

## Deposit Return Systems

### Fact Sheet: System Performance



In an effort to reduce litter and increase recycling, more and more jurisdictions are turning to deposit return systems (DRSs) for the recovery of beverage containers. Intended to act as an economic incentive to recycle, a deposit is a small fee charged on the purchase of certain beverage containers, which is refunded (partially or fully) to the consumer when he/she returns the empty container to a collection point.

Despite claims to the contrary by the beverage industry, international experience consistently shows that collection rates for beverage containers are significantly higher in jurisdictions that have deposit return. In Canada, provinces with deposit return programs recover an average of 80% of all non-refillable beverage containers sold, compared to an average of just 50% in provinces that recover containers through municipal curbside recycling programs. In some jurisdictions, collection rates are significantly higher at more than 95%. In the U.S., states with active container deposit laws recycle 50-89% of covered containers, while the overall recycling rate for beverage containers in states without deposit return is around 30%.<sup>1</sup> Nearly every European country with deposit return for single use beverages reports recycling rates of over 85%.

In addition, in most non-deposit jurisdictions in North America and Europe, collection rates for non-deposit containers tend to be over-estimated because they report on collection rather than what is actually recycled. What's more is that these rates do not account for free-riders and can sometimes include tonnage of imported recyclables.

Program performance is typically measured using the collection rate, which represents the number of containers collected for recycling in a given jurisdiction versus the number of containers sold. Assessing the performance of a DRS is straightforward since the deposit/refund allows sales and collections to be tracked to the last unit. Measuring the performance of curbside collection programs, on the other hand, is more complex because beverage packaging is collected together with other material, such as paper and non-beverage containers.

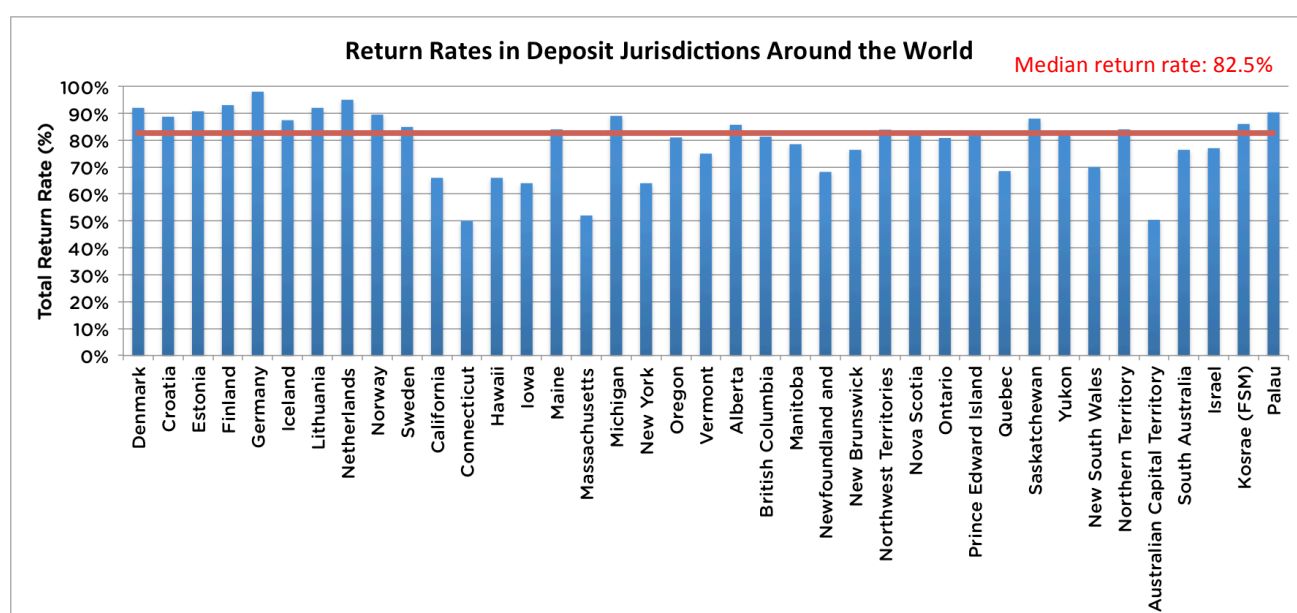
In contrast, in DRSs, collection *is* recycling because contamination is low and quality is high, and because these rates are reported on unit counts, not on weight.

