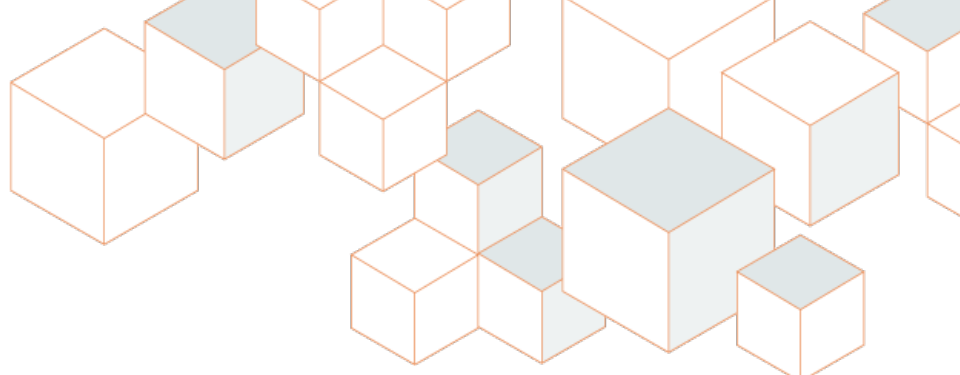




October 6, 2016

ADVANCING RECOVERY OF NON-RECYCLED PLASTICS:

