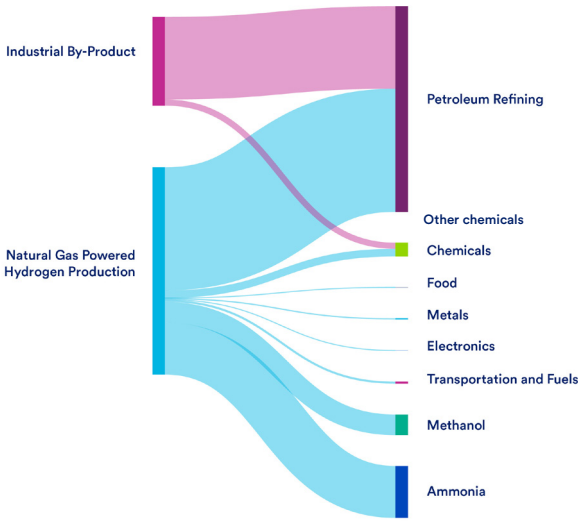
Louisiana is the Center of the U.S. Hydrogen Industry

CLEAN AIR TASK FORCE

Hydrogen is a cornerstone of the U.S. industrial economy. Louisiana is the largest U.S. ecosystem for hydrogen, with a competitive edge in global clean hydrogen markets.

What is Hydrogen Used for Today?

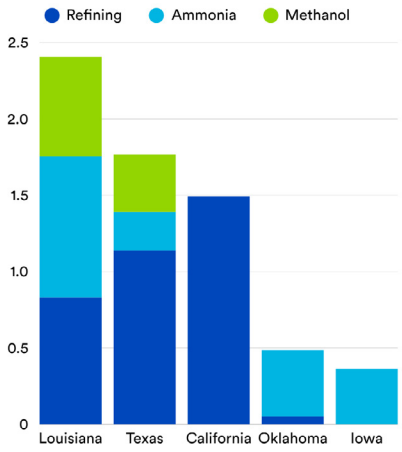
Hydrogen is a core industrial input that is primarily used to refine petroleum and make chemicals such as ammonia for fertilizer production and methanol. Based on the latest publicly available data from 2023 to 2024, the U.S. produces approximately 14 million metric tons (MMT) of hydrogen per year, the vast majority of which is used in existing industrial processes, with a smaller share exported in the form of hydrogen-derived products such as ammonia and methanol.



Louisiana and U.S. Hydrogen Markets

- Hydrogen demand in the U.S. is highly concentrated by industrial sector and geography.[1] Over 90% of U.S. hydrog demand comes from petroleum refining and the producti ammonia and syngas, a chemical feedstock for methanol.
- Louisiana is ranked first nationally in dedicated hydrogen production, accounting for almost 30% of the country's total dedicated hydrogen production.
- Louisiana is also a major consumer of hydrogen and home to some of the largest petroleum refining and ammonia and methanol production facilities in the country.

Top 5 U.S. States by Hydrogen Consumption (MMT/yr)[2]



Louisiana's Edge in Global Clean Hydrogen Markets

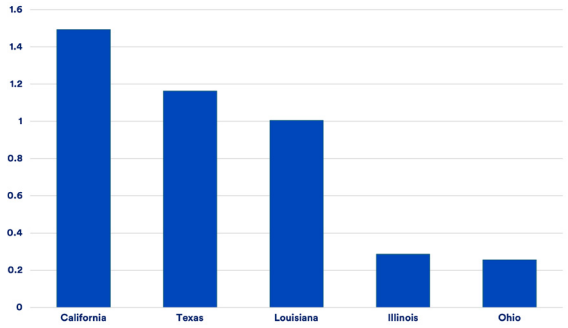
Global demand for clean hydrogen and hydrogen-derived products is growing rapidly, driven by international buyers (Europe, Japan, and South Korea) willing to pay premiums for lower-emissions commodities. Louisiana's existing hydrogen production, industrial base, export infrastructure, and CO_2 storage capacity position the state to compete in these high-volume global markets.

