

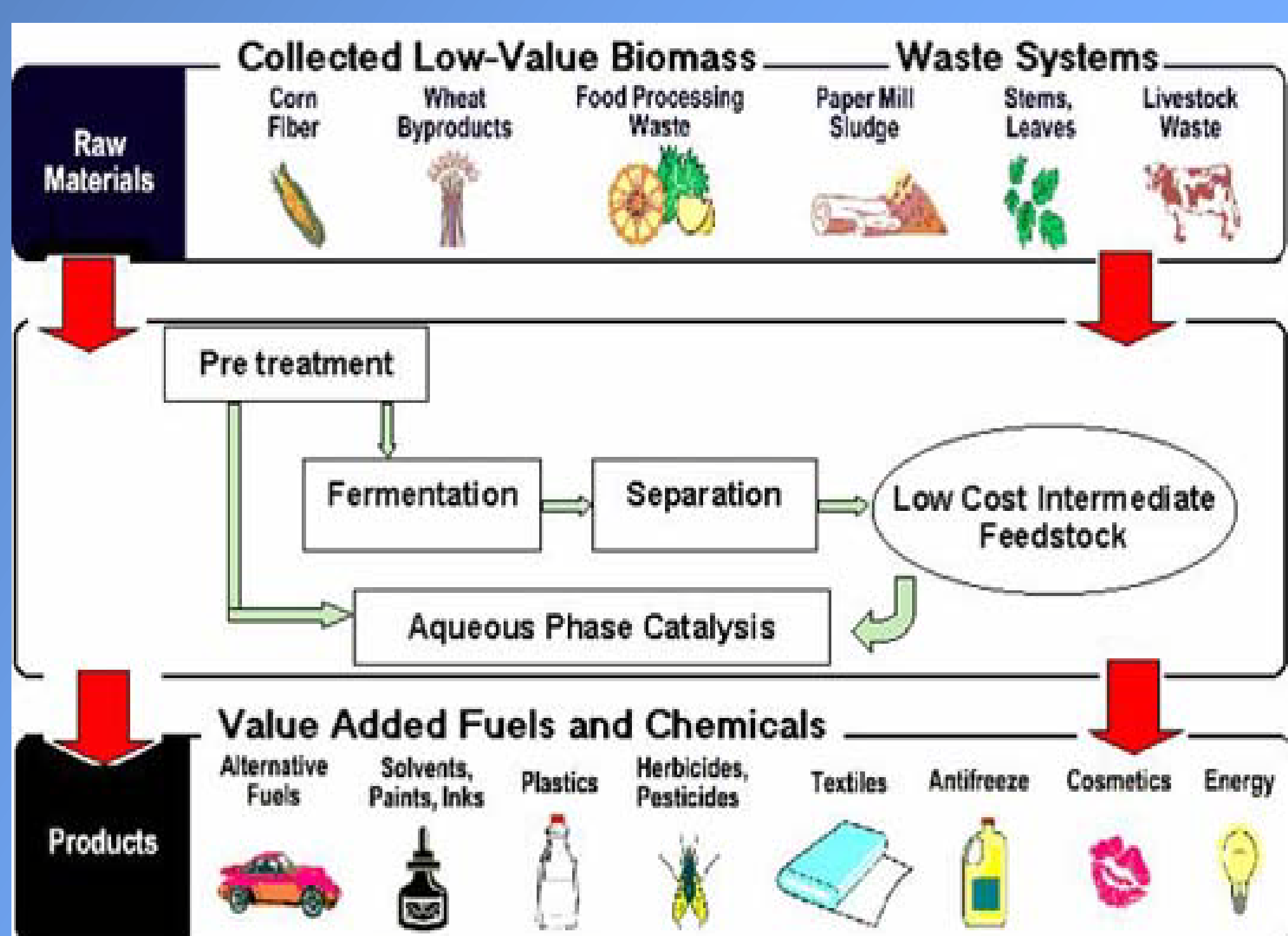
Renewable Feedstocks

Definition

A feedstock is a raw material required for an industrial process; a renewable feedstock is a raw material that can be reused and is less harmful to the environment. Renewable feedstocks also reduce our dependency of foreign oil.

Biomass

Refers to plant and plant-derived materials, in general, the fermentation of sugar from crops such as corn and sugarcane providing oxygenated organics. Chemicals produced from biomass include organic acids, textile fibers, adhesives, lubricants and greases and soy-based inks.



Soy-Based Ink

Soy-ink is an ink made from soy beans. Soy-ink is a more environmentally friendly version of ink than petroleum based inks. Soy-based ink is available in bright colors and improves the lifespan of printers. Overall the soy-based inks are more economical.

