POLYSTYRENE PACKAGING IS ENVIRONMENTALLY RESPONSIBLE

Polystyrene **foam cups weigh between 2 to 5 times less** than comparable paper packaging products. This means less energy is required to ship them, which **results in fewer air emissions** and a lighter environmental footprint.[1] A polystyrene hot beverage cup **requires about 50% less energy to produce** than a similar coated paperboard cup with a corrugated sleeve.[2]

Advanced recycling and recovery technologies can convert used polystyrene foam into brand new plastics or fuels and other useful products for new manufacturing, accelerating our path toward a circular economy.[3]

Banning polystyrene products is unlikely to reduce litter. The City Auditor of Honolulu, HI, found that a 'simplistic ban on a single kind of litter or trash is unlikely to reduce the overall amount of litter and its harm to the environment.'[4] A San Francisco ban had a similar result—no litter reduction, only a change in litter type.

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[1] https://www.americanchemistry.com/Polystyrene-Foam-Cups-and-Plates-Use-Less-Energy.html
[2] https://www.americanchemistry.com/Polystyrene-Foam-Cups-and-Plates-Use-Less-Energy.html
[3] https://www.recyclingtoday.com/article/agilyx-corporation-forms-profitable-polystyrene-recycling-program/
[4] http://www.honolulu.gov/rep/site/oca/oca_docs/PS_Ban_Study_Final_Report.pdf

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POLYSTYRENE PACKAGING IS AFFORDABLE

A study on polystyrene ban legislation in New York City found that **for every $1.00 spent on polystyrene food ware, restaurants would have to spend nearly $2.00 on alternatives**. Plastic food ware in general is more economical—wholesale costs can be two to five times less than alternatives.[1]

Restaurants and other food establishments face razor thin margins and increasingly heavy competition, making it exceedingly difficult to operate and make a profit. By **restricting cost effective products they rely on to serve fresh food, bans would significantly increase their cost of doing business**, resulting in higher costs to lower and middle income families.

Because **polystyrene foodservice products provide outstanding insulation and strength, wasteful practices such as double-cupping or extra sleeves are not needed**. This significantly reduces the number of containers and the natural resources used to make them.

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[1] https://www.plasticfoodservicefacts.com/wp-content/uploads/2017/10/NYC-Foodservice-Impact-Study.pdf

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POLYSTYRENE PACKAGING IS EFFECTIVE

Polystyrene packaging has long been a **preferred material of the foodservice industry because it insulates better, keeps food fresher longer, and costs less** than alternative coated paperboard products.

Polystyrene foodservice products can **help in providing sanitary foodservice and preventing the spread of disease**.

Polystyrene food ware **works better at keeping hot food hot and cold food cold**, so consumers can throw away less food. Nearly 40 percent of food in the U.S. is wasted and food waste has a big impact.

According to the Food and Agriculture Organization of the United Nations, if food waste were a country, it would be the third largest source of greenhouse gas emissions.[1] **We should use packaging that is most effective at reducing food waste.**

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[1] http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/FWF_and_climate_change.pdf

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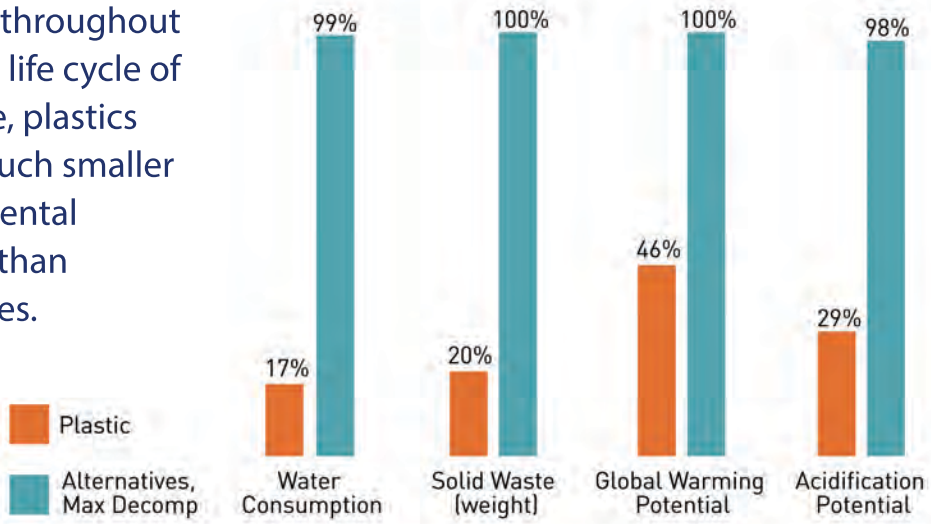
Replacing Plastic Packaging with Other Materials Would Increase Environmental Impacts