1 Sources: Author's calculations, EFI Foundation, The Landscape of Clean Hydrogen: An Outlook for Industrial Hubs in the United States, DOE National Clean Hydrogen Strategy and Roadmap; Ruth et al., The Technical and Economic Potential of the H2@Scale Concept within the United States.
2 Sources: EFI Foundation, U.S. Environmental Protection Agency (EPA) Facility Level GHG Emissions Data, and U.S. Energy Information Administration (EIA)

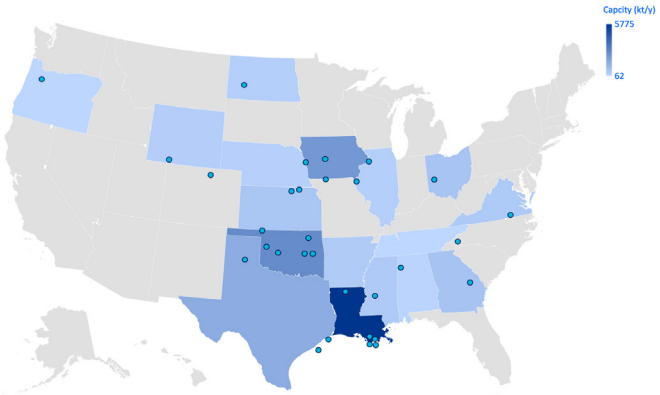
Petroleum refining is the single largest source of hydrogen demand in the U.S., consuming approximately 10 MMT of hydrogen per year across 131 crude oil refineries in the U.S. (as of January 1, 2025). Around 60% of the total hydrogen used in petroleum refining (~6 MMT) is produced at designated production facilities, with the remaining 40% sourced from other facilities that produce hydrogen a as by-product.[3]

- In 2023, Louisiana ranked second nationally in refining capacity and third in dedicated hydrogen production for refining.
- Five states, including Louisiana, account for over 70% of hydrogen production capacity supplying the refining industry.

Hydrogen Production Capacity for Refining by State (MMT/yr)[4]



Ammonia Production Capacity by State (Thousand Metric Tons (kt))[5]



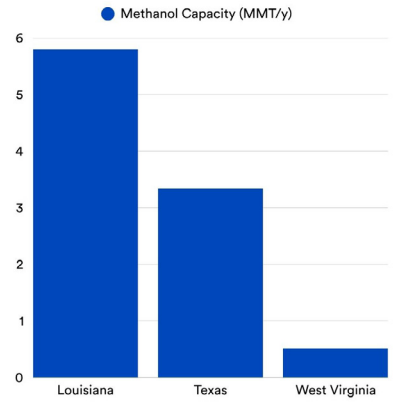
Ammonia production uses approximately 2.5 MMT of hydrogen per year, almost entirely from on-site hydrogen production. Louisiana's ammonia industry uses over 1 MMT/yr of hydrogen, which is over a third of U.S. total ammonia production.

- In 2023, Louisiana ranked top in ammonia production capacity nationally, producing more than twice that of Oklahoma, the next-largest ammonia producer.
- With over 4.3 MMT in ammonia production capacity, the CF Industries Donaldsonville Nitrogen Complex is the world's largest ammonia production facility.

Methanol is an industrial chemical and fuel made from syngas, which uses hydrogen as a key building block in production. The U.S. consumes roughly 7 MMT of methanol per year and produces over 10 MMT per year, making it a net exporter.

- Louisiana has historically been the leading state in methanol production nationally. As methanol facilities are large consumers of hydrogen, Louisiana methanol facilities consume close to 1 MMT of hydrogen per year.
- Louisiana is a leading U.S. methanol production and export hub, anchored by Methanex's Geismar complex, one of the world's largest methanol production sites with an annual production capacity of 4 MMT.

Methanol Production Capacity by State (MMT/yr)[6,7]



3 "The Landscape of Clean Hydrogen: An Outlook for Industrial Hubs in the United States," Carbon Solutions & Industrial Innovation Initiative (i3), May 2023.
4 Sources: EIA Refinery Capacity Report, H2 Hydrogen Tools, and Center for Applied Environmental Law and Policy (CAELP)
5 Sources: United States Geological Survey (USGS) 2023 and Various Project Announcements
6 Production capacity data for certain methanol plants was not found online. The graph provides only a partial image of methanol production in the U.S., given the limited available information and might not capture all methanol production capacity in the U.S.
7 Sources: EIA, EPA Facility Level GHG Emissions Data, and Company Annual Reports
8 Argus Media & Consulting, Oil & Gas Watch, and CATF's calculations. Please reference CATF's paper on hydrogen end uses here: https://www.catf.us/resource/hydrogen-decarbonization-realistic-assessment. Please see references to CATF's work in relevant industrial sectors here: https://www.catf.us/resource/decarbonization-pathways-policy-recommendations-united-states-steel-sector/.