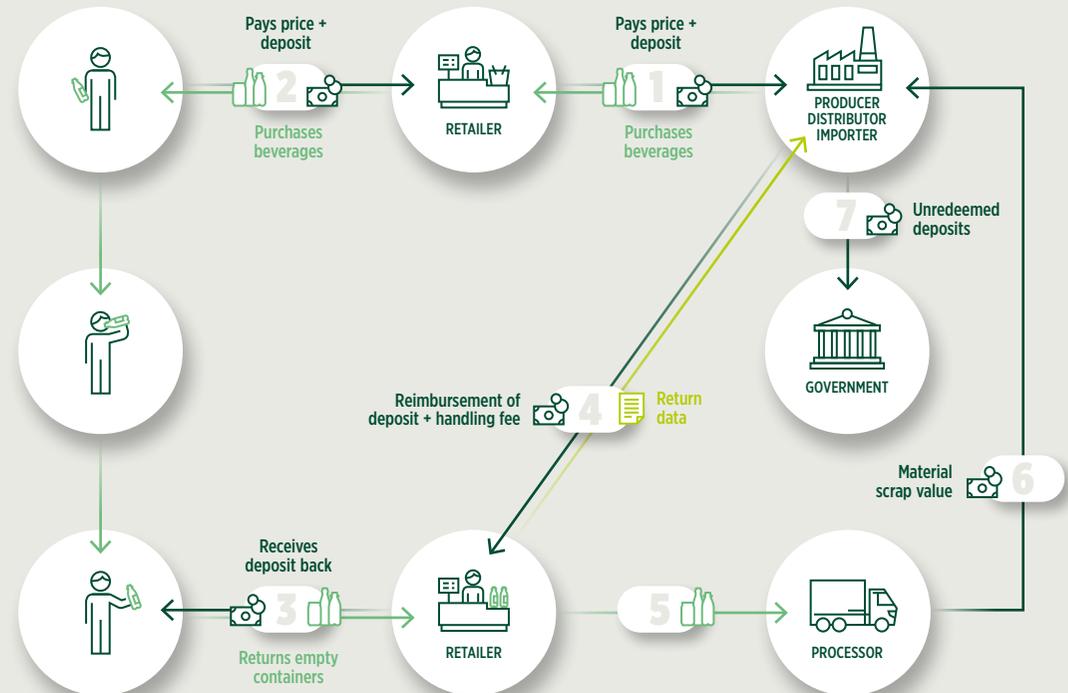
Producer/Distributor/Importer

SYSTEM RESULTS (2019)

Total Return Rate: 88.7%



MONEY MATERIAL FLOW



NEW YORK

Population: 19.5 m

Website: www.dec.ny.gov/chemical/8500.html



LEGISLATIVE FRAMEWORK

Mandate: New York State Returnable Container Act
Enacted: 1982
Implemented: 1983, 2009 (Water)
Last updated: 2012
Authority: New York State Department of Environmental Conservation
Targets: None

PROGRAM SCOPE

Material:
Plastic, metal (aluminum, steel), glass

Beverage type:
Containers \leq 3.78 L (1 gal):
Carbonated soft drinks, soda water, carbonated energy drinks, beer and other malt beverages, mineral water (carbonated and non-carbonated), wine products, water that does not contain sugar (including flavored or nutritionally enhanced water)

Excluded:
Milk products, wine and liquors, tea, sports drinks, juice, drink boxes, water containing sugar

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$ 0.05

Unredeemed deposits:
80% escheated to the New York State Department of Taxation and Finance (quarterly basis); 20% retained by deposit initiator

Handling fees (2020):
USD\$ 0.035

SYSTEM OPERATOR

Clearing system:

Decentralized

System operator & administrator:

Beverage Industry; TOMRA New York Recycling, Western New York Beverage Industry Collection & Sorting (WNYBICS)

System finance:

Material revenues, 20% of unredeemed deposits

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

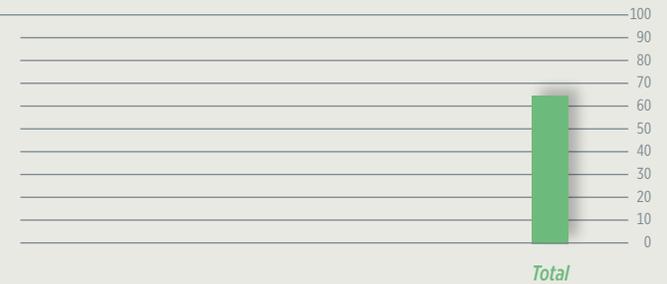
All retailers who sell beverages are required to take back the empty beverage containers they sell plus some redemption centers.

Material owner:

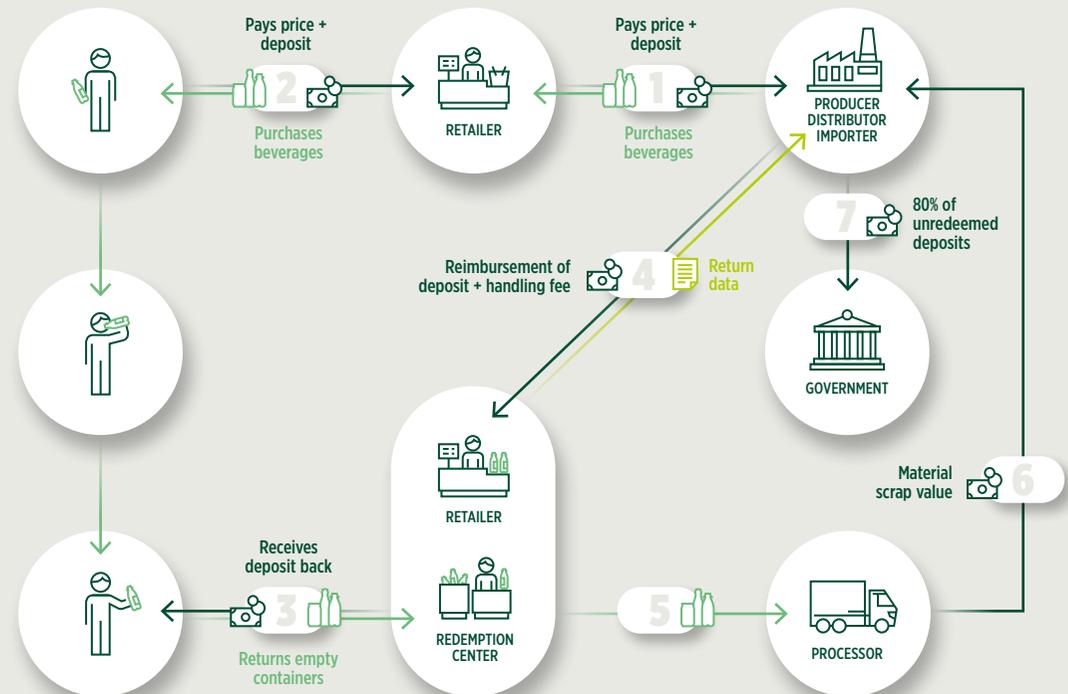
Producer/Distributor/Importer

SYSTEM RESULTS (2019)

Total Return Rate: 64%



MONEY MATERIAL FLOW



OREGON

Population: 4.2 m

Websites: www.oregon.gov/OLCC/pages/bottle_bill.aspx
<https://obrc.com/>



LEGISLATIVE FRAMEWORK

Mandate: The Beverage Container Act
Enacted: 1971
Implemented: 1972
Last updated: 2007 (bottled water and flavored water), 2017 (deposit increase), 2018 (expansion to all beverages with some exceptions)
Authority: Oregon Liquor Control Commission (OLCC)
Targets: Collection target of 80%

PROGRAM SCOPE

Material:
Plastic, metal (aluminum/tinplate), glass

Beverage type:
Containers 4 oz. (0.03 gal) to 1.5 L (0.4 gal):
Coffee/tea; energy and sports drinks, fruit and vegetable juice (does not have to be 100%), juice smoothies, coconut water, non-alcohol wine, hard cider if 8.5% ABV or less, marijuana beverages, protein shakes (unless marketed as a meal replacement), Kombucha, cocktail mixers

Containers ≤ 3 L (0.79 gal):
Soda (carbonated/sparkling beverages), beer, water

Excluded:
Distilled liquor, wine, dairy or plant-based milks and milk substitutes, infant formula, meal-replacement drinks, alcohol kombucha made with cane sugar, kefir, concentrates

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
USD\$ 0.10

Unredeemed deposits:
Oregon Beverage Container Recycling Cooperative (OBRC)

Handling fees:
Technically none, however OBRC directly funds redemption centers

SYSTEM OPERATOR

Clearing system:
Centralized (OBRC)

System operator & administrator:
Beverage industry

System finance:
Material revenues, unredeemed deposits

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Centers:

All retailers who sell beverages are required to take back the empty beverages they sell plus some redemption sites. There are currently over 2,300 return locations, including 25 redemption centers (276 RVMs), 30 BottleDrop Express sites, and 2,254 retail drop off sites (360 RVMs).

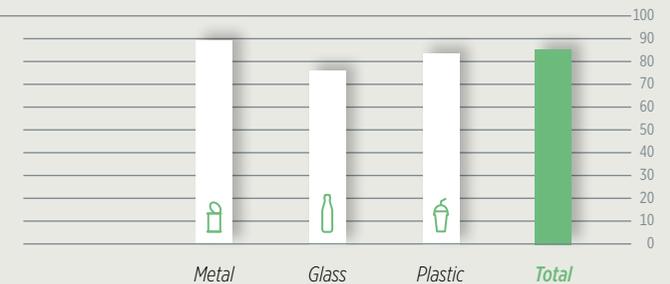
Material owner:

OBRC (all scrap value is returned to OBRC members proportional to the volume and type of material they sell)

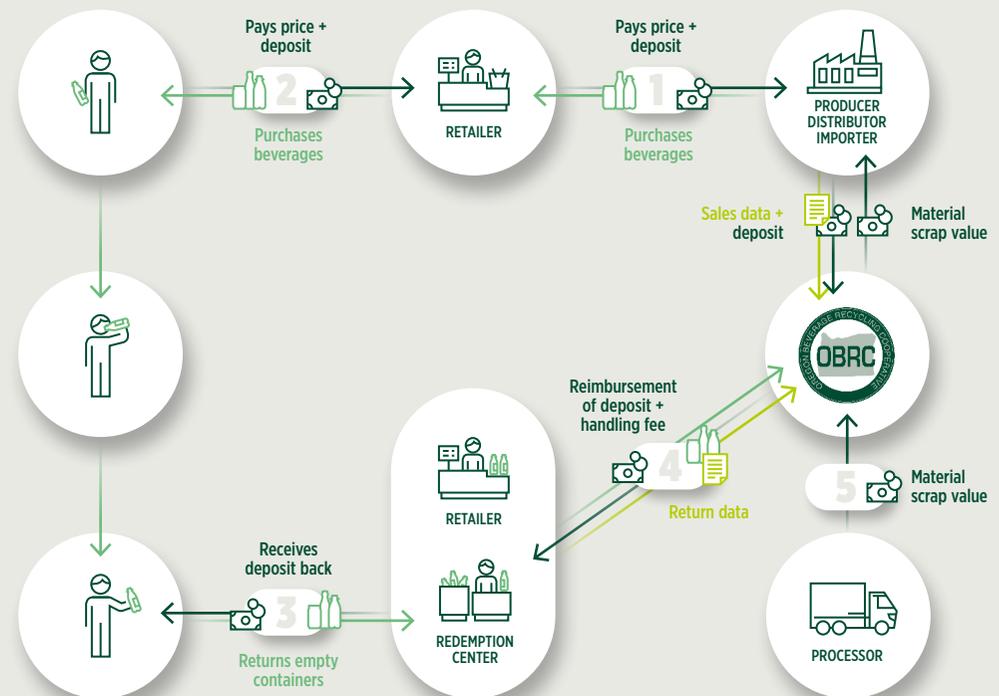
SYSTEM RESULTS (2019)

Metal	89.6%
Glass	76.8%
Plastic	83.5%

Total Return Rate: 85.8%¹



MONEY MATERIAL FLOW



¹ Note: Deposit initiators within OBRC, which covers the vast majority of deposit containers sold in the state, reported a 2019 return rate of 90%.

VERMONT

Population: 0.6 m

Website: <http://dec.vermont.gov/waste-management/solid/product-stewardship/bottle-bill>



LEGISLATIVE FRAMEWORK

Mandate: Beverage Container Law (1972) and Solid Waste Act (1987)
Enacted: 1972
Implemented: 1973
Last updated: 1991
Authority: Agency of Natural Resources
Targets: None

PROGRAM SCOPE

Material:
Plastic, metal (aluminum/tinplate), glass

Beverage type:
Liquor and spirits, beer, wine coolers and other malt beverages, soft drinks and other carbonated beverages

Excluded:
Wine and hard cider, water, milk, juices, sports drinks, other non-carbonated beverages

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
Liquor: USD\$ 0.15
Other beverages: USD\$ 0.05

Unredeemed deposits:
Escheated to State for use on clean water programs

Handling fees (2020):
USD\$ 0.04 for brand-sorted containers
USD\$ 0.035 for comingled containers

SYSTEM OPERATOR

Clearing system:

Decentralized

System operator & administrator:

Beverage industry

System finance:

Material revenues

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

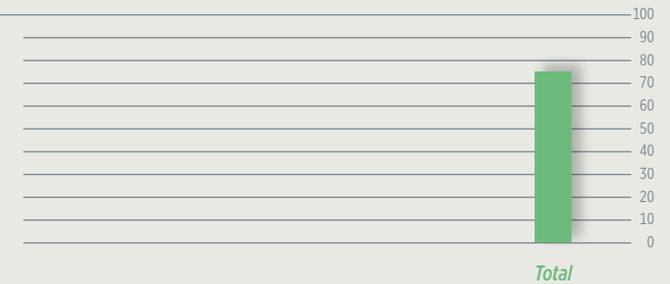
All retailers who sell beverages are required to take back the empty beverage containers they sell, but can apply for an exemption from this requirement if they are located near a licensed redemption center. Redemption centers must accept all covered beverage containers.

Material owner:

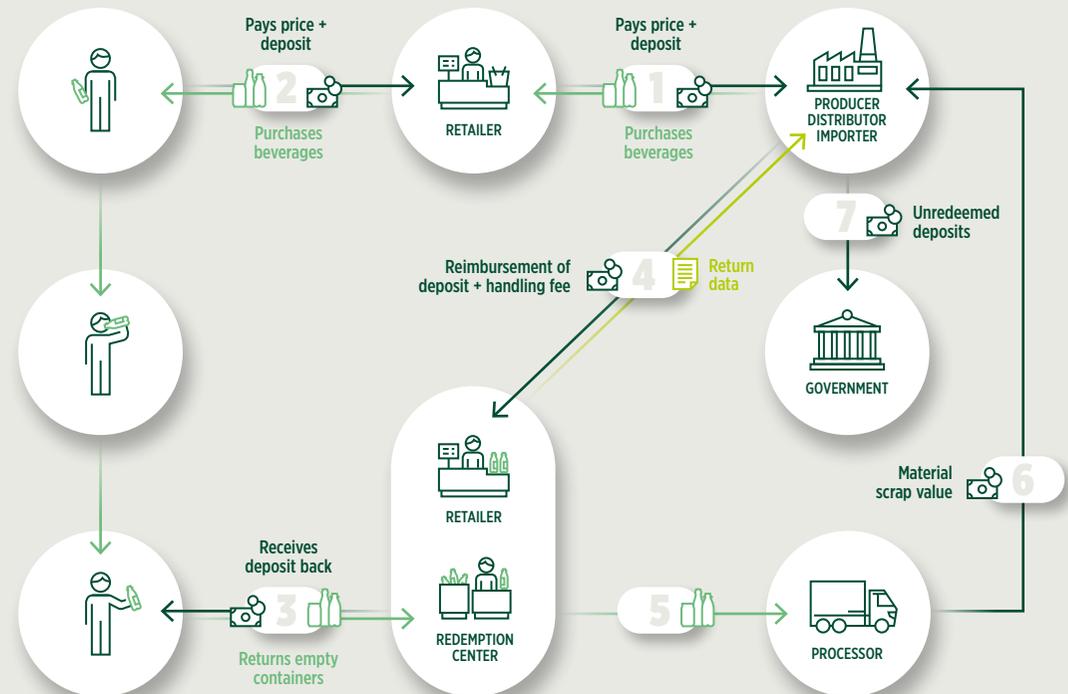
Producer/Distributor/Importer

SYSTEM RESULTS (2013)

Total Return Rate: 75%¹



MONEY MATERIAL FLOW



¹ Estimate is from a 2012–2013 study commissioned by the State, as the redemption rate has not been measured and reported on annually. All retailers who sell beverages are required to take back the empty beverages they sell plus some redemption sites. There are currently over 2,300 return locations, including 25 redemption centers (276 RVMs), 30 BottleDrop Express sites, and 2,254 retail drop off sites (360 RVMs).



CANADA

36.3 million have access to DRS

<i>Province</i>	<i>Population 2019 (million)</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
Alberta	4.4	1972	1972
British Columbia	5.1	1970	1970
Newfoundland & Labrador	0.5	1996	1997
New Brunswick	0.8	1991	1992
Northwest Territories	0.04	2003	2005
Nova Scotia	0.9	1995	1996
Ontario	14.7	2006	2007
Prince Edward Island	0.1	1988	2008
Quebec	8.5	1972	1984
Saskatchewan	1.2	1978	1988
Yukon	0.04	1991	1992

ALBERTA

Population: 4.4 m

Website: www.abcrc.com



LEGISLATIVE FRAMEWORK

Mandate:	Beverage Container Recycling Regulation
Enacted:	1972
Implemented:	1972
Last updated:	2008
Authority:	Beverage Container Management Board (BCMB)
Targets:	No official target, however the BCMB's 2019–2021 Business Plan includes an overall return rate target of 85.7% for 2019, 86.1% for 2020, and 86.3% for 2021. The BCMB has also set targets by container type (e.g. 91.0% for cans and glass (includes refillable), 82.5% for plastics, and 72.0% for polycoats for 2021).

PROGRAM SCOPE

Material:	Plastic (PET, HDPE), metal (aluminum, bi-metal), one-way glass, gable top, Tetra Pak, bag-in-a-box, pouches
Beverage type:	All sealed alcohol and non-alcohol beverages including milk (first jurisdiction in North America to include milk)
Excluded:	None

DEPOSITS AND FEES

Deposit initiator:	Producer/Distributor/Importer
Deposit value:	Containers ≤ 1 L (0.26 gal): CAD\$ 0.10 (USD\$ 0.07) Containers > 1 L (0.26 gal): CAD\$ 0.25 (USD\$ 0.18)
Unredeemed deposits:	Alberta Beverage Container Recycling Corporation (ABCRC)
Handling fees (2020):	CAD\$ 0.03640 (USD\$ 0.027) to CAD\$ 1.26189 (USD\$ 0.94)
Container recycling fees (2020):	CAD\$ 0.00 to CAD\$ 0.25 (USD\$ 0.19)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Alberta Beverage Container Recycling Corporation (ABCRC)

System finance:

Material revenues, unredeemed deposits, container recycling fees

REDEMPTION SYSTEM

Return to Depot:

Manual collection. There are currently 221 province-wide privately owned & operated registered bottle depots.

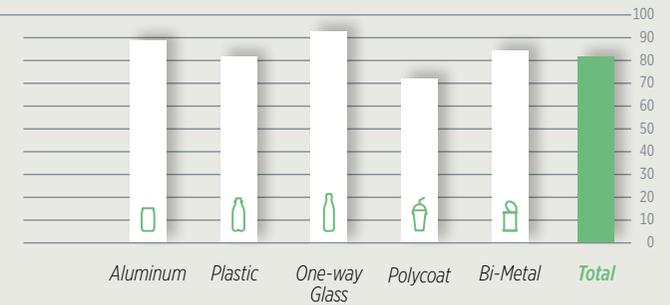
Material owner:

ABCRC

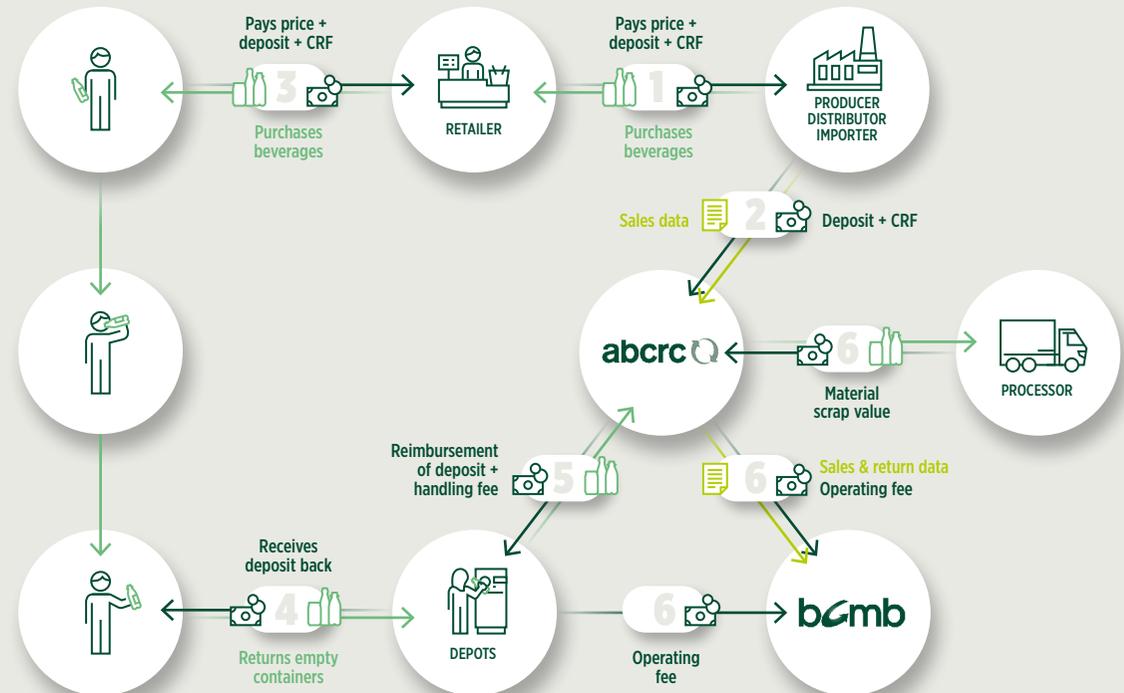
SYSTEM RESULTS (2019)

Aluminum	89.1%
Plastic	81.6%
One-way Glass	92.6%
Polycoat	71.1%
Bi-Metal	84.1%

Total Return Rate: 84.9%



MONEY MATERIAL FLOW



BRITISH COLUMBIA

Population: 5.1 m

Website: www.return-it.ca/beverage/products/



LEGISLATIVE FRAMEWORK

- Mandate:** Beverage Container Stewardship Program (Litter Act), Recycling Regulation
- Enacted:** 1970
- Implemented:** 1970
- Last updated:** 2019 (deposit increase)
- Authority:** Ministry of Environment
- Targets:** There is a legislated 75% minimum collection target for each sub-category of beverage containers listed in Schedule 1 of the Recycling Regulation. Encorp has also set its own (draft) recovery targets which include a 77% overall recovery rate to be achieved by 2022 (81.5% for aluminum; 88.5% for glass; 72.3% for plastic; 59.4% for polycoat; 60% for 'other')

PROGRAM SCOPE

- Material:** Plastic, metal (aluminum, bi-metal), one-way glass, gable top, Tetra Pak, pouch, bag-in-a-box
- Beverage type¹:** All sealed, ready-to-drink beverages including non-alcohol beverages, wine, spirits, and beer ≤ 1 L (0.26 gal)
- Excluded:** Milk and milk substitute, rice milk, soya milk, flavoured milk, infant formulas, meal replacements, dietary supplements

¹Note: Effective February 1, 2022, the system will expand to include beverage containers for milk, milk substitutes, rice milk, soya milk, flavoured milk, infant formulas, meal replacements and dietary supplements.

DEPOSITS AND FEES

- Deposit initiator:** Producer/Distributor/Importer
- Deposit value²:**
- | | |
|---------------------------------|---|
| Non-alcohol ≤ 1 L (0.26 gal): | CAD\$ 0.10 (USD\$ 0.07)
(up from CAD\$ 0.05 (USD\$ 0.04) as of November 1, 2019) |
| Non-alcohol > 1 L (0.26 gal): | CAD\$0.20 (USD\$ 0.15) |
| Wine & spirit ≤ 1 L (0.26 gal): | CAD\$ 0.10 (USD\$ 0.07) |
| Wine & spirit > 1 L (0.26 gal): | CAD\$ 0.20 (USD\$ 0.15) |
| Beer bottles ≤ 1 L (0.26 gal): | CAD\$ 0.10 (USD\$ 0.07) |
- Unredeemed deposits:** Encorp Pacific (Canada) and Brewers Distributors Limited (BDL)

Handling fees:

Confidential - Bottle depots independently negotiate HFs directly with the beer industry. HFs fluctuate depending on the cost to collect and process each type of container.

