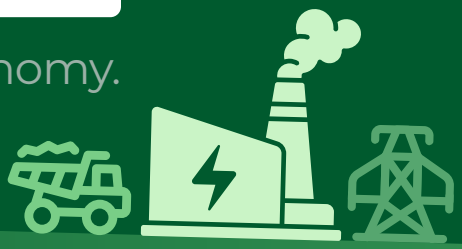
Community Energy Association

Low-Carbon Fuels in BC Primer

Fuels you can use in the transition to a clean economy.



Proven Solutions...

Low-carbon fuels have lower greenhouse gas emissions over their full life cycle, compared to petroleum-derived gasoline and diesel.

Most of these fuels can be used in existing engines and infrastructure, enabling immediate emissions reductions.

...to Power the Transition

This makes low-carbon fuels an important interim solution while waiting for zero-emission technologies to become widely available.

And they are a financially prudent choice for vehicles and infrastructure that are still early in their operating life.

Low-Carbon Fuels Available in BC

Biodiesel

Up to 80%

GHG emissions reduction

Renewable Diesel

Up to 65%

GHG emissions reduction

Compressed Natural Gas

Up to 40%

GHG emissions reduction

Liquefied Natural Gas

Up to 25%

GHG emissions reduction

Other low-carbon fuels include renewable aviation fuel, ethanol, and some forms of hydrogen (read our primer on hydrogen for more details).

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British Columbia cleanBC GO ELECTRIC

BC Hydro Power smart

	Biodiesel	Renewable Diesel	Compressed Natural Gas (CNG)	Liquefied Natural Gas (LNG)
Description	Liquid fuel synthesized from plant oils, waste cooking oils, other oils (fish/algae), and agricultural/forestry biomass feedstocks.	Liquid fuel synthesized from natural fats and oils, such as soybean or canola oil.	Gaseous fossil fuel consisting of more than 95% methane and small amounts of other hydrocarbons.	Gaseous fossil fuel consisting of more than 95% methane and small amounts of other hydrocarbons.
Details	Chemically *different* to petroleum diesel.	Chemically *identical* to petroleum diesel. May be blended or substituted for petroleum diesel.	Stored in gaseous form at very high pressure, compressed to >1% of its volume.	Cooled to –162°C, it becomes a liquid and is stored at low pressure, at 1/600 of its previous volume.
BC Retailers	· Parkland Fuels · Tidewater Midstream	· Imperial Oil · Tidewater Renewables · Parkland · Northside Petroleum	· FortisBC · Certarus	· FortisBC · ENN Canada
Transportation Fuel	Diesel engines can be modified to use biodiesel.	Renewable diesel is a *drop-in replacement* for petroleum diesel. It can be used pure or blended with petroleum diesel.	Vehicles can be converted to use CNG dual or single fuel. CNG vehicles can also be purchased new. CNG vehicles are prevalent vs. LNG.	Vehicles can be converted to use LNG dual or single fuel. LNG vehicles can also be purchased new.
Real-World Use Cases	Optimus Technologies upgrades enable trucks to use 100% biodiesel from Edmonton–Ft Mac. Read/Watch	Tidewater supplies locally refined renewable diesel to Canfor in Prince George.	Kelowna-based Nortrans deploys natural gas truck on mountainous routes with heavy payloads. Read More	LNG-powered ships can now fuel up at the Port of Vancouver Read More

Carbon Credits

These four low-carbon fuels generate carbon credits under the BC Low Carbon Fuel Standard (LCFS) and Canada Clean Fuel Regulations (CFR), which can be sold for additional revenue.

Community Energy Association offers a carbon credit aggregation service to help local governments of any size take part in the carbon credit market.

Watch Unlocking the Value of Carbon Credits for EV Charging Infrastructure Owners to learn more about monetizing carbon credits.

Sources

This high-level analysis is informed by publicly available data from:

- Natural Resources Canada
- FortisBC
- Go With Natural Gas
- Canada Energy Regulator
- US Department of Energy
- California Air Resources Board
- Government of Ontario
- BC BioEnergy Network