

Best practices in container
deposit refund systems
—
Senate Committee on Natural Resources & Energy

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Topics for today

Introduction to TOMRA

Overview of the key functions of deposit refund systems

Key principles of high performing deposit systems

Implementantion of H.158

Introduction to TOMRA

TOMRA has five decades of experience in deposit refund systems

**ACTIVE IN EVERY MAJOR
GLOBAL DEPOSIT MARKET**



NORWAY



GERMANY



MICHIGAN



QUEBEC



AUSTRALIA



OREGON

+ 34 more markets

41 BILLION

cans and bottles collected annually

84,000

reverse vending installations globally

\$6.8 BILLION

in deposits exchanged annually

We are active in every link of the deposit value chain



REVERSE VENDING

MATERIAL RECOVERY



RVM
Technology



Service
Support



Data Admin/
Clearing



Material
Pick-Up



Material
Processing

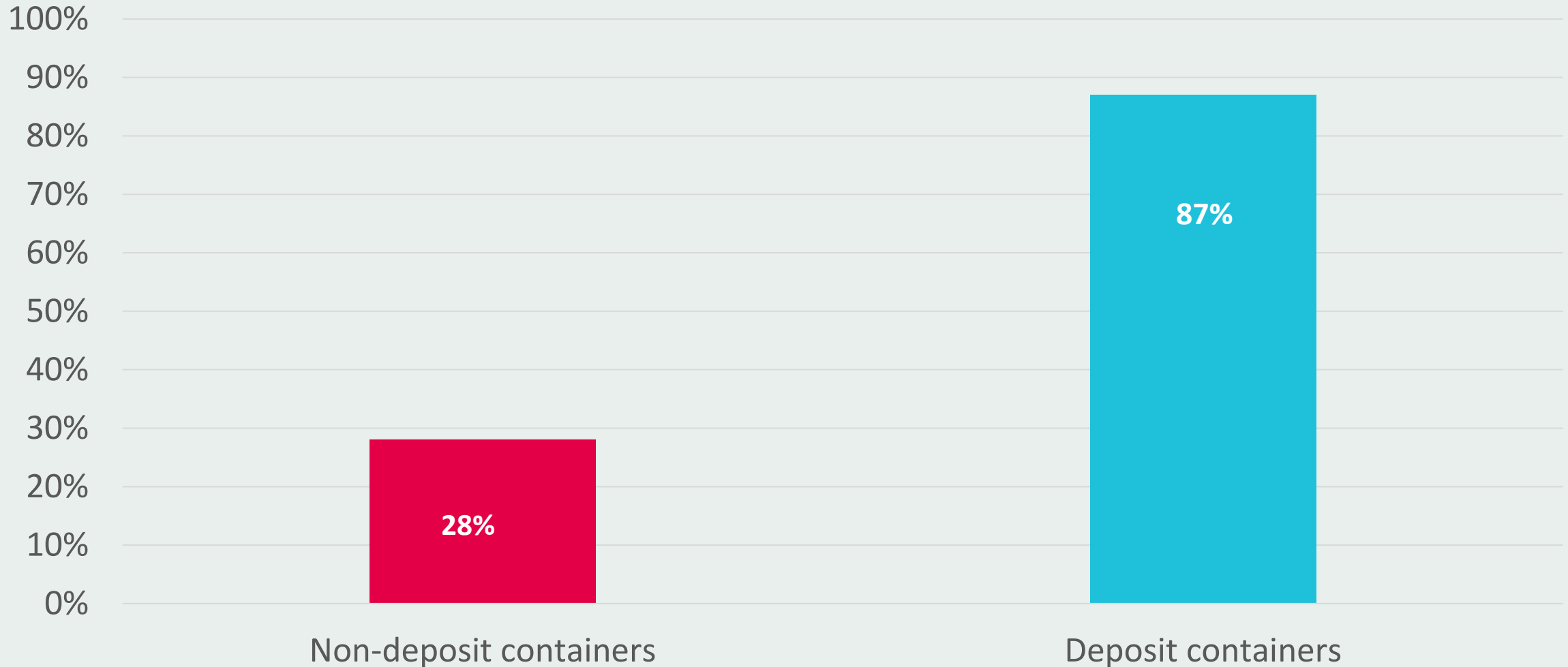


Material
Brokerage

Overview of the key functions of deposit systems

Deposit systems generate higher recycling rates

Deposit vs. Non-Deposit Container Recycling Rates in Vermont (2018)



“Vermont Waste Disposal Increased from 2012 to 2017; Bottle Bill Materials Recycled at 87% Rate, Compared to 28% Rate for Other “Container” Materials,”
Container Recycling Institute. 2022.

