



**Green Plus news (88) 2007 - 2010**

1. 04/14/2010 [Biofriendly Corporation Signs Agreement with Sandcastle Petroleum LLC to Market „Green” Fuel](#)  
The agreement gives Sandcastle exclusive rights to market fuel which has been treated with Biofriendly’s patented Green Plus® liquid combustion catalyst to independent gas stations in the United States, Puerto Rico and other geographies.
2. 04/07/2010: [Biofriendly Corporation Launches Green Plus for Home Heating Oil](#)  
Green Plus will now be offered for sale to the general public for use in home heating oil.
3. 11/16/2009: [Green Plus® Liquid Combustion Catalyst Approved by the State of Texas for Use in Diesel Fuel](#)  
Biofriendly Corporation announced today that Green Plus has been approved by the Texas Commission for Environmental Quality (TCEQ), as an alternative formulation solution to meet the Texas Low Emission Diesel (TxLED) requirements.
4. 02/20/2009: [Now Hiring: Systems Engineer](#)
5. 11/2008: [Biofriendly Corporation is Now Hiring a Systems Engineer](#)  
[Petrolina Oil Adopts Green Plus to Enhance Gasoline and Diesel Fuel in Cyprus](#)  
The Cyprus company announced, "Petrolina, in cooperation with the US based Biofriendly Corporation, is launching new revolutionary fuels with the Green Plus liquid catalyst as Platinum +"
6. 11/03/2008: [US EPA Grants Biofriendly Corporation New Product Registrations](#)  
US EPA completes two year review of Biofriendly Corporation. Green Plus granted three new EPA registrations.
7. 10/24/2008: [Rising Gas Prices Boost Scooter Sales - Hybrid Model Gets 180 MPG](#)  
More and more environmentally conscious drivers are switching to biofriendly scooters.
8. 10/17/2008: [Clean Energy 2030: An Ambitious Plan from an Ambitious Company](#)  
How a successful corporation proposes to bring about a more biofriendly environment.
9. 10/10/2008: [Saving Fuel and Money with Global Positioning Systems](#)  
A promising new technology can help bring about a greener, more biofriendly planet.

10. 09/26/2008: [The Sahara Forest Project: Providing Water, Food and Energy](#)  
A bold new approach to finding a biofriendly solution for hot and arid coastal areas.
11. 09/19/2008: [New York to Los Angeles Run to Promote Biofuel](#)  
Driving from coast to coast, using a biofriendly fuel and without stopping to refuel.
12. 09/12/2008: [Solar Power Technology Gains Momentum](#)  
Major projects are underway that provide a boost to biofriendly solar power.
13. 09/05/2008: [Gas From Trash Will Help Clean the Environment](#)  
New biofriendly development will generate gasoline from discarded organic waste.
14. 08/29/2008: [USA's First Fossil Fuel Free Community Housing Tract in Colorado](#)  
Clever planning will make these biofriendly homes independent of the power grid.
15. 08/22/2008: [New Development Paves the Way to a Future of Cleaner Air](#)  
Scientists find a biofriendly method of removing harmful emissions from the atmosphere.
16. 08/15/2008: [The Lure of Manure: Energy from Farm Waste](#)  
Biogas made from manure takes on a biofriendly aspect as an energy source.
17. 08/08/2008: [Encouraging New Biofriendly Developments in Ethanol Production](#)  
Researchers have found a biofriendly way to produce ethanol more efficient
18. 07/25/2008: [Revolutionary New Engine Design Optimizes Fuel Economy](#)  
The biofriendly Hefley engine saves fuel by adjusting itself to varying loads.
19. 07/18/2008: [Volkswagen's Biofriendly 1 Liter Car Hits the Road](#)  
This revolutionary vehicle demonstrates that fuel economy is not just an empty phrase.
20. 07/11/2008: [Is Carbon Sequestration Biofriendly And What is it About?](#)  
Concerns about global warming lead to new ways to reduce greenhouse gases.
21. 07/04/2008: [Can Offshore Drilling Lower the Price of Oil](#)  
It has been suggested that opening up the currently off-limits oil fields in the U.S. coastal waters can alleviate the price of gas at the pumps, but can it and is it biofriendly?
22. 06/27/2008: [Algae for Food and Fuel A Panacea](#)  
The world is struggling with food and energy shortages, but algae hold much promise to alleviate both.

23. 06/19/2008: [The World Takes Another Look at Biofuels](#)  
Not long ago, biofuels were considered in many circles to be the biofriendly answer to the looming crisis in oil production, but there have been unpredicted consequences.
24. 06/13/2008: [Hypermilers Are A New Breed of Motorist](#)  
With gasoline prices reaching record highs, motorists are discovering techniques to get dramatic improvements in fuel economy.
25. 06/06/2008: [Zero Energy Buildings Are Gaining Ground](#)  
While much attention is being paid to making automobiles more energy efficient, efforts are underway to do the same with buildings.
26. 05/30/2008: [Norwegian Company to Build Huge Offshore Floating Wind Turbine](#)  
After building a successful scale model, Norway's StatoilHydro has set out upon an ambitious engineering project.
27. 05/23/2008: [How Earth Day Got Started and How it Evolved](#)  
One fine spring day in 1970, America woke up to the importance of preserving the environment, due to the efforts of a few dedicated individuals.
28. 05/16/2008: [Clean Coal Technology: What is it all About?](#)  
The world is looking for more biofriendly solutions to the use of energy resources. The controversial clean coal technology is an attempt to reduce the harmful effects of coal on the environment.
29. 05/01/2008: [General Motor's Hy-wire: Car of the Future?](#)  
In a drastic departure from the complexity of traditional design, one car stands out as a potential model of things to come.
30. 04/25/2008: [Air Quality: Getting a Breath of Fresh Air](#)  
The air we breathe is precious and the Air Quality Index has been instituted with the purpose of keeping it clean.
31. 04/18/2008: [San Francisco And Their Ambitious Plans for Reduced Emissions](#)  
Mass transit is one area that can have a major positive impact on the environment.
32. 04/11/2008: [Environmental Stewardship no Longer a Grassroots Movement](#)  
All over the world, opinion leaders are speaking out about the need to take care of our planet.
33. 04/04/2008: [Earth Hour: Symbol for Environmental Awareness](#)  
Australian initiative raised environmental awareness and induced millions of people to cut power consumption.
34. 03/26/2008: [Meeting Future Energy Needs With Biofuels](#)  
This article presents some ways in which rising prices and dwindling supplies of fossil fuels can be alleviated.

