

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

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P: dngallphoto

# Topics for today

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Introduction to TOMRA

Overview of the key functions of deposit systems

Key principles and elements of high performing deposit systems

Implementantion of H.175

# Introduction to TOMRA

# 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

# 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

## 40 BILLION

cans and bottles collected annually

## 84,000

reverse vending installations globally

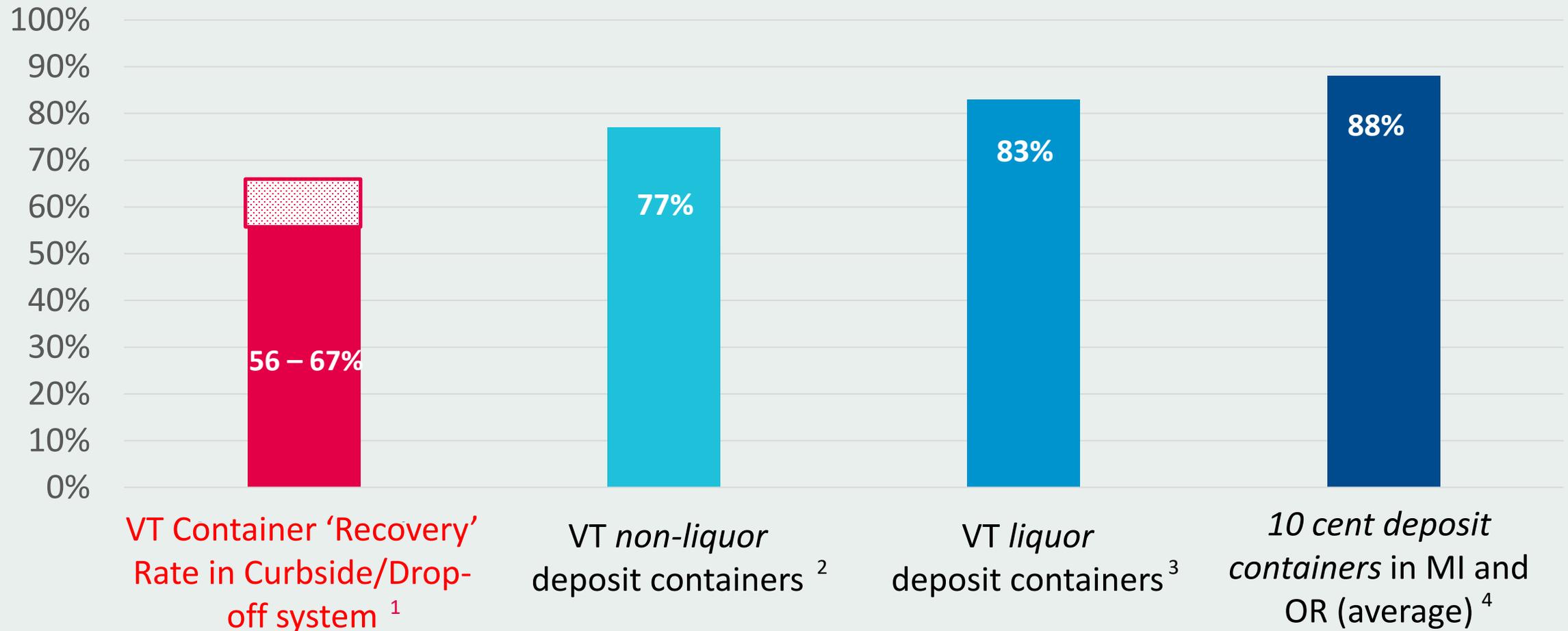
## \$6.8 BILLION

in deposits exchanged annually

# Overview of the key functions of deposit systems

# Deposit systems generate higher collection rates for recycling

## Beverage Container Collection Rates for Recycling



<sup>1</sup> Container Recycling Institute testimony. DEC 2018 "Container Recovery Rate" subtracted by 6k tons of glass dumped by CSWD. 2022. And '2018 Waste Characterization' Prepared for DEC. 2018. BY WEIGHT..

