Reduce/Reuse: A Climate Solution for Plastic Pollution

EESI Briefing
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Upstream

We heart reuse.

We can’t create a good quality of life for 7.5B people and growing on a “one-way throw-away” model.

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We Can’t Recycle and Compost Our Way Out

Recyclable- *myth*

- Most recovered materials down-cycled- doesn’t turn off the tap
- Foodware too dirty to recycle
- Recyclable better for the environment only 56% of the time

Compostable- *myth*

- Only 14 of 182 compost facilities in CA process compostable plastic- but it creates a contaminated product
- Food packaging lowers compost quality
- Compostables in landfill = 30X more GHG impact than when composted

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Will Banning Plastic Solve the Problem?

150 MMT of plastic in our oceans...

and the problem is growing

Are single-use plastic bans the right solution?

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The problem isn't just plastic... it's "single-use" itself

Bio-based plastic

- Corn, sugar, starch, or other crops
- Don't degrade quickly enough; not all designed to biodegrade; contaminant in compost
- Fossil fuels used to grow and process - agriculture impacts (water pollution)

Aluminum

- Average recycled content 73%
- Virgin aluminum = 5 x more carbon than recycled
- Bauxite mining releases perfluorocarbons 9,200 times more harmful than CO_2

Paper

- Over ½ of paper produced = packaging (**3 billion trees per year**)
- Toxic chemicals
- Greater GHG emissions compared to plastic

Wood / Bamboo

- Impacts from monoculture
- Biodiversity loss, heavy soil erosion, and sedimentation and eutrophication

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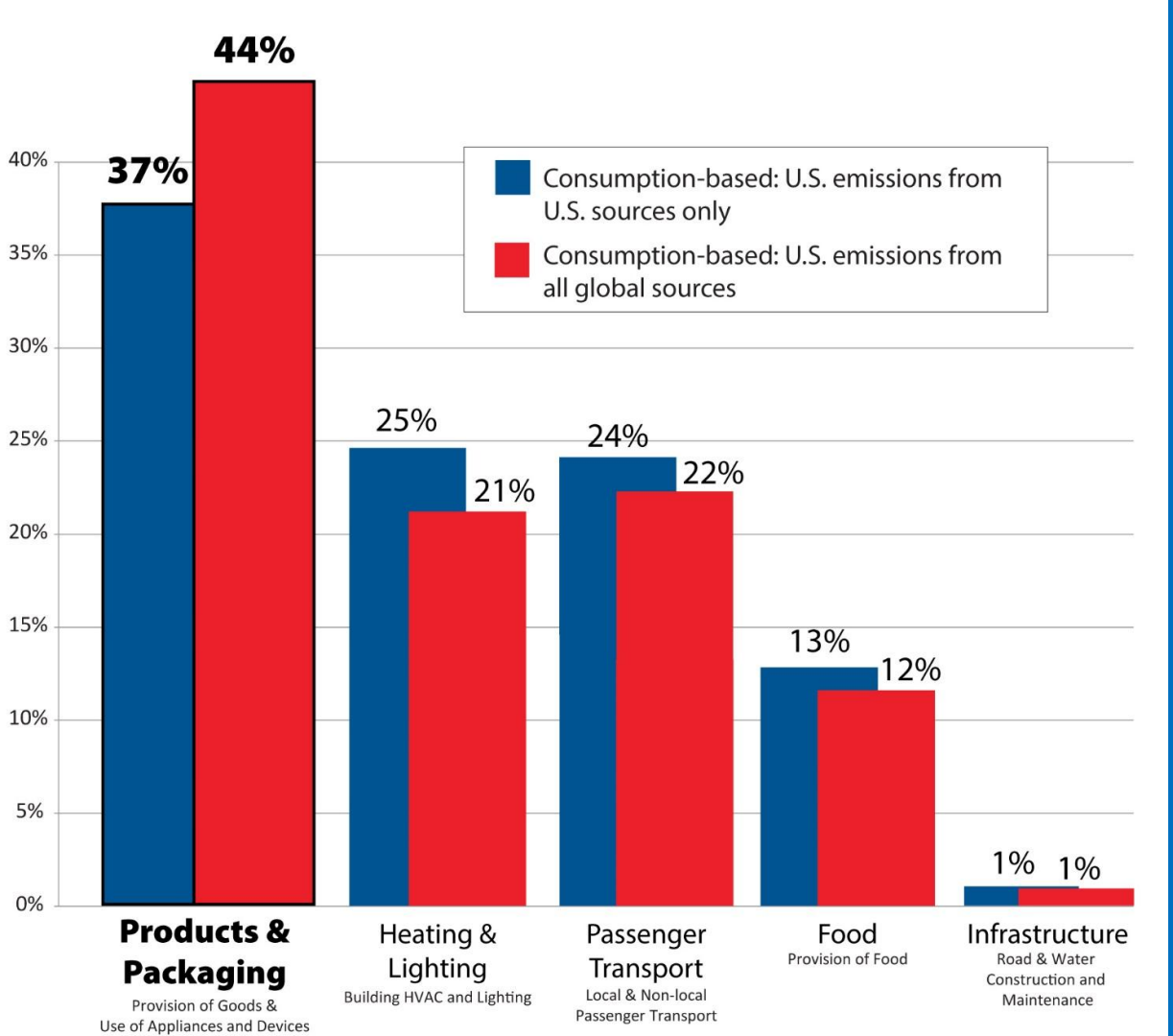