35. 03/21/2008: [Will Spray-On Solar Cells Transform the World?](#)  
Solar energy is about to change the way we live and can create a significant beneficial impact on the environment.
36. 03/14/2008: [An Underground Connection Saves Energy and Roads](#)  
An enterprising Dutch corporation has found a creative way to keep warm in winter and cool in summer.
37. 03/07/2008: [Coal-to-Liquid Technology: Not a Panacea](#)  
While CTL can reduce our dependency on foreign oil, there are drawbacks to large-scale implementation, which makes it less than biofriendly.
38. 02/29/2008: [Tata Nano: The World™s Cheapest Car Makes its Debut](#)  
As India™s Tata Motors announces its super-affordable Nano car, environmentalists around the world ponder its implications.
39. 02/22/2008: [Air Powered Cars: Not Just Inflated Claims](#)  
Hard to believe, but a recent environmental development presents us with cars that run on nothing but air.
40. 02/15/2008: [Hybrid Buses are Gaining Ground Across the Globe](#)  
Widespread use of public transportation, rather than automobiles, reduces energy demands. Now, public transportation is further reducing fuel consumption.
41. 02/08/2008: [The Cold Fusion Controversy: Fact or Fiction?](#)  
The jury is still out on whether or not cold fusion is a valid new technology, but new evidence has turned up from an unexpected quarter.
42. 01/25/2008: [German Kite Ship Sets Sail for Venezuela on Maiden Voyage](#)  
For thousands of years wind power has propelled ships, small and large, across the oceans. Now an enterprising shipping company is reviving that tradition.
43. 01/18/2008: [Hybrid Taxicabs for New York City: A Biofriendly Move](#)  
Plans are afoot to make the Big Apple a greener and more enjoyable place to live and work.
44. 01/11/2008: [The Many Biofriendly Advantages of Geothermal Power Generation](#)  
Taking advantage of the geologically active landscape, The Geysers power plant in Northern California produces enough power for a city the size of San Francisco.
45. 01/04/2008: [Concentrating Solar Power: Biofriendly Technology of the Future?](#)  
An innovative approach to getting abundant clean renewable energy from a free super long-lasting energy source: the Sun.
46. 12/20/2007: [The Florida Gulf Stream: A Biofriendly Source of Renewable Energy](#)  
Abundant free energy from the sea: A promising new technology that could transform the world by ultimately eliminating the need for fossil fuels.

47. 12/19/2007: [Replacing Coal with a Cheaper, More Biofriendly Fuel](#)  
Search engine giant Google decides to pursue research and development on affordable and renewable energy sources.
48. 12/13/2007: [Former Chairman of California Air Resources Board Joins Biofriendly Board of Advisors](#)  
December 12, 2007, Covina, CA – Biofriendly Corporation announce today that John D. Dunlap III has joined its Board of Advisors.
49. 12/12/2007: [Novel Truck Loading Technique Saves Energy and Cuts Emissions](#)  
Instead of trying to get higher miles per gallon, this company evolved a different biofriendly approach to fuel economy.
50. 12/10/2007: [Solar Vehicles Are Taking Off: A Biofriendly Transportation Method](#)  
Solar technology comes of age in a grueling race across Australia's interior.
51. 11/27/2007: [Cylinder Deactivation: Another Biofriendly Way to Save Gas](#)  
Power when you need it, but who needs all that power when just cruising along?
52. 11/26/2007: [Will Biofriendly Fuel Cells Power Future Cars?](#)  
Although not expected to become widely available for some years, fuel cell vehicles may well revolutionize future transportation.
53. 11/19/2007: [Moving to a More Biofriendly Future: Hybrid Big Rigs Hit the Road](#)  
The green movement gets another boost as giant retailer Wal-Mart starts deploying new hybrid big rig trucks.
54. 11/16/2007: [A Biofriendly Approach to Energy Efficiency](#)  
"Of the 65 largest oil producing countries in the world, up to 54 have passed their peak production and are now in decline, including the USA in 1970/1, Indonesia in 1997, Australia in 2000, the North Sea in 2001, and Mexico in 2004." (1)
55. 10/31/2007: [Biofriendly Applauds Congress Call for Cleaner Air](#)  
Letter urges EPA to impose stricter limits on smog pollution. Meanwhile, Biofriendly Corporation is doing its part in helping to bring about a cleaner and healthier environment.
56. 10/29/2007: [Biofriendly Cars: New Plug-In Hybrids](#)  
"Over the last two decades, U.S. dependence on foreign oil has nearly doubled, gas prices have climbed more than 55 percent and our nation's global warming emissions have skyrocketed, while average gas mileage for new vehicles has actually fallen." (1)
57. 10/17/2007: [Ethanol: A Biofriendly Panacea?](#)  
Among alternative fuels under consideration, ethanol is currently receiving a great deal of attention. Biofriendly Corporation is one contributor to reducing dependence on foreign oil.

58. 10/10/2007: [Biofriendly's Quest Further Fueled by Federal Verdict](#)  
Vermont ruling endorses states' rights to set limits for greenhouse gas emissions.
59. 10/03/2007: [Mexico Engages in Serious Climate Change Measures and Biofriendly is Helping](#)  
Biofriendly is assisting the world's twelfth-largest greenhouse emitter
60. 09/24/2007: [Top TV Series Tackles Global Warming: Biofriendly Already There](#)  
Top-rated series "24" goes into territory where Biofriendly™s Green Plus(R) liquid fuel catalyst has been for years
61. 09/18/2007: [Biofriendly.com Becomes Even More User Friendly](#)  
September 18, 2007, Covina, CA -- Biofriendly Corporation announced today the complete upgrade and revamp of its website [www.biofriendly.com](http://www.biofriendly.com).
62. 09/05/2007: [Fossil Fuel Catalyst Slows Fuel Consumption](#)  
Biofriendly's Green Plus(R) liquid fuel catalyst can ease the fossil fuel crunch
63. 08/31/2007: [Biofriendly Liquid Fuel Catalyst, Green Plus®<sup>®</sup>, Passes Four Billion Mile Mark](#)  
Green Plus can be added to gasoline, diesel, marine fuels, heavy fuel oil and even coal
64. 08/22/2007: [National Safety Council Offers Sound Advice on Vehicle Emissions](#)  
We can take pollution reduction to the next level with a fuel catalyst that increases fuel efficiency
65. 08/16/2007: [Biofriendly Executive Jim D'Arezzo Recognized by the Mexican State of Jalisco](#)  
Liquid Fuel Catalyst Causes Emissions Reduction
66. 07/31/2007: [The Long Term Scramble to Improve Fuel Combustion - Biofriendly Succeeds](#)  
Biofriendly's Green Plus liquid fuel catalyst truly succeeds where others have failed
67. 07/30/2007: [Can Fuel Additives Offset Higher Fuel Prices? Biofriendly Has the Answer](#)  
Biofriendly's Green Plus fuel catalyst is beyond a fuel additive and it works
68. 07/27/2007: [The Science Behind Global Warming and the Biofriendly Solution](#)  
The realities of global warming are established...and Biofriendly Corporation's Green Plus liquid fuel catalyst is an extraordinary solution

