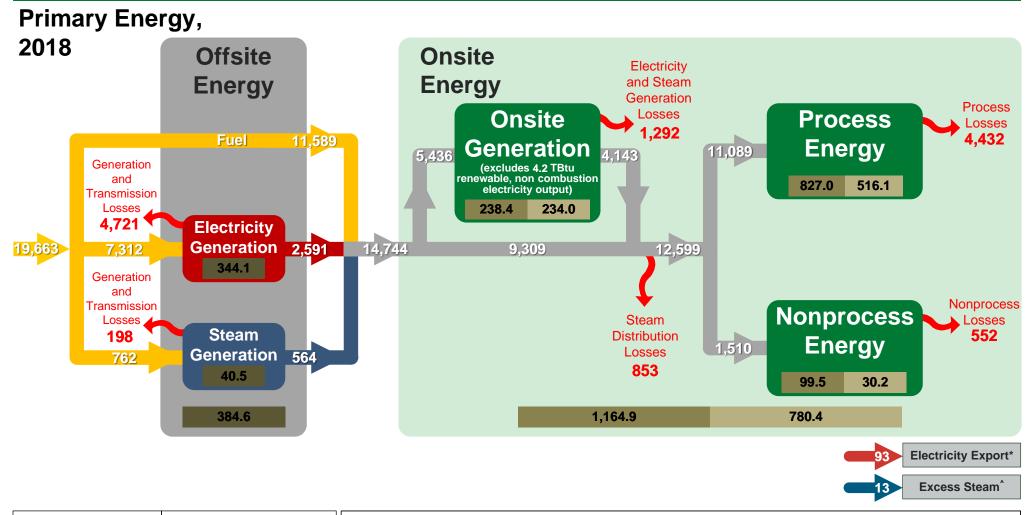
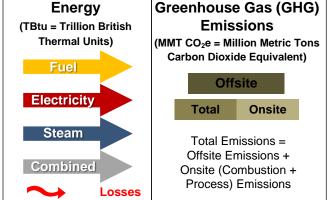
Manufacturing Energy and Carbon Footprint Sector: All Manufacturing (NAICS 31-33)

Primary Energy Use: 19,663 TBtu
Total GHG Emissions: 1,165 MMT CO₂e





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

Last Revised: December 2021

Last Nevisca. 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 24,355 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 14,744 TBtu Onsite Emissions: 780 MMT CO₂e Sector: All Manufacturing (NAICS 31-33) **Onsite Energy**, **Onsite Process** Nonprocess 2018 Generation **Energy Energy** 2,497 353 321 **Facility HVAC Process Heating Conventional** 5.003 **Boilers** 1,412 360.4 297.3 58.4 22.5 328 86.6 128 **Process Cooling Facility Lighting** 122 910 CHP/ and Refrigeration 21.9 0.0 <u>441</u> Cogeneration 32.4 1.7 2.288 Other Facility 371 145.2 145.2 **Other Process Uses Support** 30 23.5 Other 9.6 2.9 **Electricity** % of **Electro-Chemical Fuel Type** Onsite Total 15 Generation 55% Natural Gas 21.4 0.0 **Transportation** (excludes 4.2 TBtu Byproduct Fuels 36% renewable. 5.7 3.8 Coal 4% non-combustion **Machine Drive** 296 electricity output) Distillate and < 1% Other Residual Fuel Oils 2.2 2.2 643 **Pumps** HGL (excl. natural **Nonprocess** < 1% gasoline) Other Fuels 4% 12 4.0 1.0 369 Fans **Fuel Types** 228 238.4 234.0 99.5 30.2 263 **Compressed Air** 50 **Electricity Export*** 11.589 6.187 175 Materials Handling 2.591 2,558 3.001 Excess Steam 517 564 614 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); 61 age for details **Greenhouse Gas (GHG)** Energy 853 Other Systems Last Revised: December 2021 **Emissions** Steam (TBtu = Trillion British Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 13.9 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 827.0 516.1 179.8 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of Steam Onsite Combustion Emissions + electricity to utilities and other entities Process Emissions Refers to sales and transfers offsite or

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Combined

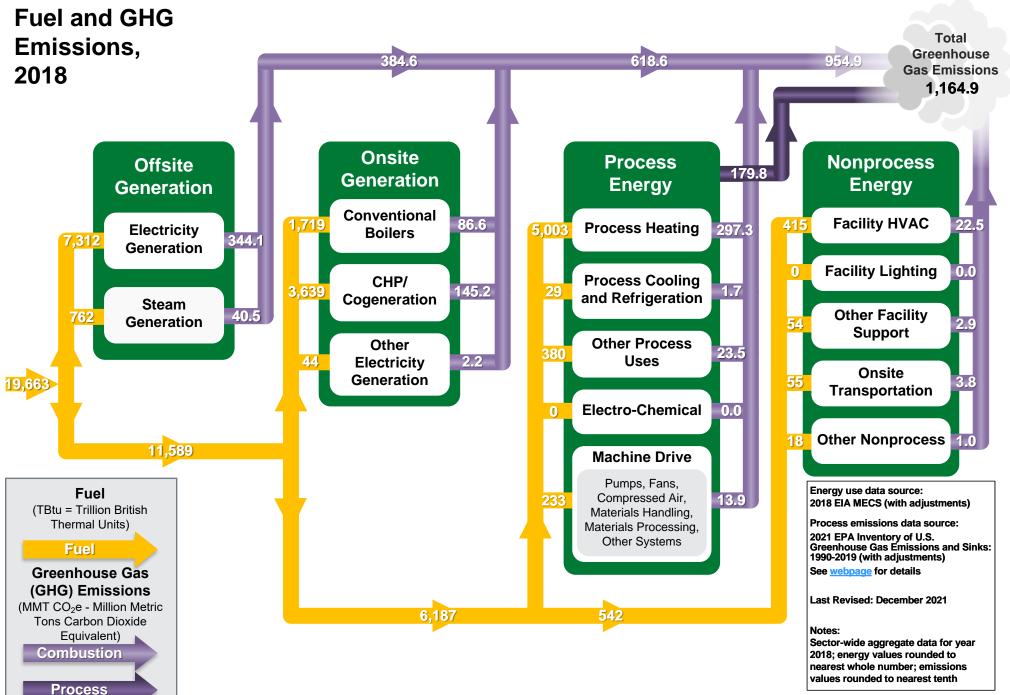
Losses

purging of surplus steam

Feedstock energy excluded

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

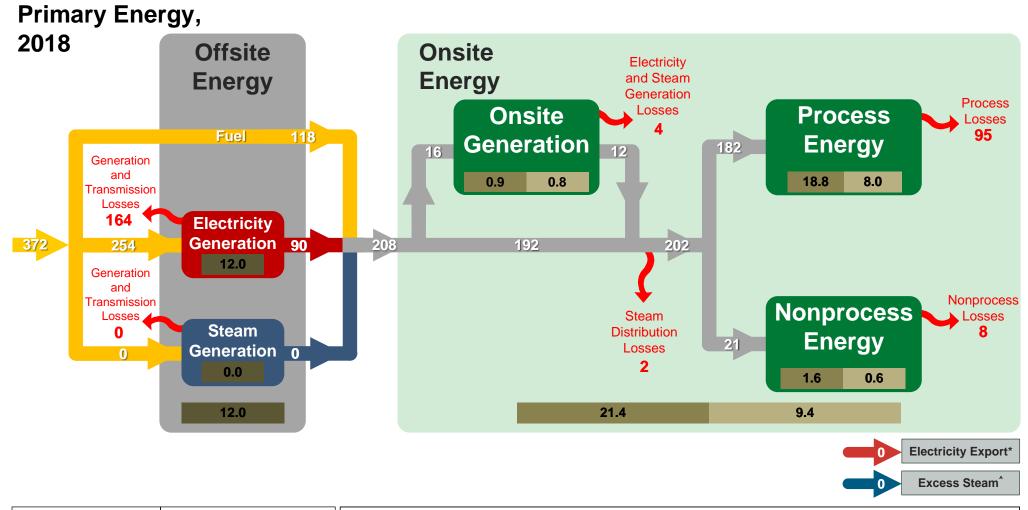
Primary Energy Use: 19,663 TBtu
Total GHG Emissions: 1,165 MMT CO₂e

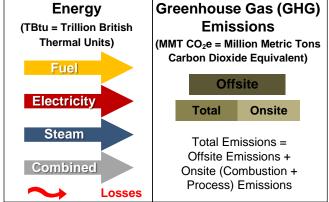


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Manufacturing Energy and Carbon Footprint Sector: Alumina and Aluminum (NAICS 3313)

Primary Energy Use: 372 TBtu
Total GHG Emissions: 21 MMT CO₂e





Energy use 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, data source: 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 381 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 208 TBtu Onsite Emissions: 9 MMT CO₂e Sector: Alumina and Aluminum (NAICS 3313) **Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 43 **Process Heating Facility HVAC** Conventional **Boilers** 4.8 0.4 0.1 **Process Cooling Facility Lighting** and Refrigeration CHP/ 0.4 0.0 Cogeneration 0.1 0.0 Other Facility 0.7 **Other Process Uses Support** 0.2 0.1 Other 0.3 0.1 34 **Electricity Electro-Chemical Onsite** Generation 7.4 0.0 **Transportation** 0.0 0.1 0.1 % of **Machine Drive Fuel Type** Total Other Natural Gas 98% **Pumps** Distillate Fuel Oil < 1% **Nonprocess** HGL (excl. natural < 1% 0.1 0.0 gasoline) Fans **Fuel Types** 0.9 0.8 1.6 0.6 **Compressed Air Electricity Export*** 118 103 Materials Handling 90 89 208 Excess Steam 13 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 0.1 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 18.8 8.0 3.1 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or Onsite Emissions = Onsite

Combined

Losses

Combustion Emissions +

Process Emissions

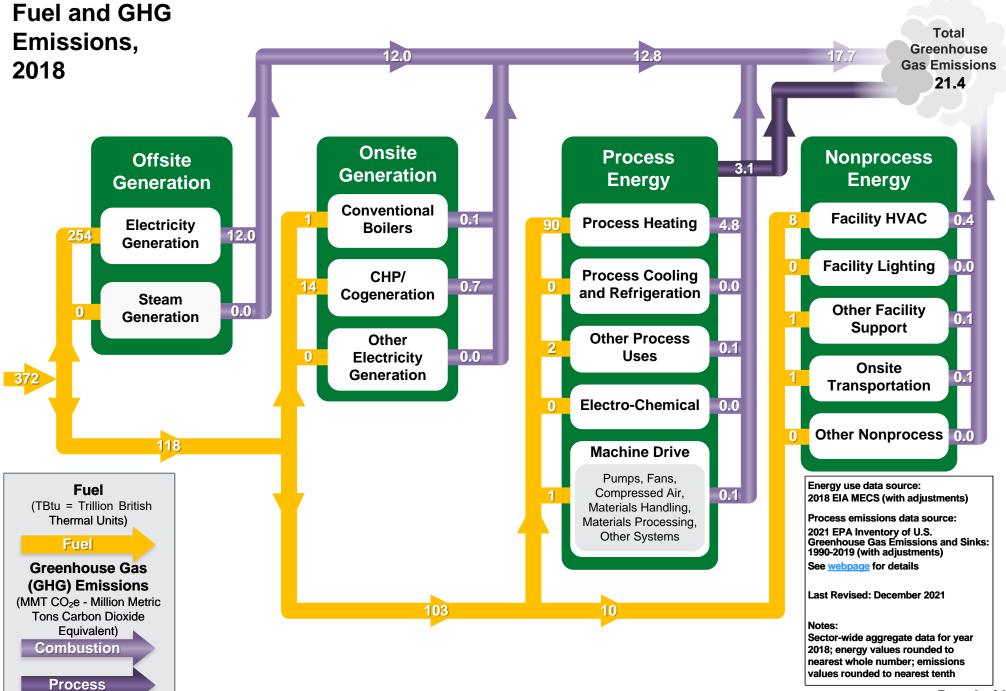
Page 2 of 3

purging of surplus steam

Feedstock energy excluded

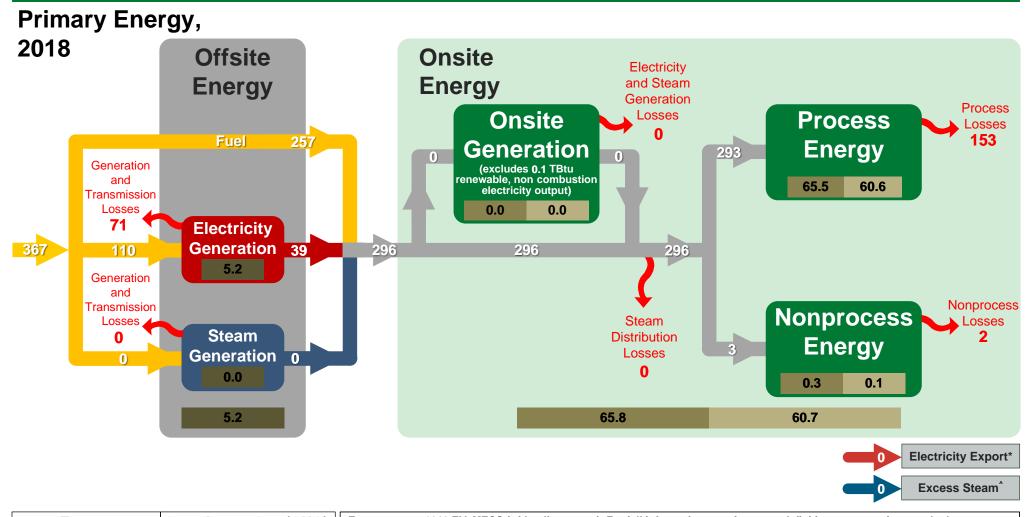
Manufacturing Carbon Footprint Sector: Alumina and Aluminum (NAICS 3313)

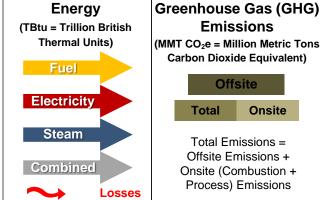
Primary Energy Use: 372 TBtu
Total GHG Emissions: 21 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Cement (NAICS 327310)

Primary Energy Use: 367 TBtu Total GHG Emissions: 66 MMT CO₂e





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

Last Revised: December 2021

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

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 367 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 296 TBtu Onsite Emissions: 61 MMT CO₂e Sector: Cement (NAICS 327310) **Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 102 **Facility HVAC Process Heating** Conventional **Boilers** 18.9 0.0 0.0 **Process Cooling Facility Lighting** and Refrigeration CHP/ 0.1 0.0 Cogeneration 0.7 0.5 Other Facility 0.0 **Other Process Uses Support** % of **Fuel Type** Total 0.1 0.0 Other 0.0 0.0 Coal 41% **Electricity** Petroleum Coke **Electro-Chemical** 24% **Onsite** (byproduct f el) Generation 0.1 0.0 **Transportation** Natural Gas 23% (excludes 0.1 TBtu Waste Oils/Tars renewable. 0.1 0.1 and Waste non-combustion **Machine Drive** 3% Materials electricity output) 3 Other (byproduc fuel) **Pumps** Coke and Breeze <1% **Nonprocess** Distillate Fuel Oil <1% Other Fuels 8% 0 0.0 0.0 Fans **Fuel Types** 0.1 0.0 0.3 0.0 **Compressed Air Electricity Export*** 257 4 Materials Handling 39 39 Excess Steam 34 40 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 6.2 2.3 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 65.5 60.6 39.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Combined

