

Human Kindness Foundation

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RE: Carolina Biodiesel Incorporated & The Assembly of Governments in Orange County NC

Carolina Biodiesel Incorporated (CBI)

Human Kindness Foundation (HKF), a 501(c)(3) nonprofit organization headquartered in Orange County, has been working with prisoners and prison staff since 1973. In 1994, HKF created Kindness House, Orange County's only post-release residential facility for selected parolees. In 2003, HKF acquired a five-acre tract eleven miles north of Hillsborough on Hwy 86, including a 10,000 sq ft factory in good condition (the former site of The Wizard's Cauldron, a food condiments company). This acquisition is for the purpose of **creating a job training program for parolees and other ex-offenders and recovering addicts**. HKF owns the site free and clear.

After months of consideration about the product around which to revolve the program, HKF decided to launch **Carolina Biodiesel Incorporated** for the following reasons:

- NC is the fifth leading state in the use of biodiesel, yet the closest biodiesel suppliers are located in Kentucky or Florida, requiring expensive transportation costs for procurement;
- NC is the ninth worst diesel polluter in the U.S., and biodiesel is a clear solution to that problem, drastically reducing emissions without any modifications to existing engines;
- The Triangle's air quality has reached the "non-attainment" designation by federal standards, and we are now mandated to improve it, in part, by using alternative fuels;
- Biodiesel production entails a diverse range of job training, leading to very marketable skills. Our plant would simultaneously address environmental quality, employment security and economic development.

Our Proposal

Because our sole aims in CBI are to create jobs and improve our local eco-environment, we propose a partnership between CBI and the local governments that will enable us to provide ASTM-certified biodiesel fuel to those partners and others in the most direct and economical ways possible. At least three areas of partnership would be:

- 1) CBI "splash-blending" B100 into B20 at the municipal yards rather than selling B100 first to a petroleum jobber who would need to blend it at a profit before delivering B20 to the municipal yards.
- 2) CBI and government jointly creating official proclamations to encourage the use of biodiesel in our communities among public and private fleets, farm equipment and personal diesel vehicles.
- 3) CBI and government working together to encourage area restaurants, institutions, schools, hospitals, etc., to contract with CBI for disposal of their waste vegetable oil ("yellow grease") which would be a primary and lowest-cost feedstock of our biodiesel fuel.
- 4) CBI and government working together in a pilot program to test B100 in a small number of vehicles and keep reports as to cost efficiency and increased engine life.

The Next Step

We are now in the process of developing our business plan and feasibility study. Without disrupting your present contracts, we request a simple **Agreement in Principle** between CBI and the governmental entities within Orange County, that **all parties agree to the spirit of this partnership** contingent, of course, on CBI opening its plant and producing ASTM-certified biodiesel at a price less than the entities are now paying. Further, upon signing of such Agreement in Principle, CBI could begin working with appropriate staff of the four entities toward practical arrangements involving yellow grease collection and biodiesel storage and pumping facilities. We are mainly looking for an agreement of friendly collaboration on this project which promises such clear benefit to all our mutual constituencies. Staff of HKF/CBI, along with your staff, could jointly draft this Agreement in Principle which would be signed by officials of all involved entities at a press release / media event for the benefit of public awareness of this partnership.



Biodiesel Factsheet

What is biodiesel?

Biodiesel is a naturally oxygenated fuel produced from organic feed sources such as soybeans, cooking oil, and animal fats. Biodiesel can be used in its pure form (B100 or “neat”) or blended at any ratio with petroleum diesel to achieve cost efficiency and improve cold weather performance. It is commonly used as B20 - a blend of 20% biodiesel and 80% petroleum diesel.

What types of vehicles can use biodiesel?

Biodiesel can be used in any diesel vehicle without modification. It is used extensively in parts of Europe and is gaining support in the United States. Applications include buses, delivery trucks, waste disposal and recycling trucks, construction and farm equipment, heavy-duty freight hauling, boats and passenger vehicles.

How does biodiesel perform?

Biodiesel performs just like traditional diesel, though B100 may result in a minimal power loss at the high end and a slight reduction in fuel economy. B20 users generally experience no marked difference in fuel economy from petroleum diesel. ASTM International has reviewed biodiesel performance and issued a final specification (users should be sure that any fuel they purchase meets ASTM D6751). Because biodiesel acts as a lubricant, it reduces wear and tear on the engine, reducing maintenance costs and extending engine life. Biodiesel remains blended with petroleum diesel so it can be easily stored and dispensed in existing facilities. Biodiesel thickens more than diesel fuel in cold weather and special systems or minor modifications are required for use of B100. Vehicles produced prior to 1993 should have rubber seals in fuel pumps and fuel systems replaced with non-rubber (Viton) seals.

