

# Building ReUse Systems: *Overcoming Barriers to Scale*

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Driving Circularity Forward through  
Pilots, Policies, and Best Practices



Rethink Resource Use  
Conference



# Rep. Michelle Ciccolo

15<sup>th</sup> Middlesex District, Massachusetts

- ▶ 4<sup>th</sup> term legislator
- ▶ Founder of the Zero Waste Caucus in 2019
- ▶ Lead sponsor of 10 waste reduction, Deposit Return Systems(DRS), reuse, and recycling bills in MA
- ▶ 3 NGO sponsored deep-dives into reuse, recycling, and waste reduction



# Why ReUse?

- Reuse systems align with circular economy principles, offering environmental and economic benefits and promising **reductions in material extraction, pollution and waste management costs.**
- With each additional use cycle comes additional environmental and economic benefits from **avoided production, cost savings, and end-of-life management.**



# Why ReUse?

- According to the World Economic Forum, replacing single-use packaging with reusables by **10%** will stop almost half of plastic waste from entering the ocean.
- In markets facilitating multiple uses, a reusable glass bottle generates **57-85% lower emissions** compared to all other types of single-use beverage containers.



# More on why we should pursue *circularity*:

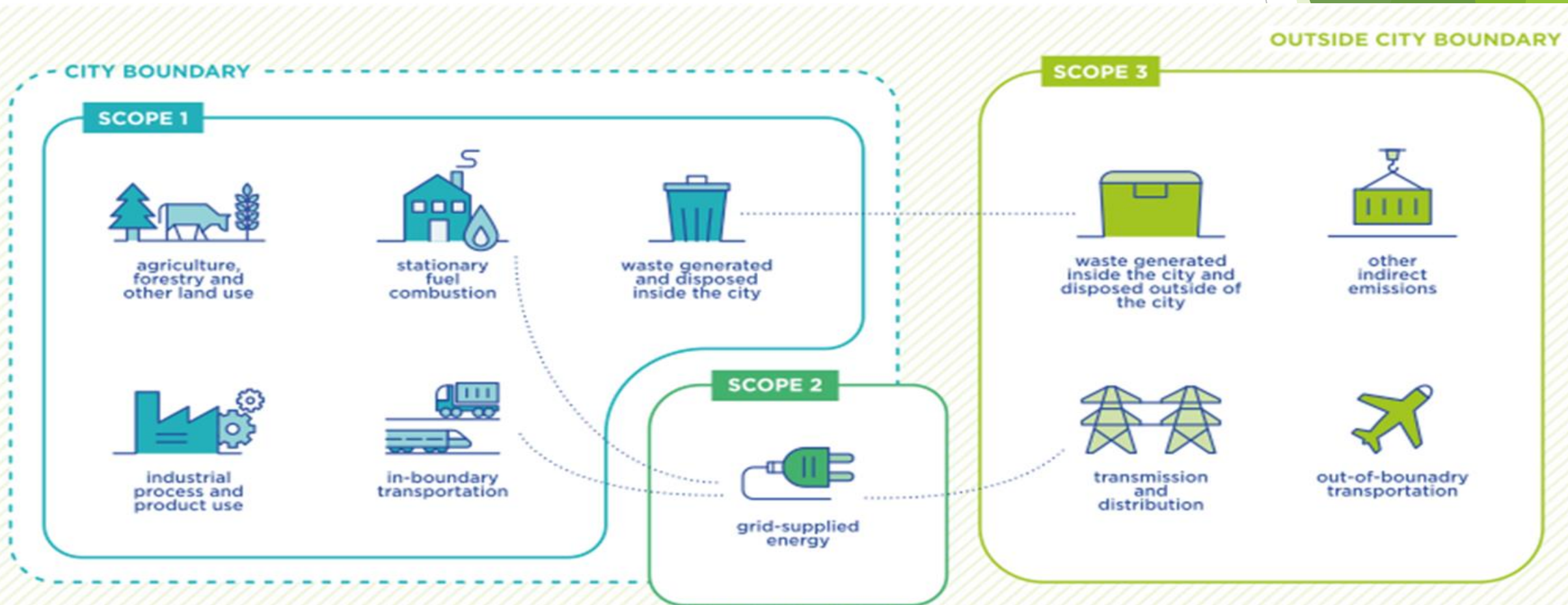
- Glass reusables use 75% less carbon than PET
- Glass reusables use 85% less carbon than single use glass
- Glass reusables use 57% less carbon than aluminum

# And it's not just the beverage industry...

## In foodware:

- Switching 21 average sized schools to reusable foodware would reduce carbon emissions by approx 220 metric tons of CO2 per year.
- Switching a senior living facility of 500 residents to reusable foodware would remove around 4.25 tons of waste per year.