69. 06/28/2007: [The Next Stage of the "Carbon Neutral" Trend: Biofriendly Green Plus](#)  
Becoming "carbon neutral" greatly assists in the effort against climactic change-the next step is Biofriendly's Green Plus liquid fuel catalyst
70. 06/26/2007: [EPA Spending 118 Million to Eliminate Greenhouse Gas Emissions](#)  
With Green Plus liquid fuel catalyst, a drastic reduction in greenhouse gas emissions can be had now for a tiny fraction of EPA's FY 2008 budget
71. 06/20/2007: [What Exactly Are Greenhouse Gases, and How Does Biofriendly Help?](#)  
It helps to know exactly what "greenhouse gases" are, and how Biofriendly Corporation's Green Plus liquid fuel catalyst helps solves the problem
72. 06/07/2007: [The Science Behind Global Warming And the Biofriendly Solution](#)  
The realities of global warming are established. Biofriendly Corporation's Green Plus liquid fuel catalyst is an extraordinary solution
73. 06/06/2007: [NOx Emissions from Ships a Major Source of Air Pollution on the California Coast](#)  
Biofriendly Corporation's liquid fuel catalyst a possible solution to harmful emissions from marine engines
74. 05/24/2007: [EPA Urged to Clean Up Toxic Pollution from Diesel Ships and Trains](#)  
Environmental group pushes for new pollution standard by the end of the year
75. 05/23/2007: [Choice of Fuel Affects Emissions and Air Quality](#)  
While gasoline is a cleaner fuel, the gasoline engine is less fuel-efficient than a diesel engine
76. 05/21/2007: [CARB Planning to Reduce NOx Emissions from Diesel Trucks](#)  
California needs cleaner air, less harmful emissions.
77. 03/07/2007: [Biofriendly's Sister Company Now Listed in UK Vehicle Certification Agency Register](#)  
Aveley Emissions Laboratory was acquired by Green Plus Limited in April 2006. The Laboratory has undergone extensive refurbishment and following UK Government Certification by the Vehicle Certification Agency it is registered to carry out official emission testing.
78. 02/14/2007: [Alarming U.N. Report on Global Warming Due -- But Biofriendly Corporation is Reversing the Trend](#)  
In the face of dire predictions of global warming, Biofriendly Corporation's Green Plus liquid fuel catalyst brings a much-needed solution
79. 01/30/2007: [NOx Emissions Affecting California Air Quality](#)  
Biofriendly Fuel Catalyst Shows Marked Reductions in Harmful Diesel Emissions

80. 01/24/2007: [Biofriendly's Green Plus Fuel Catalyst To Be Used By Four More Cities In Mexico](#)  
"Emission Zero" Program aimed at improving air quality.
81. 01/16/2007: [Biofriendly Liquid Fuel Catalyst Tested By U.S. EPA and California Air Resources Board Accepted Laboratory](#)  
Light-duty gasoline automobile showed significant reductions in harmful emissions using Green Plus additive.
82. 01/15/2007: [Green Plus Mandated in Mexican City of Guzman to Help Clean Air](#)  
All city vehicles, private buses and taxis to use Biofriendly fuel catalyst.
83. 01/14/2007: [Green Plus Fuel Catalyst Reduces Emissions and Improves Fuel Economy in Heavy-Duty Diesel Truck Engine Test](#)  
Biofriendly Corporation has introduced Green Plus, a liquid fuel combustion catalyst, the world's most effective solution for significantly improving fuel economy and reducing harmful emissions.
84. 01/10/2007: [Significant Reductions in Air Pollution Attained by Petroecuador in Test of Green Plus TM Fuel Catalyst](#)  
Biofriendly Corporation has introduced Green Plus TM, a liquid fuel combustion catalyst, the world's most effective solution for significantly improving fuel economy and reducing harmful emissions.
85. 01/09/2007: [Biofriendly's Green Plus Achieves Significant Reductions in Emissions While Improving Fuel Economy](#)  
Beijing Automobile Research Institute tests liquid fuel catalyst
86. 01/08/2007: [Green Plus Liquid Fuel Catalyst Shows Improved Combustion Efficiency In Coal-Fired Power Generator](#)  
Biofriendly's UK sister company Green Plus releases details of E.ON report.
87. 10/24/2006: [Biofriendly Completes Combustion Efficiency Test](#)  
Liquid fuel Catalyst Shows Real-Time Improvements in Horsepower and Torque
88. 10/11/2006: [Biofriendly's Liquid Fuel Catalyst Passes Marine Engine Maintenance Testing](#)  
Engine assessment report on Biofriendly's Green Plus fuel catalyst leads to "Letter of No Objection" from major marine engine manufacturer.

1. **Biofriendly Corporation Signs Agreement with Sandcastle Petroleum LLC to Market “Green” Fuel**

**Covina, California** –Biofriendly Corporation announced today that it has signed an agreement with Sandcastle Petroleum LLC of Celebration, Florida. The agreement gives Sandcastle exclusive rights to market fuel which has been treated with Biofriendly’s patented Green Plus® liquid combustion catalyst to independent gas stations in the United States, Puerto Rico and other geographies.

Sandcastle plans to market the Green Plus treated diesel and gasoline fuel for the same price as regular fuels. Sandcastle selected Green Plus for its unique ability to lower harmful emissions, improve fuel economy and enhance engine performance. Sandcastle reports that independent gas station owners believe offering a “Green” fuel will give them a marketing edge because consumers want to improve fuel economy and be environmentally conscious at the same time.

Robert W. Carroll, Biofriendly’s Chairman and CEO stated, “Sandcastle Petroleum has developed an innovative model to serve the independent gas station market. Having Green Plus already in their fuel provides consumers with enhanced performance and lower emissions for every mile they drive. We are delighted to be associated with the Sandcastle team.”

Carlos Troche, CEO of Sandcastle Petroleum said, “We made a careful investigation of the market and found that Green Plus enhances the overall performance of vehicles while being environmentally friendly. Biofriendly’s track record of billions of safe miles, independent test results and safe use in all types of engines made it the best choice for Sandcastle and for consumers.”

**About Sandcastle Petroleum LLC**

Sandcastle Petroleum, LLC. is **The GREEN FUEL Company**. For the first time Green Fuel gasoline and diesel is coming to market. Sandcastle Petroleum is marketing and distributing Green Plus treated fuel at the same price consumers currently pay at the pump.

Sandcastle has begun distribution in Central Florida without Green Plus but have aggressive expansion plans to cover the State within the next several months and then expand to other States with Green Fuel treated with Green Plus. The company goal is to market its Green Fuel nationwide. Sandcastle CEO Carlos Troche states, “We are very confident that GREEN PLUS will take over the national fuel market rapidly, since we are helping to provide a simple but effective way for consumers to reduce the harmful emissions that are taking such a high toll on our environment.”

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler (fewer hot spots) and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patented product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

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# GREEN PLUS

## 2. Biofriendly Corporation Launches Green Plus for Home Heating Oil

04/07/2010

Covina, CA April 7, 2010—Biofriendly Corporation announced today that Green Plus will now be offered for sale to the general public for use in home heating oil. The company's Green Plus® combustion catalyst has been used in bulk by large oil companies and fleets to "go green" since 2005, but it has never been available to the general public.

Significant, successful independent testing of fuel oil both by Biofriendly and by third party corporations inspired the decision to launch this new product, according to Bob Carroll, the company's CEO. "Consistent test results have proven that Green Plus is equally as effective in heating oil as it is in diesel, gasoline, marine fuels and coal. Realizing that Green Plus could so significantly reduce home heating oil emissions in the US, made the decision to offer it to that market, too important to ignore."

The test results also show that Green Plus reduces fuel oil consumption by 7-8%. Biofriendly's hope is that the financial savings that result from using less heating oil will inspire home oil users to clean up the environment. To learn more about Green Plus in heating oil, or to try out the product, go to [www.cheaphomeheatingoil.net](http://www.cheaphomeheatingoil.net).