What are the benefits of using biodiesel?

The production of Biodiesel has a 1 to 3.2 energy balance ratio. In other words, for every 1 unit of energy that goes into producing biodiesel, 3.2 units of energy are produced. Biodiesel also results in significantly lower emissions of particulate matter, carbon monoxide, toxic contaminants, sulfur dioxide, hydrocarbons, visible smoke and noxious odors than petroleum diesel. Depending on the feed source, biodiesel can result in lower life-cycle carbon dioxide emissions.

Biodiesel is non-toxic and biodegradable and therefore does not pose a threat to water and soil resources if B100 is spilled. Producing biodiesel from restaurant oil or animal processing wastes reduces the amount of materials overcrowding landfills. Additionally, biodiesel is one of the safest fuels to use, handle, and store because it does not produce combustible vapors and has a higher flash point (300° F) than petroleum diesel. Significant benefits of biodiesel include reducing dependence on foreign oil and providing alternative markets for farmers.

BIODIESEL EMISSION AND BASIC HEALTH FACTS

(source – NBB, EPA)



The overall **ozone** (smog) forming potential of biodiesel is less than diesel fuel. The ozone forming potential of the speciated hydrocarbon emissions was **nearly 50 percent less** than that measured for diesel fuel.

Sulfur emissions are essentially eliminated with pure biodiesel. The exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from biodiesel were essentially eliminated compared to sulfur oxides and sulfates from diesel.

Criteria pollutants are reduced with biodiesel use. Tests show the use of biodiesel in diesel engines results in **substantial reductions of unburned hydrocarbons, carbon monoxide, and particulate matter.**

Carbon Monoxide -- The exhaust emissions of carbon monoxide (a poisonous gas) from biodiesel are on average **47 percent lower** than carbon monoxide emissions from diesel.

Particulate Matter -- Breathing particulate has been shown to be a human health hazard. The exhaust emissions of particulate matter from biodiesel are about **47 percent lower** than overall particulate matter emissions from diesel.

Hydrocarbons – The exhaust emissions of total hydrocarbons (a contributing factor in the localized formation of smog and ozone) are on average **67 percent lower** for biodiesel than diesel fuel.

Nitrogen Oxides -- NO_x emissions from biodiesel increase or decrease depending on the engine family and testing procedures. NO_x emissions (a contributing factor in the localized formation of smog and ozone) from pure (100%) biodiesel increase on average by 10 percent. However, biodiesel's lack of sulfur allows the use of NO_x control technologies that cannot be used with conventional diesel. So, **biodiesel NO_x emissions can be effectively managed and efficiently eliminated** as a concern of the fuel's use.

Biodiesel reduces the health risks associated with petroleum diesel.

Biodiesel emissions show **decreased levels of PAH and nitrated PAH compounds which have been identified as potential cancer causing compounds.** In the recent testing, PAH compounds were **reduced by 75 to 85 percent**, with the exception of benzo(a)anthracene, which was reduced by roughly 50 percent. Targeted nPAH compounds were also reduced dramatically with biodiesel fuel, with 2-nitrofluorene and 1-nitropyrene **reduced by 90 percent**, and the rest of the nPAH compounds reduced to only trace levels.

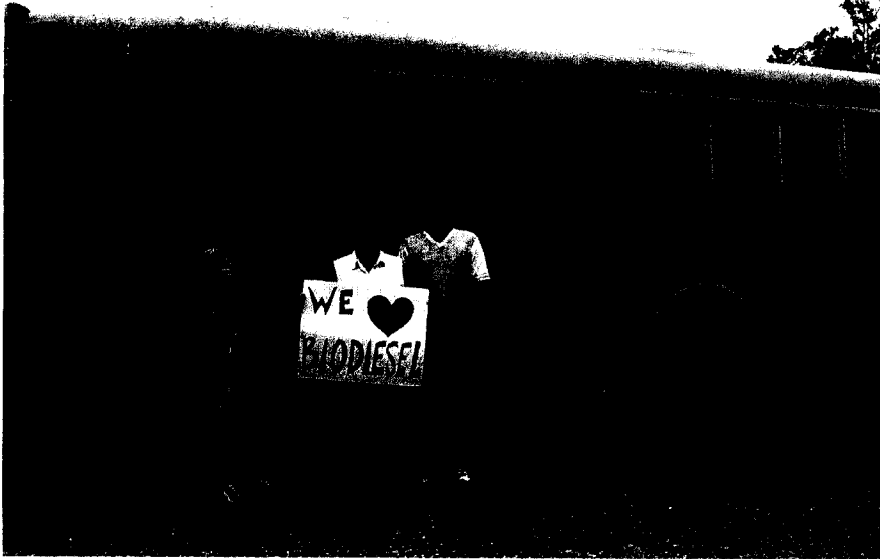
Biodiesel is less toxic than table salt and more biodegradable than sugar.

