

THINKING BEYOND PLASTIC:

POLICY SOLUTIONS FOR A GROWING
ENVIRONMENTAL ISSUE



Photo: Charlie Plybon



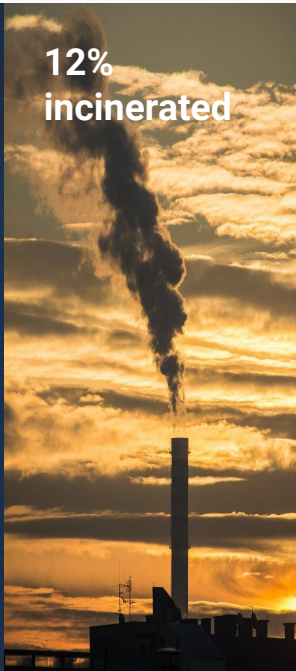
Photo: Raed Mansour via Wikimedia Commons

PLASTICS

9%
recycled



12%
incinerated



79% landfilled
and in the
natural
environment



MARINE IMPACTS



Photo: Amelia Vaughan, Beverly Beach State Park

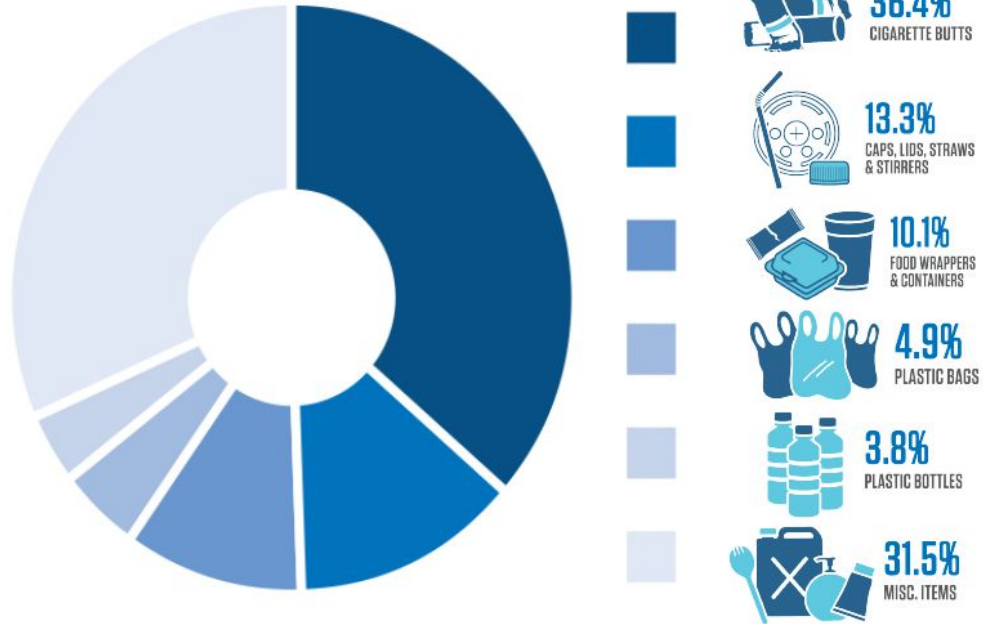


Photo: USFWS



Photo: Kristal Talbot

THE TOP 5 ITEMS FOUND ON BEACH CLEANUPS IN OREGON



*Source - Surfrider and SOLVE combined beach cleanup data 2017 (200+ cleanups)

FRESHWATER IMPACTS



Photos: Willamette Riverkeeper

MICROPLASTICS



Photo: Shutterstock



Photo: Surfrider

PUBLIC HEALTH IMPACTS

IMPACTS OF PLASTICS TO VULNERABLE POPULATIONS

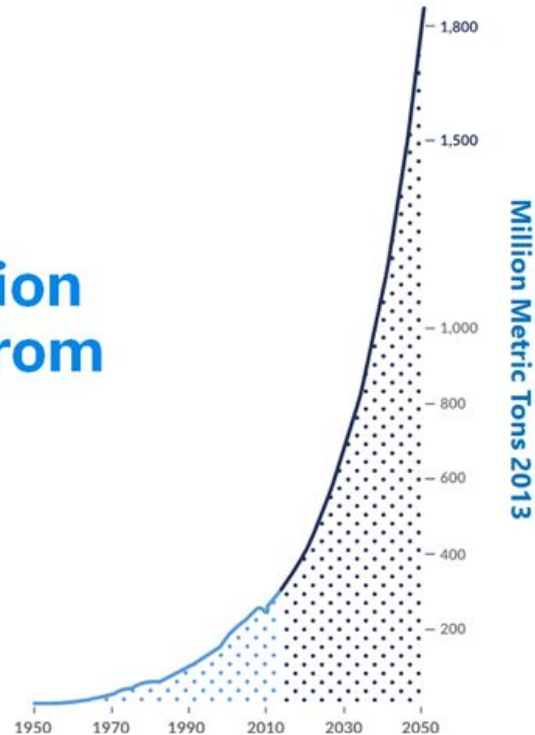


PLASTIC PRODUCTION IS ON THE RISE

Source: UN Environment Programme and GRID-Arendal, 2016

Plastic Production to Quadruple from 2014 to 2050

● Historical Growth ● Future Growth



EXPANDED POLYSTYRENE

- 7 states banned various forms of polystyrene foam
 - Washington, Maryland, New York, Virginia, Massachusetts, Colorado, New Jersey
- 8 local jurisdictions in Oregon regulate polystyrene foam
- World Health Organization classifies styrene as a “probable carcinogen”



