

# BIODIESEL

Biodiesel is a petroleum diesel alternative made from renewable sources such as canola, soybeans, tallow and used cooking oil. Biodiesel is most often blended up to a 20 percent concentration with petroleum diesel or renewable diesel. Using locally-produced biodiesel improves air quality, supports the local economy, and helps reduce greenhouse gas emissions.

## Better for the environment & your health

Biodiesel is made from renewable resources, so using it to displace conventional ultra-low-sulfur diesel (ULSD) helps keep fossil fuels in the ground. Research by the Argonne National Laboratory found that the greenhouse gas impact of pure biodiesel is 74 percent lower than that of ULSD.

Due to its higher cetane value compared with ULSD, biodiesel combusts more fully in an engine and produces fewer tailpipe emissions. Pure biodiesel reduces particulate matter and carbon monoxide, two known types of airborne carcinogens, by nearly 50 percent. However, it may produce up to 10 percent more nitrogen oxides (NOx).

Another benefit of biodiesel is that it is nontoxic and nonflammable, making it much safer to handle, store and transport than nearly any other fuel product.

## Can help prolong engine life

In addition to burning more cleanly, biodiesel has far greater lubricity than ULSD, allowing the engine's moving parts to operate more smoothly. It is also an excellent solvent, which can help remove dirt and grime from the engine, fuel tank, and fuel lines. In fact, when first using biodiesel blends of B20 or higher, drivers should



*Yellow fields are a common sight in eastern Washington as more farmers use canola as a rotation crop.*

pay extra attention to their vehicle's fuel filters, which may clog up due to the flushing out of old deposits. After a few tanks of biodiesel, vehicles should require only regular maintenance, and the added cleanliness and lubricity can help improve operating efficiency and increase the lifespan of the engine.

## Meets strict fuel quality standards

All biodiesel manufactured or sold in the United States must meet the international fuel specification standards ASTM-D6751. Blends of five percent biodiesel (B5) or less are required to meet the same set of specifications as conventional diesel.

Most biodiesel producers and suppliers are also registered with BQ-9000, a voluntary program from the National Biodiesel Board. BQ-9000 independently reviews each applicant's fuel quality control systems. Program applicants need to meet a strict set of best practices in fuel processing, testing, blending, and storage before approval.

## Biodiesel benefits:

- Produced and available in Washington State
- Ready to use – no vehicle conversion required
- Emits less air pollution
- Can improve engine performance
- Safer to handle and store

## Local & readily available

In Washington, biodiesel is primarily made from used cooking oils and locally-grown canola.

Pacific Northwest producers:

- **General Biodiesel**, Seattle, Washington
- **Renewable Energy Group**, Grays Harbor, Washington
- **SeSequential Biodiesel**, Salem, Oregon



## Best when blended

Nearly all vehicle manufacturers approve the use of up to B20 in their vehicles without affecting the vehicle warranty. Due to the slight differences in pure biodiesel's materials specifications as compared to ULSD, it is recommended that most users stick to blends of B20 or lower.

In some states, such as Minnesota, New Mexico, and Oregon, biodiesel is blended into all diesel fuels sold in the state.

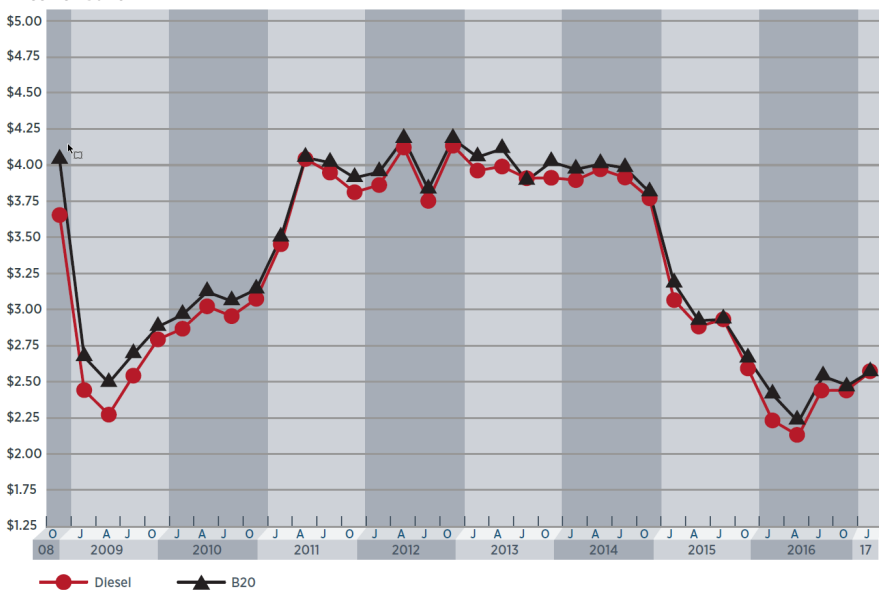
The emergence of renewable diesel, another petroleum diesel replacement, offers a promising opportunity to create a maximally sustainable diesel fuel alternative by blending 20 percent biodiesel with 80 percent renewable diesel, a blend called RB20. Renewable diesel with or without blended biodiesel is fully compatible with all diesel vehicles and diesel fueling infrastructure with no modifications necessary. Like ULSD, renewable diesel's lubricity is improved by blending it with biodiesel.

## An investment in a clean energy future

As of April 2017, the bulk price on locally-produced biodiesel is slightly lower than ULSD, so using it could even help save on fuel costs! Even when it runs a few cents higher per gallon, biodiesel's multiple benefits more than outweigh its cost. An increasingly important piece of Washington's economy, biodiesel creates local industry opportunities, provides revenue for Washington farmers, reduces environmental impacts, and helps keep your diesel engine running strong.

## Biodiesel (B20) vs. Diesel Prices

Price Per Gallon



Biodiesel prices have stayed consistent with diesel prices over the past decade.

Source: U.S. Department of Energy's Alternative Fuel Data Center

## Want to keep updated on biodiesel in Washington?

Let Western Washington Clean Cities be your guide.

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## About Western Washington Clean Cities Coalition

Western Washington Clean Cities Coalition is a not-for-profit membership organization dedicated to expanding the use of alternative fuels and advanced vehicle technologies. We provide education, technical expertise, and networking opportunities to help our members transition from petroleum to more sustainable energy choices.

## Biodiesel in Western WA:

Many Western WA Clean Cities members already know the benefits of biodiesel.

Members using a **B10** biodiesel blend or higher:

- City of Bellevue
- City of Seattle
- Click Wholesale Distributing
- Jefferson County
- King County
- Pierce County
- Port of Seattle
- Recology CleanScapes
- University of Washington
- Washington State Department of Transportation

