

BIODIESEL BASICS

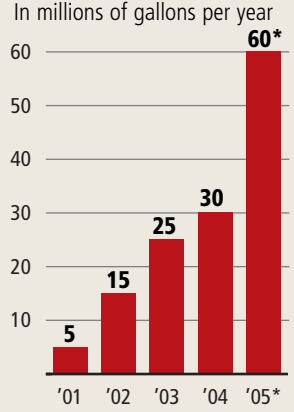
Interest in biodiesel, the clean-burning, non-toxic fuel made mostly from sustainable vegetable oil grown in America, is exploding. The Seattle area probably has one of the highest concentrations of people who run biodiesel in their personal cars, and Washington is one of the top states in biodiesel usage, mainly by government fleets. Though we're not producing the crops to make our own biodiesel yet, many groups are working to make that happen.

What is biodiesel?

Biodiesel is vegetable oil or animal fats mixed with methanol (or, in some cases, ethanol) and lye, which create the fuel through a chemical process called transesterification – similar to soap making. Its byproduct is glycerine, used in soaps. Most biodiesel today is made from soybean oil, but many consider the ideal source to be oilseed crops – canola, mustard, rapeseed – which are all high in oil content. Biodiesel can be used interchangeably in most diesel engines, in any blend. Some older diesel cars need minor modifications to fuel filters and rubber hoses and seals to use it. Rudolph Diesel actually designed his engine to run on vegetable oil. Biodiesel is biodegradable, non-toxic, and considered carbon neutral – it absorbs as much carbon dioxide as it takes to produce it. It produces significantly less greenhouse gas emissions than gas or diesel.



U.S. biodiesel use



*Projected, based on new federal tax credit

COMMON BLENDS OF BIODIESEL

B100: 100% biodiesel | **B20:** 20% biodiesel, 80% diesel | **B5:** 5% biodiesel, 95% diesel

More money, more miles

A comparison of gas, diesel and biodiesel based on the cost of use in a 2005 Volkswagen Jetta M-5

	MILES PER GALLON*	AVERAGE COST OF FUEL**	COST OF FUEL PER MILE***
DIESEL	38/46	\$2.21	5.2 cents
B20	37/45	\$2.56	6.0 cents
GAS	25/31	\$1.90	6.9 cents
B100	37/45	\$3.40	8.2 cents

* City/highway

** Gas and diesel figures from AAA for Seattle-Bellevue-Everett

*** Averaging city and highway mileage

Average biodiesel emissions

Compared to conventional diesel

EMISSION TYPE	B100	B20
Total unburned hydrocarbons	-67%	-20%
Carbon monoxide	-48%	-12%
Particulate matter	-47%	-12%
Nitrogen oxides	+10%	+2%
Sulfates	-100%	20%*
Polycyclic aromatic hydrocarbons (PAH)	-80%	-13%
Nitrated PAHs	-90%	-50%

* Estimated from B100 result

Note: The EPA has no comparative results for gas vs. biodiesel emissions.

Big users of biodiesel in Puget Sound

	NUMBER OF VEHICLES	TYPE OF BIODIESEL	GALLONS OF FUEL USED PER YEAR
Washington State Ferry System*	3 ferries	B20	1.5 million
King County Metro	338 buses	B5	832,000
City of Seattle	500 diesel trucks	B20	500,000
City of Tacoma	85 garbage trucks	B20	350,000
City of Olympia	70	B20	120,000
Central Valley School District	69 buses	B20	75,000
McChord Air Force Base	36	B20	65,800
Northshore School District	30 buses	B20	64,000
Mount Rainier National Park	50	B20	38,000
Fort Lewis	30	B20	34,000**
Everett Naval Station	50	B20	11,000

* Currently suspended due to clogged fuel filters

**10-month period

FOR MORE INFORMATION

National Biodiesel Board, www.biodiesel.org

Puget Sound Clean Cities Coalition, www.pugetsoundcleancities.org

Seattle Biodiesel, www.seattlebiodiesel.com

Northwest Biodiesel Network, www.nwbiodieselnetwork.org, hosts a large community forum on biodiesel on March 19 at the Phinney Neighborhood Center, 6532 Phinney Ave. N., with cars, demonstrations, speakers and more