Photo: Coos Bay Surfrider

Presentation for Oregon House Energy & Environment
Committee



Chemical Recycling and the Plastic Problem

24 May 2021

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neil@no-burn.org

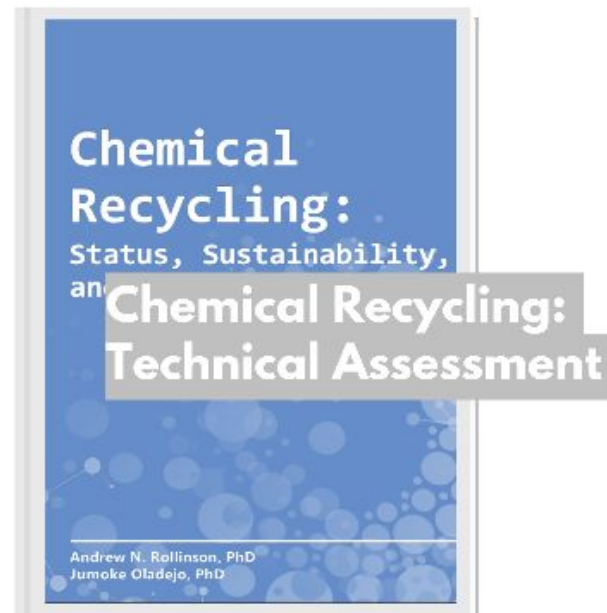
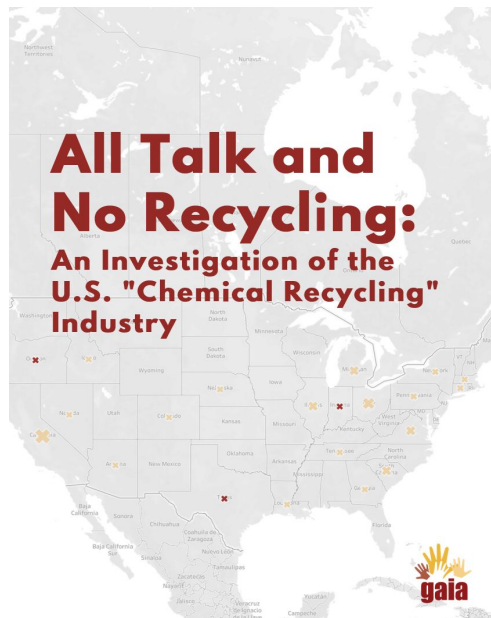
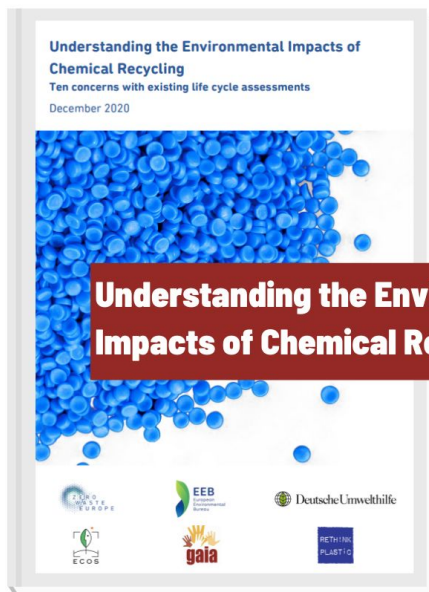


GAIA: A global network of 800 organizations in 90 countries working for a just, toxic-free, zero waste world.