# Why does waste matter and why should we pursue zero waste strategies?



# Building Reuse Systems: *Overcoming Barriers to Scale*

- Changing systems is hard
- Can it even be done in the US?
- Where do we start?

Best Practices, Policies, and Pilots

*It can be done! And it works!*

**Best Practices -**  
Recent Lessons Learned from  
Germany, Brussels, & France

**ReUse Refill Tour 2023**

Sponsored by ReLoop International

# In the EU Policy Drives the Outcome:

- Europe has promulgated “**The New Circular Economy Action Plan**”
- Goal to have all EU packaging sold in economical reusable or recyclable packaging by 2030
- The plan “aims to create a **climate-neutral, resource-efficient and competitive economy** by 2050.”
- In 2019, the European Parliament and the European Council promulgated Directive 904 on *Single-use Plastics* to reduce the environmental impact of certain plastic products. – **Europe is well ahead of the US.**

# What we saw:

- ▶ High functioning, market-driven, consumer beverage refill programs for water, beer, juice, and soda
  - ▶ *High tech, energy efficient, low-water use, robotic driven, optical scanning, sophisticated sorting, washing, and refill*
  - ▶ 54% of all single-serve German beverages (excluding dairy) are sold through refill systems. 87% of beer and cider excluding dairy, wine, and spirits for a 42% overall refill program of all consumer drinks.
  - ▶ European markets that have deposit return systems (DRS) are achieving high return rates and the German & French systems are operating at 98% and 99% returned.

## We also saw:

- ▶ Wholesale restaurant refill of beer and wine
- ▶ Take-out food container reuse systems
- ▶ Wholesale reusable crate systems for food shipping and consumer display
- ▶ **Local jobs in manufacturing, technology, system operations, warehousing, shipping and receiving**

# Principles for effective reuse systems

- ▶ Clear definitions: aligning what is meant by “refillable,” “reusable,” “returnable,” and “recyclable”
- ▶ Clearly established targets/other objectives
- ▶ System designed to recover at least 90% of packaging and recirculate it multiple cycles
- ▶ Clearly defined governance structure/government oversight
- ▶ Responsible parties adhere to reuse standards, enable and verify system functionality
- ▶ Reporting requirements with public access to data
- ▶ Equal access and fair conditions for all supply chain actors
- ▶ Reuse systems that are easy to use and accessible with incentivized return

# Rheinfels: Refillable Single Serve Water Systems







# High-tech Reverse Vending Machines



# Supermarket & Behind the scenes







## ► Eternity Systems site visit - Paris

Bon Marche Paris



**Reusable Eternity System Crates Ship and Display Food, eliminating cardboard and plastic lined boxes**



# Lessons from European Best Practices:

- ▶ Glass bottles can be used up to 40 times or more
- ▶ PET bottles can only be reused a maximum of 20 times
- ▶ Water consumption for new vs. reused is virtually the same or lower.
- ▶ For DRS to be cost effective, redemption rates need to be at 90% or higher
- ▶ Once glass bottles are used approximately 20 times, they have paid for themselves and the next 20 uses are “free.”
- ▶ Upfront investment, yields long term savings

## More Key Take-aways:

- ▶ Systems that are optimized for local distribution achieve higher energy efficiency. **AND MORE LOCAL JOBS THAT ARE NOT EXPORTABLE.**
- ▶ Some markets are more readily converted to refill, in particular institutions which can establish *closed-loop systems*, and wholesale to restaurant where deliveries are regular and frequent
- ▶ Systems need to be sufficiently at-scale to achieve desired results.
- ▶ Government incentives, policy, and funding are likely required to pave the way for scaled systems.
- ▶ Well functioning market-based systems are more advantageous for business interests

# More Lessons from Quebec OPLN tour, 2025

- ▶ DRS expansion works best when phased-in
- ▶ Producer Responsibility Organizations (PROs) when well formed and managed can catalyze significant investment in new facilities
  1. Quebec province PRO has invested \$200 million and on track for \$400 million in modernized redemption centers
  2. Significant job creation

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

# Market Based Systems

## Jobs & the Economy & Small Businesses

*Refill works best  
when it is market driven*

# Market Driven Systems

According to the “Reuse Wins” report published recently by Upstream:

- 100% of the time, for onsite dining, restaurants save money with reusable service ware.
- The average small business saves \$3,000-\$22,000 / year with durable food service ware.
- 193,000 jobs to be created in reuse in the US in the near-term

Finding Two:

**Transitioning from single-use to reusable food serviceware can save businesses significant amounts of money.**

The economic benefits of reusables work the same way as their environmental benefits. The upfront costs are higher, but after just a few uses, the reusable breaks even and then starts to save businesses money.

