



Hydrogen In Michigan

Michigan is committed to delivering on the vision of a clean energy future. Clean hydrogen can help bring hard-to-decarbonize sectors, like heavy transportation and steel production, into the clean energy economy, creating good-paying middle-class jobs and bringing our supply chain home.

How Clean Hydrogen is Produced

Clean hydrogen can be produced via the steam methane reformation method combined with carbon capture and sequestration or by converting water into hydrogen by using zero-carbon sources of power like nuclear energy or renewable energy (mainly solar and wind) to power an electrolyzer.

Midwest Hydrogen Hub

As part of the Bipartisan Infrastructure Law, the Department of Energy introduced the Regional Clean Hydrogen Hubs opportunity – a program that awards up to \$1.25 billion to 6-10 regional coalitions of hydrogen producers and off-takers. In 2022, 79 applicants submitted letters of interest for this opportunity, and in October 2023 Michigan's Midwest Alliance for Clean Hydrogen (MachH2) was one of merely seven projects to secure this transformational funding. Clean Hydrogen hub funding for this project is expected to create 13,600 direct jobs—12,100 in construction jobs and 1,500 permanent jobs.

Funding will support the management and engagement of the Midwest Hydrogen Hub in local projects:

- The Michigan Infrastructure office is working with the Midwest Hydrogen Hub to develop the **Truck Stop of the Future Detroit Area**, which is projected to reduce emissions by approximately up to 8,250 tons of CO₂ per year. This project will serve the Gordie Howe International Bridge, positioning Michigan as the prime location for the future of hydrogen-powered heavy-duty vehicles.
- The Midwest Hydrogen Hub is overseeing construction of a hydrogen production facility located at Ypsilanti's **American Center for Mobility**. Partnership with the American Center for Mobility will provide on-site hydrogen generation, supporting hydrogen R&D.
- Expansion of a hydrogen production and refueling center on-site at the **Flint Mass Transportation Authority (MTA)** is also being overseen by the Midwest Hydrogen hub. The Flint MTA is working to further reduce transportation-related emissions through the expansion of its fleet of hydrogen-powered busses. The current fleet of

busses has reduced Flint MTA's consumption of diesel fuel by 99%, from 3 million gallons down to 30,000, clearing the air and saving taxpayers money.

Hydrogen-Powered Buses in Flint

Hydrogen fuel cell buses not only reduce emissions, but they can also provide a smoother and quieter ride, travel longer distances with less refueling than diesel buses, and remain idle without contributing to air pollution.

In April 2023, the Flint Mass Transportation Authority expanded its fleet of hydrogen fuel cell buses using a \$4.3 million grant from the FTA's Low and No Emission Vehicle Program, which is funded through the Bi-Partisan Infrastructure Law.

A Midwestern Hydrogen Refueling Network

Hydrogen has been hailed as a “fuel-of-the-future” with the potential to decarbonize hard-to-reach industrial sectors, like medium and heavy-duty trucking. Stakeholders across the region are working to establish the necessary infrastructure for a transition to this zero-emission fuel.

An initial network connecting Michigan's international border crossings with Chicago, Indianapolis, Louisville, Toledo, Detroit and other midwestern cities could serve as a catalyst for the widespread adoption of next generation vehicles, supporting the decarbonization of the Chicago to Quebec freight corridor. This corridor is the busiest in North America and responsible for making the Michigan-Ontario border crossings among the busiest in the world.

Michigan is expected to have between five and seven initial hydrogen stations across the freight corridors of the lower peninsula. These stations not only facilitate longer trips, but also support local fleets of short-haul or “return-to-base” fleets. Combined with other technologies such as on-site hydrogen generation and storage or electricity-producing fuel-cells, each station has the potential to act as a self-contained production/distribution facility, or a mini hydrogen-hub, supporting the ongoing development of the broader hydrogen economy.

Industrial Decarbonization

The Great Lakes region's reliance on steel production highlights the critical need of modernizing the industry as demand for near-zero emission products increases. Hydrogen

use in steel production technology can reduce the emissions released from the production processes of materials like steel, cement, and glass, which rely on high temperatures that are often achieved by burning fossil fuels. Prioritizing clean hydrogen production serves as a catalyst to meet the demand for low-emission products and securing the sustainability of the steel industry in the Great Lakes region. Investment in the expansion of the hydrogen industry will position the Great Lakes region as a leader in industrial decarbonization.