

Fact Sheet:

Deposit Return System: 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 66-96% of covered containers, while the overall recycling rate for beverage containers in states without deposit return is around 30%.¹ 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.

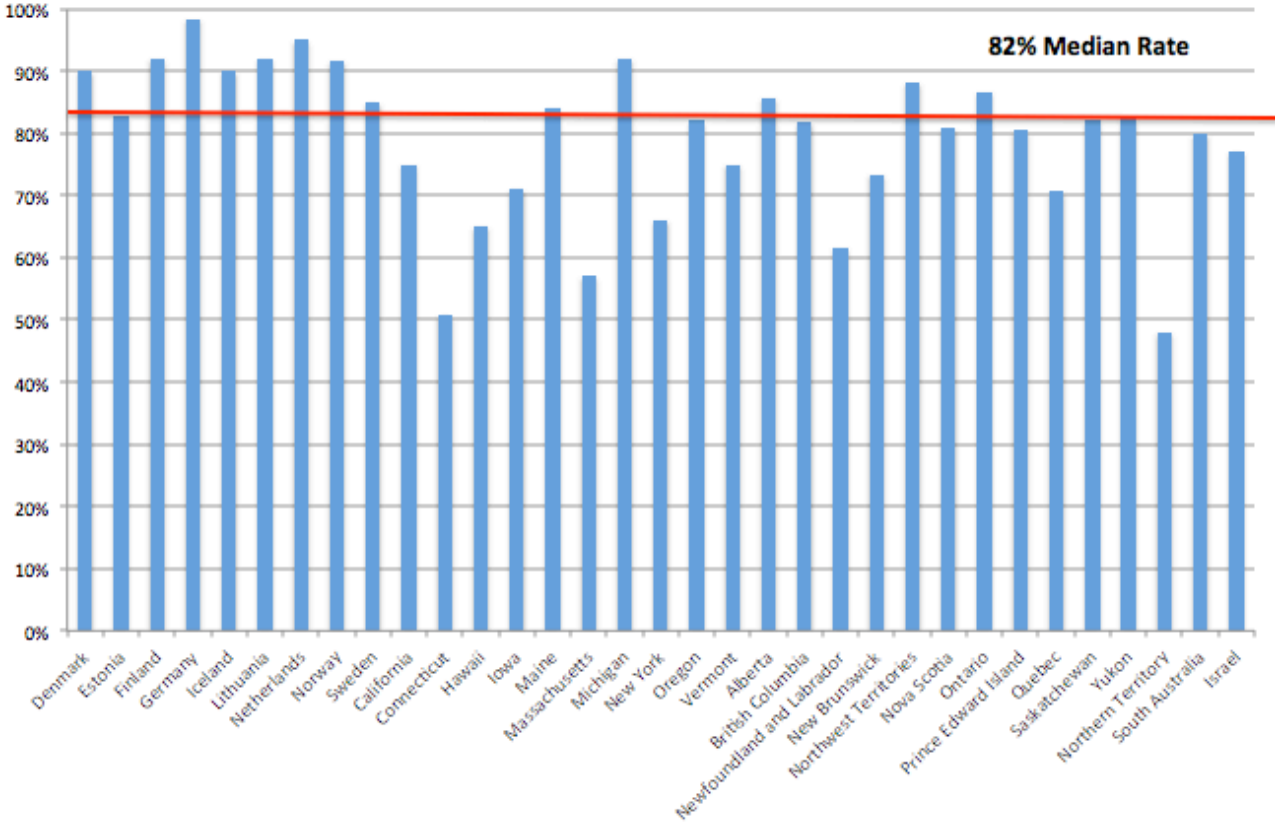
The following table summarizes the performance of 34 different DRSs around the world, where data was available.