www.no-burn.org



Recent publications on chemical recycling



We have a problem with plastic recycling

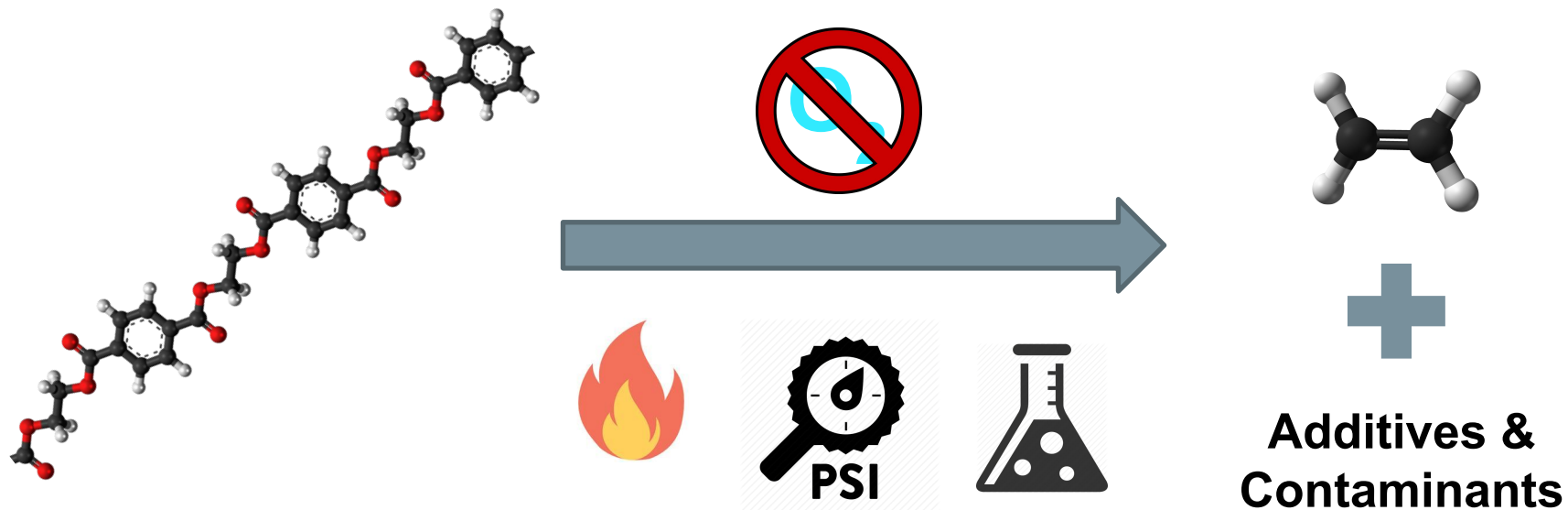


Source: Ellen MacArthur Foundation (2016). A New Plastic Economy.

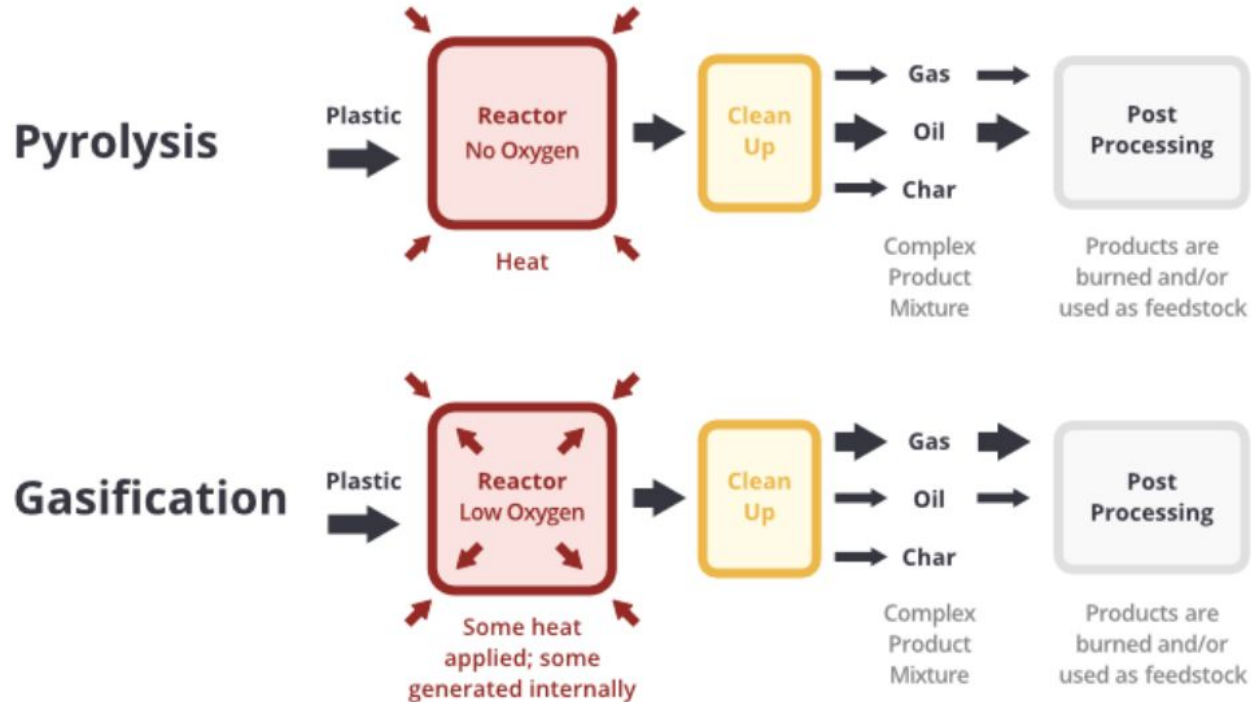
Chemical recycling - what is it?