Container recycling fees (2020):

CAD\$ 0.00 to CAD\$ 0.17 (USD\$ 0.13) (calculated on an annual basis and based on net cost of collection and recycling of specific containers)

²Note: In June 2020, the B.C. government amended its Recycling Regulation. As part of this amendment, the previous section obligating a deposit of CAD \$ 0.20 on larger containers (> 1 L) was struck, allowing Encorp Pacific to harmonize the deposits on all beverage containers. In response, on July 6, 2020, Encorp Pacific announced that starting October 1, 2020, it will implement a CAD \$ 0.10 unified deposit for all beverage containers, regardless of size.

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Encorp Pacific (Canada) and BDL

Encorp Pacific represents brand owners of non-alcohol beverages, wine, spirits, some ciders, and coolers, as well as some import beer manufacturers. BDL represents brand owners of domestic coolers, beers, and ciders, and it collects the containers of both these domestic distributors and of outside distributors who import.

System finance:

Material revenues, unredeemed deposits, container recycling fees

REDEMPTION SYSTEM

Return-to-Retail/Return-to-Depot:

Total of over 1,315 return locations

Encorp Pacific (Non-alcohol, wine, spirits, cider, and imported beer):

170 independent depots and hundreds of retail outlets

Brewers Distributor Ltd. (domestic beer, coolers and cider):

Provides for retail returns at a total of 1,145 locations including 73 BDL authorized depots, 649 licensee retail stores, 200 government liquor stores, and 223 rural agency locations.

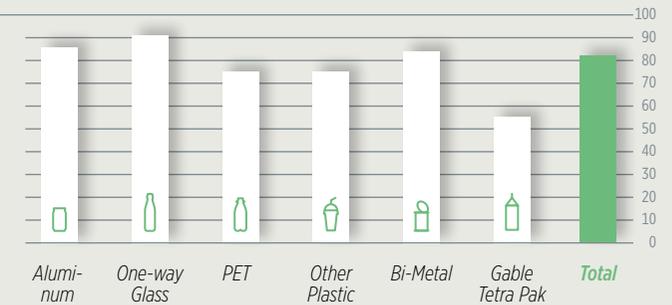
Material owner:

Encorp Pacific and BDL

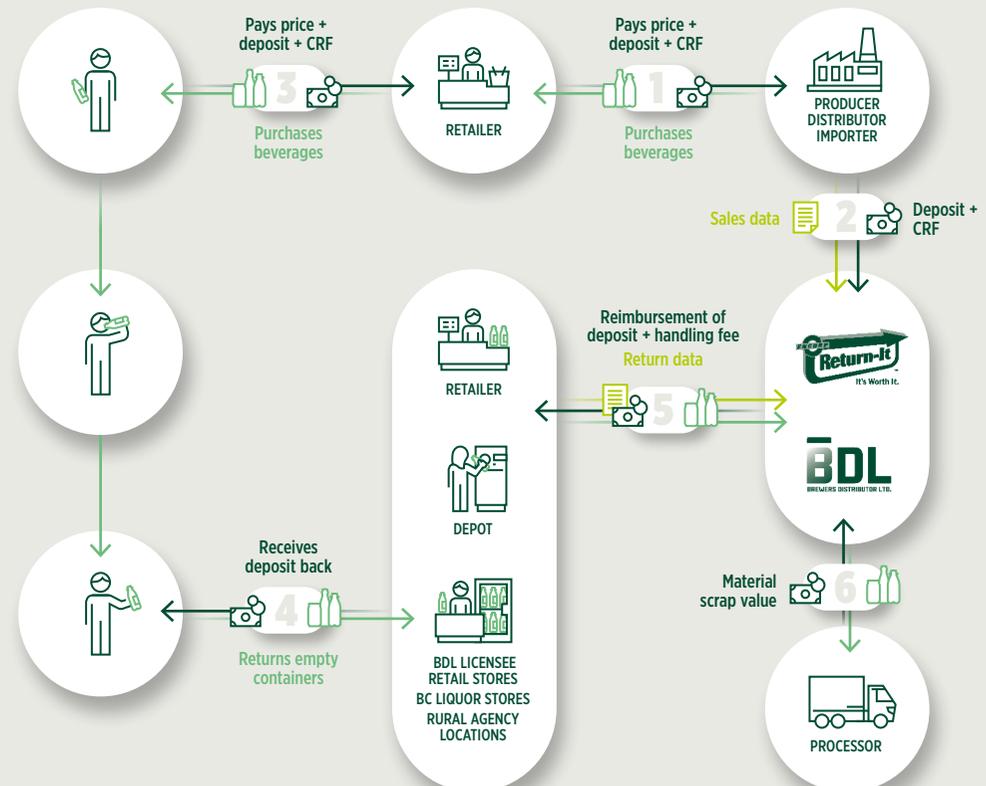
SYSTEM RESULTS (2019)

Aluminum	86.3%
One-way Glass	91.6%
PET	74.6%
Other Plastics	74.6%
Bi-Metal	84.0%
Gable/Tetra	56.2%

Total Return Rate: 82.2%



MONEY MATERIAL FLOW



NEWFOUNDLAND & LABRADOR

Population: 0.5 m

Website: www.mmsb.nl.ca/recyclingprograms/beverage-containers/



LEGISLATIVE FRAMEWORK

Mandate: Waste Management Regulations, made under the Environmental Protection Act

Enacted: 1996

Implemented: 1997

Last updated: 2003

Authority: Ministry of Environment

Targets: None

PROGRAM SCOPE

Material: Plastics, metal (aluminum and other), one-way glass, gable top, Tetra Pak, drink pouches, bag in a box

Beverage type:
Containers ≤ 5 L (1.32 gal): All ready-to-drink beverages (non-alcohol beverages, wine, spirits, non-refillable beer). Only milk products that are labelled as “fortified plant-based beverages” and “not sources of protein” are covered by the program.

Excluded: Milk and milk substitutes, infant formula, refillable bottles (including domestic beer bottles), concentrated liquids, medicinal/nutritional supplements)

DEPOSITS (HALF BACK) AND FEES

Deposit initiator: Producer/Distributor/Importer

Deposit/refund value:

Non-alcohol:	CAD\$ 0.08 / \$ 0.05 ¹ (USD\$ 0.06 / \$ 0.04)
Wine and spirits (any size):	CAD\$ 0.20 / \$ 0.10 ¹ (USD\$ 0.15 / \$ 0.07)
Beer cans and imported bottles ≤ 1 L (0.26 gal):	CAD\$ 0.08 / \$ 0.05 ¹ (USD\$ 0.06 / \$ 0.04)

Unredeemed deposits: Multi-Materials Stewardship Board (MMSB)

¹Part of the revenue generated from the non-refunded portion of the deposit (CAD\$ 0.03 (USD\$ 0.02) for non-alcohol containers, beer cans and imported bottles and CAD\$ 0.10 (USD\$ 0.07) for alcohol containers) is used to pay for the cost of the recycling program, including administration, handling, transportation, and processing costs. Money from unredeemed beverage container deposits, as well as revenue generated from the sale of material, also goes towards paying for the program.

Handling fees (2020): CAD\$ 0.0435 (USD\$ 0.032)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

MMSB

The MMSB is a crown corporation established pursuant to the Environmental Protection Act and accompanying Waste Management Regulations. This board manages the Used Beverage Container Recycling Program and is mandated to support and promote the protection, enhancement, and wise use of the environment through waste management programs. By law, beverage distributors and retailers are obligated to register with and remit deposits charged on the sale of all beverage containers to MMSB. Green Depots must also register with MMSB.

System finance:

Material revenues, unredeemed deposits, half-back revenues (goes into Waste Management Trust Fund)

REDEMPTION SYSTEM

Return to Depot:

56 Green Depot locations

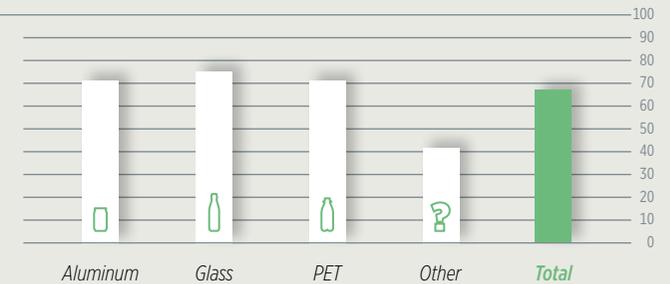
Material owner:

MMSB

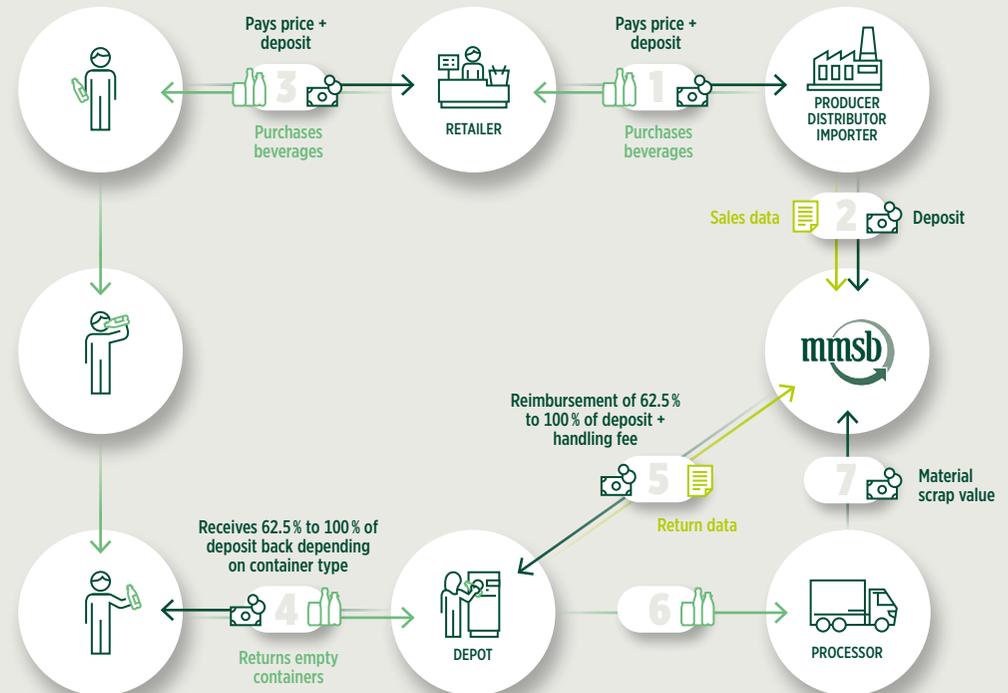
SYSTEM RESULTS (2019-20)

Aluminum	70.8%
Glass	76.7%
PET	71.0%
Other	40.5%

Total Return Rate: 68.3%



MONEY MATERIAL FLOW



NEW BRUNSWICK

Population: 0.8 m

Website: www2.gnb.ca/content/gnb/en/services/services_renderer.3975.Beverage_Container_Program.html



LEGISLATIVE FRAMEWORK

- Mandate:** General Regulation – Beverage Containers, made under the Beverage Container Act
- Enacted:** 1991
- Implemented:** 1992
- Authority:** Department of Environment
- Targets:** No legislated targets, however the Department of Environment has established an unofficial target recovery rate of 80% by year five (1997) of the program

PROGRAM SCOPE

- Material:** Plastic, metal (aluminum and other), one-way glass, gable top, Tetra Pak
- Beverage type:**
Containers ≤ 5 L (1.32 gal): Water, flavoured waters, fruit juices, vegetable juices, soft drinks, beverages with dairy (e.g. milk shakes, coffee drinks), unfortified plant-based beverages (e.g. almond, rice), fortified plant-based beverages not a source of protein, sports drinks, beer, wine, spirits, low-alcohol drinks
- Excluded:** Milk, fortified plant-based beverages considered a source of protein, meal replacements, formulated liquid diets, infant formula, powdered or frozen juices, concentrates, fruit syrups

DEPOSITS (HALF BACK) AND FEES

- Deposit initiator:** Producer/Distributor/Importer
- Deposit/refund value:**
- | | |
|------------------------------|--|
| Non-alcohol: | CAD\$ 0.10 / CAD\$ 0.05 ¹
(USD\$ 0.07 / \$ 0.04) |
| Alcohol ≤ 500 ml (0.13 gal): | CAD\$ 0.10 / CAD\$ 0.05 ¹
(USD\$ 0.07 / \$ 0.04) |
| Alcohol > 500 ml (0.13 gal): | CAD\$ 0.20 / CAD\$ 0.10 ¹
(USD\$ 0.15 / \$ 0.07) |
- Unredeemed deposits:** Encorp Atlantic and New Brunswick Liquor (Alcool NB Liquor)

¹Under New Brunswick's half-back system, consumers receive only half of their deposit back when they return non-refillable containers. Fifty-percent of this "half-back" revenue (2.5- or 5-cents depending on container size), plus the revenue generated from unredeemed deposits and from the sale of material, is used to pay for program costs. The remaining 50% of the "half-back" revenue goes into the province's Environmental Trust Fund where it is used for environmental conservation, education, protection, and other provincial environmental initiatives aimed at reducing waste.

- Handling fees (2018):** CAD\$ 0.0406 (USD\$ 0.03)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Encorp Atlantic (Non-alcohol), Rayan Industries (Alcohol)

Encorp Atlantic manages the collection of non-alcohol containers on behalf of brand owners. It collects the containers from depots, ships materials for processing, and markets these materials. Encorp is also responsible for collecting deposits from the distributors, and reimbursing the redemption centers for the refunds paid out.

Alcool NB Liquor is responsible for collecting alcohol containers and it contracts the transportation and processing of these containers to Neighbourhood Recycling (Rayan Investments Ltd.).

System finance:

Material revenues, unredeemed deposits, 50% of half-back deposit

REDEMPTION SYSTEM

Return-to-Depot

78 licenced depots (individually owned and operated)

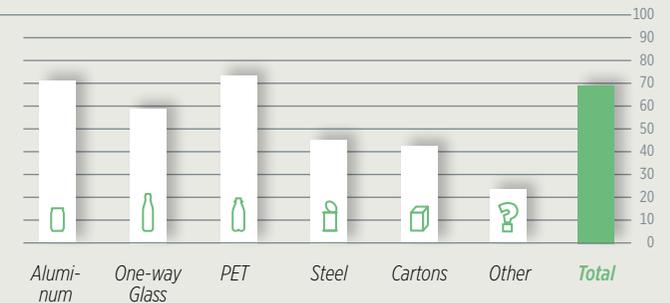
Material owner:

Encorp Atlantic and Alcool NB Liquor

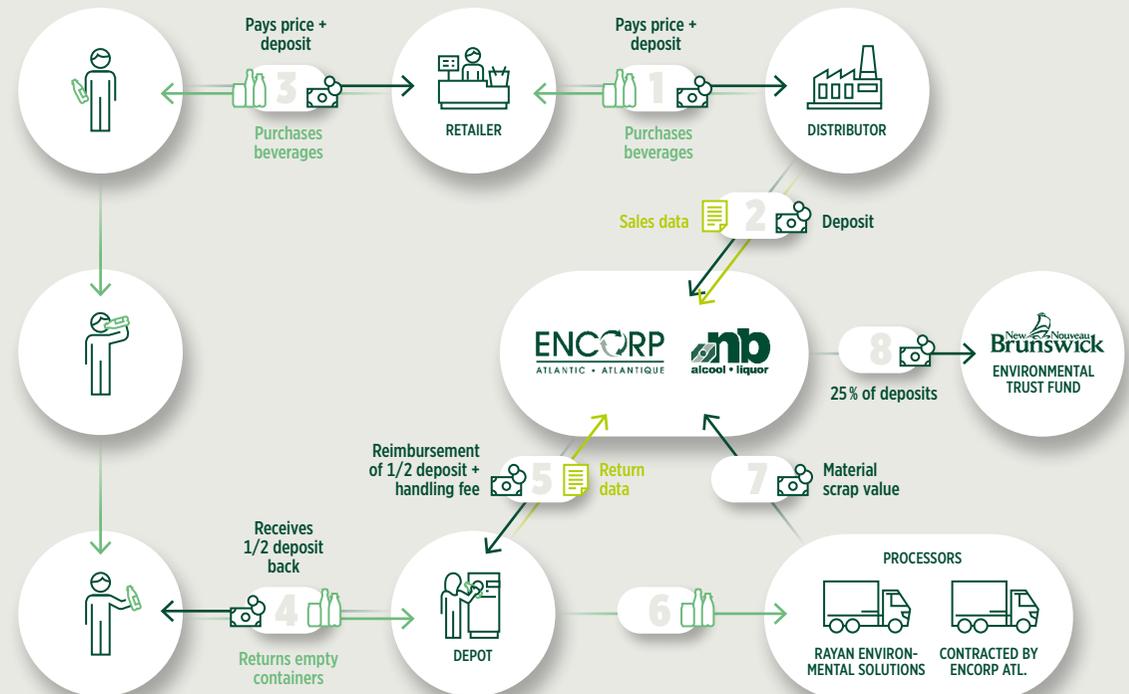
SYSTEM RESULTS (2018-19)

Aluminum	70.8%
One-way Glass	59.4%
PET	73.4%
Steel	46.0%
Cartons	42.0%
Other	22.3%

Total Return Rate: 69.5%



MONEY MATERIAL FLOW



NORTHWEST TERRITORIES

Population: 0.04 m

Website: <https://www.enr.gov.nt.ca/en/services/beverage-container-program>



LEGISLATIVE FRAMEWORK

Mandate:	Beverage Container Regulations, made under the Waste Reduction and Recovery Act
Enacted:	2003
Implemented:	2005
Last updated:	2010
Authority:	Northwest Territories Department of Environment and Natural Resources (ENR)
Targets:	None

PROGRAM SCOPE

Material:	Plastic, metal (aluminum, bimetal), one-way glass, Tetra Pak, drink pouch, bag-in-a box, carton
Beverage type:	All ready-to-serve drinks including non-alcohol beverages (including liquid milk products), wine, spirits, and non-refillable beer
Excluded:	Infant formula, liquid milk products < 30 ml (0.007 gal), powdered milk, open containers filled with a drink when sold

DEPOSITS AND FEES

Deposit initiator:	Producer/Distributor/Importer
Deposit value:	CAD\$ 0.10 to CAD\$ 0.25 (USD\$ 0.07 to USD\$ 0.18)
Unredeemed deposits:	Department of Environment and Natural Resources

Container recycling fees:

CAD\$ 0.05 to CAD\$ 0.13
(USD\$ 0.04 to \$ 0.10)

Handling fees (2018):

CAD\$ 0.022 to CAD\$ 0.045
(USD\$ 0.016 to USD\$ 0.033)

Processing fees (2018):

CAD\$ 0.02 to CAD\$ 0.045
(USD\$ 0.015 to USD\$ 0.033)

At the point of purchase, the customer is charged a refundable deposit and a non-refundable container recycling fee. Container recycling fees vary by type of container and container size, and are based on the estimated costs to collect, process, and transport beverage containers and to administer the program. These fees, along with unredeemed deposits and material revenues, are used to pay for the program.

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Department of Environment and Natural Resources

The program is overseen by the Northwest Territories Department of Environment and Natural Resources (ENR). The ENR administers the program by enforcing the act and the regulations, coordinating and supporting local depots and regional processing centers, coordinating public information, improving the program, and undertaking audits or checks on distributors, importers, stores, depots, and processing centers.

System finance:

Material revenues, unredeemed deposits, container recycling fees

REDEMPTION SYSTEM

Return to Depot:

25 locally operated depots and 5 temporary satellite depots

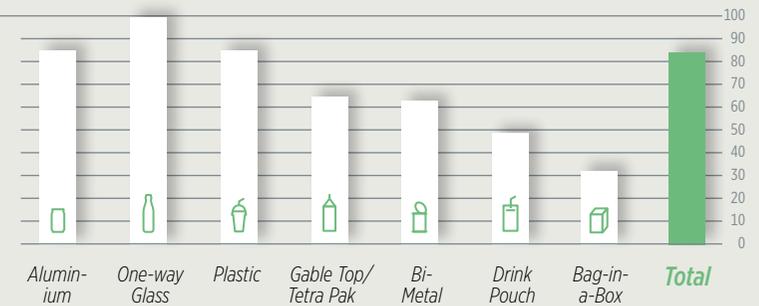
Material owner:

Processors

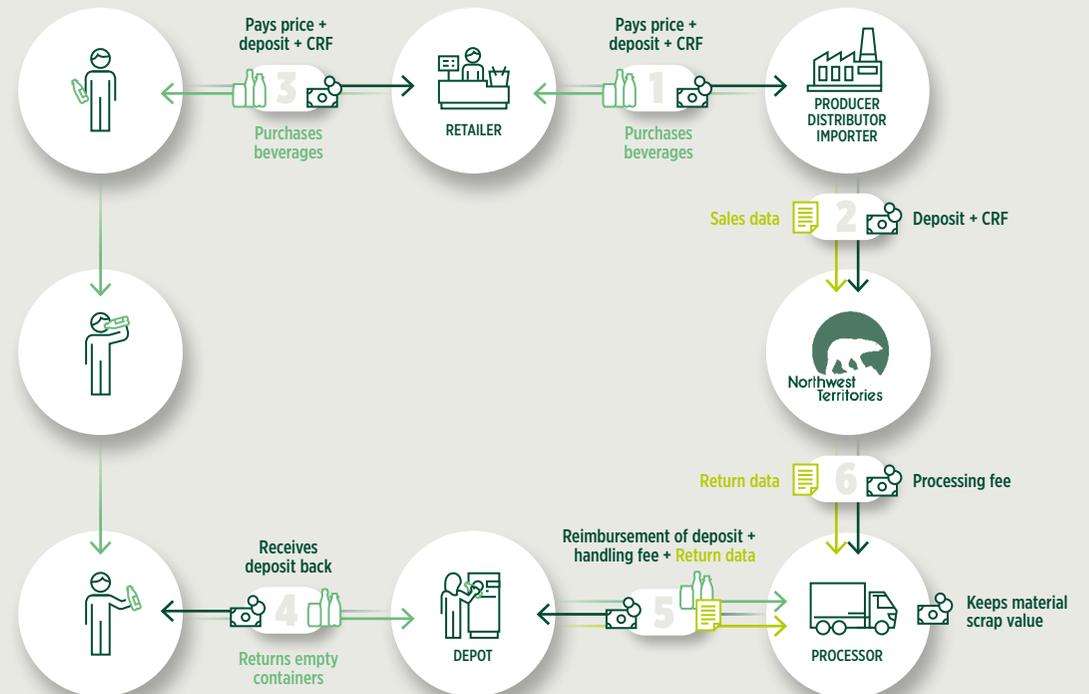
SYSTEM RESULTS (2018-19)

Aluminum	86.1%
One-way Glass	100.0% ¹
Plastic	84.6%
Gable Top/Tetra Pak	64.6%
Bi-Metal	62.3%
Drink Pouch	48.6%
Bag-in-a-Box	31.7%

Total Return Rate: 83.9%¹



MONEY MATERIAL FLOW



¹ Note: Although the Government of the Northwest Territories reports a return rate of 108.5% for glass, we have lowered this to 100% because that is the highest possible rate. This, in turn, brings the NWT's reported overall return rate down from 85.4% to 83.9%.

NOVA SCOTIA

Population: 0.9 m

Website: <http://divertns.ca/recycling/what-goes-where/beverage-container-recycling>



LEGISLATIVE FRAMEWORK

Mandate: Solid Waste – Resource Management Regulations
Enacted: 1994
Implemented: 1996
Last updated: 2007
Authority: Department of Environment
Targets: None

PROGRAM SCOPE

Material: Plastic, metal (aluminum, bimal), one-way glass, gable top, Tetra Pak

Beverage type:
Containers < 5 L (1.32 gal): All ready-to-serve drinks including non-alcohol beverages, wine, spirits, and one-way beer

Excluded: Fluid milk and milk products, soya milk, rice beverages, certain meal replacements, formulated liquid diets, foods for low energy diets, thickened juices, baby formulas, concentrates, non-alcohol beverages ≥ 5 L (1.32 gal)

DEPOSITS (HALF BACK) AND FEES

Deposit initiator: Producer/Distributor/Importer

Deposit/refund value:

Non-alcohol < 5 L (1.32 gal):	CAD\$ 0.10 / CAD\$ 0.05 (USD\$ 0.07 / \$ 0.04)
Wine and spirits ≤ 500 ml (0.13 gal):	CAD\$ 0.10 / CAD\$ 0.05 (USD\$ 0.07 / \$ 0.04)
Wine and spirits > 500 ml (0.13 gal):	CAD\$ 0.20 / CAD\$ 0.10 (USD\$ 0.15 / \$ 0.07)

Unredeemed deposits: Resource Recovery Fund Board (RRFB) Inc.

Handling fees (2018): CAD\$ 0.0427 (USD\$ 0.032)

Processing fees: Not available

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

RRFB Inc. (Operating as Divert NS)

RRFB Inc. (operating as Divert NS) was incorporated in 1996 to administer major components of the Nova Scotia Solid Waste-Resource Management Strategy (1995). Divert NS is tasked with five mandates, one of which is to develop and operate a DRS for beverage containers. Distributors of designated beverage containers are required to register with Divert NS in order to sell or distribute these products legally within the province. They must also report sales data and remit applicable deposits directly to Divert NS on a monthly basis.

