



School Buses Excel with Biodiesel Blends

School buses are the primary form of transportation for millions of students across the United States. Approximately 450,000 school buses transport more than 24 million students each day, travelling more than 4 billion miles each year. While school buses are a safe and integral part of many school systems, there is increasing concern about children's exposure to pollution from diesel exhaust.

Studies have shown that children riding school buses are exposed to a higher level of emissions than other children. In fact, an analysis by researchers at the University of California, Berkeley found that children on school buses collectively inhale as much or more exhaust emitted from those buses as does the rest of the city's population.¹ The results highlight the problem of "self-pollution," or exhaust from the vehicle leaking into the cabin, particularly among older buses. Exhaust emissions from petroleum diesel fuel inhaled on a consistent basis has been linked to asthma and other respiratory conditions.

Numerous programs now exist at the federal and state levels offering incentives for school districts and other entities to utilize clean and renewable energy such as biodiesel fuel. The U.S. Environmental Protection Agency's Clean Bus USA program is one example.²

Biodiesel's benefits include a reduction in particulate matter, carbon monoxide and unburned hydrocarbons, which contribute to the formation of smog. Biodiesel emissions also reduce potential cancer causing compounds by 80 to 90 percent. The fuel is nontoxic and biodegradable.

Numerous school districts across the country have realized the health and environmental benefits of biodiesel blends and made the switch. Because they work in any diesel engine with few or no modifications, biodiesel blends offer schools a relatively inexpensive option for an immediate solution to air quality concerns.

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The Hays, Kansas School District was the first school district in the state to switch to a biodiesel blend in its 35 buses in 2003. Since then other Kansas school districts have followed suit and the Kansas State Pupil Transportation Association has gotten behind biodiesel as well. In June 2009, that organization hosted the annual Summer Symposium and School Bus Driver Safety Competition for school bus drivers and officials from across the state. The buses used in the competition were all powered with a B20 biodiesel blend.

Gavon Smith, Past President of the Kansas State Pupil Transportation Association and Transportation Director for the Hays School District said,

"This event was a great opportunity to educate other school districts around the state about the benefits of biodiesel. Using biodiesel not only helps to reduce U.S. dependence on foreign oil, but it's better for the environment, our drivers, and helps our farmers here at home."

¹ Vehicle Self-Pollution Intake Fraction: Children's Exposure to School Bus Emissions Julian D. Marshall, and, Eduardo Behrentz *Environmental Science & Technology* 2005 39 (8), 2559-2563

² See www.epa.gov/otaq/schoolbus for more.



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Examples of school districts that are fueling their buses with biodiesel blends

The Medford, New Jersey School District is the pioneer in school bus use of biodiesel blends. Located in Southern New Jersey about thirty minutes southeast of Philadelphia, Medford began using B20 (a blend of 80 percent petroleum diesel and 20 percent biodiesel)

in 1997. According to Director of Operations and Technology Joe Biluck, the B20 blend they use has performed well even in temperatures as low as eleven degrees below zero.



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— Joe Biluck, Director of Operations and Technology
Medford, New Jersey School District

“We transport 3,500 students a day in our buses,” said Biluck. “This biodiesel program was started for them. It has been proven that biodiesel improves air quality both outside of the bus and in the interior.”

According to Medford Township Public School System officials, over the past decade the district’s school buses have traveled more than 4 million miles, consumed more than 615,000 gallons of B20, displaced more than 123,000 gallons of diesel fuel, and eliminated 127,000 pounds of hazardous emissions and 428 pounds of particulate matter while reducing the overall cost of fleet operations by \$80,000 over ten years.

Chicago, Illinois area school children have ridden biodiesel-powered school buses since 2005. The Cook-Illinois Corporation, which operates over 2,000 school buses in communities throughout the Chicago-land area, sees biodiesel as a “win, win situation.”

³ See www.cleanairclub.net.

The National Biodiesel Board is funded in part by the United Soybean Board and state soybean board checkoff programs. For more information, visit: <http://www.biodiesel.org/markets/sch/>

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— John Benish, Jr., Chief Operating Officer of Chicago School Transit parent company

“Students and parents rely on us every day to get their children to and from school safely,” said John Benish, Jr., chief operating officer of Chicago School Transit parent company, Cook-Illinois Corp. “Our feeling is why not use a fuel that’s better for the environment, better for the students and helps Illinois farmers. For us, fuel is everything. We have to be able to rely on it each and every day.”

In addition to using biodiesel, the Cook-Illinois Corporation is spreading the word about the benefits of biodiesel through its Clean Air Club³, which features a school bus that has been transformed into an interactive mobile museum to teach children how to be more environmentally conscious.

Arlington County, Virginia, located in suburban Washington, D.C., is another long-time user of B20. The county’s 500 diesel-powered vehicles, including 130 school buses, run on the biodiesel blend.

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— Dwaine Cunningham, Shop Foreman,
The Potomac School in McLean, VA.

In addition, **The Potomac School**, a private K-12 school in McLean, VA, uses a biodiesel blend in its 39 diesel-powered buses and in its bobcat and other diesel maintenance equipment. Shop Foreman Dwaine Cunningham credits biodiesel’s lubricating properties as being “the saving grace” in protecting the injectors. Cunningham, who admits he was hesitant about switching to biodiesel at first, now has “nothing but good things to say” about the fuel.

