CRIMSON RENEWABLE ENERGY

SeQuential Collect. Refine. Refuel.

Ultra-Low Carbon Fuel

Petroleum-based transportation fuels are a vital source of energy. However, these petroleum-based fuels account for 40+% of total carbon emissions. As the global community seeks to address climate change and develop sustainable sources of energy, transportation fuels must evolve to reduce carbon and other harmful emissions.

Advanced biofuels like Crimson Renewable Energy's ultra-low carbon biodiesel are paving the way for the future of fuel by helping petroleum-based transportation fuels achieve critical new environmental objectives. As the largest producer of ultra-low carbon biodiesel in California and Oregon, we and our subsidiaries, SeQuential Biofuels and SeQuential Environmental Services, take pride in our innovations and efforts to collect used cooking oil and greases from thousands food service establishments and locally produce highly sustainable, ultra low carbon fuels.

Our BQ-9000-accredited biodiesel scores below 20 gCO2e/MJ via California's Low Carbon Fuel Standard and Oregon's Clean Fuel Program carbon intensity models, and thus considered ultra-low carbon biodiesel.

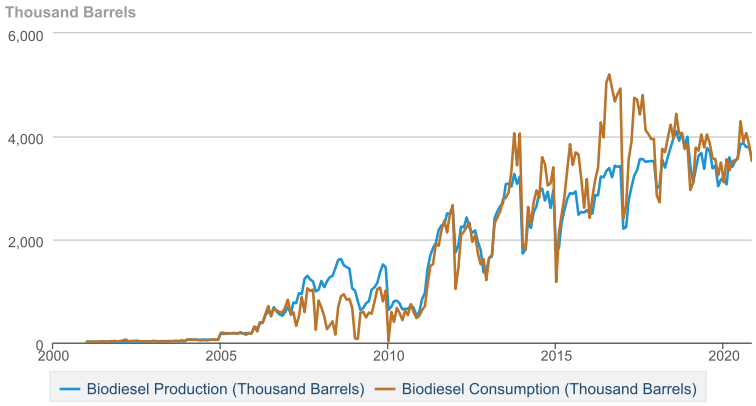
Each year, Crimson biodiesel generates more than 300,000 metric tons of carbon reduction compared to the same volume of petroleum-based diesel fuel, which is like planting 330,000 trees or removing 82,000 cars from our roads. Thus, Crimson's ultra-low carbon biodiesel is making a vital contribution in the battle against Climate Change.

Benefits of Ultra-Low Carbon Biodiesel

Crimson's ultra-low carbon biodiesel is a sustainable, cleaner-burning diesel substitute that reduces carbon emissions by 80+% and reduces particulate matter and hydrocarbon by 50% compared to petroleum-based diesel fuel. It boosts engine performance and longevity. Biodiesel fuel blends are also typically cheaper than 100% petroleum based diesel.

- Renewable
- Reduces Harmful Pollutants
- Increases Energy Independence
- Safe and Easy-to-Use
- Improves Fuel Lubricity
- Cost-effective

Biodiesel Production and Consumption[1]

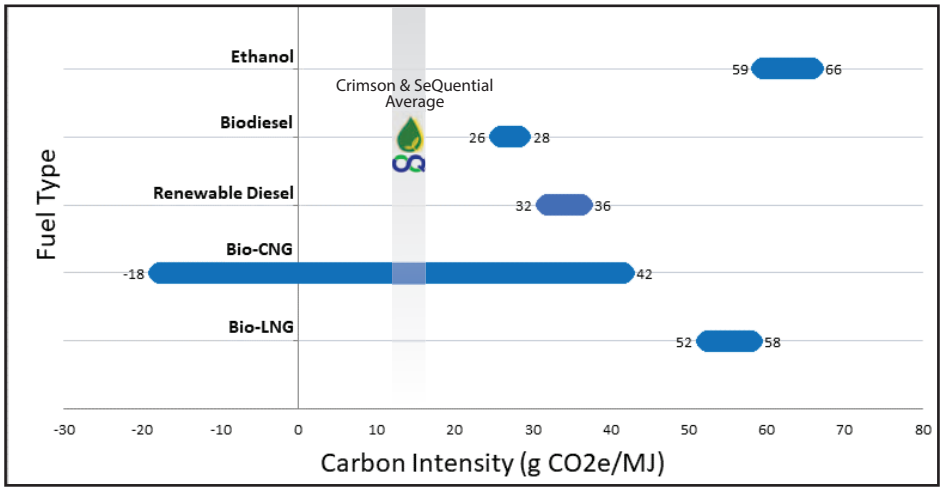


Why Low Carbon Matters

California established the Low Carbon Fuel Standard ("LCFS") in 2007, which requires a 20% carbon reduction relative to a 2010 baseline by 2030. In 2012, Oregon adopted a nearly identical program called the Clean Fuel Standard ("CFS"), which requires 25% carbon reduction by 2035. These programs require certain percentages of carbon reduction in petroleum-based gasoline and diesel fuels each year and use a market-based, fuel-neutral approach designed to encourage the use and production of cleaner, low-carbon fuels. [2] Each type of fuel and each fuel production facility is assigned a "carbon intensity" (CI) score, which is grams of carbon dioxide equivalent per megajoule of energy and accounts for the carbon/GHG emissions associated with raw material and fuel production, transportation, and use. The lower the CI score, the greater amount of carbon reduction for each gallon of fuel. [3]

The program is based on the principle that all fuels have "life-cycle" greenhouse gas emissions during its extraction, production, transportation, sales and use.[3] Since the LCFS and CFS programs began, biodiesel has proven to be a very cost effective, drop-in fuel solution to achieve significant and immediate carbon reduction.

