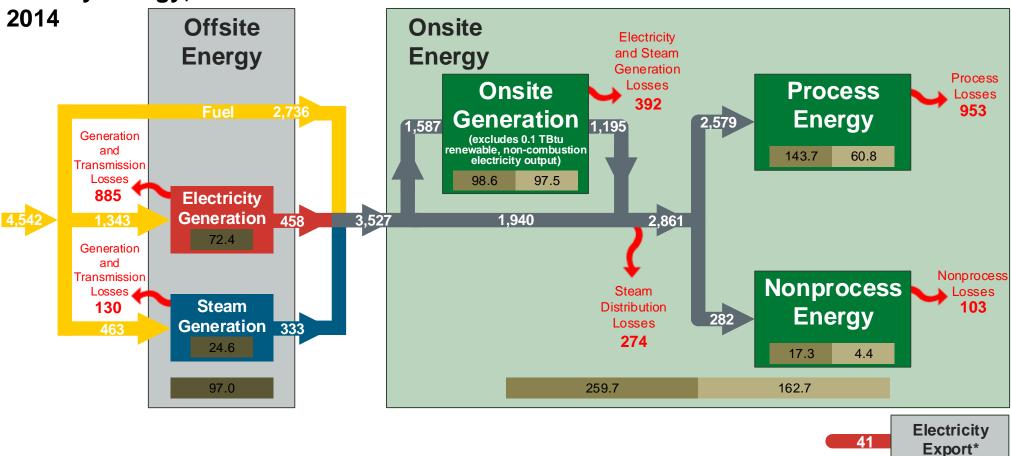
Manufacturing Energy and Carbon Footprint Sector: Chemicals (NAICS 325)

Primary Energy Use: 4,542 TBtu Total Combustion Emissions: 260 MMT CO₂e

Primary Energy,



| Energy (TBtu = Trillion British | Combustion Emissions (MMT CO ₂ e = Million Metric Tons | Energy use 2014 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, visit: https://www.energy.gov/eere/amo/manufacturing-energy-and-carbon-footprints-2014-mecs |
|------------------------------------|--|--|
| Thermal Units) | Carbon Dioxide Equivalent) | Last Revised: September 2018 |
| Fuel Electricity | Offsite Total Onsite | 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 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 |
| Steam Combined | Total Emissions = | Energy for All Purposes estimated at 7,312 TBtu Includes primary energy plus net energy consumed for nonfuel purposes, including feedstock use |
| | Offsite Emissions + Onsite Emissions | Page 1 of 2 Prepared for the U.S. Department of Energy, Advanced Manufacturing Office by Energetics |

Manufacturing Energy and Carbon Footprint **Onsite Energy Use:** 3.527 TBtu Onsite Combustion Emissions: 163 MMT CO₂e Sector: Chemicals (NAICS 325) **Onsite Energy**, Onsite Nonprocess Process 2014 Generation Energy Energy 373 99 65 **Process Heating Facility HVAC** Conventional 60 **Boilers** 450 49.1 3.4 68.7 10.7 93 33.4 32.3 18 **Process Cooling** 37 Facility Lighting 291 CHP/ and Refrigeration 3.3 0.0 <u>165</u> Cogeneration 7.9 1.1 584 **Other Facility** 91 65.0 65.0 **Other Process Uses** Support 7.8 4.4 Other 1.4 0.5 87 % of **Fuel Type** 37 Electricity Total **Electro-Chemical Onsite** 3 Natura I Gas 73% Generation 105 9.2 0.0 Waste Gas Transportation 13% (excludes 0.1 TBtu (byproduct fuel) renewable, 0.5 0.4 9% Coal non-combustion **Machine Drive** electricity output) 89 Distillate and < 1% 13 Other Residual Fuel Oils 0.2 0.2 160 343 Pumps HGL (excl. natural Nonprocess < 1% 114 41 gasoline) Other Fuels 4% 39 1.3 0.1 6 73 Fans **Fuel Types** 150 98.6 97.5 17.3 4.4 170 **Compressed Air** 3 Electricity 2.736 1.15641 Materials Handling Export* 458 451 3.527 611 124 333 1.368 145 Materials Processing Energy use data source: 2014 EIA MECS (with adjustments); 7 see page 1 of 2 for reference link Energy **Combustion Emissions** 274 **Other Systems** Last Revised: September 2018 (MMT CO₂e = Million Metric Tons (TBtu = Trillion British Steam Notes: Carbon Dioxide Equivalent) Distribution Thermal Units) 50.1 6.2 Sector-wide aggregate data for year 2014; Losses energy values and fuel type percentages rounded to nearest whole number 143.7 60.8 Offsite generation shown on net basis Total Onsite Electricity (purchases, sales, and transfers) accounted for) and includes onsite noncombustion renewable output Total Emissions = Steam Refers to sales and transfers offsite of Offsite Emissions + electricity to utilities and other entities **Onsite Emissions** Combined Feedstock energy excluded

Losses