Divert NS is not responsible for administering the domestic beer bottle deposit program. Deposits are provided by the Brewers Association. Under their program, the deposit for refillable domestic beer bottles is fully refundable (\$ 1.20/dozen).

System finance:

Material revenues, half-back, unredeemed deposits

REDEMPTION SYSTEM

Return to Depot:

80 Enviro Depot locations

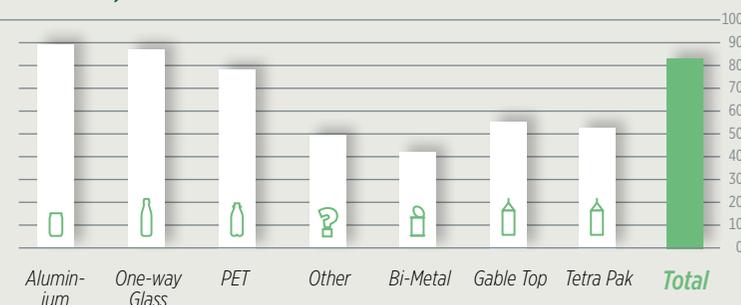
Material owner:

RRFB

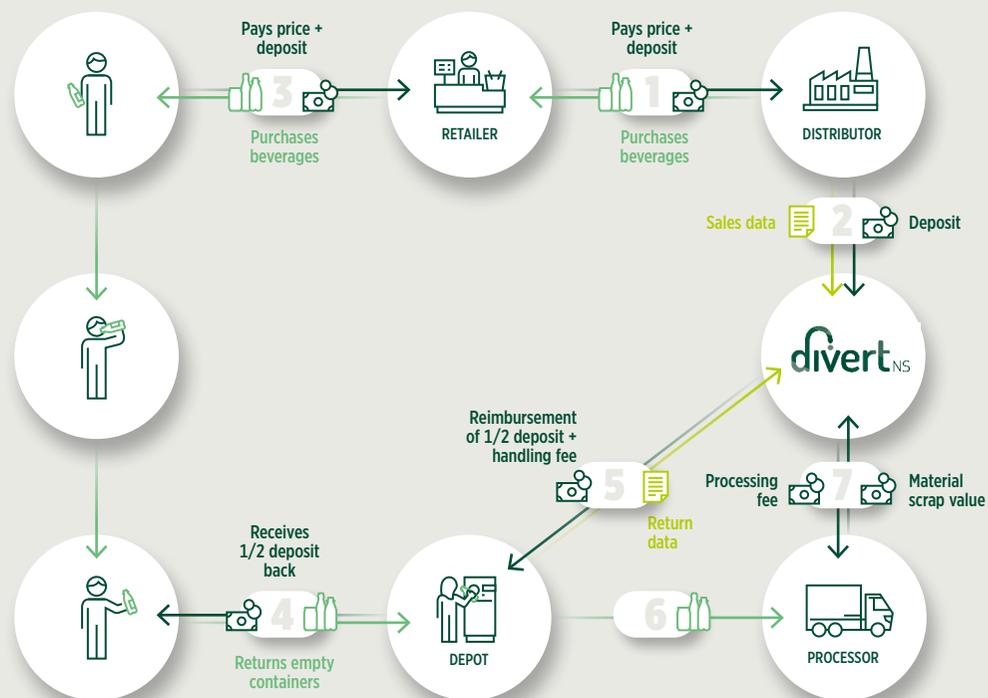
SYSTEM RESULTS (2018-19)

Aluminum	89.3%
One-way Glass	86.9%
PET	78.8%
Other	49.4%
Bi-Metal	40.7%
Gable Top	56.7%
Tetra Pak	52.2%

Total Return Rate: 82.9%



MONEY MATERIAL FLOW



ONTARIO

Population: 14.7 m

Website: www.bagitback.ca



LEGISLATIVE FRAMEWORK

Mandate: Ontario Regulation 13/07 (Ontario Deposit Return Program), made under the Liquor Control Act

Enacted: 2006

Implemented: 2007

Authority: Liquor Control Board Ontario (LCBO)

Targets: Ontario's Strategy for a Waste-Free Ontario: Building the Circular Economy indicates that the province will establish requirements that producers must meet, including reuse and recycling targets. What these targets will be and how they will be set (e.g., material-specific, specific to the DRS, or specific to the residential curbside recycling program) will be set out in future regulations.

PROGRAM SCOPE

Material: Plastic, metal (aluminum, bimetal), one-way glass, gable top, Tetra Pak, bag-in-a-box

Beverage type: Wine, spirits, beer

Excluded: Non-alcohol beverages, containers \leq 100 ml (0.03 gal), containers purchased at duty-free stores

DEPOSITS AND FEES

Deposit initiator: Producer/Distributor/Importer

Deposit value:

Wine and spirits \leq 630 ml (0.17 gal):	CAD\$ 0.10 (USD\$ 0.07)
Wine and spirits $>$ 630 ml (0.17 gal):	CAD\$ 0.20 (USD\$ 0.15)
Beer cans and bottles \leq 1 L (0.26 gal):	CAD\$ 0.10 (USD\$ 0.07)
Beer cans and bottles $>$ 1 L (0.26 gal):	CAD\$ 0.20 (USD\$ 0.15)

Unredeemed deposits: Beer distributor/bottlers and the Liquor Control Board of Ontario (LCBO)

Handling fees: Proprietary (paid by brewers to The Beer Store)

The LCBO is obligated to reimburse The Beer Store (TBS) for all deposit refunds that TBS pays out to consumers who return wine, spirit, and imported beer containers that are not sold at TBS; it is also required to pay TBS a per unit service fee for these containers. A contract with TBS, in effect since September 2015, sets the fee at 10.81-cents for 2018.

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

TBS

System finance:

Material revenues, unredeemed deposits, per unit service fee from LCBO for wine spirits and any imported beer or cider sold exclusively at LCBO stores.

REDEMPTION SYSTEM

Return-to-Retail:

1,165 redemption locations, including 435 TBS locations, 320 on-site brewery stores (beer containers only), 327 retail partner stores and LCBO northern agency stores, 3 LCBO stores, and 80 TBS-contracted empty bottle dealers

Material owner:

TBS

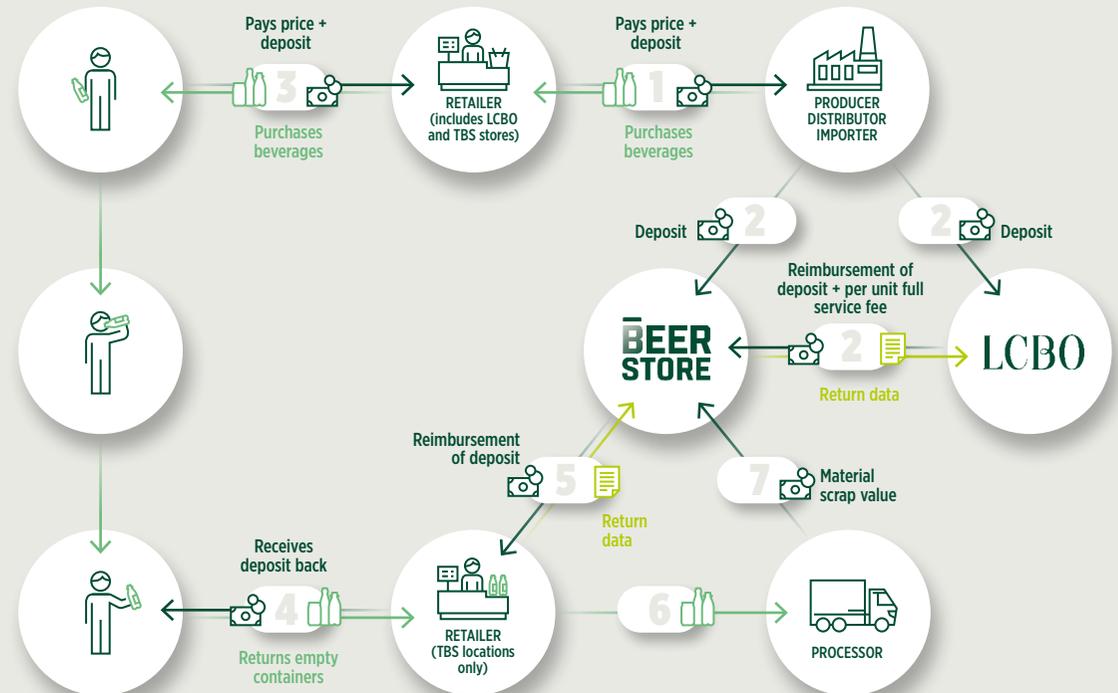
SYSTEM RESULTS (2019)

Aluminum	78.2%
One-way Glass	84.2%
PET	53.4%
Tetra/Bag-in-a-Box	27.3%

Total Return Rate: 78.9%



MONEY MATERIAL FLOW



PRINCE EDWARD ISLAND

Population: 0.1 m

Website: <https://www.princeedwardisland.ca/en/information/communities-land-and-environment/beverage-container-program>



LEGISLATIVE FRAMEWORK

Mandate:	General Regulations and the Recyclable Beverage Container Deposit Regulations made under the Beverage Container Act
Enacted:	2008
Implemented:	2008
Authority:	PEI Department of Environment, Water, and Climate Change
Targets:	None

PROGRAM SCOPE

Material:	Plastic, metal (aluminum, bimetal), one-way glass, gable top, Tetra Pak, bag-in-box, drink pouches
Beverage type:	
Containers ≤ 5 L (1.32 gal):	All ready-to-drink, sealed beverages including non-alcohol beverages, wine, spirits, and one-way beer
Excluded:	Dairy products, milk substitutes, nutritional supplements

DEPOSITS (HALF-BACK) AND FEES

Deposit initiator:	Producer/Distributor/Importer
Deposit/refund value:	
Non-alcohol:	CAD\$ 0.10 / CAD\$ 0.05 (USD\$ 0.07 / USD\$ 0.03)
Wine and spirits ≤ 500 ml (0.1321 gal):	CAD\$ 0.10 / CAD\$ 0.05 (USD\$ 0.07 / USD\$ 0.03)
Wine and spirits 501 ml to 5L (0.13 gal to 1.32 gal):	CAD\$ 0.20 / CAD\$ 0.10 (USD\$ 0.15 / USD\$ 0.07)
Beer cans and bottles ≤ 500 ml (0.1321 gal):	CAD\$ 0.10 / CAD\$ 0.05 (USD\$ 0.07 / USD\$ 0.03)
Beer cans and bottles ≥ 501ml (0.1324 gal):	CAD\$ 0.20 / CAD\$ 0.10 (USD\$ 0.15 / USD\$ 0.07)

Unredeemed deposits:
Provincial government (provincial treasury)

Handling fees (2018):
CAD\$ 0.04211 (USD\$ 0.031)

Processing fees:
Not available (paid by provincial government to processors)

Prince Edward Island operates a half-back deposit system on all non-refillable beverage containers. Under this system, deposits are paid on all beverage containers. While deposits on refillable containers are 100% refundable, those on non-refillable containers are only half (50%) refundable.

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Department of Environment, Water and Climate Change

System finance:

Half-back, unredeemed deposits, material revenues

REDEMPTION SYSTEM

Return to Depot:

10 licensed depots

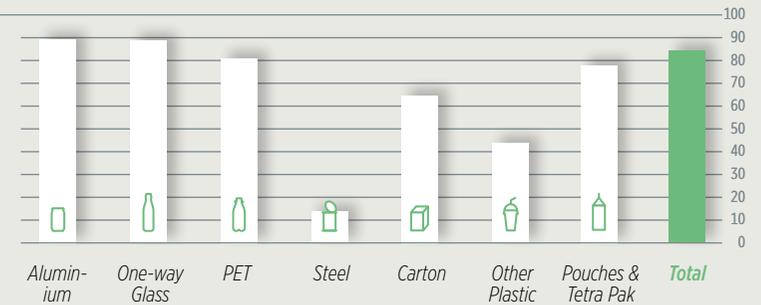
Material owner:

Processors

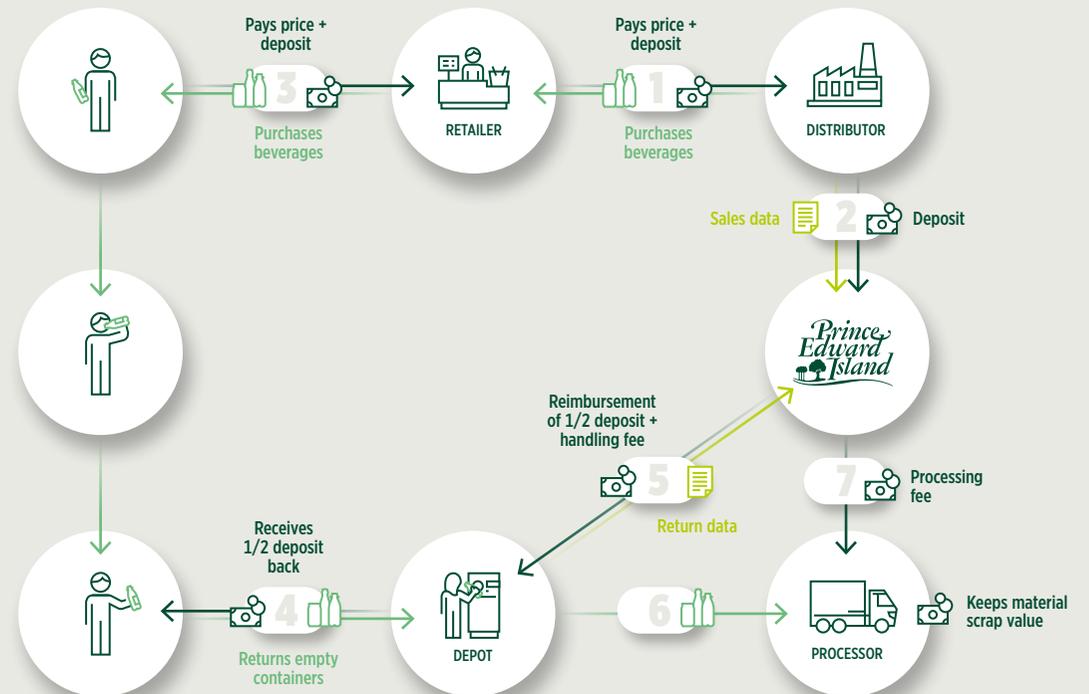
SYSTEM RESULTS (2019)

Aluminum	89.6%
One-way Glass	89.2%
PET	80.3%
Steel	13.3%
Carton	65.0%
Other Plastic	44.1%
Pouches & Tetra Pak	78.2%

Total Return Rate: 84.6%



MONEY MATERIAL FLOW



QUEBEC

Population: 8.5 m

Website: www.recyc-quebec.gouv.qc.ca/entreprises-organismes/mieux-gerer/consigne



LEGISLATIVE FRAMEWORK

Mandate: Environment Quality Act and the Agreement Relating to the Consignment, Recovery & Recycling of Non-Refillable (Soft Drink/Beer) Containers

Enacted: 1984

Implemented: 1984

Last updated: 2014

Authority: Recyc-Québec

Targets: 75% collection target for soft drinks and 75% collection target for beer. By 2025, 75% of containers must be recycled and reused, increasing to 90% by 2030.

PROGRAM SCOPE

Material:

Plastic, metal (aluminum, bimetal), one-way glass

Beverage type¹:

Beer and carbonated soft drinks (all beverages that contain water with essence of flavour)

Excluded:

Energy drinks, water, juice, wine, spirits, milk

¹ By Fall 2022, the system will expand to include all beverages in containers 100 ml (0.026 gal) to 2 L (0.53 gal) in size, including wine, spirits, iced tea, water, and vegetable drinks. Milk and juice cartons will be added by 2024.

DEPOSITS AND FEES

Deposit initiator:

Producer/Distributor/Importer

Deposit value²:

Soft drink containers and beer cans

≤ 450 ml (0.12 gal): CAD\$ 0.05 (USD\$ 0.04)

Beer cans > 450 ml (0.12 gal): CAD\$ 0.20 (USD\$ 0.15)

One-way glass ≤ 450 ml (0.12 gal): CAD\$ 0.10 (USD\$ 0.07)

Unredeemed deposits:

For unredeemed deposits on soft drink containers, BGE gives \$ 250K/year to Recyc-Québec to cover their operational costs. The rest stays with BGE. For one-way beer containers, Recyc-Québec keeps 33% and gives the rest (66%) back to the brewers association (L'association des brasseurs du Québec).

² By Fall 2022, wine will have a deposit of CAD\$ 0.25 (USD\$ 0.18) deposit and spirits will have a deposit of CAD\$ 0.10 (USD\$ 0.07).

Handling fees (2020):

Soft drink containers & beer cans: CAD\$ 0.02 (USD\$ 0.015)

One-way glass beer bottles: CAD\$ 0.01 (USD\$ 0.007)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Boissons Gazeuses Environnement (BGE) (non-alcohol) and Québec Brewers Association (QBA, l'association des Brasseurs du Québec) (beer)

In 1990, the Québec government established the Société Québécoise de récupération et de recyclage, giving the Société (Recyc-Québec) regulatory authority for the program. Recyc-Québec is responsible for the promotion and development of reduction, reuse, recovery, and recycling of containers and packaging in Québec. Its main responsibility is program oversight.

In 1999, BGE—a non-profit organization established by the Québec soft drink industry—took over Recyc-Québec's responsibility for collecting non-refillable soft drink containers. Brewers are responsible for running the system for beer bottles and cans.

System finance:

Material revenues, unredeemed deposits, producer fees

REDEMPTION SYSTEM

Return-to-Retailer:

Approx. 10,000 retail locations. By law, anyone that sells these containers must take them back. Collection system is 75% automated/25% manual.

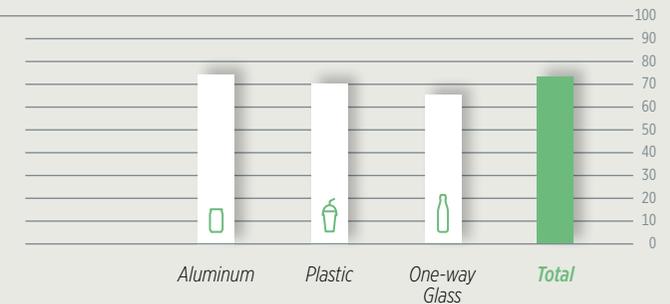
Material owner:

Producer/Distributor/Importer

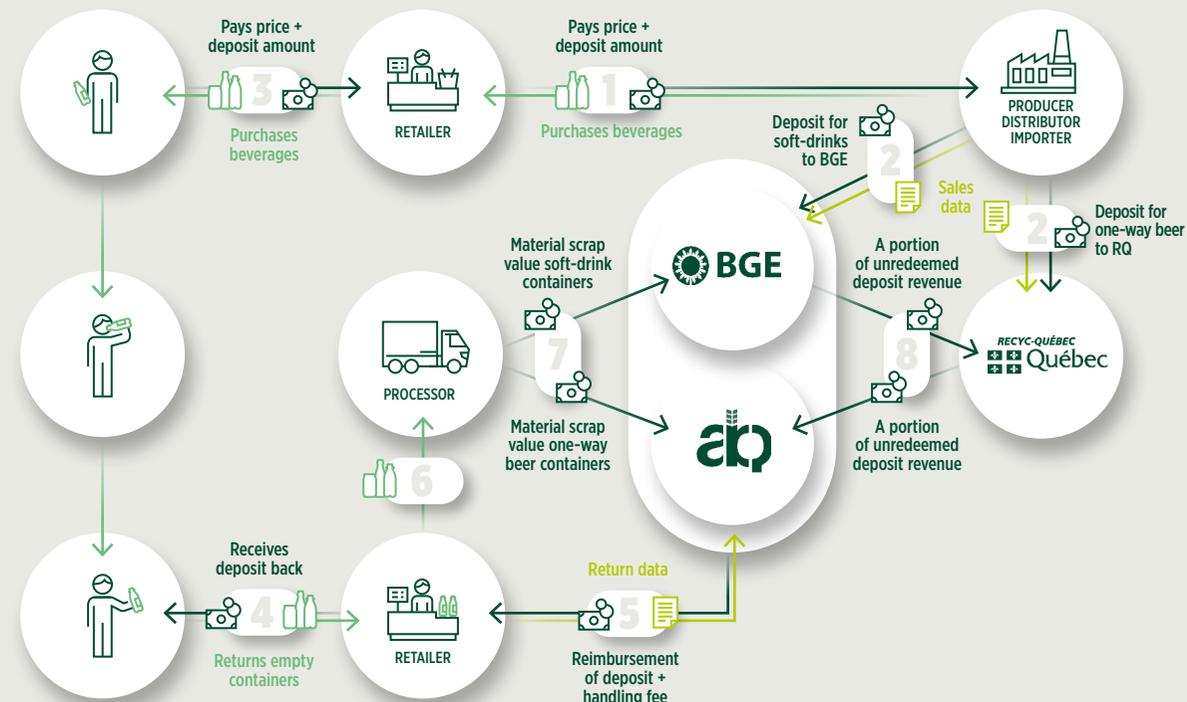
SYSTEM RESULTS (2019)

Aluminum	75.0%
Plastic	70.0%
One-way Glass	64.9%

Total Return Rate: 73.8%



MONEY MATERIAL FLOW



SASKATCHEWAN

Population: 1.2 m

Website: https://www.sarcan.ca/pages/beverage_containers.html



LEGISLATIVE FRAMEWORK

Mandate: Environmental Management and Protection Act
Enacted: 1978
Implemented: 1988
Last updated: 1999, 2017 (deposit increase and expansion to milk)
Authority: Ministry of Environment
Targets: None

PROGRAM SCOPE

Material:

Plastic, metal (aluminum/tin, bimetal), glass, gable top, Tetra Pak

Beverage type:

All ready-to-serve drinks including non-alcohol beverages, wine, spirits, and one-way beer

Excluded:

Foil pouches, bag-in-a-box containers (wine, water), refillable water jugs or industrial milk bladders (> 5 L), meal replacements, products labeled as fortified liquid diet, baby juices (i.e., Heinz), any product which requires one or more additives to transform it into a ready-to-serve drink (e.g. frozen juice concentrate)

DEPOSITS AND FEES

Deposit initiator:

Producer/Distributor/Importer

Deposit value:

Metal < 1 L (0.26 gal):	CAD\$ 0.10 (USD\$ 0.07)
Metal ≥ 1 L (0.26 gal):	CAD\$ 0.25 (USD\$ 0.18)
Glass ≤ 300 ml:	CAD\$ 0.10 (USD\$ 0.07)
Glass 301 ml to 999 ml:	CAD\$ 0.20 (USD\$ 0.15)
Glass ≥ 1 L (0.26 gal):	CAD\$ 0.40 (USD\$ 0.30)
Plastic < 1 L (0.26 gal):	CAD\$ 0.10 (USD\$ 0.07)
Plastic ≥ 1 L (0.26 gal)	CAD\$ 0.25 (USD\$ 0.18)
Drink boxes/gable top cartons < 1 L (0.26 gal):	CAD\$ 0.10 (USD\$ 0.07)
Drink boxes/gable top cartons ≥ 1 L (0.26 gal):	CAD\$ 0.25 (USD\$ 0.18)

Unredeemed deposits:

Provincial government

Handling fees:

None

Non-refundable Environmental Handling Charge:

Aluminum/tin cans:	CAD\$ 0.07,
Gable top cartons/drink boxes:	CAD\$ 0.05 (USD\$ 0.04)
Plastic:	CAD\$ 0.08 (USD\$ 0.06)
One-way glass:	CAD\$ 0.09 (USD\$ 0.07)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator:

SARCAN Recycling

The Saskatchewan Association of Rehabilitation Centers (SARC) has a recycling division known as SARCAN Recycling, which administers the program. SARCAN operates under contract to the Saskatchewan Ministry of Environment.

