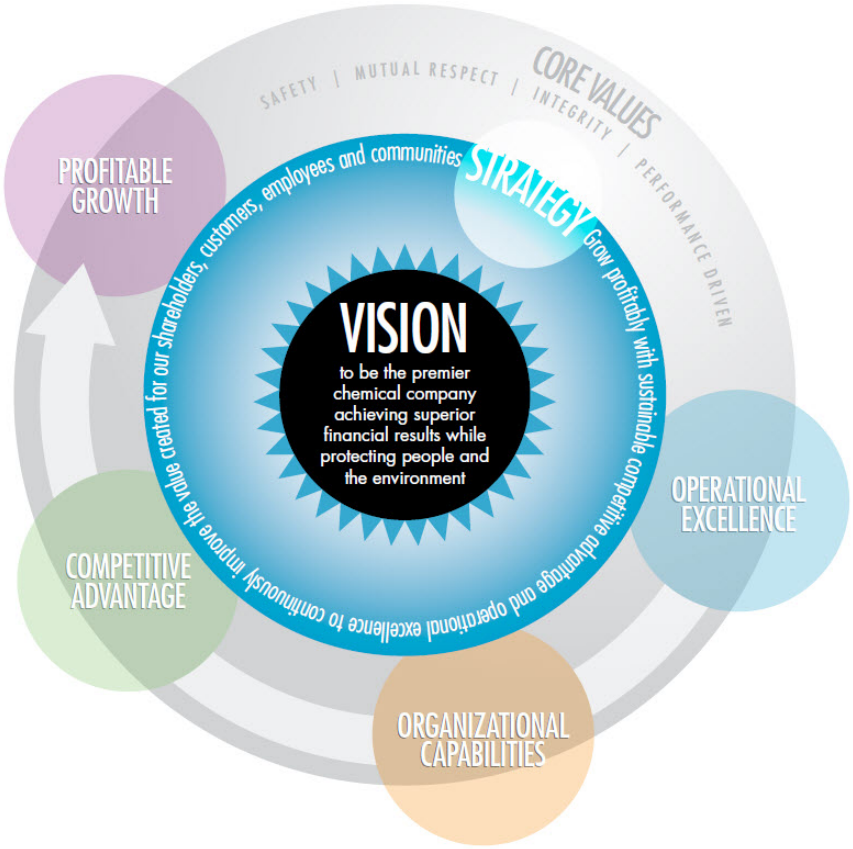
Sustainable Practices Produces Products with a Sustainable Future

UCSB 2016 UCSB Workshop
February 1, 2016

BUILDING A SUSTAINABLE TOMORROW

Chevron Phillips Chemical Company's Business Strategy for Sustainable Growth



Vision – To be the premier chemical company achieving superior financial results while protecting people and the environment.