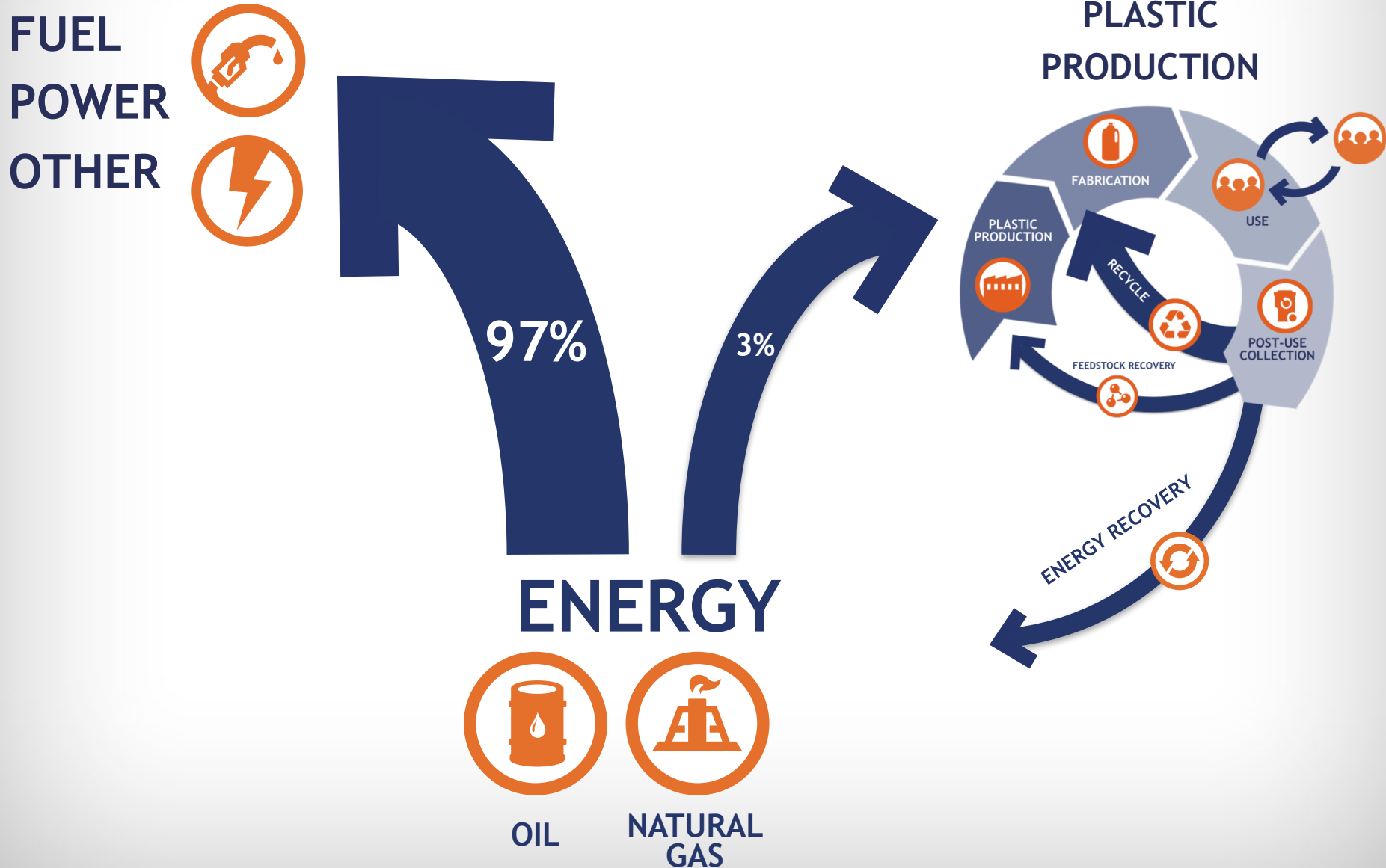
2016 WTERT Bi-Annual Meeting



Plastics Division Members

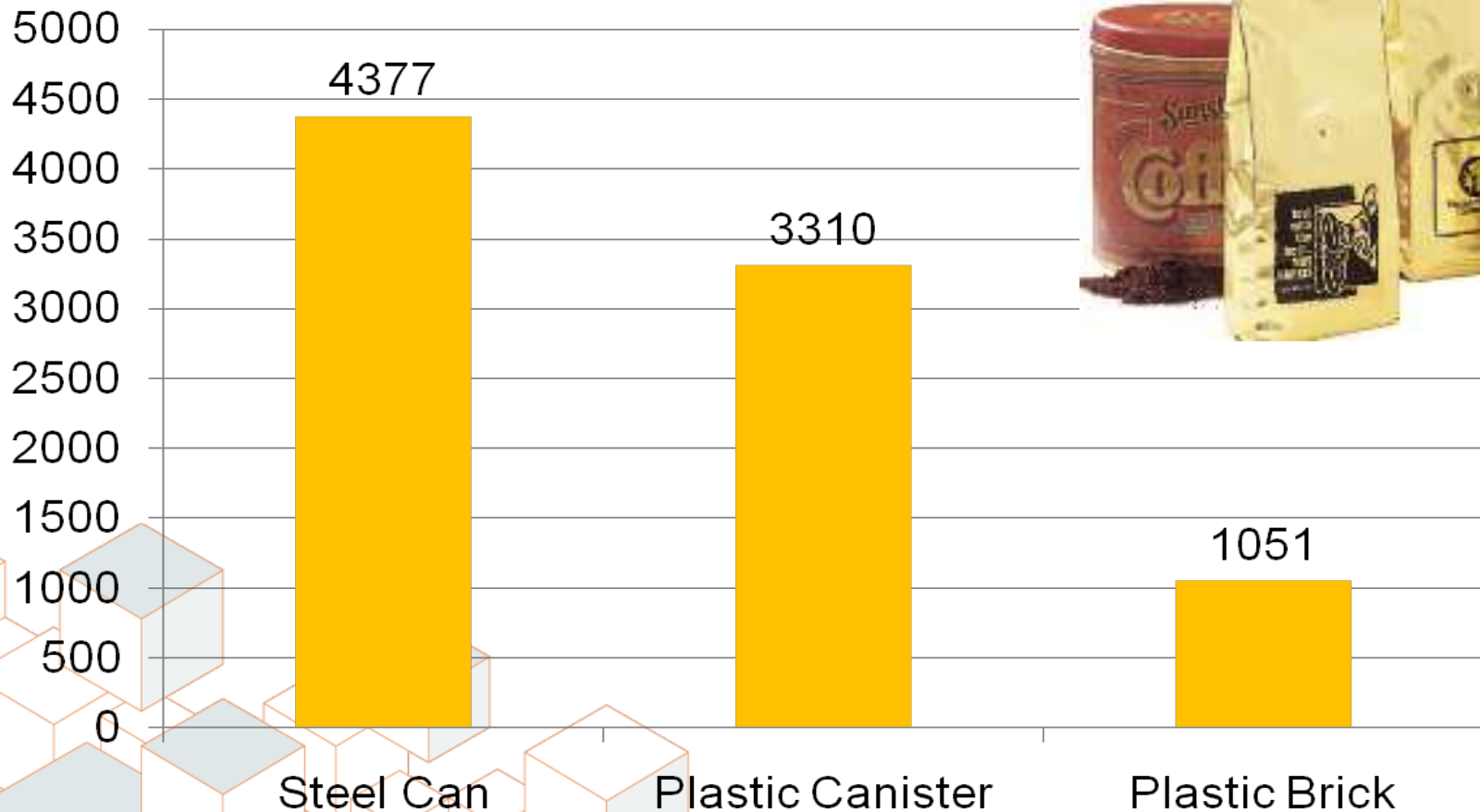


Plastic: A Nominal Energy User



Plastic Packaging: Do More With Less

Greenhouse gas



Source: FRANKLIN ASSOCIATES, September, 2008

Global Environmental Costs (2015)

The Environmental cost to society of alternatives use in the consumer goods sector are 3.8 times more than plastic

