

# Using the US Life Cycle Inventory Database – Data Provider Perspective (Plastics Industry)

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# Key Questions & Observations

- Advantages and disadvantages of making data public
  - Why an LCI program for plastics industry?
  - Plastics contribution to US LCI Database
- Value of a central, standard, public database
  - What are customer and stakeholder interests in plastics industry LCI data
- Lesson's learned from the plastics data
  - Data collection issues
  - Data comparison to regional (global) databases

# What are customer and stakeholder interests in plastics industry LCI data?

- Responding to stakeholders
  - Customers (auto, packaging, building & construction)
  - Government Agencies – EPA EPP program, USDA Biobased Products Procurement Preference Program
  - Local & state policy makers – landfill diversion/waste management policy
  - U.S. Green Building Council “LCA in LEED” Program
  - Critics
- Tool to promote plastics role in a sustainable future
  - Allows sound sustainability decisions to be made
- Benchmarking within the plastics industry
  - Areas for improvement compared to the industry

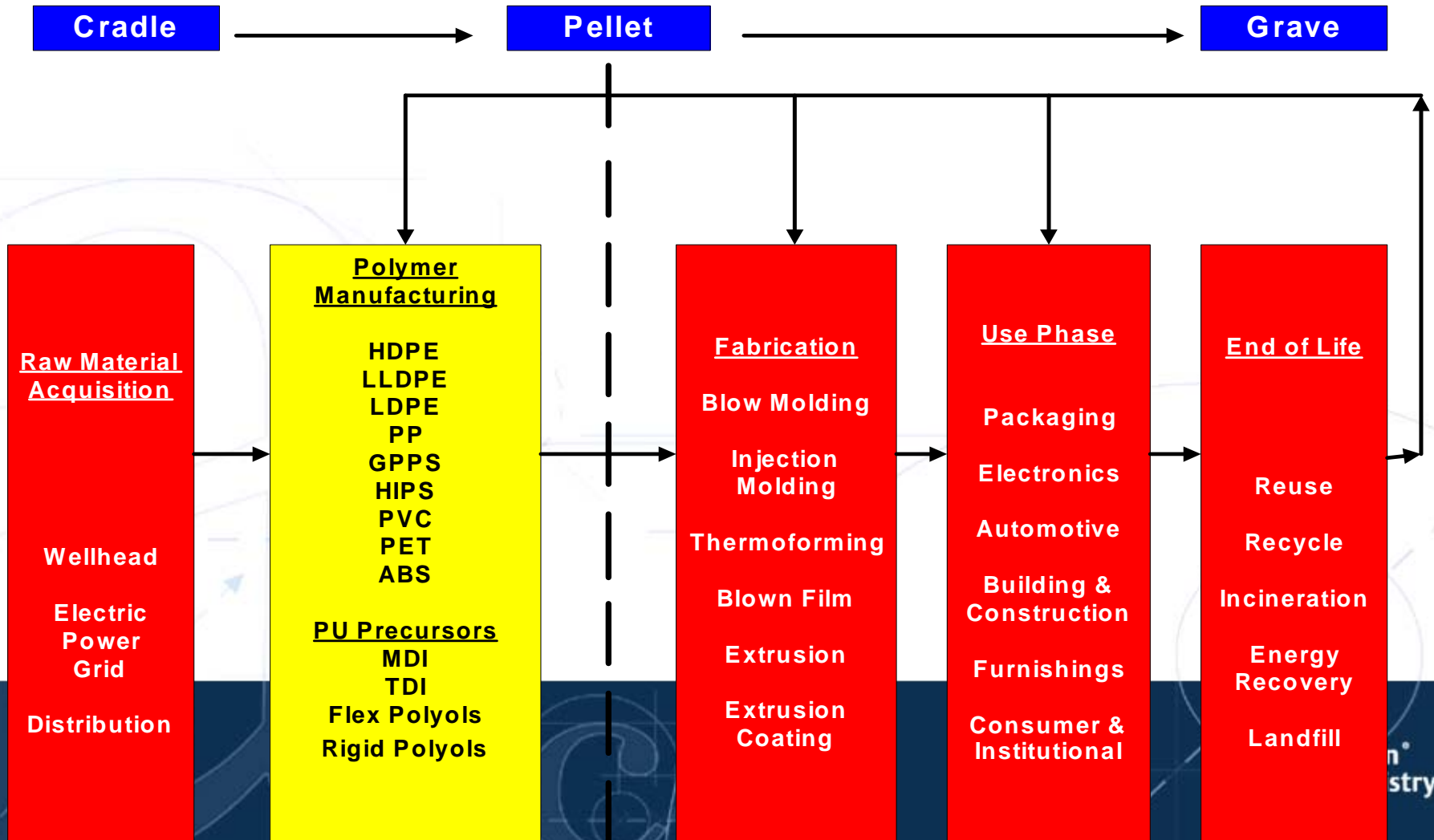
# Plastics Division of ACC Contribution to US

