### Manufacturing Energy and Carbon Footprint

**Sector:** Foundries (NAICS 3315)

**Primary Energy Use:** 206 TBtu

**Total Combustion Emissions:** 10 MMT CO₂e

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**Primary Energy, 2014**

#### Offsite Energy

- **Electricity Generation:** 7.2 TBtu
- **Steam Generation:** 0.0 TBtu
- **Fuel:** 73 TBtu
- **Generation and Transmission Losses:** 88 TBtu

#### Onsite Energy

- **Electricity Generation:** 0.1 TBtu
- **Steam Generation:** 0.1 TBtu
- **Losses:**
  - Electricity and Steam Generation Losses: 1 TBtu
  - Steam Distribution Losses: 0 TBtu

#### Process Energy

- **Energy:**
  - Electric: 8.0 TBtu
  - Steam: 2.2 TBtu
- **Losses:** 42 TBtu

#### Nonprocess Energy

- **Energy:**
  - Electric: 2.2 TBtu
  - Steam: 0.7 TBtu
- **Losses:** 9 TBtu

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**Combustion Emissions**

<table>
<thead>
<tr>
<th>Energy</th>
<th>Combustion Emissions (MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>Offsite: 45.1 Onsite: 27.9 Total: 72.9</td>
</tr>
<tr>
<td>Electricity</td>
<td>Offsite: 1.1 Onsite: 1.1 Total: 2.2</td>
</tr>
<tr>
<td>Steam</td>
<td>Offsite: 0.0 Onsite: 0.0 Total: 0.0</td>
</tr>
<tr>
<td>Combined</td>
<td>Offsite: 46.2 Onsite: 27.9 Total: 74.1</td>
</tr>
</tbody>
</table>

**Total Emissions = Offsite Emissions + Onsite Emissions**

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**Last Revised:** September 2018

**Notes:**

- Sector-wide aggregate data for year 2014; energy values rounded to nearest whole number
- Offsite generation shown on net basis (purchases, sales, and transfers accounted for) and includes onsite noncombustion 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

**Energy for All Purposes estimated at 206 TBtu**

Includes primary energy plus net energy consumed for nonfuel purposes, including feedstock use.

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Prepared for the U.S. Department of Energy, Advanced Manufacturing Office by Energetics
Onsite Energy, 2014

### Onsite Generation

- **Conventional Boilers**
  - 0.1
  - 0.1

- **CHP/Cogeneration**
  - 0.1
  - 0.1

- **Other Electricity Generation**
  - 0.0
  - 0.0

### Process Energy

- **Process Heating**
  - 5.5
  - 2.1

- **Process Cooling and Refrigeration**
  - 0.2
  - 0.0

- **Other Process Uses**
  - 0.2
  - 0.1

- **Electro-Chemical**
  - 0.0
  - 0.0

#### Machine Drive

- **Pumps**
  - 2
- **Fans**
  - 2
- **Compressed Air**
  - 2
- **Materials Handling**
  - 7
- **Materials Processing**
  - 2
- **Other Systems**
  - 0
- **Other Nonprocess**
  - 0

### Nonprocess Energy

- **Facility HVAC**
  - 1.4
  - 0.6

- **Facility Lighting**
  - 0.5
  - 0.0

- **Other Facility Support**
  - 0.2
  - 0.1

- **Onsite Transportation**
  - 0.1
  - 0.1

- **Other Nonprocess**
  - 0
  - 0

### Energy Use Data Source

2014 EIA MECS (with adjustments); see page 1 of 2 for reference link

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Notes:

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- *Refers to sales and transfers offsite of electricity to utilities and other entities
- Feedstock energy excluded

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