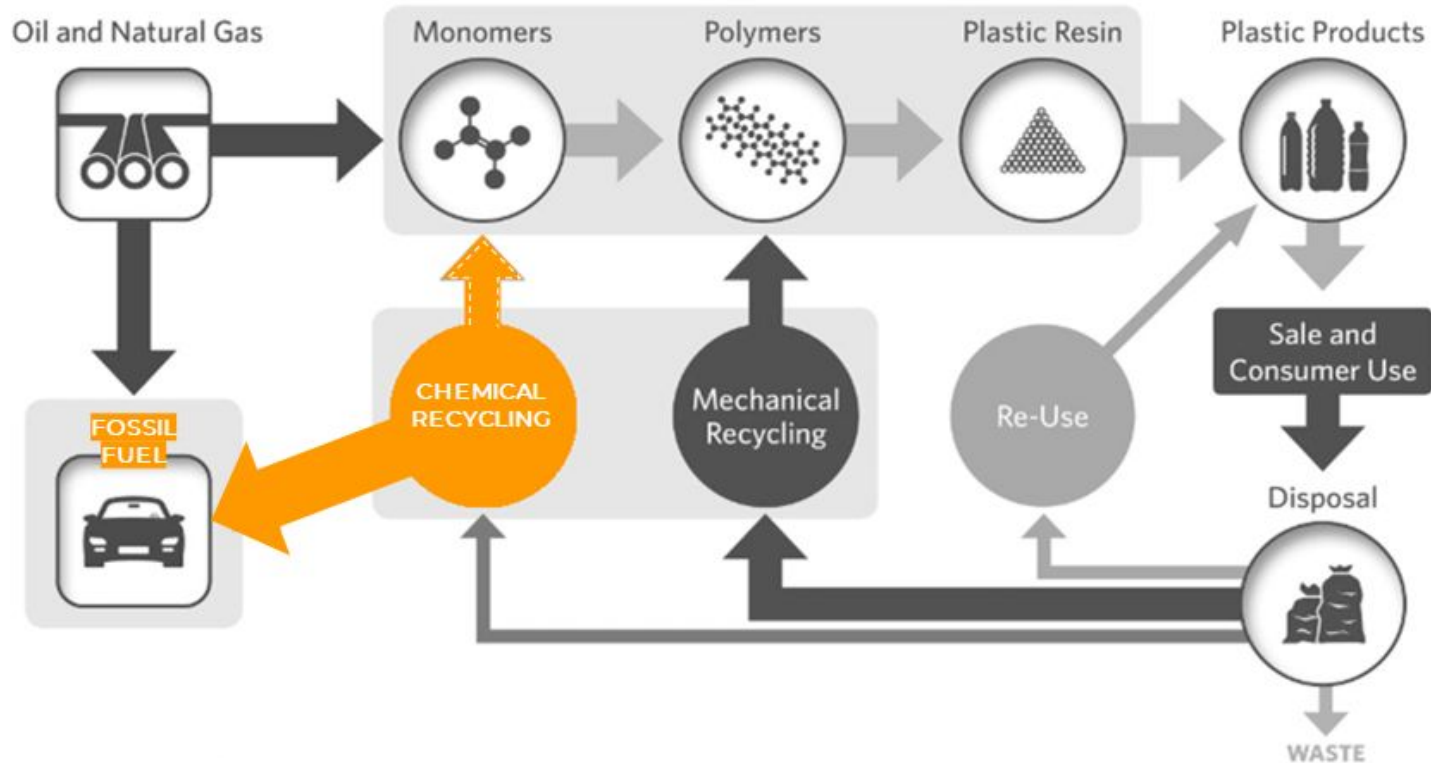
Chemical Recycling breaks plastic down into its chemical components (monomers)



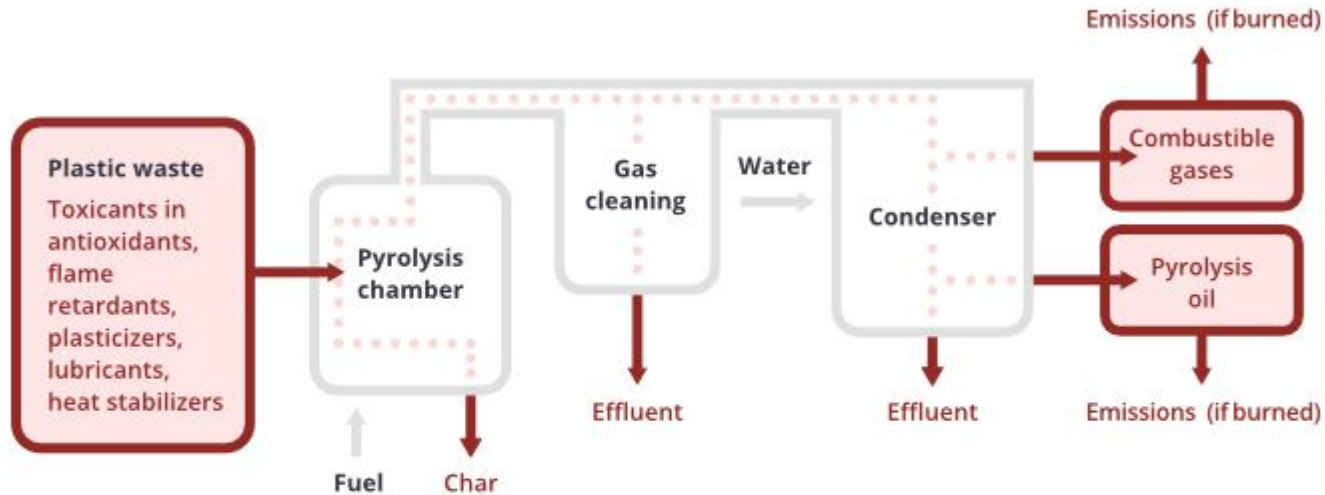
Chemical recycling technology types



Recycling or plastic-to-fuel?



