



Best practices in container deposit refund systems

—
Regarding H.158

Senate Committee on Natural Resources and Energy

Mike Noel
Public Affairs Director
TOMRA

TOMRA has five decades of experience in deposit refund systems

**ACTIVE IN EVERY MAJOR
GLOBAL DEPOSIT MARKET**



VERMONT



NEW YORK



MAINE



QUEBEC



OREGON



NORWAY

+ 34 more markets

40 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

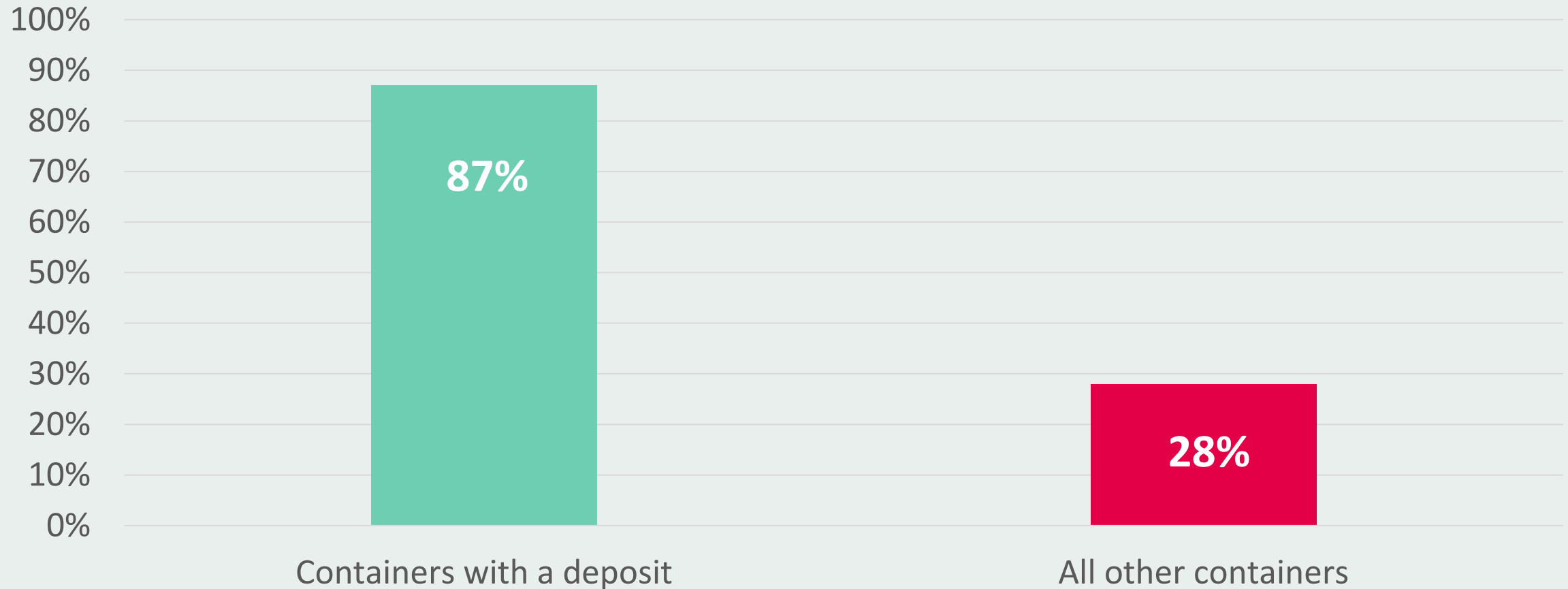


Material
Brokerage

Overview of the key functions of deposit systems

Deposit systems generate higher collection rates for recycling

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.

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



CIRCULARITY



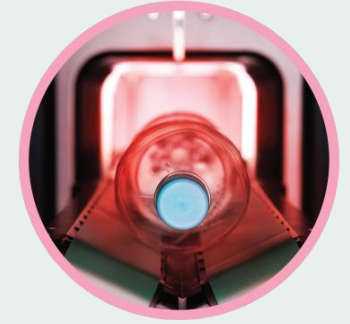
CONVENIENCE



SYSTEM MANAGEMENT



SYSTEM INTEGRITY



Principle #1 of High-performing deposit refund systems: Performance

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



Key Element	Does H.158 address this?
• Meaningful deposit value	✓ Yes
• Broad scope of beverages	✓ Yes
• Performance targets	✓ Yes