Losses

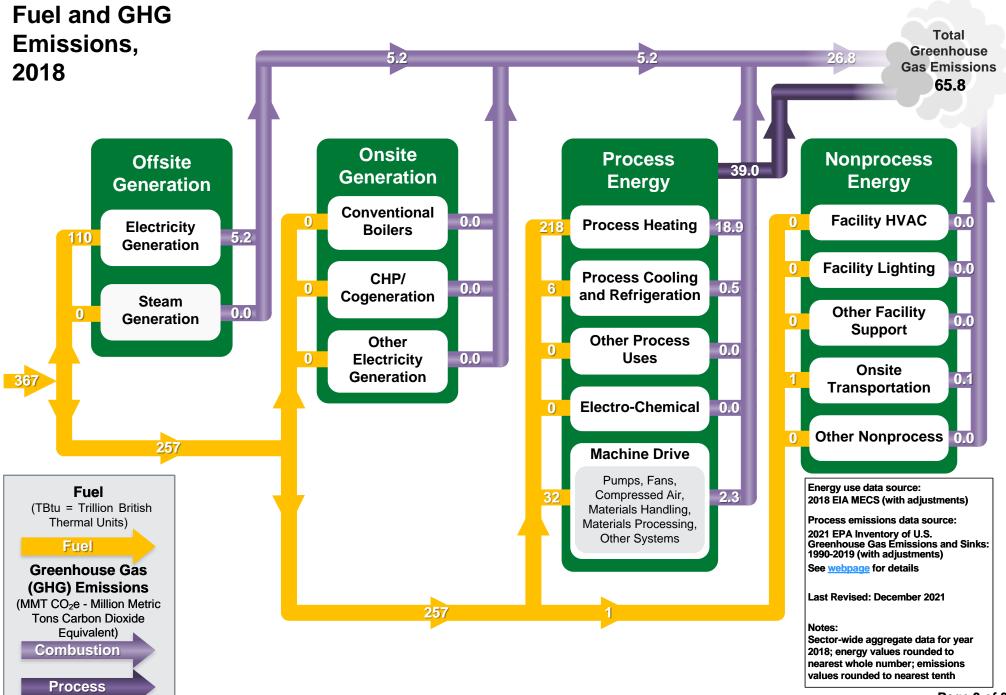
Page 2 of 3

purging of surplus steam

Feedstock energy excluded

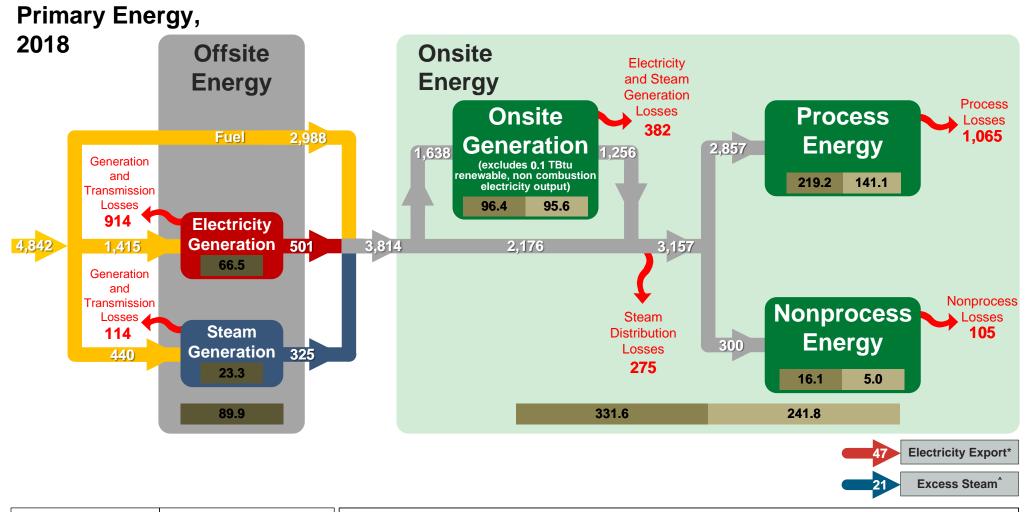
Manufacturing Carbon Footprint Sector: Cement (NAICS 327310)

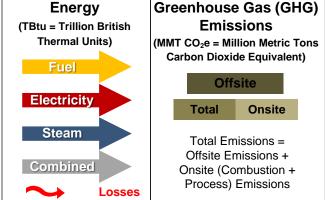
Primary Energy Use: 367 TBtu
Total GHG Emissions: 66 MMT CO₂e



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

Primary Energy Use: 4,842 TBtu
Total GHG Emissions: 332 MMT CO₂e





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

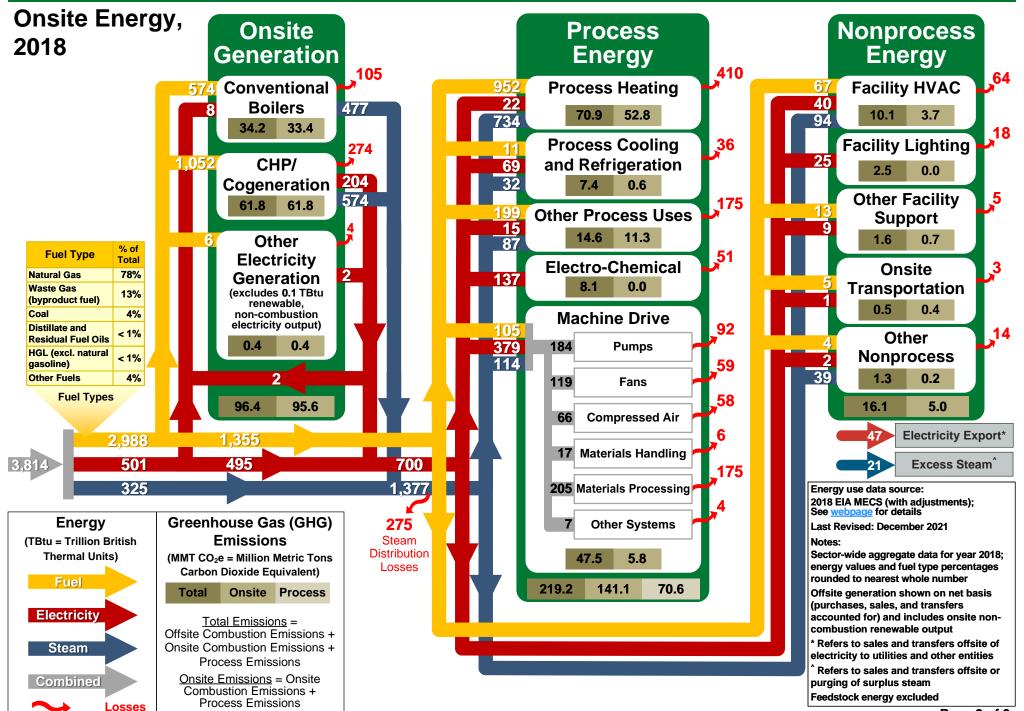
Feedstock energy excluded from primary, offsite, and onsite energy values and included in Energy for All Purposes

^ Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 8,169 TBtu

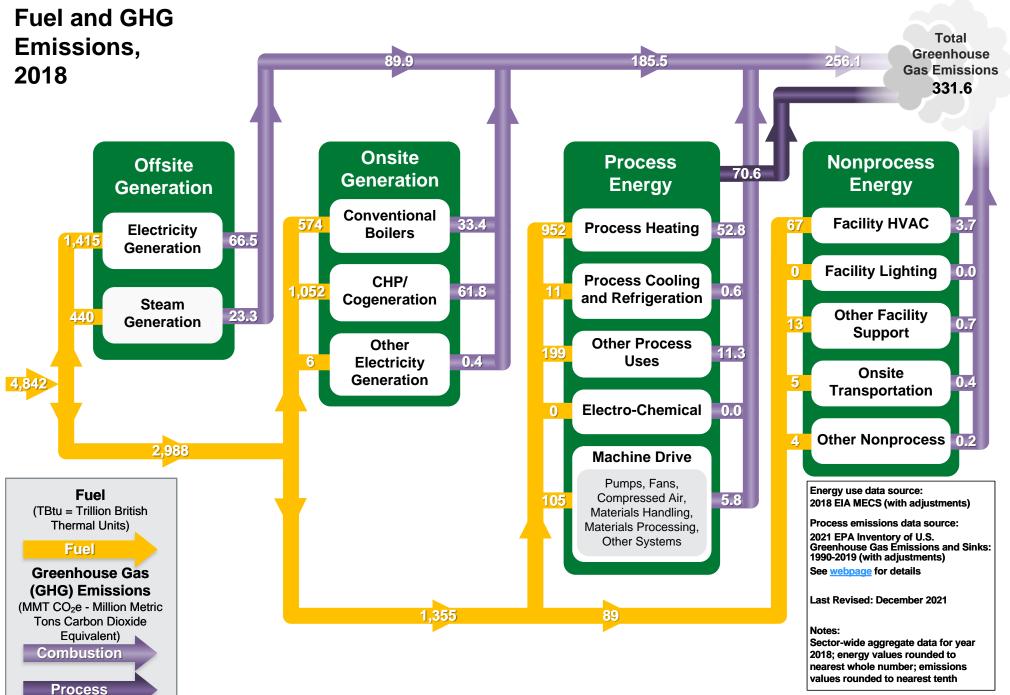
Manufacturing Energy and Carbon Footprint Sector: Chemicals (NAICS 325)

Onsite Energy Use: 3,814 TBtu
Onsite Emissions: 242 MMT CO₂e



Manufacturing Carbon Footprint Sector: Chemicals (NAICS 325)

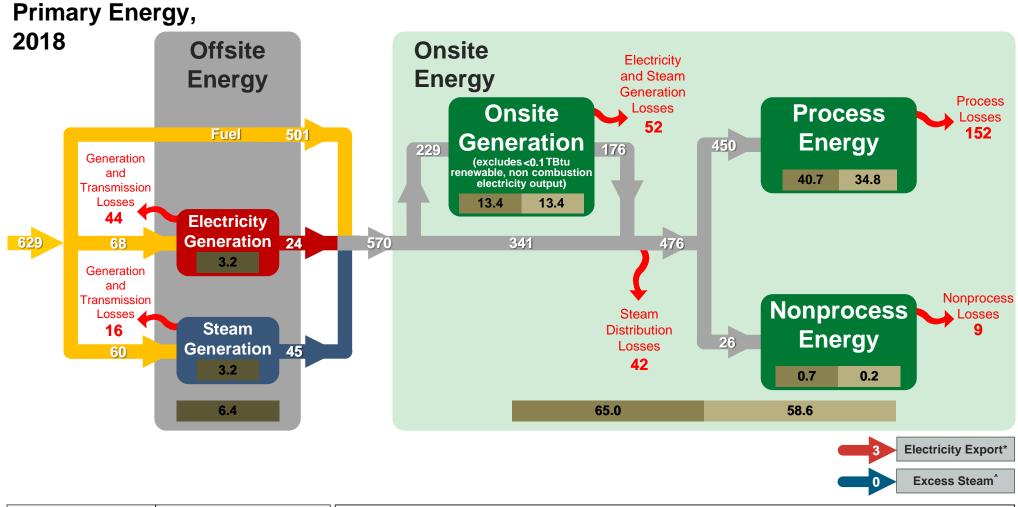
Primary Energy Use: 4,842 TBtu
Total GHG Emissions: 332 MMT CO₂e

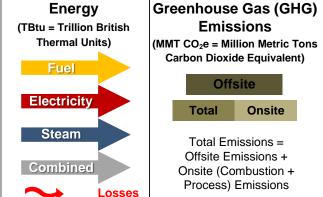


Page 3 of 3

Manufacturing Energy and Carbon Footprint Sector: Petrochemicals (NAICS 325110)

Primary Energy Use: 629 TBtu
Total GHG Emissions: 55 MMT CO₂e





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

Last Revised: October 2022

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 1,520 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 570 TBtu Onsite Emissions: 48 MMT CO₂e **Sector: Petrochemicals (NAICS 325110) Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy 79 Facility HVAC Process Heating** Conventional **Boilers** 78 14.8 12.5 0.1 5.7 **Process Cooling Facility Lighting** 35 and Refrigeration CHP/ 0.0 0.0 <u> 14</u> Cogeneration 1.0 0.4 86 Other Facility 25 7.7 **Other Process Uses Support** 1.9 1.6 Other 0.0 0.0 % of **Fuel Type Electricity Total Electro-Chemical Onsite** 61% Natural Gas Generation 0.0 0.0 **Transportation** Waste Gas (excludes < 0.1 TBtu 31% (byproduct fuel) renewable. 0.0 0.0 Distillate Fuel Oil < 1% non-combustion **Machine Drive** electricity output) HGL (excl. natural < 1% Other gasoline) 18 **Pumps** Pulping liquor or **Nonprocess** < 1% black liquor Other Fuels 7% 0.2 0.1 12 Fans **Fuel Types** 13.4 13.4 0.7 0.2 **Compressed Air Electricity Export*** 501 2 Materials Handling 24 24 570 Excess Steam 45 20 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); See webpage for details **Greenhouse Gas (GHG) Energy** 42 Other Systems Last Revised: October 2022 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 3.6 0.9 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 40.7 34.8 19.4 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Combined

Losses

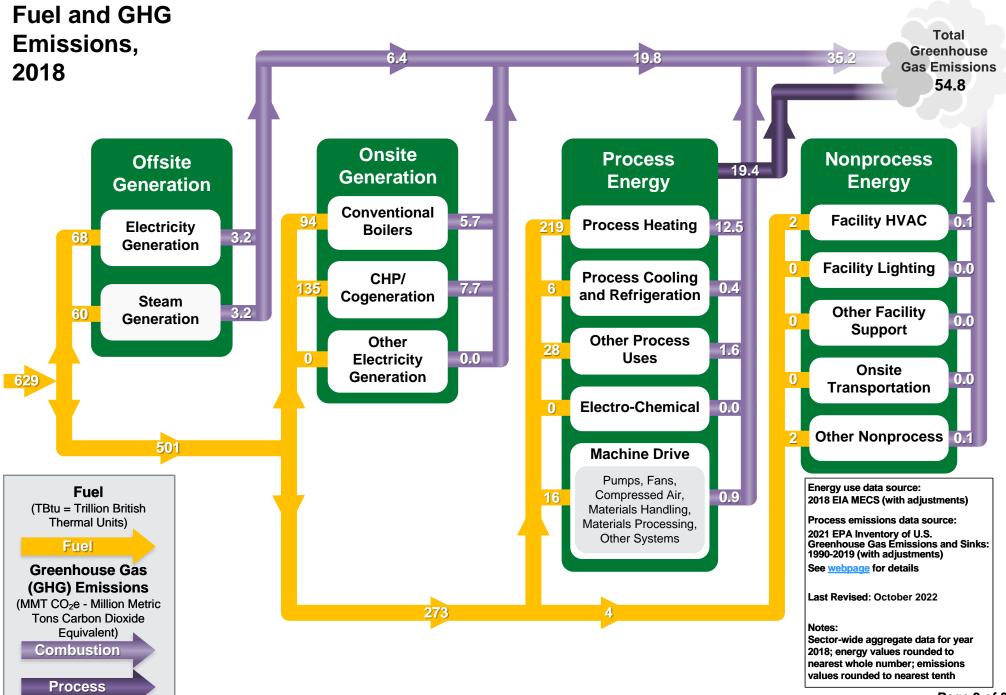
Page 2 of 3

purging of surplus steam

Feedstock energy excluded

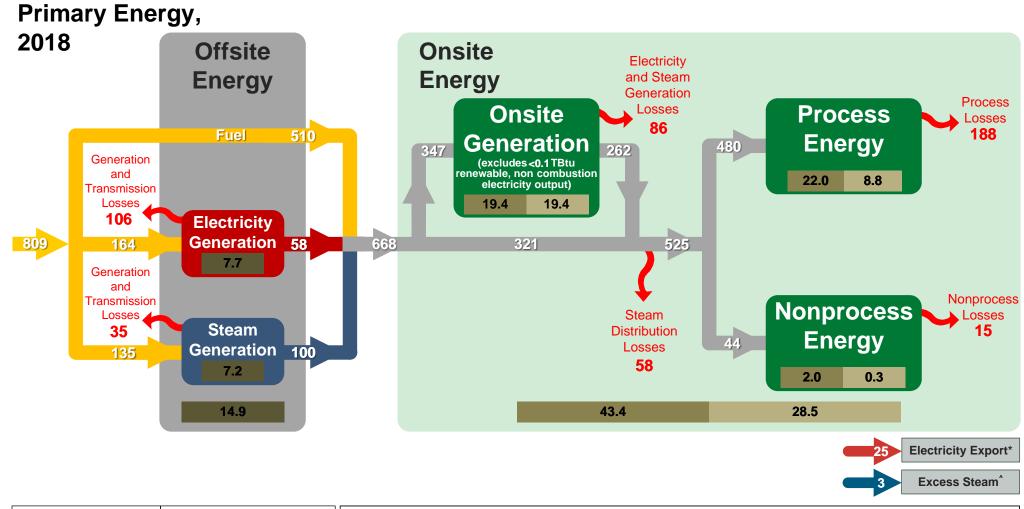
Manufacturing Carbon Footprint Sector: Petrochemicals (NAICS 325110)

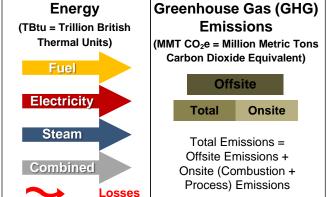
Primary Energy Use: 629 TBtu
Total GHG Emissions: 55 MMT CO₂e



Manufacturing Energy and Carbon FootprintSector: Plastics Material and Resins (NAICS 325211)

