



Cup Return Project Proposal



**RESIDENTIAL
SUSTAINABILITY
LEADERS**

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Background



The Problem



Single use coffee cups waste energy, water, and CO2.



Coffee cups are not recyclable and compostable cups need special facilities.

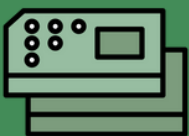


Shifts of consumer behavior alone can not solve the problem.

At Cornell

"[Cornell] is committed to inventing and demonstrating cutting-edge sustainability solutions, starting with our own campus and community." - Cornell Website

Previous successes



Fill it forward program **saves 300 pounds** of waste every month!



8.000 redemptions of the reusable mug program between July and October !



Future challenge

approx. 300 pounds of waste are produced from single use coffee mugs at Cornell **every four days***

approx. **170.000 total cup purchases** between July and October !*

*assuming 15g per cup, 20 cups per hour, 6 hours open, 19 coffee shops on campus

We propose to work with Cornell Dining to empower the NEXT STEP in sustainability!

Background



RSL Coffee mug survey

Spring 2023: Survey of > 1000 Cornell students on reusable mug habits.



70% of students own reusable mug



Only 10-15% of students bring it.

Primary reasons cited:

- students preorder drinks
- students forget their mugs
- students don't have facilities to wash them

Open ended question, what would help them:

Many students independently suggested a system like Fill-it-Forward for coffee mugs!

BUT: Fill-it-Forward can not easily be expanded to retail locations, because of missing washing capabilities!

At other institutions

All Ivy league schools and many others by now have implemented deposit based systems for take out from dining halls.

Yale, UPenn, Dartmouth, Harvard, Princeton, Brown, Columbia, Northwestern, BU, Stanford, ...

UC Berkeley has a limited deposit based mug program. (1, 2)

Princeton is discussing a pilot with Vytal at the moment.

No institution in the US has targeted coffee mugs more broadly, YET...

Our Proposal



Cornell could offer reusable cups in retail locations with a deposit based scheme similar to fill it forward.

We propose:
Outsource logistics and washing to the company.

Advantages:

- money savings from not having to buy disposables
- drastic waste reduction
- positive environmental impact (CO2, water, energy)

Our proposal will allow Cornell to set a national example and ensure future leadership in sustainability!

Below are the profiles of 13 companies and detailed notes from zoom meetings with 3 of them.

Vytal

We identified Vytal as the most promising partner for Cornell to implement our proposal. Vytal is an international reuse company that offers cups as well as washing and logistics.

Alternative companies:

- Encora offers cups but outsources washing to third party company
- re:dish offers cups, logistics and washing didn't reply to our emails

Cornell provides a unique ecosystem for a deposit based model in retail locations!

Minimal effort can result in drastic savings in CO2, energy, and water use.

Researched Companies



Providers of reusable dishware have a B2B model.

Companies mainly differ in the following ways:

- **Who owns the cups?**
 - cups leased to business
 - cups sold to business
- **Who do they serve?**
 - events
 - catering
 - coffee shops / dining
- **Washing**
 - they wash their cups
 - you wash their cups
 - they only wash for you but have no cups

We used the Reuse Service Provider Map from the NGO Upstream to find Companies active in the US.
Here are some of their profiles:

Click on the logo for each company's website!

Vytal

- Location: Europe, US East Coast
- Facts:
 - cups, bowls, tupper boxes, ...
 - serve dining, coffee shops and catering
 - mostly focused on large companies
 - they deliver, pick up, wash
- met on 10/17/25, see notes below



Encora

- Location: Seattle
- Facts:
 - cups, soup containers, clamshell, ...
 - partner with 3rd party companies for washing
 - have smart return bin
- met on 10/16/25, see notes below



CupZero

- Location: US wide
- Facts:
 - only cups for bars/events
 - retrieve cups from return bins and search through trash
- met on 10/17/25, see notes below



Researched Companies



MatterCup

- Location: UC Davis campus, 1 location
- Facts:
 - user pays 1\$ cash deposit to borrow cup
 - student-run
 - maybe out of business (did not respond to inquiries)
- emailed, but no reply

r.world

- Location: US based, active in 35 states
- Facts:
 - mostly cups for events
 - maybe also other containers
 - they deliver, pick up, wash
- emailed, they replied first but then unresponsive



re:dish

- Location: Boston, Philly, NYC
- Facts:
 - coffee cups, clamshell containers, ...
 - full service reusable dishware program
 - take care of all washing, pick up and drop off logistics
- emailed, but no reply

