



Image: EsemblyBaby.com

PRODUCT POSITION STUDY

Esembly Rash Relief Cream

Proposal for redesigned,
sustainable packaging

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Sustainable Packaging / MCAD Spring 2024

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COMPANY OVERVIEW

Esembly is a cloth diaper company that sells reusable cloth diapers and a line of skincare and laundering products.

Tagline

Live Less Disposably

Founded

2020

Located in

Brooklyn, NY

Recycled & Organic

materials and ingredients

Sold Online

EsemblyBaby.com, Target,
and Amazon

PRODUCT PROFILE

Rash Relief Cream

Esembly's Rash Relief Cream is a diaper rash cream intended to treat active cases of diaper rash. It is formulated with zinc oxide as an active ingredient and with natural, organic inactive ingredients.

Esembly markets the cream as safe for use with cloth diapers. It does not contain petrolatum, which can cause cloth diapers to repel moisture.¹

Natural & Organic

INACTIVE INGREDIENTS

3 oz

TUBE VOLUME

\$14.50

PRICE ON ESEMBLYBABY.COM

PRIMARY AUDIENCE

Cloth-diapering
parents

SECONDARY AUDIENCE

Health- and
eco-conscious
parents



Competitive Environment

DIAPER CREAM MARKET OVERVIEW

A shift from conventional to natural products

Majority of parents care about sustainability

In a survey conducted by HP, sixty-four percent of parents reported that they opt for products with sustainably-sourced ingredients, and sixty-percent stated that a company's sustainability practices play a "large part" in their purchasing decisions.²

Increasing awareness of harmful ingredients

Shoppers are increasingly conscious of potentially harmful ingredients used in cosmetics and skincare products.³ In the realm of diaper creams, this has led to an increased demand for creams formulated with natural ingredients (e.g. beeswax rather than petrolatum or mineral oil) and without parabens or phthalates.

A growing market for natural products

The global diaper cream market is expected to grow at a compound annual growth rate of 6.6% from 2019 to 2025 and reach \$2.17 billion USD by 2025. Sales of organic and/or natural creams are expected to grow at the fastest rate.⁴



DIAPER CREAM MARKET OVERVIEW⁵

\$2.17 BIL

GLOBAL MARKET SIZE BY 2025

6.6%

AVERAGE GROWTH RATE

FASTEST GROWTH IN

**Natural & Organic
Products**

MAJOR COMPANIES

**Johnson & Johnson
Bayer AG
Beiersdorf Inc.**

**Supermarkets
& Hypermarkets**

MOST POPULAR
DISTRIBUTION CHANNELS

60%

of parents say a company's
sustainability practices
influence their purchases⁶

64%

of parents say they opt
for products with sustain-
ably-sourced ingredients⁷

ESEMBLY'S DIRECT COMPETITORS

Natural, cloth-diaper friendly,* zinc-oxide diaper rash creams

Honest, Weleda, Badger, Burt's Bees, Pipette, Hello Bello,
Boudreaux's with Aloe

ESEMBLY'S INDIRECT COMPETITORS

Conventional diaper rash creams

Desitin, A+D, Aquaphor, Triple Paste

*Creams that do not contain petrolatum,
which is not compatible with most cloth diapers⁸

COMPETITIVE PRODUCTS

Honest Everyday Diaper Rash Cream

2.5 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$11.26 | \$4.50 |

CLAIMS:

- Clean, plant-based formula
- Free from fragrances, petrolatum, lanolin, & mineral oil
- Pediatrician-tested and hypoallergenic

ACTIVE INGREDIENT:

Zinc oxide (14%)

PACKAGING:

- Plastic squeeze tube
- Secondary paperboard box
- Tube not marked for recycling



Image: Honest.com

Burt's Bees Baby Diaper Rash Ointment

3 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$10.49 | \$3.50 |

CLAIMS:

- 100% natural origin
- Free from phthalates, parabens, petrolatum, or SLS
- Pediatrician-tested

ACTIVE INGREDIENT:

Zinc oxide (40%)

PACKAGING:

- Plastic squeeze tube
- Tube marked for recycling through TerraCycle



Image: BurtsBees.com

COMPETITIVE PRODUCTS

HelloBello
Diaper Rash Cream

4 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$7.80 | \$1.95 |

- CLAIMS:
- Worry-free, clean ingredients
 - Free from fragrances, parabens, lanolin, mineral oil
 - Pediatrician- and dermatologist-approved

ACTIVE INGREDIENT:
Zinc oxide (40%)

- PACKAGING:
- Plastic squeeze tube
 - Secondary paperboard box
 - Tube marked for recycling with #2 plastics (MDPE)



Image: HelloBello.com

Pipette
Diaper Rash Cream

3 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$9.99 | \$3.33 |

- CLAIMS:
- Fragrance free, clean and non-toxic
 - Dermatologist-tested and hypoallergenic
 - 100% renewable energy
 - EWG verified

ACTIVE INGREDIENT:
Zinc oxide (14%)

- PACKAGING:
- Plastic squeeze tube
 - Secondary paperboard box
 - Tube not marked for recycling



Image: Pipette.com

COMPETITIVE PRODUCTS

Boudreaux's
Butt Paste with Natural Aloe

4 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$7.03 | \$1.75 |

CLAIMS:

- Free from parabens, dyes, talc, preservatives, and petrolatum
- Plant-based ingredients
- Pediatrician recommended

ACTIVE INGREDIENT:

Zinc oxide (16%)

PACKAGING:

- Plastic squeeze tube
- Secondary paperboard box
- Tube not marked for recycling



Badger
Diaper Rash Cream

2.9 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$14.62 | \$5.04 |

CLAIMS:

- 99% organic ingredients
- Pediatrician-tested and hypoallergenic
- Five simple ingredients
- Leaping bunny certified

ACTIVE INGREDIENT:

Zinc oxide (10%)

PACKAGING:

- Plastic squeeze tube
- Tube not marked for recycling



COMPETITIVE PRODUCTS

Weleda

Calendula Diaper Rash Cream

2.8 oz tube

| AVERAGE PRICE | PRICE PER OZ |
|---------------|--------------|
| \$13.66 | \$4.88 |

CLAIMS:

- Free from parabens, phthalates, synthetic dyes, preservatives, and fragrances
- No animal testing
- Dermatologist-tested
- Certified natural personal care

ACTIVE INGREDIENT:

Zinc oxide (12%)

PACKAGING:

- Aluminum squeeze tube
- Secondary paperboard box
- Tube marked for recycling through Terracycle



Image: Weleda.com



Kat Van Der Linden, Unsplash

COMPETITIVE PRODUCTS OVERVIEW

| BRAND | PACKAGE TYPE | PACKAGE SIZE | PACKAGE MATERIAL | SECONDARY PACKAGE | RECYCLABLE TUBE | AVERAGE PRICE PER OZ | ORGANIC INGREDIENTS |
|-------------|--------------|--------------|------------------|-------------------|---------------------|----------------------|---------------------|
| Esembly | Squeeze tube | 3 oz | Plastic | — | Not marked | \$4.21 | Y |
| Honest | Squeeze tube | 2.5 oz | Plastic | Paperboard box | Not marked | \$4.50 | — |
| Burt’s Bees | Squeeze tube | 3 oz | Plastic | — | Terracycle | \$3.50 | — |
| Hello Bello | Squeeze tube | 4 oz | Plastic | Paperboard box | #2 plastics (MDPE)* | \$1.95 | Y |
| Pipette | Squeeze tube | 3 oz | Plastic | Paperboard box | Not marked | \$3.33 | — |
| Weleda | Squeeze tube | 2.8 oz | Aluminum | Paperboard box | Terracycle | \$4.88 | — |
| Badger | Squeeze tube | 2.9 oz | Plastic | — | Not marked | \$5.04 | Y |
| Boudreaux’s | Squeeze tube | 4 oz | Plastic | Paperboard box | Not marked | \$1.75 | — |

*Squeeze tubes are not accepted for recycling by all municipalities

IN-STORE PRODUCT LOCATION AND SHELF SPACE

Limited natural options in most stores

I visited multiple retailers in Ithaca, New York, to get a sense of how diaper creams in Esembly's competitive set are placed in stores.

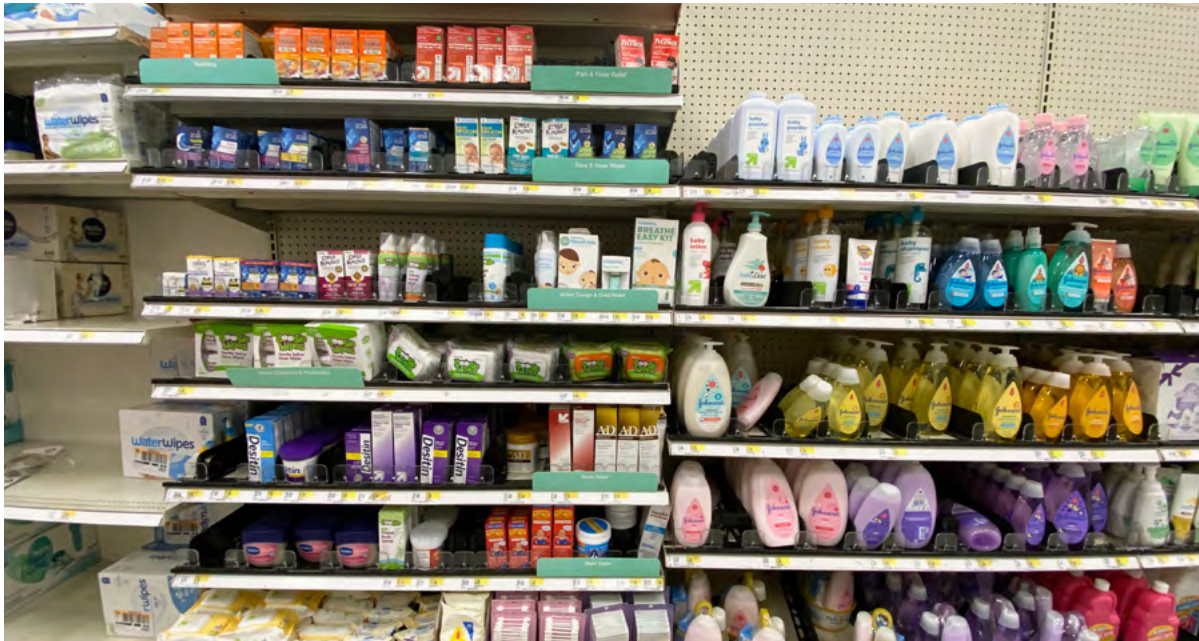
Conventional creams are easier to find

Overall, conventional diaper creams were more common—every store but GreenStar Co+op carried the most popular conventional brands (Desitin, A+D, and Aquaphor). No store carried all of the competitive products. And none carries Esembly's Rash Relief Cream or any products specific to cloth diapering.

Diaper creams don't occupy prime shelf space

In every store but GreenStar, diaper creams were placed on high or low shelves. All stores stocked diaper creams alongside other baby hygiene products, and the diaper creams were difficult to spot in the visual noise. Some stores organized products by type first (e.g. shampoos, lotions, diapers creams), and some sorted by brand first.





Target

Ithaca, New York

No natural diaper cream options in store. Diaper creams are placed alongside other baby hygiene products but are organized separately on lower shelves.

Target does sell Esembly's products online, along with other natural diaper cream options.

COMPETITIVE PRODUCTS CARRIED:

- None



GreenStar Food Co+op

Ithaca, New York

Two natural options available, organized with other hygiene products by brand. No conventional options available.

COMPETITIVE PRODUCTS CARRIED:

- Weleda Calendula Diaper Cream
- Badger Diaper Rash Cream



Wegman's

Ithaca, New York

Only one natural option available in store. Diaper creams are placed alongside other baby hygiene products but organized separately on the highest shelf.

COMPETITIVE PRODUCT CARRIED:

- Boudreaux's Butt Paste with Natural Aloe



CVS Pharmacy

Ithaca, New York

Three natural options available in store. Diaper rash creams are placed on the two lowest shelves.

COMPETITIVE PRODUCTS CARRIED:

- Hello Bello Diaper Rash Cream
- Honest Everyday Diaper Rash Cream
- Boudreaux's Butt Paste with Natural Aloe

ONLINE PRODUCT SEARCH RESULTS

Requiring the customer to narrow down

Overwhelming and innacurate search results

Online searches for natural diaper creams containing zinc yield many results, including products (balms, etc.) without zinc and products that are not compatible with cloth diapers. The customer must take the time to review each product to find one that meets their needs. For parents who want natural and/or organic creams that contain zinc oxide and are safe for cloth diapers, this requires some effort.

Lots of competition for natural creams

There are *many* options available online for natural diaper creams. Esembly does not have a competitive edge for parents who are simply looking for a natural product. For that audience, there are many choices, and Esembly's cream does not stand out.

Making the choice clear for cloth-diapering parents

Esembly has a potential edge for their primary market (cloth-diapering parents) because they prominently state that their cream is safe for use with cloth diapers, which cuts through the noise and simplifies their customer's choice. They also gain credibility because they sell cloth diapers and other accompanying products.



Google search for cloth-diaper safe, natural diaper creams with zinc

Google search for cloth-diaper safe, natural diaper creams with zinc. Esembly's cream appears near the top, alongside a few other zinc-based creams and some irrelevant products (diaper balms). The first result actually contains petrolatum, making it incompatible with most cloth diapers.

Filter by

Get it fast

Nearby

Small business

Stores

amazon.com

Walmart

Target

CVS Pharmacy

See 16 more

Brand

Honest

Burt's Bees

Triple Paste

Bayer

See 26 more

Sustainability

Features

Price


Get it fast

Nearby

Organic

About 2,710,000 results (0.41 seconds)


Sponsored



The Buddle Diaper Rash...

