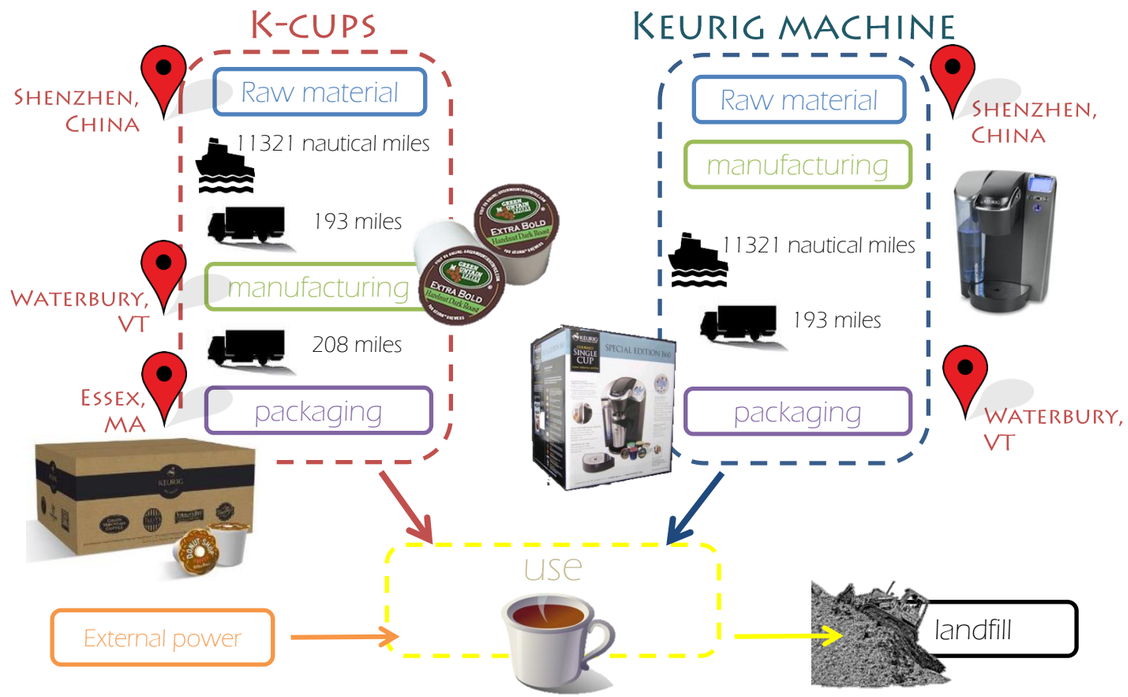
One Cup at a Time

The life cycle analysis (LCA) of the Keurig brewing experience will not only help product designers identify areas of the opportunities, but will also alert the users to the costs of their habits. A sustainable brewing experience is intimately connected with quantification of impact.

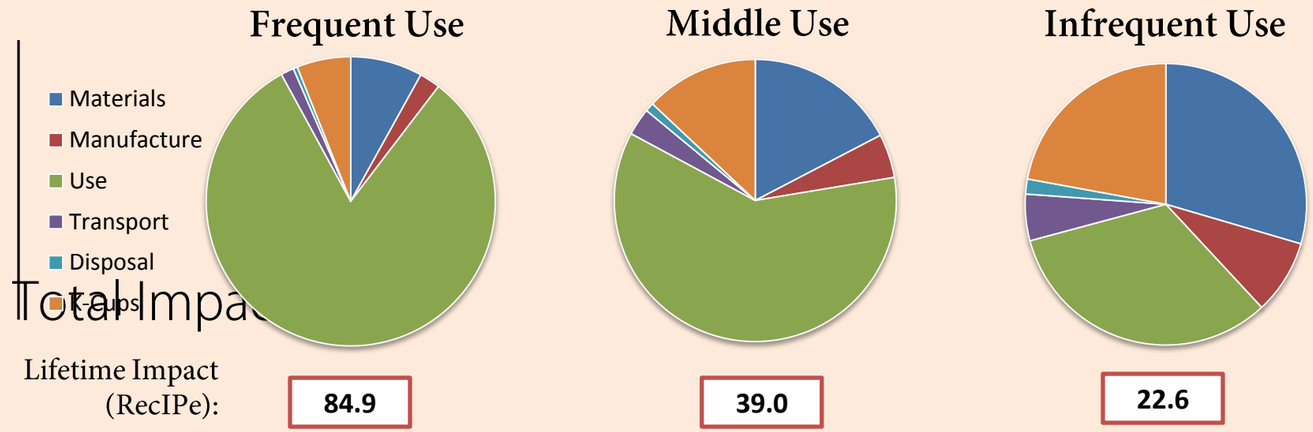
System Boundary

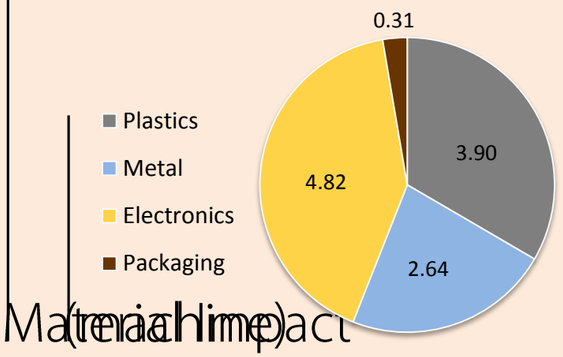


LCA

Functional Unit = 1 brew

Frequent User	Middle User	Infrequent User
2 cups/day	2 cups/day	2 cups/week
Turns machine off 8 hours/day	Machine off when not brewing	Machine unplugged when not brewing
Machine on for rest of day		





Exclusions:

- *Production and transport of coffee*
- *Water usage*
- *Cleaning*
- *Capital production inputs*
- *Means of drinking coffee*
- *Delivery to the consumers*

Assumptions/limitations:

- *Lifetime is 1460 brews*
- *Raw materials for the machine were assembled in China*

All users interviewed felt guilty about throwing away k-cups, but none felt guilty about leaving the machine turned on.

1 k-cup costs 60 cents to buy. Reversing the environmental impact of brewing this cup costs 9.5 cents.

0.8 % of the daily energy consumption is used by brewing 1 cup of coffee with Keurig (260 Watt*h / 35000 Watt*h).

Frequent Use costs 103 € to undo the impact, spends 457 Wh/day in idle, 56 Wh/day brewing, making it a 30/70 product.
Infrequent Use costs 40 € to undo the impact, spends 0 Wh/day in idle, 56 Wh/day brewing, making it a 55/45 product.
-K-cups are not the primary source of the impact in the Keurig experience.
-Therefore, for a less harmful Keurig experience, designers should reduce material impacts and users should always unplug the machine when not in use.