Principle #3 of High-performing deposit refund systems: Convenience

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



Key Element	Does H.158 address this?
<ul style="list-style-type: none">• Convenient redemption system for consumers	<ul style="list-style-type: none">• Convenience standard in bill - Requirements to provide at least 3 redemption locations per county, one per municipality over 7k people, and describe how sites will be sited in high population areas/centers• Raise in the handling fee and expansion are likely to result in more independent redemption centers regardless of PRO plans.
<ul style="list-style-type: none">• Return to retail ensures redeeming a container is as easy as buying it in the first place	<ul style="list-style-type: none">• Large and medium retailers continue to play an important part role in providing convenient access

Principle #4 of High-performing deposit refund systems: System Management

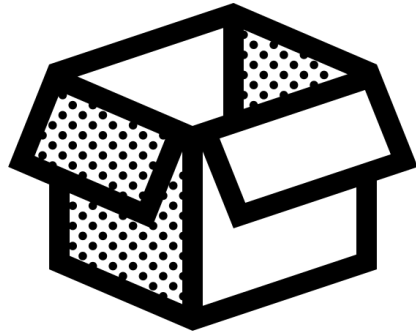
Producers finance and manage infrastructure and operations within the frame conditions set by Government; with use of unredeemed deposits and commodity revenues.



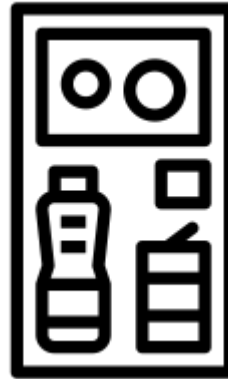
Key Element	Does H.158 address this?
Unredeemed deposits and revenue from collected commodities are reinvested in the system	<ul style="list-style-type: none">✓ Commodity revenue remains with producers• Unredeemed deposit revenue shared with producers
Whether the system is centralized through a Producer Responsibility Organization or decentralized, clear roles and responsibilities are defined.	<ul style="list-style-type: none">✓ Requirements for a Producer Responsibility Organization are specified.✓ Significant enforcement measures included

Modernizing Vermont's Deposit Refund System

Meeting retailer and redemption center space needs



Commingling of containers reduces space and sort needs



Reverse Vending Machines are cost-effective solutions for the vast majority of redemption locations in VT rather than manual sorting



“The plan shall describe how materials will be picked up on a timely basis”

Thank you



Mike Noel, Public Affairs Director

Michael.Noel@TOMRA.com

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

APPENDIX

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



Glass

- Glass in the deposit system is collected and valued at \$20 a ton.¹
- Chittenden Solid Waste District states, “Glass is a net cost to single-stream recycling” (curbside).²



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.^{3 4}



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.”⁵

Principle #2 of High-performing deposit refund systems: Circularity

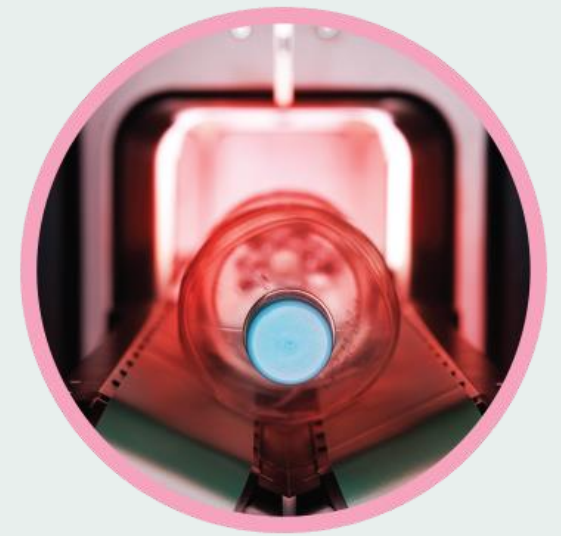
Financial incentives and penalties exist to ensure containers are effectively recycled and not 'downcycled' or wasted.



Key Element	Does H.158 address this?
<ul style="list-style-type: none">• Defines “redemption rate” <p><i>“Redemption rate” means the number of beverage containers returned for the refund value divided by the number of beverage containers sold in this state.</i></p>	✓ No
<ul style="list-style-type: none">• Recycled content standards<ul style="list-style-type: none">• e.g, beverage containers shall utilize 15% post-consumer recycled material by 2027, 25% by 2030, etc.	✓ No

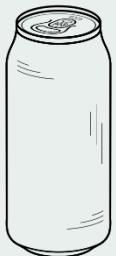
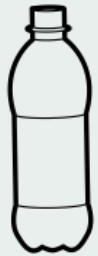
Principle #5 of High-performing deposit refund systems: System Integrity

Trust and transparency are built into the system's processes. Enabled by: product registration, data-management, a clearinghouse, and redemption specifications.