Business as Usual

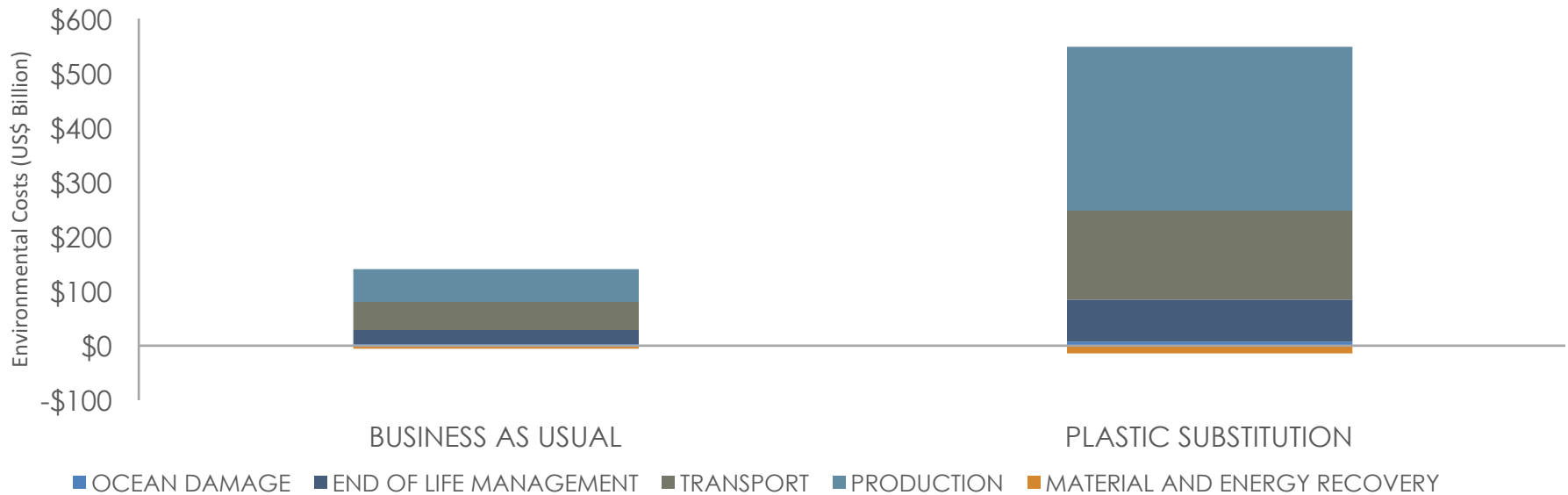
\$139 Billion

For every million of Consumer goods sector revenue, \$4,886 of environmental costs are created

Plastic Alternatives

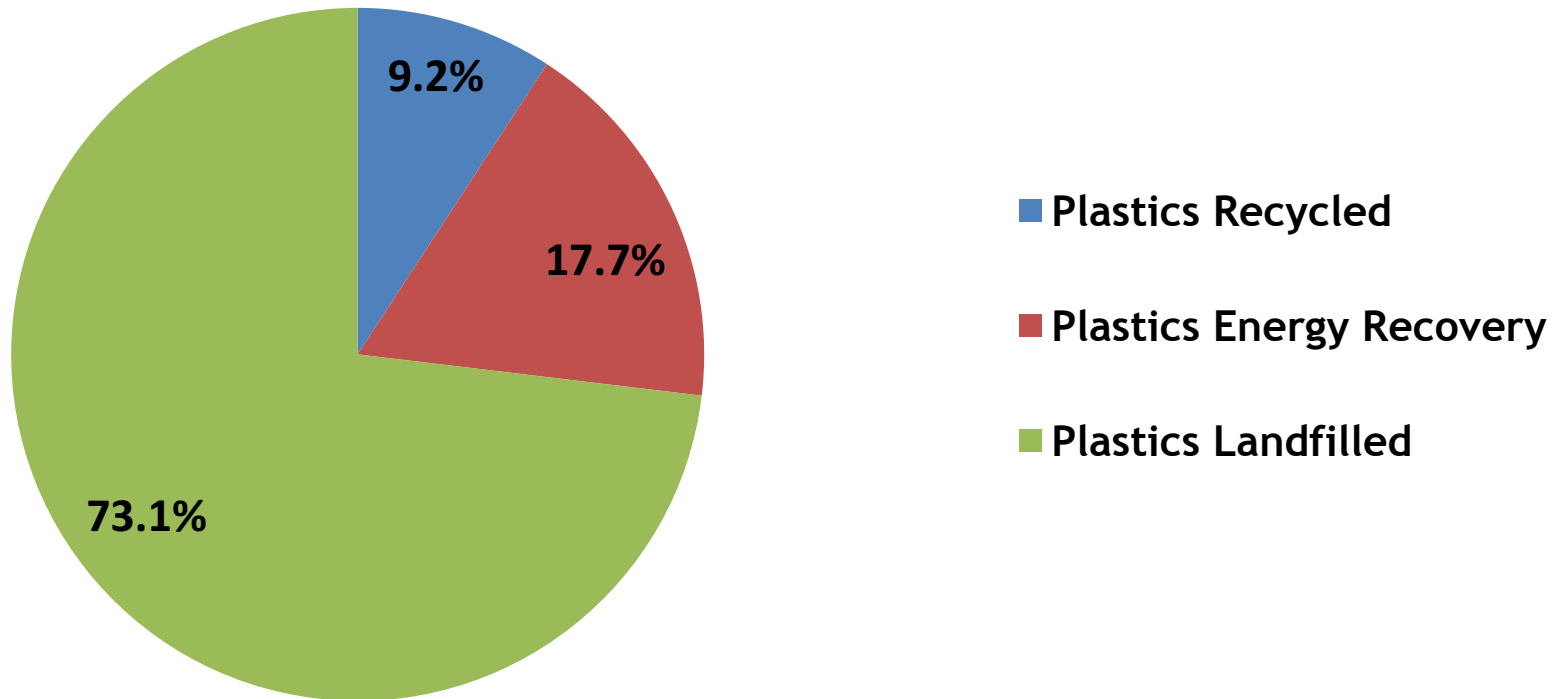
\$533 Billion

For every million of Consumer goods sector revenue, \$18,773 of environmental costs are created



