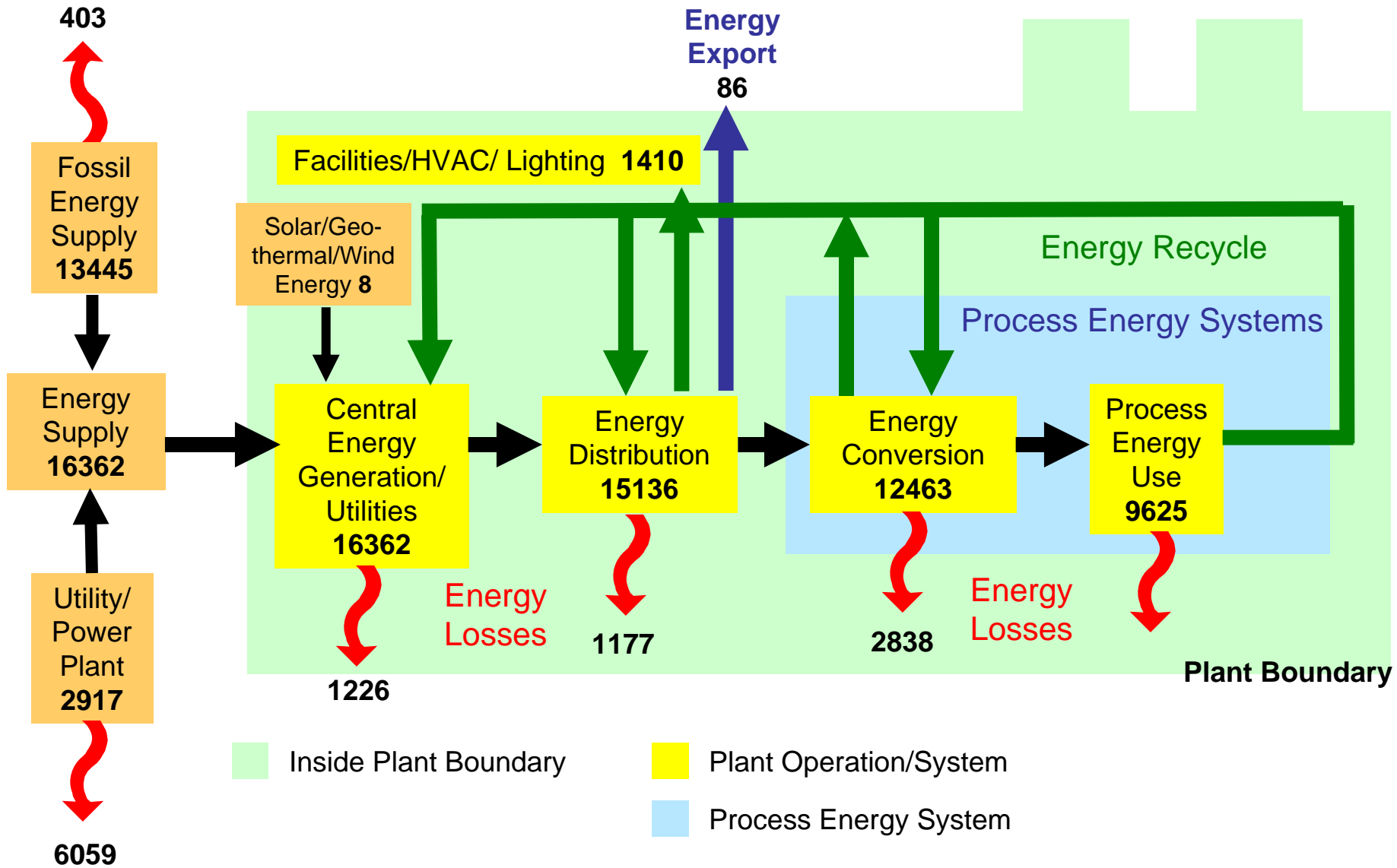
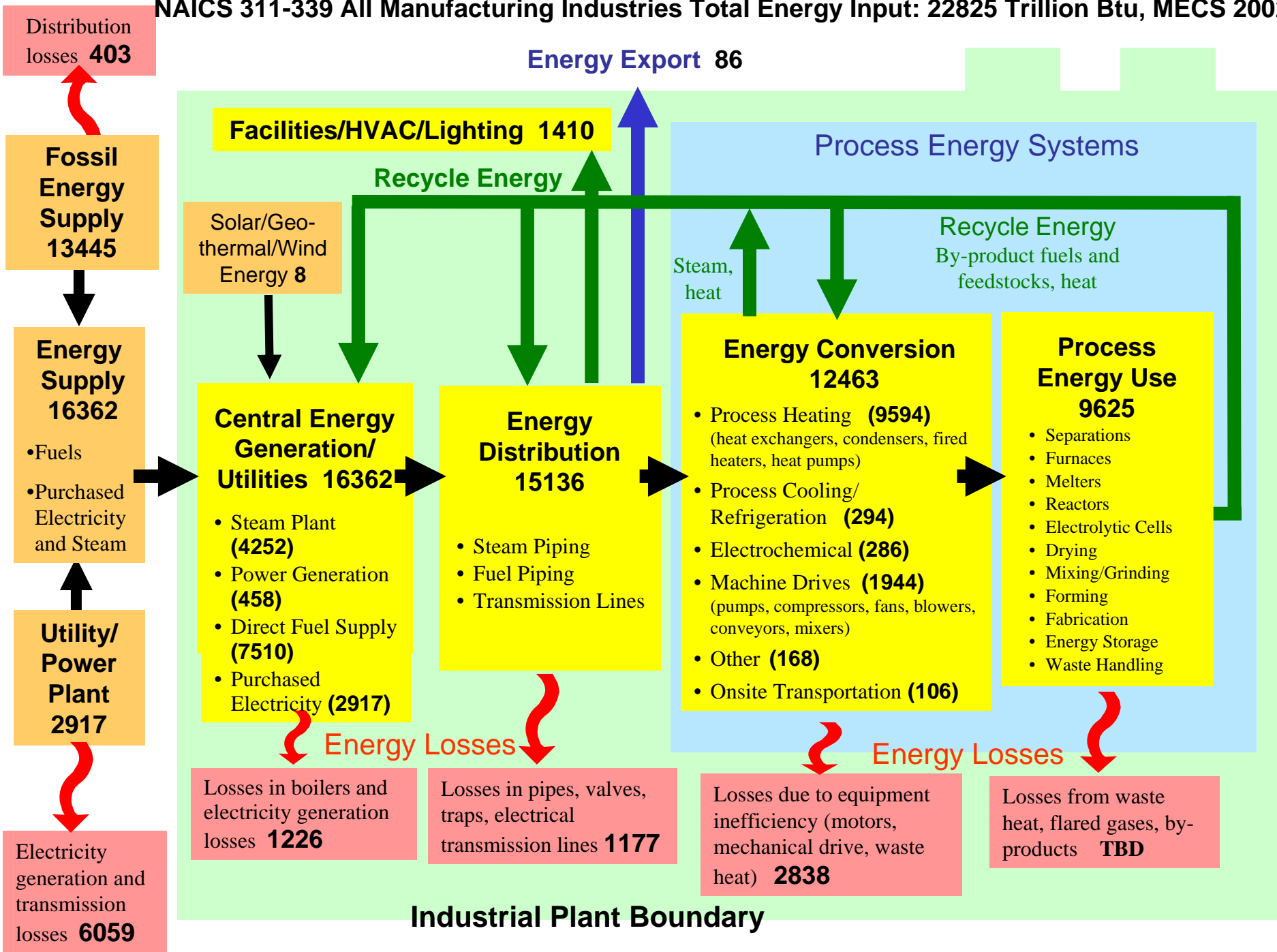