\$69.00

Buddle Skinc...




Diaper Rash Cream + Zinc

\$12.00

Honeybkids....

Get by 2/7

Cream · Cruelty-free




EWG VERIFIED...

\$18.00

Healthybaby

Get by 2/1

Cream · Organic




Baby Diaper Rash Relief...

\$14.50

Esembly Baby

20% off \$1+

Cream · Organic




BABO Botanicals...

\$12.50

Amazon.com

Special offer

Cream · Organic, Cruelty-free




Organic Daily Diaper Baby...

\$15.50

Esembly Baby

20% off \$1+

Balm · Organic




Nature's Baby Diaper & Bod...

\$11.50

Wayward Chi...

Get by 2/8

Balm



Organic French Diaper Cream...

\$22.99

La Petite Cre...

★★★★★ (22)

Balm · Organic, Cruelty-free

Kinder Cloth Diaper Co.

<https://www.kinderclothdiapers.com> › blog › cloth-d...

Choosing the right cloth diaper safe diaper cream

Nov 22, 2023 — Cloth diaper safe **diaper cream** does not contain **zinc oxide** or **petroleum**. ... In summary, when selecting a **diaper cream** for **cloth...**

8–11 day delivery · 14-day returns

Google search for natural diaper creams with zinc

Essembly's cream does not appear, though their diaper balm does. This search also returns irrelevant products (diaper balms without zinc), and the top result contains petrolatum.

Filter by

Get it fast

Small business

Sustainability

☐ Organic

☐ Cruelty-free

☐ Fair Trade

Features

☐ Hypoallergenic

☐ Fragrance-free

☐ For Baby

☐ Incontinence Care

Brand

☐ Honest

☐ Aquaphor

☐ DESITIN

☐ Boudreaux's Bu...

See 26 more

Stores

Ingredient

Price

Organic

Get it fast

Hypoallergenic


Fragrance-free

For Baby


Incontinence Care

About 6,240,000 results (0.44 seconds)


Sponsored




The Buggle Diaper Rash...
\$69.00
Buggle Skinc...




Diaper Rash Cream + Zinc
\$12.00
Honeybkids...
Get by 2/7
Cream · Cruelty-free




EWG VERIFIED...
\$18.00
Healthybaby
Get by 2/1
Cream · Organic




Burt's Bees Baby Diaper...
\$21.18
Amazon.com
Special offer
Ointment · Cruelty-free




Weleda - Cream - Bab...
\$13.99
Amazon.com
Special offer
Cream · Organic, Cruelty-free




Balm - Organic Daily Diaper...
\$15.50
Essembly Baby
20% off \$1+
Balm · Organic




Organic French Diaper Crea...
\$22.99
La Petite Cre...
★★★★★ (22)
Balm · Organic, Cruelty-free




Balm - "The Best Baby...
\$22.95
Cristina's Curls
Get by 2/8
Balm · Organic




Earth Mama



The Honest



Burt's Bees Baby



Badger Zinc Oxide

Things to know

Best natural

Best natural zinc oxide diaper cream

Best

Best zinc free diaper cream

Highest zinc oxide

OPPORTUNITIES

Differentiating from the competition

Prioritize user experience

Esembly and its competitors all use a very similar primary package: a squeeze tube. Product reviews show that many parents find these tubes frustrating: They make a mess and leave wasted product in the tube. Offering a different packaging format could improve user experience and differentiate Esembly's product.

Differentiate with more sustainable packaging

Esembly's non-recyclable plastic tube does not stand out from its competition. For parents who are concerned about sustainability (a large portion of cloth-diapering parents),⁹ a more sustainable packaging option could be a huge draw.

Appeal to a broader audience

Esembly's packaging doesn't advertise the benefits of its formula. Bringing that information front and center, along with clearly stating that the cream is safe for cloth diapers, could attract a broader audience (parents who want a natural product but don't use cloth diapers).

Placement in Target stores

Esembly's products are available on Target.com. An in-store presence could broaden their customer base and would align with Target's stated sustainability goals.¹⁰



Market Research

ESEMBLY'S PRIMARY AUDIENCE

Cloth-diapering parents

Male and female | Age: 25 to 35 | Income: \$50–\$100k
Motivated by sustainability, baby's health, and saving money ¹

ESEMBLY'S SECONDARY AUDIENCE

Health- and eco-conscious parents

Overview of methods

I gathered insights about how parents use diaper cream packaging via three channels:

- Google survey
53 responses collected Feb 5 to 16, 2024
- Interviews
- Amazon product reviews

The feedback I collected informed the key insights presented on the following pages.



KEY INSIGHT

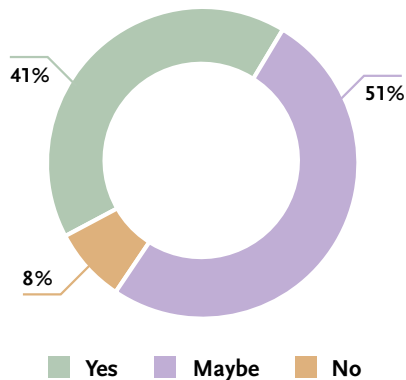
For most parents, efficacy comes first

Sustainable packaging is a bonus

Most parents surveyed said they would try a new cream if it came in sustainable packaging but emphasized that product efficacy is top priority. Most parents feel that eco-friendly packaging is a “bonus” when choosing a cream to heal their child’s rash.

Desire for natural ingredients does not always translate to purchase of a natural product

49 percent of parents surveyed said that they look for diaper creams with natural or organic ingredients—but 91 percent actually use a conventional product. Possible explanations include product availability, awareness of natural vs. synthetic ingredients, lack of attention, or a desire to use a trusted, effective brand (Desitin, etc.).



SURVEY QUESTION

Would you consider trying a different product if it came in sustainable and/or recyclable packaging?

“

I’m always looking for options that come in recyclable containers, but swear by stuff that works. I’d pay a bit more money for something that worked and was more sustainable.

—Survey response

“

We’ve been fighting a bad rash for several weeks now. There comes a point where I don’t care about the ingredients, packaging, price or smell—I only care about the efficacy of the product.

—Survey response

KEY INSIGHT

Greenwashing undermines eco claims

Many consumers skeptical of “clean” ingredients

Nearly one-third of products in the U.S. personal care market boast “clean” ingredient labels, and many consumers are growing skeptical of these claims, especially when they can’t be verified.² A recent report from McKinsey and Company states that while many consumers do look for “clean” ingredients in personal care products, “the pendulum has started to swing back toward efficacy.”³

Unclear recycling labeling creates confusion

75 percent of parents surveyed did not know whether the package for the cream they use is recyclable. This is unsurprising, since most diaper cream packages do not include a recycling label, regardless of recyclability or the brand’s sustainability claims.

Brands need to build trust

To truly stand out, brands like Esembly need to be fully transparent about their ingredients and any sustainability claims they make, including recyclability. Certifications, data, and invitations for customers to verify claims can all help create trust. An easy place to start for diaper cream packaging: clear recycling labeling.

“

Labeling a product with ‘clean’ or ‘natural’ will not automatically entice consumers, who are discerning about these claims and who may, in fact, be more interested in the product’s efficacy.

—McKinsey & Company

75%

of parents surveyed did not know if packaging for the cream they use can be recycled

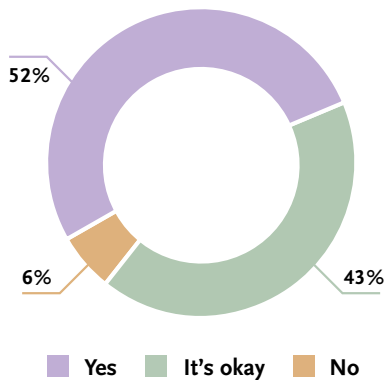
KEY INSIGHT

Parents don't love current packaging options

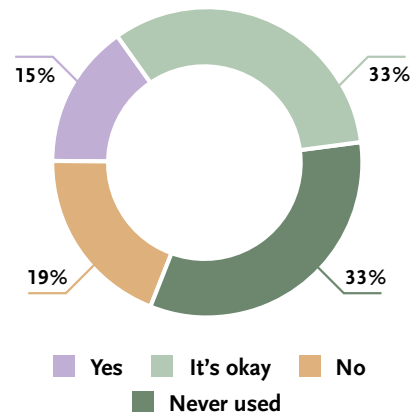
Squeeze tubes and tubs both have downsides

Squeeze tubes and tubs—the most common formats for diaper cream packaging—received mixed reviews from survey respondents. 50 percent of parents who use cream in a squeeze tube and 15 percent who use cream in a tub said they had no complaints about the packaging.

SURVEY QUESTION
Do you think diaper cream in a **squeeze tube** is easy to use?



SURVEY QUESTION
Do you think diaper cream in a **tub** is easy to use?



PROS OF SQUEEZE TUBES:

Portable, one-handed use, feels more hygienic

CONS OF SQUEEZE TUBES:

Wasted product, awkward to use for some, mess

PROS OF TUBS:

Larger volume, better value, control amount applied

CONS OF TUBS:

Mess, concerns about hygiene, less portable, lids are difficult to open one-handed

KEY INSIGHT

Parents share similar wishes for packaging

One-handed, mess-free use is a priority

Parents surveyed emphasized that they need a package that can be used with one hand while handling a squirmy baby—but neither squeeze tubes or tubs clearly satisfy that need. While most survey respondents don't mind getting diaper cream on their fingers, they don't want it to end up all over their child, change mat, etc.

Wasted product is a common complaint

In survey responses and across product reviews, many parents complained that wasted product is left behind in squeeze tubes. Some feel they need to struggle with the package or cut it open to access the last of the cream, while others are simply frustrated by the wasted product.

Parents want package size options

The current options for diaper cream packaging don't meet parents' diverse needs. Some parents use much more cream than others do, and diaper cream is used both at home and on the go. Multiple parents surveyed expressed a desire for package size options—e.g. a bulk size for home or for parents who use cream regularly and a portable size for the diaper bag.

PARENTS' TOP PACKAGING WISHES

Minimal mess

One-handed application

Portable

No wasted product

Size options

“

The only thing that is incredibly annoying is the packaging. You get the first 70% out easily, the next 10% is hard work, and for the last 20% you just have to cut it open. I wish they would also sell it in a container with a lid.

—Amazon review of Burt's Bees
Diaper Rash Ointment

OPPORTUNITIES

Unite efficacy, usability, and sustainability

Highlight efficacy and build trust with transparency

Esembly's current packaging is light on claims. Emphasizing efficacy, ideally backed by a verifiable source, could encourage new customers to try the product. Any sustainability claims need to be verifiable to build trust and avoid the perception of greenwashing. Packaging should be clearly labeled for recycling.

Explore sustainable and user-friendly packaging

Esembly offers its cream in a plastic squeeze tube, a packaging format that is not very popular and is not widely recyclable. Options to explore include a pump dispenser, improved tub design, and refillable squeeze tube. The solution needs to meet parents' top wishes: limited mess, one-handed use, portability, and minimal wasted product. A sustainable package could differentiate Esembly from its competitors and encourage new customers to try the product.

Consider a refill-based subscription model

Esembly already offers a subscribe-and-save option to customers purchasing cream through their website. A refill-based model, either with returnable containers or limited packaging for refills, could improve packaging sustainability.



Materials, Processes, Waste & Energy

MATERIALS SURVEY

Plastic Squeeze Tube
Esembly Rash Relief Cream

Esembly's Rash Relief Cream packaging has three components: a plastic squeeze tube, a plastic flip-top cap, and a foil seal.



Plastic Squeeze Tube

Material: Medium density polyethylene (MDPE)
Size: 5.25 in. (h) x 2.625 in. (w) x 1.5 in. (d)
Weight: 0.3 oz
Recyclable: Yes, but not in most facilities²
Printing: Flexography



Plastic Flip-Top Cap

Material: Polypropylene (PP)
Size: 1.5 in. (w) x .75 in. (h)
Weight: 0.1 oz
Recyclable: Yes, but small size is likely challenging for sorting¹



Foil Heat-Induction Seal

Material: Foil
Size: .5 in. round
Weight: >0.1 oz
Recyclable: No

| PACKAGE TYPE | PRODUCT WEIGHT | TOTAL WEIGHT | PACKAGE WEIGHT | CAP | TUBE | SEAL | % PRODUCT |
|--------------|----------------|--------------|----------------|-------|-------|--------|-----------|
| Squeeze tube | 3 oz | 3.4 oz | .4 oz | .1 oz | .3 oz | >.1 oz | 88% |

MATERIALS SURVEY

Aluminum Squeeze Tube
+ Paperboard Box

Weleda Calendula Diaper Cream

Unlike most other brands, Weleda packages their diaper cream in an aluminum squeeze tube. The packaging has four components: an aluminum squeeze tube, a plastic tube orifice, a paperboard box, and a plastic twist-on cap.