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler (fewer hot spots) and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide and in retail for home heating oil.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patented product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com)

# GREEN PLUS

### 3. Green Plus® Liquid Combustion Catalyst Approved by the State of Texas for Use in Diesel Fuel

11/09/2009

**November 16, 2009, Covina, CA** – Biofriendly Corporation announced today that Green Plus has been approved by the [Texas Commission for Environmental Quality \(TCEQ\)](#), as an alternative formulation solution to meet the [Texas Low Emission Diesel \(TxLED\) requirements](#).

The Texas Low Emission Diesel program is designed to lower emissions of Nitrogen Oxides (NOx) and other smog-forming pollutants from diesel-powered motor vehicles and non-road equipment in 110 counties in Texas where air quality is a concern. Green Plus was approved as a solution for diesel fuel producers, importers, retailers and others to meet this State requirement.

The approval was granted to Biofriendly's liquid combustion catalyst by TCEQ after Green Plus passed a series of stringent Federal Test Procedures. The test compared the current standard diesel used in Texas and treated with Green Plus, with the emissions output of a much cleaner burning diesel fuel as required by TCEQ. The results of this test, which was audited and approved by the State of Texas, proved that Green Plus reduced harmful emissions to a level equivalent to the cleaner diesel blend.

"We are pleased that Green Plus has been accepted as an emissions solution option in Texas," Commented Robert Carroll, Chairman and CEO of Biofriendly Corporation. "Green Plus is a solution that not only helps fuel burn cleaner, it is easy to implement on a broad scale and extremely cost effective. We feel we can make a bigger difference in the environment at a lower cost than any other solution on the market," he added.

#### About Biofriendly Corporation and Green Plus

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[Green Plus](#) is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com)

#### 4. Now Hiring Systems Engineer

02/20/2009

##### Systems Engineer

In context of company producing technologies for clean and efficient industrial energy systems, performs various data engineering functions in area of systems integration between BIOFRIENDLY injection control systems and corporate customers' plant management control systems. In collaboration with laboratory and facilities managers in United Kingdom to create testing programs to produce maximum volume and reliability of data within prescribed budgets and to ensure correct data analysis, reporting, and storage. Works with specific project managers to engineer data analysis and storage systems: HFO/Coal Boiler Manager, Maritime and Land Power Manager, Gasoline and Diesel Manager. May perform sales engineering functions from time to time to provide advanced technical data and technology interface information to customers' engineering personnel. Performs various reporting and data organizing functions to meet company's technical management information needs.

##### Requirements:

- (1) Master of Science in Electrical Engineering or Master of Science in Computer Engineering
- (2) SKILLSET: Successful candidate must mastery of data compression and coding computer technologies, whether gained through academic exposure or previous experience. Persons qualifying based on MS in alternate field (Comp Eng) must possess previous electronic systems design experience, no minimum specified.



# GREEN PLUS

**5. Petrolina Oil Adopts Green Plus to Enhance Gasoline and Diesel Fuel in Cyprus**  
[Market Wire, November, 2008](#)



Biofriendly Corporation announced today that its Green Plus® liquid combustion catalyst has been adopted by Petrolina (Holdings) Public Ltd oil company to enhance all of its gasoline and diesel fuel. Petrolina is one of the largest oil companies in the country of Cyprus. Petrolina owns and operates Petrolina and Agip fuel stations.

The Cyprus company announced, "Petrolina, in cooperation with the US based Biofriendly Corporation, is launching new revolutionary fuels with the Green Plus liquid catalyst as Platinum +"

"Petrolina sought to upgrade the quality and performance of their fuel," said Jim D'Arezzo, senior vice-president of sales and marketing for Biofriendly. "Green Plus was selected based on its superior capabilities."

Green Plus has been successfully tested in certified independent laboratories on five continents. The catalytic action of Green Plus in fuel improves combustion and has been shown to improve engine performance, reduce emissions and improve fuel economy. Petrolina products with Green Plus are high performance fuels that are available in gasoline unleaded 95 and 98 octane and low sulfur Euro diesel.

**About Biofriendly Corporation and Green Plus**

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler (fewer hot spots) and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production.

For more information about Biofriendly Corporation , please visit their web site <http://www.biofriendly.com/> . [www.petrochina.com.cy](http://www.petrochina.com.cy)

## 6. US EPA Grants Biofriendly New Product Registrations

11/03/2008

Biofriendly Corporation announced today that the U.S. Environmental Protection Agency (EPA) approved new product registrations for its Green Plus liquid combustion catalyst after an exhaustive two year review. Green Plus is a breakthrough technology that improves fuel combustion, thus reducing harmful emissions and improving fuel efficiency.

Biofriendly Chairman and Chief Executive Officer Robert W. Carroll acknowledged EPA, noting that "EPA recognized the potential value of Green Plus and worked tirelessly with Company scientists to get the product approved and into commerce."

Biofriendly is also pleased to have fully resolved a complaint brought against it when a competitor presented false and unsubstantiated information to EPA in November 2005. The competitor's claims were found to be baseless.

The comprehensive review by EPA also revealed an alleged error in the filing of Biofriendly's product registration. The claim was that Biofriendly failed to properly describe all of the constituents of the Green Plus product when it was originally registered in 2001. Biofriendly strongly disputed the allegations, but in order to move forward and get back into the market as quickly as possible, the EPA and Biofriendly agreed to a consent decree settlement, allowing Biofriendly to pay a fine for the administrative dispute while admitting no liability.

"This was a difficult situation for both the EPA and Biofriendly," said Carroll, "and we are very pleased to have moved beyond this distraction and get back to what we do best-innovating to make the planet greener. Green Plus is a highly effective solution to the world's environmental challenges. I would like to thank the members of our team and EPA for working together so effectively to make sure that no stone was left unturned while resolving this issue. We take pride in our product and in the manner in which we do business."

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

## 7. Rising Gas Prices Boost Scooter Sales - Hybrid Model Gets 180 MPG

10/24/2008

Soaring gas prices have led to slumping sales of new cars. Scooters, however, being more [biofriendly](#) in fuel consumption, have caught the attention of the American public, with sales up by 66 percent in the first half of 2008, compared to the previous year. It is scooters, rather than motorcycles, that enjoy this new popularity; and for good reason. Scooters tend to get better gas mileage than motorcycles and are typically less expensive to purchase.

Vespa scooters, in particular, did extremely well, with July sales up 173 percent over the same period in 2007. Yamaha [scooters](#) performed very well too, with sales almost doubling.

If you like the idea of reducing your gasoline purchases that way, you may want to check out a brand new hybrid scooter. Manufactured by California-based ELV Motors, the VKM 50 hybrid scooter is said to get 180 miles per gallon and costs less than \$3000.

The VKM 50 has a 49 cc gasoline motor and a 500 watt electric engine, which combination can reach speeds of up to 40 miles per hour. The small gasoline engine means that in many states it classifies as a motorized bicycle, which does not require a special license or permit. The distributors claim that the scooter has been certified by the Department of Transportation and the Environmental Protection Agency. According to the Inhabitat website, this scooter seems to be well made and comfortable and weighs less than 200 lbs.

Some well-known brand name manufacturers are also developing hybrid scooters, notably Honda and Peugeot, but none of them come close to 180 mpg. Moreover, in contrast to these manufacturers, the VKM 50 is available for delivery right now.

