



The Case for Sustainability: The Future is Now

100% Recyclable Food Trays



Executive summary

- Polystyrene (Styrofoam) is essentially **non-recyclable and takes at least 500 years to decompose.**
- **State and local polystyrene bans are becoming increasingly common** and accelerating the sustainability timelines of many organizations. In fact, **Polystyrene foam bans** have passed in more than **200 cities and communities** in the U.S. – and that number is growing.
- Millennials **purposefully seek out products with recyclable packaging.** And they will soon be **largest living adult generation / largest working generation.** **This list** ranks the top 10 states according to number of Millennials.
- Although red states can absolutely be eco-friendly, blue states are generally more so. **This list features the political affiliations of each state.**
- **The packaging industry is responsible for 40 percent of plastic pollution** and represents **one-third of all trash.**
- Currently, **meat trays are a primary culprit for grocery stores and processors** as they are made of polystyrene. Supermarkets may ultimately be mandated to convert to a recyclable solution through government bans or encouraged to make the change by consumer demand.
- Moving to a 100% recyclable food tray **will allow companies to be one of the first to market, to underscore the company's commitment to the environment, and increase brand loyalty.**

***Note: Click on the green underlined text throughout the presentation to view the source.**



Polystyrene (Styrofoam or plastic foam)

- Essentially non-recyclable
- Not biodegradable
- Takes at least 500 years to decompose
- Takes up more space in landfills than alternatives
- Requires a high amount of energy to produce compared to alternatives

The damage: potential health problems



- **Possible carcinogen**: Styrene, a component in polystyrene, has been classified as a possible human carcinogen by the EPA.
- **Food contamination**: Food in Styrofoam containers can be contaminated by chemicals that leach into the food, affecting human health / reproductive systems.
- **Can affect central nervous system**: According to the EPA, regular exposure to styrene in humans can affect the central nervous system (CNS), with symptoms such as headaches, weakness, depression, and CNS dysfunction.
- **Chemicals in seafood**: When the fish eat toxic materials in Styrofoam and the additional pollutants it absorbs, the chemicals bioaccumulate and can harm people who consume this seafood, according to the Los Angeles Times.
- **In 100% of human tissue**: Back in 1986, a study by the EPA detected styrene in 100% of human tissue and breast milk samples.
- **Damages the ozone layer**: When exposed to sunlight, Styrofoam creates harmful air pollutants, which contaminate landfills and deplete the ozone layer.

The reaction: government bans

Polystyrene foam bans have passed in more than 200 cities and communities in the U.S. ([The Federation of State PIRGs](#))

Below is a look at various bans around the world:



Source: Plastic Free Times

📍 = Bag Ban 📍 = Bottle Bill 📍 = BPA Bill 📍 = Polystyrene Foam Bill 📍 = Plastic Free Campus

- [Numerous cities](#) already have varying types of bans in effect.
- Groups like Environment America (which has representation in each state) are [launching campaigns to pass statewide bans on single-use Styrofoam food containers](#).

The reaction: buying behaviors



General Consumers

- **86% of American consumers expect companies to do more than make a profit, but also operate responsibly to address social and environmental issues.***
- **88% of American consumers will be more loyal to a company that supports a social or environmental issue.***
- **87% of American consumers would buy a product with a social and/or environmental benefit.***
- **87% of American consumers would be more likely to trust a company that supports a social or environmental issue.***
- **92% of American consumers have a more positive image of a company with a social or environmental focus.***
- **89% of American consumers are likely to switch brands to one that is associated with a good cause, given similar price and quality.)***
- **66% of global consumers are willing to pay more for sustainable goods.+**

* [2017 Cone Communications CSR Study](#)

+ [Nielsen](#)