2019-2020 Average Carbon Intensity (CI) in (gCO2e/MJ)[1]



Underlying data available[3]

1 Source: US Dept of Energy, Energy Information Administration
2 Source: http://www.energy.ca.gov/low_carbon_fuel_standard/
3 Source: https://www.arb.ca.gov/fuels/lcfs/lcfs.htm

What We Deliver

Crimson offers a variety of term supply, logistics, and pricing structures to meet the varying needs of partners who purchase it's ultra-low carbon biodiesel.

Commitment to Quality

Crimson biodiesel will meet or exceed the highest industry standards for fuel quality. This includes proprietary major oil and terminal specifications year-round.

A Economical Way to Meet Regulations

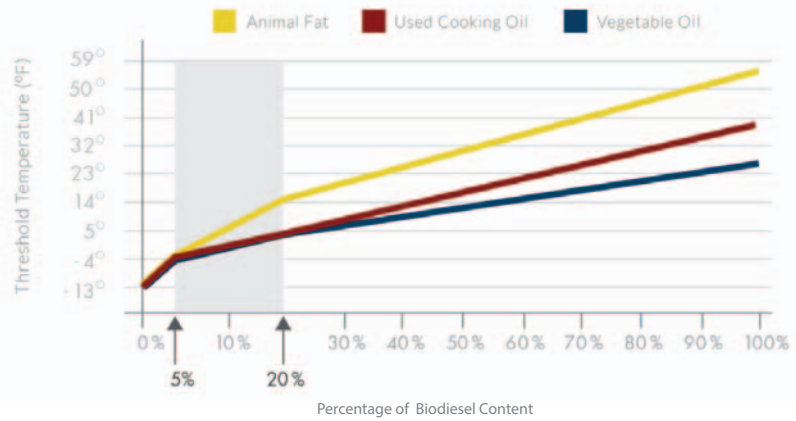
Leading refiners, wholesale distributors, and retailers use biodiesel blends as an economic way to improve the environmental performance of petroleum-based diesel fuel.

Select Properties of Typical Diesel and Biodiesel Fuels[5]

Fuel Property	Diesel No. 2	Biodiesel No. 1-8 Grade
Fuel Standard	ASTM D975	ASTM D6751
Higher Heating Value, Btu/gal / Lower Heating Value, Btu/gal	-138,490 / -129,488	-127,960 / -119,550
Kinematic Viscosity, mm2/s @ 40° C (104° F)	1.3 - 4.1	4.0 - 6.0
Specific Gravity, kg/l @ 15.5° C (60° F)	0.85	0.88
Density, lb/gal @ 15.5° C (60° F)	7.079	7.328
Carbon, wt %	87	77
Hydrogen, wt %	13	12
Oxygen, by dif. wt %	0	11
Sulfur, wt % (parts per million [ppm])	0.0015 max. (15 ppm max.)	0.0 – 0.0015 (0 – 15 ppm)
Boiling Point, ° C (° F)	180 – 340 (356 – 644)	315 – 350 (599 – 662)
Flash Point, ° C (° F)	60 – 80 (140 – 176)	100 – 170 (212 – 338)
Cloud Point, ° C (° F)	-35 – 5 (-31 – 41)	-3 – 15 (26 – 59)
Pour Point, ° C (° F)	-35 – -15 (-31 to 5)	-5 – 10 (23 – 50)
Cetane Number	40 – 55	47 – 65

Cloud Point[6]

(based on ASTM D 2500)



5 http://biodiesel.org/docs/using-hotline/nrel-handling-and-use.pdf?sfvrsn=4

6 Biodiesel Demonstration and Assessment by Societe de Transport de Montreal, Mar. 2002 through Mar. 2003

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The Future of Fuels

Renewable transportation fuels like Crimson's ultra-low carbon biodiesel, used alongside conventional petroleum diesel, delivers more sustainable energy sources that help address climate change and reduce environmental impacts.

Our Commitment to Communities

Crimson's locally-produced, ultra-low carbon biodiesel provides regional and global benefits such as high-paying jobs, increased regional demand for goods and services, cleaner air, and significant reductions in carbon and other harmful pollutants.

We Help Boost Local and Regional Economic Activity

Our biodiesel plants and our SeQuential Environmental Services subsidiary deliver high-quality, high-paying manufacturing and service technician jobs with full benefits. Our biodiesel plants spend tens of millions of dollars each year supporting an ecosystem of local and regional raw material, equipment and parts suppliers, repair/ maintenance and construction contractors, and logistics providers.

We Help Improve Area Health and the Environment

Air quality is measurably worse in industrial areas and major transit corridors with high truck traffic and heavy diesel usage. Cleaner burning fuels like ultra-low carbon biodiesel lead to cleaner air, which means less asthma and reductions in lung cancer and other respiratory illnesses.

Contact Us Today to Learn More

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