Recyclability & Reuse

How to Use Packaging to Improve Prepared Food Sustainability

KURT RICHARS
ANCHOR PACKAGING





Why Do You Need a Packaging Sustainability Plan?

30 states

Number of states with material bans or recycled content mandates already in place

40%

Minimum threshold for California SB54 source reduction target to be achieved by direct elimination or by switching to reuse and refill systems

19

Number of states that have introduced EPR proposals to date (CA, CO, ME & OR are now law).

Growing consumer interest, Legislative momentum...





Truly Sustainable Packaging

- 1. Protects and preserves the food to limit food waste
- 2. Offers viable options after use to reduce packaging waste





Truly Sustainable Packaging

ECONOMICALLY Sustainable

Food that arrives looking and tasting great:

- 1. Gets eaten
- 2. Brings customers back for more

ENVIRONMENTALLYSustainable

Packaging that is

- Reusable
- Recyclable
- Compostable





Reducing Waste

- Protecting & Preserving Food
 - 30-40% of food produced is not eaten
 - Methane from food waste is 80x more potent than CO2 emissions
 - Food waste is the single most common material landfilled and incinerated (about 240lbs of food per person per year)
 - 83% of food waste comes from homes, restaurants, grocery and food service (that is, it is not from farms and manufacturers)
- Using the wrong package increases food waste and packaging waste
- All approaches must be <u>economically</u> <u>sustainable</u>



Why prioritize protecting the food?

| Food Item | GHG Emissions Ratio: Food to Packaging |
|---------------|--|
| Ham (cooked) | 624:1 |
| Beef | 370:1 |
| Whole chicken | 114:1 |
| Cheese | 52:1 |
| Fish | 13:1 |
| Pasta | 7:1 |





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or







Single-Use

Multi-Use & Reusable

Protect & Preserve Food



Single-Use Goal: Minimize the Impact

- 1. Food waste: protect the food
- 2. Packaging waste: options after use
 - Compost: certified compostable
 - Reduce: reduced material
 - Recycle: recyclable materials with the widest recycling access





Certified Compostable Independently tested and verified to break down completely in a commercial compost facility after use.





Recyclable

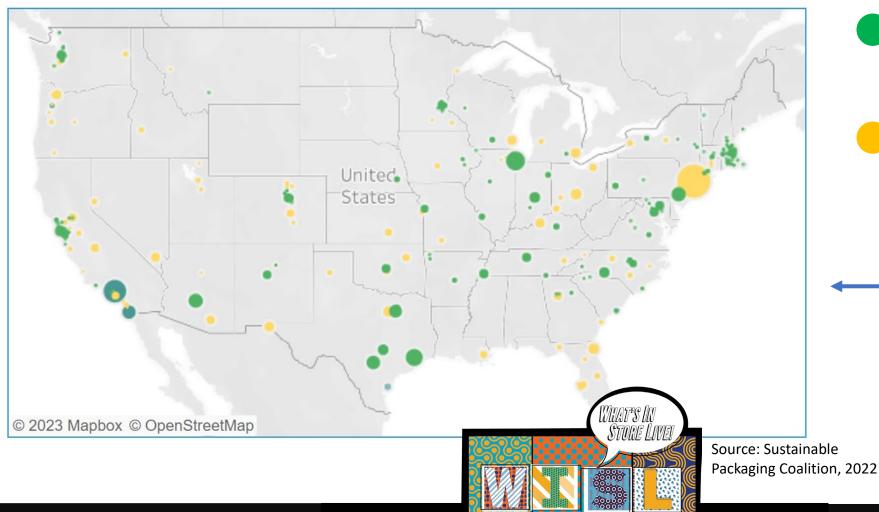
Convenient and efficient recycling requires:

