

Key Insights

- Electrifying ammonia and pulp & paper production in Oregon can **significantly reduce emissions**.
- Electrifying recycled plastic, milk powder, container glass, soybean oil, cast aluminum, or beer production may **reduce energy costs** per unit of production.
- Electrifying just the subsectors in this study will **advance Oregon 1.3% by 2030 towards its goal of a 45% emissions reduction by 2035**.

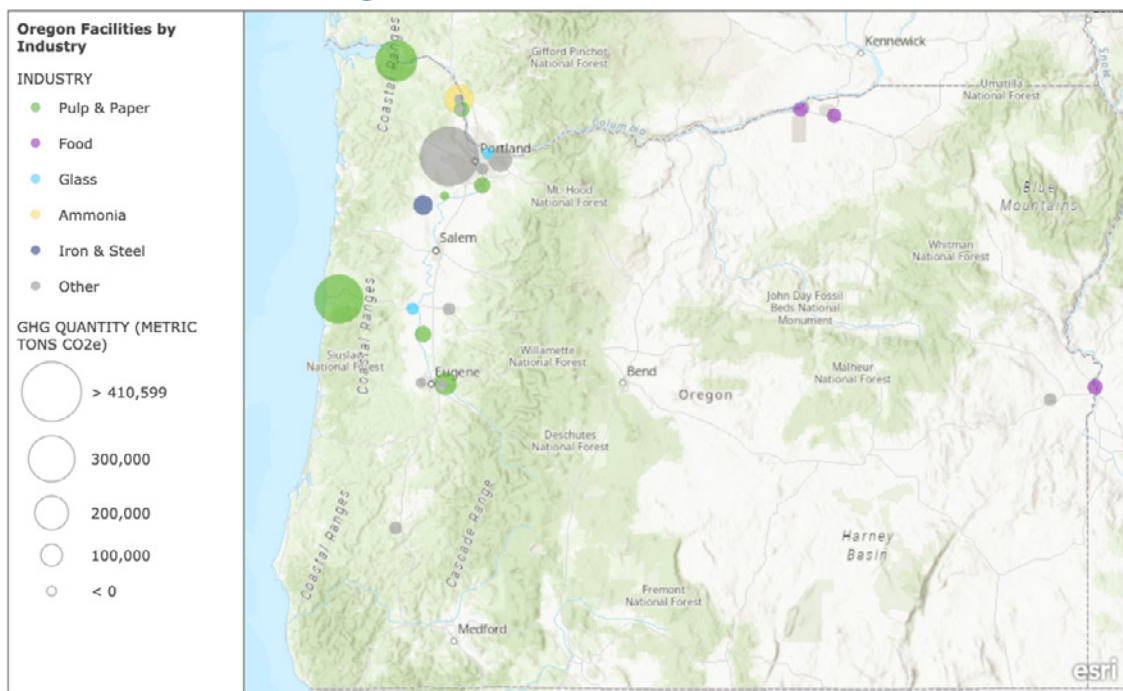
Quick Facts

- **10.8% of Oregon's GHG emissions** are from industry.¹
- The state is committed to achieve **emissions reductions of 45% by 2035 and 80% by 2050** compared to 1990 levels.²
- As of 2022, the manufacturing sector employed **9.8% of the state's workforce** and accounted for more than **13% of total gross state product**.³

Electrifying industrial processes offers a significant opportunity to decarbonize Oregon's industrial sector, which accounts for 10.8% of the state's greenhouse gas (GHG) emissions.¹ Industrial emissions originate from facilities throughout the state as shown in the map below. These emissions must be reduced to meet the state's emissions reductions goals. In numerous industrial subsectors, electrified technologies can shift production away from carbon-intensive fossil fuels to renewable electricity.

The report [Industrial Electrification in U.S. States](#) analyzes nine of Oregon's industrial subsectors and the changes in energy use, CO₂ emissions, and energy costs that would occur if individual industrial processes were electrified. This report studied Oregon's industrial pulp and paper, container glass, ammonia, plastic recycling, beet sugar, milk powder, aluminum casting, beer, and soybean oil sectors.

Oregon's Industrial Emissions



Esri, USGS | County of Crook, State of Oregon GEO, Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, 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, among the Oregon subsectors analyzed, the following have the potential to reduce emissions by the largest margins, ranked by the expected decrease in annual emissions by 2050 through electrification:

- Ammonia (259 kt CO₂)
- Pulp and paper (136 kt CO₂)
- Container glass (66 kt CO₂)

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 electrification technologies considered in this study are commercially available, enabling Oregon to begin electrifying, and realizing emissions reductions, in the near-term. Within Oregon today:

- The ammonia industry can electrify using electrolysis technology to produce hydrogen for the Haber-Bosch process, delivering immediate emissions reductions. The pulp and paper industry can deploy infrared dryers to see emissions savings before 2040.
- Electrification can bring energy cost savings across six industries, including plastic recycling, milk powder, container glass, soybean oil, aluminum casting, and beer, if lower renewable electricity cost is used. 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 and bringing Oregon closer to its emissions reduction goals.

Key Actions to Accelerate Industrial Electrification in Oregon

- Open a dialogue with the ammonia and pulp & paper industries to learn what hurdles prevent manufacturers from adopting commercially available electrified technologies, especially electrolysis for hydrogen production and 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.
- Support efforts to establish federally supported H₂ Hubs in the state, given the potential for hydrogen to decarbonize the ammonia industry with clean electricity.
- 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 U.S. Energy Information Administration, "[Introduction and Key Concepts: State Energy-Related Carbon Dioxide Emissions Tables](#)," Independent Statistics & Analysis, U.S. Department of Energy, October 2022.

² Brown, Kate, "[Executive Order No. 20-04 Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions](#)," Office of the Governor, State of Oregon, March 10, 2020.

³ National Association of Manufacturers, "[2022 Oregon 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>