Biodiesel References – March 2004

Organization	Contact	Phone	Vehicles	Estimated annual B20 usage	Comments
Town of Cary	Juan Vega	919-469-4098	6 buses, 2 vans, 152 other vehicles	157,000 gallons	Runs entire city fleet on biodiesel.
Town of Chapel Hill	Bill Terry	919-968-2800 x148	165 vehicles (dump trucks, sanitation vehicles, fire trucks, lawn mowing tractors, etc.)	80,960 gallons	An additional 95,040 gallons are being dispensed to the Orange Co. EMS ambulance fleet, Carolina Air Care Ambulance Fleet, UNC Hospital Bus Service, UNC Recycling, UNC Housekeeping, Orange County Recycling, and the Orange Water and Sewer Authority (approx. 175 vehicles total) Has been using B20 since 1997.
NC Dept. of Transportation	Bruce Thompson	919-733-2220	Not available	1,900,000 gallons	
Durham Public Schools	Henry Kirby	919-560-3821	284 school buses, plus activity and spare buses	600,000 gallons	Has had fewer complaints about buses and fewer breakdowns due to the fueling system. Drivers notice a significant reduction in fumes/smoke.
Town of Garner	Will Wigal	919-772-7600	30 trucks	12,000 gallons	Has been using B20 since 2001.
United Energy	Haddon Clark	919-785-1904 ue1@mindspring.com	Progress Energy trucks and the general public	60,000 gallons	Sales of biodiesel are twice what they were when the station sold petroleum diesel.
City of Raleigh	David Scarborough	919-890-3079	300-400 trucks (refuse, street sweeper trucks, etc.)	Over 600,000 gallons	Has been using B20 since 2001.
Wake County	Thomas Kuryla	919-856-5756	48 trucks, diesel vehicles	121,400 gallons	Began with biodiesel in 2003.
Raleigh Durham Airport	Charles Barnes	840-2106 ext 363	16 buses, 15 trucks and tractors	180,000 gallons	Just began 6/23/03 No problems /has noticed a reduction in odor and exhaust particulates
City of Greensboro	Gary Smith	336-373-2448	Entire fleet of 751 diesel vehicles, also fuels Guilford Co.	Over 1,132,000 gallons	Was able to absorb costs into regular fuel budget.
Town of Carrboro	Pete White	919-918-7429 pwhite@townofcarrboro.org	45 vehicles & equip. incld. Fire trucks & mowers	22,000 gallons	Running all diesel vehicles & equipment since Fall 2002. No known B20 related engine performance problems.

Sweet-Smelling Stuff

The Herald-Sun
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Final Edition
Editorial Section
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Remember the last time you were stuck behind a school bus?

You will empathize with Deborah Johnson, a Durham Public Schools

bus driver who has inhaled her fair share of foul smelling fumes. Johnson says the smell from the driver's seat is awful, and she should know.

"You could taste it," says Johnson. "It would be in your eyes, and you would get sleepy."

Fortunately for Johnson, Durham Public Schools has taken to heart its drivers' frequent complaints about thick diesel fumes. In March, with a \$75,000 grant from the Triangle J Council of Governments, the school system switched to a cleaner burning biodiesel fuel made from agricultural products. Durham is the first school district in the state to try it.

The blended fuel, known as B-20, is four parts regular petroleum and one part agricultural product such as soybean oil or recycled cooking oil. School officials say the blended fuel has cut the number of complaints from drivers to zero.

There isn't a lot of downside to using biodiesel in the school system's buses. Not only is the blended fuel more environmentally friendly (tests show biodiesel reduces the amount of toxins that diesel vehicles release into the air), it also reduces maintenance.

If there is a downside to biodiesel, it is price. The fuel sells for 10 to 25 cents more per gallon than regular diesel. For now, the Triangle J grant is helping DPS buy the blended fuel.

But with so much upside to using biodiesel, let's hope Durham Public Schools can continue to use it. Bus drivers and the people behind them will breathe easier.

