INDUSTRIAL ELECTRIFICATION Factsheet

Wisconsin

March 2023

Key Insights

- **Electrifying the plastic recycling and pulp and paper production** industries in Wisconsin would have the highest emissions reduction impact
- Electrifying plastic recycling production can **reduce energy costs** per unit of production.

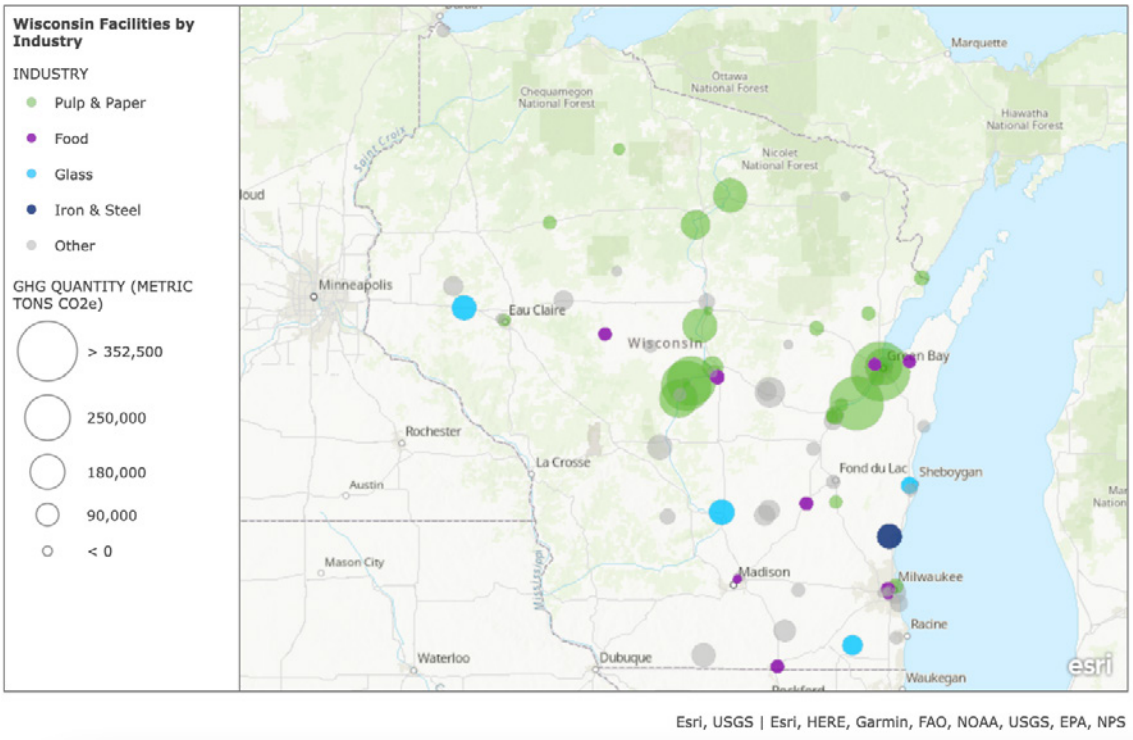
Quick Facts

- **14% of Wisconsin's GHG emissions** are from industry.
- The state is committed to **100% carbon-free electricity by 2050 and reducing state emissions in line with the Paris Agreement.**[1]
- As of 2021, the manufacturing sector employed more than **16% of the state's workforce** and accounted for nearly **19% of total gross state product.**[2]

Electrifying industrial processes offers a significant opportunity to decarbonize Wisconsin's industrial sector which currently accounts for 14% of the state's greenhouse gas (GHG) emissions.[1] Industrial emissions originate from facilities throughout the state as shown in the map below. In numerous industrial subsectors, electrified technologies can be used to shift production away from carbon-intensive fossil fuels to renewable electricity.

The report, Industrial Electrification in U.S. States, analyzes eight of Wisconsin's industrial subsectors and the changes in energy use, CO_2 emissions, and energy costs that would occur if individual industrial processes were electrified. Wisconsin's industrial subsectors included in the study are aluminum casting, beer, container glass, milk powder, pulp and paper, recycled plastic, soybean oil, and wet corn milling.

Wisconsin's Industrial Emissions



Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

Built using ArcGIS online with U.S. Environmental Protection Agency's Facility Level Information on GHGs Tool (FLIGHT) 2020 data. U.S. Environmental Protection Agency, "Greenhouse Gas Reporting Program (GHGRP)," last accessed February 25, 2022, https://www.epa.gov/ghgreporting.

This map shows the relative emissions of large industrial facilities. Facility types that are included in the full report analysis are shown in colors while other industrial facility types are shown in grey.

The study found that the following Wisconsin subsectors have the potential to reduce emissions by the largest margins, ranked by the expected decrease in annual emissions by 2050 through electrification:

- Pulp & Paper (330 kt CO_2)
- Plastic Recycling (298 kt CO_2)
- Container Glass (122 CO_2)

Deploying electric technologies would result in near-term emissions reductions, and, given the Biden administration's stated policy to achieve a "carbon pollution-free power sector by 2035," electrification could deliver even further decarbonization in the near- and medium-term.

Many technologies included in this study are commercially available, enabling Wisconsin to begin electrifying, and realizing emissions reductions, in the near term. Within Wisconsin:

- The pulp and paper sector can electrify using infrared dryers, delivering energy savings immediately and emissions reductions by 2050.
- Electrification can bring energy cost savings to the milk powder sector using the lower renewable electricity cost scenario. Additional cost information can be found in the full report.
- Industrial electrification can be advanced by supporting electrified technology demonstration, financially incentivizing electrification, increasing the state's renewable electricity generation capacity, enhancing the electric grid, and developing the workforce. A decarbonized energy grid is crucial for realizing the full benefits of industrial electrification.

Key Actions to Accelerate Industrial Electrification in Wisconsin

- Open a dialogue with the pulp and paper industry to learn what hurdles prevent manufacturers from adopting commercially available electrified technologies, especially infrared dryers.
- Assist facilities in accessing the Inflation Reduction Act's incentives for electrification, such as the Sec. 48C Advanced Energy Manufacturing Credit and the Advanced Industrial Facilities Deployment Program.
- Leverage federal resources in the Investment in Infrastructure and Jobs Act (IIJA), including opportunities under the Advanced Energy Manufacturing and Recycling Grant Program and the Industrial Emissions Reduction Technology Development Program.
- Ensure sufficient renewable electricity generation resources are built to supply increasing demand and that grid infrastructure can adequately and reliably serve increased loads.
- Engage frontline communities and those working on environmental justice in this industrial transition.

Additional Factsheet Sources:
[1] State of Wisconsin, "Governor's Task Force on Climate Change Annual Report," December, 2020.
[2] National Association of Manufacturers, "2022 Wisconsin Manufacturing Facts," 2023.

Download the full report and analysis here: https://www.renewablethermal.org/state-electrification-report
or from here: https://www.globalefficiencyintel.com/industrial-electrification-in-us-states