Benefits

- Reduce greenhouse gas emissions
- Renewable
- Provide energy security
- Support local agriculture
- Reduce waste going to landfill

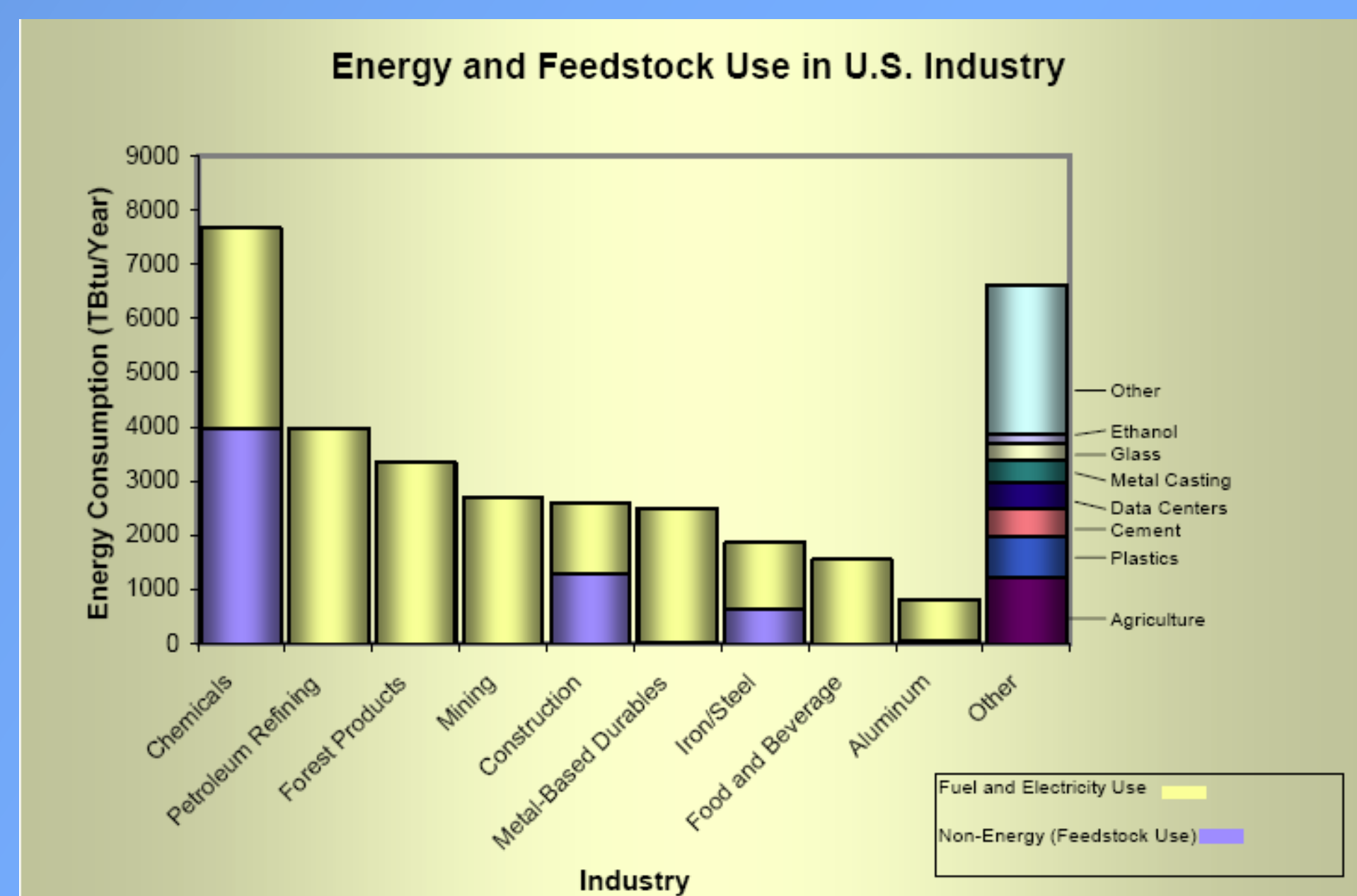


Exhibit 1: Industrial Use of Energy
(Source: DOE Annual Energy Outlook 2007 Supplemental Tables: Table 27)

Future Research

- Improve catalyst performance to increase desired product yield
- Research needed to reduce production costs
- Increase rate of cellulose degradation by bacteria to increase commercial chemical production
- Development of enzymes that can better utilize biomass wastes

Green Chemistry Principle #4

Use renewable feedstocks: Use raw materials and feedstocks that are renewable rather than depleting. Renewable feedstocks are often made from agricultural products or are the wastes of other processes; depleting feedstocks are made from fossil fuels (petroleum, natural gas, or coal) or are mined.