System finance:

Material revenues, unredeemed deposits, provincial grants, Environmental Handling Charges

REDEMPTION SYSTEM

Return to Depot:

72 SARCAN licensed depots

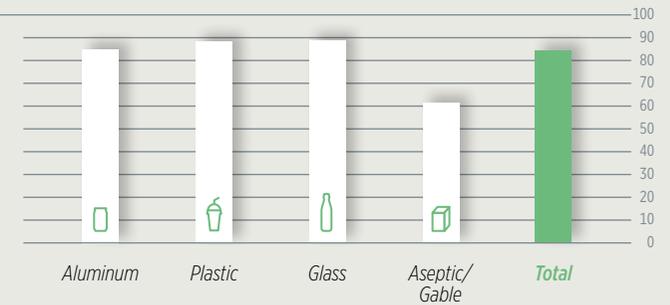
Material owner:

SARCAN

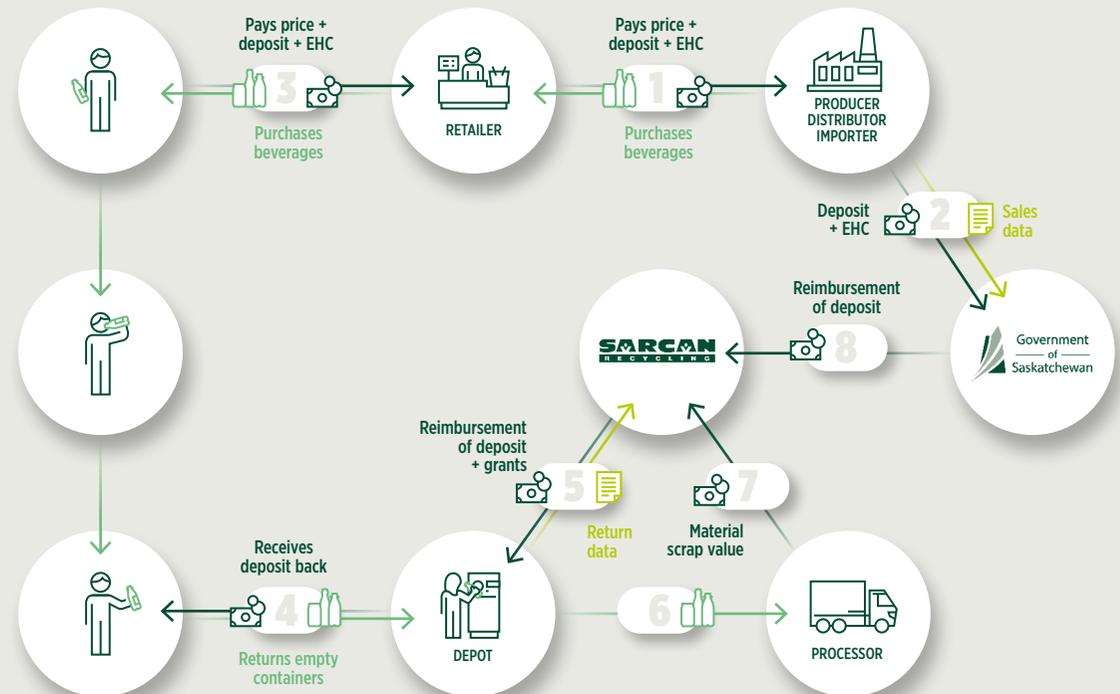
SYSTEM RESULTS (2019)

Aluminum	84.7%
Plastic	88.0%
Glass	88.8%
Aseptic/Gable	61.0%

Total Return Rate: 83.7%



MONEY MATERIAL FLOW



YUKON

Population: 0.04 m

Website: <https://yukon.ca/en/beverage-container-recycling-information>



LEGISLATIVE FRAMEWORK

Mandate: Beverage Container Regulation and Recycling Fund Regulation, made under the Environment Act

Enacted: 1991

Implemented: 1992

Last updated: 2009

Authority: Environment Yukon

Targets: None

PROGRAM SCOPE

Material:

Plastic, metal (aluminum, bimetal), one-way glass, gable top, Tetra Pak

Beverage type:

All ready-to-drink beverages including non-alcohol beverages, wine, spirits, one-way beer, milk and milk substitutes

Excluded:

Canned coconut milk, canned condensed or evaporated milk, canned whipping cream, powdered drink crystals, juice concentrate, liquid meal replacement, infant formula

DEPOSITS AND FEES

Deposit initiator:

Producer/Distributor/Importer

Deposit/refund value:

Containers < 750 ml (0.2 gal): CAD\$ 0.10 / CAD\$ 0.05
(USD\$ 0.07 / USD\$ 0.04)

Milk and milk substitutes
(Containers ≥ 30 ml (0.01 gal)): CAD\$ 0.10 / CAD\$ 0.05
(USD\$ 0.07 / USD\$ 0.04)

Containers ≥ 750 ml (0.2 gal): CAD\$ 0.35 / CAD\$ 0.25
(USD\$ 0.26 / USD\$ 0.18)

Unredeemed deposits:

Territorial government

Handling fees (2018):

CAD\$ 0.025 to CAD\$ 0.075
(USD\$ 0.018 to USD\$ 0.055)

Recycling fund fees:

CAD\$ 0.05 to CAD\$ 0.10 (USD\$ 0.04 to USD\$ 0.07)

Processing fees:

Not available

(Paid to processing facilities for each container received)

When purchasing beverages, the consumer pays a deposit, which includes a refundable portion and a non-refundable RFF. Consumers receive a refund when they return the empty containers to a registered recycling depot. The non-refundable (RFF) is collected by the retailer and goes into a recycling fund that is administered by the government. Unredeemed deposits also go into this fund.

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Territorial government (Department of Community Services)

System finance:

Recycling fund fees, unredeemed deposits, grants

REDEMPTION SYSTEM

Return to Depot:

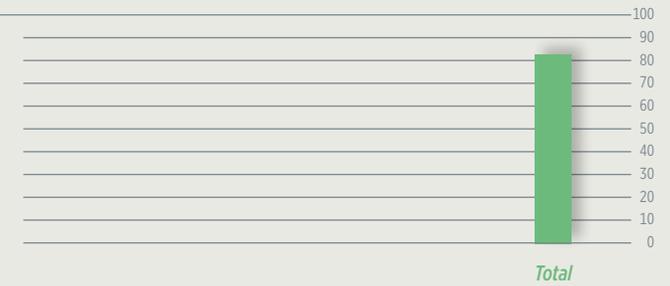
22 registered depots

Material owner:

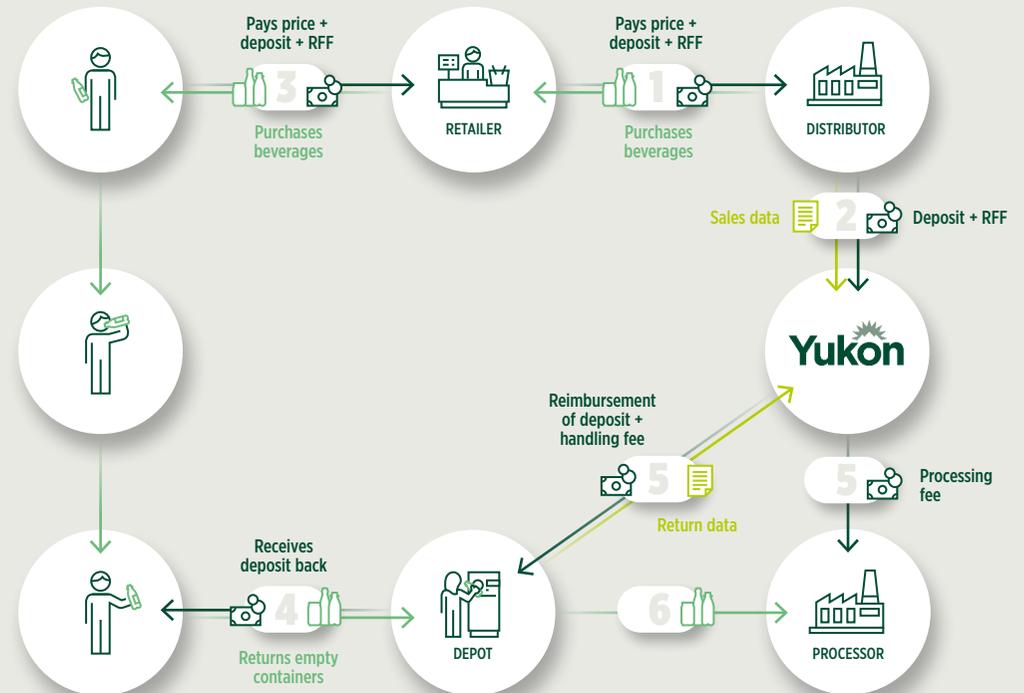
Processors

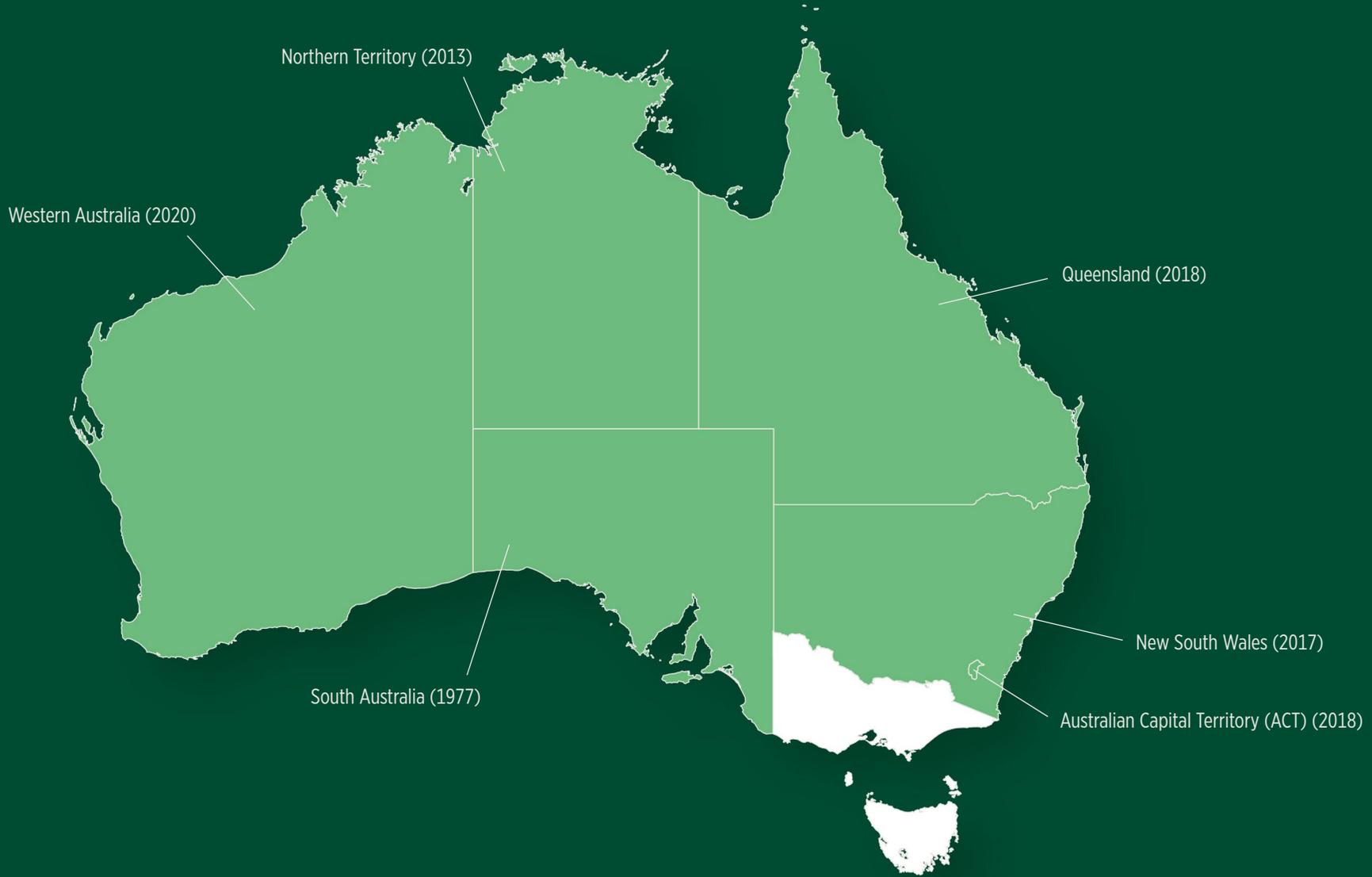
SYSTEM RESULTS (2016)

Total Return Rate: 82.3%



MONEY MATERIAL FLOW





AUSTRALIA

18.2 million have access to DRS

<i>State</i>	<i>Population 2019 (million)</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
Australian Capital Territory (ACT)	0.4	2017	2018
New South Wales	8.1	2016	2017
Northern Territory	0.2	2011	2012
Queensland	5.1	2017	2018
South Australia	1.8	1975	1977
Western Australia	2.6	2019	2020

AUSTRALIAN CAPITAL TERRITORY (ACT)

Population: 0.4 m

Website: www.actcds.com.au



LEGISLATIVE FRAMEWORK

Mandate: Waste Management and Resource Recovery Amendment Act and the Waste Management and Resource Recovery (Container Deposit Scheme) Amendment Regulation (No 1)

Enacted: 2017

Implemented: 2018

Authority: ACT Government
(Transport Canberra and City Services)

Targets: None

PROGRAM SCOPE

Material:

Metal (aluminum/steel), glass, plastic (HDPE, PET), liquid paperboard

Beverage type:

Containers 150 ml to 3 L (0.04 gal to 0.79 gal):

All beverages

Excluded:

Wine, spirits, cordial and plain milk (or milk substitute) containers, flavored milk containers of ≥ 1 L (0.26 gal), pure fruit or vegetable juice containers of ≥ 1 L (0.26 gal), glass containers for wine and spirits, casks for wine or water ≥ 1 L (0.26 gal), sachets for wine of ≥ 250 ml (0.07 gal), containers for cordials and concentrated fruit/vegetable juices registered health tonics

DEPOSITS AND FEES

Deposit initiator:

Producer/Distributor/Importer

Refund value:

AUD\$ 0.10 (€ 0.07, USD\$ 0.08)

Unredeemed deposits:

Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees (2020):

AUD\$ 0.08 – \$ 0.09

(estimate, as this is confidential)

Producer fees:

Producer costs per container for the first three months of operation, including the AUD\$ 0.10 deposit, based on an expected overall recovery of between 70–72%, are AUD\$ 0.0994, AUD\$ 0.10192 and AUD\$ 0.10455

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Exchange for Change is the system coordinator, responsible for financial management and ensuring that the scheme meets its statewide access and recovery targets. The network operator is Re.Turn It, which sets up and runs the collection points, including utilizing their existing MRF as a consolidation and processing center.

System finance:

Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return to Depot/Redemption Center:

21 drop-off points including 3 bulk depots, 9 express points at Vinnies, Salvos, and Anglicare stores, express points at Evatt and Farrer IGAs and ACT Basketball, and 6 express pods. Collection is mostly manual. Curbside redemption is also possible.

Material owner:

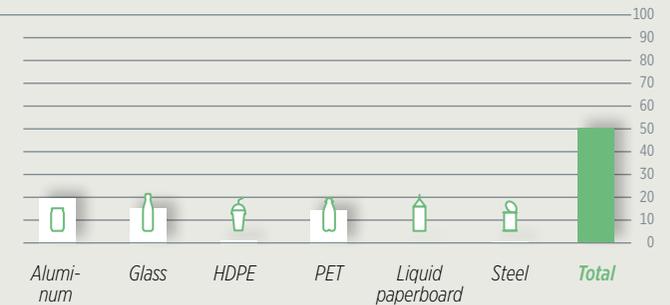
Re.Turn It (network operator)

¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price - this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to Exchange for Change effectively includes the value of the deposit + system costs (including handling fees) - material sales revenues.

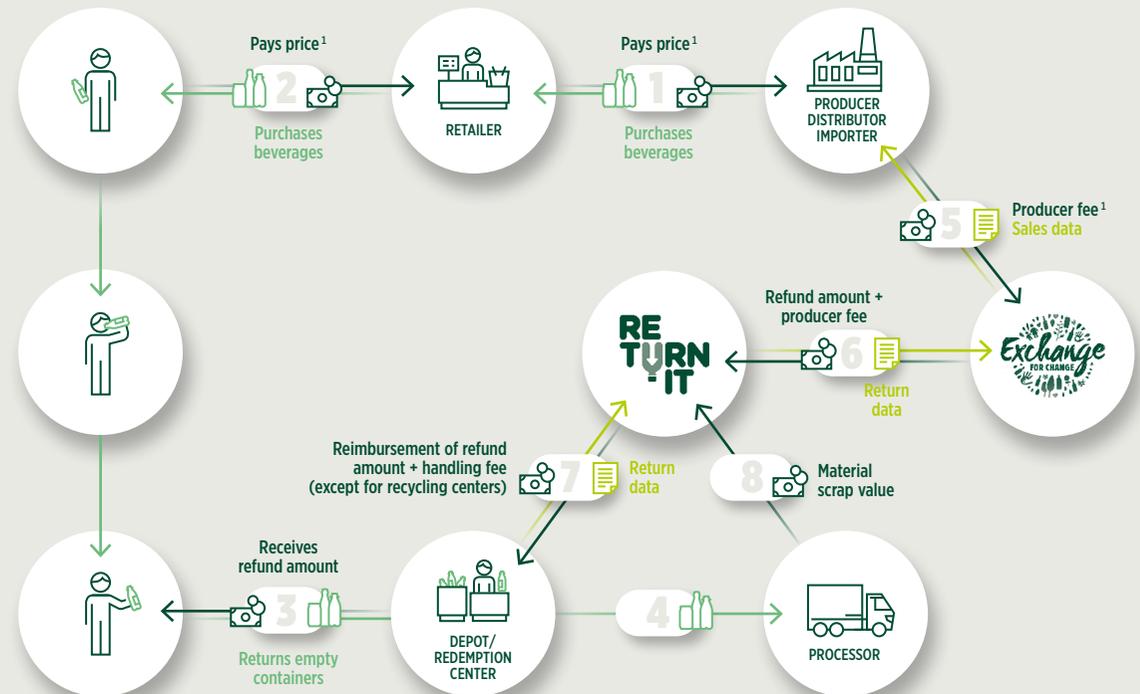
SYSTEM RESULTS (2018-19)

Aluminum	19.8%
Glass	14.9%
HDPE	1.0%
PET	14.2%
Liquid paperboard	0.4%
Steel	0.01%

Total Return Rate: 50.4%



MONEY MATERIAL FLOW



NEW SOUTH WALES (NSW)

Population: 8.1 m

Website: www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn

www.returnandearn.org.au



LEGISLATIVE FRAMEWORK

Mandate: Waste Avoidance and Resource Recovery Amendment (Container Deposit Scheme) Act and Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation

Enacted: 2016

Implemented: 2017

Authority: Environment Protection Authority

Targets: None

PROGRAM SCOPE

Material:

Metal (aluminum/steel), glass, plastic (HDPE, PET), liquid paperboard

Beverage type:

Containers 150 ml to 3L (0.04 gal to 0.79 gal):

All beverages

Excluded:

Wine, spirits, cordial and plain milk (or milk substitute) containers, flavored milk containers of ≥ 1 L (0.26 gal), pure fruit or vegetable juice containers of ≥ 1 L (0.26 gal), glass containers for wine and spirits, casks for wine or water ≥ 1 L (0.26 gal), sachets for wine of ≥ 250 ml (0.07 gal), containers for cordials and concentrated fruit/vegetable juices, registered health tonics

DEPOSITS AND FEES

Deposit initiator:

Producer/Distributor/Importer

Refund value:

AUD\$0.10 (€0.07, USD\$0.08)

Unredeemed deposits:

Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees (2020):

Estimated to be AUD\$ 0.08 – AUD\$ 0.09
(fee has not been made public)

Producer fees (2020):

AUD\$ 0.0153 to AUD\$ 0.1559
(as of February 2020; the fees vary by material and are adjusted monthly based on forecast and actual returns)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Exchange for Change is the System Coordinator, responsible for financial management and ensuring that the scheme meets its statewide access and recovery targets. The Network Operator is TOMRA Cleanaway, which has set up and runs a network of owned and third party collection points; manages logistics; and manages material sales.

System finance:

Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return-to-Retail/Return to Depot:

There are a total of 635 collection sites including RVM 'kiosks' (over 1200 RVMs with four RVMs per kiosk) located close to retail and other public precincts; approximately 285 over-the-counter collection points, and 26 large scale automated depots.

Material owner:

TOMRA Cleanaway (network operator)

¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price - this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to CDS coordinators effectively includes the value of the deposit + system costs - material sales revenues.

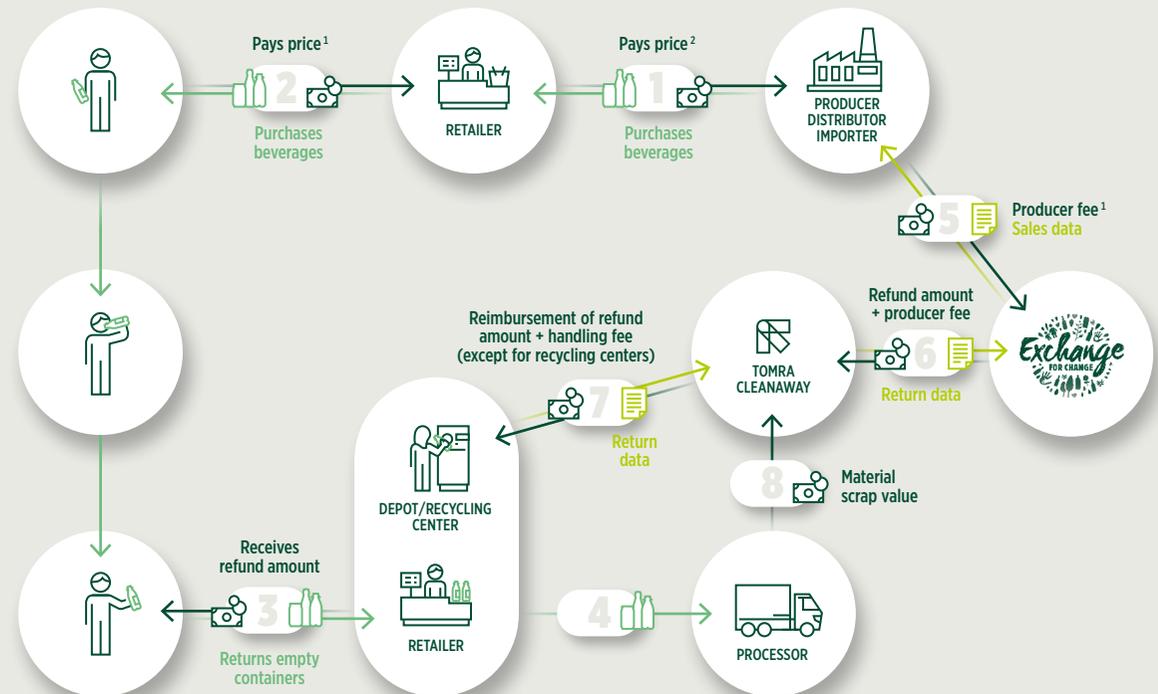
SYSTEM RESULTS (2018-19)

Total Return Rate: 70%

Includes returns through the DRS network and curbside council programs.



MONEY MATERIAL FLOW



NORTHERN TERRITORY

Population: 0.2 m

Website: www.ntepa.nt.gov.au/container-deposits



LEGISLATIVE FRAMEWORK

Mandate:	Environment Protection (Beverage Containers and Plastic Bags) Act
Enacted:	2011
Implemented:	2012
Updated:	2014
Authority:	Environment Protection Authority
Targets:	None

PROGRAM SCOPE

Material:
Glass, aluminum, plastic (HDPE, PET), liquid paperboard

Beverage type:
Containers < 1 L (0.26 gal):
Flavoured milk, pure fruit/vegetable juice, water in aseptic packs/casks, some wine-based beverages

Containers ≤ 3 L (0.79 gal):
Carbonated soft drinks, non-carbonated soft drinks (including but not limited to: fruit/juice based drinks containing < 90% juice, sports drinks, vitamin drinks, energy drinks, ready-to-drink cordials), water that is not in an aseptic pack/cask, beer/ales/stouts/cider, spirit-based beverages, some wine-based beverages

Excluded:
Unflavored milk, soy milk, cordial bottles (undiluted), concentrated fruit and/or vegetable juice intended to be diluted before consumption, still or sparkling wine (in glass)

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Refund value:
AUD\$ 0.10 (€ 0.07, USD\$ 0.08)

Unredeemed deposits:
Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees:
Not available (negotiated and proprietary)

SYSTEM OPERATOR

Clearing system:
Decentralized (Multiple CDS coordinators)

System operator & administrator:
Beverage industry and private operators

System finance:
Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return to Depot:

14 permanent collection depots and 10 temporary/mobile sites.

Material owner:

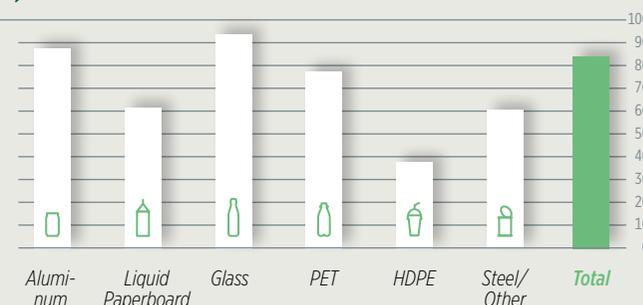
CDS coordinators

CDS coordinators coordinate the activities of those involved in the deposit return scheme and have arrangements with depots across the Territory. They coordinate the return of empty containers from collection depots, reimburse depots for refunds paid to consumers, and pay depots a handling fee, sell the containers to material recyclers and processors for recycling, reuse or recovery of energy. CDS coordinators, in turn, claim the deposit and handling fee from the beverage filler. As of 2019, four CDS coordinators are approved to operate under the CDS: Envirobank NT Pty Ltd.; Marine Stores Pty Ltd.; NT Coordinators Pty Ltd.; and Can-Recycling (SA) Pty Ltd. trading as Statewide Recycling.

