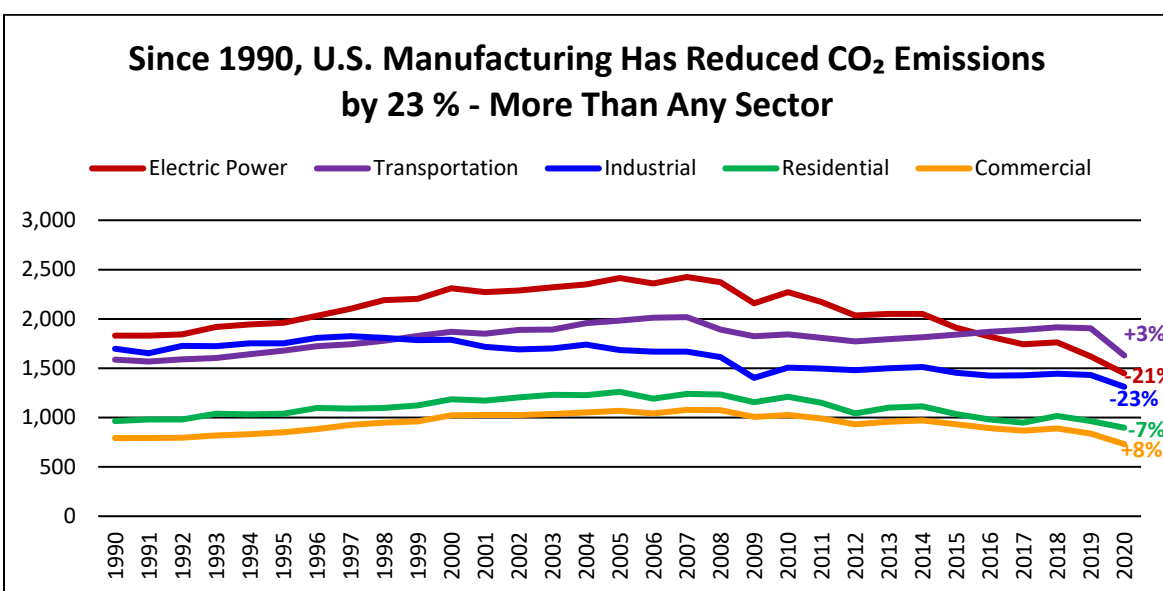


U.S. MANUFACTURING SECTOR CLIMATE SUCCESS STORY AND DECARBONIZATION CHALLENGES

The U.S. manufacturing sector is one of the largest contributors to the U.S. GDP at \$2.2 trillion in 2020 and is motivated to reduce energy use to compete in the global marketplace. Since 1990, U.S. manufacturing has reduced CO₂ emissions by 23 percent, which is more than any other sector, while also increasing gross output by 112 percent.¹ As a result, during the same timeframe, U.S. industrial energy intensity has decreased by 56 percent. U.S. manufacturing direct and indirect energy consumption has been flat for 50 years.² While U.S. manufacturers have been making this progress, the carbon intensity of China's manufacturing is 350 percent higher than U.S. manufacturing.³



Source: Monthly Energy Review, U.S. Energy Information Administration (EIA)

U.S. Energy-Intensive Trade-Exposed (EITE) Manufacturing Decarbonization Challenges:

- We must have a level playing field with global competitors or manufacturing jobs and GHG emissions will go offshore, creating GHG leakage.
- If U.S. climate policies increase domestic energy costs, a carbon border adjustment mechanism should be implemented for certain carbon-intensive imports to enable a level playing field and prevent GHG leakage.
- Economic decarbonization process technology to make our products does not exist.⁴
- We are price takers. All upstream GHG compliance costs are passed onto us.
- For manufacturing, non-power energy efficiency tax incentives do not exist.
- Manufacturing product process equipment is designed for natural gas, not electricity.⁵ Cost of electricity on a Btu basis is substantially higher than natural gas.
- We are dependent upon our suppliers for less carbon-intensive energy, feedstocks, and electricity.

¹ Industry Data, U.S. Bureau of Economic Analysis (BEA), www.bea.gov and Annual Energy Review, U.S. Energy Information Administration (EIA), <https://www.eia.gov/totalenergy/data/annual/index.php>

² Inventory of U.S. Greenhouse Gas Emissions and Sinks, 2019, EIA, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

³ CO₂ Emissions from Fuel Combustion 2018, International Energy Agency (IEA)

⁴ CLEAN Future Act, House Committee on Energy and Commerce, <https://energycommerce.house.gov/newsroom/press-releases/ec-leaders-introduce-the-clean-future-act-comprehensive-legislation-to>

⁵ Manufacturing Energy Consumption Survey (MECS), 2018, EIA, <https://www.eia.gov/consumption/manufacturing/data/2018/>