

Norfolk Southern to launch cutting-edge hybrid locomotive project through Alstom partnership, federal support

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Converted locomotives expected to cut carbon emissions 90% and deliver 30% more pulling power

ATLANTA, Nov. 12, 2024 – Norfolk Southern Corporation (NYSE: NSC) is pioneering sustainable locomotive propulsion with the conversion of two engines to hybrid technology in partnership with Alstom, a global rail transportation manufacturer and leader in low-carbon and sustainable transportation. The finished locomotives will deliver quieter, lower-emission operations with an estimated 90% fewer emissions and 30% better pulling capacity than traditional diesel models.

The first-of-its-kind battery diesel hybrid locomotive prototype is being made possible by a significant CRISI (Consolidated Rail Infrastructure and Safety Improvements) grant from the Federal Railroad Administration (FRA), as well as support from the Steuben County (NY) Industrial Development Agency and Binghamton University's New Energy New York (NENY) consortium.

"Rail is already the most sustainable mode of land transportation, and these hybrid conversions will deliver quieter, cleaner rail options," said Norfolk Southern Chief Sustainability Officer Josh Raglin. "Thanks to the FRA's CRISI grant and strong support from Alstom, Steuben County IDA, and NENY, we're charting a path to deliver a better

product for our customers and better experience for the communities where Norfolk Southern operates.”

Norfolk Southern is the first to apply Alstom’s hybrid technology, which is used extensively in European rail, to freight locomotives in North America. The initiative will use frames from two 50-year-old locomotives. Batteries will provide primary propulsion while a smaller Tier 4 diesel engine will run only when needed to charge batteries. The modular design will allow the propulsion systems to be upgraded or replaced as battery and engine technology advances.

In addition to lowering emissions and noise pollution, the new hybrid locomotives will help Norfolk Southern meet or exceed its long-term sustainability targets. This project builds on past achievements, which include Norfolk Southern’s conversion of older switcher locomotives to eco-friendly models and initiatives to modernize the company’s fleet with AC traction technology, improving fuel efficiency up to 25% and reducing maintenance by 20% in the past decade.

“Decarbonizing the rail industry is a huge challenge, and this grant will support critical strategic collaboration and shared expertise needed to innovate new sustainable technologies,” said Eric Rondeau, who leads Alstom's innovation Center for sustainable mobility solutions in North America. “Alstom is grateful to be a part of this innovative project to lower emissions and expand clean transit options.”

Alstom will lead the design and assembly of the hybrid locomotives at its Kanona, N.Y. facility. The project is expected to bring positive economic impacts to Steuben County and the surrounding region.

About Norfolk Southern

Since 1827, Norfolk Southern Corporation (NYSE: NSC) and its predecessor companies have safely moved the goods and materials that drive the U.S. economy. Today, it operates a customer-centric and operations-driven freight transportation network. Committed to furthering sustainability, Norfolk Southern helps its customers avoid approximately 15 million tons of yearly carbon emissions by shipping via rail. Its dedicated team members deliver more than 7 million carloads annually, from agriculture to consumer goods. Norfolk Southern also has the most extensive intermodal network in the eastern U.S. It serves a majority of the country's population and manufacturing base, with connections to every major container port on the Atlantic coast as well as major ports in the Gulf of Mexico and Great Lakes. Learn more by visiting [**www.NorfolkSouthern.com**](http://www.NorfolkSouthern.com).

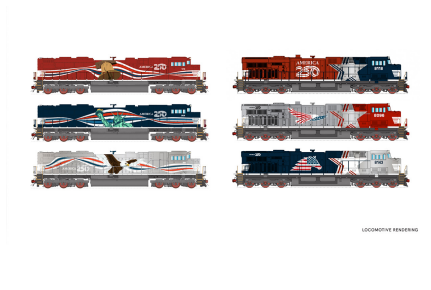
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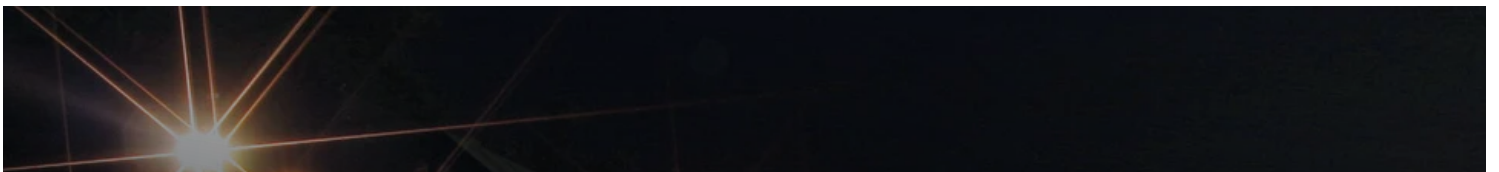


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