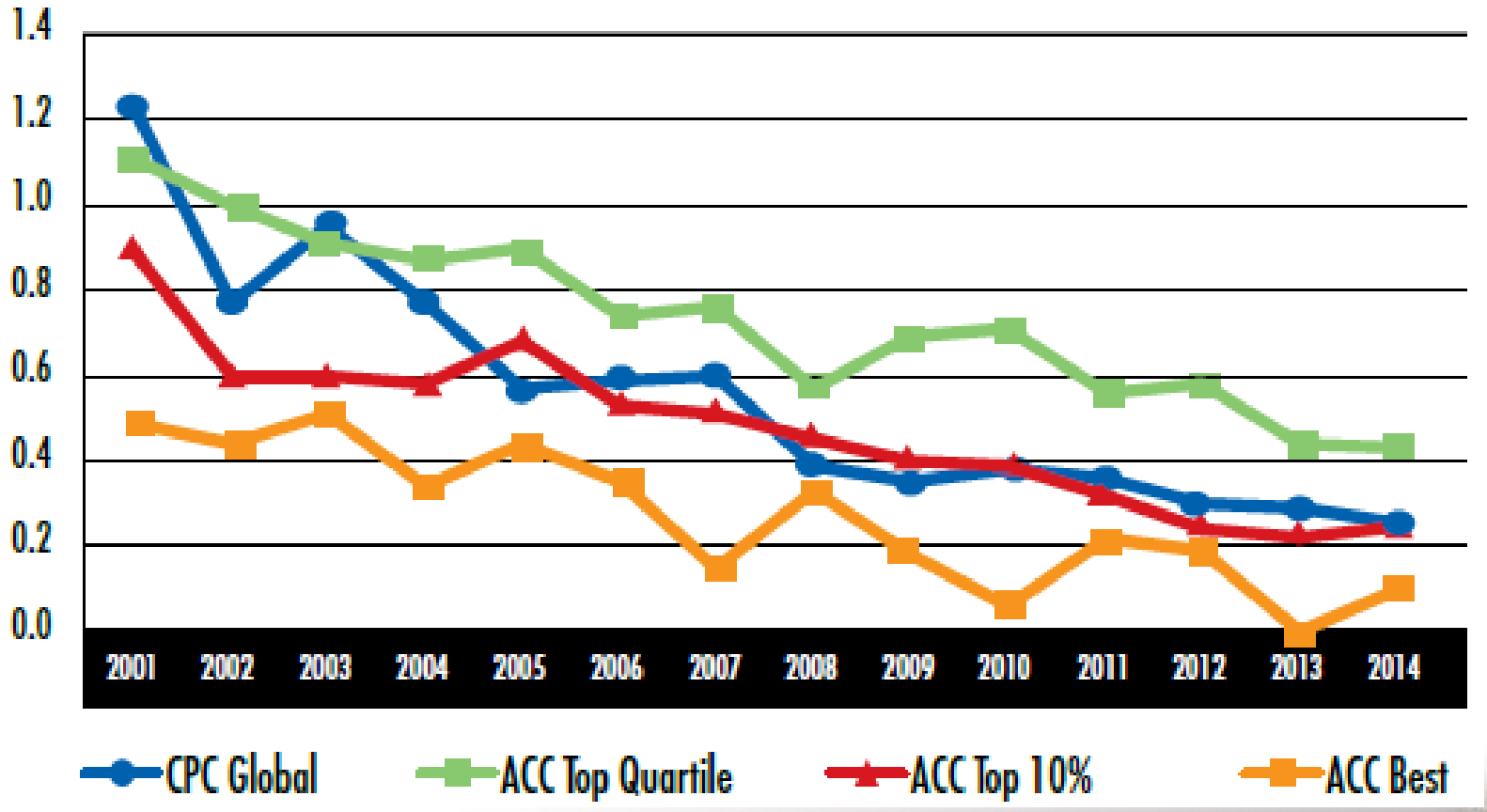
Strategy – Grow profitably with sustainable competitive advantage and operational excellence to continuously improve the value created for our shareholders, customers, employees and communities.

Programs and Practices

- Adoption of Life Saving Rules to compliment an Operational Discipline focus
- Asset Integrity and Reliability Organization
- Engaging our employees in creating a great place to work
- Diversity and Inclusion initiatives
- Construction of our US Gulf Coast Petrochemicals Project
- Completed startup of the worlds largest on-purpose 1-Hexene plant
- Engaging with industry associations to address regional and global issues
- Communicating with stakeholders to assess sustainability performance

Performance Examples

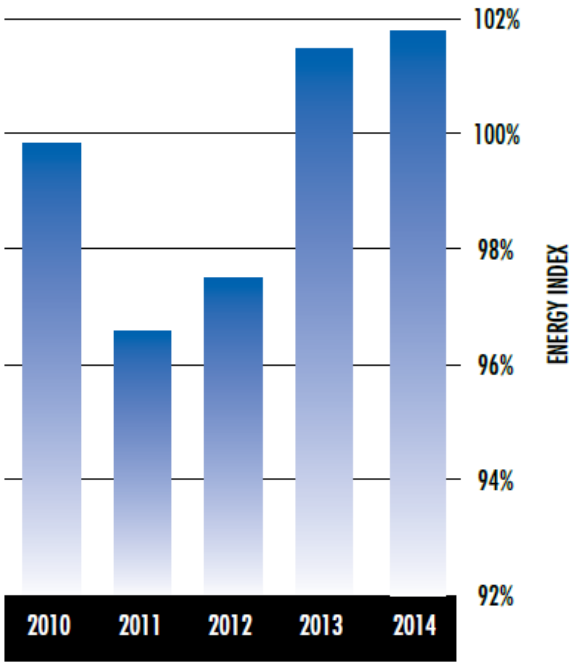
Employee Performance vs. ACC Member Companies[2]