Note: Weleda is a German brand and does not follow US FDA standards for labeling and tamper-evident sealing

Plastic Twist-On Cap

Material: Polypropylene (PP)
Size: 1 in. (h) x 1.25 in. (w)
Weight: 0.1 oz
Recyclable: Yes, but small size is likely challenging for sorting³



Paperboard Box

Material: 85% recycled paperboard
Size: 5.5 in. (h) x 2 in. (w) x 1.5 in. (d)
Weight: 0.4 oz
Recyclable: Yes

Aluminum Squeeze Tube

Material: Aluminum
Size: 5 in. (h) x 1.375 in. (w) x 1.75 in. (d)
Weight: 0.5 oz
Recyclable: Yes⁴
Printing: Flexography

Plastic Tube Orifice

Material: Unidentified plastic
Size: .375 in. (w) x .25 in. (h)
Weight: >0.1 oz
Recyclable: No

| PACKAGE TYPE | PRODUCT WEIGHT | TOTAL WEIGHT | PACKAGE WEIGHT | CAP | TUBE | TUBE ORIFICE | BOX | % PRODUCT |
|--------------|----------------|--------------|----------------|-------|-------|--------------|-------|-----------|
| Squeeze tube | 2.8 oz | 3.7 oz | .9 oz | .1 oz | .3 oz | >.1 oz | .4 oz | 76% |

MATERIALS SURVEY


Plastic Tub
Esembly Everyday Balm

Esembly also offers a non-zinc diaper balm in a plastic tub, which is the second most common packaging format for diaper creams and balms. The packaging has five components: a plastic tub, a plastic screw-on lid, two printed labels, and a foam seal.


Printed Label x2

Material: Polypropylene (PP) with adhesive backing
Size: 7.125 in. (w) x 1.625 in. (w)
Weight: >0.1 oz.
Recyclable: No, not in a PET recycling stream⁵
Printing: Offset

Plastic Tub

Material: Polyethylene terephthalate (PET)
Size: 2.5 in. (h) x 2.25 in. (w)
Weight: 0.6 oz.
Recyclable: Yes  WIDELY ACCEPTED

Plastic Lid

Material: Polypropylene (PP)
Size: .5 in. (h) x 2.25 in. (w)
Weight: 0.2 oz.
Recyclable: Yes  LIMITED ACCEPTANCE
Printing: Offset

Pressure-Sensitive Foam Seal

Material: Polystyrene
Size: 2.25 in. (w) x .03 in. (h)
Weight: >0.1 oz.
Recyclable: No



| PACKAGE TYPE | PRODUCT WEIGHT | TOTAL WEIGHT | PACKAGE WEIGHT | LID | TUB | LABELS | SEAL | % PRODUCT |
|--------------|----------------|--------------|----------------|-------|-------|--------|--------|-----------|
| Tub | 4 oz | 4.8 oz | .8 oz | .2 oz | .6 oz | >.1 oz | >.1 oz | 83% |

MATERIALS & STRUCTURE

Product Needs

What does the product need from the package?

Non-porous barrier to maintain quality

Natural diaper creams are generally composed of ingredients like oils and beeswax that require a non-porous barrier to maintain moisture and to protect the product from contamination.

Resealable package for protection during use

Most parents use a container of diaper cream within weeks or months. The package must be easily resealed (e.g. with a cap or lid) to maintain the product's moisture and protect from contamination during that time.

Tamper-evident seal and drug facts labeling

The US Food and Drug Administration requires diaper creams to be sold with tamper-evident seals to ensure product safety. It also requires drug facts labeling on creams containing zinc oxide.



Esembly's packaging includes a drug facts label and tamper-evident seal per FDA regulations

MATERIALS & STRUCTURE

Consumer Needs

What does the user need from the package?

Safety, ease of use, and minimal mess

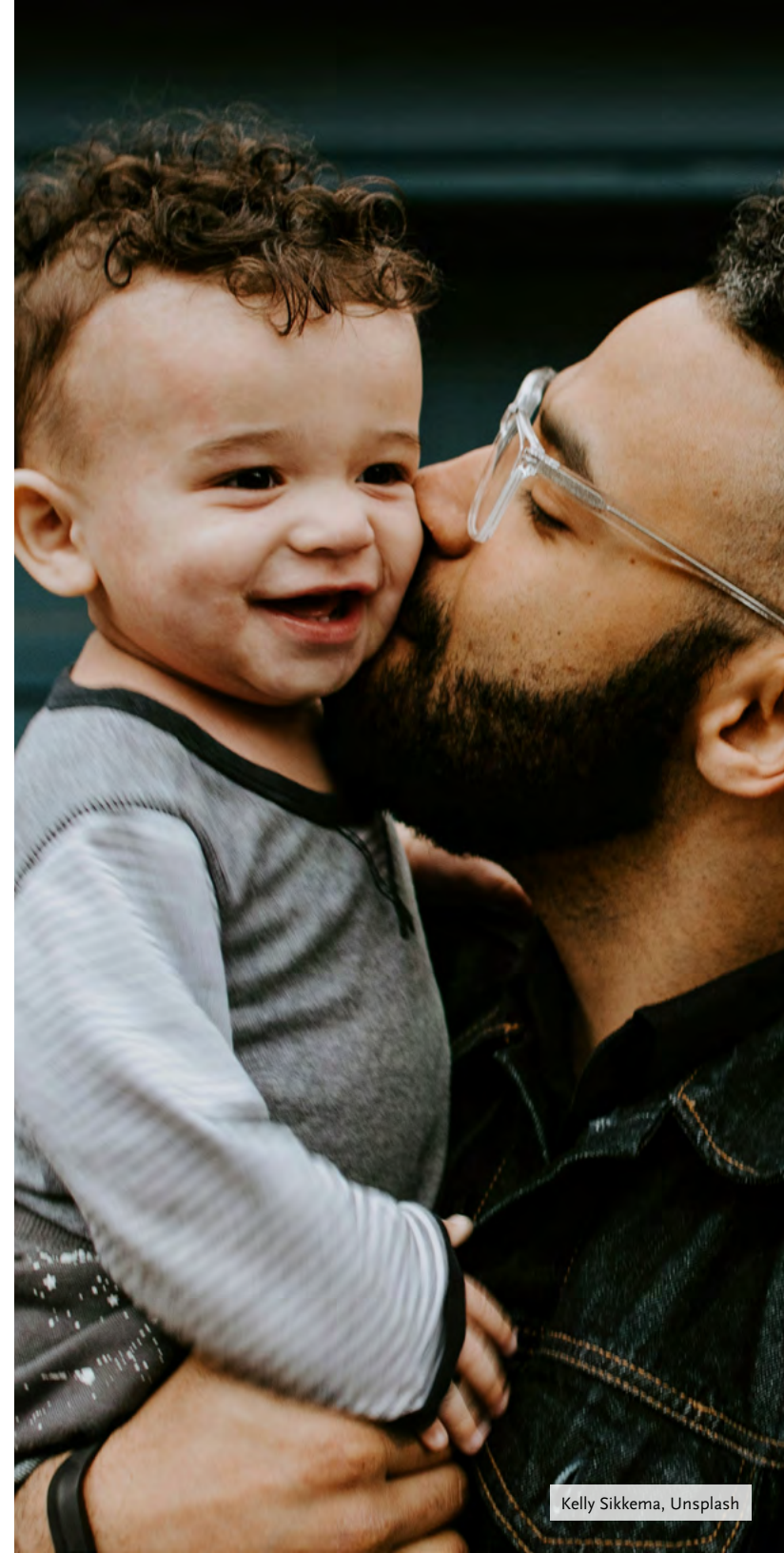
Parents need a package that they can open and use one-handed during diaper changes. Easy one-handed use helps minimize mess during application. Lids that require two hands to open (like twist-off lids) make the process more difficult. The package should be shatter-proof and free of any sharp edges for safe use around squirmy and curious babies.

Minimal wasted product

Diaper cream isn't especially affordable, and many parents use it regularly. Parents want to be able to use all of the diaper cream in a package and are frustrated by packages like squeeze tubes that make it difficult to access the last of the product.

Size options for different uses

Some parents use much more cream than others do, and diaper cream is used both at home and on the go. Multiple parents surveyed expressed a desire for package size options—e.g. a bulk size for home or for parents who use cream regularly and a portable size for the diaper bag.



CROSS-PRODUCT INSPIRATION

Paper Squeeze Tube

Cosmetics manufacturing company Kolmar USA introduced a paper squeeze tube in 2021. They claim that the tube reduces plastic up to 80% and can withstand moisture thanks to a “coated paper” layer.

MATERIALS, PROCESSES, & ENERGY

- + Significant reduction in plastic (80% less than a traditional plastic tube)
- Single-use packaging generates significant impacts across its lifecycle, regardless of recyclability⁶
- + Package is lightweight (comparable to plastic tubes)

WASTE

- Packaging manufacturer does not disclose whether coated paper is recyclable, and cap is likely not recyclable due to small size
- + Design minimizes wasted product

CUSTOMER EXPERIENCE

- + Maintain familiar squeeze tube format (portable, relatively easy one-handed use)
- + Paper tube exterior communicates focus on sustainability



Tearable tube creates easy access to remaining product, reducing waste



UNCLEAR
RECYCLABILITY



SINGLE-USE



MATERIAL
REDUCTION



LIGHTWEIGHT

CROSS-PRODUCT INSPIRATION

Pouch + Refillable Container

Several brands offer bulk-size refills of personal care products in lightweight plastic pouches. Paired with refillable containers, this approach can significantly reduce packaging volume.

MATERIALS, PROCESSES, & ENERGY

- + Lightweight, bulk-size refill pouch creates a significant reduction in plastic/packaging material
- + Improved product-package ratio increases transport efficiency
- Minimizes but does not eliminate single-use packaging

WASTE

- Plastic pouches are not widely recyclable, though the brand could partner with Terracycle to increase recycling rate
- Heavier-weight refillable containers can generate more waste if they are not consistently reused by the customer
- + Significantly improved product-package ratio reduces overall packaging waste

CUSTOMER EXPERIENCE

- + Customer loyalty fostered by subscription refill model
- + Opportunity to offer customers a choice of well-designed refillable container, improving user experience



Refill pouch



Choice of refillable container:
Pump bottle, squeeze tube, or
tub with one-hand open lid



NOT
RECYCLABLE



SINGLE-USE



MATERIAL
REDUCTION



LIGHTWEIGHT



IMPROVED PRODUCT-
PACKAGE RATIO

CROSS-PRODUCT INSPIRATION

Solid or Concentrated Formula in Plastic-Free Packaging

Innovative brands like Ethique and Attitude offer personal care products in solid or concentrated form, allowing a total elimination of plastic packaging.

MATERIALS, PROCESSES, & ENERGY

- + Opportunity to eliminate plastic packaging in favor of paper/paperboard
- + Concentrates significantly improve product-package ratio and increase transport efficiency
- Minimizes but does not eliminate single-use packaging

WASTE

- Heavier-weight refillable containers can generate more waste if they are not consistently reused by the customer
- + Paperboard is recycled at high rates (81% in the U.S. in 2018) and can be sourced from responsibly-managed forests⁷

CUSTOMER EXPERIENCE

- + Concentrates create opportunity to offer a choice of well-designed refillable containers, improving user experience
- Customers may be hesitant to adopt a new formulation, and the new formulation must be as effective as the original



Ethique's concentrated shampoo and bodywash simply require the customer to add water. The liquid product can be stored in a refillable container.



Attitude offers a solid diaper cream with zinc sold as a balm stick packaged in paperboard.



RECYCLABLE



SINGLE-USE



MATERIAL
REDUCTION



LIGHTWEIGHT



IMPROVED PRODUCT-
PACKAGE RATIO

OPPORTUNITIES

Reduce, if not eliminate, plastic waste

Esembly has the opportunity to offer packaging that significantly reduces waste. A local, NYC-based, returnable/refillable packaging system could reduce packaging waste even further.

Explore innovative packaging options

Paper squeeze tubes are a promising new option, but more exploration is needed to confirm the composition and recyclability of the “coated paper” used. The tubes could offer a better user experience compared to aluminum tubes (which develop sharp edges) and plastic tubes (which leave behind wasted product).

Refills reduce waste and improve experience

Offering bulk-size refills in pouches would significantly improve product-packaging ratio and reduce waste, though the pouches themselves are generally not recyclable. A local, NYC-based, returnable/refillable packaging system could reduce packaging waste even further. Offering customers a choice of well-designed refillable containers could improve user experience compared to disposable squeeze tubes.

New formula = new packaging opportunities

Though the costs of reformulating Esembly's diaper cream in solid or concentrated form could be high, this approach offers significant sustainability gains by improving the product-package ratio and eliminating plastic waste.



Supply Chains

SUPPLY CHAIN EXPLORATION

Digging into the process

This section outlines the supply chain for three potential packaging solutions:

- Paper squeeze tube
- Refill pouch + refillable container
- NYC-based refillable packaging program

These solutions were selected to maximize recyclability, reduce weight and volume of packaging materials, and/or improve user experience. Takeaways and opportunities are discussed at the end of the section.