- Accepted materials
- Clean & dry





Compostable Packaging is Promising, but Access is Limited



GREEN

Programs that accept compostable packaging in addition to food waste

YELLOW

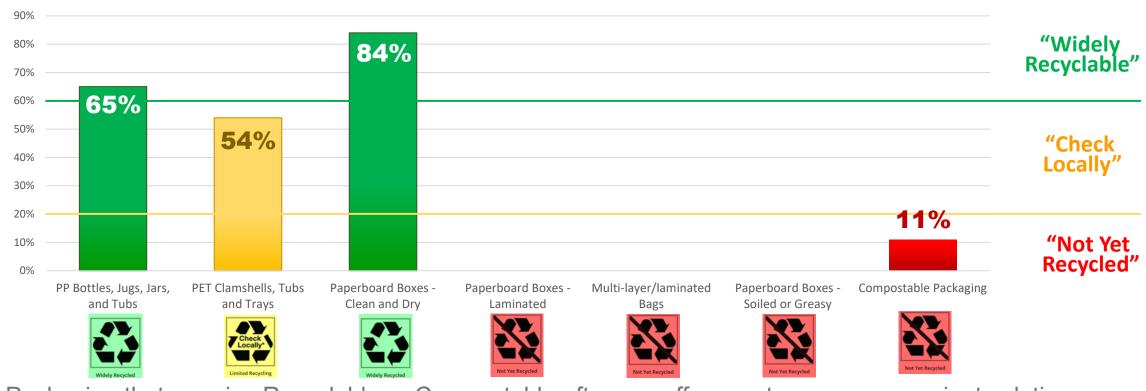
Programs that accept food waste, but DO NOT accept compostable packaging

Programs Mapped:

- Municipally-run curbside programs
- Privately-run curbside programs
- Drop-Off programs

Recycling Options Vary Widely for Food Packaging

% of US Population with Access to Recycle by Packaging Substrate & How2Recycle Categories



Packaging that remains Recyclable or Compostable after use offers customers a convenient solution



Source: Sustainable Packaging Coalition, 2021 Centralized Study on the Availability of Recycling



Plastics Recycling Value Chain: First stop = Material Recovery Facility (MRF)



- Material is sorted, baled, and sold to a producer or PRF
- Markets continue to develop for PET, HDPE, and PP
- Objective: maximize the value of the outgoing bales and minimize the quantity of lowvalue material collected
 - Material type, bale composition & contamination determines bale quality and end-market value



- (Polyethylene Terephthalate) Soft drink, water and salad dressing bottles:
- peanut butter and jam jars... Suitable to store cold or warm drinks. Bad idea for hot drinks.



- (High-density Polyethylene)
- Water pipes, milk, juice and water bottles; grocery bags, some shampoo / toiletry



- (Polyvinyl Chloride) · Not used for food packaging.
- · Pipes, cables, furniture, clothes, toys...



(Low-density Polyethylene)

· Frozen food bags; squeezable bottles, e.g. honey, mustard; cling films; flexible



(Polypropylene)

Reusable microwaveable ware: kitchenware; yogurt containers; microwaveable disposable take-away containers; disposable cups; plates...





(Polystyrene)

Egg cartons; packing peanuts; disposable cups, plates, trays and cutlery; disposable A void for food storage!



(often polycarbonate or ABS)

Beverage bottles, baby milk bottles. compact discs; "unbreakable" glazing; lenses including sunglasses, prescription glasses, automotive headlamps, riot shields, instrument panels.



Maximizing Recyclability

- Sorting capabilities vary by municipality
- These options maximize capture and higher end-use recycling:



Color:

- Clear
- White
- Natural

Homo-polymer:

Non mineral-filled



Sorting Technology is Improving Capture and Increasing Access Rates





- Robotics powered by AI
- Identifies objects in stream by shape, color, brand, SKU
- Sorts up to 80 items per minute
- Receives live data from stream contents to improve selections





AMP

ROBOTICS"

Single-Use

Multi-Use & Reusable

Protect & Preserve Food





Return

Refill

Consumer Reuse

| Container | Container is loaned to consumer | Consumer owns container | Consumer owns container |
|----------------|--|-------------------------|-------------------------|
| Deposit | Requires a deposit | No deposit required | N/A |
| Washing | Operator or 3P service washes | Consumer washes | N/A |
| Transportation | Operator or 3P service transports | Consumer transports | N/A |
| Tracking | Requires tracking | No tracking required | N/A |
| |)(C)(C)(C)(C)(C)(C)(C)(C)(C)(C)(C)(C)(C) | WHAT'S IN STORE LIVE | ≈ 20 |



Return

Refill

Consumer Reuse

| TM | Store or Service collects, cleans and returns to use | Consumer refills container on future visits | |
|----------------|--|---|-------------------------|
| Container | Container is loaned to consumer | Consumer owns container | Consumer owns container |
| Deposit | Requires a deposit | No deposit required | N/A |
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Return

Refill

Consumer Reuse

| TM | cleans and returns to use | on future visits | recycles at end of use |
|----------------|---------------------------------|-------------------------|-------------------------|
| Container | Container is loaned to consumer | Consumer owns container | Consumer owns container |
| Deposit | Requires a deposit | No deposit required | N/A |
| Washing | Operator or service washes | Consumer washes | N/A |
| Transportation | Operator or service transports | Consumer transports | N/A |
| Tracking | Requires tracking | No tracking required | N/A |