Performance Examples

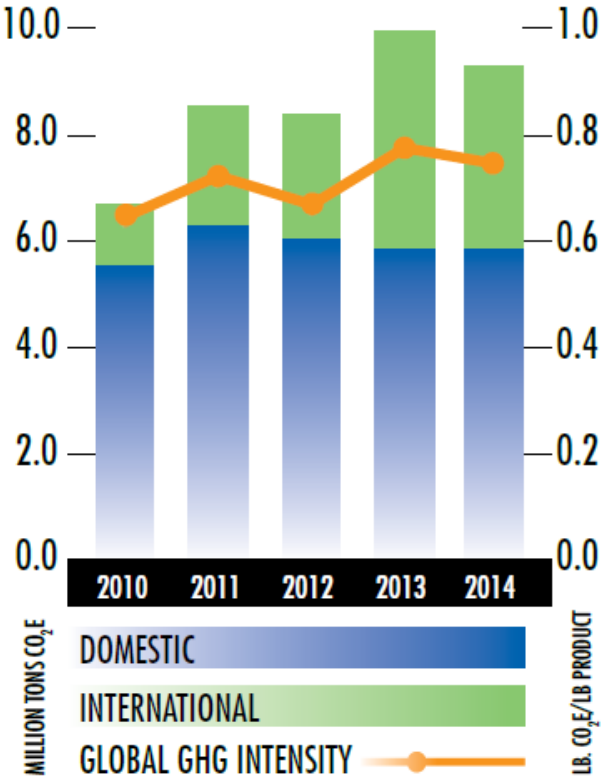
US Manufacturing Energy Intensity[5]

Actual Energy Consumed Divided by Expected Energy Consumption



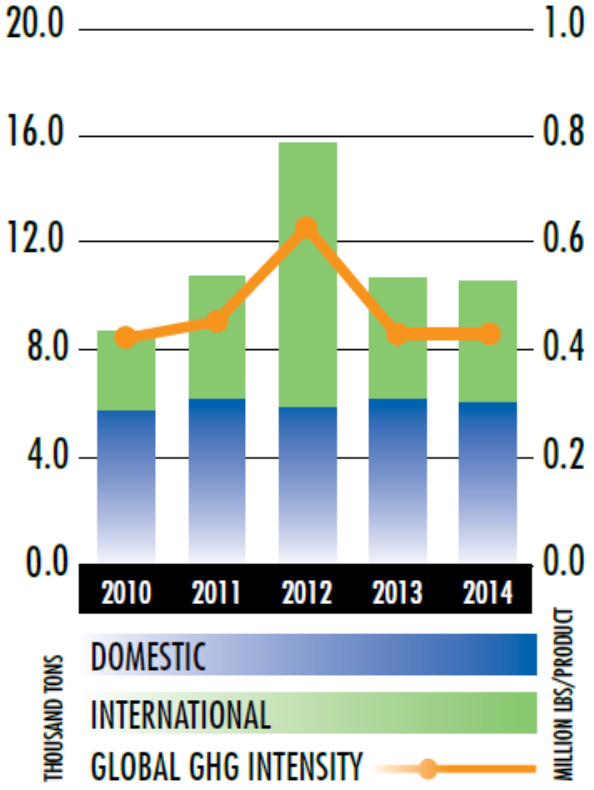
Greenhouse Gas Emissions and Intensity[6]

(direct and indirect)