The reaction: buying behaviors



Millennials

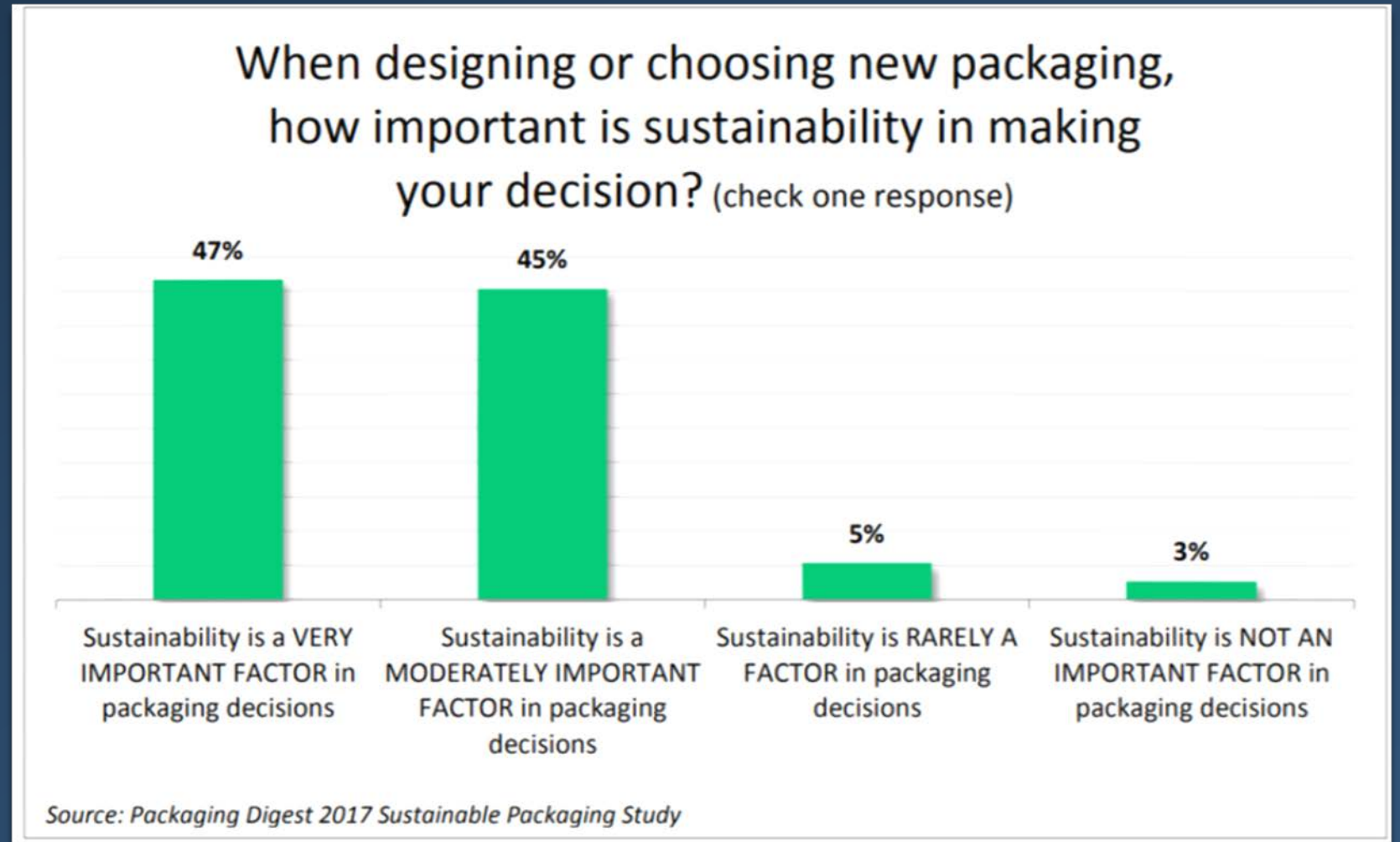
(Soon to be the [largest living adult generation](#) / [largest working generation](#). [Spend \\$600 billion per year in the U.S. — a figure that's expected to grow to \\$1.4 trillion, which is 30% of the market.](#))

- Millennials [purposefully seek out products with recyclable packaging](#). [This list](#) ranks the top 10 states according to number of Millennials.
- Millennials [purposefully seek out](#) products with recyclable or renewable packaging.
- [87% would be more loyal](#) to the company when a company supports a social / environmental issue.
- [90% of Millennials will buy](#) from a brand whose social / environmental practices they trust.
- [95% of them will recommend](#) a brand whose social / environmental practices they trust to a friend.
- [73% are willing to pay more](#) for sustainable goods.
- According to the Pew Research Center, [Republican Millennials are more likely to endorse environmental positions](#) than their older peers.
- [Packaging presents another opportunity for manufacturers to sell their products](#) at premium prices. Iconic packaging designs or those made with sustainable, recyclable, or biodegradable materials hold higher value for Millennials than traditional plastics and boring designs.
- [90% would switch brands to one associated with a cause](#) – and Millennials are prepared to make personal sacrifices to make an impact on issues they care about, whether that's paying more for a product, sharing products rather than buying, or taking a pay cut to work for a responsible company.

Companies' packaging priorities shift

92%

of companies say sustainability is an important factor when choosing packaging



Smooth-edge, PET recyclable food trays



The Clearly Clean MAP Tray

The world's **ONLY PATENTED RECYCLABLE PET MAP** tray with a **SMOOTH, ROLLED edge**. The tray allows companies to achieve their **sustainability goals quickly, easily, and cost-effectively**.

Includes a proprietary film, which provides the appropriate bonding surface for the lidding material and a superior barrier alternative. Peel away the protective liner to recycle the 100% recyclable PET base tray.



PROPRIETARY DESIGN: Reduce shrink & increase customer satisfaction

- THREE TIMES stronger than Styrofoam
- Prevents leakers
- Will not break during packaging and transportation
- Will not bow tie due to weak walls
- Can withstand high-speed processors without a loss in structural strength

EFFICIENCY: Can immediately replace all plastic foam trays on high-speed packaging machinery -- no need for an equipment change.

LONGER SHELF LIFE: Allows for a longer shelf life through its proprietary CCP barrier.

MAXIMUM SHELF APPEAL: Your products will stand out from the competition. Words used to describe their look include "clean," "fresh," and "different."