As the Europeans discovered decades ago, scooters are great for traveling short distances, such as inside cities and it seems fairly certain that we will see a lot more of them in the near future. Saving on fuel is good for the pocketbook and good for the environment. One company that is also contributing to this cause is [Biofriendly Corporation](#) which has developed the [Green Plus](#) liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [scooters](#), [hybrid](#), [180 mpg](#), [elv motors](#), [motorcycles](#), [environment](#)

## 8. Clean Energy 2030: An Ambitious Plan from an Ambitious Company 10/17/2008

Google, the Internet search engine giant, has long been a proponent of a greener, more [biofriendly](#) planet. As reported earlier in our articles, the company has made a major investment in solar power. Now, Google has proposed an ambitious plan by the name of [Clean Energy 2030](#). The purpose of this plan is to achieve a significant reduction in fossil fuels and resulting harmful emissions by the year 2030. The proposal suggests a 3-pronged approach.

- o Saving energy by learning to do more with less. For example, personal computers waste about 50% of the power they use. Developing more energy-efficient computers could result in saving enough energy to eliminate 10-20 coal-fired power plants by 2010. In most states energy use is estimated to increase by about 1% per year. However, in California, due to improved efficiency standards, building codes and utility programs, the per-capita energy consumption has remained flat for years. Implementing such measures across the nation could assist greatly in keeping rising energy demands in check.

- o Create renewable energy that is cheaper than coal. Promising technologies include wind power, concentrated solar power (CSP) and geothermal power sources.

- o Electrical transportation. Plug-in hybrids can achieve 90 miles per gallon or better, while of course electrical cars do not use any gasoline at all. Google is working with General Electric to establish a "smart grid" power distribution system where the consumer can recharge his plug-in hybrid during "off-hours" when electricity is cheaper and more plentiful and where the consumer can monitor the cost per kilowatt-hour at a glance. Projected improvements from implementing the Clean Energy 2030 proposal are:

- o An 88% reduction in fossil fuel-based electricity generation

- o A 38% reduction in vehicle oil consumption

- o A 33% reduction in foreign oil importation

- o A 95% reduction in electricity-based CO2 emissions

- o A 38% reduction in personal vehicle CO2 emissions

- o A 48% overall reduction in US CO2 emissions

To achieve these results the proposal suggests the following distribution of renewable energy sources to replace all coal and oil power generation by 2030.

- o 300 gigawatts (GW) on-shore and 80 GW off-shore wind power

- o 170 GW photovoltaic (PV) and 80 GW concentrated solar power (CSP)

- o 15 GW conventional geothermal and 85 GW enhanced geothermal systems (EGS)

Moreover, in the transportation arena, the following is projected.

- o Plug-in hybrids and all-electric vehicles to amount to 90% of new car sales by 2030

- o Conventional vehicle fuel economy to increase to 45 mpg by 2030

- o An increased turn-over rate of vehicle fleet by 2030 from 19 to 13 years

Although the cost of implementation will be high (about \$4.4 trillion in 2008 dollars) by 2030 a resulting net savings of about \$1 trillion will have ensued. Implementing a proposal such as this one cannot be done without a strong commitment from federal and state governments, as well as broad support from the private sector. The change in emphasis from a fossil fuel-based economy to one based on renewable sources would create a large number of new jobs. For example, according to the US Department of Energy, an additional 293 GW of wind power will produce 476,000 new jobs by 2030. Google is to be commended for its efforts in improving the environment. The scenario envisioned by the Clean Energy 2030 Proposal is a bold one, but achievable if enough people recognize the need to act.

And once the environmental movement gains momentum, the results can be even more favorable than the proposal's estimates. Another company that distinguishes itself in promoting a greener and cleaner planet is [Biofriendly Corporation](#), which produces [Green Plus®](#), a liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [clean energy 2030](#), [wind power](#), [solar power](#), [geothermal power](#), [csp](#), [egs](#)

## 9. Saving Fuel and Money with Global Positioning Systems

10/10/2008

Global Positioning Systems (GPS) have not received a great deal of publicity, but these [biofriendly](#) devices are likely to have a major impact on our lives as they gain wider acceptance. According to a [survey by Motorola](#), almost 50 percent of responding businesses using GPS cited significant savings—reducing travel distances by an average of over 230 miles per week, which amounts to more than \$900 a week in fuel savings at current prices. In addition, these businesses saved 54 minutes per day, which translates into annual labor saving of \$5,484 per employee.

Originally developed for the military, civilians can now also benefit from GPS technology. Although the technology of GPS is complex, the principles on which it is based are simple. In plane geometry, the location of a point can be accurately determined relative to two other points of known location, so as to form a triangle. With GPS, your location is determined using satellites as reference points, using radio signals. This technology is so precise that you can determine your location anywhere on Earth within a few feet.

Many motorists already enjoy the benefits of GPS, resulting in fuel savings, less time spent on the road and less frustration by being able to avoid heavy traffic areas. Some insurance companies even offer lower rates on GPS-equipped vehicles because of increased driver safety (some GPS units can warn users of potential traffic hazards).

Another use of GPS is by the airlines. Recently, the FAA conducted tests using GPS, rather than ground-based radar to guide aircraft routes. At San Francisco International Airport they monitored a Boeing 777 flight from Auckland, New Zealand, to check on potential fuel savings with GPS.

The test was a success. It turned out that by using GPS, a more direct route can be taken, resulting in improved fuel economy and saved time. Following this first of a kind flight, the [Airways New Zealand pilot noted](#) that the flight saved 1,200 gallons of jet fuel (resulting in a 12-ton reduction in carbon emissions) and in addition the plane arrived five minutes early.

The GPS-based system requires pilots and air traffic controllers to work together more closely. According to the FAA's Acting Administrator Robert Sturgell, the new system will cut fuel costs, improve safety and reduce delays. "From taxi to touch down, it's just flat-out green," Sturgell said.

The FAA plans to gradually implement the GPS-based system throughout the nation. That is good news, not only for the airline industry and its passengers, but also for the planet. Greater efficiency and fewer harmful emissions will benefit everyone.

On the path of using available fuels more effectively to achieve a greener and cleaner planet is [Biofriendly Corporation](#). This company has produced [Green Plus®](#), a liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

## 10. The Sahara Forest Project: Providing Water, Food and Energy

09/26/2008

The Sahara Desert is the world's largest hot desert. At 3.5 million square miles (9 million square kilometers) it is larger than Australia and almost as large as the continental United States. Thousands of years ago it featured lush vegetation and, but for the lack of water, could do so again. Now, it has become possible to reverse the desertification of this vast arid land area and turn it into [biofriendly forest](#), if some enterprising men get their way.

The Sahara Forest Project is the brainchild of three men—inventor Charlie Paton, architect Michael Pawlyn and engineer Bill Watts. Together, they have come up with an ambitious proposal that aims to reverse deforestation and provide energy in the Sahara and other hot deserts worldwide. The idea is to combine two exciting and proven technologies—the Seawater Greenhouse and Concentrated Solar Power (CSP). Working together, these two technologies can achieve [reforestation](#) as well as provide much needed food crops, fresh water and electricity to surrounding areas.