POTENTIAL PACKAGING SOLUTIONS OVERVIEW

| PACKAGE | MATERIALS | RECYCLABLE | SINGLE-USE | IMPROVED PRODUCT-PACKAGE RATIO* | USER EXPERIENCE |
|--------------------------------|-------------------|------------|------------|---------------------------------|-------------------------------------------------------------------------------------------|
| Aluminum Squeeze Tube | Aluminum, plastic | Unclear | Yes | No | Potential for sharp edges, may require tube key, squeeze tube is familiar but not beloved |
| Paper Squeeze Tube | Paper, plastic | No | Yes | Maybe | May reduce product waste, squeeze tube is familiar but not beloved |
| Paper Push Tube | Paperboard | Yes | Yes | Maybe | Testing required to determine popularity of solid product format |
| Refill Pouch | Plastic | Yes** | Yes | Yes | Allows purchase in bulk, refill may be messy |
| Refillable Squeeze Tube | Silicone, plastic | Unlikely | No | Yes, with reuse | Squeeze tube is familiar but not beloved, refill may be messy |
| Refillable Tub | Plastic | Yes | No | Yes, with reuse | Less popular format, may be improved with one-hand-open lid |

*Compared to current plastic squeeze tube

**Via supermarket plastic film collection, which may not be available in all communities

SELECTED PACKAGING SOLUTIONS

The solutions selected for further exploration maximize recyclability, reduce weight and volume of packaging materials, and/or improve user experience.

| PACKAGE | MATERIALS | RECYCLABLE | SINGLE-USE | IMPROVED PRODUCT-PACKAGE RATIO* | USER EXPERIENCE |
|----------------------------------|-------------------|------------|------------|---------------------------------|--------------------------------------------------------------------|
| Aluminum Squeeze Tube | Aluminum, plastic | Unclear | Yes | No | Potential for sharp edges with use, may require tube key |
| Paper Squeeze Tube | Paper, plastic | No | Yes | Maybe | May reduce product waste, squeeze tube is familiar but not beloved |
| Paper Push Tube | Paperboard | Yes | Yes | Maybe | Testing required to determine popularity of solid product format |
| Refill Pouch | Plastic | Yes** | Yes | Yes | Allows purchase in bulk, refill may be messy |
| + Refillable Squeeze Tube | Silicone, plastic | Unlikely | No | Yes, with reuse | Squeeze tube is familiar but not beloved, refill may be messy |
| Refillable Tub | Plastic | Yes | No | Yes, with reuse | Less popular format, may be improved with one-hand-open lid |

*Compared to current plastic squeeze tube

**Via supermarket plastic film collection, which may not be available in all communities

SUPPLY CHAIN DETAILS

Solution Avenue A

Paper Squeeze Tube



KEY VENDORS

- Packaging supplier/printer: [Kolmar USA](#)
- Fulfillment center and/or product formulator: [Kolmar USA](#)

PACKAGE COMPONENTS

- Flip-top cap & tube neck (PP)
- Tube (kraft paper + LDPE lining)
- Tamper-evident seal (aluminum)

RAW MATERIALS REQUIRED*

- Wood pulp
- Petroleum and chemical additives
- Soy oil, ink pigments, and resins
- Aluminum

Solution Avenue B

Refill Pouch + Refillable Silicone Squeeze Tube



KEY VENDORS

- Packaging supplier/printer: [Grounded](#)
- Tube manufacturer: [Extreme Molding](#)
- Fulfillment center and/or product formulator: [Prime Matter Labs](#)

PACKAGE COMPONENTS

Refill pouch:

- Screw-on cap & neck (PP)
- Pouch (PCR LDPE + PE film)

Refillable silicone squeeze tube:

- Flip-top cap & tube neck (PP)
- Tube (silicone)

RAW MATERIALS REQUIRED*

- Petroleum and chemical additives
- PCR plastic
- Soy oil, ink pigments, and resins
- Silica

Solution Avenue C

NYC Refill Program with Refillable Tub



KEY VENDORS

- Packaging supplier/printer: [Big Sky Packaging](#) or [United States Plastic Corp.](#)
- Product formulator: [Prime Matter Labs](#)
- Transport, cleaning, and filling logistics: [The Good Goods](#)

PACKAGE COMPONENTS

- Tub (PCR PET)
- Lid (HDPE or PP)
- Tamper-evident seal (PS)

RAW MATERIALS REQUIRED*

- Petroleum and chemical additives
- PCR plastic
- Ink pigments and resins

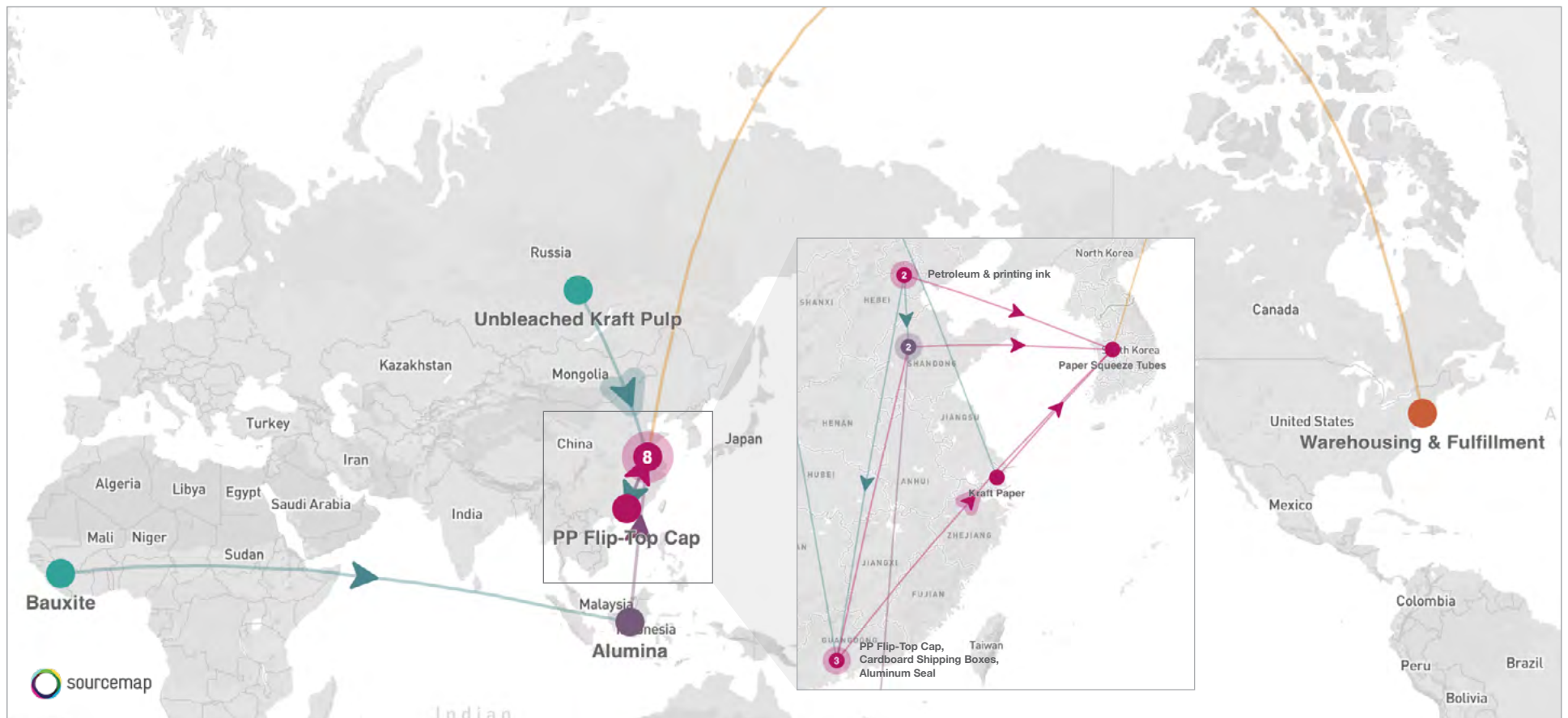
*In addition to the materials listed, each solution requires cardboard shipping boxes for transportation between supply chain steps

SUPPLY CHAIN MAP

Solution Avenue A: Paper Squeeze Tube

Key Partner: Kolmar USA

This map shows a potential supply chain for production of a paper squeeze tube. Materials for the tube would be sourced and processed primarily in China, and the tubes would be manufactured, printed, and filled in South Korea. Full tubes would be shipped to Brooklyn, New York, for warehousing and shipment to customers across the U.S.

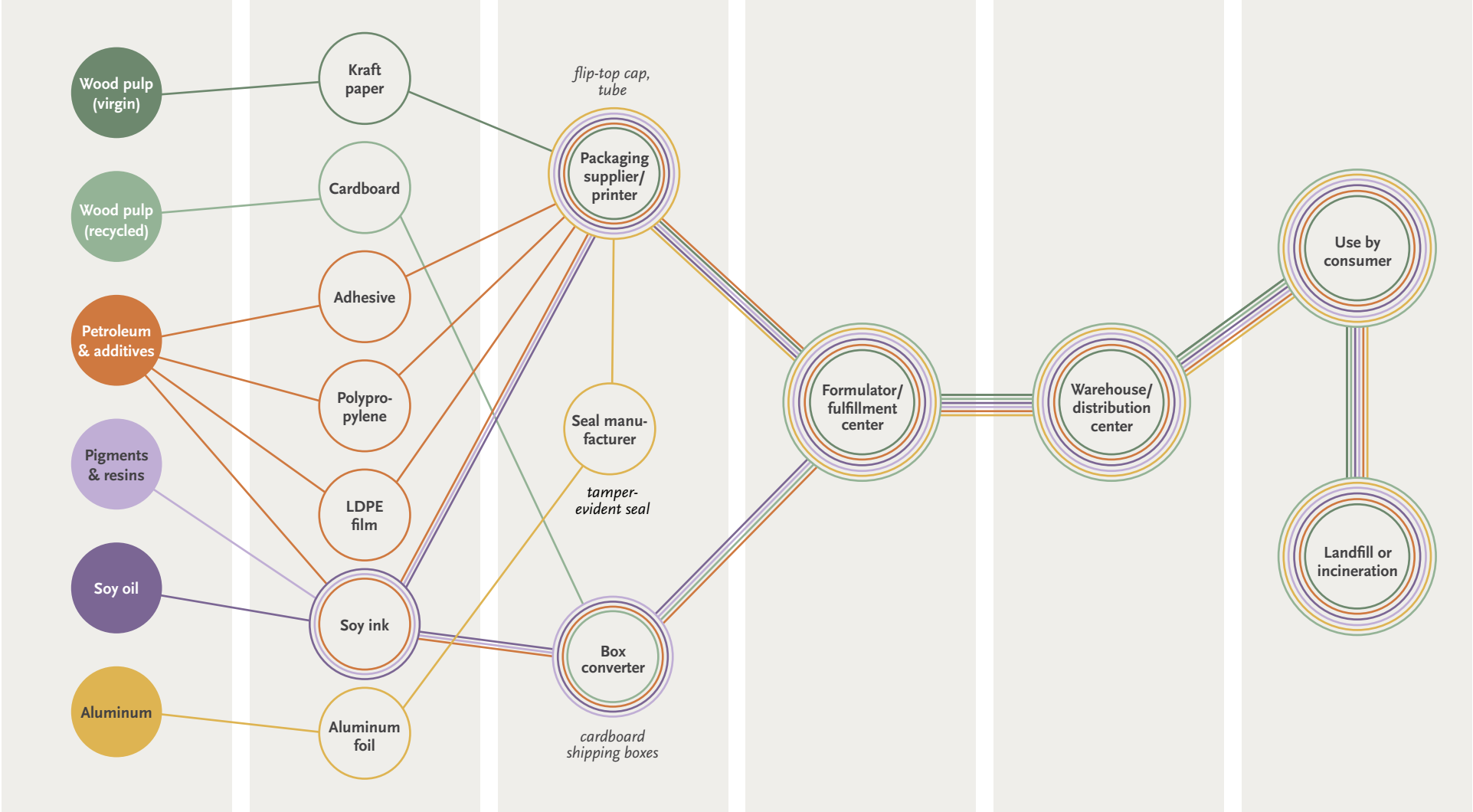


SUPPLY CHAIN DIAGRAM

Solution Avenue A: Paper Squeeze Tube

Key Partner: Kolmar USA

RAW MATERIALS → PROCESSING → MANUFACTURING → FULFILLMENT → DISTRIBUTION → PRODUCT USE & END OF LIFE



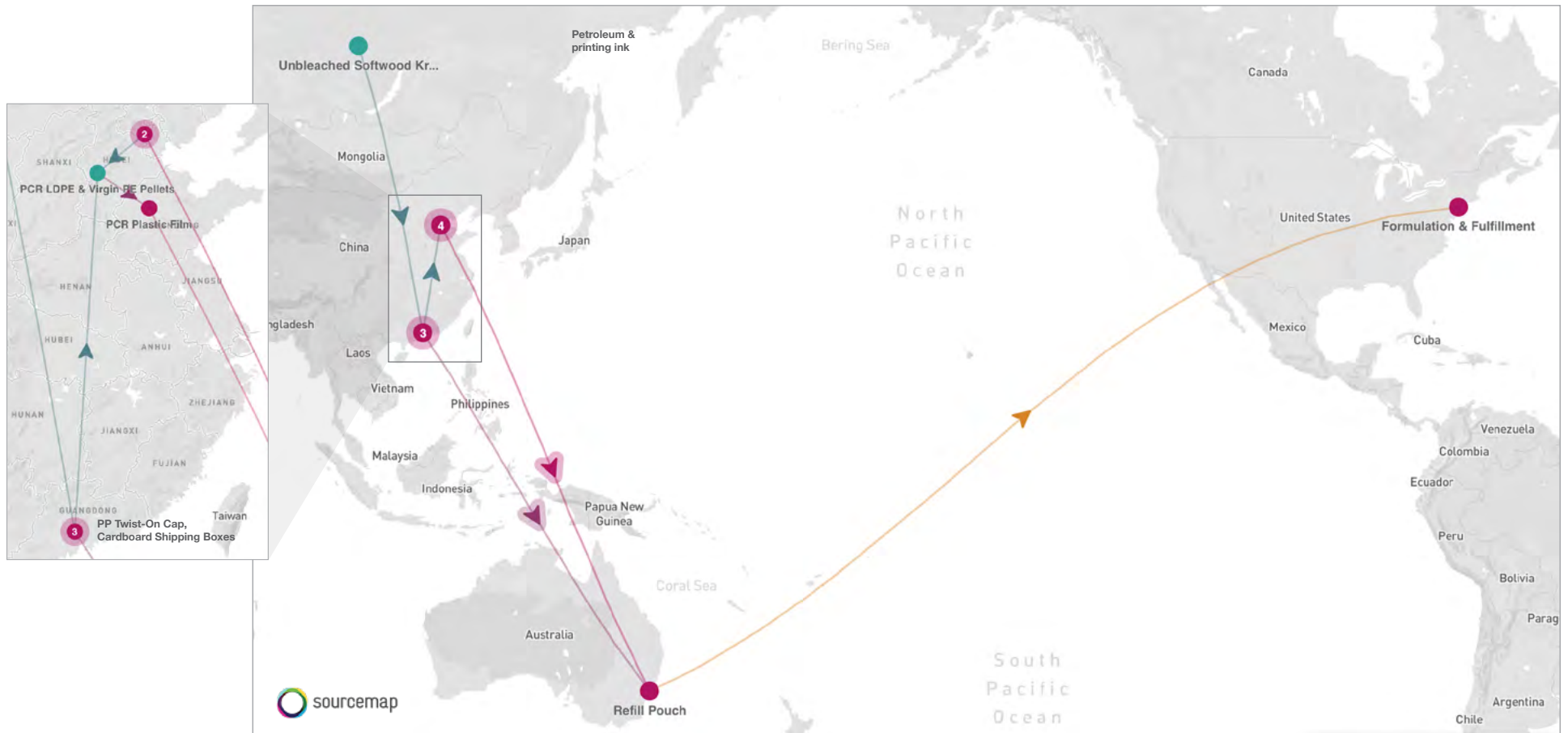
Transportation is required between each step of the supply chain