Post-Use Treatment of Plastics

Plastics Generated in Waste Stream



Vision for Plastics Recovery

Natural Gas & Oil

97%
Fuels,
Power,
Other

3%

PLASTIC
PRODUCTION

FABRICATION

USE

CONSUMER
REUSE

POST-USE
COLLECTION

CHEMICAL RECYCLING

ENERGY RECOVERY

RECYCLE



Growing Plastic Recycling



Technical reports and data: rate reports, material recovery for future, mixed-waste



Industry programs: plastic film recycling, common recycling terms, grocery rigids

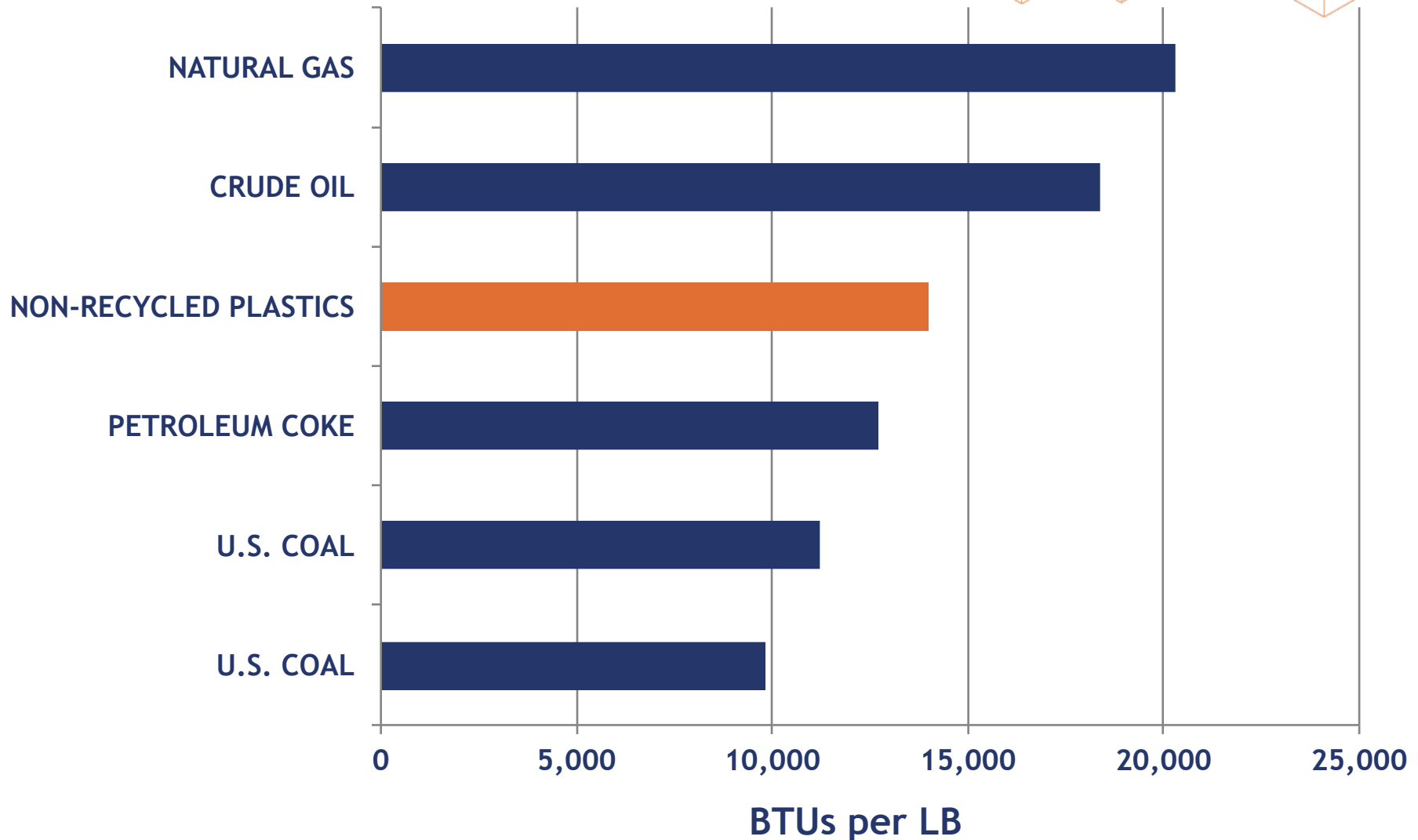


Policy alignment: advance broadly supported recycling policies



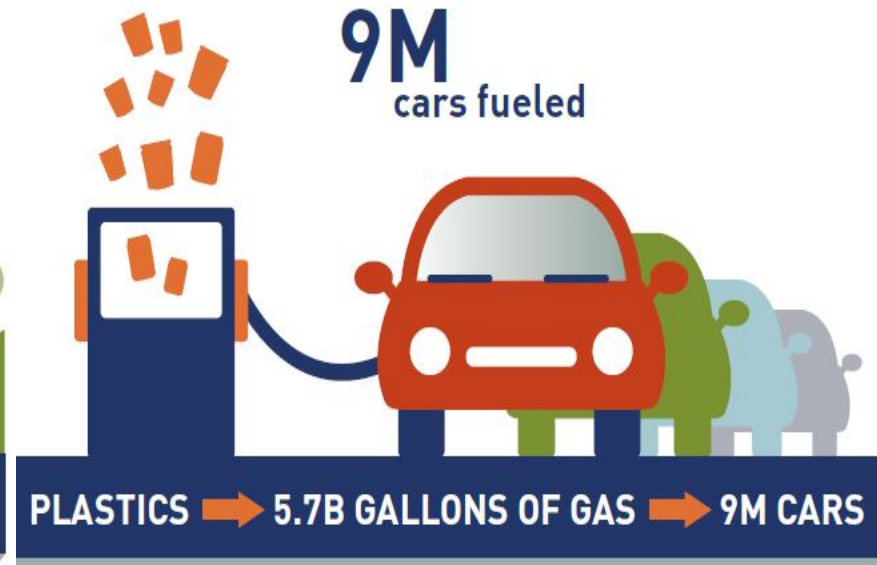
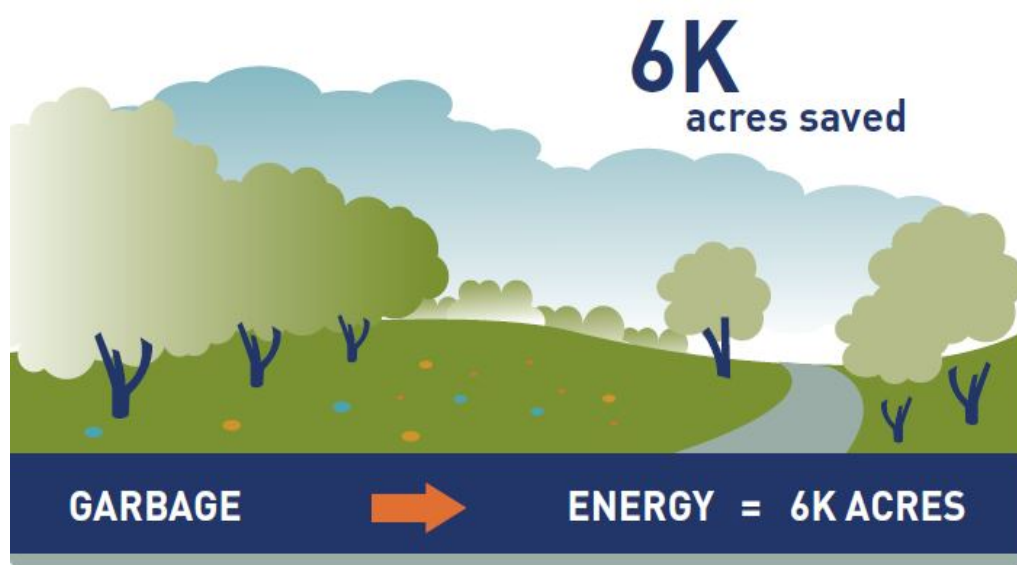
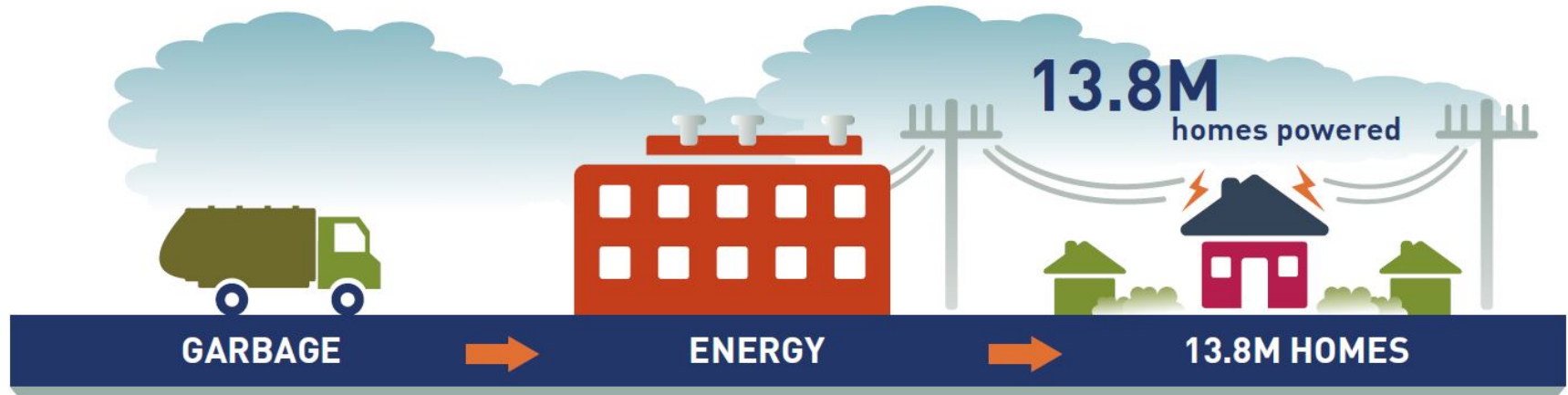
Large scalable partnerships: for carts, education, infrastructure, education