[The Seawater Greenhouse](#) has already been put to use in the Arabian Gulf and the Canary Islands. Using the Sun's heat to evaporate and distil seawater and at the same time cool and humidify the air, an ideal environment is created to grow crops that would not otherwise be possible to grow there. This technology is of great importance for agriculture, which accounts for some 70% of the world's fresh water consumption. Further, having a fresh water supply in arid coastal regions will help relieve the plight of those who live there (an estimated one billion people do not have access to sufficient fresh water). These greenhouses can also be used to generate bio-fuels.

The second technology in the Sahara Forest Project, Concentrated Solar Power, uses mirrors on the ground that bounce sunlight to a boiler atop a tower. The concentrated heat from the sun turns water into superheated steam that drives turbines to generate electrical power. This technology was mentioned in an earlier Biofriendly article; it can provide solar power much more cheaply and efficiently than with photovoltaic solar cells. Concentrated Solar Plants, covering less than 1% of the world's deserts, would meet the current electricity needs of the entire planet.

The two technologies combined are synergistic and provide an effective, biofriendly solution that alleviates chronic fresh water, food and energy shortages in arid coastal areas. Moreover, unlike current other methods of desalination and electricity generated from fossil fuels, they are truly sustainable, as long as sunshine and seawater are abundant.

Part of working towards achieving a greener and cleaner planet is to use available fuels more effectively. [Biofriendly Corporation](#) has taken this to heart and produced [Green Plus®](#), a liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [Sahara Forest Project](#), [seawater greenhouses](#), [csp](#), [concentrated solar power](#)

## 11. New York to Los Angeles Run to Promote Biofuel

09/19/2008

Two adventurous men, Nik Barstow and Brian Pierce, plan to drive their Volkswagen Jetta TDI from New York's Manhattan in the East to Santa Monica on America's West Coast on September 22, 2008. Their purpose is to promote the [biofriendly](#) properties of biodiesel.

What is special about their 2,800-mile trek is that they plan to do so without refueling along the way. To accomplish this they installed a second fuel tank in the vehicle. Both tanks will be filled with Bio-Willie, a bio-diesel named after famous Country music singer and songwriter, Willie Nelson, who, in 2004, formed a company to provide truck stops with bio-diesel made from vegetable oil.

Appropriately dubbed Willie Run '08, the two-man team will endeavor not only to cross the continent without refueling, they will also attempt to break the previous driving record of 35 hours and 54 minutes. Even with an extra fuel tank, driving across America using conventional gasoline without fuel stops would be just about impossible. The trip's purpose is to promote the advantages of bio-diesel and the fact that hybrids are not the only road to fuel economy. What then exactly are the advantages of biofuels? Biofuel is almost carbon-neutral, which is to say that even though it produces carbon dioxide (CO<sub>2</sub>) as a by-product of combustion, that same carbon dioxide was extracted from the atmosphere by the plant material from which the fuel is derived. It is not totally carbon-neutral because of the energy expended in the manufacture and transportation of the fuel. Even so, biofuels are to be preferred over fossil fuels, which release greenhouse gases captured by plants that grew millions of years ago.

Another, more obvious, advantage of biofuels is that they can be produced locally and will not have to be transported halfway across the world, as is often the case with oil from the Middle East. This means that the fuel can be produced more economically and benefit the local economy. Reduced cost is an important factor, especially with the recent steep increases in the price of crude oil.

The objection is sometimes raised that biofuels increase the price of food. This is not necessarily the case, however, as biofuels can be produced from waste, such as weeds, garden clippings, dead leaves, manure, sawdust, etc., or even recycled cooking oil.

Growing non-food crops for producing biofuels can also raise the living standards in poor parts of the world. For example, in India nearly 2.5 million acres have been planted with *Jatropha*, an inedible plant with seeds that are rich in oil, for biofuel production. *Jatropha*, by the way, is an excellent choice for biofuel production, as it produces four times as much fuel per acre as soy and ten times as much as corn, while requiring only minimal care and resources. It will even grow in poor soils that are unsuitable for growing food crops.

Another approach to achieving a cleaner, more biofriendly environment is by using fuel more effectively. One company that is contributing to this cause is [Biofriendly Corporation](#), which has developed the [Green Plus](#)<sup>®</sup> liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [greenhouse gases](#), [biofuels](#), [biodiesel](#), [willierun](#), [bio-willie](#), [jatropha](#)

## 12. Solar Power Technology Gains Momentum

09/12/2008

Not long ago, it was announced that search engine giant Google had committed major investments in solar technology. Since then, more and more companies have become aware of this [biofriendly](#) renewable energy source and are embarking on solar projects. [General Motors](#), for example, has decided to build the world's largest rooftop solar power source at their Zaragoza, Spain, automotive assembly plant. The 2 million square feet roof surface will comprise about 85,000 solar panels and will generate circa 12 megawatts, which is enough power for 4,575 Spanish homes. In the United States GM has two large solar installations already in place. Both are in California, at Rancho Cucamonga and Fontana, providing 1 megawatt of power each.

Now, significantly larger solar power plants are on the drawing boards. In India, at Haldia, West Bengal, a 250 MW solar facility has been planned and is expected to become operational by 2011. Meanwhile, BrightSource Energy plans to build a 500 MW solar plant in the Mojave Desert in California, which is claimed to be the world's largest. This plant is similar to a solar plant near Seville, Spain, but on a much larger scale. More than 1,600 large mirrors will concentrate the sun's rays and direct the beams at a boiler atop a 60-meter tall tower. The sun's energy will heat the water inside the boiler and create superheated steam of over 1000° F. The steam is routed to steam turbines that generate the electrical power. [BrightSource](#) claims that this installation will provide power at a much lower cost than other solar installations.

The Pacific Gas and Electric (PG&E) company has signed an agreement to buy up to 900 megawatts of solar power from BrightSource, but it does not stop there. It is also purchasing another 800 MW from two other companies, Optisolar and Sunpower.

In an even larger project, BrightSource plans to build three solar power stations in Nevada, northeast of Las Vegas, with a total capacity of 1,200 megawatts. With this and other projects, BrightSource will provide enough solar electricity to power over 3.2 million homes and reduce greenhouse gas emissions equivalent to taking a million cars off the road.

To top it all off, the Clinton Foundation is planning a gigantic 5,000 megawatt solar project that is to be built as part of what is called the Integrated Solar City in the Gujarat state of India, at an estimated cost of almost \$12 billion.

Solar power is an excellent source of clean energy, especially in parts of the world where sunshine is abundant. With the current concerns about global warming, it can't hurt to trap some of the sun's heat for the world's energy needs. This will also lessen the demand for power stations operating on fossil fuels, with the result of less pollution, fewer greenhouse gases and cleaner air. Another advantage is that these solar power plants can be placed in deserts, where there is plenty of sunshine, which puts those barren areas to good use.

Another approach to achieving a cleaner, more biofriendly environment is by using fuel more effectively. One company that is contributing to this cause is [Biofriendly Corporation](#), which has developed the [Green Plus®](#) liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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### 13. Gas From Trash Will Help Clean the Environment

09/05/2008

One thing the world has too much of is trash. How to dispose of the many tons of trash again and again is a major problem for many cities. If trash could be made to serve a useful and [biofriendly](#) purpose everyone would come out ahead. Well, that is exactly what Byogy, a Bakersfield, California enterprise, is gearing up to do.