ALTERNATIVES TO PLASTIC PACKAGING WOULD NEARLY DOUBLE GREENHOUSE GAS EMISSIONS[1]

When comparing materials throughout the entire life cycle of a package, plastics leave a much smaller environmental footprint than alternatives.

Normalized U.S. Results for Plastic Packaging and Substitutes



Substituting Plastic Packaging Negatively Impacts Solid Waste

If consumers weren't using plastics, they'd be using more glass and metal as substitutes. On average the combined weight of alternative materials is about 4.5 times more than the weight of plastic packaging,[2] and compostable packaging requires the more rigorous conditions of municipal composting facilities to degrade[3].

4.5 times heavier than the weight of plastic packaging

Plastics Makers Circular Economy Goals

U.S. resin manufacturers have set goals to ensure that 100% of plastic packaging is recyclable or recoverable by 2030 and that all plastic packaging is re-used, recycled or recovered by 2040.

2040
All plastic packaging is
100%
reused, recycled or recovered

Plastic Packaging

Using plastics in packaging requires less energy

Saves enough energy to heat nearly
48 million homes

The plastic packaging lifecycle including post-consumer disposal, results in less solid waste

Saves the weight of
290,000
jumbo jets worth of waste

Production of plastic packaging consumes much less water, including in waste system

Saves the weight of
461,000
Olympic-sized swimming pools

1. Life Cycle Impacts of Plastic Packaging Compared To Substitutes in the United States and Canada. Franklin Associates, A Division of Eastern Research Group (ERG), Apr. 2018 ***https://plastics.americanchemistry.com/Reports-and-Publications/LCA-of-Plastic-Packaging-Compared-to-Substitutes.pdf.***
2. Role of plastics in decoupling municipal solid waste and economic growth in the U.S., Demetra A. Tsiamis, Melissa Torres, Marco J. Castaldi, ***https://plastics.americanchemistry.com/Plastics-Decoupling-Waste-and-Growth.pdf***
3. ***http://www.bpiworld.org/***

American Chemistry Council | Plastics Division

201902-002-Plastics

POTENTIAL POLYSTYRENE RECYCLING PROGRAM

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	In a Curbside Program	In a Drop-off Program
Step 1	Residents place foam in the same containers as other recyclables.	Residents take foam to a drop-off center.
Step 2	The materials are collected curbside by a recycling truck.	The materials are collected at the drop-off center by a recycling truck (if drop-off site also densifies, skip to Step 5).
Step 3	The recyclables are delivered to a sorting facility or material recovery facility (MRF).	
Step 4	The MRF separates (either mechanically or manually) the foam from the other recyclables. It is recommended that the foam is sorted to the screens; this will result in higher volumes and less contamination in other bales.	The MRF keeps the foam separate from the other recyclables.
Step 5	The foam is delivered either mechanically or manually to a grinder (if foam was sorted mechanically, be sure to check for any contaminants that could damage equipment before grinding.)	
Step 6	The ground foam is transferred to a densifier. This can be done mechanically using air blown through a tube or manually.	
Step 7	The densifier compacts the loose foam into blocks for storage and transportation.	
Step 8	The MRF sells the foam to a broker, processor or end user, who will extrude or turn it into pellets for use in manufacturing new products.	

Courtesy of the Foodservice Packaging Institute's Foam Recycling Coalition. For more details, including case studies, visit www.RecycleFoam.org.