Primary Energy Use: 809 TBtu
Total GHG Emissions: 43 MMT CO₂e





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

ata source. Visit triis <u>webpage</u>

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

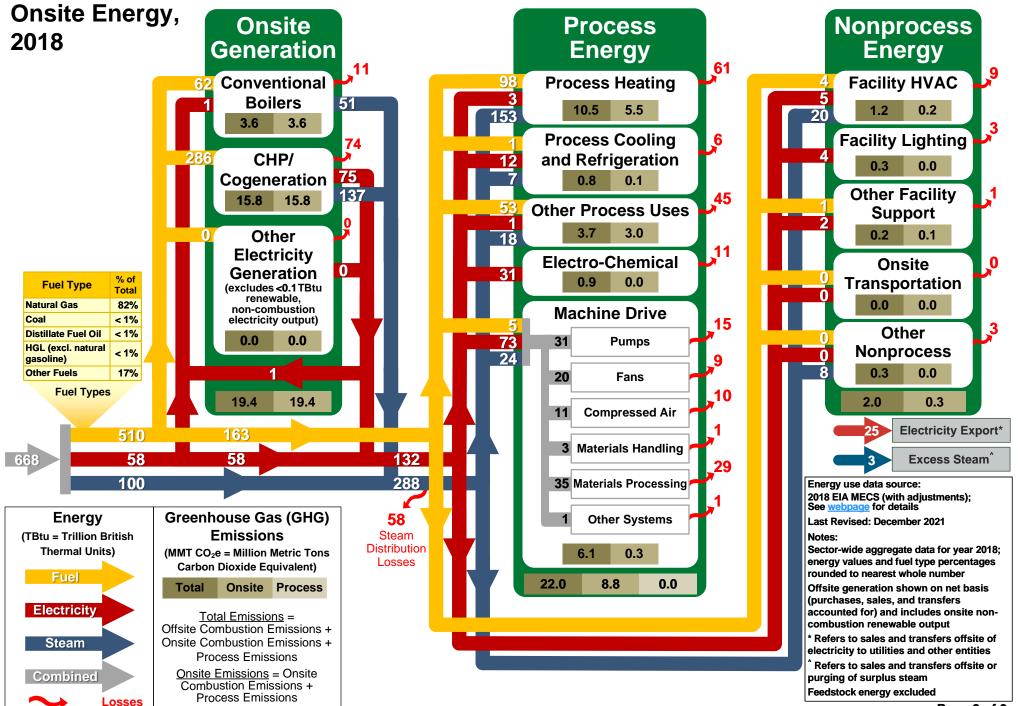
Feedstock energy excluded from primary, offsite, and onsite energy values and included in Energy for All Purposes

^ Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 1,816 TBtu

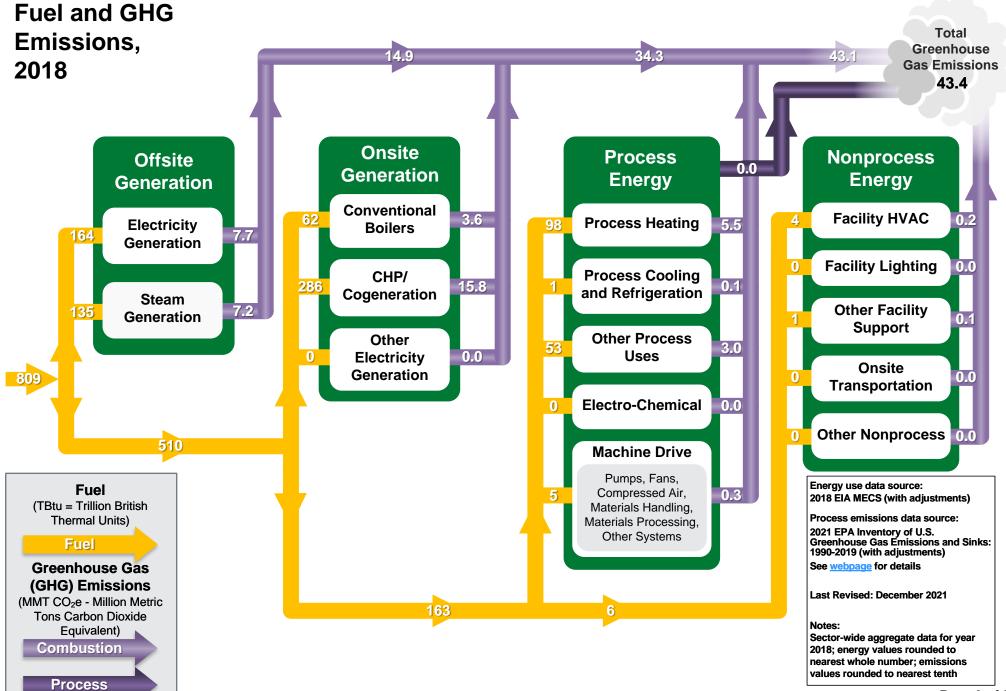
Manufacturing Energy and Carbon Footprint Sector: Plastics Material and Resins (NAICS 325211)

Onsite Energy Use: 668 TBtu
Onsite Emissions: 29 MMT CO₂e



Manufacturing Carbon FootprintSector: Plastics Material and Resins (NAICS 325211)

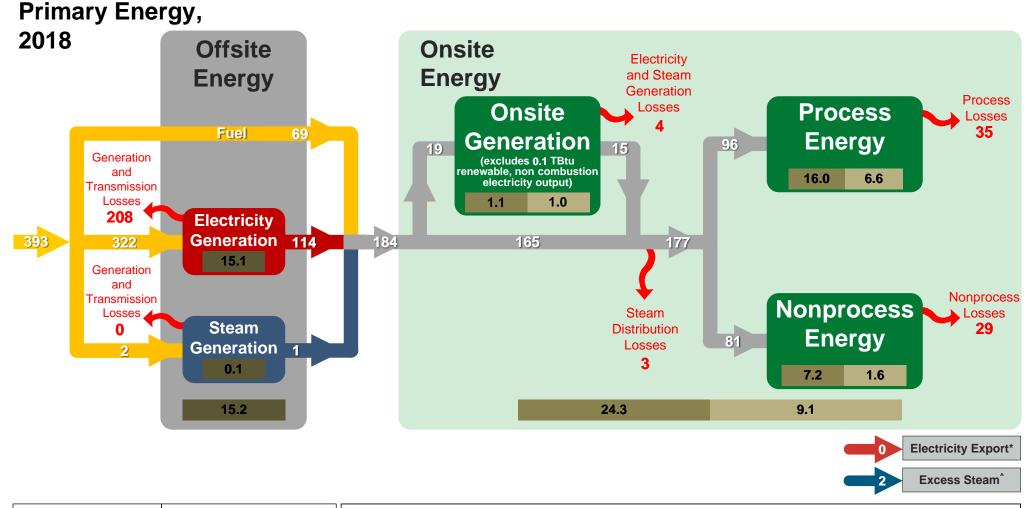
Primary Energy Use: 809 TBtu
Total GHG Emissions: 43 MMT CO₂e

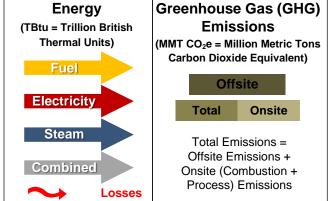


Manufacturing Energy and Carbon Footprint

Sector: Computers, Electronics and Electrical Equipment (NAICS 334, 335)

Primary Energy Use: 393 TBtu
Total GHG Emissions: 24 MMT CO₂e





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

ata source. Visit tilis <u>webpage</u>

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

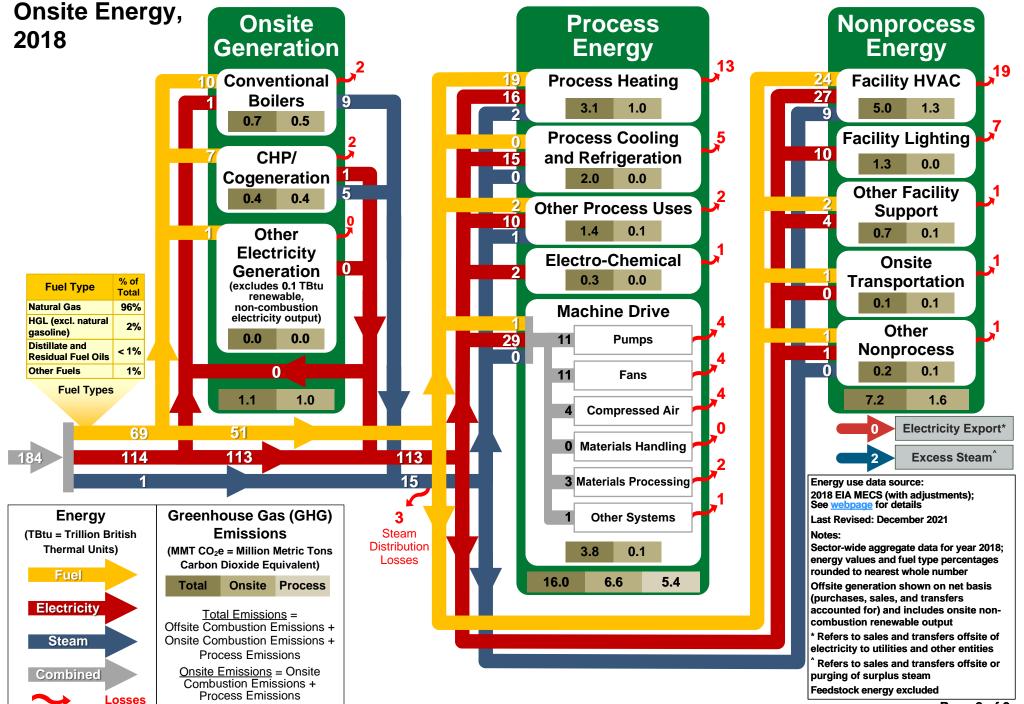
Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 403 TBtu

Manufacturing Energy and Carbon Footprint

Sector: Computers, Electronics and Electrical Equipment (NAICS 334, 335)

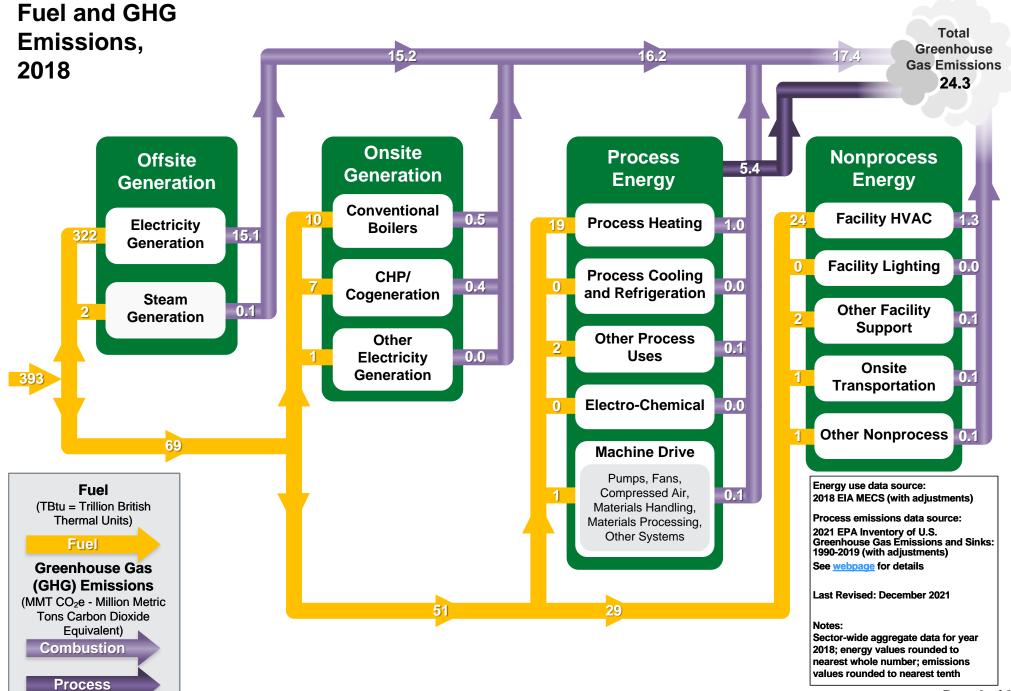
Onsite Energy Use: 184 TBtu
Onsite Emissions: 9 MMT CO₂e



Manufacturing Carbon Footprint

Sector: Computers, Electronics and Electrical Equipment (NAICS 334, 335)

Primary Energy Use: 393 TBtu
Total GHG Emissions: 24 MMT CO₂e

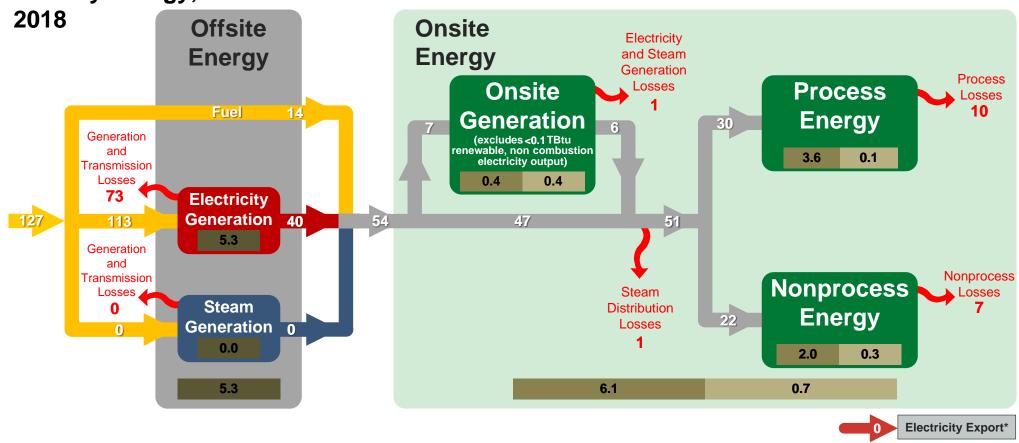


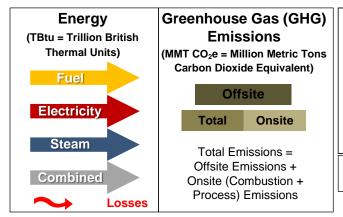
Manufacturing Energy and Carbon Footprint Sector: Semiconductor and Related Devices (NAICS 334413)

Primary Energy Use: 127 TBtu **Total GHG Emissions:**

6 MMT CO₂e

Primary Energy,





Energy use 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors,

data source: visit this webpage

Last Revised: December 2021

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

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

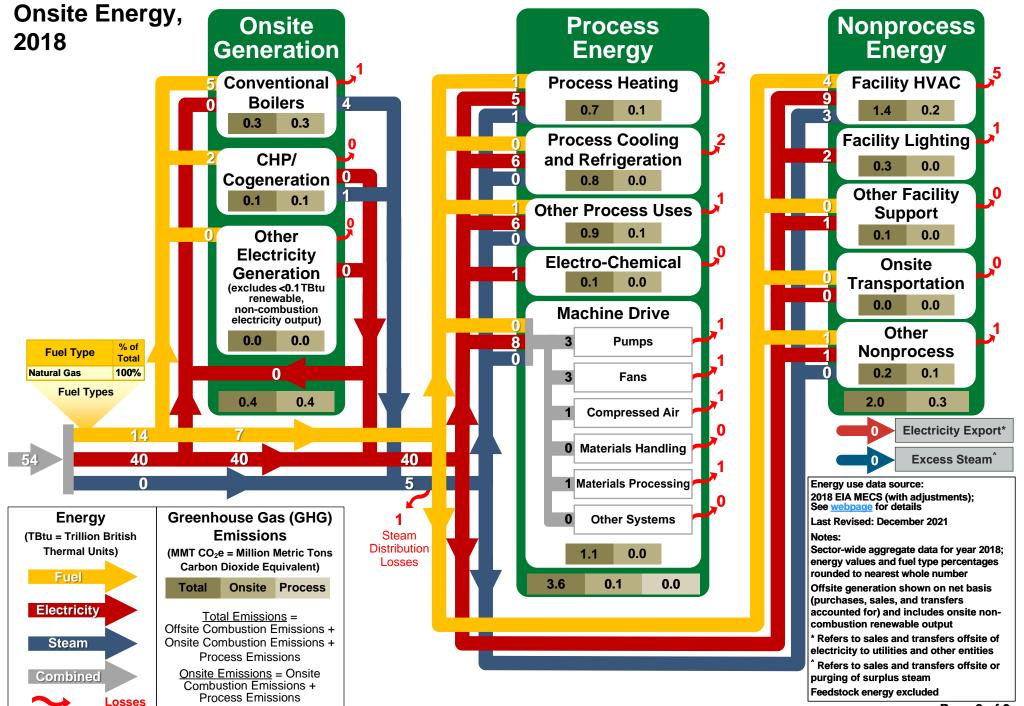
Energy for All Purposes estimated at 127 TBtu

