FLEXIBLE POUCH

SUSTAINABILITY FACTS

A leading solution to achieve sustainability goals

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THINK BEYOND PACKAGING

Flexible Pouch Sustainability Facts Summary

Sustainable Packaging Solution

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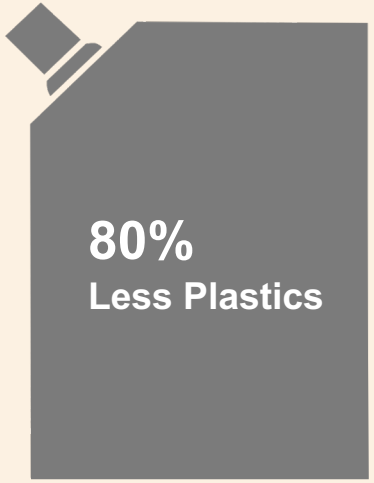
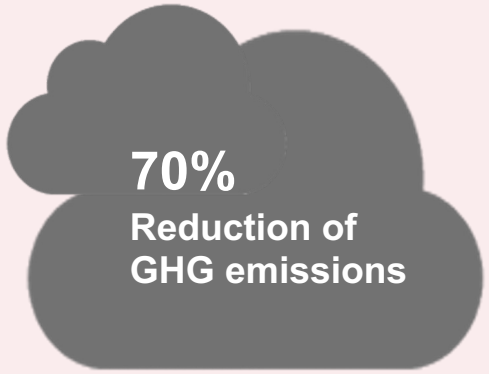


Fact 1:
Small Change, Big Impact

Flexible pouch uses significantly less materials by up to **75-85%** compared to rigid packaging.

If you have 50k units, you can save **3 tons** of plastics by switching to a flexible pouch.*

*Internal measurement



Fact 2:
Less Emissions

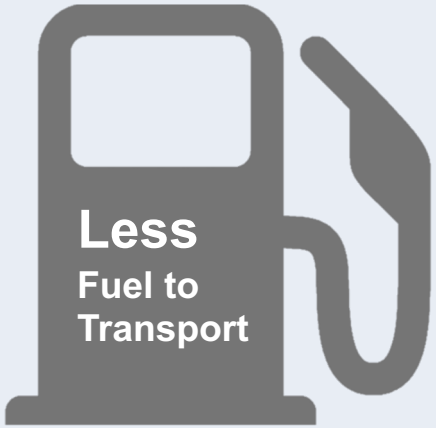
A flexible pouch reduce **70%** reduction in greenhouse gas (GHG) emissions than a HDPE Canister.

A flexible pouch has the **least amount** of total GHG emissions during production.

Manufacturing contributes significant amount of the total GHG emissions for packaging.

Flexible Pouch Sustainability Facts Summary

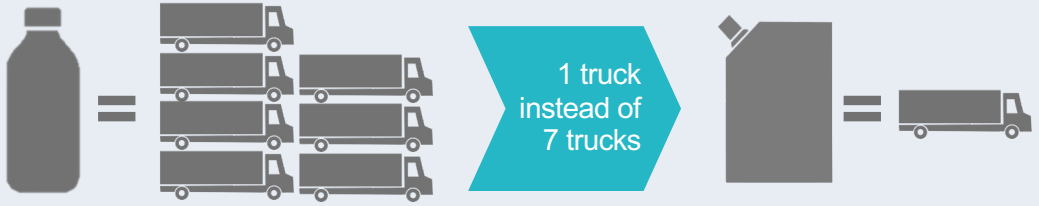
Sustainable Packaging Solution



Fact 3:
Ship More Packaging

Flexible pouch requires fewer trucks and pallets, resulting in overall **less fuel** to transport.

You can fit **7 times more** empty pouches than bottles that means pouches require 1 truck to ship 7 trucks worth of bottles.*



*Internal measurement

Fact 4:
Overall, Less Impact

According to the Life Cycle Assessment (LCA), flexible pouches have **less environmental impact**.

According to the LCA, refill pouch with a bottle has lower environmental impacts than using just rigid packaging.