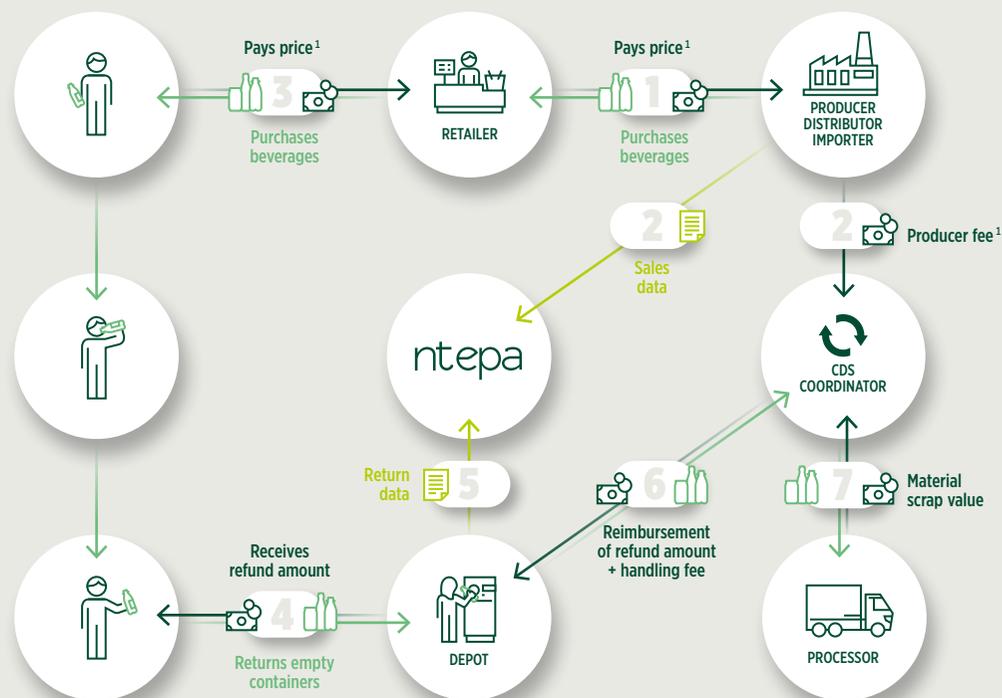
SYSTEM RESULTS (2018-19)

Aluminum	88%
Liquid Paperboard	61%
Glass	93%
PET	78%
HDPE	38%
Steel/Other	60%

Total Return Rate: 84%



MONEY MATERIAL FLOW



¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price - this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to CDS coordinators effectively includes the value of the deposit + system costs (including handling fees) - material sales revenues.

QUEENSLAND

Population: 5.1 m

Website: <https://www.containersforchange.com.au/>



LEGISLATIVE FRAMEWORK

Mandate: Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation

Enacted: 2017

Implemented: 2018

Authority: Queensland Government (Environment Minister)

Targets: 85% return rate by 2021/2022

PROGRAM SCOPE

Material: Plastics (PET, HDPE, other), glass, metal (aluminum/steel), liquid paperboard

Beverage type:
Containers 150 ml to 3 L (0.04 gal to 0.79 gal):
All beverages (non-alcohol, alcohol)

Excluded: Plain milk containers, glass containers which have contained wine or pure spirits, large containers (≥ 1 L or 0.26 gal) which have contained flavoured milk/pure juice/cask wine/cask water, cordial or vegetable juice, sachets > 250 ml (0.07 gal) (which have contained wine, registered health tonics)

DEPOSITS AND FEES

Deposit initiator: Producer/Distributor/Importer

Refund value: AUD\$ 0.10 (€ 0.07, USD\$ 0.08)

Unredeemed deposits:

Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees (2020):

Approximately AUD\$ 0.06 – AUD\$ 0.065 is paid to collection points. The scheme coordinator manages and pays separate fees for logistics and processing services (approximately AUD\$ 0.09, including collection, transport, processing).

Producer fees (2019):

Average of AUD\$ 0.102

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Container Exchange (CoEx)

System finance:

Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return to Depot:

There is a mix of collection types that include depots (10 of which are automated with RVMs), staffed over-the-counter depots, bag drops, and pop-up collection points. The mix is approximately 42% drop-offs, 35% depots, and 23% RVM/mobile. Community organizations can also provide donation points where refund are not paid to consumers but to those organizations as a donation. These points are not included in the number of refunds points above.

Material owner:

Container Exchange (CoEx)

¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price - this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to CoEX effectively includes the value of the deposit + system costs (including handling fees) - material sales revenues.

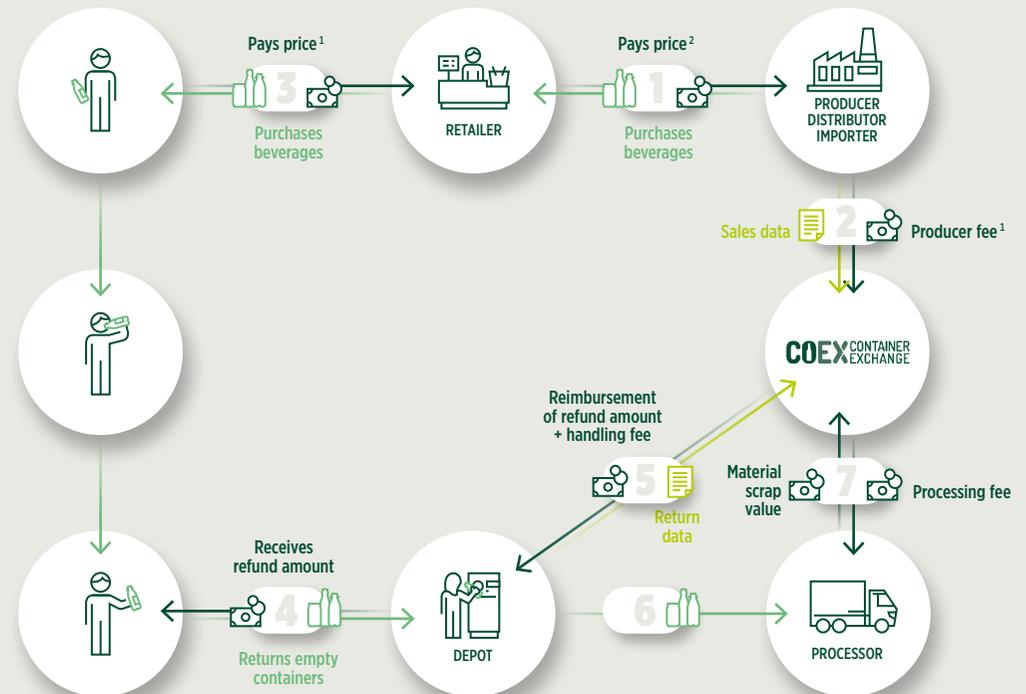
SYSTEM RESULTS (2019-20)

Total Return Rate: 58%

Includes returns through DRS network as well as curbside bins.



MONEY MATERIAL FLOW



SOUTH AUSTRALIA

Population: 1.8 m

Website: www.epa.sa.gov.au/environmental_info/container_deposit



LEGISLATIVE FRAMEWORK

Mandate:	Beverage Container Act
Enacted:	1975
Implemented:	1977
Authority:	Environmental Protection Authority
Targets:	None

PROGRAM SCOPE

Material:
Glass, aluminum, plastic (HDPE, PET), liquid paperboard

Beverage type:
Containers < 1 L (0.26 gal):
Water in aseptic packs/casks, pure fruit/vegetable juice (containing ≥ 90% fruit juice and/or vegetable juice), flavoured milk, wine in aseptic packs/casks, flavoured alcohol beverages with a wine base in aseptic packs/casks

Containers ≤ 3 L (0.79 gal):
Carbonated and non-carbonated soft drinks, water (plain, still or carbonated), beers/ales/stout, wine based beverages (wine cooler and similar beverages), spirit-based beverages, alcohol beverages (derived from the fermentation of fruit)

Excluded:
Wine in glass bottles, plain or unflavoured milk, concentrated fruit and/or vegetable juice intended to be diluted before consumption, cordial (undiluted)

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Refund value:
AUD\$ 0.10 (€ 0.07, USD\$ 0.08)

Unredeemed deposits:
Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees (2020):
Approximately AUD\$ 0.1109 (varies by material type)

SYSTEM OPERATOR

Clearing system:
Decentralized (three 'Super Collectors' operated by separate producer consortiums)

System operator & administrator:
Beverage industry and consortium of collection depots

System finance:
Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return to Depot:

132 licensed largely manual depots. Empty containers are sorted and prepared at the collection depots across the state for collection by the 'super collectors', which act as agents for the beverage industry. Only two super collectors operate facilities to physically handle and process the containers that are returned to depots for a refund. A super collector coordinates the return of empty containers from depots, reimburse depots for refunds paid to consumers, and pay depots a handling fee. They also sell and deliver the empty containers to material recyclers for recycling, reuse or energy recovery.

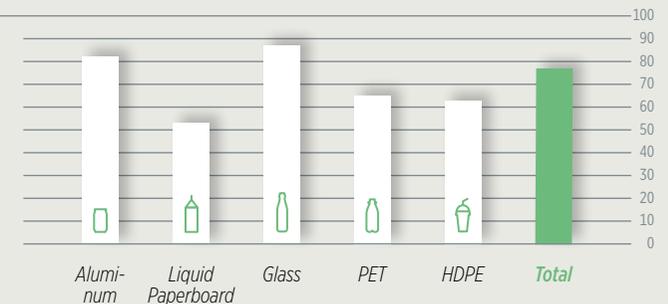
Material owner:

System operator

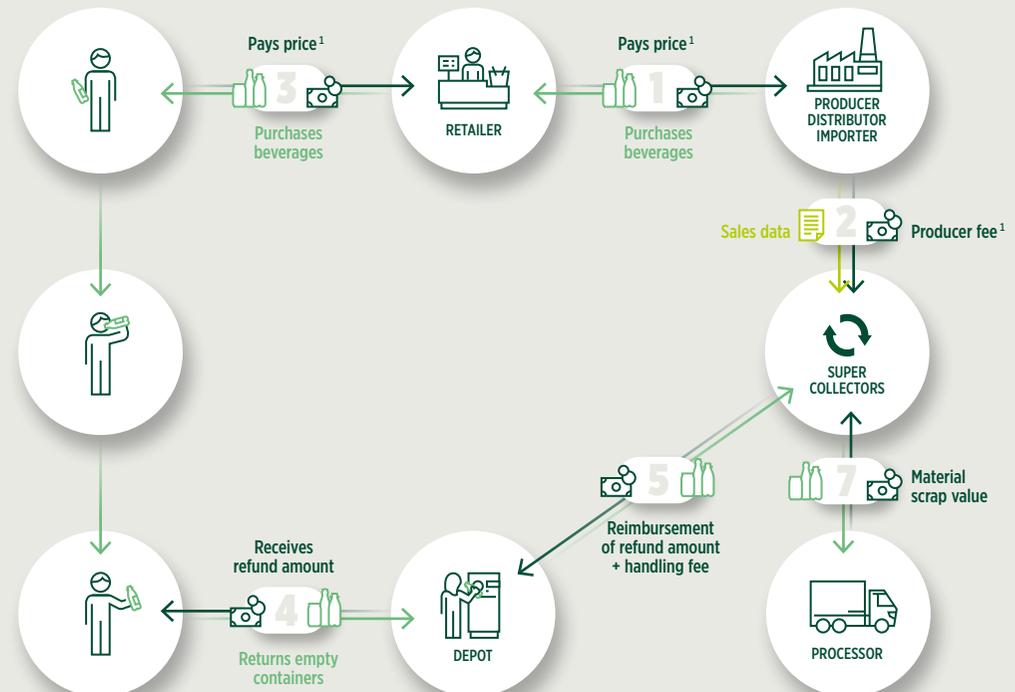
SYSTEM RESULTS (2019-20)

Aluminum	82.1%
Liquid Paperboard	52.6%
Glass	87.8%
PET	65.1%
HDPE	62.3%

Total Return Rate: 76.7%



MONEY MATERIAL FLOW



¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price - this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to Super Collectors effectively includes the value of the deposit + system costs (including handling fees) - material sales revenues.

WESTERN AUSTRALIA

Population: 2.6 m

Website: <https://dwer.wa.gov.au/cds>, <https://warrri.com.au/>



LEGISLATIVE FRAMEWORK

- Mandate:** Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations
- Enacted:** 2019
- Implemented:** October 2020
- Authority:** Western Australia Department of Water and Environmental Regulation

PROGRAM SCOPE

Material:
Plastic, glass, paper-board, metal (steel, aluminum)

Beverage type:
Non-alcohol beverages including pure fruit or vegetable juice (or a mixture of pure fruit and vegetable juices), soft drinks (carbonated and non-carbonated), water, flavored milk, sports drinks; alcohol beverages including beer, cider, spirit-based mixed drinks, wine

Excluded:
All containers < 150 ml (0.04 gal) and > 3 L (0.79 gal); pure fruit or vegetable juice containers of ≥ 1 L (0.26 gal); glass containers for wine and spirits; plain milk (or milk substitutes) containers; flavoured milk containers of ≥ 1 L (0.26 gal); casks (plastic bladders in boxes) for wine and casks for water ≥ 1 L (0.26 gal); sachets for wine of ≥ 250 ml (0.07 gal); containers for cordials, concentrated fruit/vegetable juices; registered health tonics

DEPOSITS AND FEES

Deposit initiator:
Producer/Importer

Deposit value:
AUD\$ 0.10 (USD\$ 0.07)

Unredeemed deposits:
Not applicable (In Australia, there is no legislation saying a 'deposit' must be paid, just that a refund must be given to all consumers that recycle at a refund point. As a result, there is no pool of unredeemed deposits. Instead, the system operator invoices producers a 'producer fee'. This fee is based on the number of containers that are returned and also depends on the revenues earned from the sale of material).

Handling fees:
Not public, but is expected to be around AUD\$ 0.09 (USD\$ 0.06)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

WA Return Recycle Renew (WARRRL)

WARRRL, a not-for-profit company established under the Corporations Act was appointed on 18 July 2019 as the scheme coordinator for Containers for Change. WARRRL is required to report performance data to the Minister and to the general public.

System finance:

Producer fees, material revenues

REDEMPTION SYSTEM

There is no retail obligation to participate in the scheme.

Return to Redemption Center:

There are four types of refund points where people can return their containers, including walk-in or drive-through depots, bag drops, reverse vending machines, and pop-up refund points.

Material owner:

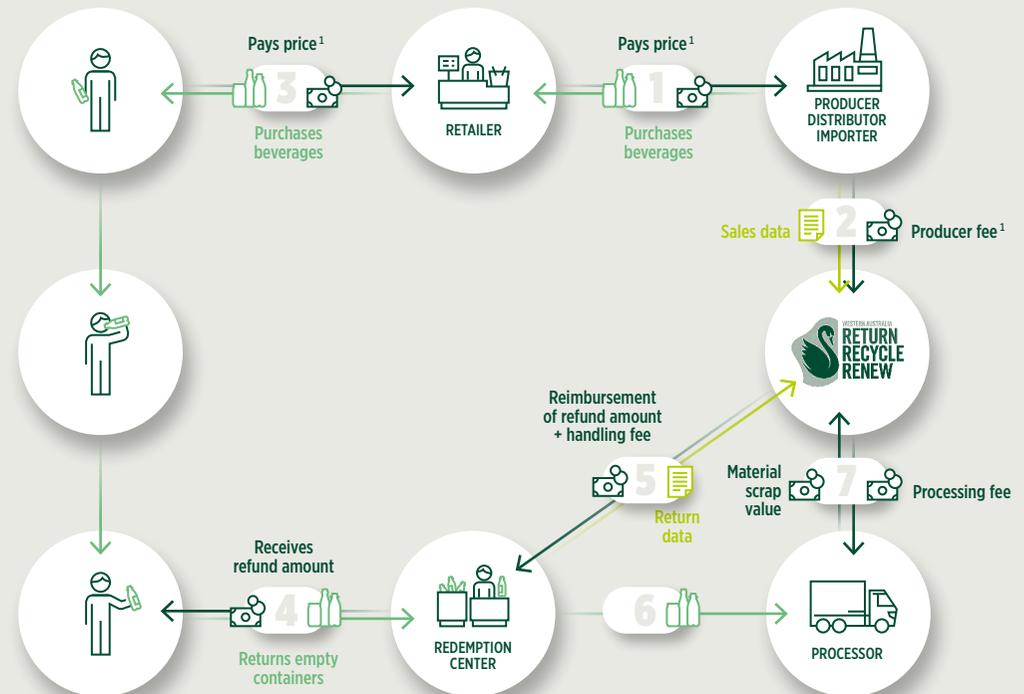
System operator

¹ Note: In Australia, unlike most other DRSs, there is no legislated requirement to place a deposit amount on every container sold. However, there is a legislated requirement to provide consumers that return their containers with a refund. This means the prices paid by retailers to producers, for instance, will not be the 'price' + 'deposit'; it's just the price – this price may then include the value of the deposit and whatever additional costs the producers want to pass on to the retailers. In the same way, producers do not pay the 'deposit' against 100% of sales, but the producer fee paid to WA Return, Recycle, Renew effectively includes the value of the deposit + system costs (including handling fees) – material sales revenues.

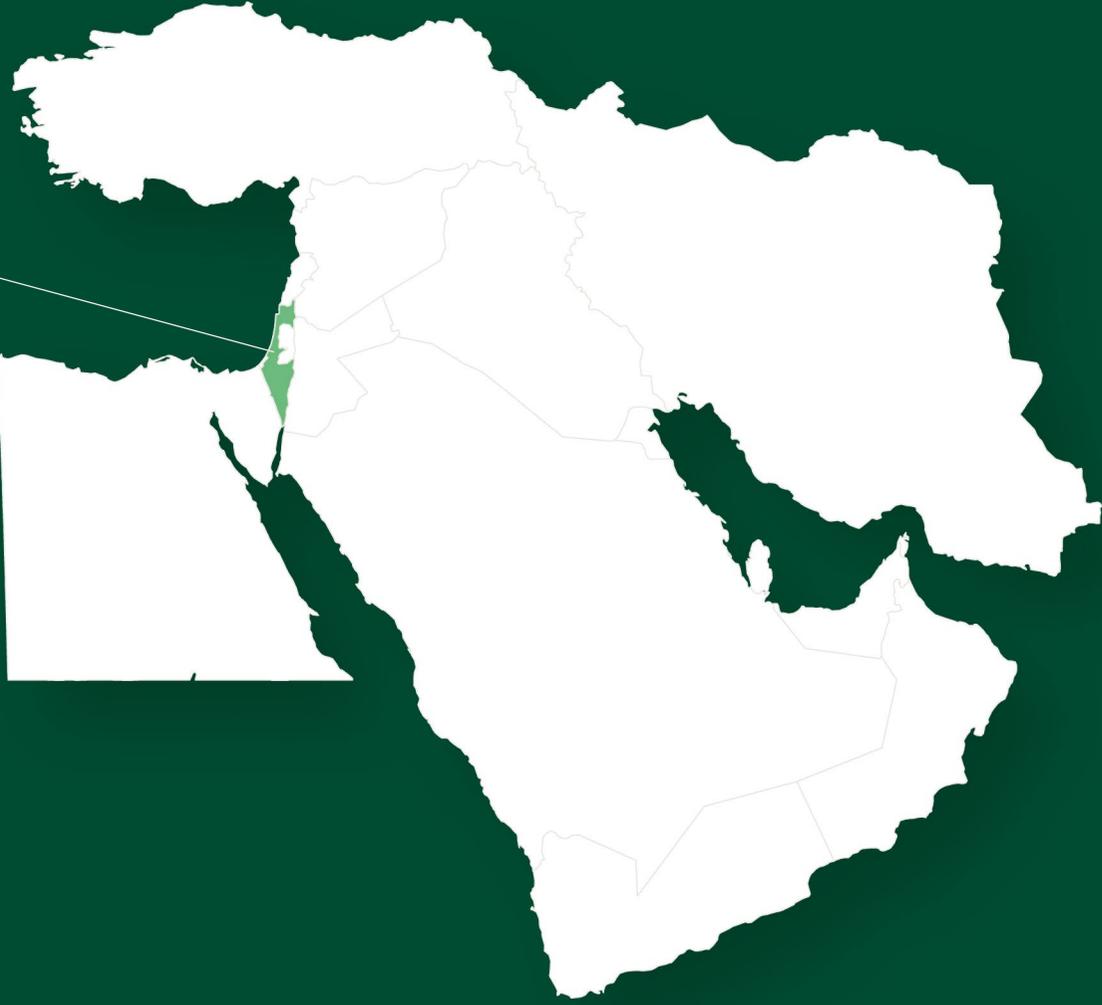
SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW



Israel (1999)



MIDDLE EAST

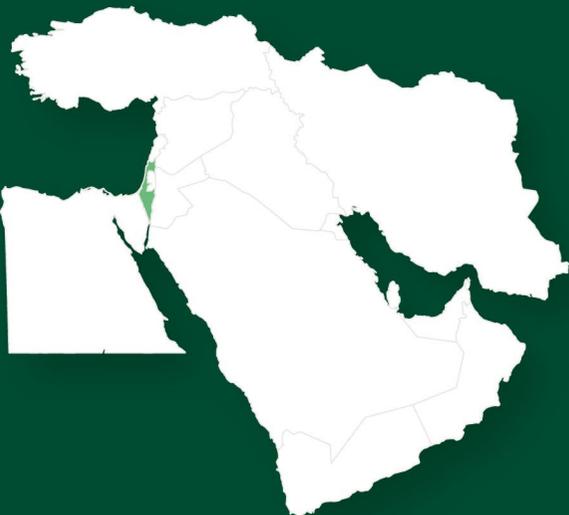
8.9 million have access to DRS

<i>Country</i>	<i>Population 2019 (million)</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
Israel	8.9	1999	2001

ISRAEL

Population: 8.9 m

Website: www.ela.org.il



LEGISLATIVE FRAMEWORK

Mandate:	Deposit on Beverage Containers Law
Enacted:	1999
Implemented:	2001
Last updated:	2010
Authority:	Ministry of Environment
Targets:	77% collection rate

PROGRAM SCOPE

Material:
PET, metal, glass

Beverage type:
Containers > 100 ml (0.026 gal) and < 1.5 L (0.4 gal)¹:
All beverages

Excluded:
Dairy products

¹ In October 2020, Israel's Environment Minister announced that the DRS will be extended to large plastic bottles of between 1.5 and 5L (1.6 to 5.3 quarts). Drinks companies and retailers involved will be given a year to prepare for the changes even though the law only provides for 60 days

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
0.3 ILS (€ 0.07, USD\$ 0.08)

Unredeemed deposits:
ELA Recycling Corporation and Asofta Recycling Corporation

Handling fees (2020):
0.05 ILS (Paid by ELA to retailers only)
(€ 0.013, USD\$ 0.014)

SYSTEM OPERATOR

Clearing system:
Centralized

System operator & administrator:
ELA Recycling Corporation and Asofta Recycling Corporation

The Deposit Law imposes the responsibility for collecting and recycling directly on the beverage manufacturers/importers so they have the choice of whether to receive their collection and recycling services from ELA or from Asota.

ELA Recycling Corporation is a private non-profit organization owned by Israel's beverage manufacturers. Its goal is to promote, coordinate and fund selective collection, sorting and recycling of bottles and beverage containers as per law in Israel.

Asofta Recycling Corporation is a private company founded in 2002 that represents more than 120 Israeli beverage importers and producers. It is responsible for fulfilling the beverage companies' obligations for reporting, collecting, and recycling their products under the Deposit Law.

System finance:

Material revenues, unredeemed deposits

REDEMPTION SYSTEM

Return-to-Retail/Depot:

Supermarkets and grocery retailers are required to collect empties from consumers (limited to 50/day). Containers can also be returned to around 80 recycling stations (depots). Containers are collected mostly manually from bars, restaurants, parks and redemption points (there are only a few RVMs).