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

Excess Steam

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

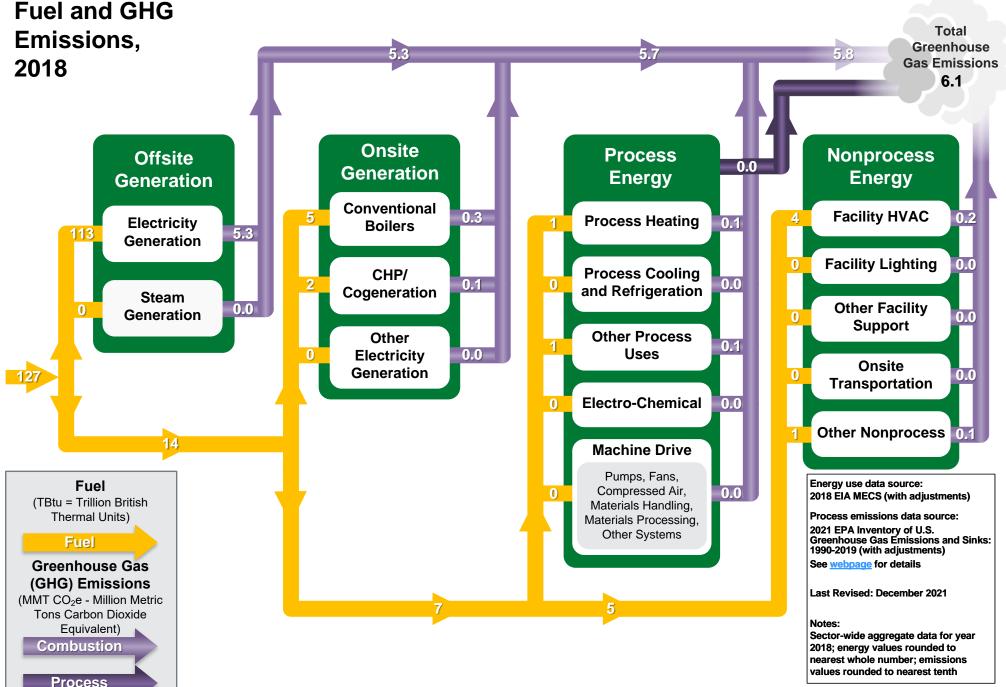
Onsite Energy Use: 54 TBtu
Onsite Emissions: 1 MMT CO₂e



Manufacturing Carbon Footprint

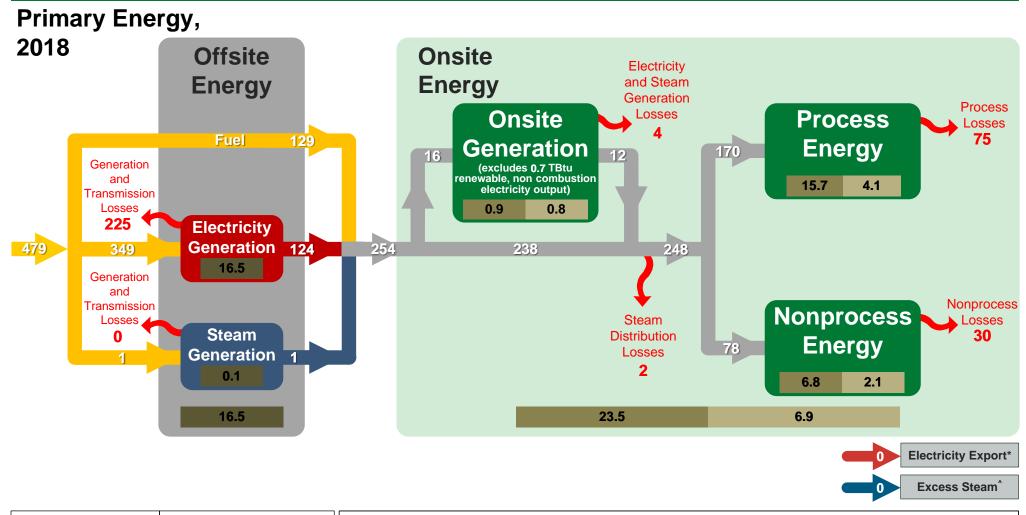
Sector: Semiconductor and Related Devices (NAICS 334413)

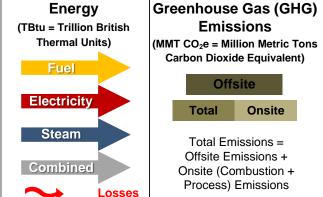
Primary Energy Use: 127 TBtu
Total GHG Emissions: 6 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Fabricated Metals (NAICS 332)

Primary Energy Use: 479 TBtu
Total GHG Emissions: 24 MMT CO₂e





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 482 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 254 TBtu Onsite Emissions: 7 MMT CO₂e Sector: Fabricated Metals (NAICS 332) **Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 33 **Process Heating Facility HVAC** Conventional **Boilers** 3.8 1.8 **Process Cooling Facility Lighting** CHP/ and Refrigeration 1.8 0.0 Cogeneration 0.7 0.0 Other Facility 0.7 **Other Process Uses Support** 0.5 0.2 Other 0.5 0.1 **Electricity Electro-Chemical Onsite** Generation 0.8 0.0 **Transportation** (excludes 0.7 TBtu % of **Fuel Type** renewable. 0.3 0.2 Total non-combustion **Machine Drive** Natural Gas 96% electricity output) Other HGL (excl. natural 2% **Pumps** gasoline) **Nonprocess** Distillate Fuel Oil < 1% 5 Other Fuels < 1% 0 0.0 0.0 13 Fans **Fuel Types** 0.9 0.8 6.8 2.1 **Compressed Air Electricity Export*** 129 115 2 Materials Handling 124 123 Excess Steam 19 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 0.1 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 15.7 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or Onsite Emissions = Onsite Combined purging of surplus steam

Combustion Emissions +

Process Emissions

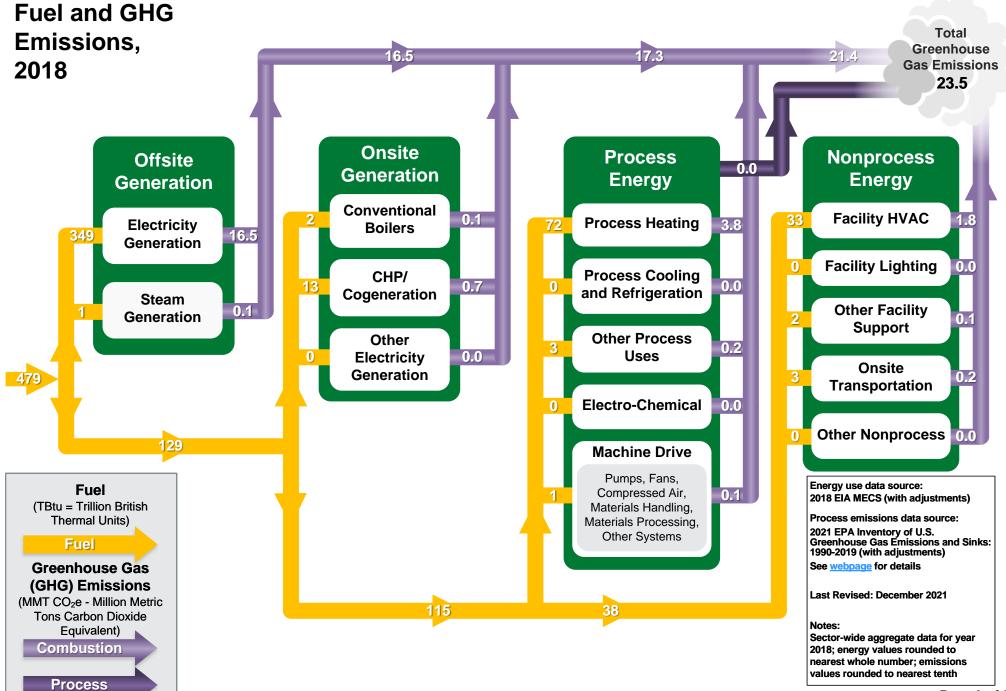
Losses

Page 2 of 3

Feedstock energy excluded

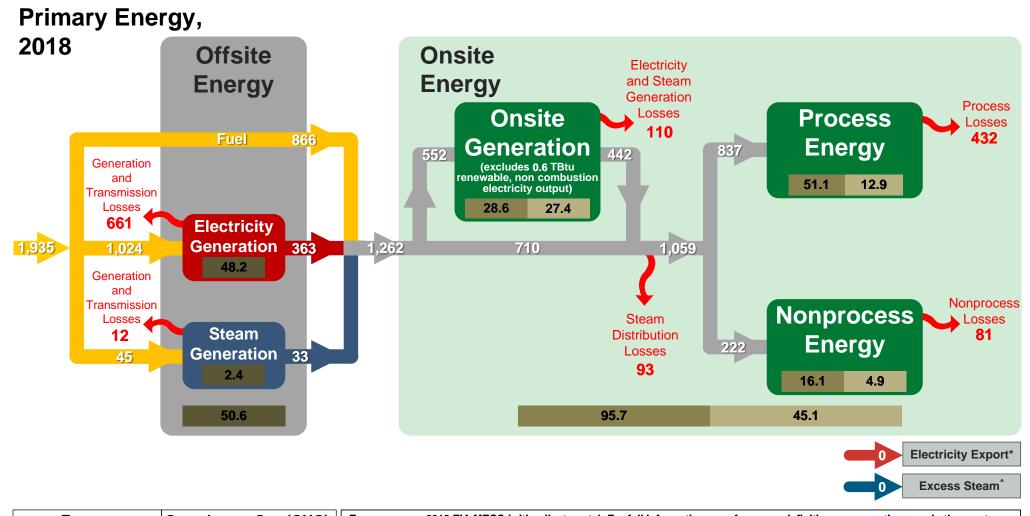
Manufacturing Carbon Footprint Sector: Fabricated Metals (NAICS 332)

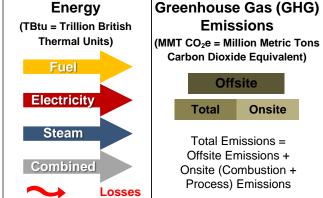
Primary Energy Use: 479 TBtu
Total GHG Emissions: 24 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Food and Beverage (NAICS 311, 312)

Primary Energy Use: 1,935 TBtu
Total GHG Emissions: 96 MMT CO₂e





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

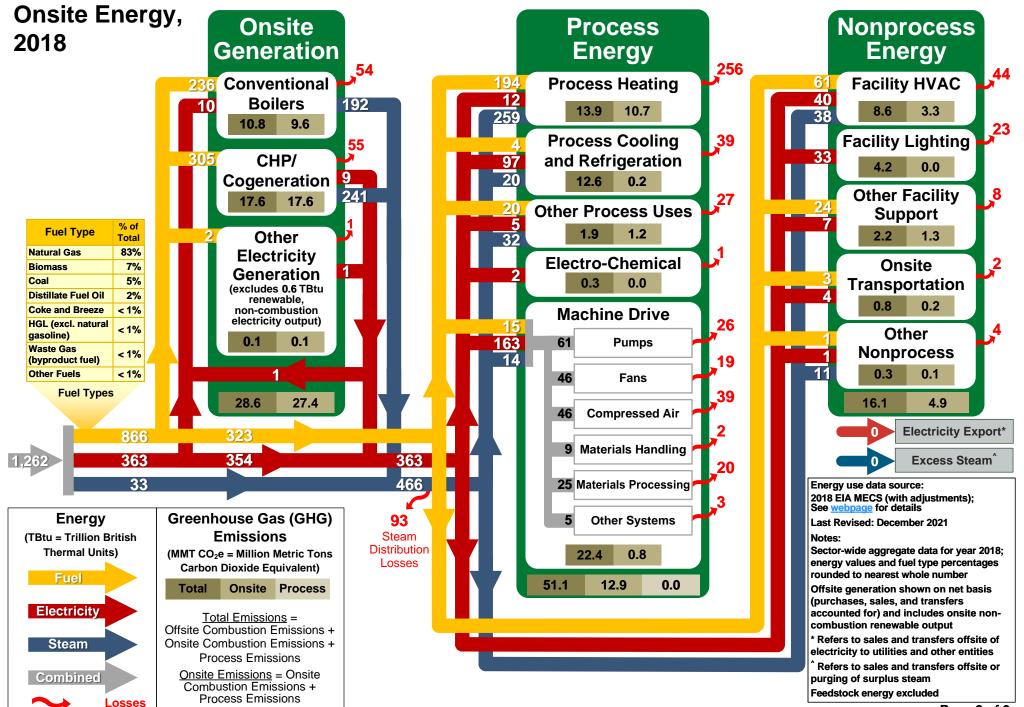
combustion renewable output
* Electricity export refers to sales and transfers offsite of electricity to utilities and other entities

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 1,952 TBtu

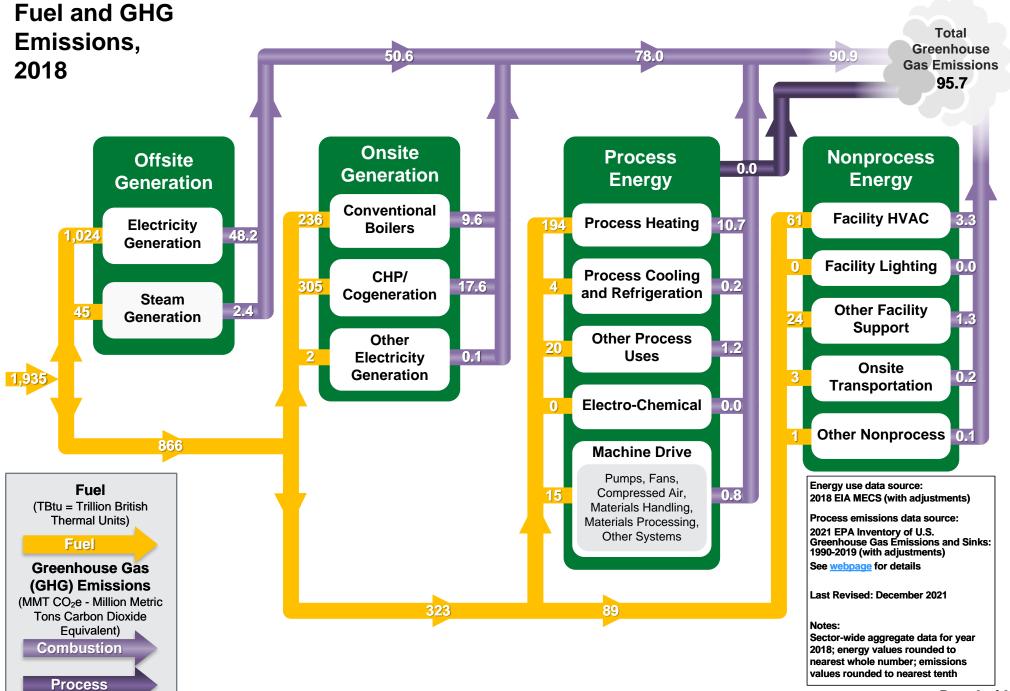
Manufacturing Energy and Carbon Footprint Sector: Food and Beverage (NAICS 311, 312)

Onsite Energy Use: 1,262 TBtu
Onsite Emissions: 45 MMT CO₂e



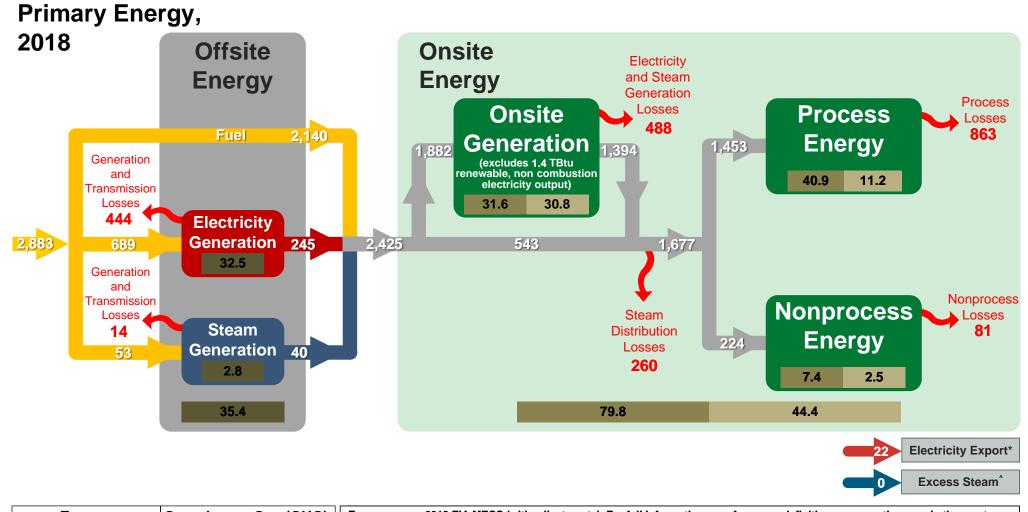
Manufacturing Carbon Footprint Sector: Food and Beverage (NAICS 311, 312)

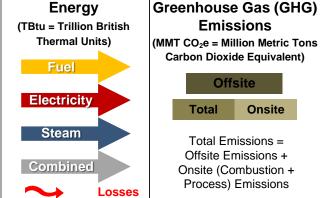
Primary Energy Use: 1,935 TBtu
Total GHG Emissions: 96 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Forest Products (NAICS 321, 322)