How RETURN Works



Consumer Joins

- Subscription
- Flat fee
- Deposit

Operator/ 3P

restocks containers for reuse





Consumer

Is served in Reusable



Operator/3P

recycles broken containers



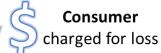
Operator/ 3P collects & cleans containers



Consumer

returns in time, Operator/ 3P

refunds deposit



Cost Drivers:

- Product initial purchase
- Washing
- Transportation
- Loss/damage
- Tracking

Challenges

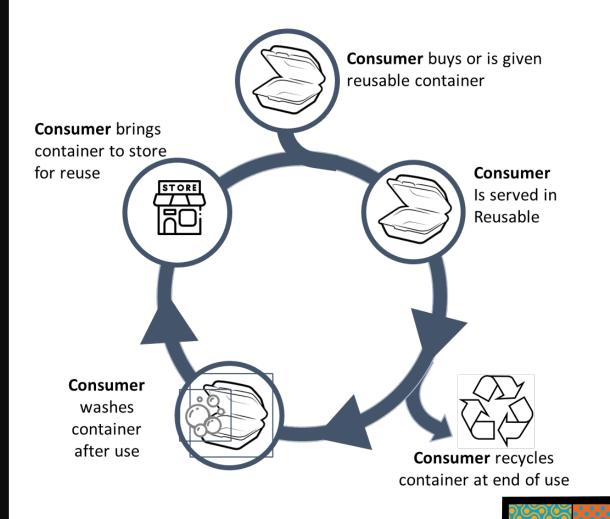
- Deposits
- Loss/damage/late charges
- Complexity

Benefits

- Net package reduction
- GHG reduction (at thresholds)



How REFILL Works



Cost Drivers:

 Product – initial purchase (can be offset with resale)

Challenges

Certifying sanitation

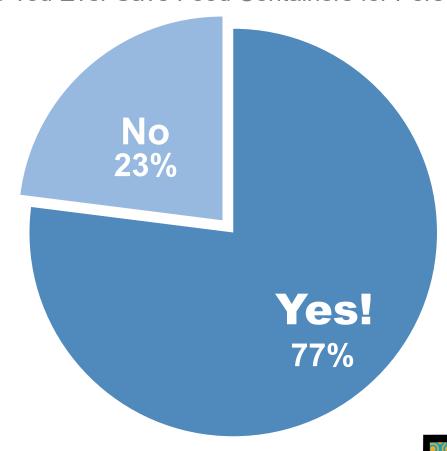
Benefits

- Consumer value
- No deposit, logistics, or tracking
- Can reduce total packaging costs



Consumer Value Reusables & Will Pay More

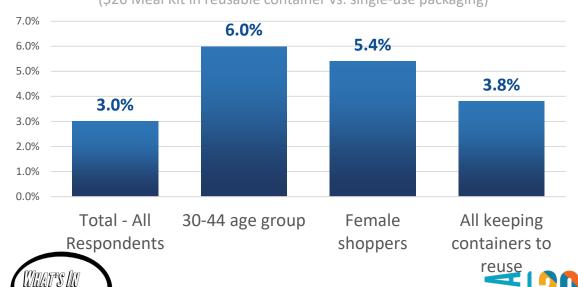
Do You Ever Save Food Containers for Personal Reuse?



SOURCE: Technomic, 2023, Base: 1,000 consumers Q: Do you ever save food containers received from restaurants, delis or grocery stores for personal reuse? Consumers assign a higher value for a reusable alternative.

Higher Willingness-to-Pay Premium

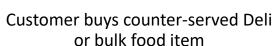
Q: What price would you pay for this product? (\$20 Meal Kit in reusable container vs. single-use packaging)



Source: Anchor Consumer research, 2022 Q: What price would you be willing to pay for this item (Meal kit in reusable vs. single-use packaging)

How REFILL Reduces Total Packaging Costs







One single-use container is used (and disposed of after use)





Single-use Container use creates cost



Customer buys counter-served Deli or bulk food item



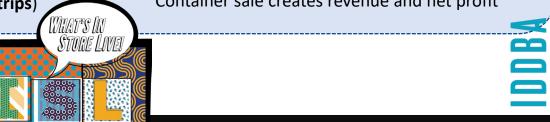
Customer selects a reusable container (for reuse on return trips)