Toxics in, toxics out



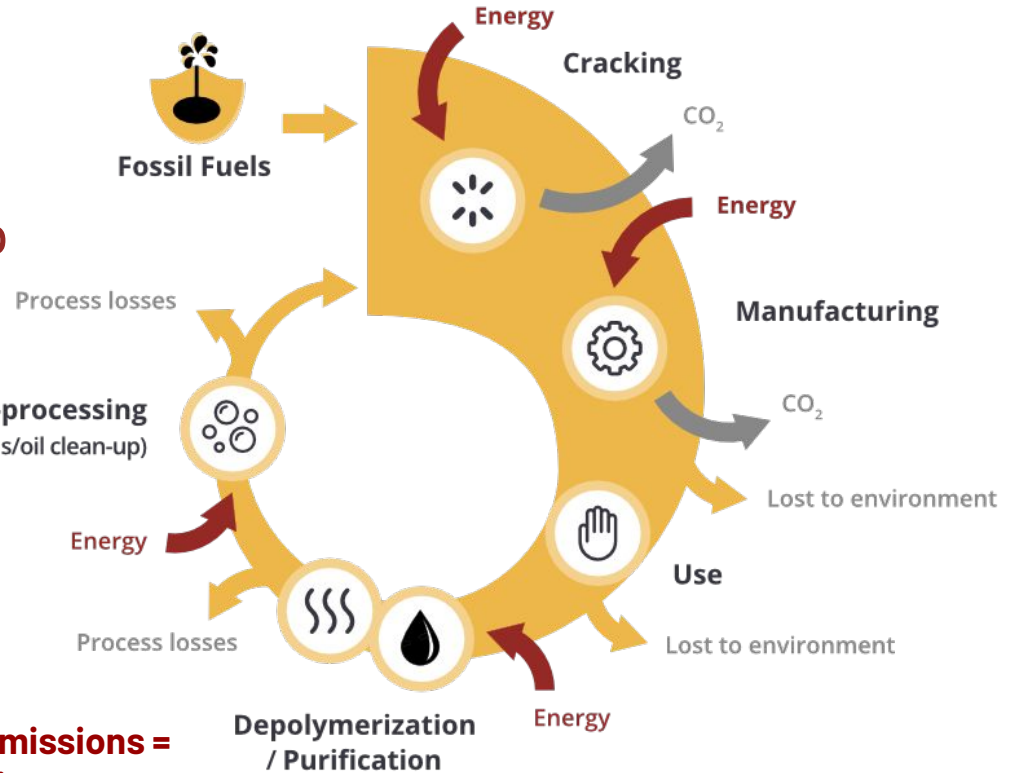
Toxicants include: phthalates, BPA, poly-brominated diphenyl ethers, toxic brominated compounds and poly-cyclic aromatic hydrocarbons (PAH), nitrated PAH (N-PAH), oxygenated PAH (O-PAH), and N/S/O - heterocyclic PAHs, As, Sb, Br, Zn, Cu, Hg, Cd, Dioxin, HCN