Example Hydraulic Densifier

Example Screw Driver Densifier

Example Hybrid Densifier

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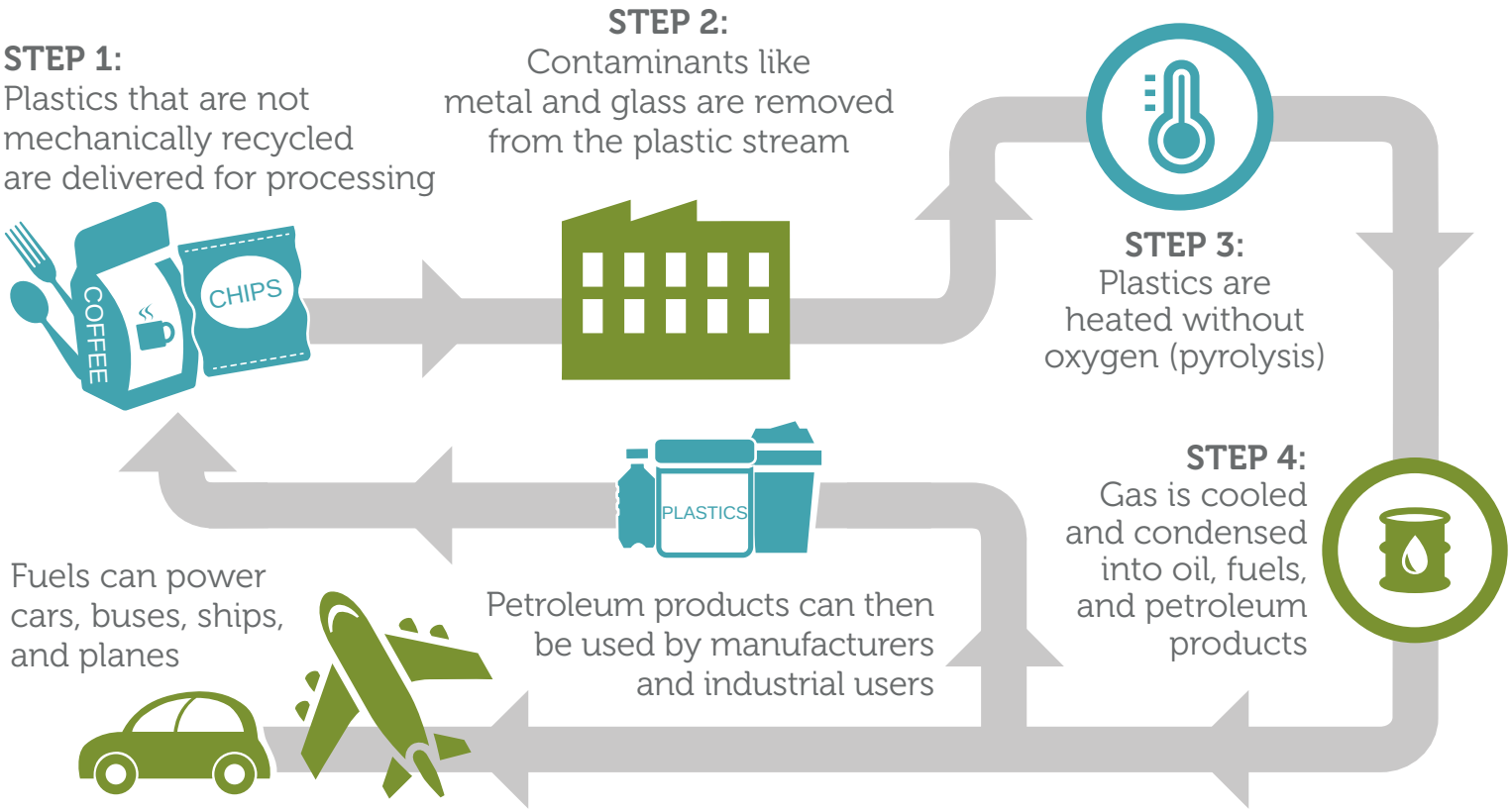
WHAT ARE CHEMICAL RECYCLING TECHNOLOGIES?

American Chemistry Council | The Chemical Recycling Alliance
Sustainable solutions for plastics

Companies are using advanced recycling and recovery technologies, a.k.a. chemical recycling, to complement ongoing recycling efforts.

Growing interest and investments in chemical recycling can reduce the amount of waste sent to landfills and generate a diverse range of products, such as industrial waxes, fuels, solvents, and plastic building blocks.