| Jurisdiction | Data Year | Refund | | Total Return Rate |
|---------------------------|-----------|------------------|----------------------------------|-------------------------|
| | | Local Currency | Euro and USD Equivalent | |
| Croatia | 2016 | 0.5 HRK | €0.066 USD\$0.07 | Up to 87% |
| Denmark | 2016 | 1-3 DKK | €0.13- €0.4 USD\$0.15-\$0.45 | 89% |
| Estonia | 2017 | €0.10 | (USD\$0.11) | 82.7% |
| Finland | 2016 | €0.10-€0.40 | USD\$0.11- \$0.45 | 92% |
| Germany | 2015 | €0.25 | USD\$0.28 | 98.4% |
| Iceland | 2014 | 15 ISK | €0.11 USD\$0.12 | 90% |
| Lithuania | 2017 | €0.10 | USD\$0.11 | 91.9% ⁱⁱ |
| Netherlands | 2016 | €0.25 | USD\$0.28 | 95% |
| Norway | 2016 | 1-2.5 NOK | €0.13- €0.32 USD\$0.12-\$0.30 | 91.7% |
| Sweden | 2016 | 1-2 SEK | €0.11-€0.22 USD\$0.12-\$0.24 | 84.9% ⁱⁱⁱ |
| California ^{iv} | 2017 | USD\$0.05-\$0.10 | €0.05-€0.09 | 75% ^v |
| Connecticut ^{vi} | 2017 | USD\$0.05 | €0.05 | 50.7% ^{vii} |
| Hawaii ^{viii} | 2017 | USD\$0.05 | €0.05 | 65% ^{ix} |
| Iowa ^x | 2016 | USD\$0.05 | €0.05 | 71% ^{xi} |
| Maine | 2017 | USD\$0.05-\$0.15 | €0.05-€0.14 | 84% ^{xii} |
| Massachusetts | 2017 | USD\$0.05 | €0.05 | 57% ^{xiii} |
| Michigan | 2016 | USD\$0.10 | €0.09 | 92% ^{xiv} |
| New York ^{xv} | 2016 | USD\$0.05 | €0.05 | 66% ^{xvi} |
| Oregon | 2017 | USD\$0.10 | €0.09 | 75.7% ^{xvii} |
| Vermont | 2016 | USD\$0.05-\$0.15 | €0.05-€0.14 | 75% ^{xviii} |
| Alberta | 2016 | CAD\$0.10-\$0.25 | €0.07-€0.17 USD\$0.07-\$0.18 | 85.7% ^{xix} |
| British Columbia | 2016 | CAD\$0.05-\$0.20 | €0.03-€0.13 USD\$0.04-\$0.15 | 81.9% ^{xx} |
| Manitoba | 2014 | CAD\$0.10-\$0.20 | €0.07-€0.13 USD\$0.10-\$0.15 | 78.5% ^{xxi} |
| Newfoundland and Labrador | 2016 | CAD\$0.05-\$0.10 | €0.03-€0.07 USD\$0.04-\$0.07 | 61.6% ^{xxii} |
| New Brunswick | 2014-15 | CAD\$0.05-\$0.10 | €0.03-€0.07 USD\$0.04-\$0.07 | 76.4% ^{xxiii} |
| Northwest Territories | 2016-17 | CAD\$0.10-\$0.25 | €0.07-€0.17 USD\$0.07-\$0.18 | 88.2% ^{xxiv} |
| Nova Scotia | 2016-17 | CAD\$0.05-\$0.10 | €0.03-€0.07 USD\$0.04-\$0.07 | 80.8% ^{xxv} |
| Ontario | 2016 | CAD\$0.10-\$0.20 | €0.07-€0.13 USD\$0.10-\$0.15 | 86.6% ^{xxvi} |
| Prince Edward Island | 2016-17 | CAD\$0.05-\$0.10 | €0.03-€0.07 USD\$0.04-\$0.07 | 80.4% ^{xxvii} |
| Quebec | 2016 | CAD\$0.05-\$0.20 | €0.03-€0.13 USD\$0.04-\$0.15 | 70.6% ^{xxviii} |
| Saskatchewan | 2016 | CAD\$0.05-\$0.40 | €0.03-€0.27 USD\$0.04-\$0.29 | 82.1% ^{xxix} |

| Jurisdiction | Data Year | Refund | | Total Return Rate |
|---|-----------|------------------|---------------------------------|------------------------|
| | | Local Currency | Euro and USD Equivalent | |
| Yukon | 2014-15 | CAD\$0.05-\$0.25 | €0.03-€0.17 USD\$0.04-\$0.18 | 82.3% ^{xxx} |
| Northern Territory | 2016-17 | AUD\$0.10 | €0.07 USD\$0.08 | 48% ^{xxxii} |
| South Australia | 2016-17 | AUD\$0.10 | €0.07 USD\$0.08 | 79.9% ^{xxxii} |
| Israel | 2015 | 0.3 ILS | €0.07 USD\$0.08 | 77% |
| Kosrae (Federated States of Micronesia) | N/A | \$0.05 | | N/A |
| Kiribati | N/A | AUD\$0.04 | €0.03 | N/A |
| Palau | N/A | \$0.05 | | N/A |