Foodware

- Location: California
- Facts:
 - reusable packaging, take out containers
 - do not offer washing
- emailed, they replied first but then unresponsive



BOLDreuse

- Location: 7 cities across US, closest is Chicago
- Facts:
 - Can add cities if market is large enough
 - Wash, replenish, and track inventory
 - Lids + multiple sizes (9, 16, and 20)
- emailed, but no reply

Researched Companies



WeUse

- Location: California
- Facts:
 - cups, clamshell containers
 - Pickup, cleaning, and return by company
- emailed, but no reply



Sparkl

- Location: California
- Facts
 - events and cafeterias
 - only clamshell and soup containers
 - they offer washing
- emailed, but no reply

Bright and Green

- Location: California
- Facts
 - 16 oz cups, plates, utensils
 - aimed towards local events only
- not contacted



DishJoy

- Location: San Francisco
- Facts
 - offers outsourced washing
 - do not offer any dishes
- not contacted

Eternity Systems

- Location: Europe, North America
- Facts
 - finances, equips and operates tailor-made territorial industrial washing centres
 - do not offer dishes
- not contacted



Meeting notes



Founded in 2020 in Germany
now active in over 21 countries

Offer wide variety of products

Meeting on 10/17/25

Zoom meeting with Henry Simonds, Chief Commercial Officer at Vytal US

- Provide the cups and wash them in centralized facility in NYC
- 4h driving radius around facility is their cutoff - We fall within that
- Even with that driving - environmental impact greatly outperforms single use cups
- Mentioned being in conversation with Princeton about a pilot project
- QR Codes on products to track impact and return behavior
- System overview:
 - Product is borrowed by customer
 - Reminders show them where the closest drop-off location is
 - Return into simple cardboard bins, QR code gets scanned when washing
 - only 1 out of 10k returns does not work
 - Customer gets charged automatically if product not returned within 2 weeks
 - Reminders lead to >99% return rate
 - System integrates into the GET app, tap2borrow integrates
- all-in fee to University: includes leasing of product and logistics+washing
- Pricing depends on overall volume (the bigger, the more efficient the whole process)
- Start with coffee cups, but could offer take out containers additionally in the future
- Pick up for washing flexible (approx. 1-2 times per week)
- Before roll out: 4-6 month pilot at a few locations
- Need data about which products and weekly or monthly sales data to estimate impact and pricing



Meeting notes



cup zero

Meeting on 10/17/25

Zoom meeting with Zsolt Bendel, Co-Founder of CupZero

- Do not offer coffee cups anymore, specialize on cups for events
- Usually <30% return rate but they use the profit to hire people to go through the trash and sort out the cups → leads to >90% return
- 1\$ per cup → break even
- >2\$ per cup → profit
- Generally don't use deposit, but instead
 - Either increase first drink cost, then reduce cost for subsequent drinks if cup is brought back
 - Increase ticket price slightly
- Branded cups possible



encora

Meeting on 10/16/25

Zoom meeting with Ted Wallis, Founder of Encora Enterprises, Inc.

- Active mostly in Seattle, but could still work with us
- Cups: 20oz plastic (cold) and 16oz stainless steel (hot)
- QR on cup, user is charged if cup not returned within 10 days
- Return in Smart Return Container: 2ftx4ftx5ft, fits 555 containers
- >99% return rate
- Cup leasing 30ct per use, buying 5\$ per cup
- So far no washing offered
- Washing could be outsourced to 3rd party company



Q&A - Vytal



What size will cups come in? Will they support both hot and iced drink orders?

A: Cold cups: 9oz, 12oz, 16oz, 20oz, (24oz coming soon)
Hot cups: 9oz, 12oz

Q: What is the flat rate of the service?

A: Depends on the volume. To be negotiated.

Q: What about purchases without the GET app?

A: Their Tap2Borrow system integrates with POS systems to allow for use of credit cards to hold the deposit.

Q: What about visitors?

A: Some disposable cups could be kept around if people ask for them.

Q: What will pickup and drop-off look like?

A: Drop-off stations are simple cardboard boxes that can be placed around campus. Vytal scans the QR codes when washing to reimburse students

Q: What does the lid look like?

A: Recommend to run the system without lids. But can provide compostable lids if required. QR code only on cup.

Q: What is the actual environmental impact considering pick up by car?

A: From our calculations* the break even point for CO2 is at ~1000 cups per drive to the washing facility (Cornell students use approx. 2000 cups per day)
Water use of one disposable cup is 20l but reusable cup takes only 1l to wash.