Connecticut Task Force to Study Methods for Reducing Consumer Packaging that Generates Solid Waste

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Vision for Plastics Recovery

- Natural Gas & Oil: 97% Fuels, Power, Other, 3%

 Processes:
- Plastic Production
- Fabrication
- Use
- Post-use Collection
- Recycle
- Energy Recovery
- Feedstock Recovery
- Consumer Reuse
Driving Results for Plastics Recycling Success

• Providing support to:
  • Assess processing at MRFs
  • Improve curbside mix of materials
  • Conduct non-bottle rigids research with APR

• Tracking progress for:
  • Bottles; flexible wraps, bags and films; and non-bottle rigids

• Sharing knowledge by:
  • Advocating for common terms
  • Growing film recycling across the U.S.

• Promoting public policies to drive growth

• Working together with large, scalable partners
  • e.g. TRP, KAB, APR
Working with States

• Outlined in Governing Magazine

• Based on existing work with states

• Combination of policy, voluntary, and industry programs

Sustainable environment officials are always looking for better solutions to help achieve their environmental goals. Government leaders can improve sustainability by promoting sound policies that look holistically at the use of materials. By examining more broadly the literature on materials, the concept of waste can be altered and perhaps even abandoned.

This is particularly true for plastics. Although plastics are inseparable to modern life — they’re used to produce everything from bicycle helmets and health care technologies to the packaging that keeps our food fresh and alive — people have questions about their impact on the environment.

But recent life cycle studies demonstrate the environmental benefits of plastics. While all materials impact the environment, plastics used in many consumer goods typically produce less waste, use less energy and create lower greenhouse gas emissions than alternatives.

Too often, state waste policies assess the environmental impact of materials such as plastics through a very narrow lens, focusing merely on the primary stage of sustainability. Now, leading authorities are taking a holistic approach to measuring the environmental performance of plastics. They are also encouraging increased plastics recycling and inventing smart business, owners and entrepreneurs to develop dynamic, market-based solutions to capture the value inherent in plastics — rather than dumping them in landfills.

Understanding Sustainable Materials Management

This more holistic approach to environmental management is known as Sustainable Materials Management (SMM) — a method that uses life cycle analyses to measure environmental impacts across the entire life of a package or material. SMM seeks to account for materials, energy and water used across their entire life cycle (birth of a product, from manufacturing to transportation to end of life).

SMM is especially useful in helping states evaluate and address the growing use of plastics because it moves the focus from weight-based recycling goals (recycling rates) to broader environmental goals. As an example, lightweight plastic packaging loses very little material and can help protect and safely transport goods, which reduces waste, material and energy use, and greenhouse gas emissions. SMM considers all the impacts of the packaging, from manufacturing and transportation to solid waste disposal, not just its ability to be recycled.

When viewed historically, plastics and plastic packaging typically compare favorably to alternatives. A 2008 study by Trucost found that the environmental cost of using plastics for consumer goods and packaging was nearly four times less compared to using alternative materials to do the same job — a difference of $15 billion versus $62 billion annually.

SMM provides a clearer picture of the environmental impact of materials, from beginning to end of life. While some communities believe reducing certain uses of plastics may reduce waste, embracing SMM and adopting a broader view of sustainability provides a more insightful measure to evaluate environmental benefits and progress toward environmental goals.ussia that restrict the use of various plastics based on single-use attributes (recycling rates, biodegradability, etc.) can turn efforts to improve sustainability. The U.S. Environmental Protection Agency (EPA) and states such as Oregon and Minnesota are rapidly moving toward SMM.
Five Key Recommendations

1. **ADOPT Sustainable Materials Management (SMM)**
2. **ENCOURAGE sensible, broadly supported recycling policies**
3. **EMBRACE voluntary plastics recycling programs and tools**
4. **LEVERAGE national partnerships for grants, loans and technical assistance**
5. **TREAT non-recycled plastics as valuable materials for conversion to fuels and chemicals**
U.S. Environmental Protection Agency Definition:

Sustainable materials management (SMM) is a systemic approach to using and reusing materials more productively over their entire lifecycles. It represents a change in how our society thinks about the use of natural resources and environmental protection. By looking at a product's entire lifecycle we can find new opportunities to reduce environmental impacts, conserve resources, and reduce costs.

• Source: https://www.epa.gov/smm
Plastic Packaging Reduces Impacts

Source: Franklin Associates, September, 2008
Environmental Impacts of PET Recycling

Normalized impact (baseline w/37% recycling = 100)

- 20.00
- 40.00
- 60.00
- 80.00
- 100.00
- 120.00

37% recycling rate
62% recycling rate

Global warming potential
Energy use
Carcinogenic potential
Respiratory effects potential
Ecotoxicity potential

*courtesy of the Oregon Department of Environmental Quality (DEQ)
Larger Impact from Lightweighting

- Baseline w/ 37% recycling rate
- 62% recycling rate, lightweighted

Normalized impact

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37% recycling rate
62% recycling rate
62% recycling rate, lightweighted
#2 Explore Broadly Supported Policies

- Enforce Connecticut’s existing laws and regulations*
  - Mandatory recycling of “designated recyclables”
  - Commercial generators
  - Multi-unit residential dwellings

- Relax certain regulations to encourage economic development (e.g. mixed waste processing/secondary sortation)*

- Earmark bottle deposit escheats directly to recycling programs and protect from the General Fund (~$20.7 million in 2015)

- Explore policies such as pay-as-you-throw, provide technical assistance and BMPs, and focus on food waste PREVENTION (~40% of MSW disposal)

*Connecticut DEEP 2016 Comprehensive Materials Management Strategy
#3 Embrace Voluntary Programs

Connecticut unveils initiative to boost plastic film recycling.

DEEP looks to elevate plastics recycling.
#4 Leverage National Partnerships

- The Recycling Partnership
- Closed Loop Fund
- Keep America Beautiful
- U.S. Department of Energy
#5 Treat Non-Recycled Plastics as Feedstocks

**Light industrial Manufacturing**

- regulated under existing manufacturing framework
- plastic feedstock not a solid waste
- producing valuable fuels and raw materials
- not landfills or WTE facilities
- recyclers determine viable markets
- allow disposal of off-spec materials and by-products

**Waste Disposal**

- landfills
- waste-to-energy facilities
- plastics-to-fuel
- plastics-to-petrochemicals
- other conversion technologies
Moving SMM Forward in Connecticut

• Focus on environmental outcomes from materials management and recycling/recovery
• Embrace life cycle analysis
• Utilize tools and programs that gain efficiencies
• Enforce Connecticut’s existing laws and regulations
• Focus on preventing food waste, rather than after it’s been wasted
• Focus on broadly supported programs and policies
• Find consensus among key stakeholders
Thank you!

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