Key Element	Does H.158 address this?
Product registration including Universal Product Code required prior to sale	✓ Yes
State has authority to require reporting, inspections and other rules for redemption centers to make sure containers are being properly redeemed and counted.	✓ Yes

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

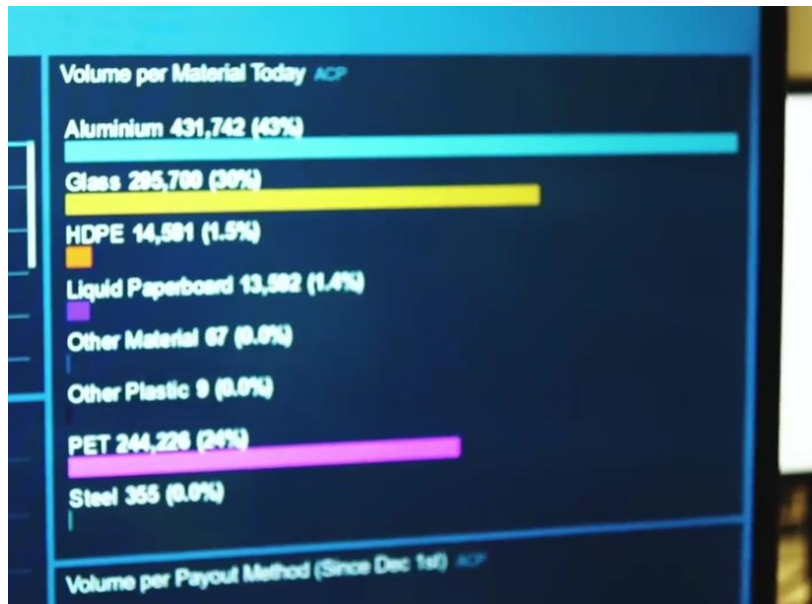


Material	Destination	End market	Recycling amount
Plastic	Sent to PET recycler in NY.	Recycled into mostly new bottles and food containers	✓ Virtually all is recycled
Glass	Sent to glass processor in New York.	Recycled into new containers and fiberglass	✓ Virtually all is recycled
Aluminum	Sent to recyclers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

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.



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

PERFORMANCE



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



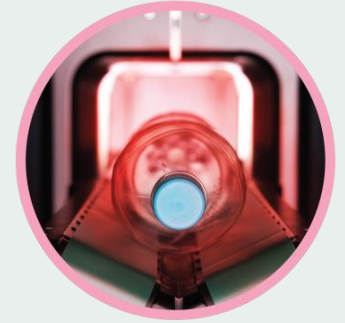
The redemption system is **easy, accessible and fair** for everyone.

SYSTEM MANAGEMENT



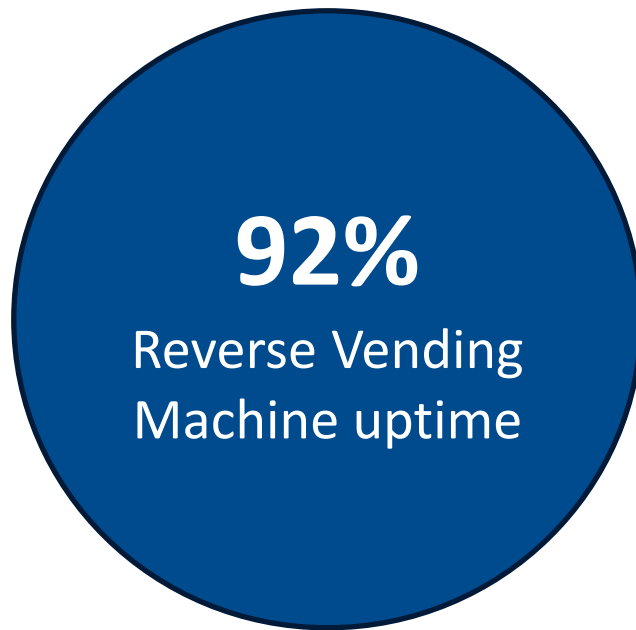
Producers finance and manage the system within a framework set by the Government AND they are able to invest in the program with the revenue generated by system.

SYSTEM INTEGRITY



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

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