SUPPLY CHAIN MAP

Solution Avenue B: Post-Consumer Recycled Refill Pouch

Key Partner: Grounded Packaging Company

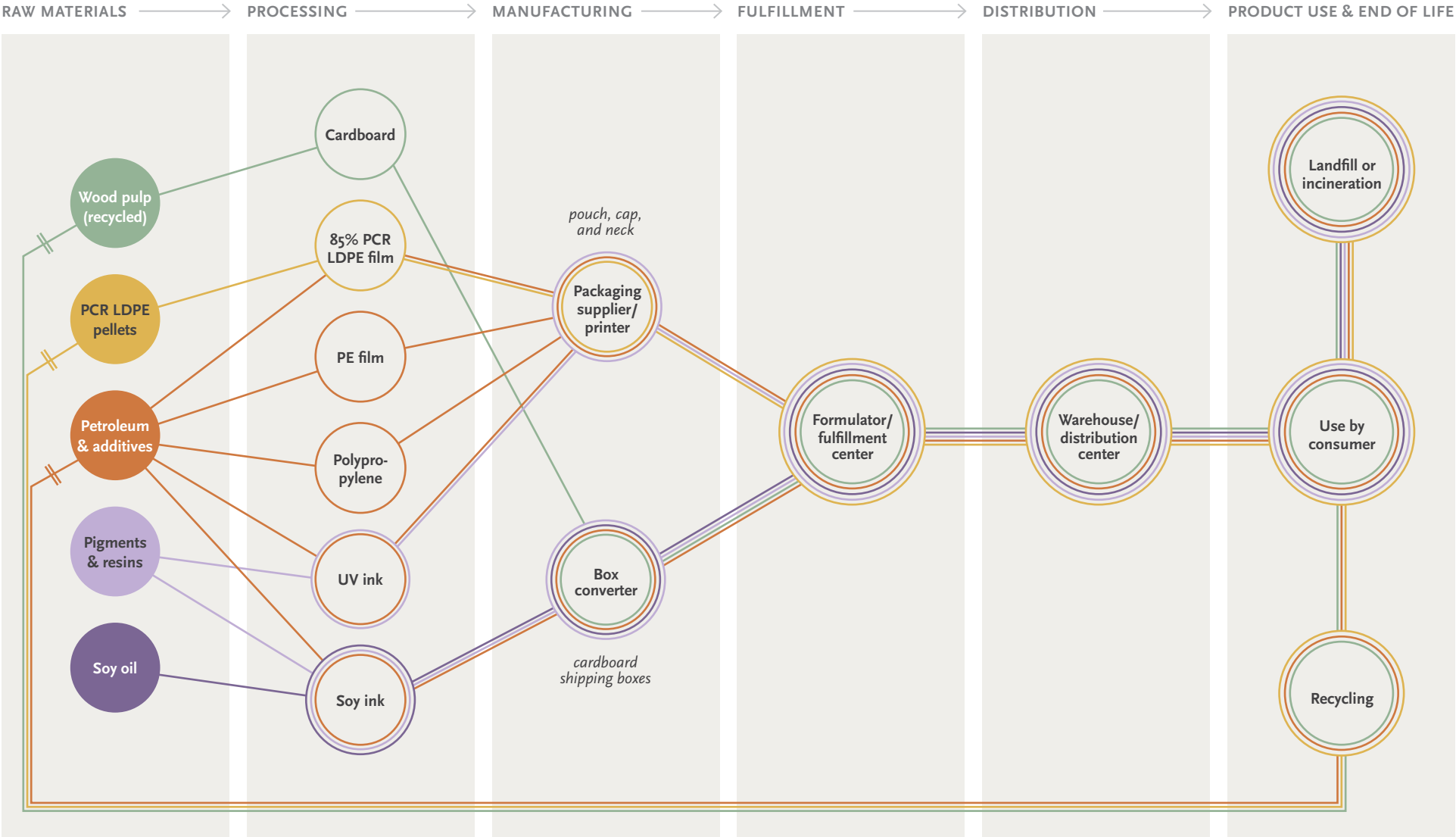
This map shows a potential supply chain for production of a PCR refill pouch. Materials for the pouch would be sourced and processed primarily in China, and the pouches would be manufactured and printed in Australia. Empty pouches would be shipped to Brooklyn, New York, for fulfillment, then shipped to customers across the U.S.



SUPPLY CHAIN DIAGRAM

Solution Avenue B: Post-Consumer Recycled Refill Pouch

Key Partner: Grounded Packaging Company



⏏ Indicates material may be downcycled

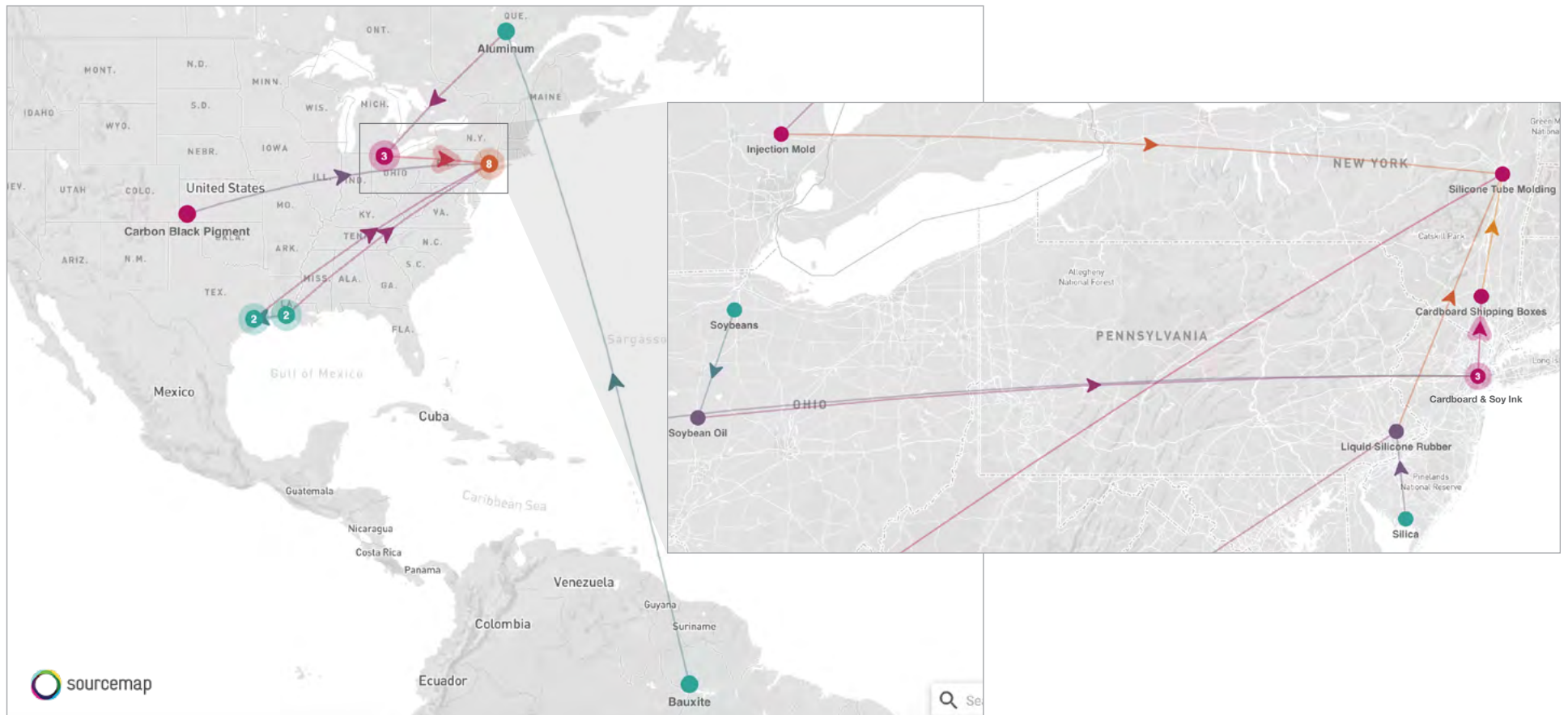
Transportation is required between each step of the supply chain

SUPPLY CHAIN MAP

Solution Avenue B: Refillable Silicone Squeeze Tube

Key Partner: Extreme Molding

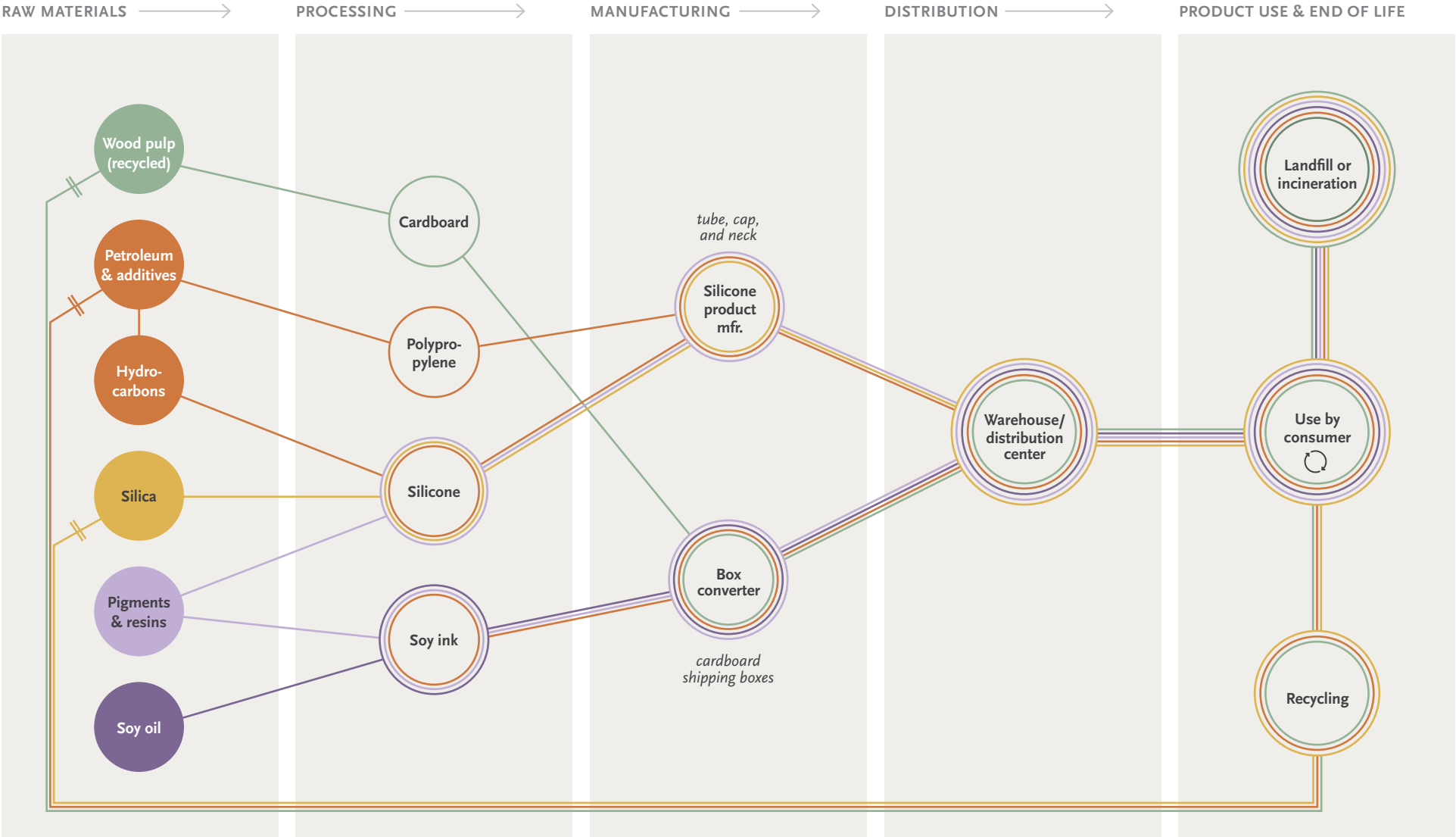
This map shows a potential supply chain for a refillable silicone squeeze tube. The tube can be produced using materials sourced primarily in the U.S. and would be manufactured in New York. Customers would order empty tubes from Embesly for use with bulk-size refill pouches. Individual orders would be fulfilled by the tube manufacturer to customers across the U.S.



