



Renewable Fuel Solutions for Mining

Chevron Renewable Energy Group's renewable fuel solutions help mining companies easily and significantly reduce carbon emissions usually without any infrastructure changes or new equipment investments.

Lower carbon Fuels for Mining

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

InfiniD BIODIESEL

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

Effective Carbon Reduction

- + May reduce engine fossil carbon emissions by up to 100% compared to conventional diesel.¹
- + May be 56% more effective in reducing carbon than electric, when taking the grid into consideration²



Emissions Reductions versus petroleum diesel

- + May reduce engine fossil carbon emissions by up to 100% compared to conventional diesel¹
- + Up to 70% emissions reduction for total hydrocarbon³
- + Up to 70% emissions reduction for particulate matter³



Performance & Quality

- + May improve combustion quality and lubricity when blended with petroleum fuels
- + Lower particulate matter may aid in reducing diesel particulate filter plugging and regenerations



¹ Product 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.

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

³ CARB Assessment of the Emissions from the Use of Biodiesel as a Motor Vehicle Fuel in California "Biodiesel Characterization and NOx Mitigation Study", Durbin (2011)

Why Bio-Based Diesel from Chevron Renewable Energy Group?

From MSHA limitations on diesel particulate matter and concerns over underground mining air quality, to the National Mining Association’s commitment to the Paris Climate Agreement and an increasing number of mining companies setting aggressive sustainability targets—there are many reasons why reducing carbon intensity is becoming not just important, but required. There are also many ways to do it—not all of them are practical or possible today. Let’s compare.

Ways to reduce carbon emissions from mining equipment

	Availability	Infrastructure	Cost	Carbon reduction	Performance & productivity
InfiniD™ Biodiesel	Available now. Feedstock flexibility ensures reliable supply.	Can be used with existing fuel tanks and equipment, typically requiring no infrastructure changes.	Among the lowest cost liquid fuels on the market today, typically requiring no new infrastructure investment.	May reduce fossil carbon emissions 56% more effectively than electric when taking the grid into consideration.	Improved lubricity and combustion, and reduced DPF clogging and regenerations.
Natural Gas	Available now, but requires retrofit that may not be available for all OEM equipment.	Requires investment in new storage infrastructure.	Slightly less in diesel gallon equivalents than biodiesel, however, requires an engine retrofit* that may not be available for all OEMs.	Conventional natural gas reduces fossil carbon emissions by no more than 30% compared to petroleum diesel.	Comparable to petroleum diesel. ⁴
Grid-tethered electric	Very limited equipment types and sizes are currently available.	Requires investment in a grid connection to remote mine sites.	Equipment can be more costly upfront versus a traditional diesel machine.	Less effective than biodiesel when taking the grid into consideration.	Equipment is stationary, which could reduce productivity.
Battery-powered electric	Very limited equipment types and sizes are currently available from select OEMs.	Requires investment in charging infrastructure.	Cost versus diesel equipment could be up to triple, plus the cost of charging infrastructure. ⁵	Less effective than biodiesel when taking the grid into consideration.	Charging time reduces uptime, and few available equipment sizes means cycle times could suffer.
Trolley-assisted diesel trucks	Available from select OEMs, only on rigid haul trucks.	Requires investment in a trolley system.	In addition to infrastructure, trucks must be retrofitted.	Only effective for the stretch of the haul route with trolley cables.	Does not impact cycle times, but would require significant reconfiguration if haul route changes.
Hydrogen fuel cells	Commercially unavailable	Likely requires investment in new infrastructure to store hydrogen.	Anglo American invested \$70 million in converting a single haul truck to hydrogen. ⁶	Engine fossil carbon emissions are zero, but full lifecycle carbon impact is unknown.	Unknown

The views expressed herein are those of the author and should be independently verified.

⁴Source: https://www.cat.com/en_US/by-industry/mining/mining-responsibly/power.html

⁵Source: <https://www.equipmentworld.com/alternative-power/article/15302787/battery-powered-and-electric-construction-equipment-pros-and-cons>

⁶Source: <https://www.bloomberg.com/news/articles/2022-05-10/the-world-s-first-510-ton-hydrogen-fueled-truck-produces-no-co2>



***The choice is clear.
Bio-based diesel
from Chevron
Renewable Energy
Group provides
simple, cost-effective
lower carbon solutions
for your entire
fleet — today.***

EnDura Fuels™

Scalable. Reliable. Responsible.

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

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