The following table summarizes the most recently available performance data of 40 different DRSs around the world, where data was available.

Jurisdiction	Data Year	Refund		Total Return Rate
		Local Currency	Euro and USD Equivalent	
Croatia	2019	0.5 HRK	€0.066 USD\$0.07	88.7% <sup>ii</sup>
Denmark	2019	1-3 DKK	€0.13- €0.4 USD\$0.15-\$0.45	92% <sup>iii</sup>
Estonia	2018	€0.10	(USD\$0.11)	90.7% <sup>iv</sup>
Finland	2019	€0.10-€0.40	USD\$0.11- \$0.45	93% <sup>v</sup>
Germany	2018	€0.25	USD\$0.28	98% <sup>vi</sup>
Iceland	2019	15 ISK	€0.11 USD\$0.12	87.4% <sup>vii</sup>
Lithuania	2019	€0.10	USD\$0.11	92% <sup>viii</sup>
Netherlands	2018	€0.25	USD\$0.28	95% <sup>ix</sup>
Norway	2019	1-2.5 NOK	€0.13- €0.32 USD\$0.12-\$0.30	89.5% <sup>x</sup>
Sweden	2019	1-2 SEK	€0.11-€0.22 USD\$0.12-\$0.24	84.9% <sup>xi</sup>
California <sup>xii</sup>	2018	USD\$0.05-\$0.10	€0.05-€0.09	66% <sup>xiii</sup>
Connecticut <sup>xiv</sup>	2018	USD\$0.05	€0.05	50% <sup>xv</sup>
Hawaii <sup>xvi</sup>	2018-19	USD\$0.05	€0.05	62.7% <sup>xvii</sup>
Iowa <sup>xviii</sup>	2018	USD\$0.05	€0.05	64% <sup>xix</sup>
Maine	2018	USD\$0.05-\$0.15	€0.05-€0.14	84% <sup>xx</sup>
Massachusetts	2018	USD\$0.05	€0.05	52% <sup>xxi</sup>
Michigan	2018	USD\$0.10	€0.09	89% <sup>xxii</sup>
New York	2018	USD\$0.05	€0.05	64% <sup>xxiii</sup>
Oregon	2018	USD\$0.10	€0.09	81% <sup>xxiv</sup>
Vermont	2018	USD\$0.05-\$0.15	€0.05-€0.14	75% <sup>xxv</sup>
Alberta	2018	CAD\$0.10-\$0.25	€0.07-€0.17 USD\$0.07-\$0.18	83.9% <sup>xxvi</sup>
British Columbia	2018	CAD\$0.05-\$0.20	€0.03-€0.13 USD\$0.04-\$0.15	77.4% <sup>xxvii</sup>
Manitoba	2014	CAD\$0.10-\$0.20	€0.07-€0.13 USD\$0.10-\$0.15	78.5% <sup>xxviii</sup>
Newfoundland and Labrador	2018-2019	CAD\$0.05-\$0.10	€0.03-€0.07 USD\$0.04-\$0.07	68.2% <sup>xxix</sup>
New Brunswick	2018	CAD\$0.05-\$0.10	€0.03-€0.07 USD\$0.04-\$0.07	69.7% <sup>xxx</sup>
Northwest Territories	2018-2019	CAD\$0.10-\$0.25	€0.07-€0.17 USD\$0.07-\$0.18	83.9% <sup>xxxi</sup>
Nova Scotia	2018-2019	CAD\$0.05-\$0.10	€0.03-€0.07 USD\$0.04-\$0.07	82.9% <sup>xxxii</sup>
Ontario ( <i>alcohol containers only</i> )	2018	CAD\$0.10-\$0.20	€0.07-€0.13 USD\$0.10-\$0.15	87% <sup>xxxiii</sup>
Prince Edward Island	2018	CAD\$0.05-\$0.10	€0.03-€0.07 USD\$0.04-\$0.07	82.5% <sup>xxxiv</sup>
Quebec ( <i>beer and soft drinks only</i> )	2018	CAD\$0.05-\$0.20	€0.03-€0.13 USD\$0.04-\$0.15	68.5% <sup>xxxv</sup>