Deposit systems achieve higher quality recycling – avoiding downcycling



SINGLE – STREAM GLASS



DEPOSIT GLASS

Containers collected in the deposit stream are more likely to be recycled into new containers and can generate more economic value, because the material is kept clean.

Not all deposit systems are performing to their potential

Return rates of every deposit return system in the world (2019)



Why are some container deposit return systems succeeding while others are failing?

High-performing deposit refund systems prioritize five principles to frame their program

PERFORMANCE TARGETS



Performance targets, a meaningful deposit and a wide scope of beverages drives strong results

CIRCULARITY



Financial incentives and penalties exist to ensure containers are effectively recycled and not 'downcycled' or wasted.

CONVENIENCE



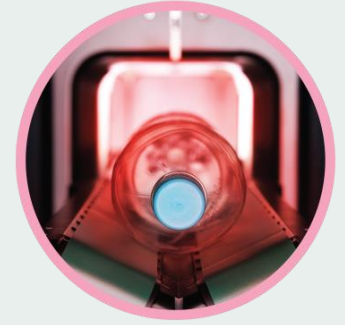
The redemption system is **easy, accessible and fair** for everyone.

SYSTEM MANAGEMENT



Producers finance and manage the system within a framework set by the Government AND they are able to invest in the program with the revenue generated by system.

SYSTEM INTEGRITY



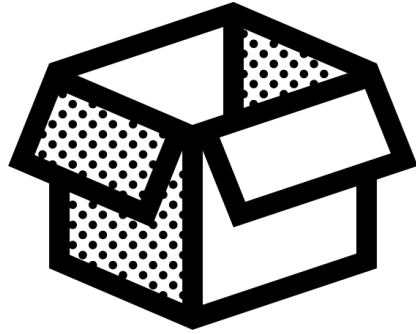
Trust is built into the system through transparent reporting, a data-driven clearinghouse, and redemption rules.

Implementing modernization of Vermont's Deposit Refund System

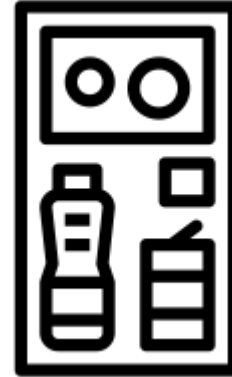
Meeting retailer and redemption center space needs



Stores below 5,000 square feet are exempt once the Producer Responsibility Organization meets the convenience standard set by the law.



Increased commingling reduces the number of sorts (and space required)



Revenue from handling fees and labor savings make RVMs available to the vast majority of redemption locations in VT rather than manual sorting

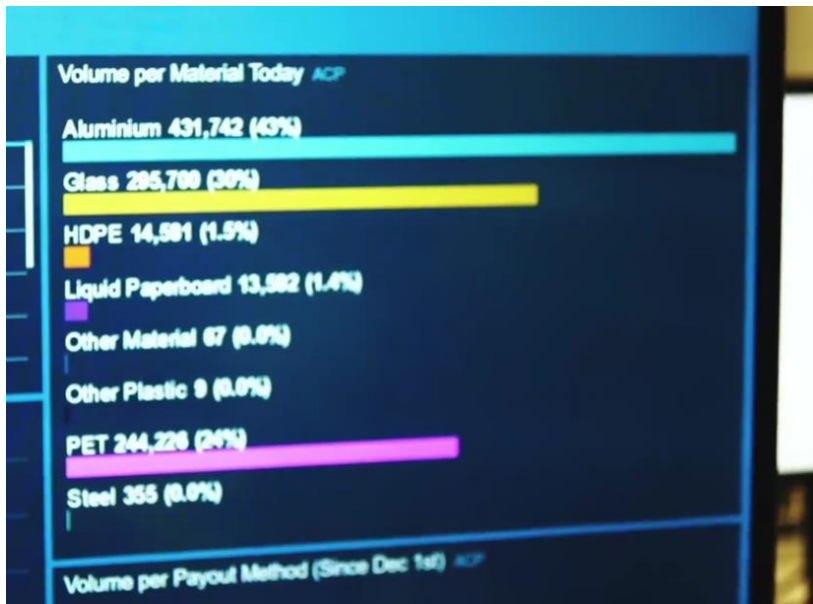


Created by Shutterstock.com from the Open Project
“The plan shall describe how materials will be picked up on a timely basis”

