SUSTAINABLE SHIPPING

Biodiesel helps Great Lakes vessels cut carbon

MICHIGAN ADVANCED BIOFUELS COALITION

Maritime shipping brings a huge economic boost to the Great Lakes Region, but its environmental impact is an increasing concern. Many commercial vessels on the Great Lakes have older diesel engines. Most of these vessels rely on fossil fuels such as fuel oil and petroleum diesel, both of which contribute significant particulate matter (PM) and greenhouse gases (GHG) to the environment.

Although the shipping industry has made great progress by using aftermarket technologies to mitigate exhaust emissions, a large percentage of vessels have not yet adopted these technologies.

Ships Operating on the Great Lakes and St. Lawrence Seaway[1]

150M gallons
of fuel consumed annually

1.6M metric tons
of CO_2 emissions annually

Why is Change Needed?

With 3,224 miles of coastline, Michigan is a major hub for marine traffic on the Great Lakes. Engine emissions from ships, along with emissions from power generation, manufacturing, and road and rail transportation, combine to create significant health issues in Michigan port cities. For example, Detroit has the third highest prevalence of asthma among major U.S. cities and more cases of asthma than any other Michigan city.[2]

Furthermore, shippers are looking for ways to be more sustainable, with pressure to decarbonize coming from consumers, major retailers like Amazon and Walmart, and industries like Ford and General Motors. Clearly there are opportunities for new fuel options, especially considering Great Lakes ships are not exposed to corrosive salt water and therefore can operate for 50 years or longer.

Low-carbon Solution, Available Now

Biodiesel is an immediately available solution to help decarbonize the shipping industry and improve air quality for port workers, mariners, and local communities throughout the Great Lakes. In 2024, the International Standards Organization (ISO) published new fuel standards, allowing for use of biodiesel blends up to 100% (B100) in marine fuel.[3] The new standards ensure that biodiesel meets rigorous performance standards for marine applications.

Biodiesel is a low carbon biofuel that allows shippers to reduce particulate matter and GHG emissions immediately, without investing in new ships, engines, or aftertreatment technologies. Biodiesel also reduces engine wear through increased lubricity.

[1] Great Lakes-St. Lawrence Seaway Ship Emissions Inventory, 2019. The International Council on Clean Transportation. Great-Lakes-emissions_final.pdf Accessed Feb. 20, 2025.

[2] 2024 Asthma Capitals: The Most Challenging Places to Live in America. Asthma and Allergy Foundation of America. AAFA 2024 Asthma Capitals Report September 2024 Accessed Feb. 17, 2025.

[3] International Standards Organization ISO 8217:2024. ISO 8217:2024 - Products from petroleum, synthetic and renewable sources — Fuels (class F) — Specifications of marine fuels Accessed Feb. 17, 2025.

Want to know more about biodiesel? Visit miadvancedbiofuels.com or contact Michigan Soybean Committee/Michigan Soybean Association at 989-652-3294 or soyinfo@michigansoybean.org.

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