



## WEST COAST COLLABORATIVE

Public-private partnership to reduce diesel emissions

The goal of the Collaborative is to leverage federal funds to strategically reduce emissions from the most polluting diesel sources in impacted communities. The Collaborative seeks to improve air quality and public health by targeting the highest polluting engines with the most cost effective control strategies.

## Bio 49 Degrees Border Project

### What is the Bio 49 Degrees Border Project?

The primary goal of this binational project was to reduce diesel emissions from utility line trucks and to set up a new infrastructure for producing biodiesel. Utilities from Washington State and British Columbia fueled line trucks with biodiesel blends near the U.S.-Canada border. Biodiesel processors were set up in Washington at Bellingham Technical College, and in British Columbia at Malaspina University and the University of British Columbia Vancouver. Students at each school performed biodiesel processing. The curriculum at each school will be modified to include training on biodiesel production.

### Why is this project important?

This project demonstrated biodiesel use in utility line trucks with cleaner burning commercially produced biodiesel. Puget Sound Energy in Washington State fueled 13 trucks with B20, and BC Hydro ran a larger portion of its fleet on B5, as well as some trucks on B20 and B100.

In addition, ASTM-certified biodiesel was successfully produced on a small scale by college student operators from virgin and used vegetable oil. Students from technical schools in the U.S. and Canada produced biodiesel as part of their curriculum. The student outreach element of the program will create a workforce already experienced with biodiesel production. The project also demonstrated the effectiveness of a new biodiesel processing unit, the "Biodieseler 115." The project will create a new Northwest infrastructure for the production of biodiesel, while providing important biodiesel education opportunities, and reducing emissions.

Emissions from diesel engines—especially the microscopic soot known as "particulate matter" (PM)—create serious health problems for adults and have extremely harmful effects on children and the elderly. Children are especially adversely affected by diesel emissions because their respiratory systems are still developing, and they have a faster breathing rate. Public health authorities associate exposure to PM with an increased risk of premature death, greater number of hospital admissions for heart and lung disease, and amplified adverse respiratory symptoms such as asthma. Long-term exposure to diesel exhaust may also pose a lung cancer hazard to humans.

Diesel exhaust also contains nitrogen oxide (NOx), which is a precursor to ozone, or "smog." In sufficient doses, ozone increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Recent evidence links the onset of asthma to exposure to elevated ozone levels in exercising children.

### What are the estimated environmental benefits of this project?

The use of biodiesel blends significantly reduces emissions compared to the use of conventional on-road fuel. The use of B20 results in the following approximate reductions at the tailpipe: 16% reduction in total PM, 19% reduction in HC, 10% reduction in CO, 20% reduction in SOx, 18% reduction in n-PAH emissions, and 13% reduction in PAH emissions ("National Biodiesel Board/ U.S. EPA Tier I Health and Environmental Effects Testing for Biofuels," Final Report, March 1998).

### How is this project funded?

Through EPA, the Collaborative is providing \$33,344 in support of this project. In addition, \$203,644 was provided in matching funds by the Washington Technology Center and other supporters.

### What is the Collaborative?

The West Coast Collaborative is an ambitious partnership between leaders from federal, state, and local government, the private sector, and environmental groups committed to reducing diesel emissions along the West Coast. Partners come from all over Western North America, including California, Oregon, Washington, Alaska, Arizona, Idaho, Nevada, Hawaii, Canada and Mexico. The Collaborative is part of the National Clean Diesel Campaign ([www.epa.gov/cleandiesel](http://www.epa.gov/cleandiesel)).

### How can I find out more about the Collaborative?

For more information about the West Coast Collaborative, please contact Peter Murchie ([murchie.peter@epa.gov](mailto:murchie.peter@epa.gov), 503-326-6554) or visit our website at [www.westcoastcollaborative.org](http://www.westcoastcollaborative.org).

<sup>1</sup> "Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution," California Air Resources Board and American Lung Association, January 2004, <http://www.arb.ca.gov/research/health/fs/PM-03fs.pdf>.