SUPPLY CHAIN DIAGRAM

Solution Avenue B: Refillable Silicone Squeeze Tube

Key Partner: Extreme Molding



Indicates material may be downcycled

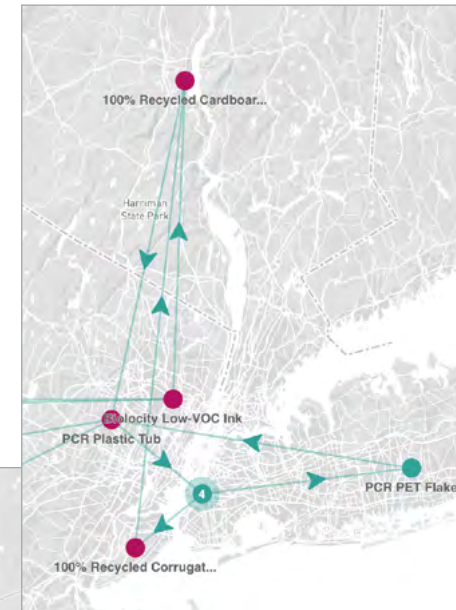
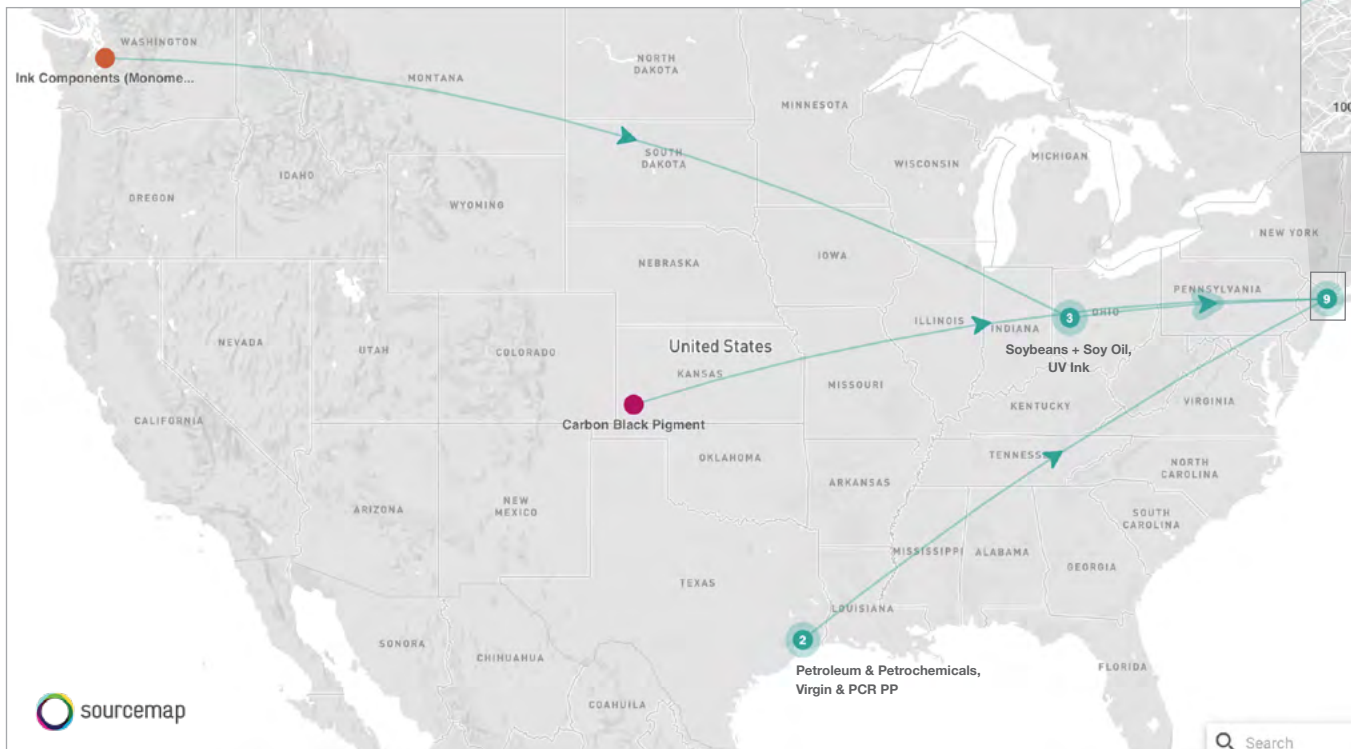
Transportation is required between each step of the supply chain

SUPPLY CHAIN MAP

Solution Avenue C: NYC Refill Program with Refillable Tub

Key Partners: Big Sky Packaging, The Good Goods

This map shows a potential supply chain for production of a refillable tub and a refill program serving New York City. The PCR plastic tub can be produced using materials sourced in the U.S. and would be manufactured in New Jersey. Product fulfillment happens in Brooklyn, and an NYC-based partner would manage cleaning containers for reuse. Essembly can leverage the delivery system already in place for the cloth diaper service run by their sister company, Diaperkind.



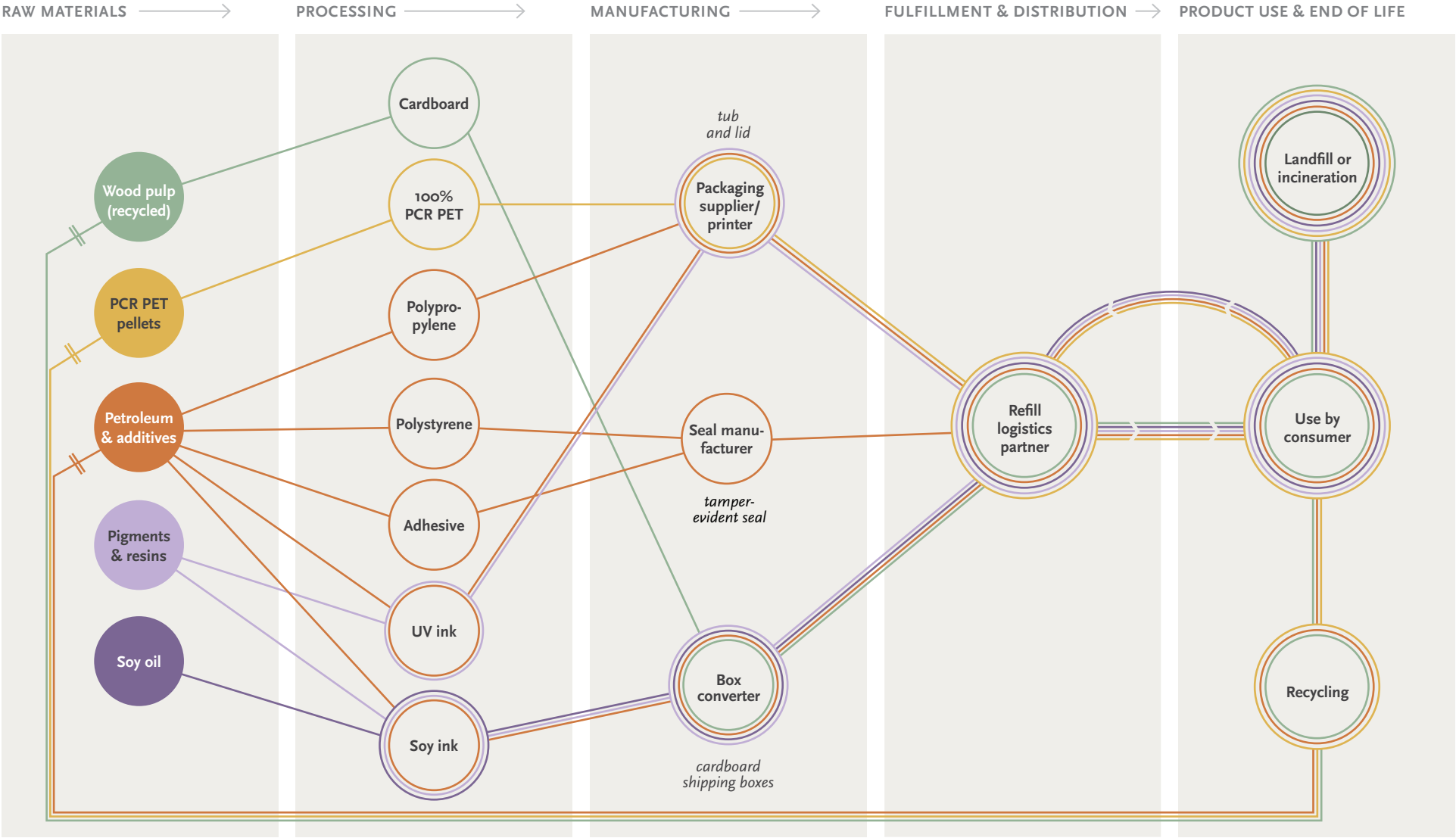
Local NYC Refill Program



SUPPLY CHAIN DIAGRAM

Solution Avenue C: NYC Refill Program with Refillable Tub

Key Partners: Big Sky Packaging, The Good Goods



// Indicates material may be downcycled

Transportation is required between each step of the supply chain

VENDOR CHECKLIST

Finding the right partners

The following checklist is a tool to ensure that potential vendors will help achieve sustainability goals. The criteria are based on The Sustainable Packaging Coalition's Definition of a Sustainable Package.

ENERGY & CLIMATE

- ☐ Greenhouse gas measurement and reduction
- ☐ Greenhouse gas and sustainability metrics reporting
- ☐ Follows a formal sustainability reporting structure (e.g. ISO, GRI)
- ☐ Facilities powered using renewable energy (Percent: ____)
- ☐ Energy use reductions (List: ____)
- ☐ Transportation efficiency measures (List :____)
- ☐ Distance from fulfillment center (List: ____)

PEOPLE & COMMUNITY

- ☐ Know the location of production facilities for every product/material offered
- ☐ Investment in community development (List actions: ____)
- ☐ Steps taken to ensure workers' health and safety (List actions: ____)

MATERIALS & RESOURCES

- ☐ Offer recycled materials
- ☐ Offer locally sourced materials
- ☐ Offer innovative materials (e.g. tree-free paper) (List relevant: ____)
- ☐ Offer materials with third-party certifications (e.g. FSC, PCF)
- ☐ Environmentally preferable inks (e.g. UV)
- ☐ Production waste reduction measures (List:____) (Percent recycled: ____)

COLLABORATION & INNOVATION

- ☐ Open to discussion and innovation to maximize sustainability
- ☐ Open to collaboration to maximize production efficiency (e.g. optimizing sheet size)
- ☐ Experience collaborating with clients to produce sustainable products (Example: ____)
- ☐ Purchasing guidelines for direct suppliers (to address environmental issues, employment practices, and safety)

OPPORTUNITIES

A new packaging system to support refills

Consider a hybrid system to integrate refills

Esembly could integrate refillable packaging by expanding their packaging options: a single-use tube for customers who aren't ready for a change, a refill pouch and refillable container for loyal customers who want to reduce waste, and an NYC-based refill program for Diaperkind's existing cloth diaper service customers.

Explore U.S.-based supply chains

The sustainability of the paper tube and refill pouch may be improved by sourcing materials and working with vendors in North America. This should be explored in depth for the selected packaging solution.

Test all assumptions

The paper tube may be a better choice than Esembly's existing 50% PCR plastic tube, seeing that it reduces plastic use overall—but it's not a clear win. The impacts of each package should be compared using a thorough LCA approach.

Design a better tub lid

The refillable tub has a fairly streamlined, U.S.-based supply chain and is the most widely recycled format of all the options considered. But, many users don't love tubs because the lids are difficult to open with one hand. Could a new lid design improve user experience?



Repositioning Proposal

ESEMBLY'S OPPORTUNITY

Integrate refillable packaging into an expanded packaging system for major sustainability gains

Reduced dependence on single-use packaging =
reduced emissions, reduced waste, improved customer experience,
and differentiation in the market

PACKAGING OVERVIEW

An expanded packaging system

Two new formats integrate refillable packaging: a bulk-size refill pouch and refillable tube, and an NYC-based refill program.

Single-Use Tube



Refill Pouch + Refillable Container



NYC Refill Program with Refillable Tub



For new customers not ready to commit to bulk size refills, or for customers who simply want a single tube of product

Online purchase

For loyal customers who use Esembly's cream regularly, available as a single purchase or via existing subscription program

Online purchase, tube and pouch sold separately

For existing Diaperkind diaper service customers in the NYC metro area

Via diaper service subscription, refills delivered and empties returned with diaper deliveries and pickups

NEW PACKAGING FORMATS

SOLUTION OVERVIEW

Pouch + Refillable Container

This solution significantly reduces packaging volume. Future opportunities: Explore a minimal pouch closure and offer options for refillable containers (e.g. tub, pump bottle, and tube).



MATERIAL REDUCTION



LIGHTWEIGHT



IMPROVED PRODUCT-PACKAGE RATIO



DESIGNED FOR REFILLS



LIMITED RECYCLABILITY



SINGLE-USE

OPPORTUNITIES CAPTURED

Pouch + Refillable Container

Opportunities were identified in each section of this proposal. By integrating a refill pouch into their packaging system, Esembly could capture the following opportunities:

Differentiate with sustainable packaging

Esembly would stand out from their competitors by offering bulk-size, refill-ready packaging. This sustainable choice is likely to appeal to Esembly's primary audience (cloth-diapering parents) and to their secondary audience (health- and eco-conscious parents).