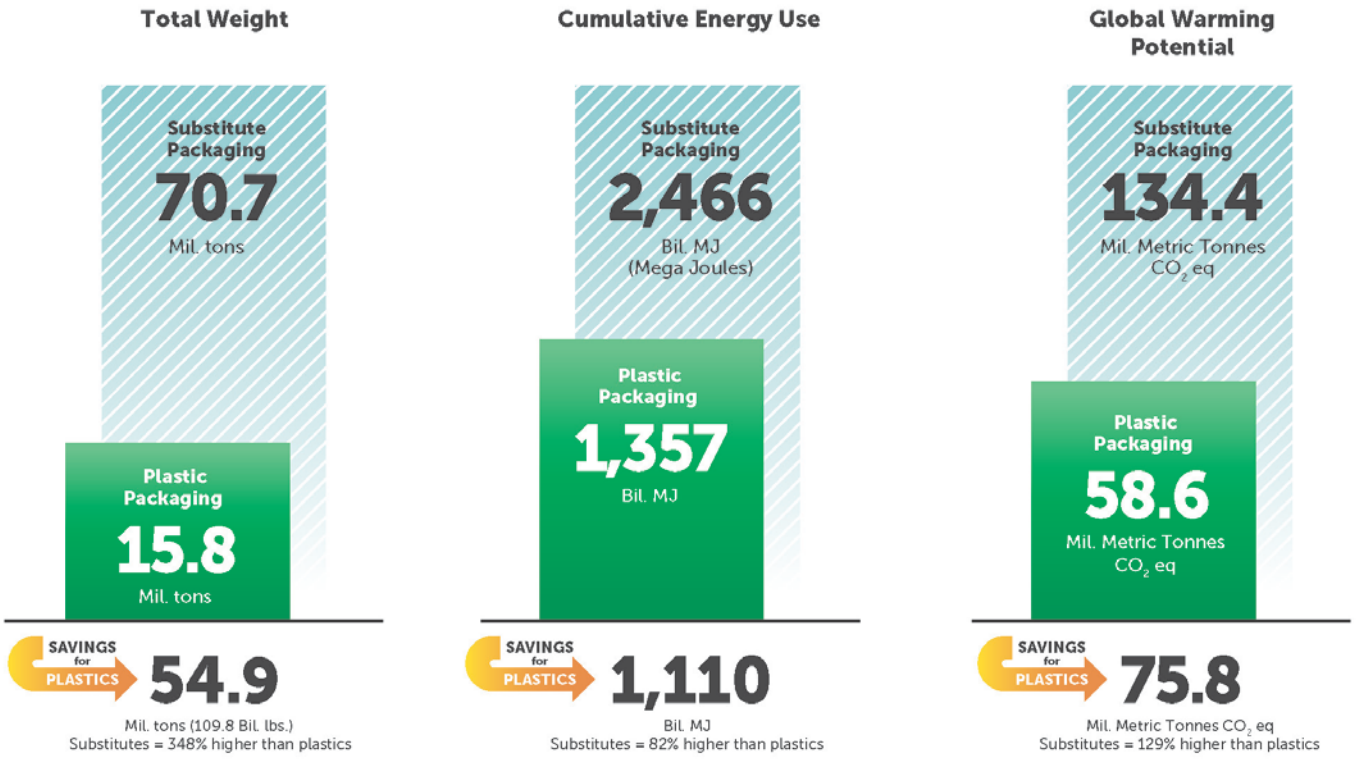
Global Emissions Inventory[7]

(aggregated NO_x, SO_2, CO, VOC, PM10)



