



Renewable Fuel Solutions for Railroads

Chevron Renewable Energy Group's renewable fuel solutions can help railroads significantly reduce carbon emissions to assist in meeting lower carbon targets, while offering engine performance benefits and a reliable supply – all without any major infrastructure changes, making it a low-cost transition.

Proven, lower carbon fuels for rail

EnDura Fuels™ is Chevron Renewable Energy Group's complete line of renewable fuel solutions that will support you in meeting your company's lower carbon, performance and profitability goals today.

InfiniD BIODIESEL

A biodiesel solution that provides engine performance and emissions reductions simply and economically, as one of the lowest cost liquid fuels today.

PuriD ULTRA BIO

A next-generation bio-based diesel that enables fuel users to confidently increase biodiesel blend levels year-round.

UltraClean Blend RENEWABLE DIESEL + BIODIESEL

A proprietary, renewable fuel combination of VelociD™ (renewable diesel) and PuriD™ to meet lower carbon goals simply.

Why bio-based diesel from Chevron Renewable Energy Group?

Simple, Lower Carbon Solution

- + Can reduce engine fossil carbon emissions by up to 100% compared to conventional diesel¹
- + May be 56% more effective in reducing carbon than electric, when taking the grid into consideration²
- + May be a low cost option for reducing your carbon intensity
- + Use as a drop-in fuel or as a blend with traditional fuels



Improved Performance & Excellent Quality

- + Enhanced lubricity may help engines run smoother, cooler and quieter
- + Lower particulate matter may help reduce DPF plugging and regenerations
- + May assist in reducing engine maintenance costs and increase longevity
- + Stringent standards that exceed ASTM, CEN and CGSB quality requirements
- + A safer fuel than petroleum diesel in terms of combustibility and impact to environment in the event of spillage³



Trusted & Proven Supply Partner

- + Production, supply, terminal infrastructure and truck assets to be your transition partner
- + International and domestic production footprint helps mitigate geopolitical risks of supply
- + 11 biorefineries including our renewable diesel production facility
- + Feedstock flexibility provides added assurance on supply
- + Giving customers online access to information regarding their accounts and deliveries, including invoices, BOLs and volumes with our proprietary fuel dashboard



¹Product is produced from renewable oils and fats. Methanol used to make biodiesel and hydrogen used to make renewable diesel and SAF are typically made from conventional natural gas but can be produced from renewable resources.

²Carbon intensity for EVs based on eGRID 2020 figures and EV EER of 3.8 for transit buses per National Renewable Energy Laboratory

³https://afdc.energy.gov/fuels/biodiesel_benefits.html

Trusted by some of the biggest names in rail



CN: aggressive sustainability

Canadian National Railway Company (CN) transports more than \$250 billion (CAD) in goods annually, across 20,000 route-miles of Canada and mid-America. They also have aggressive sustainability targets.



Union Pacific: millions of gallons

Operating roughly 8,300 locomotives over 32,200 route-miles, Union Pacific (UP) uses more than 900 million gallons of fuel per year and is aggressively committed to reducing its carbon footprint.



Goals and commitments

- + First North American railroad to commit to science-based targets for capping GHG
- + Goal of 43% reduction in carbon emission intensity by 2030 compared to 2019 baseline
- + Net zero emissions target by 2050

Renewables to the test

CN recognized renewable fuels as an immediate step toward GHG reduction and turned to Chevron Renewable Energy Group.

- + Two-year test began in Q1 2022 in Greenville, PA to evaluate cold weather performance
- + Fleet of locomotives transitioned to use PuriD™ biodiesel as a blend with petroleum diesel
- + Conducted in partnership with Progress Rail—one of the world's largest freight locomotive manufacturers



Goals and commitments

- + Goal of cutting GHG emissions 26% by 2030
- + Use energy management systems to make locomotives more efficient
- + Increase the use of bio-based diesel and renewable fuels across their fleet

By the millions

Initially starting with small pilot orders of bio-based diesel, UP has now transitioned to heavy use.

- + Currently using millions of gallons of InfiniD™ biodiesel per year
- + Running 100% renewable fuels in its Colton, CA yard, including UltraClean BlenD™—a mixture of PuriD™ and VelociD™

In their own words

"The transition to 100% renewable fuel levels has been seamless for CN and its customers since initial testing began. Prior concerns about cold-weather operations have not been experienced so far, with trains running at full capacity with no issues. What's most important is that we made this adjustment without any impact to our operations or to our customers."

François Bélanger, carbon transition director, CN

In their own words

"We are really excited about the possibility of using biodiesel and renewable diesel in order to help us achieve our emissions targets. This is essentially drop-in technology that we can begin to use right away. Chevron Renewable Energy Group has great expertise in the renewable fuels area. They work very well with us by providing advice and know-how that's been extremely helpful in our journey."

Thad Call, general director of sustainability, UP

EnDura Fuels

Scalable. Reliable. Responsible.

Learn more about how Chevron Renewable Energy Group's EnDura Fuels™ can help your rail fleet.

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