Plastics are Captured Energy





The Power of Waste



Plastics are Captured Energy

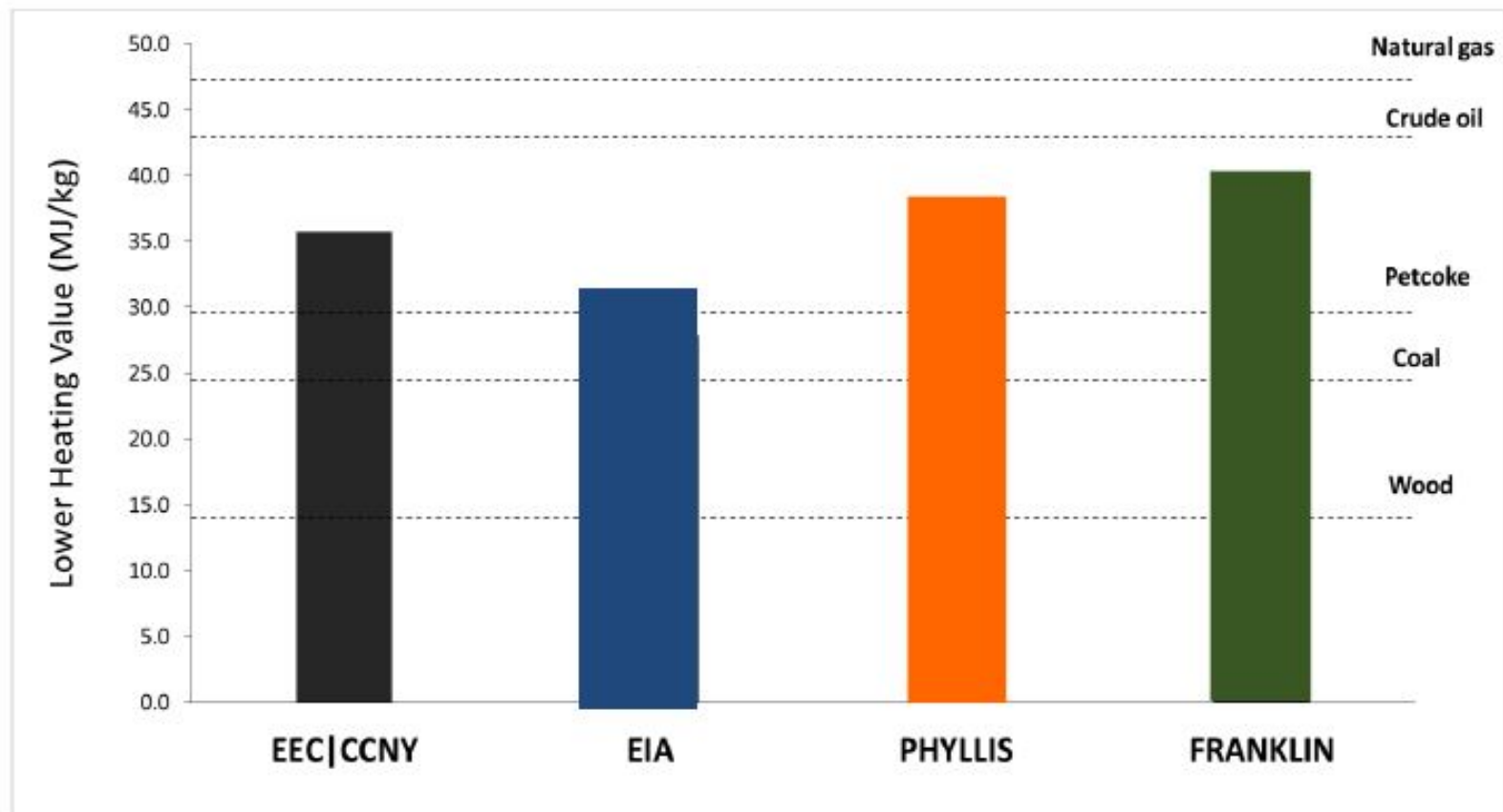
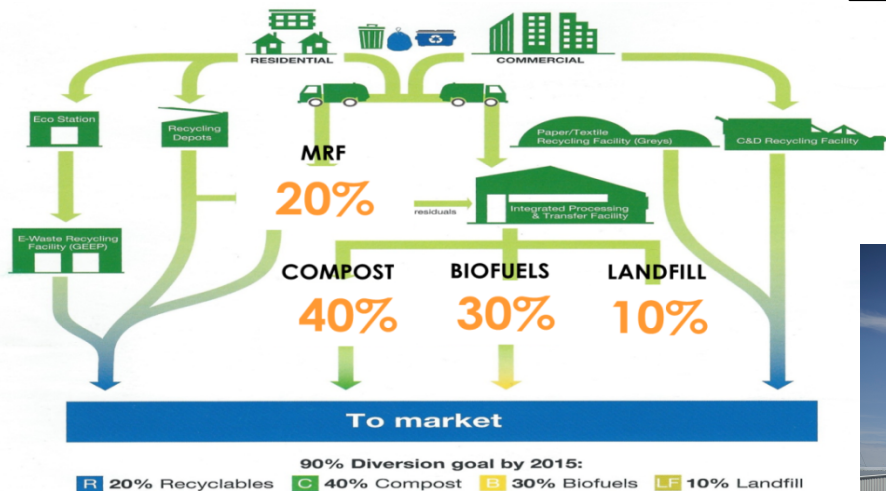