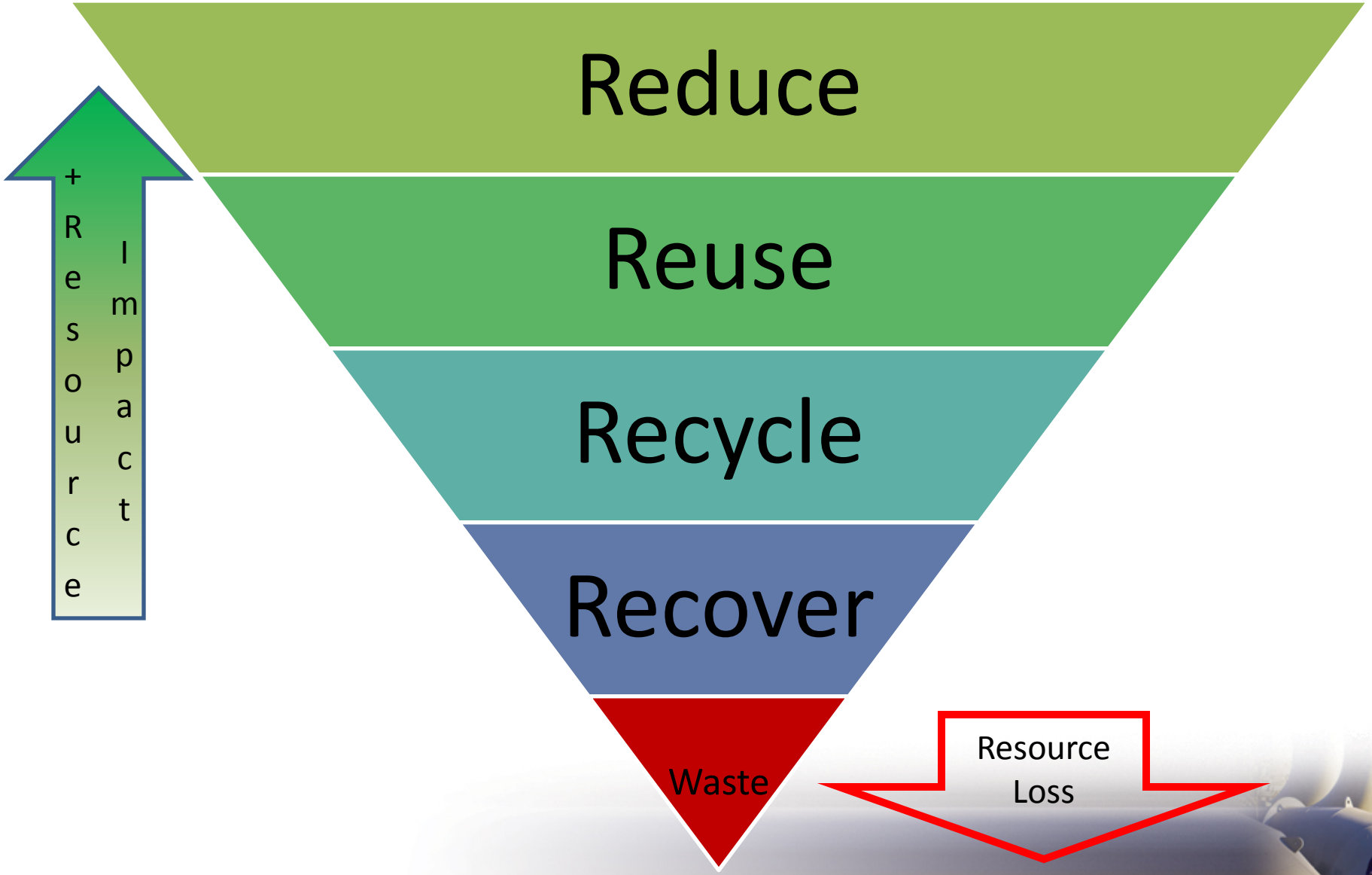
One Example of Plastics Sustainable Value

Common Plastics Packaging Helps Reduce Package Weight, Energy Use and GHG Emissions in U.S.