Greenhouse gas emissions from products

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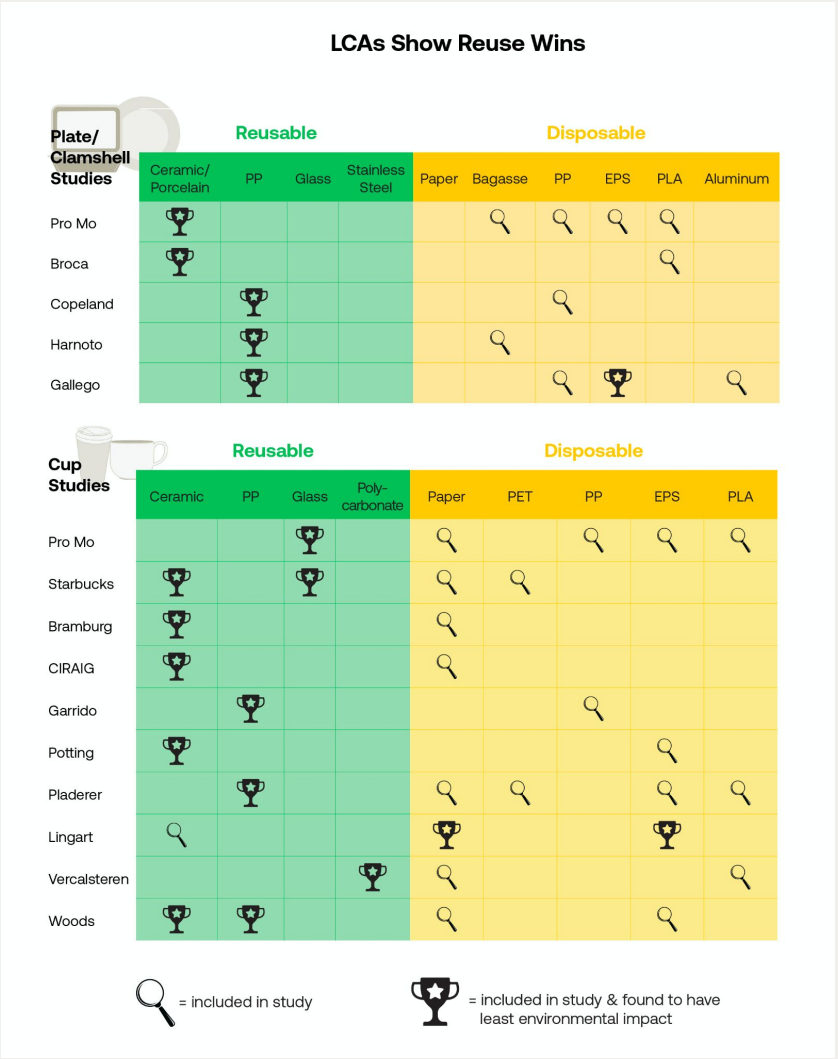
Upstream Report: Reuse Wins