Reuse saves businesses money for on-site dining 100% of the time (including schools, food courts, college and corporate campuses, and large-scale venues). Clean Water Fund's *ReThink Disposable* program has demonstrated the short-term payback of switching to reusables in over 166 cases of providing technical assistance

# Market Driven Systems

*According to 2023 research done by Zero Waste Europe:*

- Take away food containers start paying for themselves after 3-4 years.
- Transport packaging takes 2-3 years to be economically viable.
- For systems providers of beverage containers, after 5-6 years they start generating net-positive gains.

Based on current regulatory developments in Europe, reusable packaging will likely become even more economically viable, with faster return on investments, as single-use packaging will go up in price. In providing more clarity on costs and benefits, this study intends to inform both decision-makers in business and policymakers in future decision-making to confidently support reuse.

We conclude that, even in isolation, the break-even point for all three packaging formats is of only a few years. This represents both a sizable business and political opportunity to reconcile environmental concerns with economics in the foreseeable future, to the benefit of societies as a whole.

# Well functioning Deposit Return Systems (DRS) should be Market-Based

- In order for the circular economy to function, and have reuse systems you need high rates of return (more than 90%) and DRS is the only proven mechanism to achieve those rates.
- Deposit fees must be adjusted to incentivize return rates
- Return systems must be consumer friendly
- You need sufficient density to create a market driven DRS system.
- Concentrate on high population areas
- There are only 10 states in the US with Bottle Bills (DRS) and they are concentrated primarily on the west and east coasts.

# Policy Approaches

- Extended Producer Responsibility (EPR)
- EPR can be a form of DRS and the two systems should be designed to work in tandem
  - **Single Item EPR vs comprehensive**
  - **EPR for packaging that includes items traditionally included in DRS**
- Pass Bottle Bills and/ or update existing DRS programs
- Require reuse / refill targets in new EPR bills and/or updated DRS bills
- Require **minimum recycled content** in new packaging
- Develop **predictable** revenue streams to support ReUse
  - **Single use disposable fees**
  - **Dedicated escheats**

# Where do we go from here more broadly?

## Focus on all levels of government

- ▶ **Federal** - Laws, Funding, and Grants
- ▶ **State** - Laws, Programs, Operations, Capital Funding
- ▶ **Regional** - Planning & Collaboration
- ▶ **Municipalities** - Laws (Bylaws & Ordinances), Pilots, & Planning

By some estimates 30% or more of the carbon consumed on our planet can be traced to consumption. Much of that consumption is single use disposable items. To slow the pace of the earth's warming, we must slow the demand for disposables.

# Where do we go from here more broadly?

## ► Focus on all levels of government

### ► **Federal** –

1. Pass and pursue a national bottle bill law
2. Fund EPA & other programs that support ReUse, Refill, & Recycling
3. Provide grants to localities to investment in plant and equipment to facilitate reuse and refill.

# Where do we go from here more broadly?

## ► Focus on all levels of government

### ► **Regional** –

1. Develop plans and data to support change
2. Convene municipalities to learn about best practices
3. Assist cities and towns in applying for grants
4. Facilitate the formation of multi-state regional compacts and collaborations to help scale market-based systems

# Where do we go from here more broadly?

## ► Focus on all levels of government

### ► **State -**

1. Pass laws that support EPR & DRS
2. Create laws for minimum recycled content
3. Pass laws that create revenue streams
4. Improve upon and perfect existing bottle bills to maximize performance (90% redemption target)
5. Form multi-state regional compacts and collaborations to facilitate the scaling up of systems
6. Facilitate the creation of mobile bottling facilities
7. Provide grants to invest in sites to support regional sorting, processing, washing, and refilling.

# Where do we go from here more broadly?

## ► Focus on all levels of government

### ► Municipalities -

1. Pass local by-laws and ordinances
2. launch pilots for takeout food.
3. Support craft beverage companies and other small food companies to facilitate reuse and refill.
4. Support dairy industry glass bottle refill programs.
5. Develop zero waste plans.

# Act Locally Create Plans & Pilots

## ► Zero Waste House - Paris

There's a Zero Waste group in most European cities!



# The Restaurant Opportunity

- According to experts at the Green Restaurant Association, if the entire US restaurant industry were its own sovereign economy, it would have the globe's 13<sup>th</sup> largest GDP.
- **Imagine the impact we could have if all our restaurants went to reusables.**

# LexZero Waste

## & its reuse pilot



[www.lexzerowaste.org](http://www.lexzerowaste.org)

- Town Meeting bylaws and bans
- Zero Waste Resolution → Zero Waste Plan
- LexSort – Composting
- ZerotoGo partnership with Recirclable

# LexZeroWaste

## Gets Results

- 624 tons of waste composted in 2024, a 50% increase over 2023
- 3 Businesses currently participate in the ZeroToGo Reusable Takeout program
- Lexington households have been generating less trash, year over year, for the last five years.

# Representative Michelle Ciccolo

## Contact Info:

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