How cross-border unauthorized redemption is managed today

Online RVM network serves as an 'early warning system'

A network of internet-enabled RVMs enable remote monitoring of potential fraudulent behavior.



'Sampled' audits for manually redeemed containers

10% of each package type is tagged at the redemption location and then counted a second time offsite through bulk redemption technology to verify the count.



Visual audits for manual locations

The commingling group performs audits roughly quarterly of select redemption locations and processing facilities, verifying containers have the VT 5 cent marking – *for cans only*.



Opportunities for strengthening the approach to unauthorized redemption

State-specific Markings and Barcodes

Unique “Add-on Barcodes” or deposit markings enable the rejection of non-deposit containers.



Manual redemption protocols

Brand owners can establish procedures for containers redeemed manually, which would validate the count and expedite payments (e.g. incorporating a second count of containers through automated equipment)



Enabling legislation for producers to align on a preferred solution

Producers are best positioned to comment on the costs/benefits of solutions vs. status quo.



Thank you



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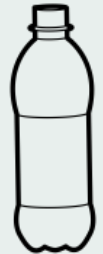
[TOMRA.com/DepositReturn](https://www.tomra.com/DepositReturn)

Material collected in deposit systems is kept clean, enabling true recycling and generating more value



Glass

- CSWD *pays* to get rid of glass at \$5/ton where it is down-cycled vs. glass in the deposit system is collected and valued at \$20 a ton.¹



PET Plastic

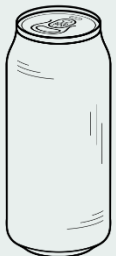
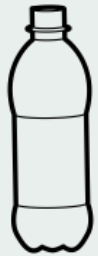
- Generally deposit PET bales are 40% more valuable than curbside bales and have been reported as much as 93% higher in 2020 according to commodity value brokers.^{2 3}



Aluminum

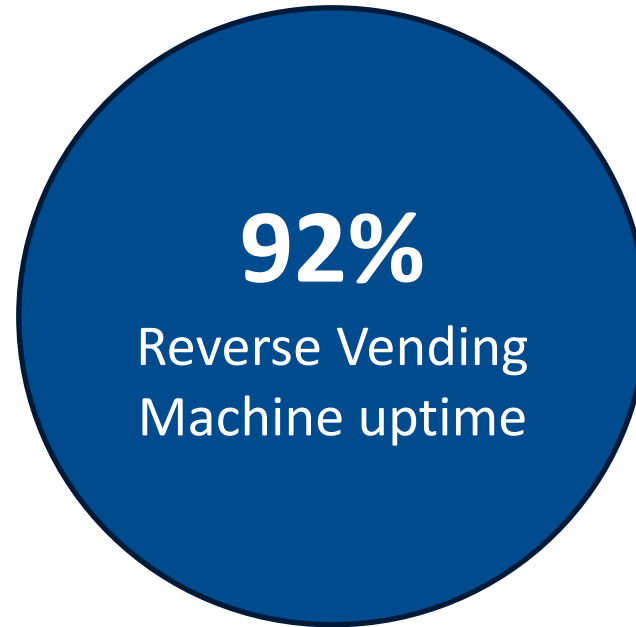
- Novelis says *“We do focus our contracts (and typically higher prices) towards deposit material. Reasons being: Consistent flow, level of cleanliness, and level of quality.”*⁴

What happens to all the deposit containers collected for redemption in VT today?