NAICS 311-339 All Manufacturing Industries Total Energy Input: 22825 Trillion Btu, MECS 2002



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Distribution losses **403**

Fossil Energy Supply
13445

Energy Supply
16362

- Fuels
- Purchased Electricity and Steam

Utility/Power Plant
2917

Electricity generation and transmission losses **6059**

Energy Export 86

Facilities/HVAC/Lighting 1410

Recycle Energy

Solar/Geo-thermal/Wind Energy **8**

Process Energy Systems

Recycle Energy
By-product fuels and feedstocks, heat

Steam, heat

Central Energy Generation/Utilities 16362

- Steam Plant (**4252**)
- Power Generation (**458**)
- Direct Fuel Supply (**7510**)
- Purchased Electricity (**2917**)

Energy Distribution 15136

- Steam Piping
- Fuel Piping
- Transmission Lines

Energy Conversion 12463

- Process Heating (**9594**)
(heat exchangers, condensers, fired heaters, heat pumps)
- Process Cooling/Refrigeration (**294**)
- Electrochemical (**286**)
- Machine Drives (**1944**)
(pumps, compressors, fans, blowers, conveyors, mixers)
- Other (**168**)
- Onsite Transportation (**106**)

Process Energy Use 9625

- Separations
- Furnaces
- Melters
- Reactors
- Electrolytic Cells
- Drying
- Mixing/Grinding
- Forming
- Fabrication
- Energy Storage
- Waste Handling

Energy Losses

Losses in boilers and electricity generation losses **1226**

Losses in pipes, valves, traps, electrical transmission lines **1177**

Energy Losses

Losses due to equipment inefficiency (motors, mechanical drive, waste heat) **2838**

Losses from waste heat, flared gases, by-products **TBD**

Industrial Plant Boundary

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