<sup>2</sup> Oct 2019 – Oct 2020 Sales/Redemption Data, DEC. BY UNIT.. <sup>3</sup> 2021.3 Container Recycling Institute. 2021. BY UNIT. <sup>4</sup> Bottlebill.org 2019. BY UNIT.

Deposit systems achieve higher quality recycling – avoiding downcycling



**SINGLE – STREAM GLASS**



**DEPOSIT GLASS**

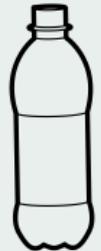
**Containers collected in the deposit stream are more likely to be recycled into new containers and can generate more economic value, because the material is kept clean.**

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



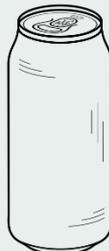
## Glass

- 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.<sup>1</sup>



## 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.<sup>2 3</sup>



## 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.”*<sup>4</sup>

# 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 four principles to frame their program

## PERFORMANCE



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

## CONVENIENCE



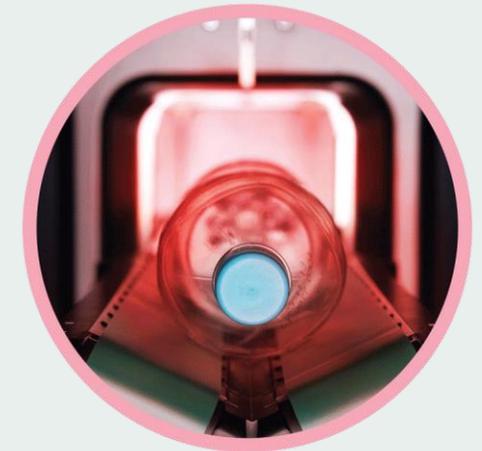
The redemption system is **easy, accessible and fair** for everyone.

## PRODUCER RESPONSIBILITY



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

# Implementing modernization of Vermont's Deposit Refund System

# The structure of Vermont's Deposit Refund System

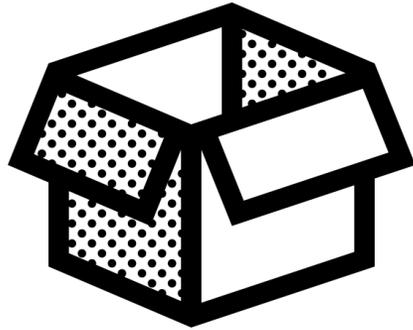
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Producers meet their legal obligations directly with the freedom to optimize costs as they see fit.

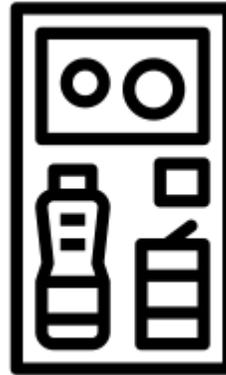
<b>Redemption network</b>	<b>Return to retail and return to redemption center:</b> <ul style="list-style-type: none"><li>• Independent redemption centers authorized for high volume redeemers in addition to retailers.</li><li>• Commingled containers make up 85% of all deposit containers</li><li>• Automation adopted at most chain grocers</li></ul>
<b>Pick-up</b>	<b>Consolidated under one pick-up agent (TOMRA)</b> who picks up from all redemption locations for all distributors, achieving economies of scale enables a low-cost service for producers.
<b>Processing</b>	<b>Consolidated through one entity (TOMRA)</b> , where producers have the right to their material or its revenue after sale. All containers are taken to processing facilities in Essex, VT or Rotterdam, NY before being sold to manufacturers.