Flexible Pouch Sustainability Facts

Fact 1: Significant Plastic Reduction

What if scenario with facial cleansers

304 million units* of facial cleansers are sold in one year in the United States

= **36k tons of plastics**

What if, we switch **just a half** of the bottles to refill pouches…

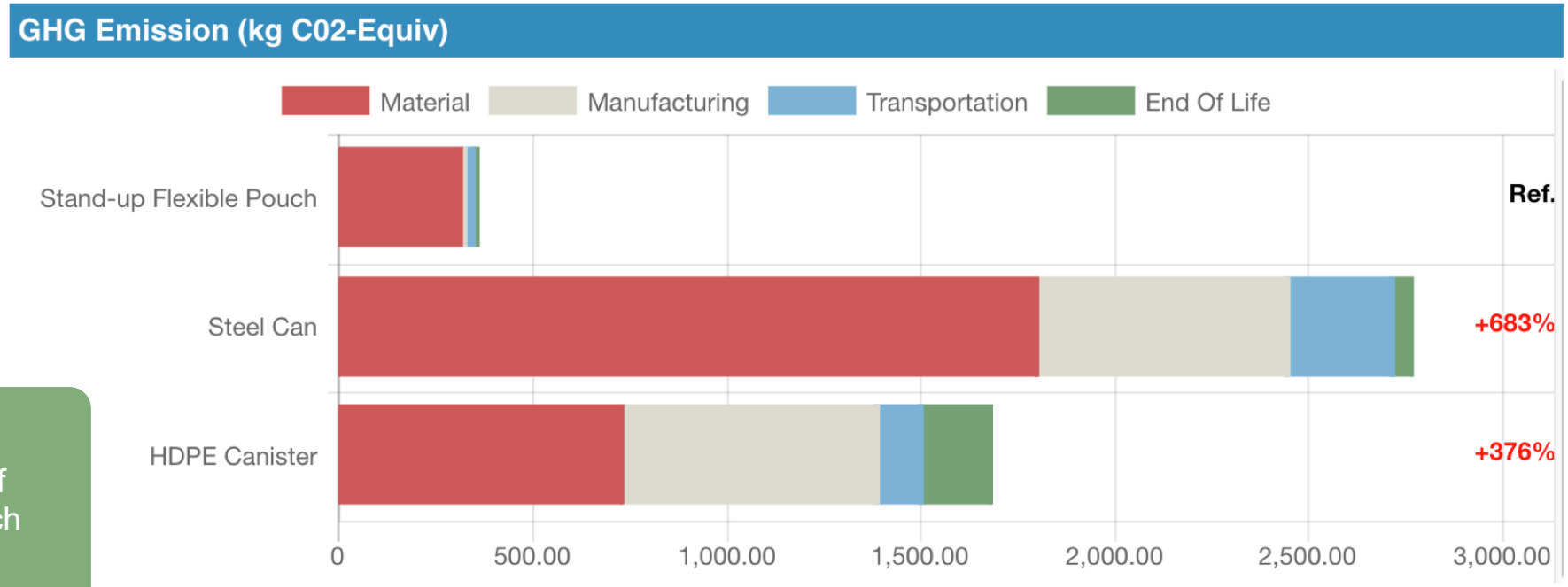
We can remove **120 million plastic bottles of facial cleaners each year**

*Source: www.statista.com (sold units are in 2020)
Assumption: all facial cleansers are sold in bottles with average weight of 120g
One refill pouch weights 25g

Flexible Pouch Sustainability Facts

Fact 2: GHG emissions

PTIS 2018 report for FPA | A Holistic View of the Role of Flexible Packaging in a Sustainable World



The GHG emissions of Stand-Up Flexible Pouch is **significantly lower than** Steel Can or HDPE Canister.

Flexible Pouch Sustainability Facts

Fact 2: GHG emissions

McKinsey & Company July 2022 report | Climate Impact of Plastics

Refilling a glass bottle 15-20 times with refill pouches results in

-25%

GHG emissions than using 15-20 HDPE bottles

Source: McKinsey, Climate impact of plastics July 2022

Flexible Pouch Sustainability Facts

Fact 3: Fuel Consumption & Product-to-Package Ratio

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Flexible Packaging Association Fact Sheet | Fast Facts Third Edition

The **weight** of a flexible pouch is the **least** among different types of packaging, while having the **highest product-to-packaging ratio**.

Examples of beverage packaging [1,4,5]

Package Type	Beverage Weight	Package Weight	Product to Package Ratio	*MSW Landfill per 100 g Product	Energy Consumed MJ/8 oz	Emissions kg CO_2 e /8 oz
Glass Bottle & Metal Cap	8 oz (236 g)	198.4 g	1:1	54.5 g	3.36	0.29
Plastic PET Bottle & Cap	8 oz (236 g)	22.7 g	10:1	6.0 g	3.0	0.18
Aluminum Can	8 oz (236 g)	11.3 g	21:1	2.4 g	0.99	0.08
Flexible Standup Pouch	**6.75 oz (199 g)**	**5.7 g**	**35:1**	**2.8 g**	**0.45**	**0.02**

