



## **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 virtually 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, at least 4.5 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**

The biodiesel industry has contributed significantly to the domestic economy. The 51,893 jobs that are currently supported by the US biodiesel industry reflect the beginning of the industry's potential to create jobs and economic growth in the US economy. Biodiesel has added \$4.287 billion to the Gross Domestic Product (GDP). Biodiesel has the potential to support more than 78,000 jobs by 2012. A stable, thriving biodiesel industry is necessary if the U.S. is to eventually benefit from the commercial scale production of algal-based biofuels. The NBB estimates that for every 100 million gallons of biodiesel that is produced from algae, 16,455 jobs will be created and \$1.461 billion will be added to the GDP.

## 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 2001, the American Society of Testing and Materials (ASTM) approved a specification (D675) for biodiesel fuel. This development was crucial in standardizing fuel quality for biodiesel in the U.S. market. As of 2008, there is a specification for B6-B20, and up to B5 is included in the diesel fuel specification (D 975).

The biodiesel industry also utilizes a voluntary quality management certification program for biodiesel producers, marketers, and laboratories called the BQ-9000 Program. The BQ-9000 Program combines internationally accepted quality management principles with the ASTM biodiesel fuel specification to help ensure that customers and end users get the highest quality fuel possible. The National Biodiesel Accreditation Commissions issues 'BQ-9000 Marketer,' 'BQ-9000 Producer' and 'BQ-9000 lab' certifications for biodiesel marketers and/or producers and biodiesel testing laboratories that have met all requirements of quality management system certification program. BQ-9000 companies are subject to annual third-party audits to verify their continued compliance with the program requirements. The BQ-9000 program provides 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.

## EPAct Benefits

Effective November 1998, Congress approved the use of biodiesel as an Energy Policy Act (EPAct) compliance strategy. The legislation allows EPAct-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 EPAct 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.

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