## LCI Database Project - [www.nrel.gov/lci](http://www.nrel.gov/lci)

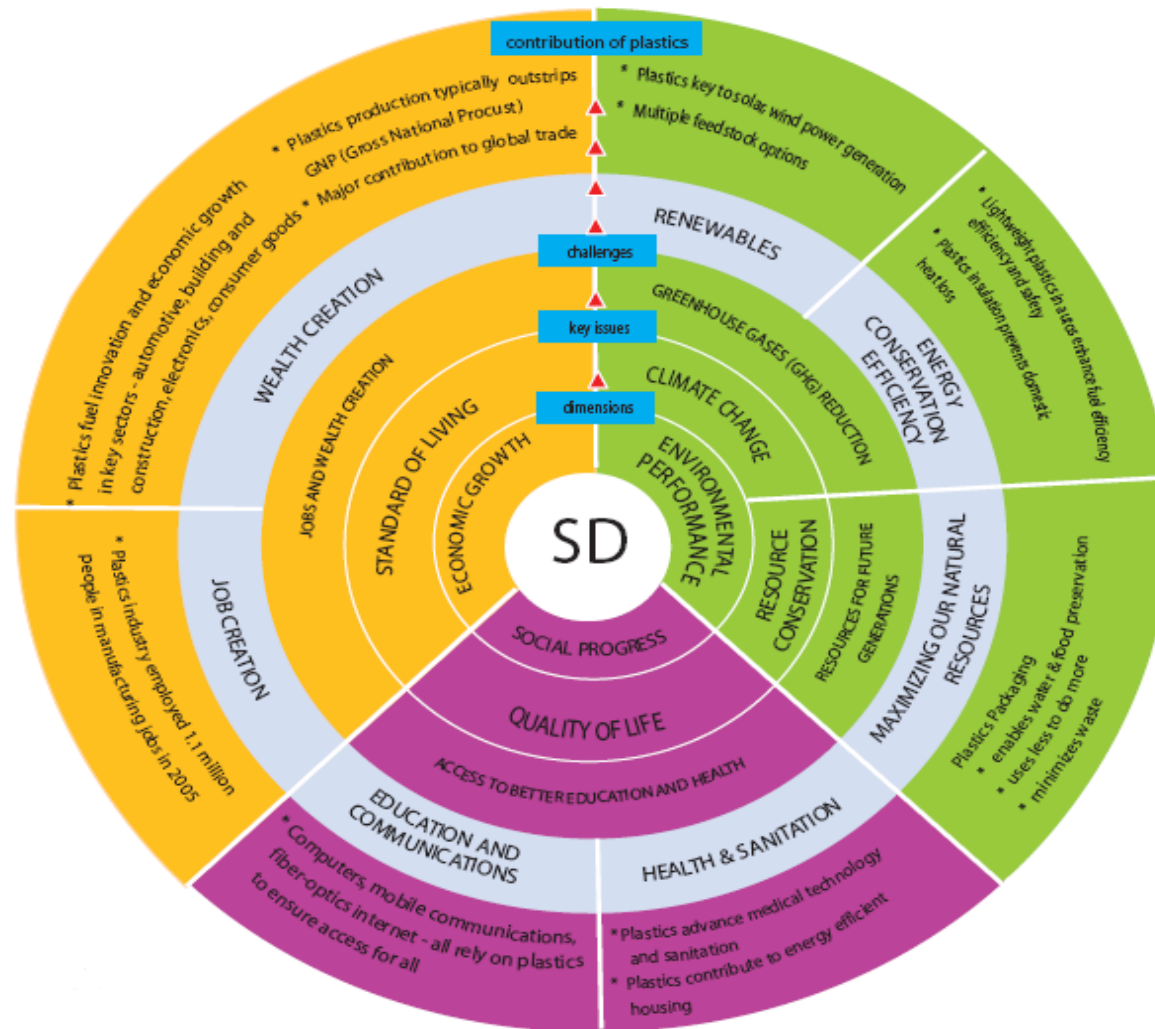
- Develop unit process data for all steps from raw material extraction through production of resin or precursor
  - Primary data provided by member companies and suppliers
  - Secondary data from public sources
- Utilize fuels and energy data developed under NREL contract
- Cradle-to-resin linked process trees will be developed
- PD of ACC LCI data converted to “Ecospold” for ease of integration
- Elements of US LCI Database
  - Common processes (energy production, energy use, end-of-life modules)
  - Commodity level manufacturing for commonly used materials and products (unit process data; cradle-to-gate scope)
  - Standard transformation processes (casting, stamping, pressing, painting, etc.)