# Meeting retailer and redemption center space needs

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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 Waste Project

Container pick-up services will have to increase frequency

# How cross-border unauthorized redemption is managed today

## Online RVM network serves as an 'early warning system'

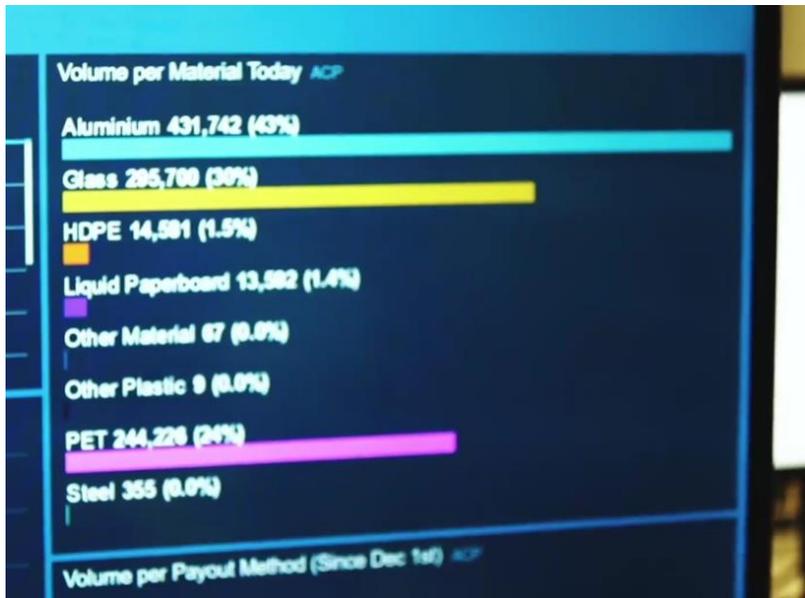
A network of internet-enabled RVMs enable remote monitoring of potential fraudulent behavior.

## '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.

## Monthly visual audits for manual locations

The commingling group performs monthly audits of select redemption locations, 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.



Some rare  
containers are  
too large to be  
redeemed  
automatically



We recommend  
Connecticut's approach  
to limit deposits to **non-  
carbonated containers at  
2.5 liters, 3 liters for  
carbonated and 150ml  
MINIMUM for non-  
alcoholic containers**

# Product registration and barcodes are needed so consumers can get their deposit money back

- Product registration is a key element of high-performing deposit systems.
- If beverage distributors do not include a barcode on containers and provide container information to RVM system operators before sale, consumers can pay a deposit and not get their money back.
- Recognizing this, Connecticut required all deposit containers to include a barcode and provide container information 30 days before sale.



Example of a Unique Product Code (UPC)

# Thank you



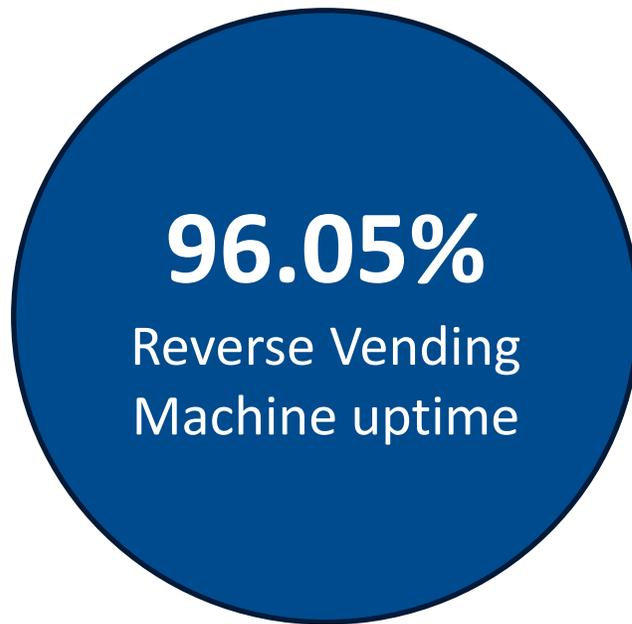
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[TOMRA.com/DepositReturn](https://www.tomra.com/DepositReturn)

# TOMRA provides itself on high Reverse Vending Machine 'Uptime'

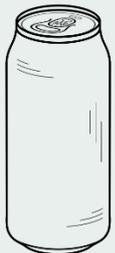
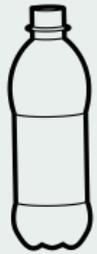
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From Feb 2021 to Feb 2022 TOMRA has achieved a 96.05% machine uptime for VT equipment

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

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



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

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

## Beverage Container Collection Rates for Recycling