Jurisdiction	Data Year	Refund		Total Return Rate
		Local Currency	Euro and USD Equivalent	
Saskatchewan	2018-2019	CAD\$0.05-\$0.40	€0.03-€0.27 USD\$0.04-\$0.29	88% <sup>xxxvi</sup>
Yukon	2016	CAD\$0.05-\$0.25	€0.03-€0.17 USD\$0.04-\$0.18	82.3% <sup>xxxvii</sup>
New South Wales	2019	AUD \$0.10	€0.06 USD \$0.07	Approximately 70% <sup>xxxviii</sup>
Queensland	2019	AUD \$0.10	€0.06 USD \$0.07	52%-55% <sup>xxxix</sup>
Northern Territory	2018-2019	AUD\$0.10	€0.06 USD \$0.07	84% <sup>xl</sup>
Australian Capital Territory (ACT)	2018-2019	AUD\$0.10	€0.06 USD \$0.07	50.4% <sup>xli</sup>
South Australia	2018-2019	AUD\$0.10	€0.06 USD \$0.07	76.4% <sup>xlii</sup>
Israel	2018	0.3 ILS	€0.07 USD\$0.08	77% <sup>xliii</sup>
Kosrae (Federated States of Micronesia)	2017	USD\$0.05	€0.05 USD\$0.05	86% <sup>xliiv</sup>
Palau	2018	USD\$0.05	€0.05 USD\$0.05	90.34% <sup>xlv</sup>
Republic of the Marshall Islands	2019	USD\$0.05	€0.05 USD\$0.05	Around 85% <sup>xlvi</sup>
Pohnpei (Federated States of Micronesia)	2017	USD\$0.05	€0.05 USD\$0.05	Estimated at 60% <sup>xlvii</sup>

**Disclaimer: In general, return rates were obtained from programs operator or the government agency responsible for oversight.**



## Conclusion

From North America to Australia and across Europe, global momentum for deposit return continues to grow. DRSS achieve high performance, produce higher quality recyclates, and promote the transition to a circular economy. Given these benefits and the often poor performance of multi-material curbside programs, more and more beverage companies are considering it to be the best solution to manage their empty containers in a circular way and to tackle the growing problems of land-based and marine litter.

## Endnotes

<sup>i</sup> Container Recycling Institute. 2013. "Bottled Up: Beverage Container Recycling Stagnates (2000-2010)." <[www.container-recycling.org/index.php/publications/2013-bottled-up-report](http://www.container-recycling.org/index.php/publications/2013-bottled-up-report)>

<sup>ii</sup> Ministry of the Environment of the Croatia Republic. Data provided to ReLoop via e-mail correspondence April 7, 2020.

<sup>iii</sup> Dansk Retursystem. Årsrapport 2019. <<https://www.danskretursystem.dk/wp-content/uploads/2020/03/A%CC%8Arssrapport-2019-FINAL-inkl.-grafik-06.03.2020.pdf>>

<sup>iv</sup> Personal communication with Rauno Raal, Eesti Pandipakend OÜ, March 27, 2020.