The company will be able to produce 95-octane gasoline from trash (including manure, garden and landscaping waste as well as food waste) at a cost of just \$1.70 to \$2.00 per gallon, without any government subsidies or tax credits. In addition to reduced cost and lessened dependency on foreign oil supplies, this fuel has the advantage that it can be painlessly integrated into the existing gasoline distribution system, without any changes to infrastructure or modifications to vehicles on the road. "This green substitute for conventional gasoline," claims Daniel L Rudnick, CEO of Byogy, "is the Holy Grail of biofuels."

Licensed from the [Texas A&M University](#), the Byogy project is being developed in conjunction with the Texas Engineering Experiment Station and the first plant is expected to be operational within the next two years. This process of converting biomass directly into gasoline is unique, as most other such projects convert biomass into alcohol, which is then mixed in with regular gasoline. Another advantage of this technology over the ethanol from corn process is that it concentrates on organic waste products and other non-food biomass, so it does not disrupt the food supply.

While, like all gasoline, this fuel produces greenhouse gases, the biomass used for this process comes from recently grown organic matter that absorbed those greenhouse gases from the air, so there is no net increase. Gasoline from fossil fuels, on the other hand, is based on vegetable matter that grew millions of years ago and therefore does add to the amount of greenhouse gases in the atmosphere.

Ultimately it will be preferable to replace carbon-based fuels with clean, renewable energy sources such as geothermal, solar and wind power, but it can be assumed that for now the world will continue to rely on gasoline to power most of its automobiles. Therefore, technologies that can generate fuel from waste can be considered biofriendly, as it means a reduced dependency on dwindling fossil fuel supplies and a lessened danger of oil spills.

Saving energy is another part of bringing about a greener, more biofriendly environment. One company that is contributing to this cause is [Biofriendly Corporation](#), which has developed the [Green Plus®](#) liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [greenhouse gases](#), [biofuels](#), [gas from trash](#)

#### 14. USA's First Fossil Fuel Free Community Housing Tract in Colorado

08/29/2008

For the first time in the United States a community is going to be created that will be totally independent of the power grid. Under the name Geos, Arvada Colorado will soon have 250 homes on 25 acres that will be energy independent. The homes will range from 850 to over 3500 square feet.

The homes are designed to supply 100% of the community's energy needs. The houses are South-facing for maximum exposure to sunlight and the roofs of houses and garages are fitted with photovoltaic cells. The homes are staggered in a checkerboard pattern for optimum sunlight exposure. Doors and windows on colder North-facing walls are kept to a minimum. Specially designed awnings shield the windows from the hot sun in summer, while in winter the lower angle of the sun will allow sunlight to warm the interior.

While sunlight provides the bulk of the energy needs, geothermal energy supplements it on overcast days and at night. A few feet underground the earth's temperature is fairly constant throughout the year. The community will take advantage of this fact to provide cooling in summer and warming in winter.

An energy-efficient home cannot exist if significant amounts of air are permitted to escape from it, as this will defeat efforts at heating in winter and cooling in summer. Most homes in the U.S. have 0.5 to 0.7 air changes per hour. This means that on average 50% to 70% of the air inside the home will have left it in one hour. In contrast, the Geos homes will have a low 0.1 air changes per hour, which makes heating and cooling much more effective.

The homes will also use heat recovery ventilation, further improving the performance of heating systems, allowing 75% of the heat from the air leaving the home to be applied to the fresh filtered air coming in. The first few homes are expected to be completed in 2009.

Other countries are also embarking on similar housing projects. In Okotoks, Alberta, Canada, a housing project collects heat from the sun in summer, via solar collectors on garage roofs. This heat is stored underground and provides heat throughout the winter season. Combined with energy efficient homes, 90% of the community's energy needs are filled with this system. Similar projects are underway in India and Estonia.

Saving energy is a large part of creating a greener, more biofriendly environment. One company that is doing its part in contributing to this cause is [Biofriendly Corporation](http://www.biofriendly.com), which has developed the [Green Plus](http://www.greenplusfuel.com)<sup>®</sup> liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [nitrous oxides](#), [greenhouse gases](#), [smog](#)

## 15. New Development Paves the Way to a Future of Cleaner Air

08/22/2008

With all the attention on the global warming effects of carbon dioxide it is easy to overlook the harmful effects of other pollutants. Nitrous oxides (NOx) emitted by automobile engines pose an environmental hazard in a number of ways. They contribute to global warming and smog, as well as cause breathing problems and acid rain. Scientists at the University of Twente in the Netherlands have come up with a novel way of removing nitrous oxides from the air and thus create a more [biofriendly](#) environment.

The Dutch scientists remove NOx from the atmosphere and thereby reduce air pollution by mixing a small amount of titanium dioxide into the top layer of concrete paving stones. When sunlight strikes these paving stones, they convert the nitrous oxides into harmless nitrates that later get washed away by rain.

The city of Hengelo and the University of Twente (UT) are paving a test road section in Hengelo with air-purifying stones. The top layer of the concrete stones converts nitrogen oxide from exhaust fumes into harmless nitrates.

The idea of paving stones to clean the air was based on a Japanese invention and further developed and tested at the University of Twente's concrete research labs. The municipality of Hengelo is embarking on a project to test these paving stones in the real world. They will divide a street into two sections, with one half paved with the air-purifying paving stones and the other half with conventional paving stones. They will then measure the air quality in both sections to determine the effectiveness of the new stones. It is further claimed that the new stones also repel dirt as an added bonus.

The test location was chosen because of its high volume of traffic and because of road works being carried out. The construction is expected to be completed by the end of 2008 and measurements are targeted to be completed by mid-2009.

If this project proves to be successful and economically viable, the new paving stones could become a significant contributor to a cleaner and more biofriendly environment.

Creating a greener environment is also on the minds of the principals of [Biofriendly Corporation](#), a company that has developed the [Green Plus](#)<sup>®</sup> liquid fuel catalyst that provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [nitrous oxides](#), [greenhouse gases](#), [smog](#)

## 16. The Lure of Manure: Energy from Farm Waste

08/15/2008

It is well known that animals—and farm animals in particular—produce greenhouse gases. However, unless everyone becomes a strict vegetarian, livestock is not likely to go away any time soon. Knowing that, some enterprising people have turned a liability into a [biofriendly](#) asset by using farm waste as an energy source.

For example, a large Chinese chicken farm about 50 miles north of Beijing has converted a coal-powered electrical power plant into a plant powered by chicken manure. The farm has 3 million chickens that produce 220 tons of manure every day. That is a lot of manure and the anaerobic digester system plant is expected to generate as much as 14.6 million kilowatt-hours of electrical energy per year. In addition, this method of generating power is estimated to reduce CO2 emissions annually by 95,000 tons.

The monetary savings will be significant as well. "This biogas project will quickly pay for itself by meeting the customer's demand for cost-effective electricity and heat," said Jack Wen, President and CEO of [GE Energy China](#). "We estimate that the customer will save more than US \$1.2 million a year in electricity costs alone."