Revenue

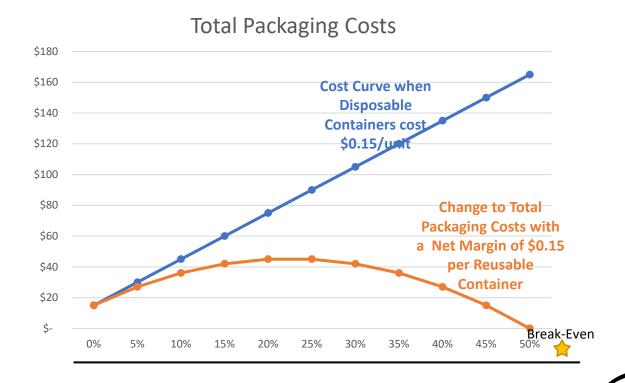
Profit



Container sale creates revenue and net profit



This Delivers an Immediate Benefit by Lowering Total Packaging Costs



% of Sales Where Customer Elects to Choose a Reusable Container

Single-Use Packaging Costs

Total Packaging Costs with Reusables

When a consumer selects the reusable alternative:

- 1. The operator realizes a net margin on the reusable container sale
- 2. The operator also avoids the use *and cost* of a disposable container

Consumers value the reusable containers at approximately \$1

- This creates room to increase the margin netted on each sale
 - This will accelerate cost reduction



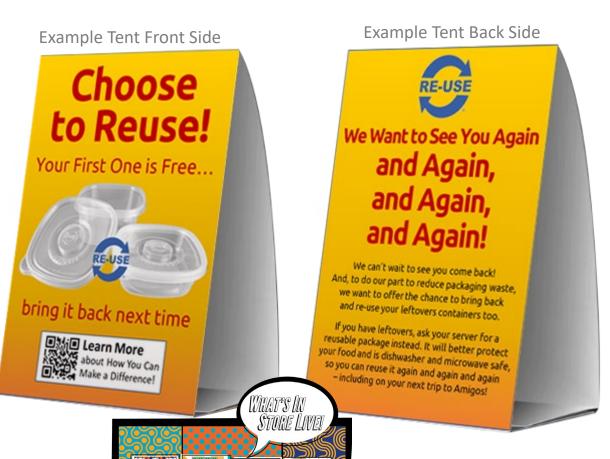
Reusables Create an Impactful Differentiator for Your Sustainability Message

Deli Counter



Bulk Food

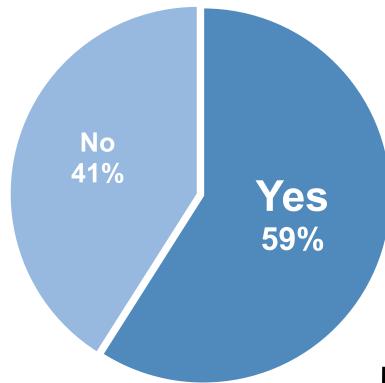




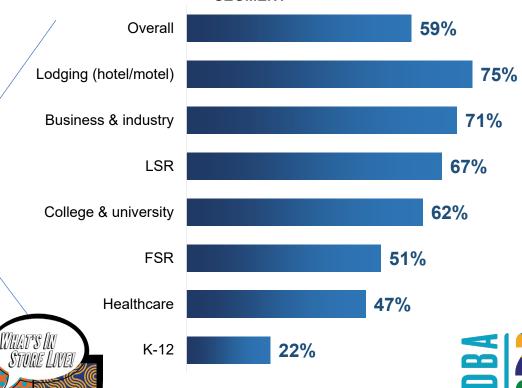


Foodservice is responding to consumer interest in reuse

DOES YOUR OPERATION PLAN TO BEGIN OFFERING A FORMAL REUSABLE CUP/FOOD CONTAINER PROGRAM IN THE NEXT TWO TO THREE YEARS?



PERCENT OF OPERATORS WITH PLANS TO BEGIN OFFERING A FORMAL REUSABLE CUP/FOOD CONTAINER PROGRAM IN THE NEXT TWO TO THREE YEARS, BY SEGMENT



SOURCE: Technomic CSR & Sustainability, 2023, Base: 331 Operators Q: Do you believe you will begin offering such a program in the next two to three years?

Take-Aways

- 1. Prioritize protecting the food
- 2. Consumer action is the key
 - Make it convenient for your customers to take action that reduces waste
- 3. Start exploring reusables





Thank You!
Feel free to
contact me with
any questions

Thank You