Figure 3: Comparison of EEC|CCNY NRP heating value to literature values and to LHV of conventional energy sources³

Non-Recycled Plastics in Gasification

- Collaboration with EEC | CCNY and City of Edmonton
- Conducted pilot testing at Edmonton test facility



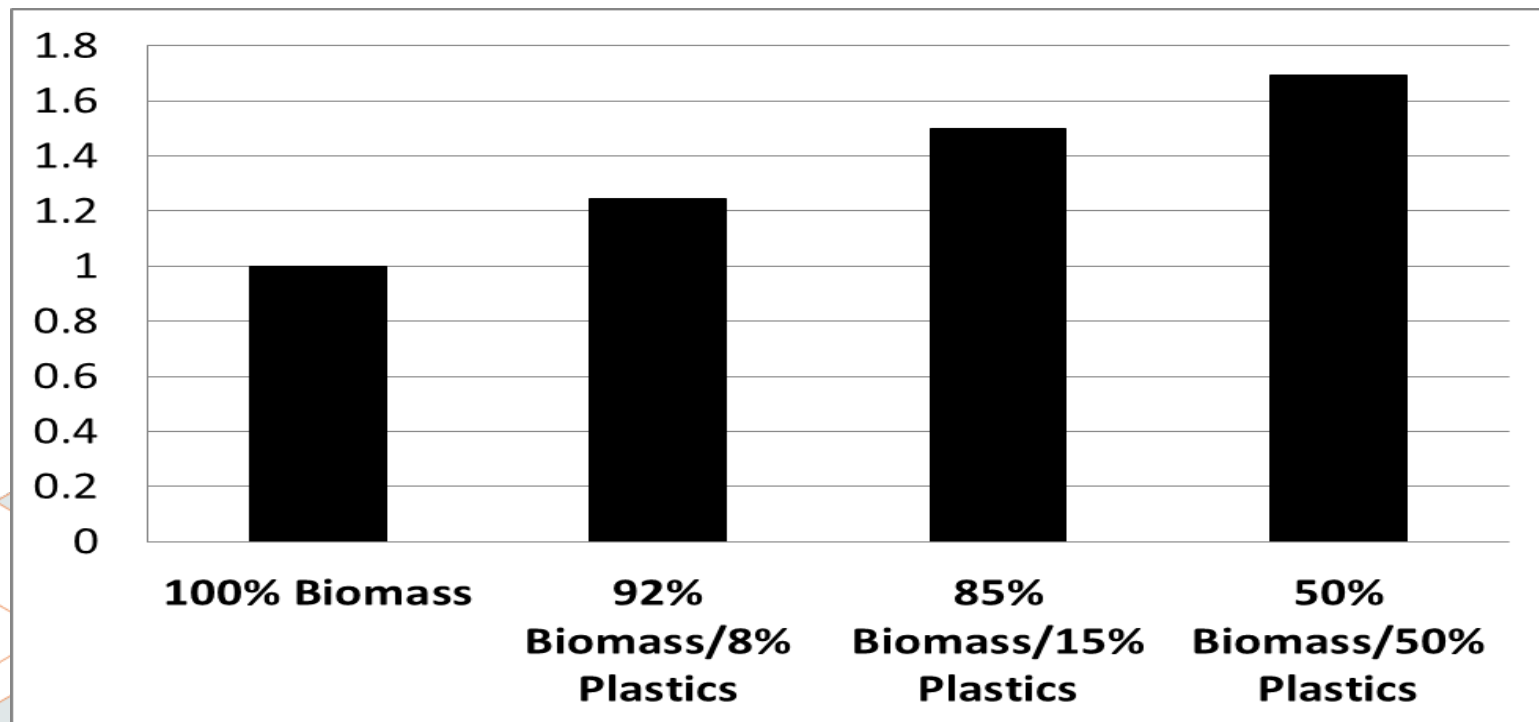
Advanced Energy
Research Facility
where pilot testing
was conducted