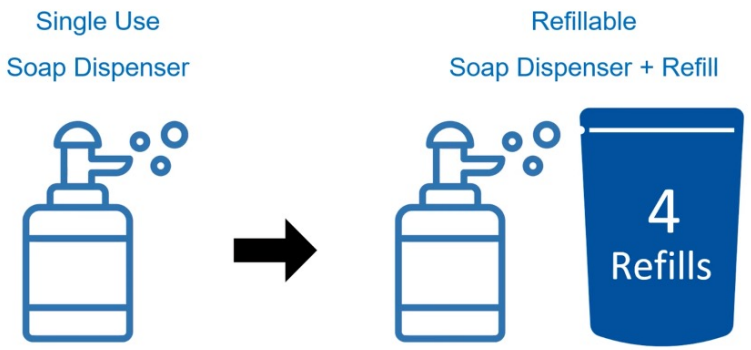
* recycling rates factored

Source: FPA Fast Fact Third Edition

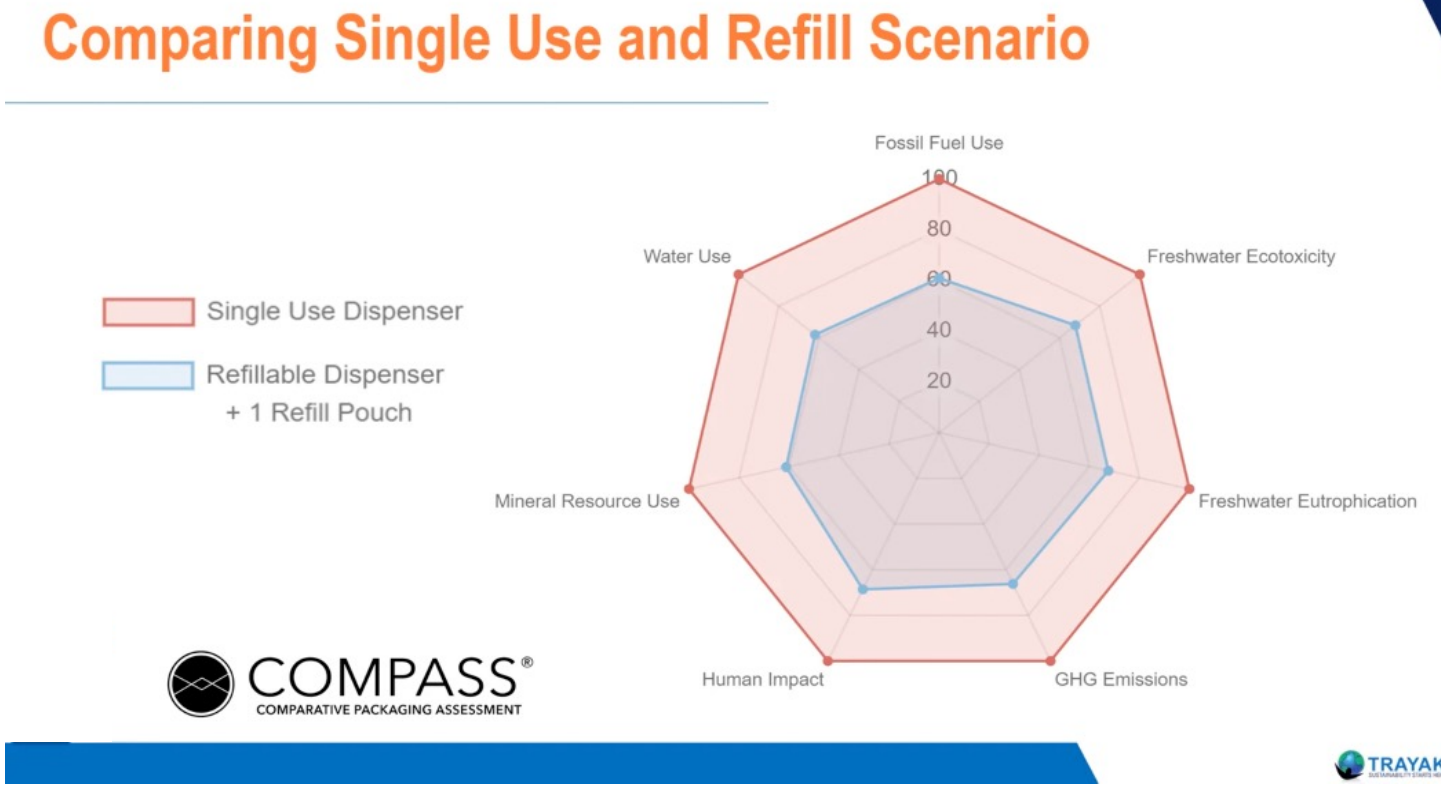
Flexible Pouch Sustainability Facts

Fact 4: Life Cycle Assessment (LCA)

TRAYAK Presentation | SPC Reusable Packaging Collaborative Meeting August 2022



The LCA of **using rigid packaging together with refill pouches** has lower environmental impact than using just rigid packaging.