Recycling stations:

Supermarkets and shops are obligated to take back up to 50 containers per person, per day

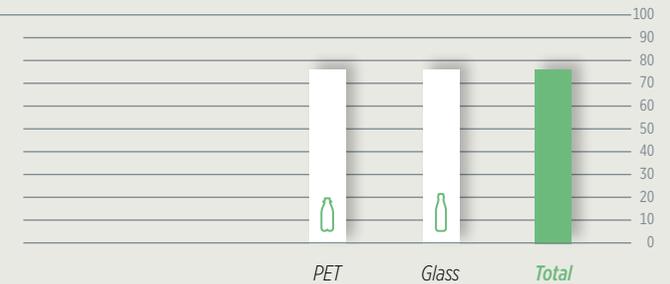
Material owner:

ELA Recycling Corporation and Asofta Recycling Corporation

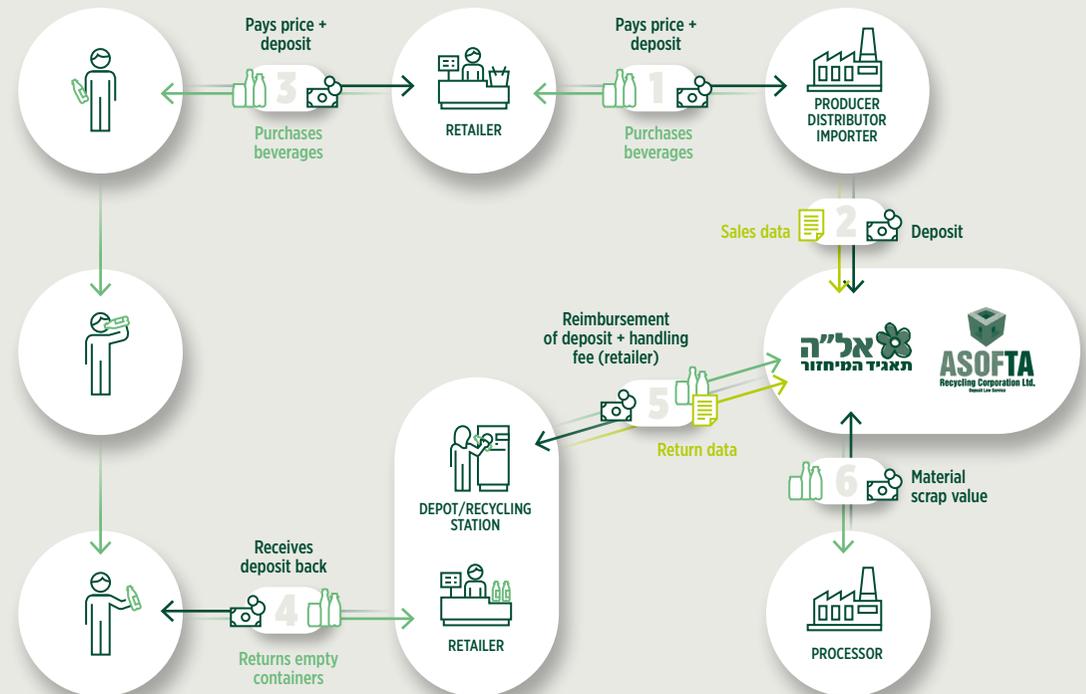
SYSTEM RESULTS (2018)

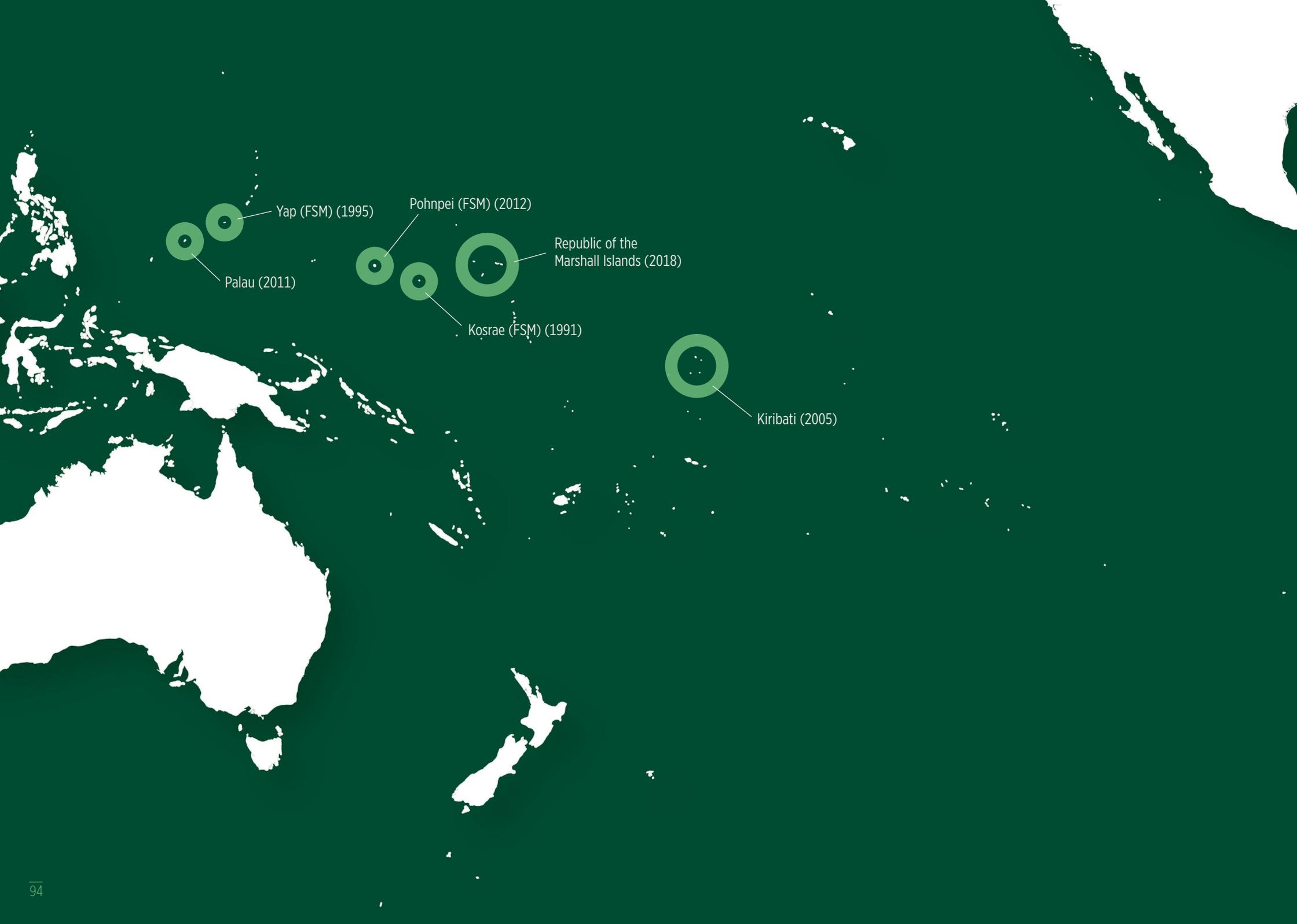
PET	77%
Glass	77%

Total Return Rate: 77%



MONEY MATERIAL FLOW





Yap (FSM) (1995)

Pohnpei (FSM) (2012)

Palau (2011)

Republic of the
Marshall Islands (2018)

Kosrae (FSM) (1991)

Kiribati (2005)

OCEANIA & CARIBBEAN

0.53 million have access to DRS



<i>State</i>	<i>Population 2019</i>	<i>Mandate Enacted</i>	<i>Mandate Implemented</i>
Barbados	285,000	Unknown	1986
Kiribati	115,800	2004	2005
Kosrae (FSM)	6,600	1991 (Cans), 2007 (Plastic, Glass, Cans)	1991
Palau	21,700	2006	2011
Pohnpei (FSM)	36,000	2011	2012
Republic of the Marshall Islands	58,400	2016	2018
Yap (FSM)	11,400	1995 (Cans), 2009 (Plastic, Glass)	1995

BARBADOS

Population: 285,000

Website: Not available

LEGISLATIVE FRAMEWORK

Mandate: Returnable Containers Act
Enacted: Unknown
Implemented: 1986
Last updated: In the process of being amended
Authority: Ministry of the Environment and Drainage
Targets: None

PROGRAM SCOPE

Material:
Plastic, glass, metal

Beverage type:
Containers \leq 3.8 L (1 gal):
Carbonated and non-carbonated soft drinks, mineral water, soda water, beer and malt beverages

Excluded:
Milk, some types of water, wine and spirits

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
Glass: USD\$ 0.20
Other containers: USD\$ 0.10

Unredeemed deposits:
Unknown

Handling fees (2020):
20% of the redemption value is paid to retailers or redemption centers

SYSTEM OPERATOR

Clearing system:

Unknown

System operator & administrator:

Unknown

System finance:

Unknown

REDEMPTION SYSTEM

Return-to-Retail/Redemption Center:

Retailers are required to accept any empty beverage container of the design, shape, size, colour, composition and brand sold by the retailer

Material owner:

Unknown

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW

Not available

KIRIBATI

Population: 115,800

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate: The Special Fund (Waste Materials Recovery) Act
Enacted: 2004
Implemented: 2005
Authority: Ministry of Environment
Targets: None

PROGRAM SCOPE

Material:
Aluminum, plastic (PET)

Beverage type:
Beer, soft drink, water

Excluded:
Milk

DEPOSITS AND FEES

Deposit initiator:
Importer

Deposit/refund value:
AUD\$ 0.05 (€ 0.03, USD\$ 0.04)
(AUD\$ 0.04 returned to the consumer)

Unredeemed deposits:
State government (10% of levy moneys are retained to fund the scheme and provide recycling infrastructure)

Handling fees (2020):
None (there is technically no handling fee, however AUD\$ 0.01 (€ 0.01, USD\$ 0.01)/container (the non-refundable portion of the deposit) is retained by Kiribati Recycling for operating costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Kiribati Recycling

System finance:

Material revenues, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Depot Community:

Recycling drop-off facilities are located at Bonriki, Bikenibeu, Teoraareke, and Bairiki (South Tarawa only)

Material owner:

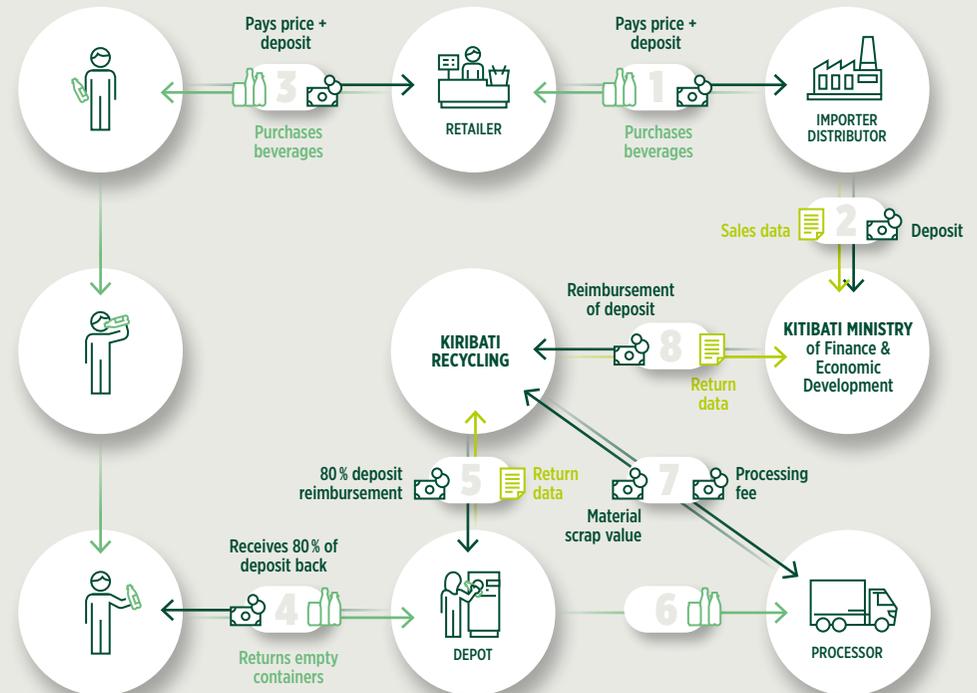
System operator (Kiribati Recycling)

SYSTEM RESULTS (2018)

Aluminum	> 90%
PET	< 50%

Total Return Rate: *Not available*

MONEY MATERIAL FLOW



KOSRAE

FEDERATED STATES OF MICRONESIA

Population: 6,600

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate:	Recycling Program Regulation
Enacted:	1991 (aluminum only)
Implemented:	1991
Last updated:	2007 (expanded to include glass and plastic)
Authority:	Kosrae State Government
Targets:	None

PROGRAM SCOPE

Material:
Aluminum, plastic (PET), glass

Beverage type:
All

Excluded:
None

DEPOSITS AND FEES

Deposit initiator:
Importers

Deposit value:
USD\$ 0.06 (\$ 0.05 returned to consumer)

Unredeemed deposits:
Recycling Fund (a Fund of the Treasury with the Kosrae State Government)

Handling fees (2020):
None (there is technically no handling fee, however USD\$ 0.01/ container (the non-refundable portion of the deposit) is retained by the system operator for operating costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Micronesian Eco Corporation

System finance:

Material revenues, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Redemption Center:

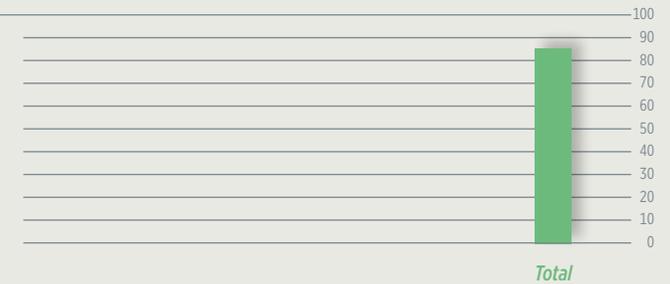
One redemption center

Material owner:

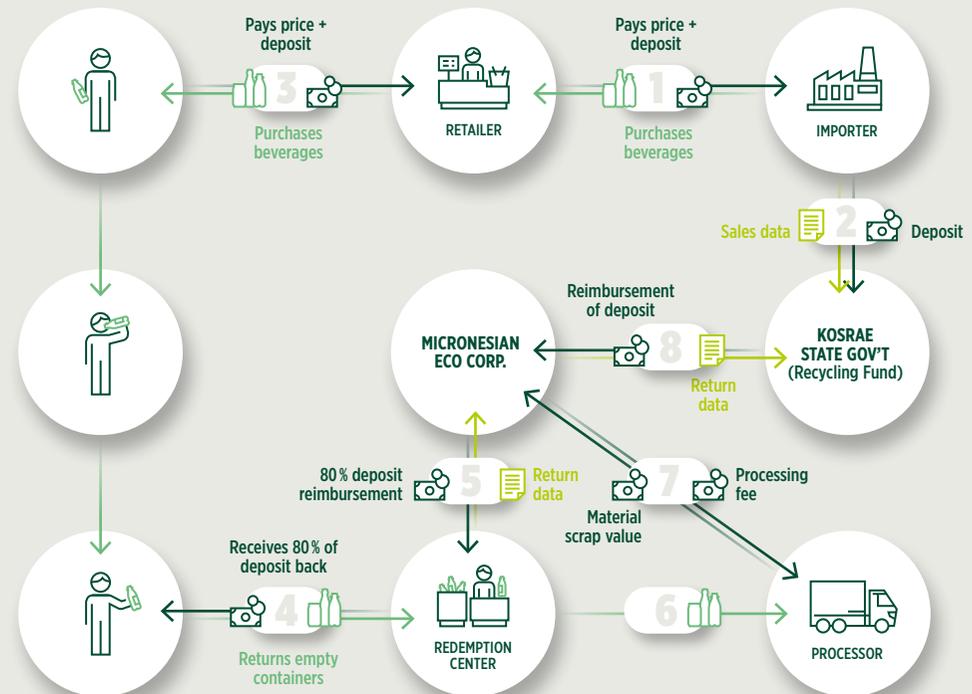
System operator (Micronesian Eco Corporation)

SYSTEM RESULTS (2017)

Total Return Rate: 86%



MONEY MATERIAL FLOW



PALAU

Population: 21,700

Website: www.kororstategov.com/swmo/beverage.html

LEGISLATIVE FRAMEWORK

Mandate:	The Republic of Palau Public Law No. 7-24, Beverage Container Recycling Regulations
Enacted:	2006
Implemented:	2011
Last updated:	2019
Authority:	Ministry of Public Infrastructure, Industries and Commerce & Ministry of Finance
Targets:	None

PROGRAM SCOPE

Material:
Glass, plastic (PET, HDPE), metal (aluminum, steel)

Beverage type:
Beer, ale, or other drink produced by fermenting malt; mixed spirits; mixed wine; tea and coffee drinks, regardless of dairy-derived product content; soda; non-carbonated water; all non-alcohol drinks

Excluded:
Liquids which are: a syrup, in a concentrated form, or typically added as a minor flavoring ingredient, such as extracts; liquid which is ingested for medicinal purposes only; liquid that is designed and consumed only as a nutritional supplement and not as a beverage; products frozen at the time of sale to the consumer; products designed to be consumed in a frozen state; instant drink powders; milk and other dairy-derived products

DEPOSITS AND FEES

Deposit initiator:
Distributor

Deposit/refund value:
USD\$ 0.10 (USD\$ 0.05 returned to consumer)

Unredeemed deposits:
Koror State Government

Handling fees (2020):
None (there is technically no handling fee, however USD\$ 0.025/container of the non-refundable portion of deposits goes to the redemption centers and USD\$ 0.025/container to the national government for administrative costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Koror State Government and BGSB Redemption Center
(private company)

System finance:

Material revenues, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Redemption Center:

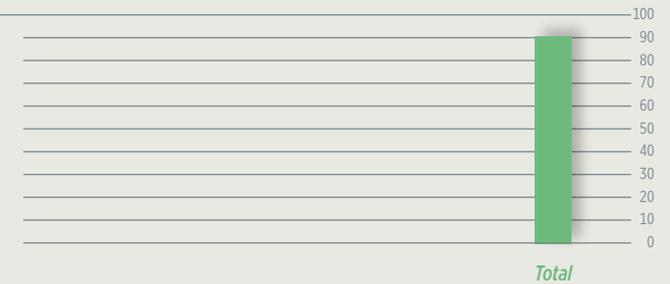
There are two redemption centers in operation

Material owner:

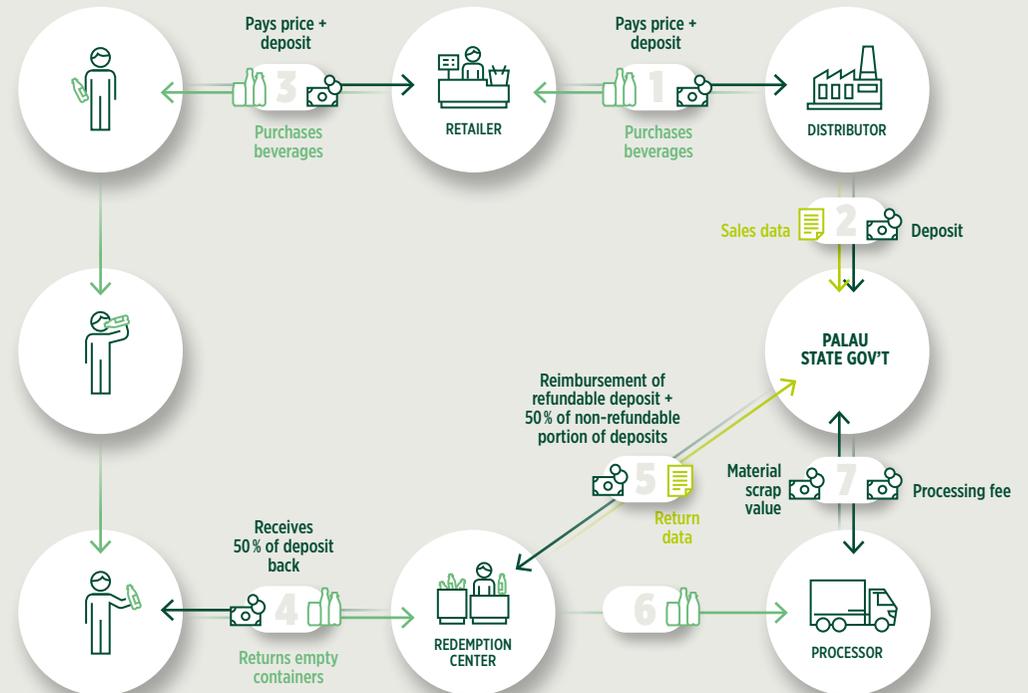
National government

SYSTEM RESULTS (2018)

Total Return Rate: 90.3 %



MONEY MATERIAL FLOW



POHNPEI

FEDERATED STATES OF MICRONESIA

Population: 36,000

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate: Recycling Program Regulation
Enacted: 2011
Implemented: 2012
Last updated: 2016
Authority: Pohnpei State Government
Targets: None

PROGRAM SCOPE

Material:
Aluminum

Beverage type:
All

Excluded:
None

DEPOSITS AND FEES

Deposit initiator:
Importers

Deposit/refund value:
USD \$0.06 (USD\$ 0.05 returned to consumer)

Unredeemed deposits:
Recycling Fund
(a Fund of the Treasury with the Pohnpei State Government)

Handling fees (2020):
None (there is technically no handling fee, however USD\$ 0.01/ container (the non-refundable portion of the deposit) is retained by the system operator for operating costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Pohnpei State Environmental Protection Authority

System finance:

Material revenues, unredeemed deposits, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Redemption Center:

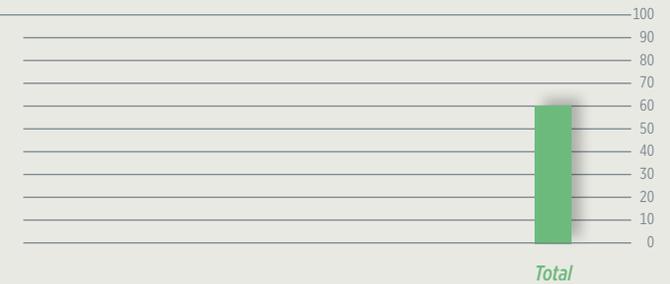
Two collection points (one in Kolonia Town operated by the Kolonia Town Government (KTG) and one in Madolenihmw operated by Madolenihmw Municipal Government (MMG))

Material owner:

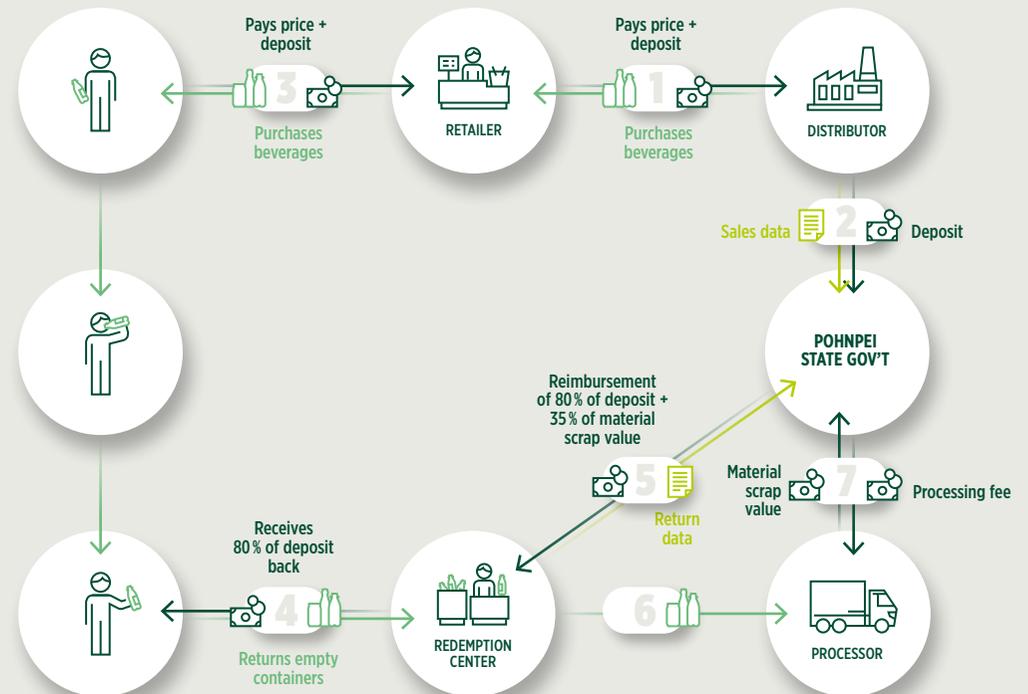
System operator (Pohnpei State Environmental Protection Authority), but KTG and MMG receive 35% of revenues from the sale of cans, split pro rata based on what was received at each collection point. KTG crushes cans for shipping and receives an additional 15% of the value of the cans for doing this.