CLARITY: Allows the product to be the focal point of the tray because one of the color options is crystal clear.

Smooth-edge, PET recyclable food trays

The Clearly Clean Roll Over-Wrap™ Tray

The world's **ONLY PATENTED 100% RECYCLABLE PET** overwrap food tray with a **SMOOTH, ROLLED edge**

The tray allows companies to achieve their **sustainability goals quickly, easily, and cost-effectively.**



PROPRIETARY DESIGN: Reduce shrink and increase customer satisfaction

- THREE TIMES stronger than Styrofoam
- Mitigates damage to overwrap films
- Prevents leakers
- Will not break during packaging and transportation
- Will not bow tie due to weak walls
- Can withstand high-speed processors without a loss in structural strength

CLARITY: Allows the product to be the focal point of the tray because one of the color options is crystal clear.

EFFICIENCY: This tray can immediately replace all plastic foam trays on high-speed packaging machinery; there is no need for an equipment change.

MAXIMUM SHELF APPEAL: Your products will stand out from the competition. Words used to describe their look include “clean,” “fresh,” and “different.”

Smooth-edge, PET recyclable food trays

Custom Design

Partners...every step of the tray

Concept > Design > Prototype > Package

Clearly Clean's engineering department goes beyond 3D drafting/designing, building, and testing. Our engineers are innovators and inventors — blending physics, mathematics, and materials science to bring your vision and package to life.

Our ultimate goal is to ensure your package encourages product purchase, represents your brand, and protects both your product and the environment.



Why is PET better than polypropylene (PP)?



PP



PETE

PP

- PP is “one of the least recycled post-consumer plastics.” In fact, “only about 3% of polypropylene products are recycled in the U.S.”
- This is primarily because it is difficult to recycle PP.
- With PP, there is no regulation that controls which polymers are added to PP; consequently, it can be comprised of numerous resins, which contaminates the recycle stream.

PET

- PET is pure and clear as it is not easily mixed with other polymers, creating a pure recycle stream
- PET is very energy-efficient and utilizes less fuel to produce.
- PET is taken curbside and is accepted by almost all MRFs.

Which is best: biodegradable, compostable and recyclable?

In California, it's against the law to include the words "biodegradable" and "compostable" on the label of a plastic product or a product with plastic packaging.

Biodegradable:

There is no time frame designated as to when the degradation process needs to occur for it to be deemed biodegradable.

Biodegradable plastic

- Does not degrade under normal conditions
- Should be sent to large municipal composters, which are few and far between
- Little-to-no curbside service that will collect it
- If it mixes with standard plastic, the entire recycling feed will be compromised.

Comparable resins (bioplastics) -- made out of corn and starch

- Drives the price of food up and decreases the amount of land used to grow food, significantly impacting the world's poor
- Farmers have to wait two years before replanting it in the same field. Biodegradable does not necessarily equate to sustainable.

Compostable:

- Needs more energy to produce and requires oxygen to degrade (landfill will not work effectively)
- Generally not taken curbside and requires a high-heat commercial compost facility (not readily available)
- Portland has banned compostable plastics from their compostable facilities.

Wood fiber products

- Contribute to global deforestation
- Less durable and cannot be produced in a clear color
- Generally, cannot be composted, biodegraded, or recycled
 - The MRFs can't separate the film (needed to adhere to the fiber) from the fiber
 - The composting facility can't separate the paper side from the film.

Recyclable PET:

- Converts the plastic into a reusable material
- Requires less energy than the alternatives and minimizes landfill waste and ocean pollution
- Conserves natural resources, such as food, trees, and soil, etc.
- Taken curbside
- Closed loop system



DPET versus APET

Unlike competitors, Clearly Clean has opted to use DPET™ as opposed to APET

What is DPET™ (Direct-to-sheet PET)?

DPET™ is the first and only direct-to-sheet polyester sheet in the world, eliminating the five energy-intensive stages of the conventional sheet production process that Amorphous PET (APET) requires.

Why is DPET™ better than APET?

- **Small Carbon Footprint**
 - DPET™ is a high-performing plastic with the lowest carbon footprint on the market today.
 - DPET™ releases 69% fewer greenhouse gas emissions from sources that are owned or controlled by the company
 - DPET™ releases 48% fewer greenhouse gas emissions from generation of electricity purchased by the company
- **A Life Cycle Analysis Study Revealed DPET™:**
 - Consumes 65% less purchased electricity
 - Uses 28% less on-site thermal energy
 - Creates an 18% lower global warming potential
 - Generates a 30% lower cradle-to-gate environmental footprint

Sustainable packaging solutions

Clearly Clean offers:

- *World's Only Patented Recyclable Overwrap Trays*
- *World's Only Patented Recyclable MAP Trays*
- *World's Only Patented Multi-Peelable Layer Packaging For Food and Retail*
- *World's Only Patented Recyclable Barrier Rollstock*
- Engineering Services to Maximize Value of Our Patented Technologies
- End-of-Life Packaging Solutions





Clearly Clean
www.clearlyclean.com