LCA is a consumer (such as numbers of cycle) and location dependent.

Flexible Pouch Sustainability Facts

Reality of Recycling

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EPA | Recycling and Composting Trends

Recycling and composting as a percentage of generation

	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	17%	15%	21%	28%	43%	50%	63%	67%	66%	68%
Glass	2%	1%	5%	20%	23%	21%	27%	28%	25%	25%
Plastics	Neg.	Neg.	<1%	2%	6%	6%	8%	9%	9%	9%
Yard Trimmings	Neg.	Neg.	Neg.	12%	52%	62%	58%	61%	69%	63%
Lead-acid Batteries	Neg.	76%	70%	97%	93%	96%	99%	99%	99%	99%

Source: EPA

Even flexible pouches don't get recycled, reduce plastics use significantly

Reduce

is the fastest way to improve sustainability

It is predicted that 20% of organizations with sustainable packaging goals will shift their focus from recycling and eliminating plastics to **reducing the carbon footprint of their packaging** by 2026.

Flexible Pouch Sustainability Facts

Success Story

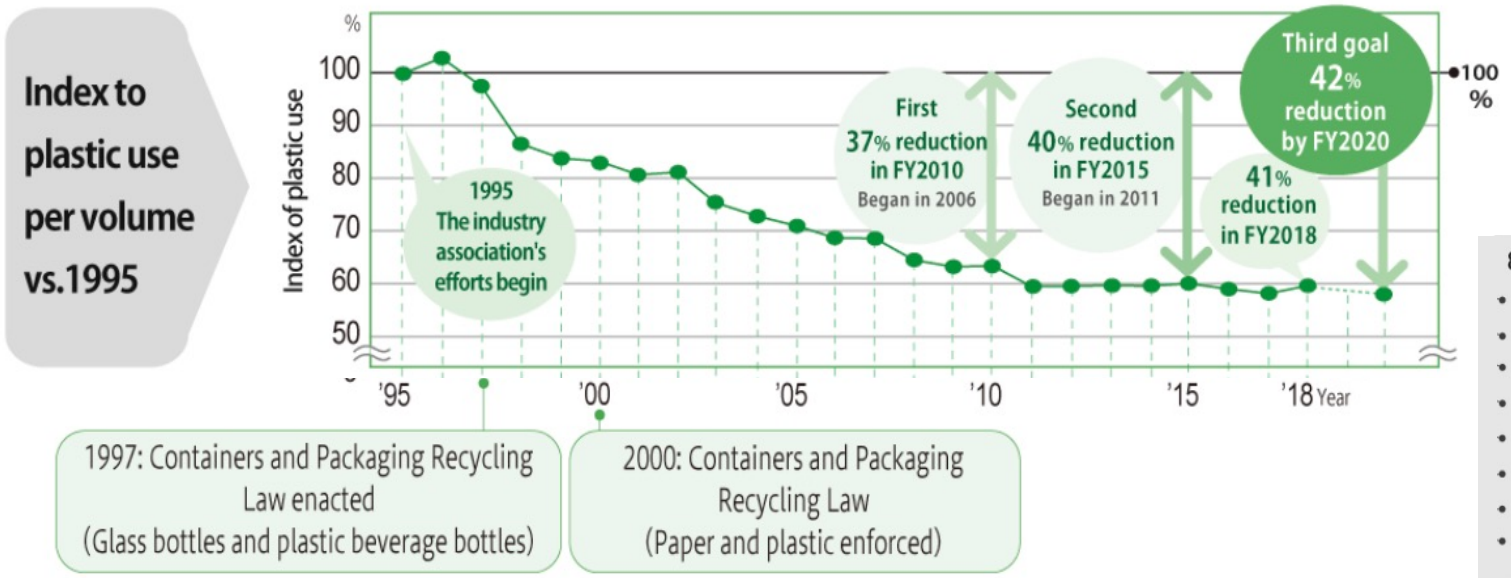
Japan Soap and Detergent Association | Voluntary Reduction in Plastic Use

Refill pouches contributed to reduce plastic usage per product volume by

-43%

compared from 1995 to 2021

Use of Plastic Containers/Packaging from 1995 to 2018 and Trends in Reduction



8 Key Product Categories

- Bleach and mildew cleaner
- Household cleaner
- Kitchen detergent
- Fabric softener
- Laundry detergent
- Shampoo and conditioner
- Hand soap
- Body shampoo

Source: Japan Soap and Detergent Association

70-80% of store shelves for the home and personal care products in Japan are refill pouches.

Flexible Pouch Sustainability Facts

Success Story

What we see in the Japanese Market

Click HERE to Watch: Refill pouches at the grocery store in Japan