<sup>v</sup> Personal communication with Tommi Vihavainen (Suomen Palautuspakkaus Oy), April 16, 2020

<sup>vi</sup> ACR+. January 2019. "Deposit-Refund Systems in Europe for One-Way Beverage Packaging." <[https://www.acrplus.org/images/technical-reports/2019\\_ACR\\_Deposit-refund\\_systems\\_in\\_Europe\\_Report.pdf](https://www.acrplus.org/images/technical-reports/2019_ACR_Deposit-refund_systems_in_Europe_Report.pdf)>

<sup>vii</sup> Personal communication with Helgi Lárússon, Managing Director at Framkvaemdastjóri, March 18, 2020.

<sup>viii</sup> Personal communication with Gintaras Varnas, USAID, March 25, 2020.

<sup>ix</sup> Personal communication with Raymond Gianotten, SRN, 7 May 2020.

<sup>x</sup> Infinitum. Årsrapport 2019. Available at [https://infinitum.no/arsmelding-vis/27/c7d2cfa03eab48e2053906b0f40a5321/Infinitum\\_Arsrapport\\_2019.pdf](https://infinitum.no/arsmelding-vis/27/c7d2cfa03eab48e2053906b0f40a5321/Infinitum_Arsrapport_2019.pdf)

<sup>xi</sup> Returpack Svenska AB. "Hållbarhetsredovisning 2019." <[https://pantamera.nu/wp-content/uploads/2020/05/Returpack\\_Hallbarhetsredovisning2019.pdf](https://pantamera.nu/wp-content/uploads/2020/05/Returpack_Hallbarhetsredovisning2019.pdf)>

<sup>xii</sup> Redemption rate reflects direct CRV redemption. In 2018, curbside programs collected an additional 9% of CRV beverage containers sold.

<sup>xiii</sup> CalRecycle. "Biannual Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates." May 10, 2019. <<https://www.calrecycle.ca.gov/docs/cr/bevcontainer/rates/biannualrpt/2018julydec.pdf>>

<sup>xiv</sup> Before water bottles were added to the deposit system in 2009, redemption rates were higher (in the range of 65-70%).

<sup>xv</sup> Connecticut Department of Energy & Environmental Protection

<sup>xvi</sup> Deposit containers collected at curbside (in Honolulu only) are already included in the statewide redemption rates.

<sup>xvii</sup> Personal communication with Jaylen Ehara, Hawaii State Department of Health, 17 January 2020.

<sup>xviii</sup> Recycling rate is 71%; estimate of 7% is through curbside and other programs.

<sup>xix</sup> Iowa Department of Natural Resources

<sup>xx</sup> Maine Beverage Association

<sup>xxi</sup> Massachusetts Department of Environmental Protection

<sup>xxii</sup> Michigan Department of Treasury

<sup>xxiii</sup> New York State Department of Taxation and Finance.

<sup>xxiv</sup> Oregon Dept. of Environmental Quality, Oregon Liquor Control Commission, Oregon Beverage Recycling Cooperative

<sup>xxv</sup> Vermont Agency of Natural Resources

<sup>xxvi</sup> Alberta Beverage Container Recycling Corporation. 2018: Making a Difference.

<<https://www.abcrc.com/assets/ABCRC-Sustainability-Report-2018.pdf>>

<sup>xxvii</sup> Encorp Pacific. Connecting with Consumers: 2018 Annual Report. <<https://www.return-it.ca/ar2018/pdf/AnnualReport.pdf>>

<sup>xxviii</sup> CM Consulting Inc. 2018. "Who Pays What: An Analysis of Beverage Container Collection and Costs in Canada: 2018

<sup>xxix</sup> Personal communication with Gordon Wall at Multi Material Stewardship Board, January 2020.

<sup>xxx</sup> Encorp Atlantic Inc. Winter 2019 Journal. <<http://encorpatl.ca/wp-content/uploads/2019/03/RC-Winter-Journal-2019-engl.pdf>>

<sup>xxxi</sup> 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 NWT's

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reported overall return rate down from 85.4% (reported in Government of Northwest Territories. “Waste Reduction and Recovery Program 2018-2019 Annual Report.”