Chemical recycling is not circular

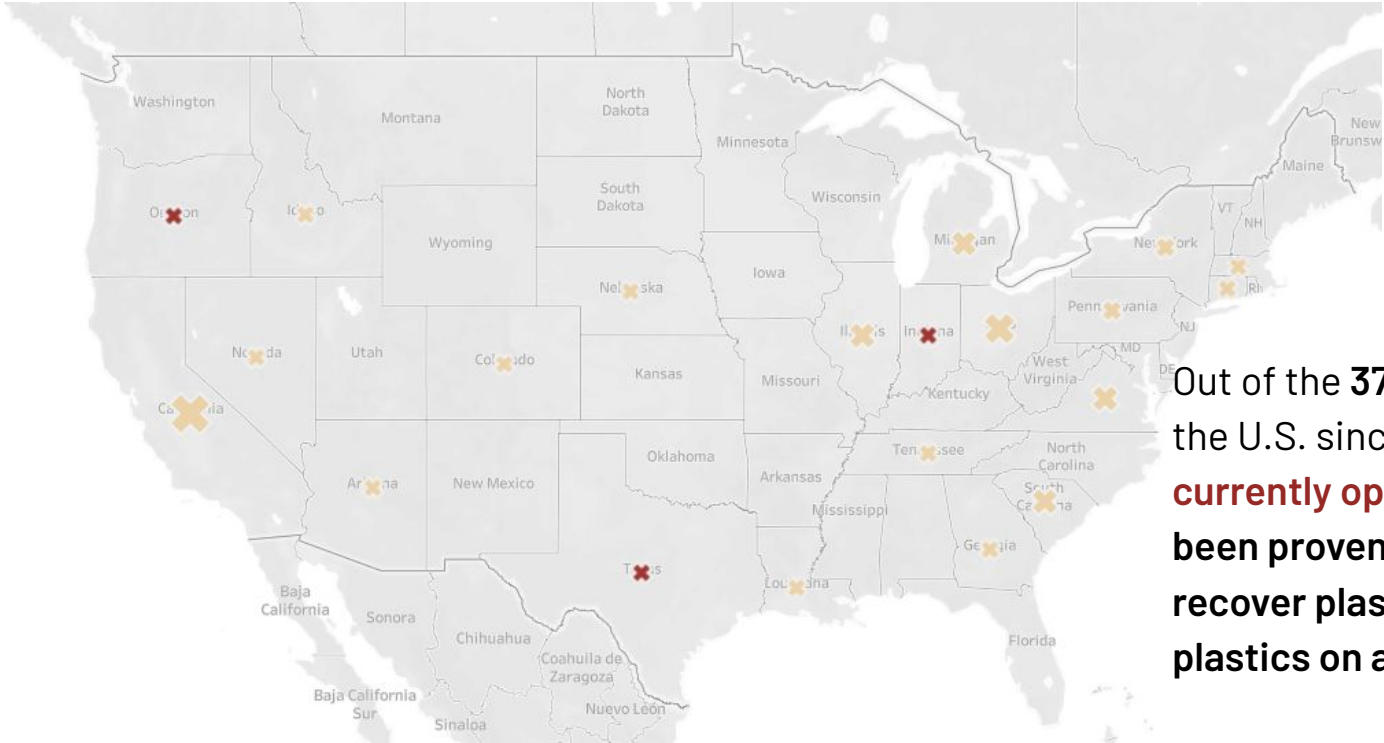
High energy intensity
High carbon emissions
Little plastic makes the round trip

**CO₂ emissions =
40% of input**

**CO₂ emissions =
2.5 x input**

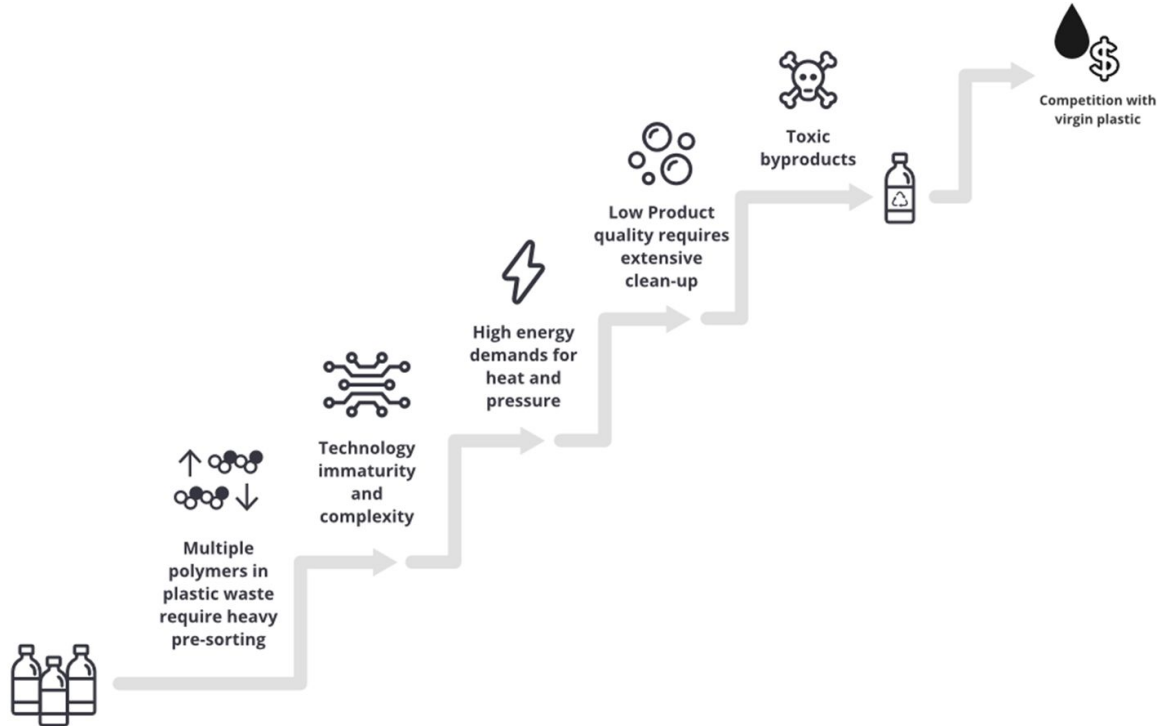


Proposed & existing chemical recycling facilities



Out of the **37 facilities** announced in the U.S. since 2000, **only 3 are currently operational** and **none have been proven to successfully recover plastic to make new plastics on a commercial scale.**