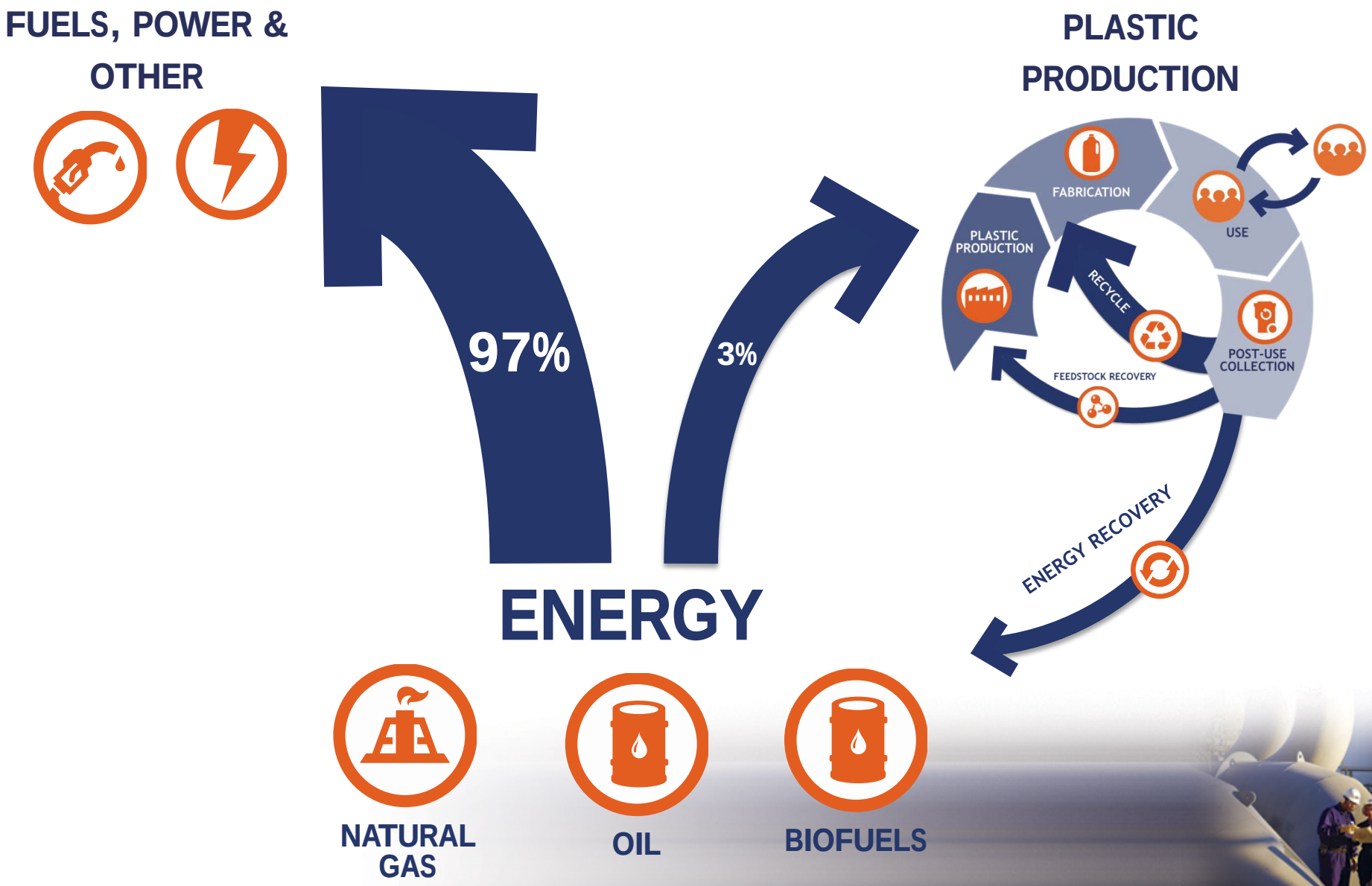


Source: "Impact of Plastics Packaging on Life Cycle Energy Consumption & Greenhouse Gas Emissions in the United States and Canada," Franklin Associates 2014. Study based on 2010 data. This study measures energy use and GHG emissions and is not an ISO 14044 life cycle assessment.

The 4 R's of a Products Sustainable life



Vision for Plastics Recovery



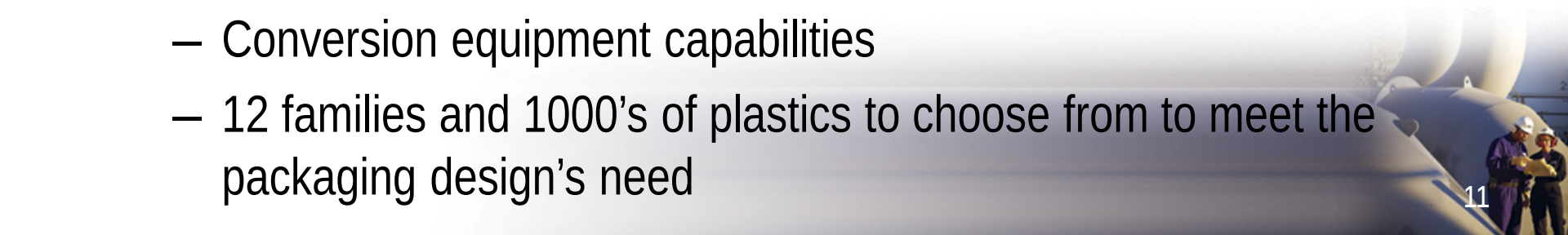
Vision for Plastics Recovery

Why isn't it Easy to Recycle and Recover?

- Recyclables need to reach sorting facilities in a consistent quality and volume
- Products need to be economically sortable
- Contamination in sorted materials is equal to lost value
- More contamination leads to higher processing cost
- Use of recycled material hinges on the ability to supply it in a consistent volume and quality

Why isn't Packaging Easily Sorted and Consistent in its Make up?

- Package design has many parameters
  - Product protection
  - Brand identification
  - Consumer preference
  - Regional environmental conditions
  - Regional regulations
  - Stacking Requirements
- Plastics conversion into a finished product has many options
  - Conversion type
  - Conversion equipment capabilities
  - 12 families and 1000's of plastics to choose from to meet the packaging design's need



Paths to a More Sustainable Plastics Future

- Analyze applicability of all 4 R's
- Support education about beneficial use and disposition across the lifecycle of your products
- Support recycling and discussion of infrastructure requirements
- Support recovery where it makes sense
- Improve automation and sorting technologies
- Find paths to recover materials like EPS and PVC

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