<[https://www.ntassembly.ca/sites/assembly/files/td\\_51-192.pdf](https://www.ntassembly.ca/sites/assembly/files/td_51-192.pdf)> to 83.9%.

<sup>xxxii</sup> Divert NS. 2018-2019 Annual Report.

<<https://divertns.ca/assets/files/DivertNS2019AnnualReport.pdf>>

<sup>xxxiii</sup> The Beer Store. Reuse & Recycle to Build a Cleaner Ontario: The Beer Store Responsible Stewardship 2018. <<https://beerstore-wpengine.netdna-ssl.com/wp-content/uploads/2019/04/StewardshipReport2018.pdf>>

<sup>xxxiv</sup> Personal communication with Mike Cheverie, Beverage Container Program Coordinator, Department of Environment, Water and Climate Change at the Government of Prince Edward Island.

<sup>xxxv</sup> Recyc-Québec. “Tableau des ventes et de la recuperation des contenants consignés (Bière et Boissons gazeuses).” <[https://www.recyc-](https://www.recyc-quebec.gouv.qc.ca/sites/default/files/documents/statistiques-ventes-recuperation-cru.pdf)

[quebec.gouv.qc.ca/sites/default/files/documents/statistiques-ventes-recuperation-cru.pdf](https://www.recyc-quebec.gouv.qc.ca/sites/default/files/documents/statistiques-ventes-recuperation-cru.pdf)>

<sup>xxxvi</sup> 88% return rate is the 3-year average. Taken from SARCAN 2018-2019 Overview,

<<https://www.sarcana.ca/public/uploads/ckfinder/files/2018-2019%20overview.pdf>>

<sup>xxxvii</sup> CM Consulting Inc. 2018. “Who Pays What: An Analysis of Beverage Container Collection and Costs in Canada: 2018.

<sup>xxxviii</sup> Personal communication with Robert Kelman, Reloop Pacific

<sup>xxxix</sup> Personal communication with Robert Kelman, Reloop Pacific

<sup>xl</sup> Northern Territory Environment Protection Authority. October 2019. Environment Protection (Beverage Containers and Plastic Bags) Act – Annual Report 2018-19. <

[https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0010/746083/2018\\_2019\\_CDS\\_annual\\_report.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0010/746083/2018_2019_CDS_annual_report.pdf)>

<sup>xli</sup> ACT Government. “ACT Container Deposit Scheme Annual Statutory Report 2018-19.” Available at [https://www.parliament.act.gov.au/\\_data/assets/pdf\\_file/0010/1455904/Container-Deposit-Scheme-Annual-Report-2018-19.PDF](https://www.parliament.act.gov.au/_data/assets/pdf_file/0010/1455904/Container-Deposit-Scheme-Annual-Report-2018-19.PDF)

<sup>xlii</sup> South Australia Environmental Protection Authority. “Container Deposits.”

[www.epa.sa.gov.au/environmental\\_info/container\\_deposit](http://www.epa.sa.gov.au/environmental_info/container_deposit)

<sup>xliii</sup> Personal communication with Carmit Bardugo, Asofta Recycling Corporation, October 7, 2019.

<sup>xliiv</sup> Kosrae State Solid Waste Management Strategy 2018-2027 (Action Plan: 2018-2022).

<<https://www.sprep.org/attachments/VirLib/Palau/kosrae-solid-waste-management-strategy.pdf>>

<sup>xliv</sup> Republic of Palau, Division of Solid Waste Management Bureau of Public Works. “Beverage Container Recycling Program Annual Report FY-2018.”

<sup>xlv</sup> Report provided by Alice Leney (alice@coolcard.co.nz) in April 2020 titled “Annual Report to the Nitijela for the CDL Recycling System for Year 2019”

<sup>xlv</sup> Personal communication with Alice Leney (alice@coolcard.co.nz), April 2020

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Reloop is a broad platform of like-minded interests that share a common vision for a circular economy. The founding members of the organisation bring together industry, government, and non-governmental organisations 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.

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