

# {benefits of **BIODIESEL**}

## ▶▶ **Environmental Benefits**

In 2000, biodiesel became the only alternative fuel in the country to have successfully completed the EPA required Tier I and Tier II health effects testing under the Clean Air Act. These independent tests conclusively demonstrated biodiesel's significant reduction of virtually all regulated emissions, and showed biodiesel does not pose a threat to human health.

Biodiesel contains no sulfur or aromatics, and use of biodiesel in a conventional diesel engine results in substantial reduction of unburned hydrocarbons, carbon monoxide and particulate matter. A U.S. Department of Energy study showed that the production and use of biodiesel, compared to petroleum diesel, resulted in a 78.5% reduction in carbon dioxide emissions. Moreover, biodiesel has a positive energy balance. For every unit of energy needed to produce a gallon of biodiesel, 3.24 units of energy are gained.

## ▶▶ **Energy Security Benefits**

With agricultural commodity prices approaching record lows, and petroleum prices approaching record highs, it is clear that more can be done to utilize domestic surpluses of vegetable oils while enhancing our energy security. Because biodiesel can be manufactured using existing industrial production capacity, and used with conventional equipment, it provides substantial opportunity for immediately addressing our energy security issues.

If the true cost of using foreign oil were imposed on the price of imported fuel, renewable fuels, such as biodiesel, probably would be the most viable option. For instance, in 1996, it was estimated that the military costs of securing foreign oil was \$57 billion annually. Foreign tax credits accounted for another estimated \$4 billion annually and environmental costs were estimated at \$45 per barrel. For every billion dollars spent on foreign oil, America lost 10,000– 25,000 jobs.

## ▶▶ **Economic Benefits**

Increased utilization of renewable biofuels results in significant microeconomic benefits to both the urban and rural sectors, and the balance of trade. A study completed in 2001 by the U.S. Department of Agriculture found that an average annual increase of the equivalent of 200 million gallons of soy - based biodiesel demand would boost total crop cash receipts by \$5.2 billion cumulatively by 2010, resulting in an average net farm income increase of \$300 million per year. The price for a bushel of soybeans would increase by an average of 17 cents annually during the ten year period.

In addition to being a domestically produced, renewable alternative fuel for diesel engines, biodiesel has positive performance attributes such as increased cetane, high fuel lubricity, and high oxygen content, which may make it a preferred blending stock with future ultra -clean diesel.



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## ▶▶ **Quality Benefits**

Biodiesel is registered as a fuel and fuel additive with the EPA and meets clean diesel standards established by the California Air Resources Board (CARB). B100 (100 percent biodiesel) has been designated as an alternative fuel by the U.S. Department of Energy and the U.S. Department of Transportation. Moreover, in December 1998, the American Society of Testing and Materials (ASTM) issued a provisional specification (PS 121) for biodiesel fuel. This development was crucial in standardizing fuel quality for biodiesel in the U.S market.

The National Biodiesel Board, the trade association for the biodiesel industry, has formed the National Biodiesel Accreditation Commission (NBAC) to audit fuel producers and marketers in order to enforce fuel quality standards in the US. NBAC issues a 'Certified Biodiesel Marketer' seal of approval for biodiesel marketers that have met all requirements of fuel accreditation audits. This seal of approval will provide added assurance to customers, as well as engine manufacturers, that the biodiesel marketed by these companies meets the ASTM standards for biodiesel and that the fuel supplier will stand behind its products.

## ▶▶ **EPA Act Benefits**

Effective November 1998, Congress approved the use of biodiesel as an Energy Policy Act (EPA Act) compliance strategy. The legislation allows EPA Act covered fleets (federal, state and public utility fleets) to meet their alternative fuel vehicle purchase requirements simply by buying 450 gallons of pure biodiesel and burning it in new or existing diesel vehicles in at least a 20% blend with diesel fuel. The Congressional Budget Office and the U.S. Department of Agriculture have confirmed that the biodiesel option is the least-cost alternative fuel option for meeting the Federal government's EPA Act compliance requirements. Because it works with existing diesel engines, biodiesel offers an immediate and seamless way to transition existing diesel vehicles into a cleaner burning fleet.

