Manufacturing Energy and Carbon Footprint
Sector: All Manufacturing (NAICS 31-33)

Total Primary Energy Use: 21,972 TBtu
Total Combustion Emissions: 1,261 MMT CO₂e

Total Energy

Onsite Energy
- Steam Generation
  - Fuel: 1,173
  - Total: 618.6

Offsite Energy
- Electricity Generation
  - Fuel: 11,789
  - Total: 2,850
- Steam Generation
  - Fuel: 544.3
  - Total: 318

Process Energy
- Nonprocess Energy
  - Total: 642.8
- Onsite Emissions: 1,582
- Offsite Emissions: 6,161

Losses
- Steam Distribution Losses: 937
- Process Losses: 4,807
- Nonprocess Losses: 647

Combustion Emissions
- Offsite: 1,261.3
- Onsite: 642.8

Energy Use (TBtu = Trillion British Thermal Units)
- All Energy
- Fuel
- Electricity
- Steam

Combustion Emissions (MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent)
- Offsite
- Total
- Onsite

Total Emissions = Offsite Emissions + Onsite Emissions

Energy data source: 2006 MECS (with adjustments)
Last Revised: October 2012
Notes:
- Feedstock energy not included
- Energy values <0.5 TBtu shown as 0
- Values represent aggregate data
- Offsite generation shown on net basis

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Onsite Energy

Onsite Generation
- Conventional Boilers: 122.8
- CHP/ Cogeneration: 206.0
- Other Electricity Generation*: 1.9

Total Onsite: 134.9

Process Energy
- Process Heating: 376.2
- Process Cooling and Refrigeration: 43.3
- Other Process Uses: 25.4
- Electro-Chemical: 39.3
- Machine Drive: 303.7

Total Process: 474.4

Nonprocess Energy
- Facility HVAC: 81.0
- Facility Lighting: 37.8
- Other Facility Support: 13.3
- Onsite Transportation: 5.6
- Other Nonprocess: 5.0

Total Nonprocess: 128.7

Total Onsite Energy: 15,494 TBtu
Onsite Combustion Emissions: 643 MMT CO₂e

Fuel Types
- Natural Gas: 47%
- Byproduct Fuels: 37%
- Coal: 9%
- Distillate and Residual Fuel Oils: 3%
- LPG and NGL: 1%
- Other Fuels: 4%

Fuel Type % of Total

Energy Use (TBtu = Trillion British Thermal Units)
- Total Emissions = Offsite Emissions + Onsite Emissions
- Total Emissions = 788.0
- Onsite Emissions = 290.6
- Offsite Emissions = 547.0

Combustion Emissions (MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent)
- Total Emissions = Offsite Emissions + Onsite Emissions
- Total Emissions = 788.0
- Onsite Emissions = 290.6
- Offsite Emissions = 547.0

Steam
- Steam Generation Losses
- Steam Distribution Losses
- Steam Use

Energy use data source: 2006 MECS (with adjustments)
Last Revised: October 2012

Notes:
Feedstock energy not included
Energy values <0.5 TBtu shown as 0
Values represent aggregate data
Offsite generation shown on net basis

* Onsite, renewable, non-combustion generation contributes 4 TBtu

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