Leadership Recognized for the Use of Biodiesel in NC

North Carolina

Posted: 2004-03-18

Triangle J Council of Governments (TJCOG) is recognizing six local governments for their leadership in reducing harmful emissions and increasing energy security through the use of **biodiesel**, a cleaner-burning renewable transportation fuel. TJCOG hosts the Triangle Clean Cities Coalition, which works to promote the use alternative fuel vehicles in the region. The North Carolina Solar Center is a member of the Coalition.

The municipalities receiving recognition on March 24th are:

The **City of Raleigh**, which uses biodiesel in 300-400 trucks, including garbage trucks, street sweepers, and recycling trucks.

Wake County, which switched to biodiesel last year for its fleet of diesel vehicles. Wake County also fuels emergency vehicles with B20.

The **Town of Garner** has been using B20 for the past 3 years in its municipal fleet of on- road and off- road diesel equipment.

The **Town of Carrboro** is running all its diesel vehicles and equipment with B20.

The **Town of Cary** runs its entire city fleet on B20, including transit buses.

The **Town of Chapel Hill** fuels 165 of its own vehicles with B20 and also provides biodiesel to the UNC Hospital Bus Service, the Orange Water and Sewer Authority, Carolina Air Care Ambulance Fleet, and others.

The recognition of these leaders corresponds with National Biodiesel Day and the birth of Rudolf Diesel on March 18th, 146 years ago. Diesel was the inventor of the engine that bears his name, and ran his engines on fuel derived from peanut oil.

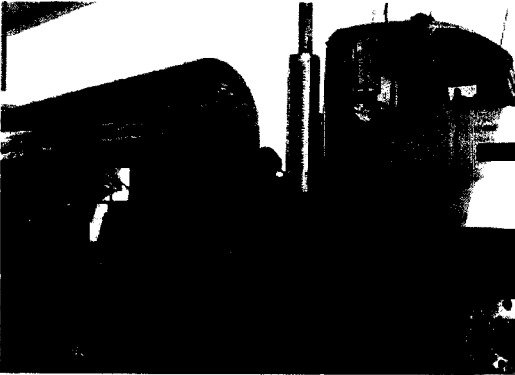
Testimonials From biodiesel users

Illinois

Bill Fleishli, Executive Vice President
Illinois Petroleum Marketers Association
Springfield, Illinois

"We started working with biodiesel earlier this year, and our membership has gotten very interested in using it. The fact that we have gotten no feedback from anyone is a good sign. We have had no negative reports.

"We see that biodiesel is a renewable fuel that helps the Illinois economy and services our needs so we can depend less on foreign oil. Biodiesel has really gained momentum across the state and I think it will continue to do so."



Gerry Downing, Biofuels Manager
Archer Daniels Midland (ADM)
Decatur, Illinois

"We are trying biodiesel in a few vehicles from our trucking fleet, but it is too early to tell whether the B2 blend will have any impact. We think the technical data will show improved lubricity, which will allow us to reduce our maintenance. We are also looking at using B20 in our barge operations fleet to reduce emissions.

"Since we are a large internal diesel user, we want to be ready when national legislation helps make biodiesel use more economically viable. We want to know the performance before we produce and market biodiesel ourselves."

Brian Schaumburg
Chenoa, Ill. Farmer

"I used biodiesel last fall in a two percent blend and am now using a five and a 20 percent blend. I am comparing tractor performance with and without the biodiesel. I have noticed no difference in power output, but have seen less smoke from the biodiesel and I am happy with that result. I am using B2 to meet half of my fuel supply needs at the current time, and hope to see better engine lubricity and cetane values. Biodiesel is a premium fuel."



Don Frieson, Vice President
Wal-Mart Private Fleet
Bentonville, Arkansas

"We were contacted by people in the biodiesel industry to see if we were interested in trying the alternative fuel, and we are now in the testing phase. We are using B2 in about 10 over-the-road trucks in Illinois and Indiana to do engine and cost analyses. We hope to have results later this summer that will help us decide on long-range plans."

Larry Celia, Fleet Maintenance Supervisor
Village of Lincolnshire
Lincolnshire, Illinois

"We tried biodiesel first about a year ago when our distributor, Conserv FS, said we could get credit for using it in our clean fuel fleet. The Village of Lincolnshire is very conscious of doing the right thing for the environment and biodiesel was a nice fit with our 'green' efforts.