Finding #1

Reuse Beats Single-Use by Every Environmental Measure



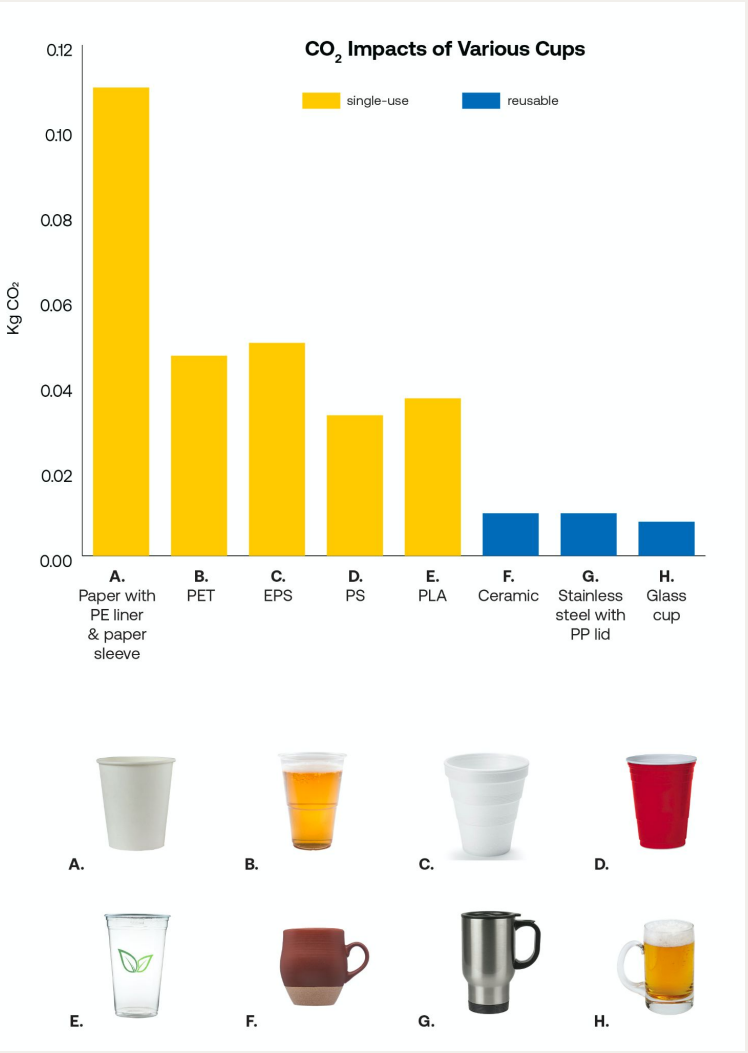
Better for Climate

Cups CO2 Impacts

Disposable paper, plastic, and bioplastic

3-10 x higher than

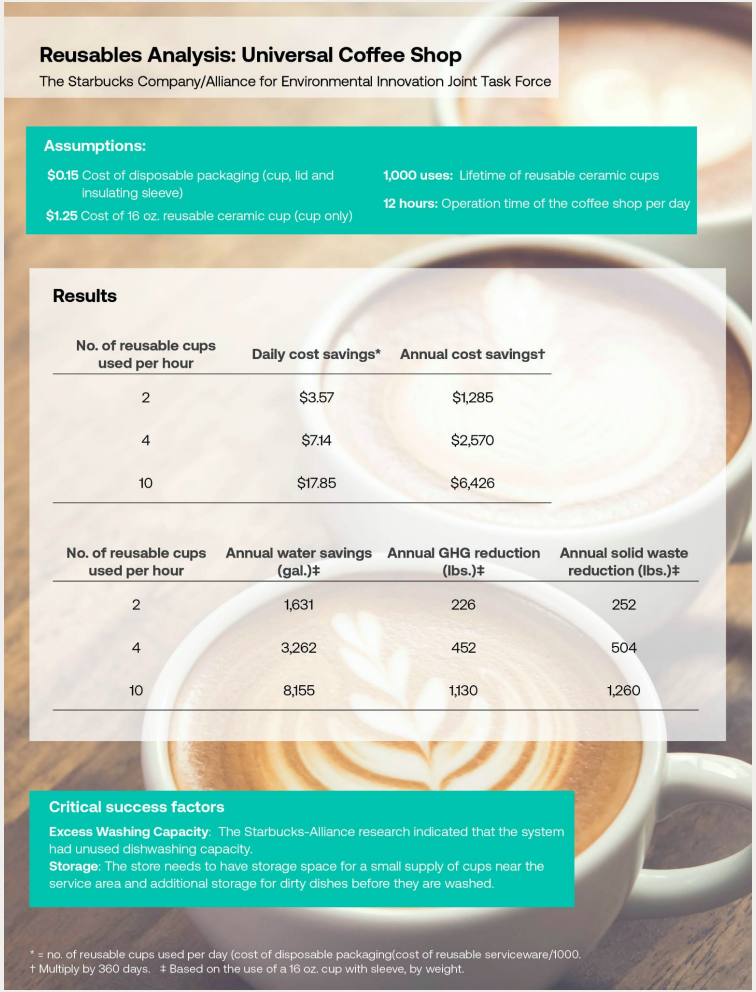
Reusable ceramic, stainless steel and glass



CO_2 Impacts: Disposables vs. Reusables

Product	DISPOSABLE Product Type	kgCO2e / per one product	REUSABLE Product Type	kgCO2e / per one product
Clamshells / Plates	Bagasse Clamshell (Sugarcane)	0.24	PP Clamshell (Hard Plastic)	0.004
	PS Plate (Rigid Plastic)	0.07	PP Plate (Hard Plastic)	0.05
	PLA Plate (Fiber-based plastic)	0.1	Ceramic / Porcelain Plate	0.02
	Cellulose Plate (Compostable)	0.12		
Cups	Paper Cup with PE Liner & Paper Sleeve	0.11	Ceramic / Porcelain Cup	0.01
	PET Cup (Lightweight Plastic)	0.04	Stainless Steel Cup with PP Lid	0.01
	EPS Cup (Styrofoam)	0.05	Glass Cup	0.01
	PS Cup (Solo Cup)	0.03		
	PLA Cup (Fiber-based)	0.04		

Finding #2- Reuse Saves Businesses Money



Reusables Analysis: Universal Coffee Shop

The Starbucks Company/Alliance for Environmental Innovation Joint Task Force

Assumptions:

$0.15 Cost of disposable packaging (cup, lid and insulating sleeve)

$1.25 Cost of 16 oz. reusable ceramic cup (cup only)

1,000 uses: Lifetime of reusable ceramic cups

12 hours: Operation time of the coffee shop per day

Results