Material	Destination	End market	Recycling amount
Plastic	Sent to PET recycler in NY.	Recycled into mostly new bottles and food containers	✓ Virtually all is recycled
Glass	Sent to glass processor in New York.	Recycled into new containers and fiberglass	✓ Virtually all is recycled
Aluminum	Sent to recyclers in Kentucky and Alabama	Recycled into new cans, auto-parts, industrial applications, etc.	✓ Virtually all is recycled

TOMRA prides itself on high Reverse Vending Machine 'Uptime'

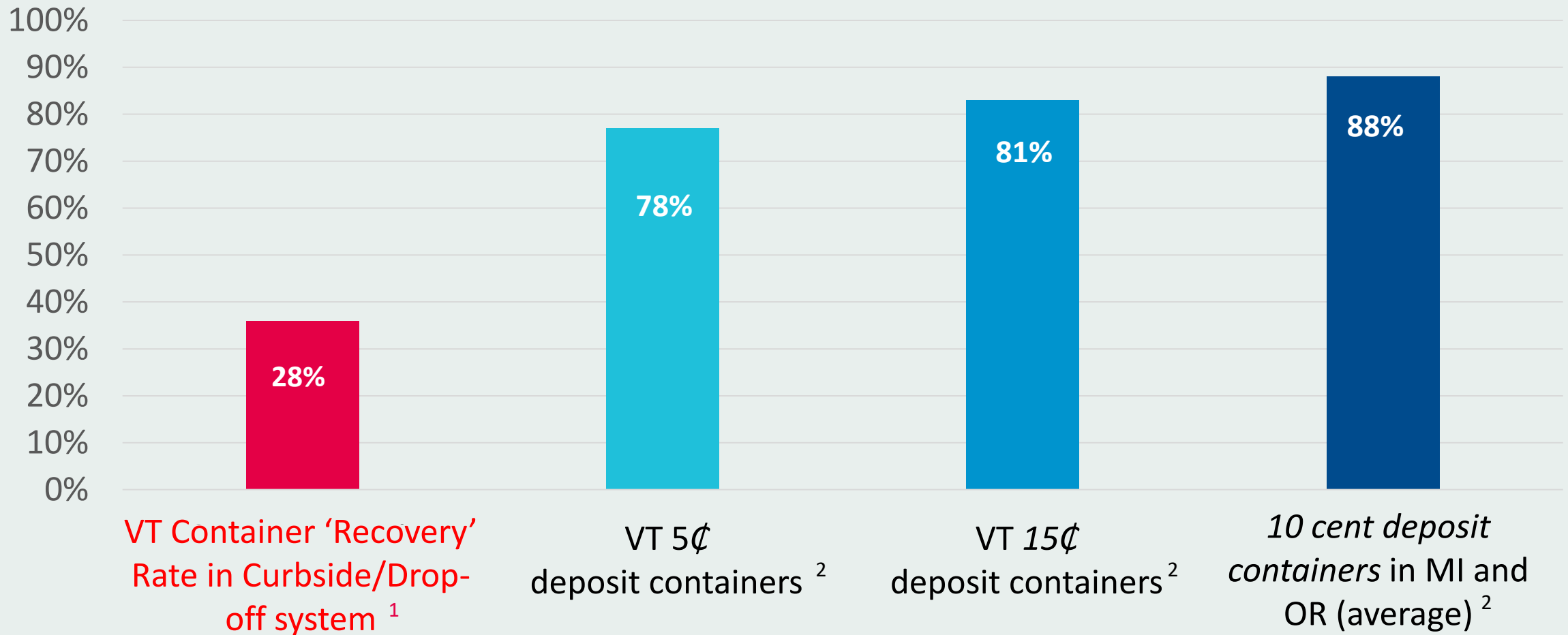


From Dec 2021 to Dec 2022 TOMRA has achieved a 92% machine uptime for VT equipment

We are incentivized to keep machines up and running which is why we have an RVM Service Team

Deposit systems generate higher collection rates for recycling

Beverage Container Collection Rates for Recycling



¹ Container Recycling Institute 2022 testimony based off DEC 2018 "Container Recovery Rate" subtracted by 6k tons of glass dumped by CSWD and containers handled by the bottle bill – BY WEIGHT.

² Bottlebill.org 2019. BY UNIT.

Deposit systems are extremely effective at collecting items for recycling, diverting from waste the stream

Beverage Container Collection Rates for Recycling