Summary: Multiple barriers to sustainability




For more on chemical recycling:
www.no-burn.org/chemical-recycling-resources

A screenshot of the GAIA website's "Chemical Recycling" resources page. The page has a white background with a red header. The GAIA logo is in the top left. The navigation menu includes "Who we are", "What we do", "Stories", "Resources", "Get Involved", "Donate", and "Español". There are social media icons for Facebook and Twitter in the top right. The main content area is titled "Chemical Recycling" and features three resource cards. Each card has a thumbnail image, a title in a red box, a subtitle, a date, and a short description.

gaia Who we are ▾ What we do Stories ▾ Resources Get Involved ▾ Donate Español 🔍

Chemical Recycling




Understanding the Environmental Impacts of Chemical Recycling

Understanding the Environmental Impacts of Chemical Recycling – Ten concerns with existing life cycle assessments

Dec 9, 2020

This joint paper presents key findings from a review of some of the most commonly cited chemical recycling and recovery LCAs, which reveal major flaws and weaknesses regarding scientific rigour, data




False Solutions to the Plastic Pollution Crisis

Fact Sheet: False solutions to the Plastic Pollution Crisis

Nov 9, 2020

Fact Sheet: False solutions to the Plastic Pollution Crisis As the global plastic pollution crisis continues to grow, so does industry hype around techno-fixes, including waste-to-energy incineration and chemical processing of plastic waste. Such...



US State Legislation Alert: "Plastic-to-fuel" bills

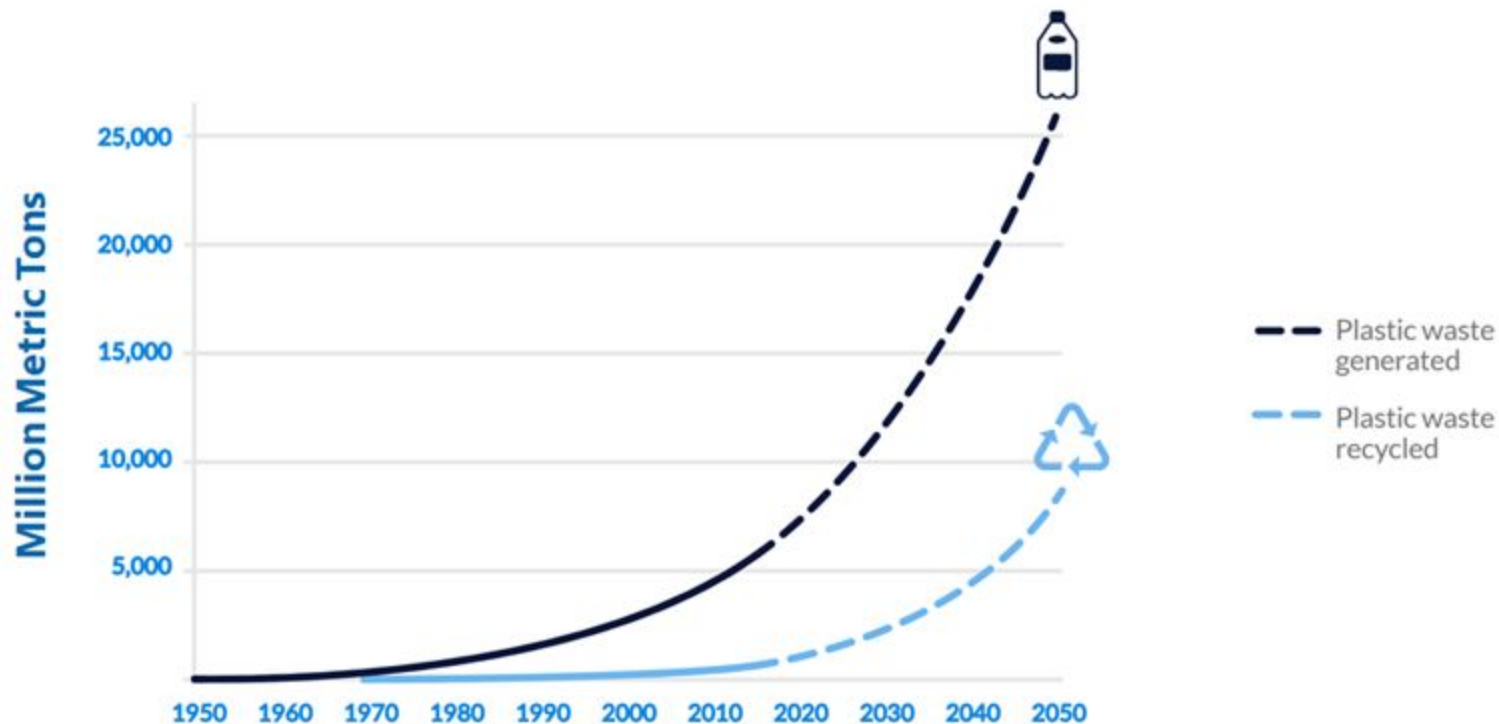
US Legislation Alert: American Chemistry Council's Effort to Push "Plastic-to-fuel" Bills