Include clear recycling labeling & highlight efficacy

The pouch design highlights the efficacy of the product, which may help broaden the appeal beyond cloth-diapering parents. Including a How2Recycle label eliminates confusion and encourages parents to drop off pouches at retailers that collect plastic film for recycling. Esembly could consider a takeback program for the pouches, potentially upcycling them into TPU for their cloth diapers.

Refills reduce waste and improve experience

Offering a bulk-size refill pouch significantly improves product-to-package ratio and reduces packaging waste. The silicone squeeze tube is designed for durability, portability, and ease of cleaning. Esembly could offer additional container options (e.g. tubs and/or pump bottles) to further improve user experience, since parents have varying preferences and needs for their diaper cream packaging.

Benefits & Drawbacks

MATERIALS, PROCESSES, & ENERGY

- + Lightweight, bulk-size refill pouch creates a significant reduction in plastic/packaging material
- + Improved product-package ratio increases transport efficiency
- Minimizes but does not eliminate single-use packaging

WASTE

- Plastic pouches are not widely recyclable, though Esembly could partner with Terracycle or offer a takeback program
- Heavier-weight refillable containers can generate more waste if they are not consistently reused by the customer
- + Significantly improved product-package ratio reduces overall packaging waste

CUSTOMER EXPERIENCE

- + Customer loyalty fostered by subscription refill model
- + Opportunity to offer customers a choice of well-designed refillable container, improving user experience
- + Offers customers a more sustainable packaging choice, something many parents say they want
- + Package is safe for use around babies (shatter-proof, no sharp edges)

SOLUTION OVERVIEW

NYC Refill Program

This solution eliminates single-use packaging by offering diaper cream in returnable containers to existing Diaperkind diaper service customers.

Note: Several logistical aspects need to be solved, including tub cleaning and refilling and FDA compliance (labeling and tamper-evident seals). The ability to use existing Diaperkind transportation and subscription infrastructure is a significant advantage.

100% post-consumer recycled tub
rPET tub can be recycled at end of life

4 oz. container will last several weeks to a month for most users

Simple, wide-mouth tub design facilitates cleaning for reuse

Tubs may require single-use tamper-evident seals

DESIGN OPPORTUNITY
Design one-hand-open tub lid for improved user experience



Screenprinting eliminates label material & facilitates cleaning for reuse



RECYCLABLE



LIGHTWEIGHT



IMPROVED PRODUCT-
PACKAGE RATIO



DESIGNED
FOR REUSE



LIMITED GEOGRAPHIC/
CUSTOMER REACH

OPPORTUNITIES CAPTURED

NYC Refill Program

Opportunities were identified in each section of this proposal. By establishing a returnable/refillable package program for NYC, Esembly could capture the following opportunities:

Differentiate with sustainable packaging

Esembly would stand out from their competitors by offering a returnable packaging option. This may inspire existing Diaperkind customers to begin using Esembly's cream and inspire new customers to sign up to Diaperkind's service. It may also attract new customers for Esembly's cloth diapers.

Offer a refill-based subscription model

Again, Esembly could gain new customers and inspire brand loyalty by offering refills via a subscription model.

Refills reduce waste

A returnable packaging program eliminates waste from single-use packaging, which is a significant sustainability win. Esembly could reduce waste even further by extending the program to more of its products (balm, detergent, etc.).

Benefits & Drawbacks

MATERIALS, PROCESSES, & ENERGY

- + Reusable tubs eliminate single-use packaging
- + Tubes are made from 100% recycled PET and are widely recyclable at end of life
- + Tubes are lightweight for transport efficiency

WASTE

- + Reusable tubs significantly reduce packaging waste compared to single-use packaging
- Tubes are made from plastic, and some will be lost or damaged, meaning loss of material from the cycle
- Tubes may still require a single-use tamper-evident seal (pressure-sensitive polystyrene) per FDA regulations

CUSTOMER EXPERIENCE

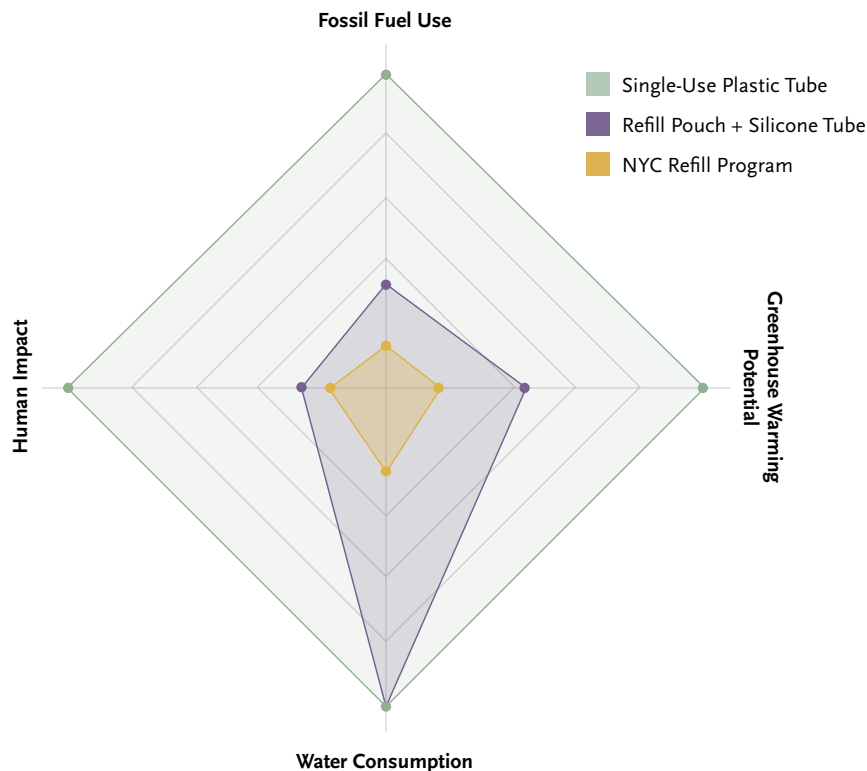
- + Customer loyalty fostered by subscription refill mode
- + Tub return is intuitive, as customers can return empty tubs along with dirty diapers
- + Potential opportunity to offer a well-designed, one-hand-open tub lid
- + Offers customers a more sustainable packaging choice, something many parents say they want
- + Package is safe for use around babies (shatter-proof, no sharp edges)

LIFE CYCLE ANALYSIS

Measuring the impacts

Life cycle analysis performed using EcoImpact Compass shows significant benefits for both the refill pouches and NYC refill program compared to Esembly's current single-use squeeze tubes.

See the appendix for full LCA results.



Reduction in impact compared to Esembly's current packaging*

Refill Pouch + Silicone Tube

Fossil Fuel Use

59.5% REDUCTION

Greenhouse Warming Potential

58.0% REDUCTION

NYC Refill Program

Fossil Fuel Use

83.8% REDUCTION

Greenhouse Warming Potential

80.8% REDUCTION

*Single-use MDPE plastic squeeze tube made with 50% recycled material

NEXT STEPS

Looking ahead to future opportunities

Esembly can realize major sustainability gains by implementing an expanded packaging system focused on refills. Looking to the future, there is potential for even more improvement:

Explore an improved single-use squeeze tube

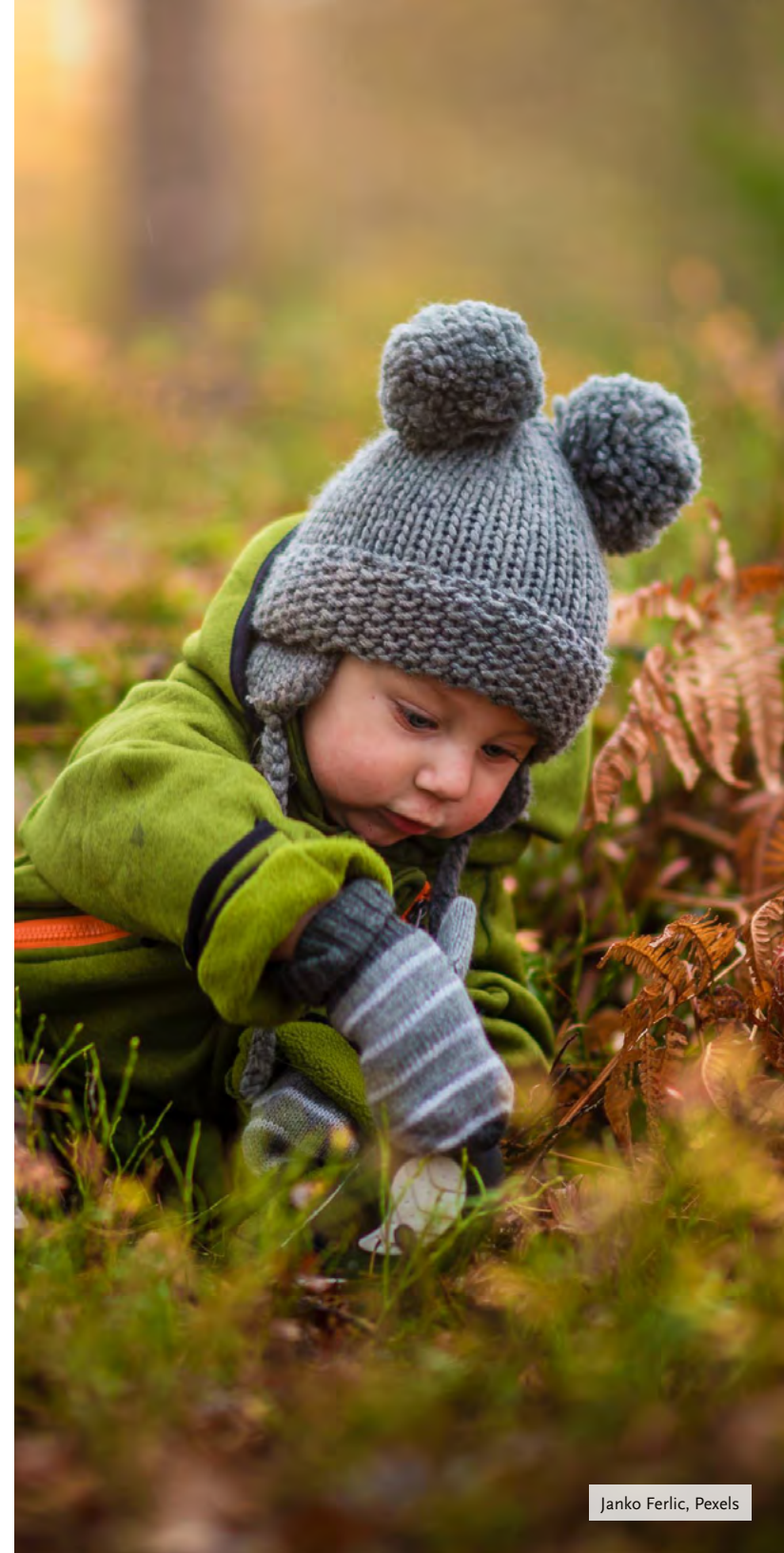
Refill-based packaging creates the biggest improvements. But, Esembly may also be able to improve its single-use tube by switching from a 50% recycled plastic tube to a kraft paper and/or bioplastic tube. An LCA showed 12 to 30 percent improvements in eco-measures for a kraft paper tube vs. Esembly's current tube.

Design a better tub lid and pouch closure

The refillable tub is widely recycled, and its simple design could facilitate cleaning for reuse. But, many parents don't love tubs because the lids are difficult to open with one hand. Could a new lid design improve user experience? The refill pouch represents significant material reduction, but eliminating the twist-on cap in favor of a minimal closure like a clip could create even larger benefits.

New formula = new packaging opportunities

Though the costs of reformulating Esembly's diaper cream in solid or concentrated form could be high, this approach could offer significant sustainability gains by improving the product-package ratio and/or eliminating plastic waste.



APPENDIX

Google Survey Questions

Google survey conducted February 5 to 15, 2024

53 responses

What is your favorite and/or most used diaper cream brand?

How often do you use diaper cream?

Every day Occassionally Rarely

Do you look for diaper creams that contain natural and/or organic ingredients?

Yes No

Do you use cloth diapers?

Yes, all the time Some of the time No, never

Do you think diaper cream in a squeeze tube is easy to use?

Yes, no complaints It's okay No, it's pretty frustrating Never used

In a few words, what do you like or dislike about using cream in a squeeze tube?

Do you think diaper cream in a tub is easy to use?

Yes, no complaints It's okay No, it's pretty frustrating Never used

In a few words, what do you like or dislike about using cream in a tub?

Do you use a diaper cream spatula/brush?

Yes, love it I have, but it's not that helpful No

How do you feel about getting diaper cream on your fingers?

Not a big deal Ugh, it's a pain

Off the top of your head, do you know if the packaging for the cream you usually use is recyclable?

I know it is Not sure I know it's not

Would you consider trying a different product if it came in sustainable and/or recyclable packaging?

