Primary Energy, 2018

Manufacturing Energy and Carbon Footprint
Sector: Semiconductor and Related Devices (NAICS 334413)

Primary Energy Use: 127 TBtu
Total GHG Emissions: 6 MMT CO₂e

Offsite Energy
- Fuel: 14 TBtu
- Electricity Generation: 5.3 TBtu
- Steam Generation: 0.0 TBtu

Onsite Energy
- Onsite Generation (excludes <0.1 TBtu renewable, non-combustion electricity output): 40.4 TBtu
- Steam Distribution Losses: 0.0 TBtu
- Steam Generation Losses: 0.0 TBtu

Process Energy
- 3.6 TBtu
- 0.1 TBtu

Nonprocess Energy
- 2.0 TBtu
- 0.3 TBtu

Electricity Export
- 0.4 TBtu

Excess Steam
- 0.7 TBtu

Greenhouse Gas (GHG) Emissions

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

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

Total Emissions = Offsite Emissions + Onsite (Combustion + Process) Emissions

Energy use data source: 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, visit this webpage.

Last Revised: December 2021

Notes:
- Sector-wide aggregate data for year 2018; energy values rounded to nearest whole number
- Offsite generation shown on net basis (purchases, sales, and transfers accounted for) and includes onsite non-combustion renewable output
- Electricity export refers to sales and transfers offsite of electricity to utilities and other entities
- Feedstock energy excluded from primary, offsite, and onsite energy values and included in Energy for All Purposes
- Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 127 TBtu
Includes primary energy plus net energy consumed for nonfuel purposes, including feedstock use

Prepared for the U.S. Department of Energy, Advanced Manufacturing Office by Energetics
Manufacturing Energy and Carbon Footprint
Sector: Semiconductor and Related Devices (NAICS 334413)

Onsite Energy Use: 54 TBtu
Onsite Emissions: 1 MMT CO₂e

Onsite Energy, 2018

Fuel Types
- Natural Gas: 100%

Energy (TBtu = Trillion British Thermal Units)
- Fuel
- Electricity
- Steam
- Combined
- Losses

Greenhouse Gas (GHG) Emissions (MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent)
- Total Onsite
- Process

Onsite Emissions = Onsite Combustion Emissions + Process Emissions

Notes:
- Sector-wide aggregate data for year 2018; energy values and fuel type percentages rounded to nearest whole number.
- Offsite generation shown on net basis (purchases, sales, and transfers accounted for) and includes onsite non-combustion renewable output.
- * Refers to sales and transfers of electricity to utilities and other entities.
- ** Refers to sales and transfers of surplus steam.
- Feedstock energy excluded.

Energy use data source:
2018 EIA MECS (with adjustments);
See webpage for details
Last Revised: December 2021

Prepared for the U.S. Department of Energy, Advanced Manufacturing Office by Energetics
Fuel and GHG Emissions, 2018

Primary Energy Use: 127 TBtu
Total GHG Emissions: 6 MMT CO₂e

Energy use data source: 2018 EIA MECS (with adjustments)
See webpage for details
Last Revised: December 2021

Notes:
Sector-wide aggregate data for year 2018; energy values rounded to nearest whole number; emissions values rounded to nearest tenth

Fuel (TBtu = Trillion British Thermal Units)
Greenhouse Gas (GHG) Emissions (MMT CO₂e - Million Metric Tons Carbon Dioxide Equivalent)