Sep 25, 2020

In 2017-2020, the plastics and chemical industry, represented by the American Chemistry Council (ACC), led an effort to make legislative changes to statewide policies to promote pyrolysis or "plastic-to-fuel" (PTF). This strategy

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Recycling Does Not Keep Pace With Plastic Waste



REAL SOLUTION: REDUCTION

Key Reduction Pathways:

- Consumer/Business Facing Programs / Policies
 - Bans, Upon Request, Deposit, etc.
- Producer Facing Policies
 - Product Stewardship, Recycled Content, Producer Responsibility

Plastic Campaign and Policy Resources

[Resources](#)

[Plastic Pollution Law Dataset](#)

[Updates](#)

[Get Involved](#)

**CHARLIE PLYBON, SURFRIDER
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[SURFRIDER.ORG/PROGRAMS/PLASTIC-CAMPAIGN-AND-POLICY-RESOURCES](https://www.surfrider.org/programs/plastic-campaign-and-policy-resources)

Foodware



Comprehensive Foodware Policy Toolkit (2020)

After over a decade of successfully advocating for and passing plastic policies such as bag, straw, and EPS bans, the Surfrider Foundation is turning towards the next generation of foodware bills that address plastic pollution in a more holistic and innovative manner. Foodware makes up a large proportion of solid waste and litter. This guide addresses how comprehensive foodware laws are the next step in making a larger impact.

DOWNLOAD
COMPREHENSIVE
FOODWARE POLICY
TOOLKIT

SURFRIDER FOUNDATION

CONSUMER REDUCTION STRATEGIES

CONSUMER CHOICES

“Upon request” and “Request-Only” policies

FEES | TAXES | DEPOSITS

Consumer financial incentive policies, government tax systems and deposits

TARGETED BANS

Outright bans on targeted priority products

POLICY CONSIDERATIONS

Waste management, Consumer behavior, Life cycle, etc.





“UPON REQUEST” & “ASK FIRST”

Generally softest approach, consumer education

STRAWS | STIRRERS

Oregon’s straw approach

CONDIMENTS | UTENSILS

Beyond the straw, framework for more comprehensive approaches

POLICY CONSIDERATIONS

Equity and access for disability, business impacts (ask first vs upon request), durable infrastructure, preemption





BAGS | MICROBEADS

Viable reusable alternatives exist

EXPANDED POLYSTYRENE

Foodware, cups & coolers - Harmful

FOODWARE, UTENSILS, ETC

Priority pollution items, short use, viable reusable alternatives .

POLICY CONSIDERATIONS

Definitions, alternatives and life cycle impacts, “composability”, implementation/enforcement



Plastic Pollution Bills

Introduced for 2021



Extended Producer Responsibility

Polystyrene Foam Foodware Ban

Comprehensive Plastic Foodware

Chemical Recycling Ban

Truth in Labeling





BAGS | BOTTLE BILL | STRAWS

Statewide some progress

EXPANDED POLYSTYRENE

Lots of local progress

FOODWARE, UTENSILS, ETC

Rising local progress

POLICY CONSIDERATIONS

Definitions, alternatives and life cycle impacts, “composability”, implementation/enforcement



COMPONENTS OF COMPREHENSIVE FOODWARE POLICIES

- All Foodware Must Be Recyclable Or Compostable*
- Reusable Foodware Required For “Dine In” Orders
- Utensils And Condiments Upon Request For Takeout And Delivery
- Single-Use Cup Charge
- Non-Reusable Food Container Charge

A cup single-use charge is the best way to encourage customers to bring their own reusable cups.

126%

Rise In Use Of Reusable Cups After A 5 Pence Charge Was Added To Single-Use Cups In Participating Starbucks Stores In The UK



- The restaurant industry has been hit hard by COVID
- Increase in delivery during COVID
- Potentially saves restaurants money



- Other Non-Foodware Plastic Bans
- PFAS In Foodware Ban



ECONOMIC ARGUMENTS: REUSABLE FOODWARE

- When you do the math, the cost of individually-wrapped condiment packets, disposable utensils, stirrers, beverage cups and lids, take-out containers, plates, and bowls all add up quickly
- All of ReThink Disposable's 300+ participating restaurants save money when making the switch
- Depending how big the operation, restaurants may experience thousands of dollars in cost savings per year

The University of San Francisco's Market Cafe saved after switching to reusables.



\$150k

Saved Annually

2.6M

Disposable Items Reduced

10.24

Metric Tons Of Greenhouse Gas Emissions Reduced



CONCLUSIONS

- Development, adoption, and implementation of plastic pollution reduction laws is an iterative process
- Foodware laws have evolved over the last decade from being simple bans on EPS foodware to comprehensive legislation that addresses all potential material types
- This shift from simple bans to an **emphasis on reuse systems** is the next generation of foodware laws and best practices policy that we advocate for at the Surfrider Foundation.



PRODUCER RESPONSIBILITY

Producer responsibility seeks to incentivize manufacturers to reduce their use of packaging and build products that are less hazardous, built to last, and are easy to recycle or reuse by requiring that producers are responsible for all waste costs associated with their products, including waste collection, transportation and management, and litter clean-up costs.



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