

Freight rails trying other locomotive fuels to cut emissions

December 15 2021, by Josh Funk



A BNSF rail terminal worker monitors the departure of a freight train, Tuesday, June 15, 2021, in Galesburg, Ill. BNSF said Wednesday, Dec. 15, 2021, that it plans to test out a hydrogen-powered locomotive on its railroad lines as part of its plan to reduce its emissions. The industry is also experimenting with battery and natural gas powered locomotives although the freight railroads caution that the new technology is likely still several years away from any widespread use.

Credit: AP Photo/Shafkat Anowar, File

The major freight railroads across North America continue to experiment with alternative locomotive fuels as a way to reduce their greenhouse gas emissions.

BNSF railroad said Wednesday that it plans to test out a hydrogen-powered locomotive along its lines, joining Canadian Pacific in experimenting with that technology. Canadian National railroad recently announced plans to test out a battery-powered locomotive to haul freight across Pennsylvania, and Union Pacific has said it would like to try using battery-powered locomotives in some of its railyards once they are more widely available in a few years.

Several other past tests at other railroads have looked at natural gas powered locomotives and battery powered options. Using some combination of these new fuel options will be key to helping the railroads achieve their goals to significantly cut their emissions in the coming years.

Both of the major locomotive manufacturers, Wabtec and Caterpillar's Progress Rail unit, are working on developing locomotives that use other fuels.

But the railroads all caution that these are only pilot tests at this stage, and the new technology won't be ready to start replacing the diesel workhorses that have been pulling freight across the continent since World War II for at least several more years.

"This technology could one day be a lower-carbon solution for line-haul service, as it has the potential to reduce carbon emissions and remain cost competitive," said John Lovenburg, BNSF's vice president of environmental.

BNSF didn't say how quickly it expects the hydrogen-powered

locomotive it plans to use will be ready to try out while a Canadian Pacific spokesman said it plans to begin using three hydrogen-powered locomotives around the province of Alberta sometime next year. CP received a \$15 million grant earlier this year to double the amount it planned to invest in the program.

Before the railroads could make wholesale changes in their locomotive fleets, they would have to invest millions in new fueling stations and other infrastructure. And any changes would likely have to be somewhat standardized across the industry because the major freight railroads regularly pass locomotives back and forth to keep trains moving efficiently.

BNSF said it plans to work with Chevron to help set up the fueling infrastructure it will need for its hydrogen test.

Another thing that will likely slow the transition to new fuels is that railroads typically use locomotives for decades to get the most out of their investment in them. And the major freight railroads have thousands of locomotives in storage currently because operational changes the industry has made over the past few years have allowed them to use fewer locomotives to use fewer locomotives because they are relying on increasingly longer trains

The Association of American Railroads trade group points out that railroads are already significantly more efficient than trucks at delivering freight. On average, freight railroads haul one ton of freight more than 480 miles per gallon of fuel, but the major U.S. railroads still consume more than 3.4 million gallons of diesel fuel each year.

The railroads already invest in an assortment of measures that help them improve the efficiency of its trains, including systems that operate like cruise control to help engineers use the least amount of fuel possible as

they cross the countryside.

"Every locomotive, piece of equipment and operational decision is an opportunity to reduce fuel usage and drive down emissions," said Ian Jefferies, president of the rail trade group. "Working with suppliers, railroads are piloting alternative and lower carbon solutions across the nation capable of delivering for both the economy and environment."

In addition to experimenting with locomotive fuels, Norfolk Southern also recently announced a plan to invest in 800 new railcars that each weight 15,000 pounds less than the current cars in use, which will also help reduce emissions.

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