### Manufacturing Energy and Carbon Footprint

**Sector:** Alumina and Aluminum (NAICS 3313)

**Primary Energy Use:** 372 TBtu

**Total GHG Emissions:** 21 MMT CO₂e

#### Primary Energy, 2018

**Offsite Energy**

- **Electricity Generation:** 12.0 TBtu
  - **Generation and Transmission Losses:** 164 TBtu
- **Steam Generation:** 0.0 TBtu
  - **Losses:** 0.0 TBtu

**Onsite Energy**

- **Electricity and Steam Generation Losses:** 4 TBtu
  - **Generation:**
    - **16 TBtu:** Offsite
    - **90 TBtu:** Onsite
  - **Total Onsite Energy:** 12 TBtu
- **Steam Distribution Losses:** 2 TBtu
- **Electricity Export:** 0.9 TBtu

**Process Energy**

- **Total Process Energy:** 18.8 TBtu

**Nonprocess Energy**

- **Nonprocess Energy:** 8.0 TBtu

### Energy Use

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

### Notes

- **Last Revised:** December 2021
- **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.**

### Greenhouse Gas (GHG) Emissions

- **Total GHG Emissions:** 21 MMT CO₂e
  - **Primary Energy Use:**
    - **12.0 TBtu:** Offsite
    - **12.0 TBtu:** Onsite
  - **Energy for All Purposes estimated at 381 TBtu:** Includes primary energy plus net energy consumed for nonfuel purposes, including feedstock use.

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Manufacturing Energy and Carbon Footprint
Sector: Alumina and Aluminum (NAICS 3313)

Onsite Energy, 2018

Onsite Generation

- Conventional Boilers: 0.2 0.1
- CHP/ Cogeneration: 0.7 0.7
- Other Electricity Generation: 0.0 0.0

Process Energy

- Process Heating: 5.3 4.8
- Process Cooling and Refrigeration: 0.1 0.0
- Other Process Uses: 0.2 0.1
- Electro-Chemical: 7.4 0.0

Machine Drive

- Pumps: 1
- Fans: 6
- Compressed Air: 2
- Materials Handling: 0
- Materials Processing: 13
- Other Systems: 0

Nonprocess Energy

- Facility HVAC: 0.7 0.4
- Facility Lighting: 0.4 0.0
- Other Facility Support: 0.3 0.1
- Onsite Transportation: 0.1 0.1
- Other Nonprocess: 1.6 0.6

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 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 offsite of
electricity to utilities and other entities
  ^ Refers to sales and transfers offsite or
  purging of surplus steam

Feedstock energy excluded

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Fuel and GHG Emissions, 2018

Manufacturing Carbon Footprint
Sector: Alumina and Aluminum (NAICS 3313)

Primary Energy Use: 372 TBtu
Total GHG Emissions: 21 MMT CO$_2$e

Total Greenhouse Gas Emissions: 21.4

Fuel 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

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