Primary Energy Use: 2,883 TBtu
Total GHG Emissions: 80 MMT CO₂e





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

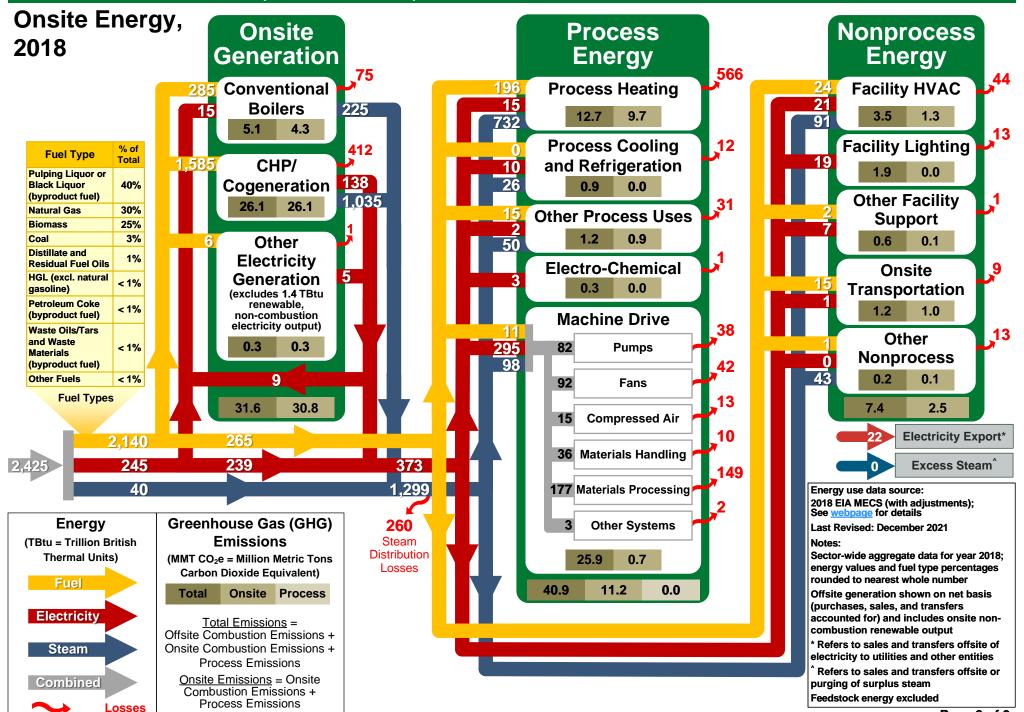
* Electricity export refers to sales and transfers offsite of electricity to utilities and other entities

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 2,887 TBtu

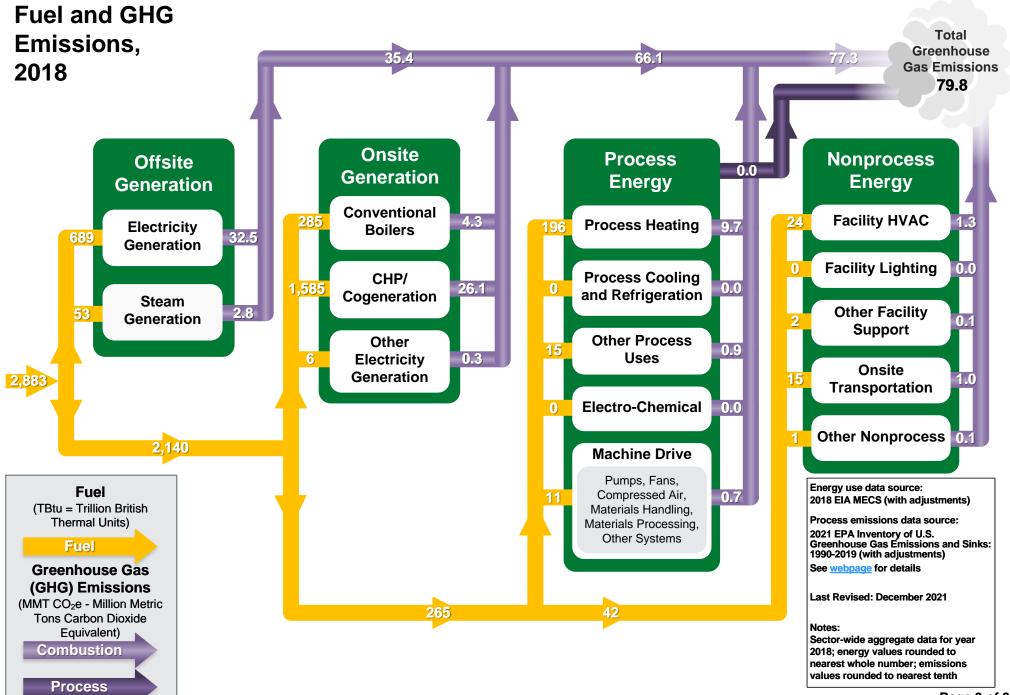
Manufacturing Energy and Carbon Footprint Sector: Forest Products (NAICS 321, 322)

Onsite Energy Use: 2,425 TBtu
Onsite Emissions: 44 MMT CO₂e



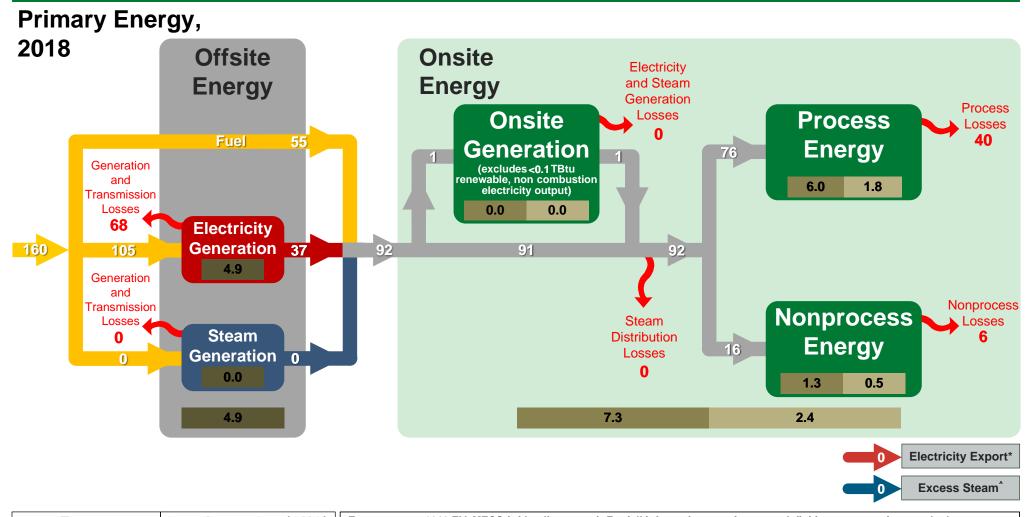
Manufacturing Carbon Footprint Sector: Forest Products (NAICS 321, 322)

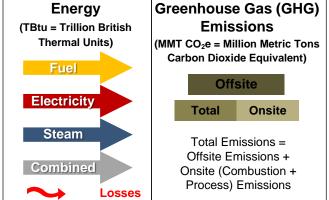
Primary Energy Use: 2,883 TBtu
Total GHG Emissions: 80 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Foundries (NAICS 3315)

Primary Energy Use: 160 TBtu
Total GHG Emissions: 7 MMT CO₂e





Energy use 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, data source: 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 161 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 92 TBtu **Onsite Emissions:** 2 MMT CO₂e **Sector: Foundries (NAICS 3315) Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 29 **Process Heating Facility HVAC** Conventional **Boilers** 1.6 0.5 0.0 **Process Cooling Facility Lighting** and Refrigeration CHP/ 0.3 0.0 Cogeneration 0.1 0.0 Other Facility 0.0 0.0 **Other Process Uses Support** 0.4 0.1 Other **Electricity Electro-Chemical Onsite** Generation 0.0 0.0 **Transportation** (excludes < 0.1 TBtu renewable. 0.0 0.0 % of non-combustion **Machine Drive Fuel Type** Total electricity output) 0 Other 80% Natural Gas **Pumps** Coke and Breeze 18% **Nonprocess** HGL (excl. natural 2% 0 0.0 0.0 gasoline) Fans **Fuel Types** 0.0 0.0 1.3 0.5 **Compressed Air Electricity Export*** 55 Materials Handling **37** Excess Steam 8 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 0.1 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 6.0 1.8 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or Onsite Emissions = Onsite

Combined

Losses

Combustion Emissions +

Process Emissions

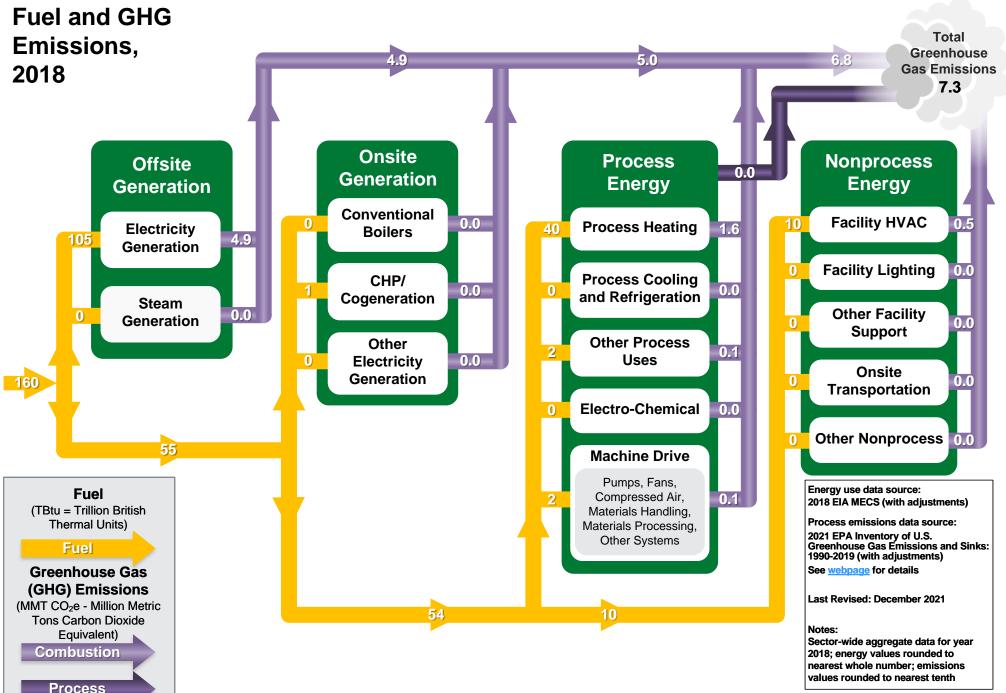
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purging of surplus steam

Feedstock energy excluded

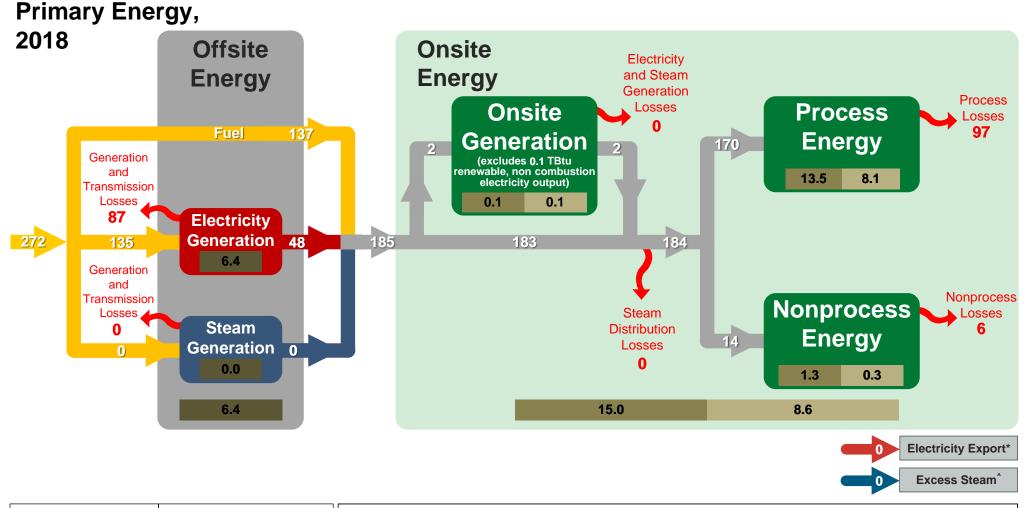
Manufacturing Carbon Footprint Sector: Foundries (NAICS 3315)

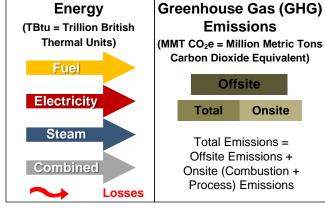
Primary Energy Use: 160 TBtu
Total GHG Emissions: 7 MMT CO₂e



Manufacturing Energy and Carbon FootprintSector: Glass and Glass Products (NAICS 3272, 327993)

Primary Energy Use: 272 TBtu
Total GHG Emissions: 15 MMT CO₂e





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

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 274 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 185 TBtu Onsite Emissions: 9 MMT CO₂e Sector: Glass and Glass Products (NAICS 3272, 327993) **Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 84 **Process Heating Facility HVAC** Conventional **Boilers** 9.2 6.7 0.3 0.1 **Process Cooling Facility Lighting** CHP/ and Refrigeration 0.4 0.0 Cogeneration 0.6 0.0 Other Facility 0.0 0.0 **Other Process Uses Support** 0.1 0.0 Other 0.0 0.0 **Electricity Electro-Chemical Onsite** Generation 0.0 0.0 **Transportation** (excludes 0.1 TBtu renewable. 0.0 0.0 non-combustion **Machine Drive** electricity output) Other **Fuel Type Pumps** Total **Nonprocess Natural Gas** 99% Other Fuels 1% 0 0.0 0.0 Fans **Fuel Types** 6 0.1 0.1 1.3 0.3 **Compressed Air Electricity Export*** 137 2 Materials Handling 48 48 185 Excess Steam 3 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions**

Steam Distribution

Losses

(MMT CO₂e = Million Metric Tons

Carbon Dioxide Equivalent)

Total Emissions =

Offsite Combustion Emissions +

Onsite Combustion Emissions +

Process Emissions

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Onsite Process

Total

(TBtu = Trillion British

Thermal Units)

Fuel

Electricity

Steam

Combined

Losses

Sector-wide aggregate data for year 2018;

energy values and fuel type percentages

Offsite generation shown on net basis (purchases, sales, and transfers

accounted for) and includes onsite non-

Refers to sales and transfers offsite of

Refers to sales and transfers offsite or

electricity to utilities and other entities

rounded to nearest whole number

combustion renewable output

purging of surplus steam

Feedstock energy excluded

0.2

1.3

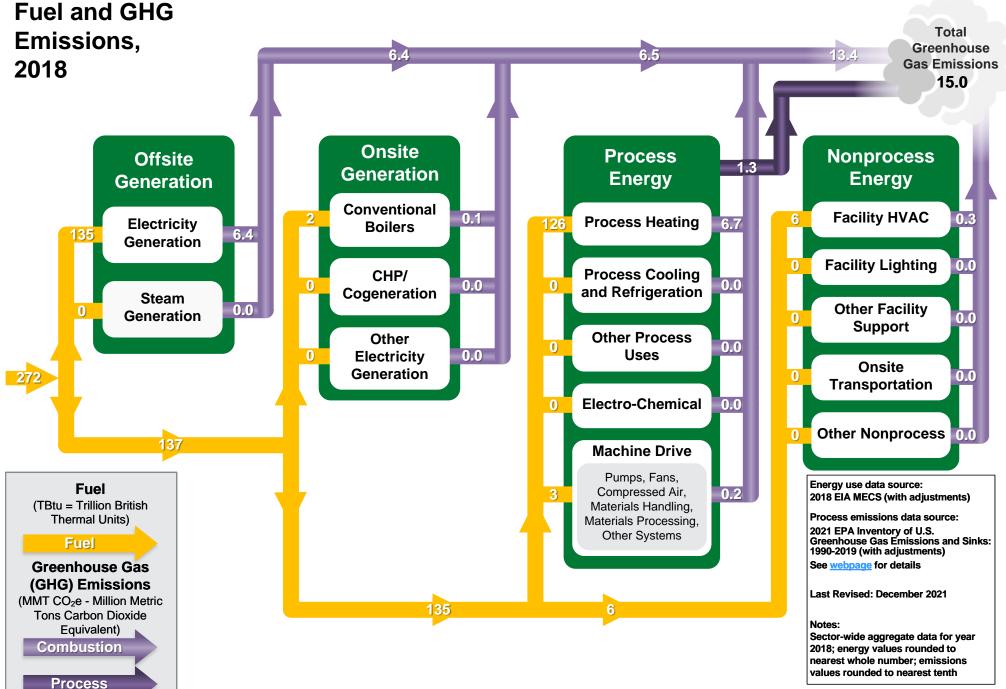
8.1

13.5

Manufacturing Carbon Footprint Sector: Class and Class Broducts (NAICS 3)