SYSTEM RESULTS (2017)

Total Return Rate: Estimated at 60%



MONEY MATERIAL FLOW



REPUBLIC OF THE MARSHALL ISLANDS

Population: 58,400

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate: Recycling Program Regulation
Enacted: 2016
Implemented: 2018
Authority: Environmental Protection Authority
Targets: None

PROGRAM SCOPE

Material:
Aluminum, plastic (PET), glass

Beverage type:
Containers ≤ 32 fl oz. (0.24 gal, 909 ml):
All

Excluded:
Milk

DEPOSITS AND FEES

Deposit initiator:
Importers/Distributors

Deposit/refund value:
USD\$ 0.06 (USD\$ 0.05 returned to consumer)

Unredeemed deposits:
Recycling Fund
(a Fund of the Treasury with the Republic of the Marshall Islands Government)

Handling fees (2020):
None (there is technically no handling fee, however USD\$ 0.01/ container (the non-refundable portion of the deposit) is retained by the system operator for operating costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Majuro Atoll Waste Company (state-owned enterprise)

System finance:

Material revenues, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Redemption Center:

One location in Batkan, Majuro

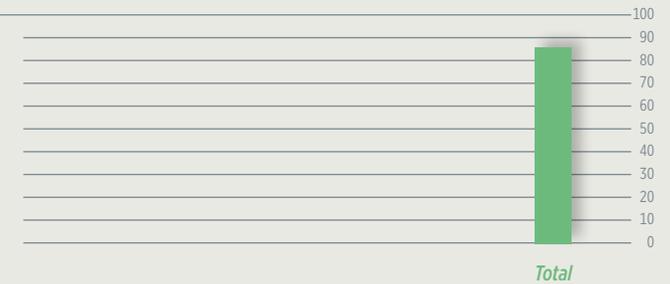
Material owner:

System operator (Majuro Atoll Waste Company)

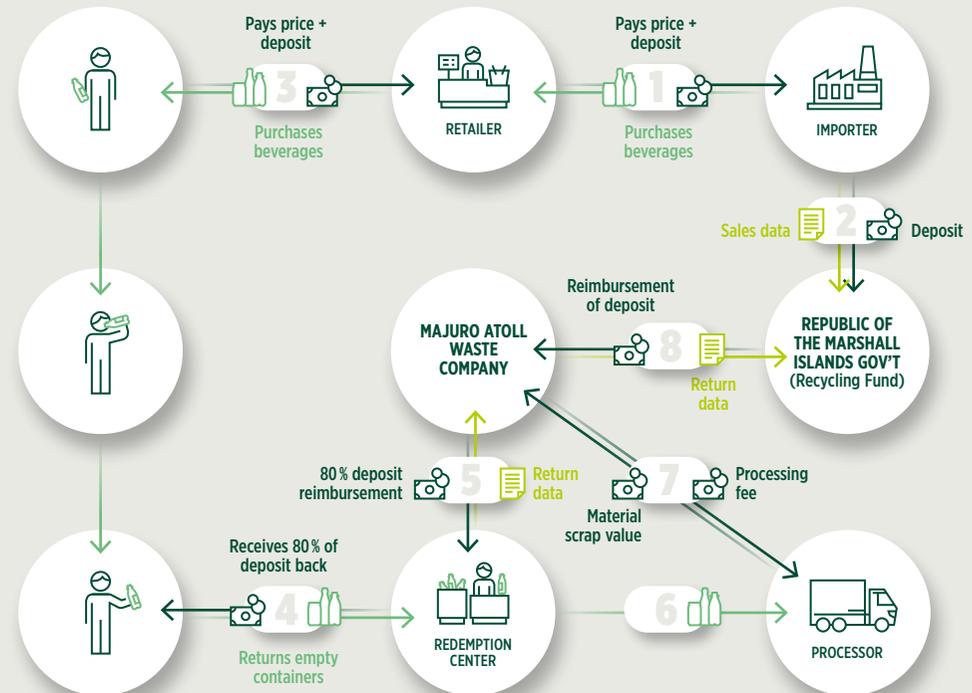
SYSTEM RESULTS (2018)

Total Return Rate:

Estimated to be around 85%



MONEY MATERIAL FLOW



YAP

FEDERATED STATES OF MICRONESIA

Population: 11,400

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate:	Recycling Program Regulation
Enacted:	1995 (aluminum only)
Implemented:	1995
Last updated:	2009 (expanded to include glass and plastic)
Authority:	Yap State Government
Targets:	None

PROGRAM SCOPE

Material:
Aluminum, plastic (PET), glass

Beverage type:
All

Excluded:
None

DEPOSITS AND FEES

Deposit initiator:
Importer

Deposit/refund value:
USD\$ 0.06 (USD\$ 0.05 returned to consumer)

Unredeemed deposits:
Recycling Fund (a Fund of the Treasury with the Yap State Government)

Handling fees (2020):
None (there is technically no handling fee, however USD\$ 0.01/ container (the non-refundable portion of the deposit) is retained by the system operator for operating costs)

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

Island Paradise Co Ltd.

System finance:

Material revenues, non-refundable portion of deposits

REDEMPTION SYSTEM

Return to Redemption Center:

One redemption center

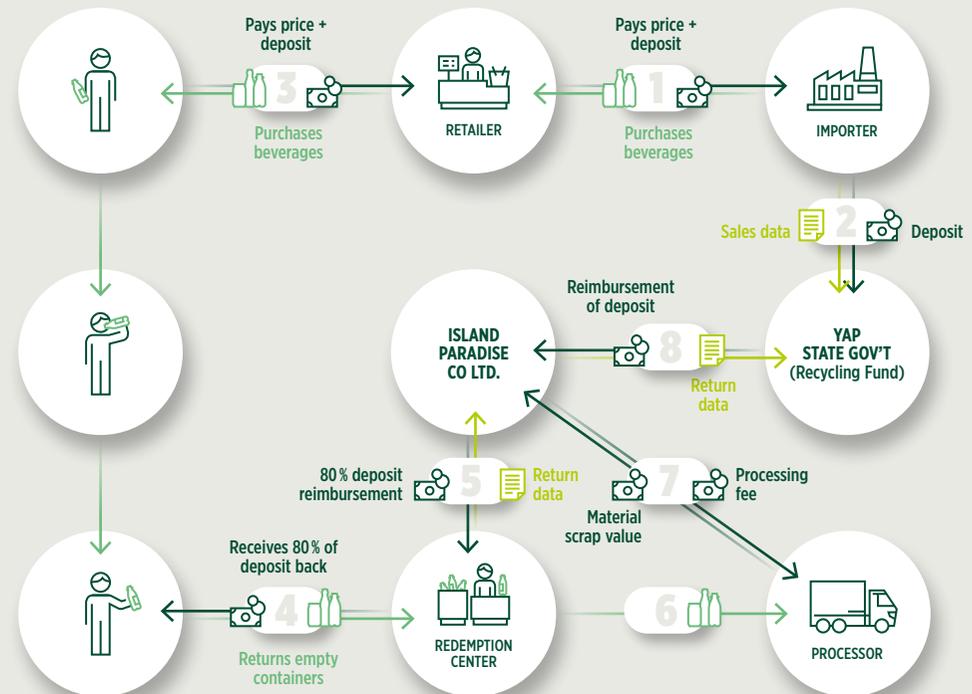
Material owner:

System operator (Island Paradise Co Ltd.)

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW





UPCOMING PROGRAMS

106.5 million could have access to DRS if all these programs are implemented

<i>Country</i>	<i>Population 2019 (million)</i>	<i>Mandate enacted</i>	<i>Mandate implemented</i>
Latvia	1.9	2019	2022
Malta	0.49	2020	2022
Portugal	10.2	2018	2022/2023
Scotland	5.4	2020	2022
Slovakia	5.4	2019	2022
Turkey	83.1	TBD	2023

LATVIA

Population: 1.9 m

Website: Not available



LEGISLATIVE FRAMEWORK¹

Mandate: Packaging Law, Deposit System Operation Regulations

Enacted: 2019

Implemented: 2022

Authority: Ministry of Environmental Protection and Regional Development

Targets: The legislation sets both material-specific and overall targets specific to the deposit system, which are set to increase until 2030.

Targets from 1 February 2023 to 31 December 2023:

Collection: glass (70%), plastic (70%), metal (60%), aluminum (40%),

Recycling: glass (65%), plastic (50%), metal (60%), aluminum (40%), overall (60%)

Reuse: glass (5%)

Targets from 1 January 2024 to 31 December 2024:

Collection: glass (73%), plastic (73%), metal (65%), aluminum (45%),

Recycling: glass (67%), plastic (53%), metal (65%), aluminum (45%), overall (63%)

Reuse: glass (6%)

Targets from 1 January 2025 to 31 December 2025:

Collection: glass (77%), plastic (77%), metal (70%), aluminum (50%),

Recycling: glass (70%), plastic (55%), metal (70%), aluminum (50%), overall (65%)

Reuse: glass (7%)

Targets from 1 January 2026 to 31 December 2027:

Collection: glass (81%), plastic (80%), metal (72%), aluminum (52%),

Recycling: glass (71%), plastic (57%), metal (72%), aluminum (52%), overall (66%)

Reuse: glass (10%)

Targets from 1 January 2028 to 31 December 2029:

Collection: glass (85%), plastic (85%), metal (75%), aluminum (55%),

Recycling: glass (73%), plastic (58%), metal (75%), aluminum (55%), overall (68%)

Reuse: glass (12%)

Targets from 2030:

Collection: glass (90%), plastic (90%), metal (80%), aluminum (60%),

Recycling: glass (75%), plastic (60%), metal (80%), aluminum (60%), overall (70%)

Reuse: glass (15%)

PROGRAM SCOPE

Material:

Plastic (predominantly pet), metal, (aluminum/tinplate), glass

Beverage type:

Plastic and glass containers 100 ml to 3 L (0.026 to 0.79 gal), aluminum containers 200 ml to 1 L (0.05 to 0.26 gal): Carbonated and non-alcohol beverages such as water, mineral water, lemonade, energy drinks, iced teas, juices, nectars, beer, mixer products with an alcohol content up to 6%

Excluded:

Wine, hard liquor, dairy products, glass jars, Tetra Pak

¹ Note: Further details to be finalized and adopted by Latvia's Cabinet of the Ministers at a later date.

DEPOSITS AND FEES

Deposit initiator: Producer/Importer

Deposit value: € 0.10

Unredeemed deposits: System operator

Handling fees: TBD

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

TBD – The law defines only one operator, which will be registered as a public service provider

System finance:

Unredeemed deposits, material revenues, producer fees

REDEMPTION SYSTEM

Return-to-Retailer:

Sellers of eligible beverages are required to take back empty containers in or near the premises (max. 150 m) if their sales area is at least 300 m² in the cities or 60 m² in the countryside. Local government may re-define the obligation in certain cases.

Material owner:

System operator

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW

Not available

MALTA

Population: 6.5 m

Website: Not available



LEGISLATIVE FRAMEWORK¹

Mandate:	Beverage Container Recycling Regulations (Legal Notice 311 of 2020) made under the Environment Protection Act
Enacted:	2020
Implemented:	Planned for Q1 2022
Authority:	Ministry for the Environment, Sustainable Development and Climate Change
Targets:	70% collection target for 2021; 70% for 2022; 80% for 2023, 85% for 2024; 90% for 2025

PROGRAM SCOPE

Material:
Plastic (PET), glass, metal (steel or aluminum)

Beverage type:
Containers 0.1 L (0.26 gal) to 3 L (0.79 gal):
Water and flavoured water, soft drinks (carbonated and non-carbonated), ciders, beers, and other malt beverages, ready-to-drink coffee, flavoured alcohol beverages with an alcohol content not exceeding 5%, dilutables

Excluded:
Dairy products, cartons, foil pouches, HDPE containers, composite materials

DEPOSITS AND FEES

Deposit initiator:
Producer/Distributor/Importer

Deposit value:
€ 0.10 (USD\$ 0.11)

Unredeemed deposits:
System operator

Handling fees:
€ 4.00/1000 containers (USD\$ 4.53)

¹ Note: In Budget 2015, the Government of Malta highlighted its intention to introduce a deposit return scheme. Subsequently, at the EU "Our Oceans" Conference in 2017, Malta committed to introducing a deposit scheme which was reflected in Budget Speech 2018. Government announced that the scheme would be in place in 2019, which did not occur. On 31 July 2020, the legal notice setting the path for the establishment of a DRS, which is intended to be led and managed by the private sector, was published. No further details are available at this time.

SYSTEM OPERATOR

Clearing system:

TBD

System operator & administrator:

TBD – An operator licensed by the Resource, Recovery and Recycling Agency (RRRA) will be tasked with establishing and operating the scheme

System finance:

Unredeemed deposits, administration fees, material revenues, government contributions

REDEMPTION SYSTEM

Return-to-retail:

The proposal is to exempt retailers < 150 m², but to give them the choice to opt in. It is envisaged that there will be a minimum of 350 RVMs.

Material owner:

System operator

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW

Not available

PORTUGAL

Population: 10.2 m

Website: Not available



LEGISLATIVE FRAMEWORK¹

- Mandate:** Law n.º 69/2018 (System to Encourage the Return and Deposit of Beverage Containers in Plastic, Glass, Ferrous Metals, and Aluminum)
- Enacted:** 2018
- Implemented:** TBD (Scheduled for January 2022 – delay expected to 2023)
- Authority:** Ministry of Environment and Energy Transition

PROGRAM SCOPE

- Material:** Plastic, glass, metal (ferrous metal, aluminum)
- Beverage type:** TBD
- Excluded:** TBD

DEPOSITS AND FEES

- Deposit initiator:** TBD
- Deposit value:** TBD
- Unredeemed deposits:** TBD
-
- Handling fees:** TBD

¹ Note: In January 2019, the Portuguese government announced that from January 1, 2022, a deposit return system for plastic, glass, ferrous and aluminum beverage containers would become mandatory. No further details have been announced.

SYSTEM OPERATOR

Clearing system:

TBD

System operator & administrator:

TBD

REDEMPTION SYSTEM

Redemption system:

TBD

Material owner:

TBD

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW

Not available

SCOTLAND

Population: 5.4 m

Websites: <https://depositreturnscheme.zerowastescotland.org.uk/>
<https://www.gov.scot/news/deposit-return-scheme-1/>



LEGISLATIVE FRAMEWORK

- Mandate:** The Deposit and Return Scheme for Scotland Regulations
- Enacted:** Legislation was passed in the Scottish Parliament in May 2020
- Implemented:** Implementation is scheduled for July 2022, but parts of the Regulations will come into force earlier to enable various scheme actors to prepare for the operation of the scheme.
- Authority:** Scottish Environment Protection Agency (SEPA)
- Targets:** Collection targets: 70% in first 18 months, 80% in year 2, and 90% in year 3

PROGRAM SCOPE

- Material:** Plastic (PET), metal (aluminum, steel), glass
- Beverage type:**
Containers 50 ml to 3 L (0.01 gal to 0.8 gal):
All alcohol and non-alcohol beverages
- Excluded:**
Mixed material pouches, cartons, HDPE containers, and cups

DEPOSITS AND FEES

- Deposit initiator:**
Producer/Importer
- Deposit value:**
£ 0.20 (USD\$ 0.23)
- Unredeemed deposits:**
System operator
-
- Handling fees:**
TBD – Will be agreed by retailers and producers, likely through a scheme administrator

SYSTEM OPERATOR

Clearing system:

TBD – Likely centralized

System operator & administrator:

TBD – The formation of the administrator(s) is one of the areas being considered by the Implementation Advisory Group (IAG). Anyone can apply to become a scheme administrator when the regulations have been passed. Through the IAG, producers and retailers are considering different options and structures for developing an administrator.

System finance:

Unredeemed deposits, material revenues, producer fees

REDEMPTION SYSTEM

Return-to-Retail/Return to Redemption Center:

Retailers selling any drinks in eligible containers that are taken away from their premises will automatically be required to operate a return point. A retailer could be granted an exemption if there is an alternative return point of equal convenience available nearby that has agreed to accept scheme containers on their behalf. In addition to retailers, anyone that would like to operate a return point from somewhere other than retail premises can apply to be registered as a 'voluntary return point operator.'

Containers can be collected manually or through a RVM. It will be up to individual retailers to decide whether they wish to install a RVM or accept returns manually. Collection of containers may be done via dedicated collections or by utilizing backhauling.

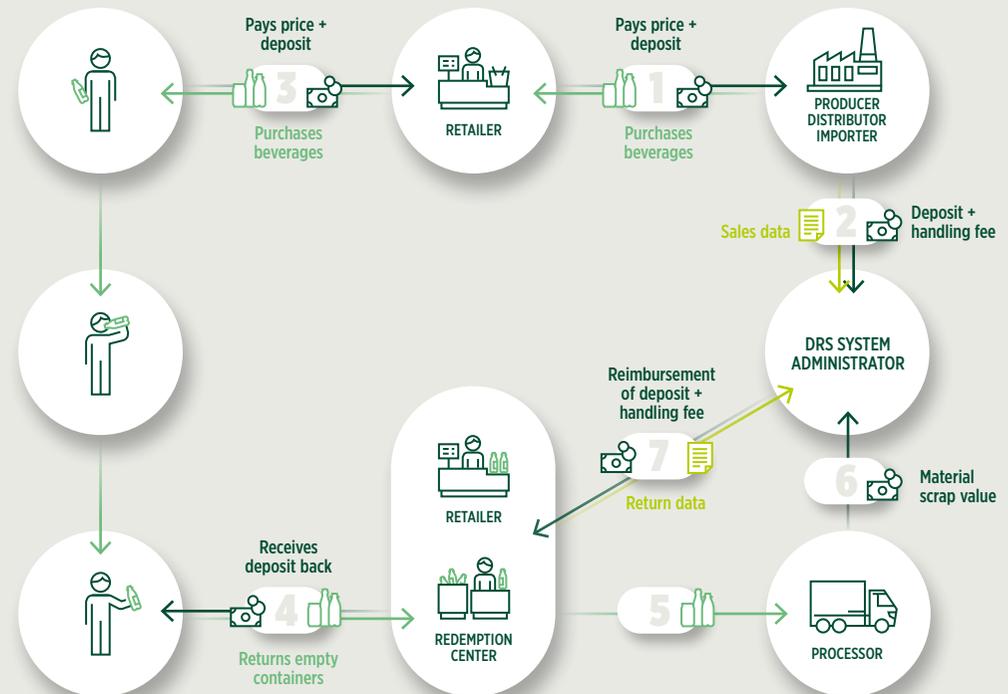
Material owner:

System operator

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW



SLOVAKIA

Population: 5.4 m

Website: Not available



LEGISLATIVE FRAMEWORK

Mandate: Act on the deposit return scheme for disposable beverage containers and on amendments to certain acts

Enacted: 2019

Implemented: Scheduled for January 2022

Authority: Environment Ministry

Target: Collection target for plastic bottles: At least 60% by the end of 2022; 77% by the end of 2024; and at least 90% from 2027.

Collection target for metal cans: At least 90% from 2025

DEPOSITS AND FEES

Deposit initiator:

Producer

Deposit value:

Plastic: € 0.12 (USD\$ 0.14)

Cans: € 0.10 (USD\$ 0.11)

Unredeemed deposits:

System operator

Handling fees:

TBD

PROGRAM SCOPE

Material:

Plastic (PET), metal

Beverage type:

Carbonated and non-carbonated beverages, beer, wine

Excluded:

Spirits, oils, milk

SYSTEM OPERATOR

Clearing system:

Centralized

System operator & administrator:

TBD (Will be comprised of the producers' associations and be supervised by the Economy Ministry, which will coordinate the activities and finance the whole system)

System finance:

Unredeemed deposits, material revenues, producer fees

REDEMPTION SYSTEM

Return to Retailer:

Stores with an area of > 300 m² will be required to take back empty containers.

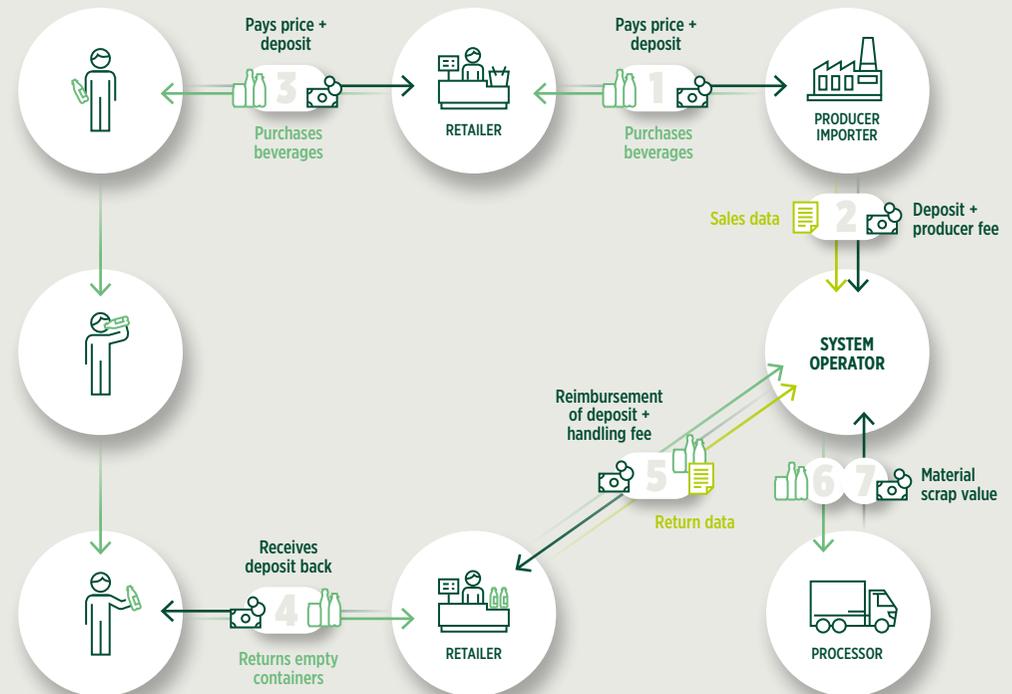
Material owner:

System operator

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW



TURKEY¹

Population: 83.1 m

Website: Not available



LEGISLATIVE FRAMEWORK¹

- Mandate:** TBD
- Enacted:** TBD
- Implemented:** TBD – Scheduled for 2021, but likely postponed to 2023
- Authority:** Ministry of Environment and Urbanization
- Targets:** Collection target is 70% in Year 1, 80% in Year 2, and 90% by Year 3

PROGRAM SCOPE

- Material:** Glass, aluminum, plastic (will expand to Tetra Pak and HDPE plastic in second stage of DRS)
- Beverage type:**
- Containers 100 ml to 3 L (0.026 gal to 0.79 gal):** Tea and coffee, carbonated soft drinks, energy drinks, milk, fruit and vegetable juice, water, sports drinks, alcohol beverages
- Excluded:** None

DEPOSITS AND FEES

- Deposit initiator:** TBD
- Deposit value:** TBD – Likely a flat rate between 0.25 TRY and 50 TRY (€ 0.04 – € 0.08)
- Unredeemed deposits:** TBD – Will likely remain with system operator
-
- Handling fees:** TBD

¹ Note: Draft legislation under discussion. Details to be finalized and approved by the Ministry of Environment and Urbanization.

SYSTEM OPERATOR

Clearing system:

TBD – Likely centralized

System operator & administrator:

TBD

System finance:

Unredeemed deposits, producer fees, material revenues

REDEMPTION SYSTEM

Return to Retailer:

All retailers that sell eligible beverage containers must accept empty containers back for recycling. In Year 1, all stores with sales area > 1000 m² are obligated to invest in RVMs. Retailers > 500 m² are obligated to invest in RVMs until beginning of Year 5 that DRS is in place.

Material owner:

Regional network operators

SYSTEM RESULTS

Not available

MONEY MATERIAL FLOW

Not available

AUTHOR'S NOTE

This report was prepared by the Reloop Platform and is intended to provide a comprehensive summary of over 40 different deposit-return systems (DRS) for one-way beverage containers in existence around the world.

Reloop Platform



Reloop is a broad platform of like-minded interests that share a common vision for a circular economy. The founding members of the organization bring together industry, government, and non-governmental organizations to form a network for advances in policy that create enabling system conditions for circularity across the global economy. With members coming from different sectors, the platform aims to work as a catalyst in order to generate economic and environmental opportunities for all stakeholders in the value chain. This includes producers, distributors, recyclers, academia, NGOs, trade unions, green regions, or cities. Reloop is born to connect stakeholders, allow for information-sharing to inform those stakeholders, and influence decision makers to adopt policy that works towards the implementation of policies and systems that promote a circular economy.

Disclaimer

Reloop provides the information contained in this report in good faith, and every attempt has been made to ensure accuracy. However, we recognize that in a report of this breadth some errors of accuracy or omission are likely. The facts and data contained in this document are taken primarily from external sources, including publicly accessible annual reports released by program operators, stewardship agencies, or other involved entities. Other information was obtained through personal communication and e-mail correspondence. We welcome any comments, clarifications, and suggestions for improvement to hello@reloopplatform.org.

Acknowledgements

This report would not have been possible without the cooperation of numerous individuals across the world (too many to mention individually) whose work is dedicated to beverage container collection and recycling and who gave their time to provide and/or review for accuracy the information that is the basis for this Global Deposit Book. Their contributions and help is greatly appreciated.

LIST OF REFERENCES BY JURISDICTION

EU 28 + EFTA (Norway/Iceland)

Country	Data Source
<i>Croatia</i>	Personal communication with Ministry of Environment of the Croatian Republic, April 2020
<i>Denmark</i>	Dansk Retursystem. Årsrapport 2019. Accessed from < http://www.mynewsdesk.com/dk/danskretursystem/documents/aarsrapport-2019-94772 >
<i>Estonia</i>	Personal communication with Rauno Raal, Eesti Pandipakend, 9 September 2020
<i>Finland</i>	Personal communication with Tommi Vihavainen, PALPA, 12 May 2020. PALPA's website. < https://www.palpa.fi/beverage-container-recycling/deposit-refund-system/#return-rates >
<i>Germany</i>	Personal communication with Thomas Morgenstern, TOMRA, 15 April 2020
<i>Iceland</i>	Personal communication with Helgi Larusson, Endurvinnslan Hf, 7 May 2020
<i>Lithuania</i>	Personal communication with Gintaras Varnas, Užstato sistemos administratorius (USAD), 25 March 2020. Užstato sistemos administratorius (USAD)'s website. < https://grazintiverta.lt/en/#slide-intro >
<i>Netherlands</i>	Personal communication with Thomas Morgenstern, TOMRA, 15 April 2020

Norway Infinitum. Årsrapport 2019. Accessed from <https://infinitum.no/armelding-vis/27/c7d2cfa03eab48e2053906b0f40a5321/Infinitum_Arsrapport_2019.pdf>

Sweden Returpack Svenska AB. Hållbarhetsredovisning 2019. Accessed from <https://pantamera.nu/wp-content/uploads/2020/05/Returpack_Hallbarhetsredovisning2019.pdf>

USA

State	Data Source
<i>California</i>	"Redemption Rates and Other Features of 10 U.S. State Deposit Programs." Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.
<i>Connecticut</i>	Container Recycling Institute. Bottle Bill Resource Guide: Connecticut. Accessed from http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/Connecticut Personal communication with Chris Nelson at Connecticut Department of Energy & Environmental Protection (DEEP), 11 May 2020
<i>Hawaii</i>	Personal communication with Jaylen Ehara, Hawaii Department of Health, Office of Solid Waste Management, 17 January 2020
<i>Iowa</i>	"Redemption Rates and Other Features of 10 U.S. State Deposit Programs." Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.