No. of reusable cups used per hour	Daily cost savings*	Annual cost savings†
2	$3.57	$1,285
4	$7.14	$2,570
10	$17.85	$6,426

No. of reusable cups used per hour	Annual water savings (gal.)‡	Annual GHG reduction (lbs.)‡	Annual solid waste reduction (lbs.)‡
2	1,631	226	252
4	3,262	452	504
10	8,155	1,130	1,260

Critical success factors

Excess Washing Capacity: The Starbucks-Alliance research indicated that the system had unused dishwashing capacity.

Storage: The store needs to have storage space for a small supply of cups near the service area and additional storage for dirty dishes before they are washed.

* = no. of reusable cups used per day (cost of disposable packaging(cost of reusable serviceware/1000.
† Multiply by 360 days. ‡ Based on the use of a 16 oz. cup with sleeve, by weight.

Imagine a city where...

- All restaurants serve on real plates, cutlery and cups.
- To-go coffee is provided in returnable reusable cups.
- Take-out and delivery is provided in reusable to-go containers that are easily returned.
- At public venues, water is provided in reusable bottles.
- At the ballpark, everyone is drinking beer and soda out of real cups.
- You can get groceries, cleaning, and personal care products delivered to your home in reusable containers- or in reusable containers at the store.

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And in this city...