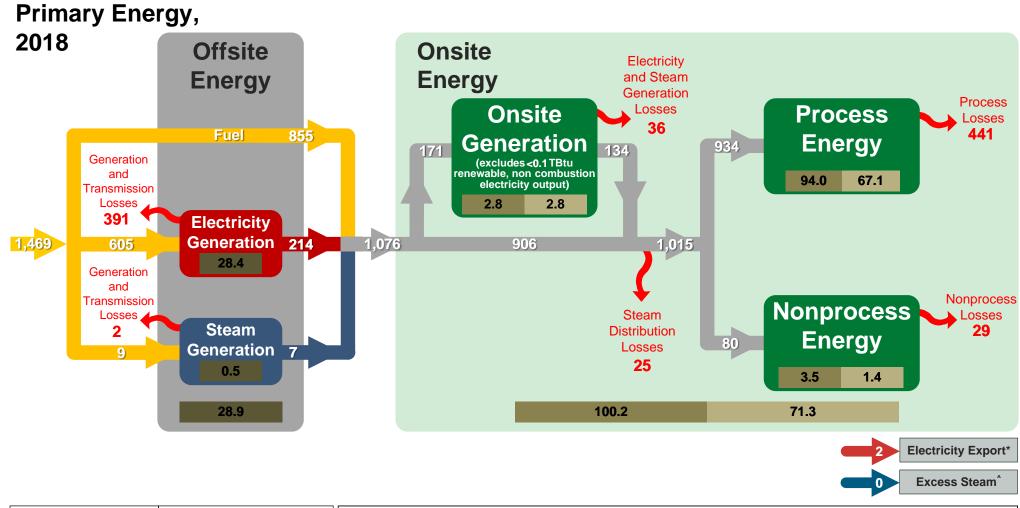
Sector: Glass and Glass Products (NAICS 3272, 327993)

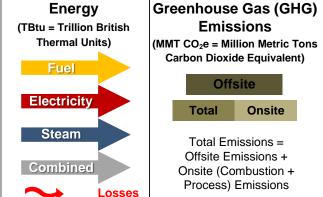
Primary Energy Use: 272 TBtu
Total GHG Emissions: 15 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Iron and Steel (NAICS 331110, 3312)

Primary Energy Use: 1,469 TBtu
Total GHG Emissions: 100 MMT CO₂e





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

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 noncombustion renewable output

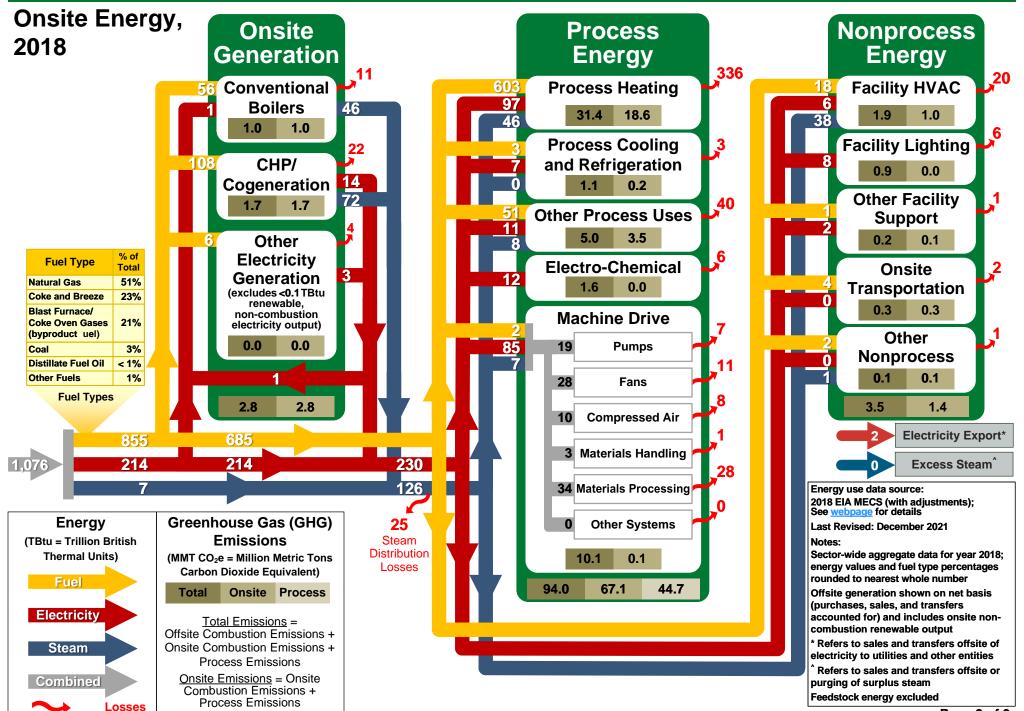
* Electricity export refers to sales and transfers offsite of electricity to utilities and other entities

Feedstock energy excluded from primary, offsite, and onsite energy values and included in Energy for All Purposes Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 1,493 TBtu

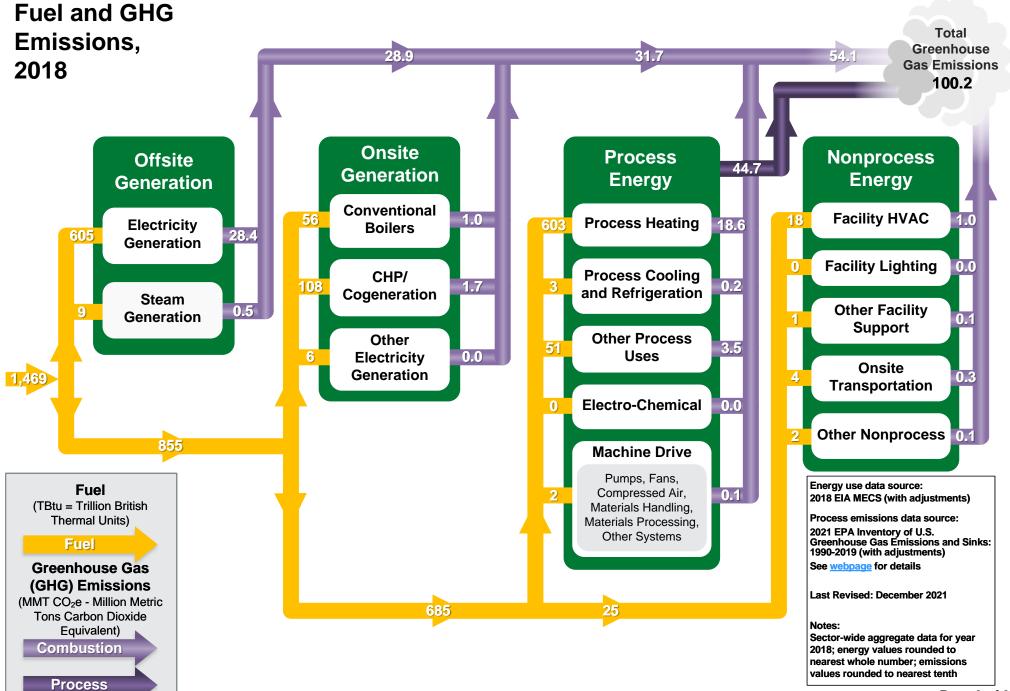
Manufacturing Energy and Carbon Footprint Sector: Iron and Steel (NAICS 331110, 3312)

Onsite Energy Use: 1,076 TBtu
Onsite Emissions: 71 MMT CO₂e



Manufacturing Carbon Footprint Sector: Iron and Steel (NAICS 331110, 3312)

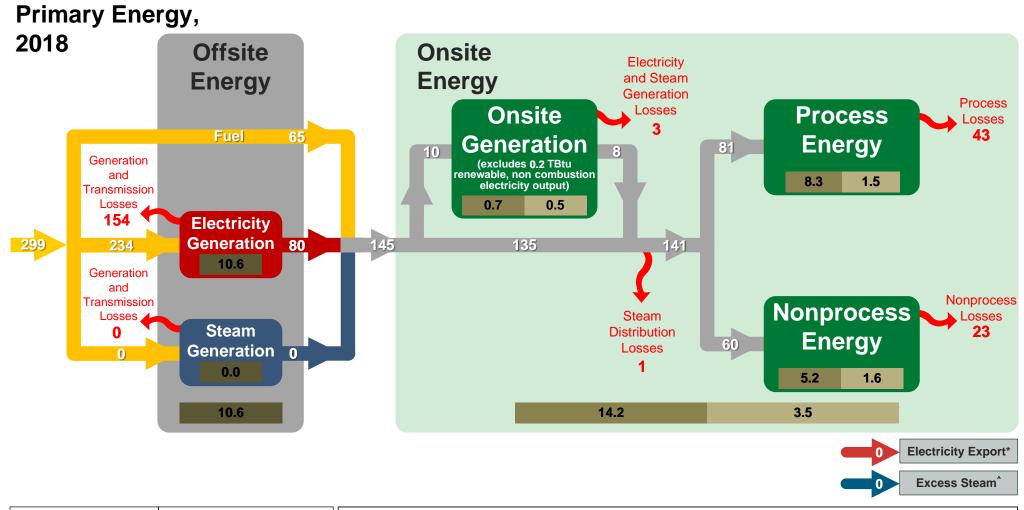
Primary Energy Use: 1,469 TBtu
Total GHG Emissions: 100 MMT CO₂e

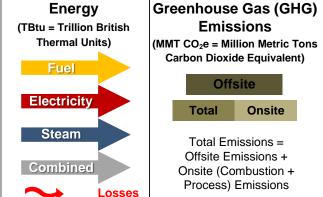


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Manufacturing Energy and Carbon Footprint Sector: Machinery (NAICS 333)

Primary Energy Use: 299 TBtu
Total GHG Emissions: 14 MMT CO₂e





Energy use 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, data source: 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 302 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 145 TBtu Onsite Emissions: 4 MMT CO₂e **Sector: Machinery (NAICS 333) Onsite Energy, Onsite** Nonprocess **Process** 2018 Generation **Energy Energy Process Heating Facility HVAC** Conventional **Boilers** 1.1 1.4 0.2 **Process Cooling Facility Lighting** and Refrigeration CHP/ 1.3 0.0 Cogeneration 0.4 0.0 Other Facility 0.3 0.3 **Other Process Uses Support** 0.3 0.2 Other 0.5 0.0 **Electricity Electro-Chemical Onsite** Generation 0.0 0.0 **Transportation** (excludes 0.2 TBtu % of **Fuel Type** renewable. 0.2 0.1 Total non-combustion **Machine Drive** Natural Gas 91% electricity output) 5 Other HGL (excl. natural 5% 10 **Pumps** gasoline) **Nonprocess** Distillate Fuel Oil 3% 3 Other Fuels 2% 0 0.0 0.0 Fans **Fuel Types** 0.7 0.5 5.2 1.6 **Compressed Air Electricity Export*** 65 5 Materials Handling 80 145 Excess Steam 16 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 5.9 0.2 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 8.3 1.5 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or Onsite Emissions = Onsite Combined purging of surplus steam

Combustion Emissions +

Process Emissions

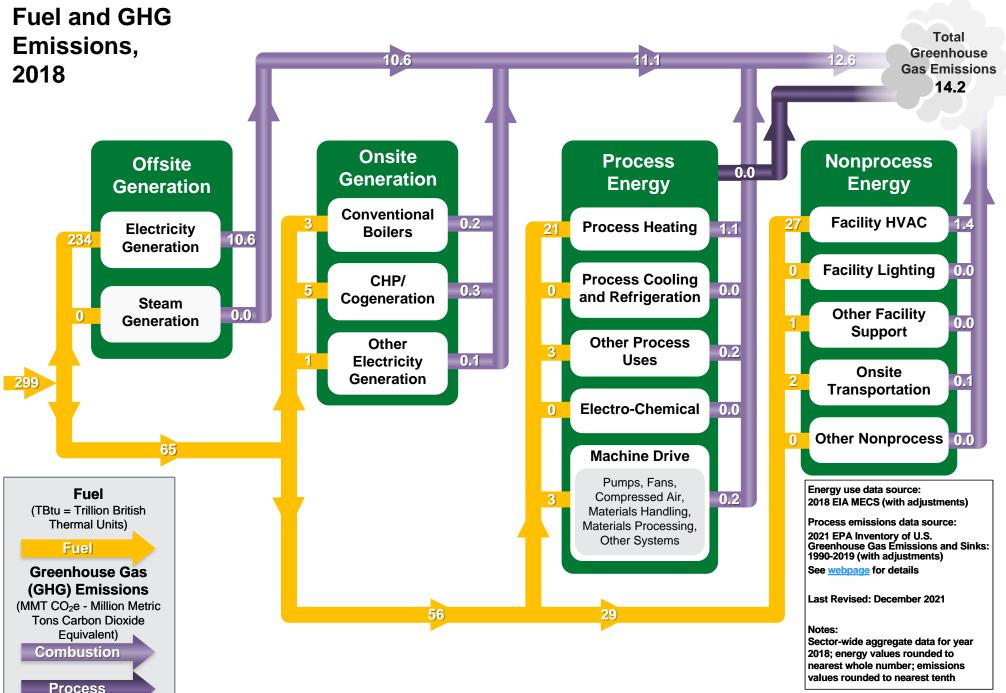
Losses

Page 2 of 3

Feedstock energy excluded

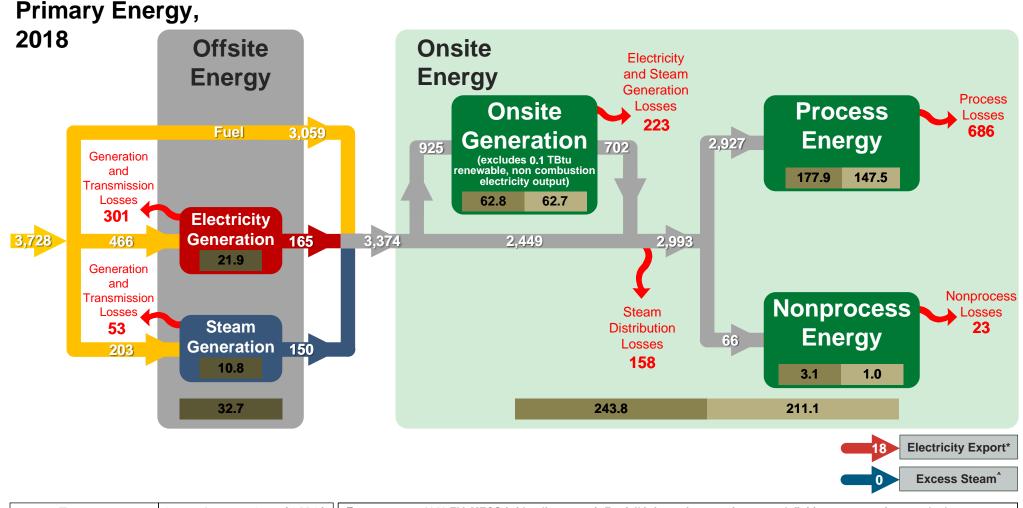
Manufacturing Carbon Footprint Sector: Machinery (NAICS 333)

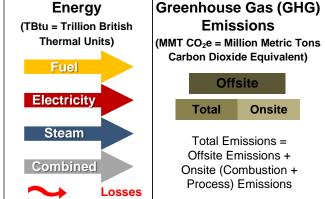
Primary Energy Use: 299 TBtu
Total GHG Emissions: 14 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Petroleum Refining (NAICS 324110)

Primary Energy Use: 3,728 TBtu Total GHG Emissions: 244 MMT CO₂e





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

Last Revised: December 2021

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

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

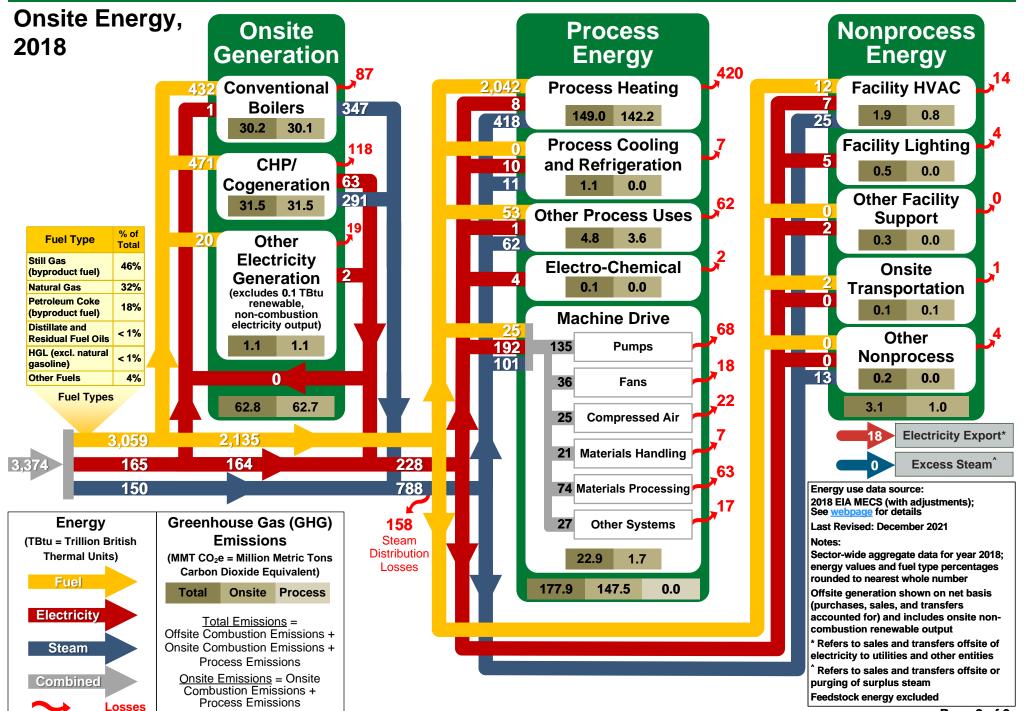
Feedstock energy excluded from primary, offsite, and onsite energy values and included in Energy for All Purposes