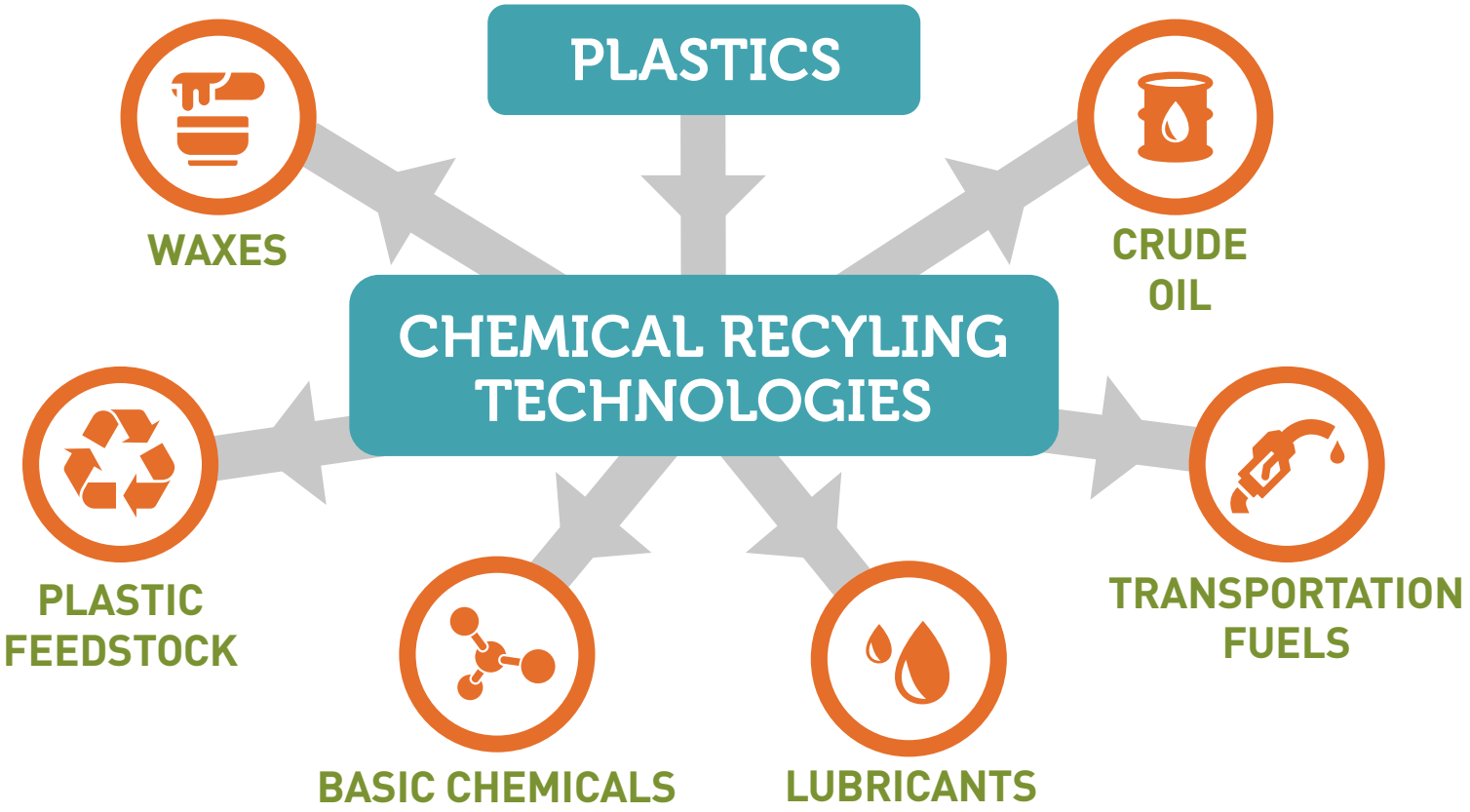
STATES AND LOCAL GOVERNMENTS SHOULD ENSURE THEIR LAWS ARE UPDATED TO SUPPORT THE POTENTIAL OF CHEMICAL RECYCLING TECHNOLOGIES:

- Chemical recycling technologies should be recognized as complementary to recycling and an important part of a community's integrated solid waste management.
- Laws and regulations should identify chemical recycling companies as producers of an alternative energy source. Rather than a form of disposal, this process should qualify as utilizing raw materials for a manufacturing process under existing state and local regulations.
- States should ensure their permitting frameworks and regulations for advanced recycling and recovery technologies reflect 21st century innovations.