Maine	“Redemption Rates and Other Features of 10 U.S. State Deposit Programs.” Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.
Massachusetts	“Redemption Rates and Other Features of 10 U.S. State Deposit Programs.” Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.
Michigan	Michigan Department of Treasury, Office of Revenue and Tax Analysis. May 27, 2020. “Bottle Deposit Information.” Accessed from < https://www.michigan.gov/documents/treasury/Bottle_Deposit_Information_6-17-20_694088_7.pdf >
New York	“Redemption Rates and Other Features of 10 U.S. State Deposit Programs.” Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.
Oregon	Oregon Liquor Control Commission. “2019 Beverage Container Return Data.” Accessed from < https://www.oregon.gov/olcc/Docs/bottle_bill/2019_BeverageContainerReturnData.pdf > Oregon Beverage Recycling Cooperative. “2019 Annual Report.” Accessed from < https://www.obrc.com/Content/Reports/OBRC%20Annual%20Report%202019.PDF > “Redemption Rates and Other Features of 10 U.S. State Deposit Programs.” Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.
Vermont	“Redemption Rates and Other Features of 10 U.S. State Deposit Programs.” Document provided by Susan Collins, Container Recycling Institute. 19 August 2020.

CANADA

Data Source

CM Consulting Inc. 2020. “Who Pays What: An Analysis of Beverage Container Collection and Costs in Canada”. Not yet available to the public.

AUSTRALIA

State

Data Source

Australian Capital Territory (ACT)	ACT Government. “ACT Container Deposit Scheme: Annual Statutory Report 2018-19.” Accessed from < https://www.parliament.act.gov.au/__data/assets/pdf_file/0010/1455904/Container-Deposit-Scheme-Annual-Report-2018-19.PDF >
New South Wales	Personal communication with Robert Kelman, Director Reeloo Pacific, 28 April 2020
Northern Territory	Northern Territory Environment Protection Authority. “Environment Protection (Beverage Containers and Plastic Bags) Act 2011 – Annual Report 2018-19.” Accessed from < https://ntepa.nt.gov.au/__data/assets/pdf_file/0010/746083/2018_2019_CDS_annual_report.pdf >
South Australia	South Australia Environment Protection Authority. “Container Deposits.” Accessed from < https://www.epa.sa.gov.au/environmental_info/container_deposit >
Queensland	Personal communication with Robert Kelman, Director Reeloo Pacific, 28 April 2020
Western Australia	Personal communication with Robert Kelman, Director Reeloo Pacific, 28 April 2020

MIDDLE EAST

<i>Jurisdiction</i>	<i>Data Source</i>
<i>Israel</i>	Personal communication with Carmit Bardugo, Asofta Recycling Corporation, 7 October 2019

OCEANIA & CARIBBEAN

<i>Jurisdiction</i>	<i>Data Source</i>
<i>Kiribati</i>	Personal communication with Alice Leney (alice@coolcard.co.nz), 28 March 2020
<i>Palau</i>	Personal communication with Fuji Katsuo (aquasdj2@yahoo.co.jp), 23 May 2020
<i>Republic of the Marshall Islands</i>	Personal communication with Alice Leney (alice@coolcard.co.nz), 28 March 2020
<i>Barbados</i>	Container Recycling Institute. "Bottle Bill Resource Guide." Accessed from < http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/barbados >
<i>Kosrae</i>	Personal communication with Alice Leney (alice@coolcard.co.nz)
<i>Pohnpei</i>	Personal communication with Alice Leney (alice@coolcard.co.nz)
<i>Yap</i>	Personal communication with Alice Leney (alice@coolcard.co.nz)

UPCOMING PROGRAMS

<i>Jurisdiction</i>	<i>Data Source</i>
<i>Latvia</i>	Personal communication with Janis Brizga, Zala Briviba, 13 August 2020
<i>Malta</i>	Personal communication with Malcolm Scerri, 7 August 2020
<i>Portugal</i>	Personal communication with Ana Gutierrez Dewar (Retorna) and Eusebio de la Casa (Recircula), 29 April 2020
<i>Scotland</i>	Personal communication with Jenni Hume (Have You Got the Bottle Scotland) and James Mackenzie, 20 May 2020
<i>Slovakia</i>	Personal communication with Anna Larsson, Director Circular Economy Reloop Europe, 26 March 2020
<i>Turkey</i>	Personal communication with Metin Tek, TOMRA, 15 April 2020

GLOSSARY / ACRONYMS

California redemption/Refund value (CRV): Similar to beverage container deposits in other jurisdictions. See “Deposit.”

Clearing system: The entity responsible for reconciling the deposits paid/redeemed.

Consumer container fee: A per unit non-refundable fee paid at the point of purchase. In Saskatchewan (Canada), the fee is called an Environmental Handling Charge. In Yukon, it is called a Recycling Fund Fee, and in the Northwest Territories it is called a Container Handling Fee. In other jurisdictions, like British Columbia, it is called a Container Recycling Fee. Unlike the others which are set by the government or other responsible entity, the Container Recycling Fee represents the net cost (net of unredeemed revenue) per container type.

Deposit: A sum of money that is charged on applicable beverage containers at the point of purchase, which retailers are required to collect from consumers. Intended to act as an incentive to recycle, deposits refunded when the consumer returns the empty container to an authorized redemption center or retailer for recycling.

Deposit initiator: The first agent (i.e. producer, bottler, distributor, importer) to collect the deposit on a beverage container sold in the jurisdiction.

Handling fee: A fee that is paid to redemption centers and retailers as compensation for receiving, paying out refunds for, sorting, and storing redeemed beverage containers. On a long-term basis, handling fees also cover expenses related to investments in reverse vending machines, electricity costs, space requirements, and additional personnel required to handle the containers. The fee is often paid by the bottler or distributor, but in some cases is paid by the state (e.g. California).

HDPE: High density polyethylene (plastic)

Material owner: The owner of the recyclable commodity (empty containers) that can sell the material to the market or keep the material to have it converted into raw material for new bottles or cans.

PET: Polyethylene terephthalate (plastic)

Processing fee: Per unit fee paid by beverage manufacturers to system operator

Processing payment: The fee offered to processors in Canada to sort and market beverage containers. It is paid on a per unit basis.

Processor: Entities that provide services that may include counting, weighing, and measuring, of empty beverage containers. They may be responsible for scrap buying/selling, overseas shipping and brokering, as well as materials transformation.

Producer: Brand owner, manufacturer or distributor of beverages. Produces beverages and places the products for sale on the market. Producers sell their products to retailers, who sell them to consumers.

Producer (administration) fee: Producer or administration fee: Also known as an extended producer responsibility (EPR) fee, this is a fee paid by beverage producers/importers/distributors to the DRS operator to cover the proportion of system costs not covered by material revenues and/or unredeemed deposits. Although different terms may be used in different jurisdictions, they all represent the same thing.

Redemption center (depot): A dedicated establishment for the collection of empty beverage containers in exchange for a deposit refund. These centers are typically situated in retail parking lots or warehouses on the outskirts of a town or city.

Retailer: Party that buys beverages from producers and sells them to consumers through a licensed establishment. In some DRSs, they are also responsible for accepting empty beverage containers from consumers and paying out deposit refunds.

Return-to-redemption center (depots): A DRS model in which consumers return empty beverage containers for recycling to privately-owned businesses established solely for this purpose.

Return-to-retail: One approach to DRS, where retailers selling beverages become legally responsible for accepting empty containers for recycling. Depending on the legislation, only stores of a certain size are required to participate, such as in Lithuania, while smaller stores may opt-out. This model is considered best-in-class as it is most convenient for consumers and also offers benefits for retailers through increased foot traffic, economic incentives, and an improved corporate image. Return-to-retail models are most common in Europe, but are also used in some North American DRSs.

Reverse vending machine (RVM): An automated mechanical device that accepts one or more types of empty beverage containers and issues a deposit refund. In some cases, they may also have a compaction function. Used by consumers at redemption locations.

Unredeemed deposits: The value of paid deposits on containers that have not been redeemed — possibly discarded in trash/as litter, recycled through other means, or lost.



reloop

www.reloopplatform.org

Reducing contamination through use of innovative digital education in lockdown

Jessica Beare

Waste and Recycling Officer

South Oxfordshire District Council and Vale of White Horse District
Council



South Oxfordshire and Vale of White Horse

South Oxfordshire

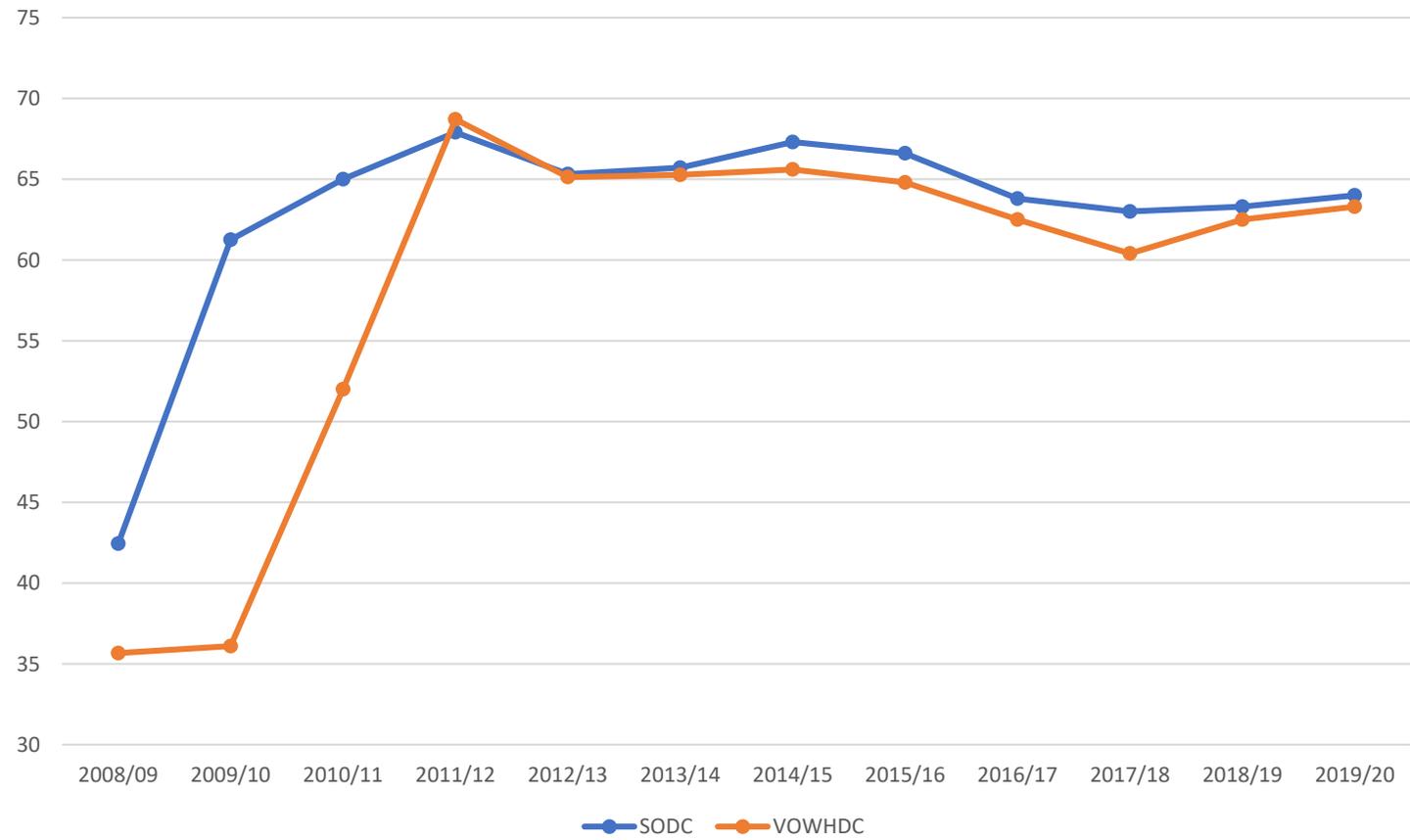
- 66,733 properties
- 64.0% recycling rate
- Sub-rural area with market towns

Vale of White Horse

- 64,193 properties
- 63.3% recycling rate
- Sub-rural area with market towns



Recycling Rates over Time



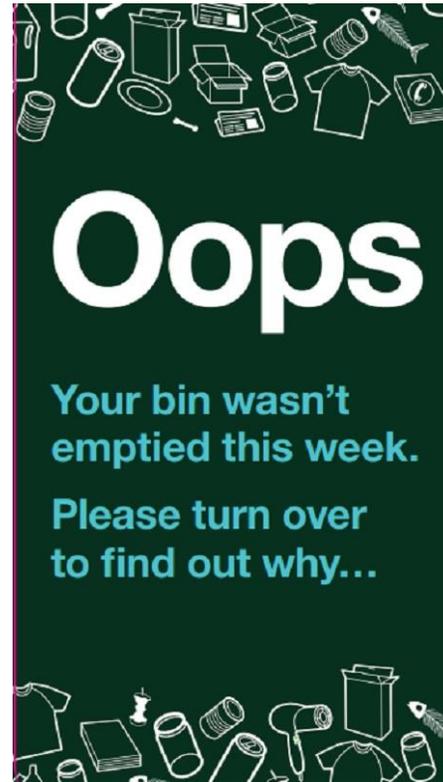
Collections

- Biffa contract 2009 – 2024.
- 240L green DMR bin – fortnightly collection.
- 180L black refuse bin – fortnightly collection.
- 24L food waste bin – weekly collection.
- 7L indoor food waste caddy.
- 240L garden waste bin – fortnightly collection.

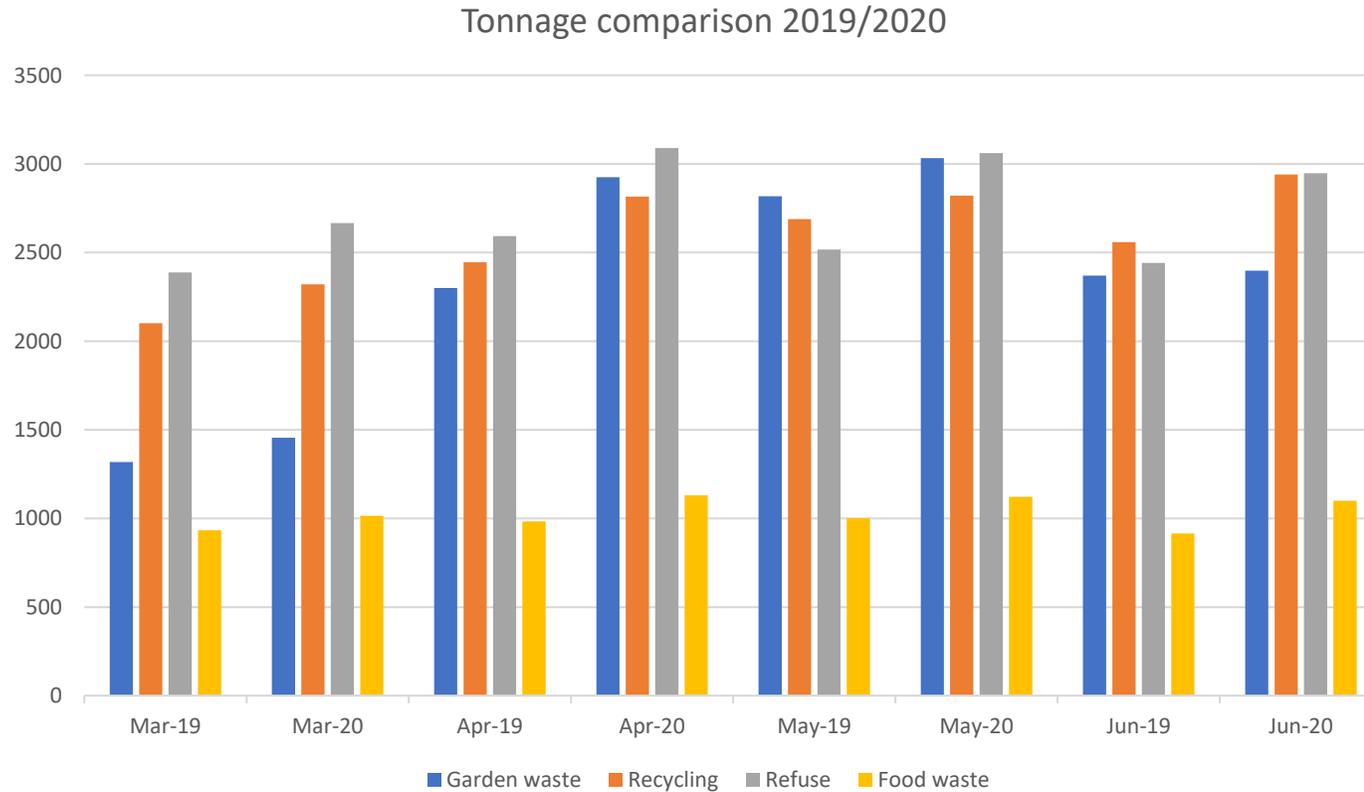


Contamination policy and procedure

- Lift lids and visually check.
- Attach oops tag:
 - Food
 - Nappies
 - Garden waste
 - WEEE or textiles
 - Other non-recyclables
 - Black/coloured sacks
- Mark on in-cab PDA
- Crews will not return for that collection.



Tonnage comparison 2019/2020



Contamination issues during lockdown

- Increased waste stream meant consistent “Christmas levels” of DMR, particularly cardboard.
- Number of tips was up to at least three per round.
- Staff shortages due to illness and COVID-related reasons.
- Crews reported seeing more contamination and non-target items, tagging increased.
- Needed to be sure of consistent high quality DMR and not “aspirational recycling”.



What we knew about residents in lockdown

- Working from Home, changes in waste and lifestyle behaviours e.g. cooking at home, buying online etc.
- Boredom!
- “Mindless scrolling” of social media looking for distractions.
- Spending 23 minutes on Facebook each day.
- Main age group of UK users of Facebook is 25-34
- 2017 Future Thinking survey found Millennials (aged 25-40) are the worst age group for recycling.
- Access the working generation who would normally be out of the house.



Innovative ways of communicating

- Easily absorbable, interesting and engaging.
- Recycling Week 2020 – Together We Recycle.
- Four videos:
 - Help from home: 2.4k views on Facebook
 - Help the bin crews
 - Help the call centre
 - Help behind the scenes: 3.6k views on Facebook



The Great Green Recycling Quiz

- 17 June 2020
- 13 pictorial questions of recyclable and non-recyclable items.
- Shared on Facebook, Twitter and our website where it remains open.

The Great Green Recycling Bin quiz

Question 1/13



Can black or coloured bags/sacks go in the **green recycling bin**? *

Yes

No

Next

The Great Green Recycling Bin quiz

Question 10/13



Can broken glass e.g. from drinking glasses, light bulbs and glass jugs go in the **green recycling bin**? *

Yes

No

Next



The Great Green Recycling Bin quiz

Correct!

Black and coloured bags/sacks can only be used in your black bin.

Recycling should always be put loose in the green recycling bin - or if necessary in a clear bag/sack.

This is so your bin crew can see what's in your recycling bin.

Next

The Great Green Recycling Bin quiz

Oops!

The correct answer is no. Black and coloured bags/sacks can only be used in your black bin.

Recycling should always be put loose in the green recycling bin - or if necessary in a clear bag/sack.

This is so your bin crew can see what's in your recycling bin.

Next



Thank you for taking the time to complete our recycling quiz!

You scored a total of 13/13.

If you scored 1 - 5 correct answers:

OK, but here's three things that would really help us: please **don't** put things like black bags, food waste and textiles into your green recycling bin. We cannot empty recycling bins with non-recyclables in them so they will be left unemptied. Please check BINZONE to help get the right things in the right bin.

If you scored 6 - 10 correct answers:

You obviously know your stuff! But there are a few items you are not sure of - you can always check them using BINZONE.

If you scored 10 - 13 correct answers:

Wow - you are a lean green recycling machine! Please keep up the great work. If there are any items that puzzle even you, then check out BINZONE.

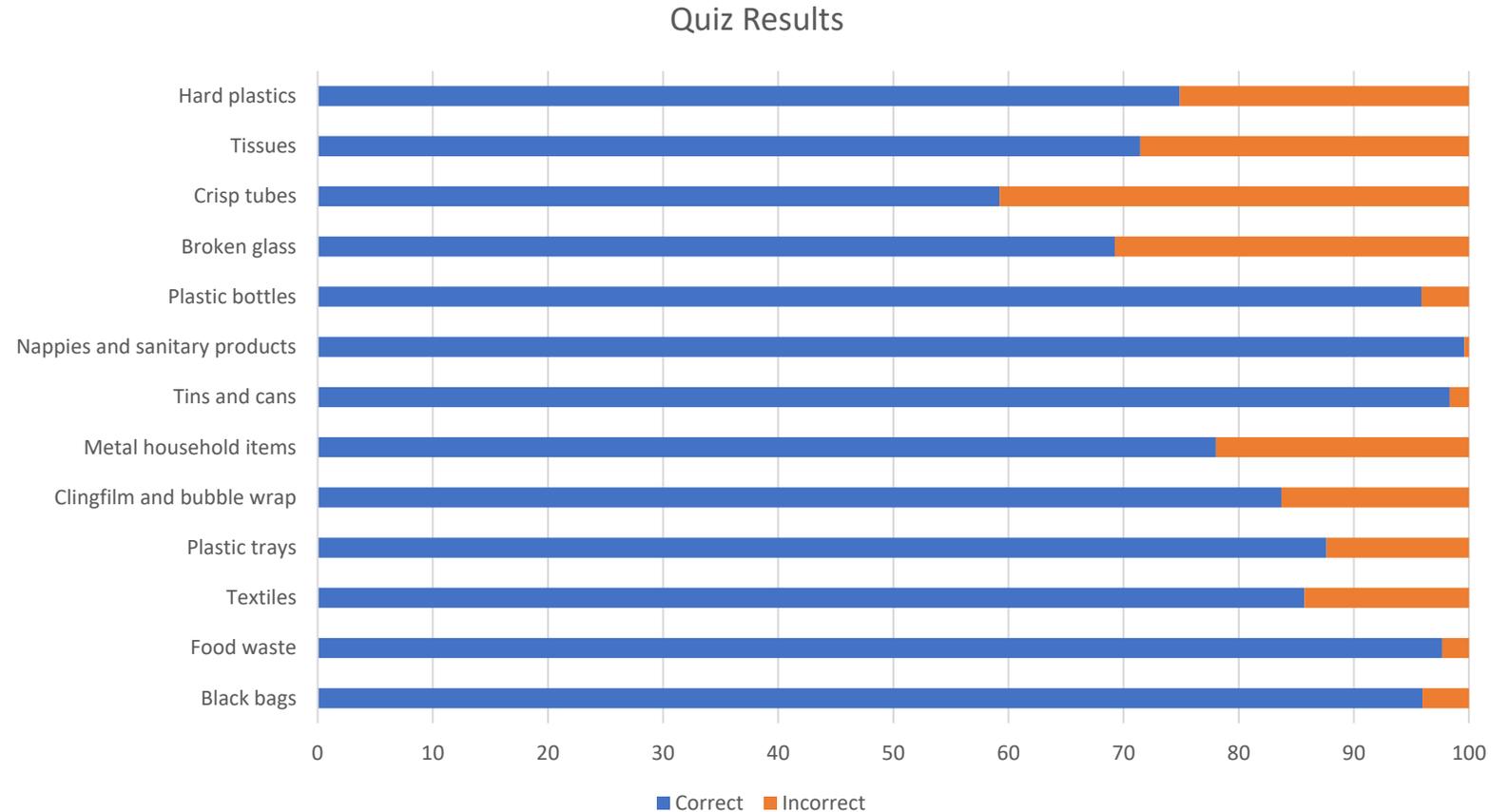
Download our free BINZONE app to your smartphone so you'll never put your rubbish in the wrong bin again!



Quiz uptake and results

- 2,448 full responses
- 464 partial responses

- Contamination rate of 9%, down 3% on the previous year.



Conclusions

- Must develop communications with behaviour and lifestyle changes in mind.
- How is this going to change future communications?
- See lockdown and behavioural changes as an opportunity to engage in new ways with residents.
- Our findings will feed into all future projects.



Questions?

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