Excess steam refers to the sales and transfer offsite or purging of surplus steam

Energy for All Purposes estimated at 3,728 TBtu

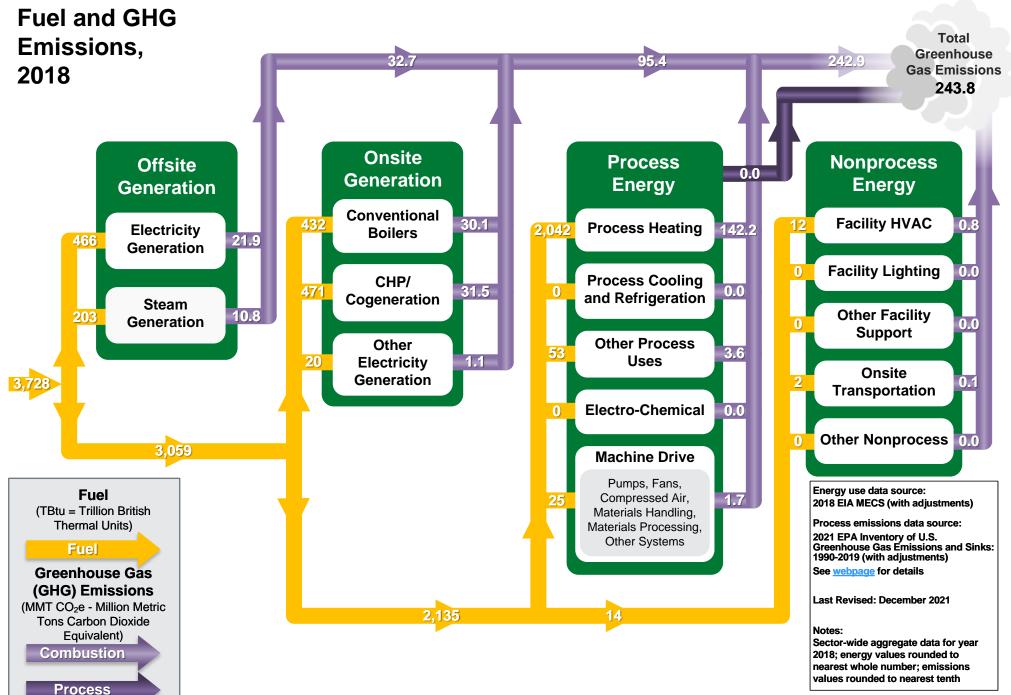
Manufacturing Energy and Carbon Footprint Sector: Petroleum Refining (NAICS 324110)

Onsite Energy Use: 3,374 TBtu
Onsite Emissions: 211 MMT CO₂e



Manufacturing Carbon Footprint Sector: Petroleum Refining (NAICS 324110)

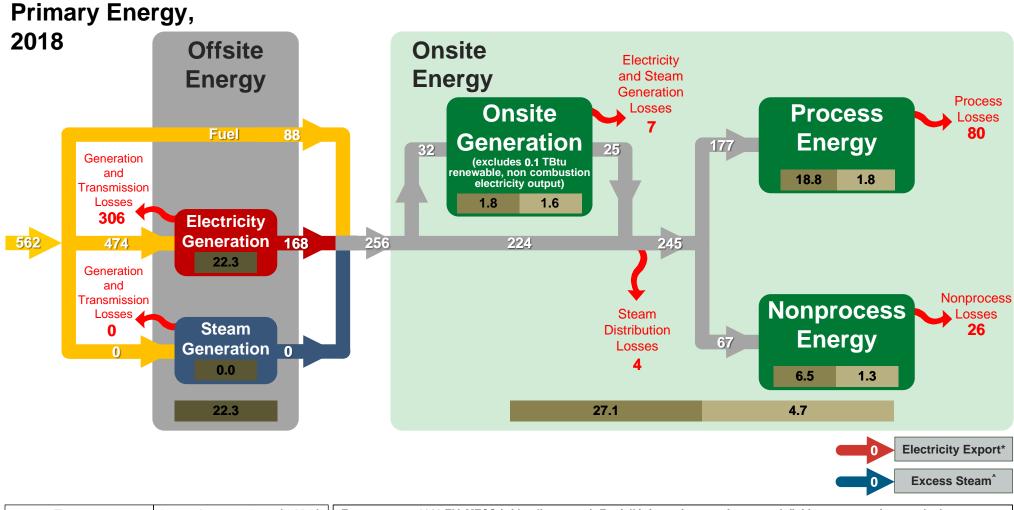
Primary Energy Use: 3,728 TBtu
Total GHG Emissions: 244 MMT CO₂e

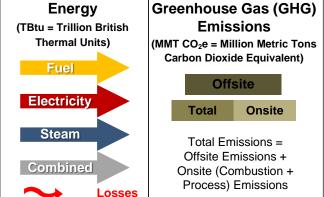


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Manufacturing Energy and Carbon Footprint Sector: Plastics and Rubber Products (NAICS 326)

Primary Energy Use: 562 TBtu Total GHG Emissions: 27 MMT CO₂e





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

Last Revised: December 2021

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

Offsite generation shown on net basis (purchases, sales, and transfers accounted for) and includes onsite non-

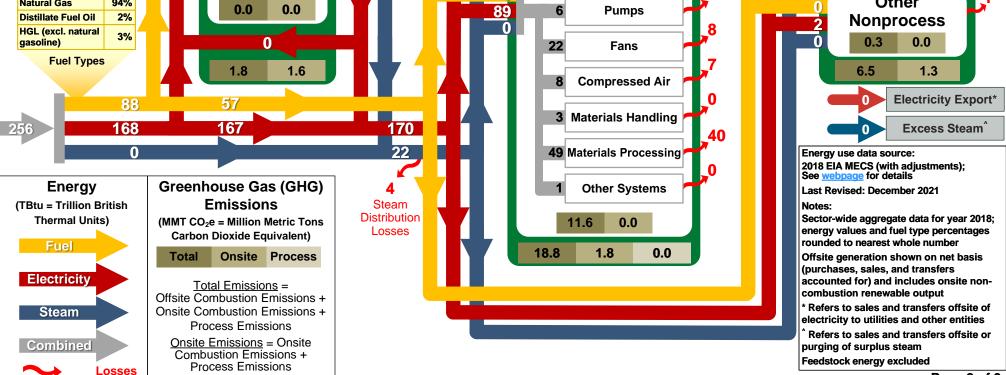
combustion renewable output

* 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

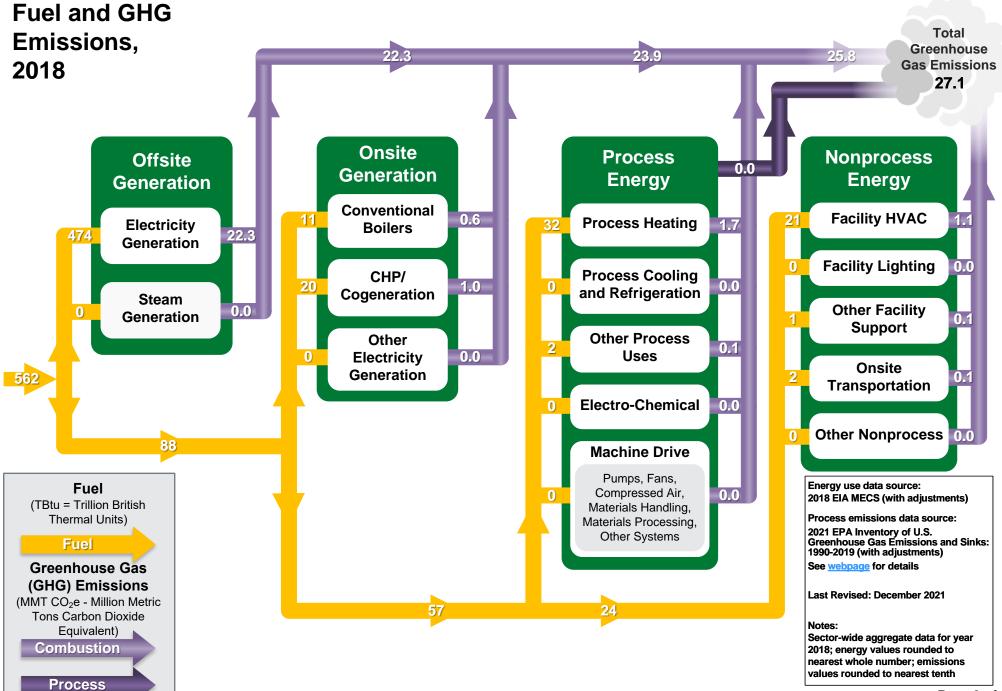
Energy for All Purposes estimated at 563 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 256 TBtu Onsite Emissions: 5 MMT CO₂e **Sector: Plastics and Rubber Products (NAICS 326) Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 15 **Process Heating Facility HVAC** Conventional **Boilers** 10 4.3 1.7 1.1 0.6 **Process Cooling Facility Lighting** CHP/ and Refrigeration 1.7 0.0 Cogeneration 1.9 0.0 Other Facility 1.0 **Other Process Uses Support** 0.8 0.1 Other 0.1 **Electricity Electro-Chemical Onsite** Generation 0.3 0.0 **Transportation** (excludes 0.1 TBtu renewable. 0.4 0.1 % of non-combustion **Machine Drive Fuel Type** Total electricity output) 2 Other Natural Gas 94% **Pumps** Distillate Fuel Oil 2% **Nonprocess** 8 HGL (excl. natural 3% 0 0.3 0.0 gasoline) 22 Fans **Fuel Types** 1.8 1.6 6.5 1.3 **Compressed Air Electricity Export*** 88 3 Materials Handling 168 167 256 Excess Steam



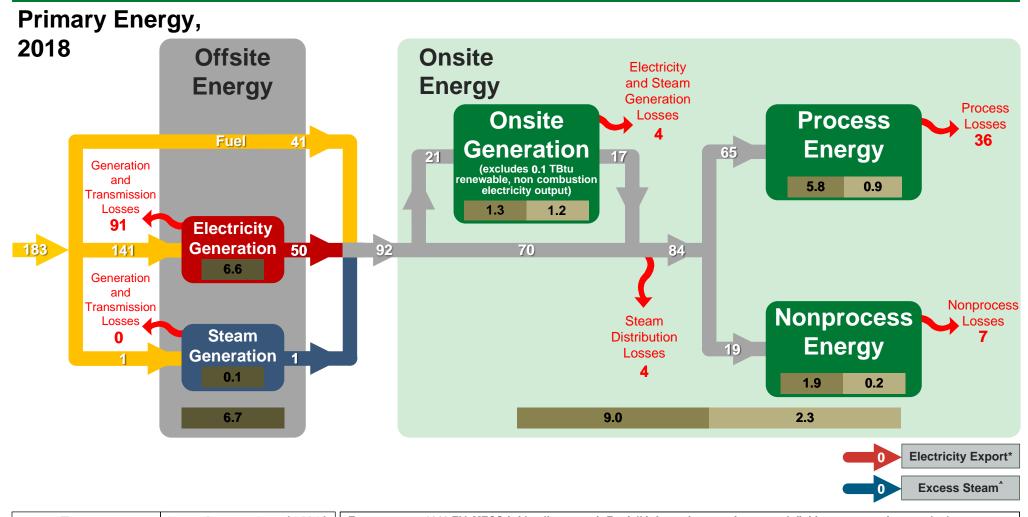
Manufacturing Carbon Footprint Sector: Plastics and Rubber Products (NAICS 326)

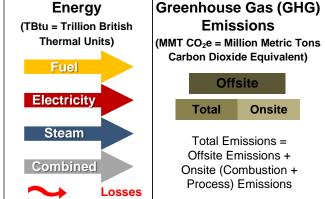
Primary Energy Use: 562 TBtu
Total GHG Emissions: 27 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Textiles (NAICS 313-316)

Primary Energy Use: 183 TBtu Total GHG Emissions: 9 MMT CO₂e





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

Last Revised: December 2021

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

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 183 TBtu

Onsite Energy Use: Manufacturing Energy and Carbon Footprint 92 TBtu Sector: Textiles (NAICS 313-316) **Onsite Emissions:** 2 MMT CO₂e **Onsite Energy, Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 17 **Process Heating Facility HVAC** Conventional **Boilers 12** 8.0 0.2 1.4 0.8 **Process Cooling Facility Lighting** and Refrigeration CHP/ 0.4 0.0 Cogeneration 0.3 0.0 Other Facility 0.4 **Other Process Uses Support** 0.1 0.0 Other **Electricity Electro-Chemical Onsite** % of Generation **Fuel Type** Total 0.0 0.0 **Transportation** (excludes 0.1 TBtu Natural Gas 91% renewable. 0.0 0.0 HGL (excl. natural non-combustion **Machine Drive** 3% gasoline) electricity output) 2 Other 2% Coal **Pumps** Distillate and **Nonprocess** 2% Residual Fuel Oils 5 Other Fuels 1% 0 0.0 0.0 12 Fans **Fuel Types** 1.3 1.2 1.9 0.2 **Compressed Air Electricity Export*** 41 20 **Materials Handling 50** 49 Excess Steam 7 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 0.1 4.0 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 5.8 0.9 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Combined

Losses

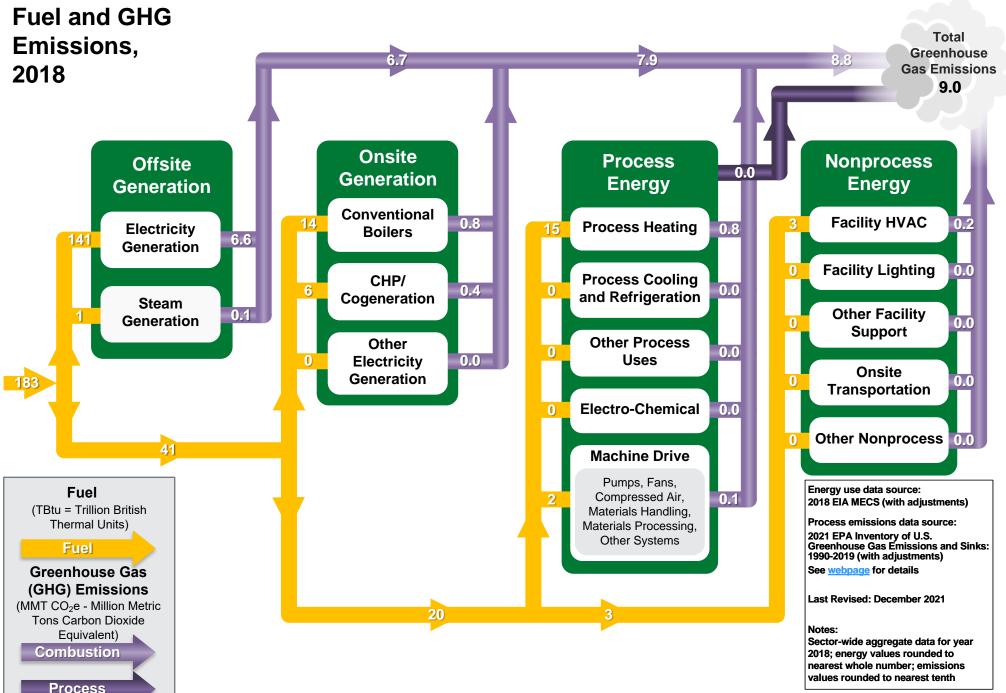
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purging of surplus steam

Feedstock energy excluded

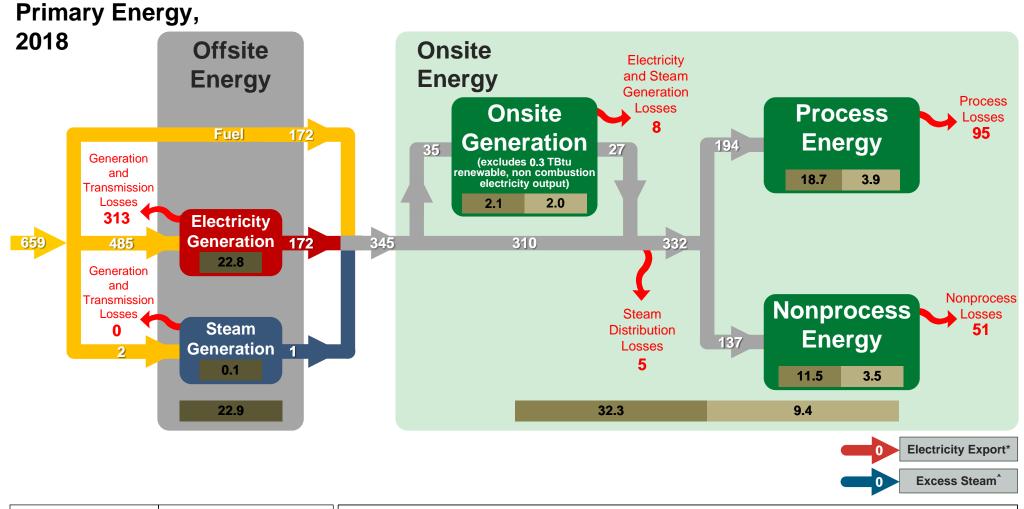
Manufacturing Carbon Footprint Sector: Textiles (NAICS 313-316)