- Tens of thousands of people are employed in delivery, pick-up, cleaning, stocking and logistics.
- Litter and solid waste costs are down and community pride is up.
- None of these innovations required you to bring your own anything.
- Community leaders and policymakers worked to create the conditions for this thriving reuse economy.
- Then the big companies saw this was the future, and everyone started doing it.

Waste Management vs. Waste Prevention

- Decades of focus on diversion from landfill
- Reduce and reuse must be stand-alone policy goals
- To be effective, they need specific enforceable metrics

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Two Policy Approaches to Shift the Paradigm

1. **REDUCE-**
   eliminate the unnecessary stuff

2. **REUSE-**
   make *reuse and refill* the norm

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Overview of Strategies and Policies

Strategy #1- Reduce as Much as Possible

- **Sector-wide targets for reduction-** (build into EPR and bottle bills)
- **Bans on throw-away packaging products** (bags, toiletries, foodware, cups, bottles)
- **Accessories on request-** (CA and WA; 30+ local policies)

Strategy #2: Transition the Rest to Reusable/Refillable

- **Refillables infrastructure and targets in Bottle Bill (BFFPPAct)**
- **Reusable bags** (State and local laws enacted, BFFPPAct)
- **Sector-wide targets for reusable packaging**
- **Only reusable foodware for on-site dining** (local ordinances)
- **Consumer charges for throw-away cups and containers,** plus mandatory reuse
- **Reuse at government events and workplaces, in gov't purchasing**

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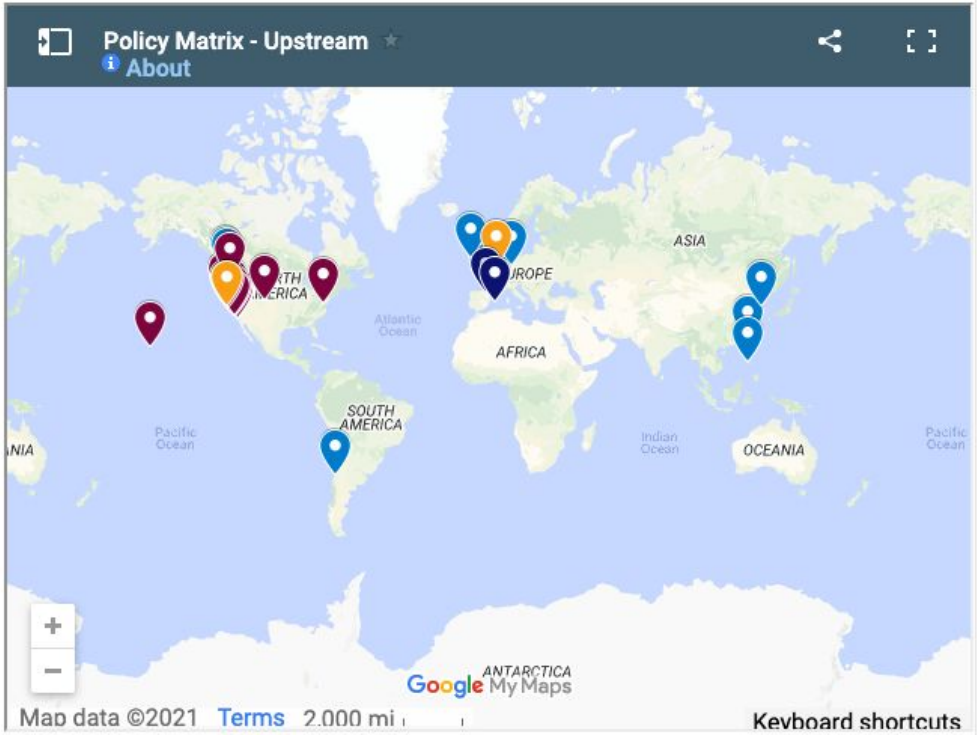
Learn More About Reuse Policies at www.upstreamsolutions.org

Reuse policies are being passed around the world.

Follow the progress of the reuse movement via Upstream's policy tracker below – and get a global view as reuse policies make waves around the world on our Reuse Policy Map.

Policy Tracker



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