American Chemistry Council | The Chemical Recycling Alliance
Sustainable solutions for plastics

THE BENEFITS AND VERSATILITY OF CHEMICAL RECYCLING TECHNOLOGIES

Today's versatile chemical recycling technologies can convert post-use plastics into a range of useful outputs, such as oil, fuels, and other petroleum-based products, to help power communities and other key parts of our economy, including transportation and manufacturing. These technologies also offer important environmental benefits, such as diverting valuable materials from landfill, transforming waste into an abundant source of alternative energy, and helping to reduce greenhouse gas emissions.



BENEFITS OF EXPANDING CHEMICAL RECYCLING TECHNOLOGIES

Chemical recycling technologies complement traditional recycling by converting post-use plastics into valuable products.

If all the post-use plastics in municipal solid waste were converted to fuel instead of landfilled, these plastics could power up to 9 million cars per year.

Chemical recycling technologies offer the opportunity to reduce greenhouse gas emissions by up to 60%-70% over new forms of crude oil extraction.

American Chemistry Council | The Chemical Recycling Alliance
Sustainable solutions for plastics

ECONOMIC POTENTIAL
FOR CHEMICAL RECYCLING TECHNOLOGIES IN THE U.S.

The U.S. could support up to 600 chemical recycling facilities, generating nearly 39,000 jobs

Companies are using advanced recycling and recovery technologies, also known as chemical recycling, to complement ongoing recycling efforts. Growing interest and investments in chemical recycling can reduce the amount of waste sent to landfills and generate a diverse range of raw materials, feedstocks for manufacturing, chemicals and fuels.

38,500 Jobs

supported by new conversion facilities, including:

- **9,400** directly employed
- **15,100** employed in supply chain industries
- **14,000** payroll-induced jobs

$2.2 Billion
in annual payrolls generated

$9.9 Billion
in U.S. economic output from plastics conversion operations, including:

- **$4.1 billion** related to increased products generated by the facilities
- **$5.8 billion** in additional supplier and payroll-induced impacts

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- States should ensure their permitting frameworks and regulations for advanced recycling and recovery technologies reflect 21st century innovations.

Source: Economic Impact of Advanced Plastics Recycling and Recovery Facilities in the U.S., February 2019
https://plastics.americanchemistry.com/Economic-Impact-of-Advanced-Plastics-Recycling-and-Recovery-Facilities-in-the-United-States.pdf

ALLIANCE TO END PLASTIC WASTE

Plastic waste in the environment, particularly the ocean, is a serious global challenge that calls for swift action and strong leadership. Despite the many benefits plastics bring to people and communities around the world, including improvements in living standards, health, safety, and sustainability, unmanaged plastic waste has become a challenge in some parts of the world.

WHO: Companies that make use, sell, process, collect, and recycle plastics, together with the World Business Council for Sustainable Development as a founding strategic partner.

WHAT: The most comprehensive cross-value chain initiative of its kind with a clear mission to **end plastic waste in the environment.**

WHEN: The Alliance to End Plastic Waste is kicking off immediately with several diverse initial projects.

WHY: To end plastic waste in the environment.

WHERE: Throughout the world, with a particular emphasis on where the need is greatest, such as Southeast Asia.

HOW: By collaborating with others working to end plastic waste in the environment and applying the resources, engineering and technical experience of Alliance members to advance an integrated four part strategy:

INFRASTRUCTURE DEVELOPMENT

Infrastructure Development to collect and manage plastic waste, and increase recycling in areas of greatest need.

INNOVATION

Innovation to advance and bring to scale new technologies that make recycling and recovering plastics easier and create value from all post-use plastics.

EDUCATION & ENGAGEMENT

Education and Engagement of governments, businesses, and communities to mobilize action.

CLEAN UP

Clean Up to help stop plastic waste at its source, focusing on cities and major rivers that carry significant amounts of plastic waste to the ocean.

The Alliance to End Plastic Waste is made up of nearly 30 companies that have committed more than $1 billion, with the goal of investing $1.5 billion over the next 5 years to help end plastic waste in the environment. The Alliance will develop, deploy and bring to scale solutions that will minimize and manage plastic waste and promote solutions for used plastics, including reuse, recovery, and recycling plastic to keep it out of the environment.

ALLIANCE TO END PLASTIC WASTE

www.endplasticwaste.org