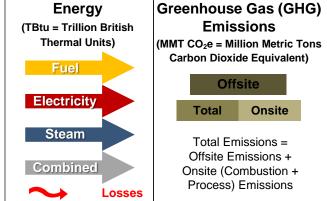
Primary Energy Use: 183 TBtu
Total GHG Emissions: 9 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Transportation Equipment (NAICS 336)

Primary Energy Use: 659 TBtu Total GHG Emissions: 32 MMT CO₂e





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

Last Revised: December 2021

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

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 662 TBtu

Manufacturing Energy and Carbon Footprint Onsite Energy Use: 345 TBtu Onsite Emissions: 9 MMT CO₂e **Sector: Transportation Equipment (NAICS 336) Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy** 38 **Process Heating Facility HVAC** Conventional **Boilers** 18 3.4 3.1 1.3 **Process Cooling Facility Lighting** CHP/ and Refrigeration 2.7 0.0 Cogeneration 1.6 0.1 Other Facility 0.6 0.6 **Other Process Uses Support** 0.2 Other 0.8 0.1 **Electricity Electro-Chemical** % of **Fuel Type Onsite** Total Generation 0.1 0.0 **Transportation Natural Gas** 91% (excludes 0.3 TBtu Distillate and renewable. 3% 0.6 0.3 Residual Fuel Oils non-combustion **Machine Drive** electricity output) 8 HGL (excl. natural 2% Other gasoline) 21 **Pumps Waste Gas Nonprocess** < 1% 8 (byproduct fuel) Other Fuels 3% 0 0.2 0.1 22 Fans **Fuel Types** 2.1 2.0 11.5 3.5 **Compressed Air Electricity Export*** 172 Materials Handling 345 172 Excess Steam 23 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); age for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 10.3 0.3 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 18.7 3.9 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities **Process Emissions** Refers to sales and transfers offsite or Onsite Emissions = Onsite

Combined

Losses

Combustion Emissions +

Process Emissions

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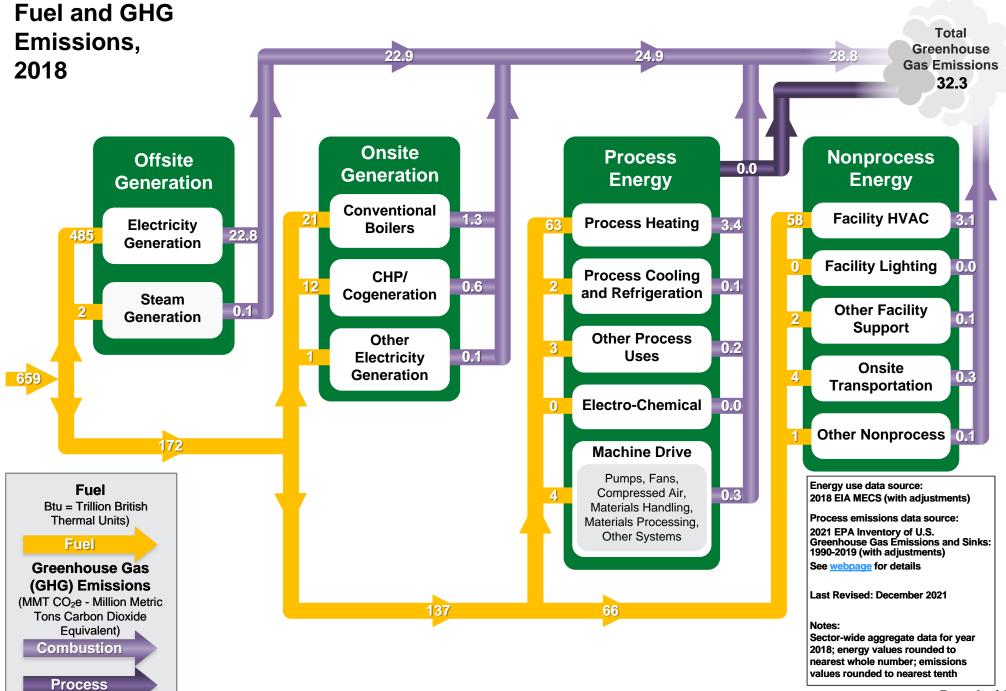
purging of surplus steam

Feedstock energy excluded

Manufacturing Carbon Footprint Sector: Transportation Equipment (NAICS 336)

Primary Energy Use: 659 TBtu

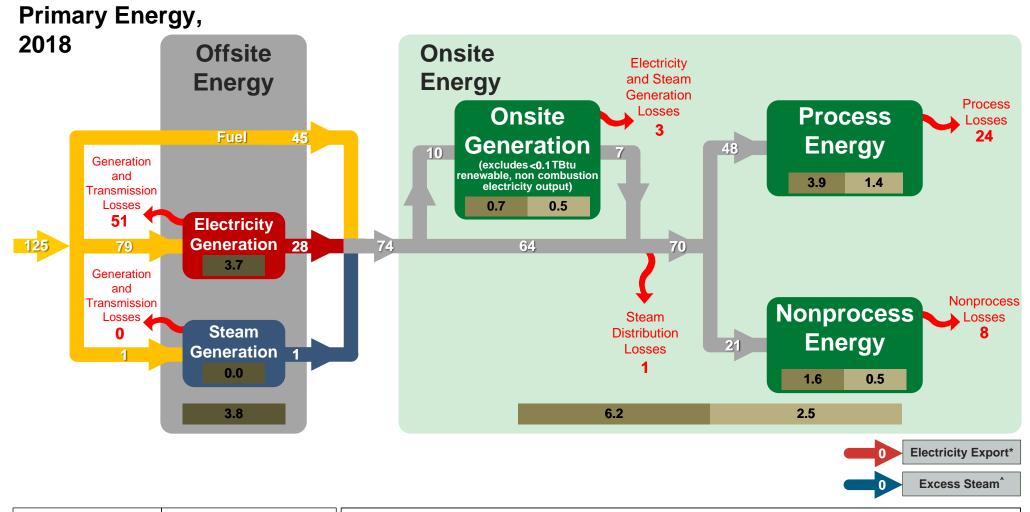
Total GHG Emissions: 32 MMT CO₂e

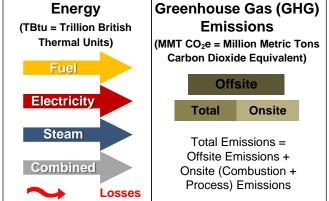


Manufacturing Energy and Carbon Footprint

Sector: Automobile and Light Duty Motor Vehicle (NAICS 33611)

Primary Energy Use: 125 TBtu **Total GHG Emissions:** 6 MMT CO₂e





Energy use 2018 EIA MECS (with adjustments). For full information on references, definitions, assumptions, and other sectors, data source: visit this webpage Last Revised: December 2021

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

Offsite generation shown on net basis (purchases, sales, and transfers accounted for) and includes onsite non-

combustion renewable output

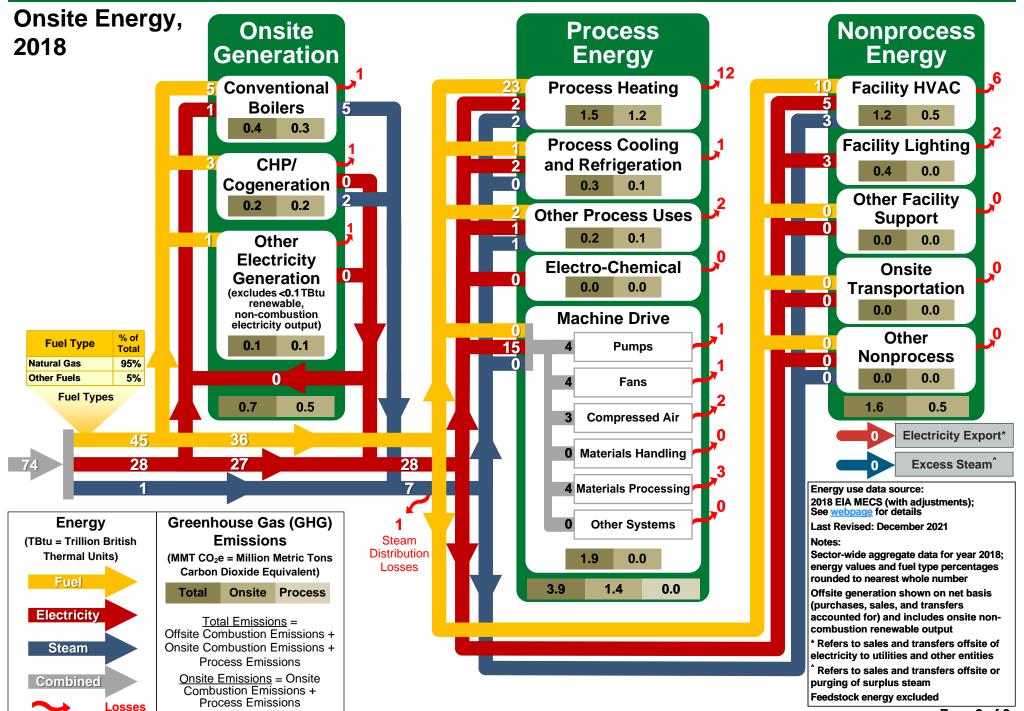
* Electricity export refers to sales and transfers offsite of electricity to utilities and other entities

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 126 TBtu

Manufacturing Energy and Carbon Footprint Sector: Automobile and Light Duty Motor Vehicle (NAICS 33611)

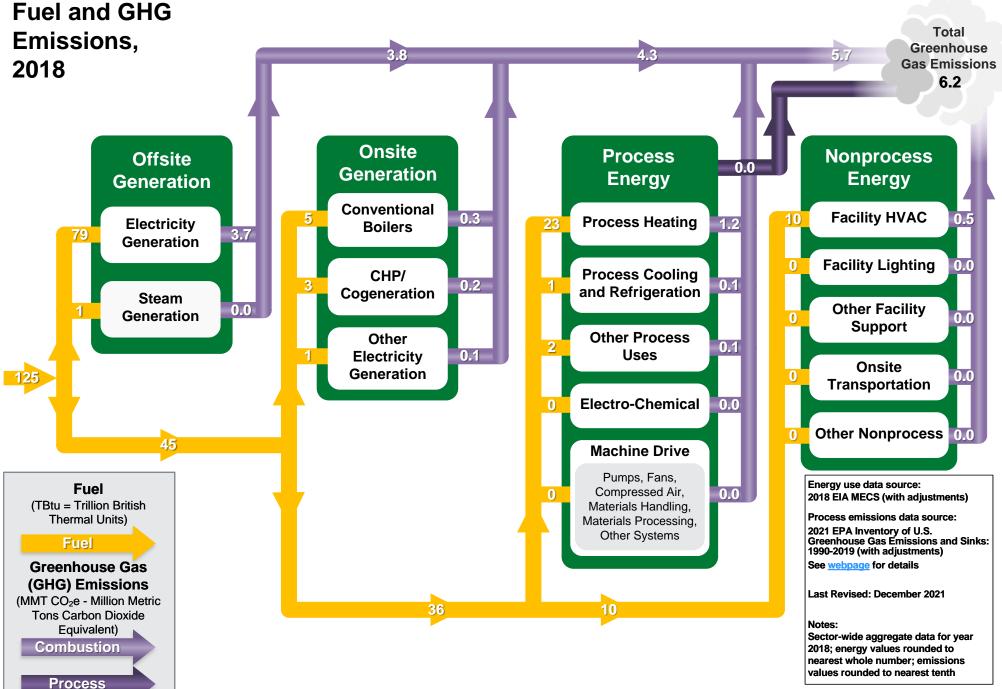
Onsite Energy Use: 74 TBtu
Onsite Emissions: 3 MMT CO₂e



Manufacturing Carbon Footprint

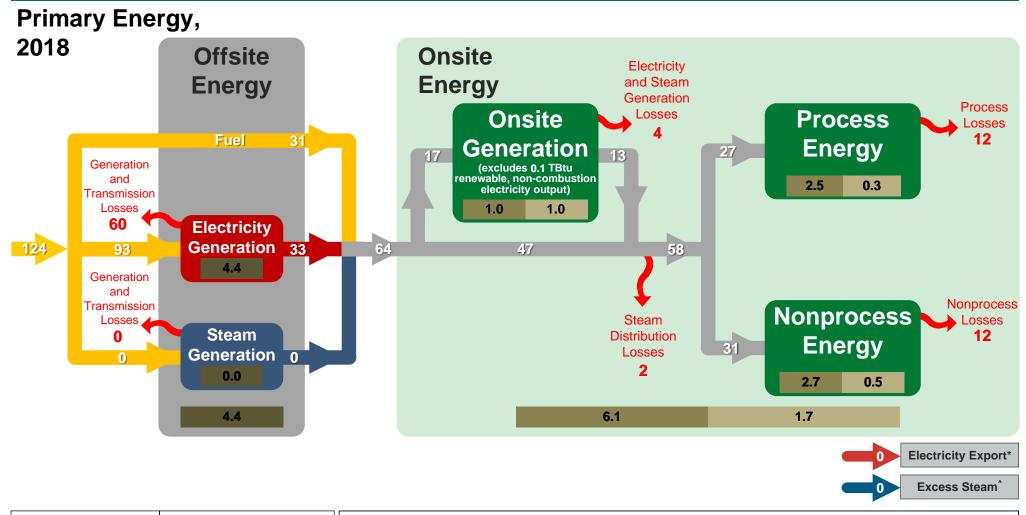
Sector: Automobile and Light Duty Motor Vehicle (NAICS 33611)

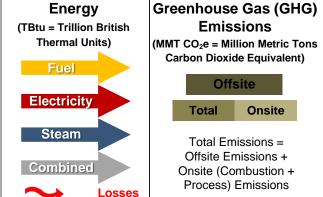
Primary Energy Use: 125 TBtu
Total GHG Emissions: 6 MMT CO₂e



Manufacturing Energy and Carbon Footprint Sector: Aerospace Product and Parts (NAICS 3364)

Primary Energy Use: 124 TBtu
Total GHG Emissions: 6 MMT CO₂e





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 126 TBtu

Onsite Energy Use: Manufacturing Energy and Carbon Footprint 64 TBtu **Onsite Emissions:** 2 MMT CO₂e **Sector: Aerospace Product and Parts (NAICS 3364) Onsite Energy**, **Onsite** Nonprocess **Process** 2018 Generation **Energy Energy Process Heating Facility HVAC** Conventional **Boilers** 8.0 0.2 0.4 0.7 **Process Cooling Facility Lighting** CHP/ and Refrigeration 0.7 0.0 Cogeneration 0.4 0.0 Other Facility 0.3 0.3 **Other Process Uses Support** 0.0 Other 0.2 **Electricity Electro-Chemical Onsite** Generation 0.0 0.0 **Transportation** (excludes 0.1 TBtu renewable. 0.0 0.0 non-combustion **Machine Drive** electricity output) Other % of **Fuel Type Pumps** Total **Nonprocess** Natural Gas 87% Other Fuels 13% 0 0.1 0.1 Fans **Fuel Types** 2.7 0.5 1.0 1.0 **Compressed Air Electricity Export*** 31 Materials Handling 33 33 Excess Steam 3 Materials Processing Energy use data source: 2018 EIA MECS (with adjustments); ge for details **Greenhouse Gas (GHG)** Energy Other Systems Last Revised: December 2021 **Emissions** (TBtu = Trillion British Steam Distribution Sector-wide aggregate data for year 2018; Thermal Units) (MMT CO₂e = Million Metric Tons 0.1 energy values and fuel type percentages Losses Carbon Dioxide Equivalent) rounded to nearest whole number Fuel 2.5 0.3 0.0 Total Onsite Process Offsite generation shown on net basis (purchases, sales, and transfers Electricity accounted for) and includes onsite non-Total Emissions = combustion renewable output Offsite Combustion Emissions + Refers to sales and transfers offsite of **Steam** Onsite Combustion Emissions + electricity to utilities and other entities Process Emissions

Onsite Emissions = Onsite

Combustion Emissions +

Process Emissions

Combined

Losses

Page 2 of 3

Refers to sales and transfers offsite or

purging of surplus steam

Feedstock energy excluded

Manufacturing Carbon Footprint Sector: Aerospace Product and Parts (NAICS 3364)

Primary Energy Use: 124 TBtu
Total GHG Emissions: 6 MMT CO₂e