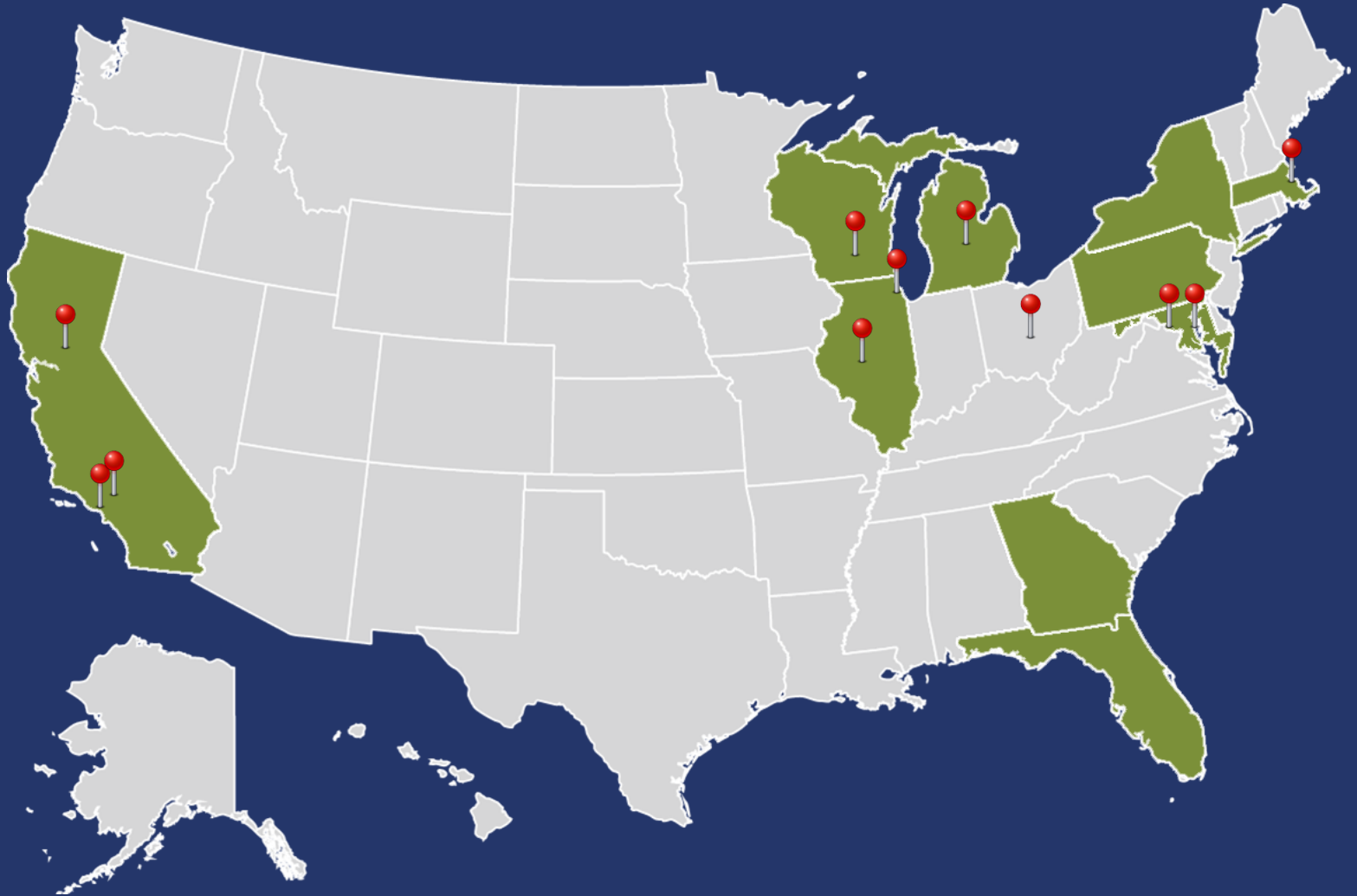
Enerkem's
commercial facility
on site of City of
Edmonton's Waste
Management Center

What was the Impact?

*Ratio of Methanol Production for
Plastic Feedstock Mixture compared to
100% Biomass Feedstock*



Engaging in State Advocacy



Pins indicate ACC testimony, policy outreach, or C2E events



Recycling/Recovery Outlook

- Low energy/commodity prices
- Plastics growth due to shale advantage
- Challenges for recycling businesses/community programs
- Renewed push for “industry pays” (EPR)
 - (unappreciated) light-weighting/source reduction
 - perception of “stagnating” recycling rates

Reasons for Optimism

- State Interest
- S. 2012 Energy Policy Modernization Act
- Sustainable Materials Management
- Leadership from U.S. EPA
- Brandowners



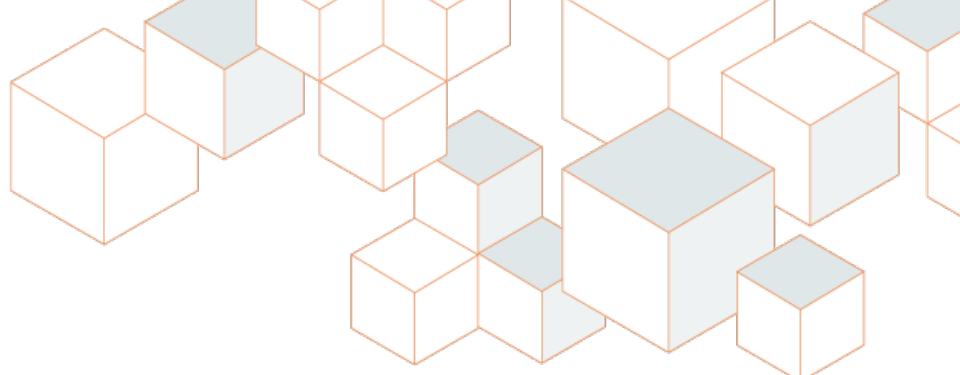
► In Our Opinion

Reprinted from
PLASTICS
RECYCLING UPDATE

EXPANDING the scope

A number of governments and stakeholders are moving aggressively toward sustainable materials management, which assesses far more than just the end-of-life segment of a product's life cycle. Our authors say such action is a significant step forward in sustainability.

BY STEVE RUSSELL AND MIKE GRUBER



Thank You!

Craig Cookson

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Plastics Division

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202.249.6622