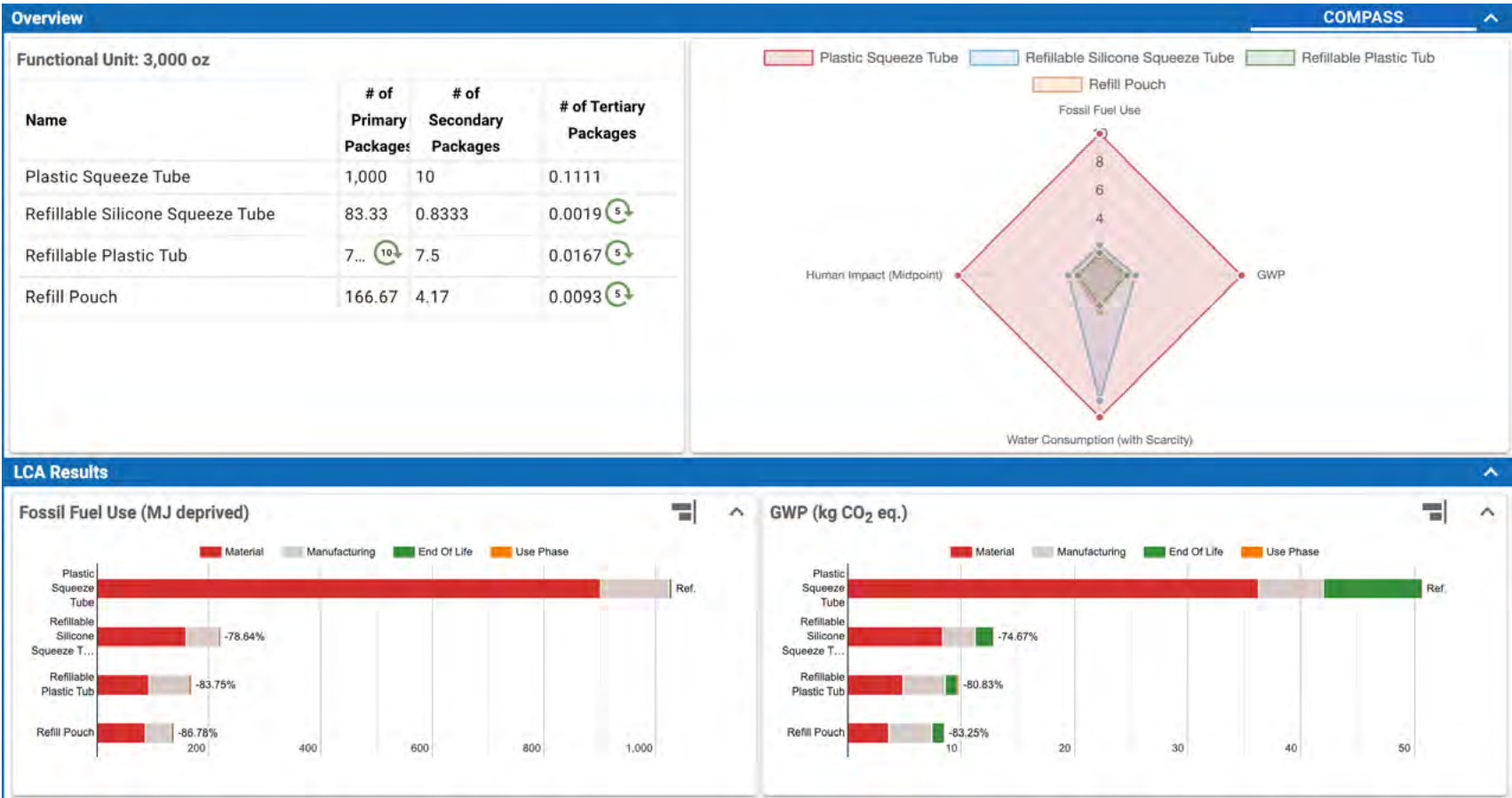
Yes, definitely Maybe No, that's not important to me

Do you have any thoughts you'd like to share about diaper cream packaging—anything you've liked or found frustrating?

APPENDIX

Life Cycle Analysis

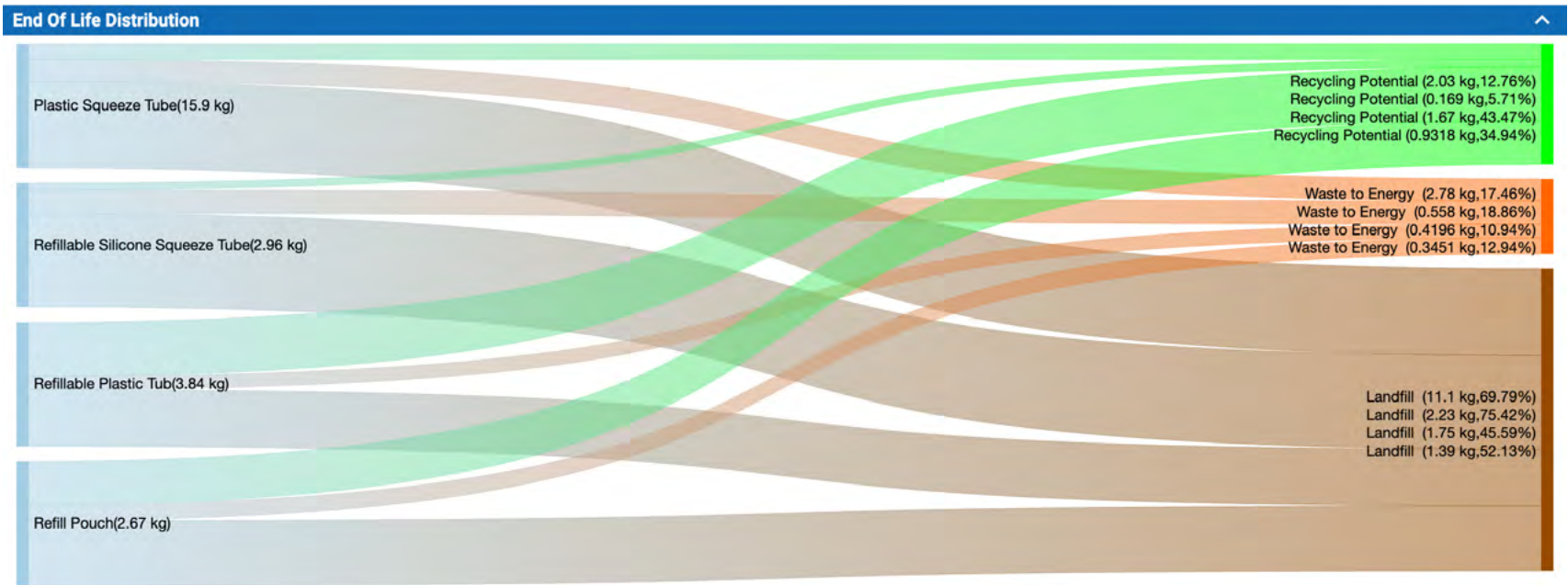
50% Recycled Plastic Squeeze Tube vs. Refill Pouch + Silicone Squeeze Tube vs. NYC Refill Program



APPENDIX

Life Cycle Analysis

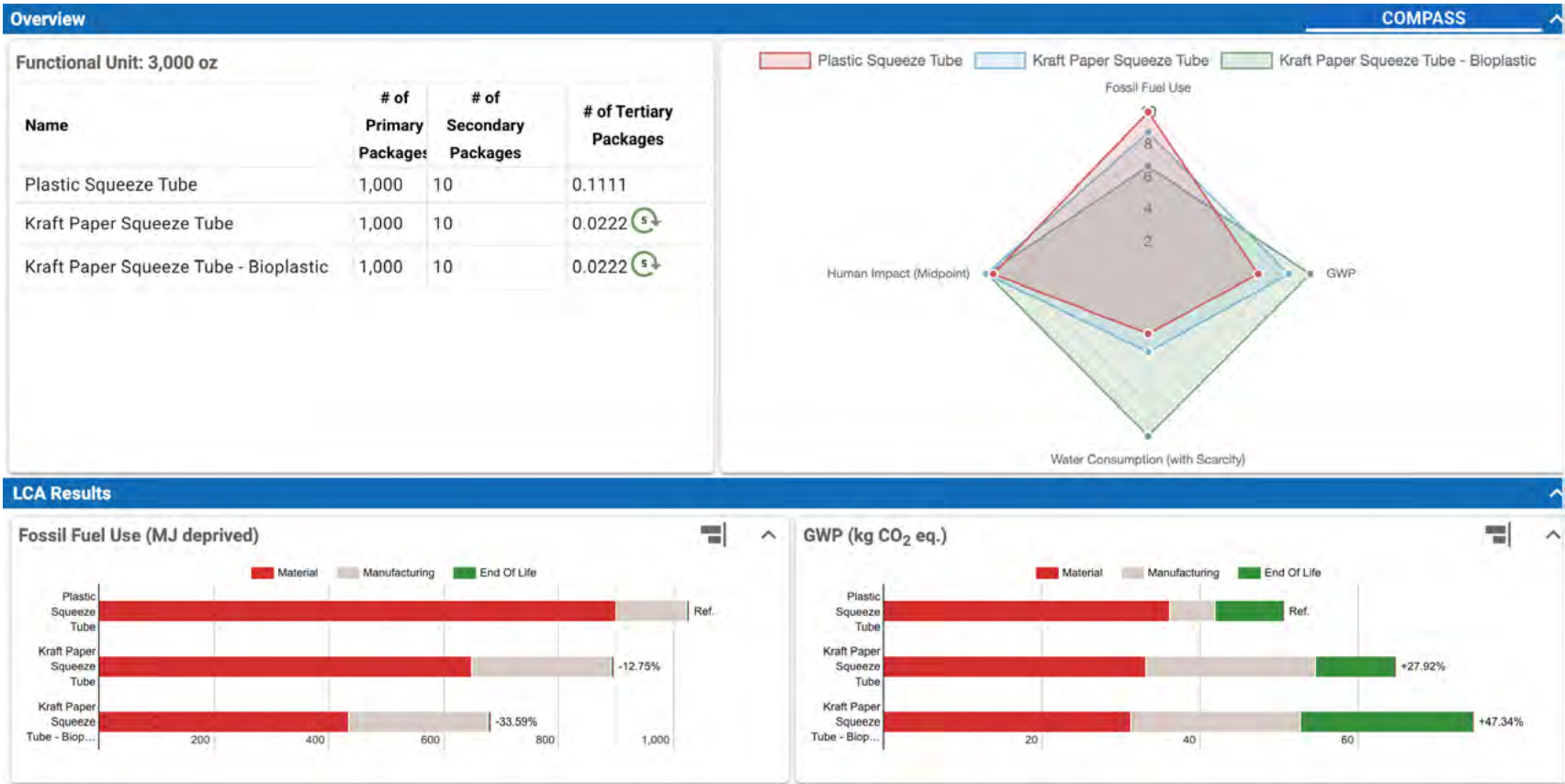
50% Recycled Plastic Squeeze Tube vs. Refill Pouch + Silicone Squeeze Tube vs. NYC Refill Program: End of Life



APPENDIX

Life Cycle Analysis

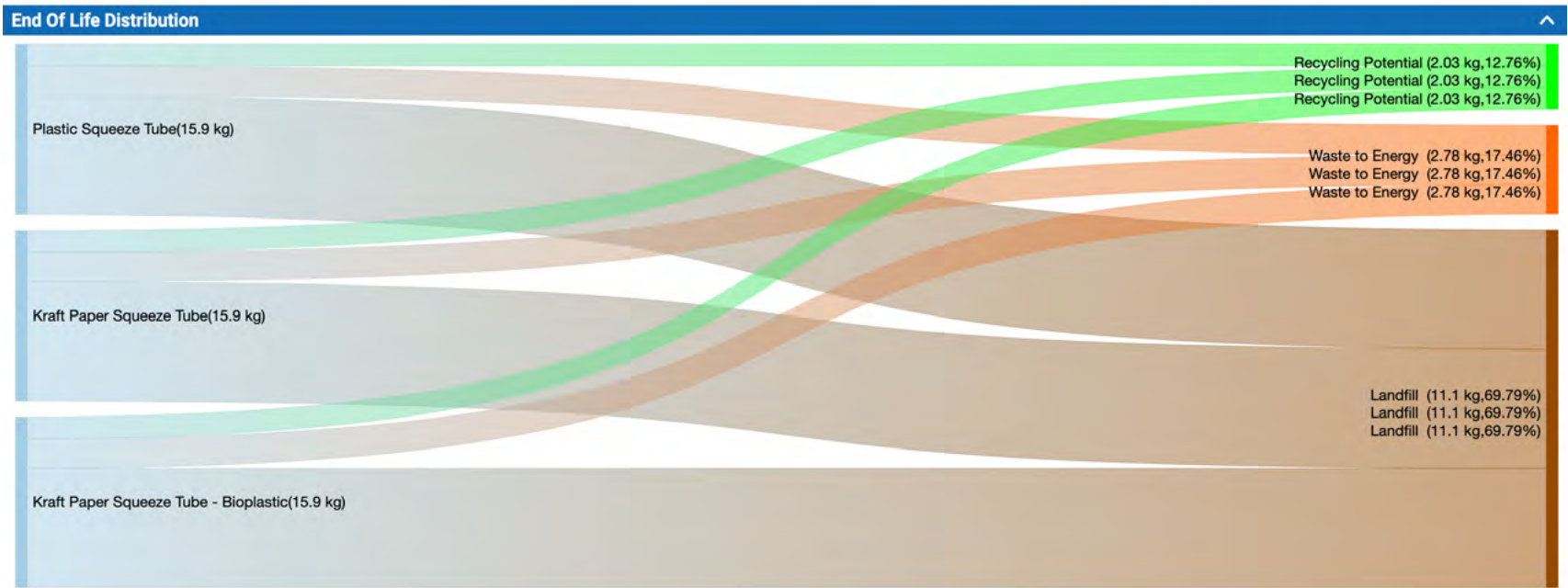
50% Recycled Plastic Squeeze Tube vs. Kraft Squeeze Tube vs. Kraft Squeeze Tube with Bioplastic



APPENDIX

Life Cycle Analysis

50% Recycled Plastic Squeeze Tube vs. Kraft Squeeze Tube vs. Kraft Squeeze Tube with Bioplastic: End of Life



REFERENCES

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