# Plastics Division of ACC Contribution of Data to U.S. Life Cycle Database Project (<http://www.nrel.gov/lci>)

## Polymer & Polyurethanes Precursors LCI Database



# Plastics are Essential(2) Sustainable Development



Adapted from *Plastics Europe* document

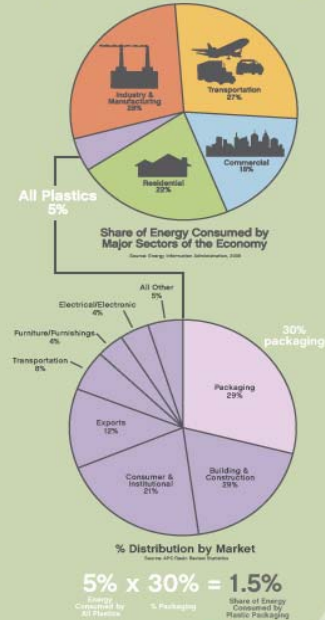
# Wal-Mart Sustainability Exhibit

## plastic packaging

efficient and sustainable



Only 1.5% of the energy consumed in the U.S. is used to produce plastic packaging



## plastic packaging scores high on sustainability

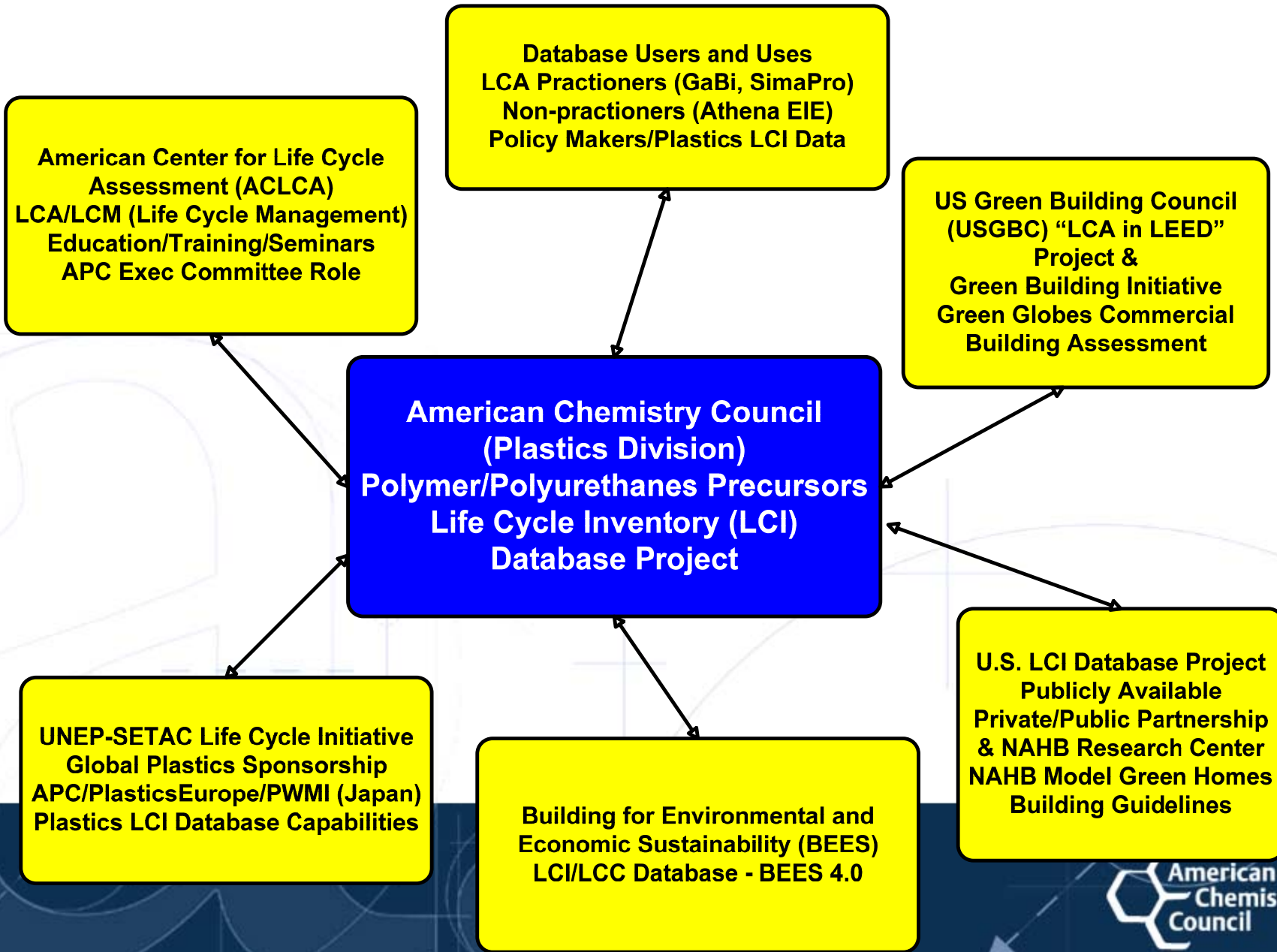
- ✓ **Material Value**  
The value of recyclable scrap plastic film continues to grow as new markets emerge.
- ✓ **Product-Package Ratio**  
Plastics' light-weighting capabilities help to maximize the product-to-package weight ratio, a significant indicator of sustainability.
- ✓ **Cube Utilization**  
Plastic stretch wrap helps reduce the volume of secondary packaging, helping minimize recycled or discarded material.



- ✓ **Transportation**  
For every seven trucks needed to deliver paper bags - only one truck is needed for the same number of plastic bags, helping to save energy and reduce emissions.
- ✓ **Recycling**  
In 2005, more than 2.1 billion pounds of plastic bottles were recycled. Approximately 80 percent of Americans have access to plastics recycling programs.  
Recycling does not exist in all areas. Check to see if recycling is available in your community.
- ✓ **Energy Recovery**  
The BTU value of plastics for waste-to-energy recovery is equivalent to fuel oil.
- ✓ **Innovation**  
America's plastics producers are committed to delivering innovative products, processes and technologies that help to build a more sustainable society.

American  
Chemistry  
Council

The Plastics Division, ACC  
Rigid Plastic Packaging Group



# Lessons learned from plastics data project

- **Data Collection**
  - Be as comprehensive in # of plants (we used minimum of 3/resin)
  - Data collection takes time (competing against other plant operation priorities) – build in sufficient time in project for data collection/review
- **Regional vs. Global**
  - For a global commodity like plastics, take time to compare regional data (e.g., U.S. vs. Europe) and be prepared to address/explain differences in results
- **Education of Full Value Chain**
  - ACC Plastics Division provided cradle-to-pellet data
  - Seminars (like this) and meetings with downstream groups (e.g., SPI) needed to encourage development of full product life cycle information