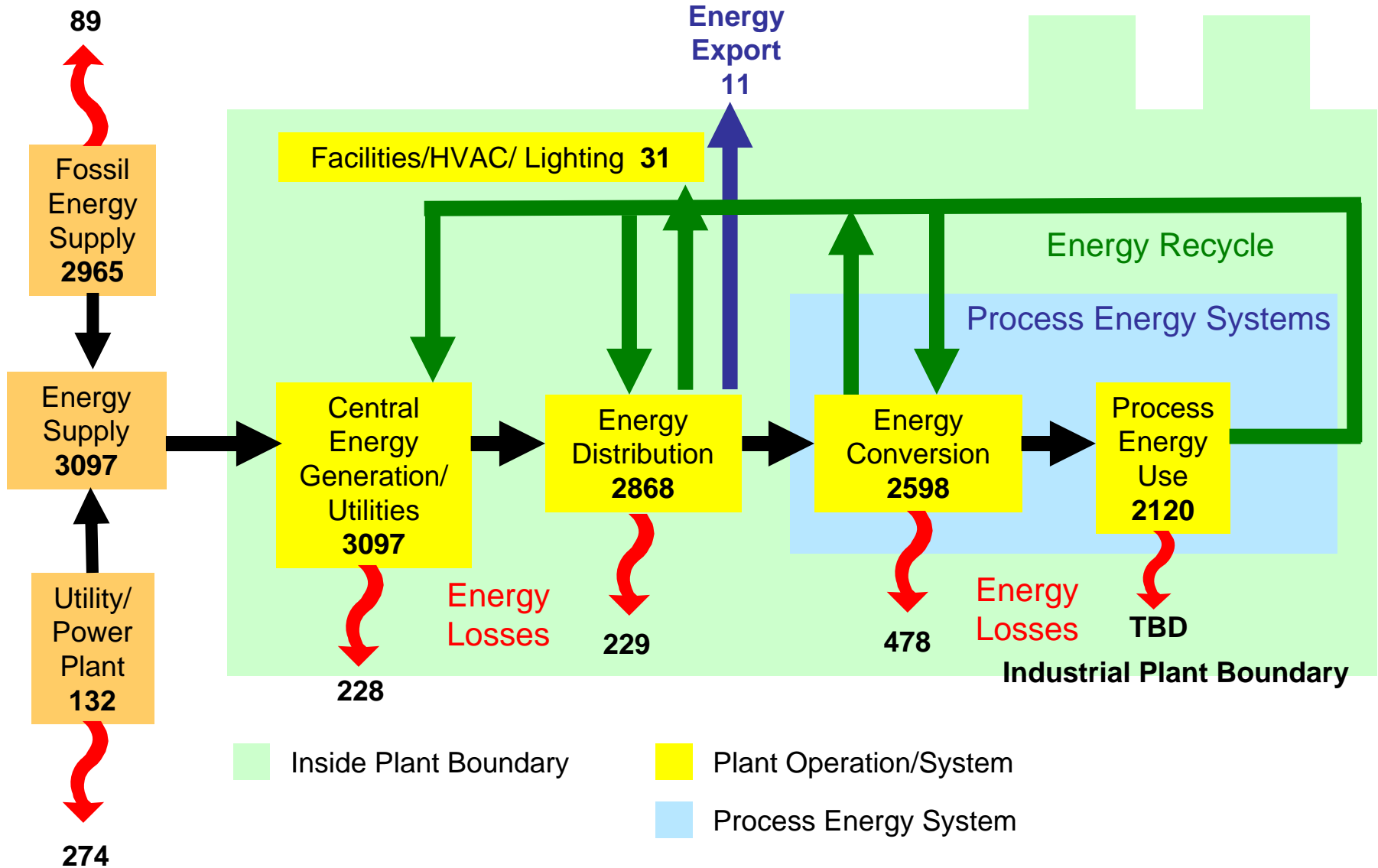


NAICS 324110 Petroleum Refining Total Energy Input: 3460 Trillion Btu, MECS 2002



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Distribution losses **89**

Fossil Energy Supply **2965**

Energy Supply **3460**

- Fuels
- Purchased Electricity and Steam

Utility/Power Plant **132**

Electricity generation and transmission losses **274**

Energy Export **11**

Facilities/HVAC/Lighting **31**

Recycle Energy

Process Energy Systems

Central Energy Generation/ Utilities 3097

- Steam Plant (**837**)
- Power Generation (**56**)
- Direct Fuel Supply (**1844**)
- Purchased Electricity (**132**)

Energy Distribution 2868

- Steam Piping
- Fuel Piping
- Transmission Lines

Energy Conversion 2598

- Process Heating (**2389**)
(steam systems, heat exchangers, condensers, fired heaters, heat pumps)
- Process Cooling (**17**)
- Machine Drives (**178**)
(pumps, compressors, fans, blowers, conveyors, mixers)
- Onsite Transport (**3**)
- Other (**10**)

Process Energy Use 2120

- Distillation
- Thermal Cracking and Coking
- Catalytic Cracking
- Hydrotreating
- Alkylation
- Isomerization
- Hydrogen Production
- Energy Storage
- Waste Handling

Recycle Energy
By-product fuels and feedstocks, heat

Steam, heat

Energy Losses

Losses in boilers and electricity generation losses **228**

Energy Losses

Losses in pipes, valves, traps, electrical transmission lines **229**

Energy Losses

Losses due to equipment inefficiency (motors, mechanical drive, waste heat) **478**

Energy Losses

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

Industrial Plant Boundary

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