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

Return Rates in 34 Deposit Return Jurisdictions



Conclusion:

From North America to Australia and across Europe, global momentum for deposit return continues to grow. DRSSs 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

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- ⁱ Container Recycling Institute. 2013. "Bottled Up: Beverage Container Recycling Stagnates (2000-2010)." <www.container-recycling.org/index.php/publications/2013-bottled-up-report>
- ⁱⁱ "Recycling: Lithuania deposit system exceeds all expectations." April 24, 2018. <www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/>
- ⁱⁱⁱ "About Returnpack." <<https://pantamera.nu/om-oss/returnpack-in-english/about-returnpack/>>
- ^{iv} Curbside included in redemption rate; curbside program collects 9% and other programs collect the other 72% of covered beverage containers.
- ^v CalRecycle. "Biannual Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates." May 10, 2018. <www.calrecycle.ca.gov/bevcontainer/Rates/BiannualRpt/JulyDecRpt.pdf>
- ^{vi} Before water bottles were added to the deposit system in 2009, redemption rates were higher (in the range of 65-70%).
- ^{vii} Judy Belaval, Connecticut Office of Source Reduction and Recycling – Bureau of MM&CA, Department of Energy and Environmental Protection.
- ^{viii} Deposit containers collected at curbside (in Honolulu only) are already included in the statewide redemption rates.
- ^{ix} Hawaii State Department of Health, Solid & Hazardous Waste Branch, Office of Solid Waste Management. 2017 is calendar year data for 10 months (through Oct. 2017).
- ^x Redemption rate is estimated based on data collected circa 2005; actual data has not been collected by the IOWA DNR since that time.
- ^{xi} Iowa Department of Natural Resources. "Study shows new recovery rate of containers in Iowa." <www.iowadnr.gov/About-DNR/DNR-News-Releases/ArticleID/1716/Study-shows-new-recovery-rate-of-containers-in-iowa>
- ^{xii} Letter from Newell Augur, Maine Beverage Association to Maine State Sen. Tom Saviello and Rep. Ralph Tucker, Jan. 18, 2018.
- ^{xiii} Sean Sylver, Massachusetts Department of Environmental Protection. Fiscal year data.
- ^{xiv} Michigan Office of Revenue and Tax Analysis, Department of Treasury.
- ^{xv} Container Recycling Institute. "Bottle Bills in the USA: New York." <www.bottlebill.org/legislation/usa/newyork.htm>
- ^{xvi} New York State Department of Taxation and Finance.
- ^{xvii} This number reflects an average for the year 2017. The deposit was raised from 5-cents to 10-cents on April 1. From January to March, the rate was 59%. From April to December the rate jumped to 82%. Source: Oregon Beverage Recycling Cooperative. 2017 Annual Report. <www.bottledropcenters.com/assets/reports/OBRC%20Annual%20Report%202017.PDF>
- ^{xviii} Estimate from "Systems Analysis of the Impact of Act 148 on Solid Waste Management in Vermont, Final Report." Prepared for the Vermont Agency of Natural Resources by DSM Environmental, Oct. 21, 2013.
- ^{xix} CM Consulting Inc. 2018. "Who Pays What: An Analysis of Beverage Container Collection and Costs in Canada: 2018.
- ^{xx} *ibid.*
- ^{xxi} *ibid.*
- ^{xxii} *ibid.*
- ^{xxiii} *ibid.*
- ^{xxiv} *ibid.*

^{xxv} *ibid.*

^{xxvi} *ibid.*

^{xxvii} *ibid.*

^{xxviii} *ibid.*

^{xxix} *ibid.*

^{xxx} *ibid.*

^{xxxi} Northern Territory Environment Protection Authority. October 2017. Environment Protection (Beverage Containers and Plastic Bags) Act - Annual Report 2016-17. <

<https://ntepa.nt.gov.au/__data/assets/pdf_file/0006/463983/2016_2017_CDS_annual_report.pdf>

^{xxxii} South Australia Environmental Protection Authority. "Container Deposits."

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

Reloop is a broad platform of like-minded interests that share a common vision for a circular economy. 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. With members coming from different sectors across Europe, 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.

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