"We are using B20 in our whole fleet now, from construction equipment to heavy duty trucks to stationary generators. We have not noticed any difference in power, but we do have fewer complaints from operators during cold start-up about the exhaust fumes and we've had no problem with burning eyes."

How You Can Get Involved

- Find out whether your local transit buses, school buses and other municipal vehicles are using biodiesel yet. If they are, send a note or e-mail to your local representatives to let them know they're doing the right thing. If they are not, encourage them to begin using biodiesel.
- When buying your next car or truck, look for a diesel model. Diesels used to be the worst choice because of noise, rattle, and foul exhaust. All that has changed with new, smooth-running diesel engines burning clean-smelling biodiesel. CBI is doing everything in its power to make both B20 (20% biodiesel) and B100 (100% biodiesel) more readily available throughout the Triangle. Contact us for locations of retail outlets.
- Invite a speaker from CBI to your civic group, church, school or office for an informative presentation on biodiesel.
- If you are a local restaurant or other business that produces waste greases or oils, please contact us. We may be able to collect your waste oils and turn them into clean renewable fuel for your own children's school buses.
- And of course, consider making a tax-deductible contribution to Carolina Biodiesel, a home-grown organization that is combining "waste oil" with "waste people" to create an important and wonderful source of energy. This is true recycling at its best. We welcome your support.

Join our unique grassroots fundraising campaign

CBI was created in 2004 at the same time as the release of Bo Lozoff's new CD of original folk/rock songs. Bo generously gave all rights to his album for us to use as a fundraising tool for CBI.



BO LOZOFF
& FRIENDS
WHATEVER
IT TAKES

How can one CD make our air cleaner, streets safer, and help prevent wars over oil??

find out at
www.humankindness.org

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Human Kindness Foundation is marketing the CD on our behalf and turning over all the proceeds to CBI. The HKF website can accept credit cards and other orders and even has a cut-&-paste encouragement for you to send to your friends via e-mail.

Help us to spread the word and sell some great music for a great purpose.



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Carolina Biodiesel, Inc. (CBI)

CBI is a 501(c)(3) non-profit organization formed to manufacture clean, renewable biodiesel fuel, and to provide job training for ex-offenders and other hard-to-employ people. CBI was founded in 2004 by the board of directors of Human Kindness Foundation (www.humankindness.org), which has been respected around the world since 1973 for its work with prisoners, prison staff, and all those affected by crime.

CBI's Job-Training Mission

Over 23,000 men and women are released from NC prisons each year. Most of them have a very hard time finding jobs both because of social bias, and because they do not possess realistic job skills.

We are developing a 6-12 month program to train ex-offenders in what it takes to be skilled and reliable employees. At the same time we will develop a network of local employers willing to give them a chance.

CBI will pay its trainees decent wages and provide coursework in substance abuse, credit counseling and other life skills as well as marketable job skills related to all aspects of biodiesel production and any affiliated cottage industries.

Every graduate of such a program who finds a decent job means one fewer person at risk of committing crimes in our state. When faced with making a living in one way or another, people will do what they know best. Many ex-offenders return to crime simply because that is what they know best. Our graduates will enjoy far better options.

Biodiesel Is...

- A **renewable** American-grown fuel
- Less toxic than table salt and more biodegradable than sugar (no more "hazardous oil spills")
- A "pour & go" technology (can be used in any diesel engine with no modifications)
- A fuel with **zero** sulfates (the leading cause of acid rain)
- The leading alternative fuel in America (US Dept of Energy)



Biodiesel Can...

- Immediately begin improving our air quality and our respiratory health
- Significantly reduce our dependency on foreign oil, thereby strengthening national security
- Greatly conserve fossil fuels
- Extend the life of diesel engines by 25% or more because of increased lubricity
- Provide a win-win solution for waste cooking oil, keeping it out of landfills and sewers
- Create new markets for NC farmers

Why Is Biodiesel Important To America And North Carolina?

America's manufactured goods and farm products are transported by diesel trucks, diesel locomotives, and diesel-powered ships and barges. Most farm equipment is also diesel-powered. Diesel is commonly used for backup electrical generation by utilities, factories and hospitals.



North Carolina is the ninth leading state in diesel pollution. As of April 15th, 2004, the Triangle has been designated as a "non-attainment region" by federal air quality standards. Asthma and other respiratory ailments have become almost epidemic among children and the elderly.

CBI will make over one million gallons per year of clean-burning biodiesel fuel using waste greases and oils, and soybean and other farm crops from North Carolina. This is good for our health, our environment, our economy, and also means a million fewer gallons of foreign oil imported to the U.S.