Meanwhile, back in Texas, an enterprising company, Microgy Inc., is putting microbes to work. The company builds anaerobic digesters, large tanks in which microbes break down organic material in an environment devoid of oxygen. The organic waste products decompose over time into numerous products, including so-called biogas, which contains a large amount of natural gas (methane) that can be burned to produce heat or electricity. There are other useful by-products as well, such as fertilizer and mulch.

At a composting center near Stephenville, Texas, Microgy is building eight 916,000-gallon digesters at a cost of \$11.5 million, which will be able to process the manure of 10,000 cows. The plant is expected to start shipping methane in the third quarter of 2008. The plant will be capable of producing about a billion cubic feet of biogas per year and earn an estimated \$4.6 million in revenue.

Biogas produced from farm manure is not only a renewable energy source, it solves the problem of waste disposal and can also be quite profitable, unlike many other methods of generating alternative energy that are heavily dependent on subsidies.

In a different, but related field, [Biofriendly Corporation](#) is doing its part in making an important contribution towards a greener planet. Their [Green Plus](#)<sup>®</sup> liquid fuel catalyst provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [biogas](#), [methane](#), [natural gas](#)

## 17. Encouraging New Biofriendly Developments in Ethanol Production

08/08/2008

While the potential benefits of ethanol are hotly disputed, there have been some recent developments that can make it more attractive and [biofriendly](#) as a fuel. Researchers at Iowa State University have developed a new technology to produce ethanol from corn, involving a fungus. They estimate that, using this process, ethanol plants collectively can save as much as 10 billion gallons of water and \$800 million a year.

Traditionally, ethanol is produced by grinding up corn, then adding water and enzymes, causing starches to turn into sugar, which is then fermented to produce ethanol by distillation. This process uses about six gallons of water for every gallon of ethanol. While about half of the leftover liquid can be recycled, it contains organic solids that are expensive to remove. However, by adding the fungus *Rhizopus microsporus* to the liquid, up to 80% of the solids can be extracted, making the remaining liquid available for recycling.

"The process could change ethanol production in dry-grind plants so much that energy costs can be reduced by as much as one-third," said professor Hans van Leeuwen, leader of the [Iowa State research project](#).

Another benefit of this process is that the extracted solids are nutrient-rich and can be used as a livestock food supplement. While implementing this process in existing ethanol plants is fairly expensive at this time, it is estimated that the savings in energy costs would amortize the investment in six months.

In Georgia, meanwhile, professor Joy Peterson and fellow [researchers at the University of Georgia](#) have developed a method to increase ethanol yields from non-food biomass sources, such as grasses and waste from corn and sugar cane. "Producing ethanol from renewable biomass sources such as grasses is desirable because they are potentially available in large quantities," said Peterson. While traditional methods use harsh chemicals and expensive equipment to break down the cell walls of the plants, the new method uses a biofriendly process that is claimed to yield a ten-fold increase in fuel.

These new developments in the direction of more effective and biofriendly energy production are most encouraging. Utilizing new technologies and energy conservation will accomplish a great deal in improving the environment and the quality of life.

One company that is doing its part in forwarding a greener planet is [Biofriendly Corporation](#), whose [Green Plus®](#) liquid fuel catalyst provides a cleaner, more linear fuel burn in internal combustion engines, resulting in fewer harmful emissions, increased torque and better fuel economy.

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [biofuels](#), [ethanol](#)

## 18. Revolutionary New Engine Design Optimizes Fuel Economy

07/25/2008

Until now, car manufacturers faced the dilemma of having to weigh fuel economy against performance. A small engine provides better fuel economy than a large one of the same type, but the larger engine is more powerful. Wouldn't it be nice to have an economical small engine for cruising on a freeway, but one that would grow bigger and stronger when it needed to climb a steep hill? This scenario is now possible with the Hefley X1 engine.

The unique Hefley engine has been designed to provide a variable piston displacement. By displacement is meant the amount of space covered by the piston when it moves up and down within the engine's cylinder. In a conventional engine the displacement is constant for a given engine, but in a Hefley engine the displacement varies. If not much power is needed it has a small displacement, but the displacement increases as the demand for power increases.

The [Hefley](#) design allows the engine to always run at full throttle, which means that it runs at maximum efficiency at all times. Running at full throttle has the advantage that the engine receives the maximum amount of oxygen, which will burn the fuel in the most effective manner. And, because the fuel burns at its cleanest, there will be fewer harmful emissions than with a conventional engine running at less than full throttle.

In a conventional engine, the piston in the engine moves up and down a fixed distance. A fuel and air mixture is injected into the cylinder, which is then compressed by the piston, followed by an explosion when the fuel is ignited, which then drives the piston down. The degree to which the fuel-air mixture is compressed inside the cylinder by the upward motion of the piston is referred to as the compression ratio. Each type of fuel has an optimum compression ratio for optimum performance. The Hefley X1 engine, even though it has a variable displacement, has a constant compression ratio. In other words, even though the distance the piston travels varies, it compresses the fuel-air mixture to the same degree. This means that the engine always burns most effectively for the chosen fuel. The latest model Hefley engine, the X2, is even more advanced. In addition to all the features of the X1, the X2 can be adjusted for different fuels, by adjusting the compression ratio. Regular gasoline may require a 12:1 compression ratio, while diesel fuel may need 20:1. Thus, depending on price, performance and availability, one can choose what fuel is best suited under the circumstances and be assured of optimum performance.

The Hefley engine is a truly novel design that may well bring about some major changes in the future of motor vehicles. In a related field, [Biofriendly Corporation](#) has developed as fuel saving additive. Their [Green Plus®](#) liquid fuel catalyst causes a cleaner, more linear burn of fuel in internal combustion engines, which results in fewer harmful emissions, increased torque and better fuel economy.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [Hefley engine](#), [variable displacement engine](#), [X1](#), [X2](#)

## 19. Volkswagen's Biofriendly 1 Liter Car Hits the Road

07/18/2008

When Volkswagen first announced its One-Liter Car in 2002, it was an instant sensation. The term "One-Liter" refers not to the size of the engine, but to the fact that it takes only one liter of fuel to drive 100 kilometers in this [biofriendly](#) vehicle. That translates to an astounding 235 U.S. miles per gallon (or 282 Imperial mpg).

It was demonstrated that this mileage is no idle claim when Volkswagen's Chairman of the Board drove the vehicle from the factory and achieved 0.89 liters per 100 km, or 264 US mpg. Until now, there was just a prototype of this car, but Volkswagen recently announced that it will produce a limited number of them in 2010, probably no more than a thousand units per year.

Obviously, Volkswagen had to do some amazing things to achieve this kind of fuel economy. To start with the car has a carbon-fiber body and weighs only about 660 pounds. With that little weight power steering or power brakes are not needed. To reduce aerodynamic drag, this sporty looking two-seater has the passenger sitting behind the driver and instead of external rear view mirrors that would increase drag, the vehicle has built-in video cameras.

The prototype car is powered by an air-cooled aluminum 0.3-liter one-cylinder diesel engine, but the production model is expected to be outfitted with a 2-cylinder engine that can be fueled with algae diesel. The engine is combined with a specially designed automated direct shift gearbox.

Even though lightweight construction was the major design criterion, safety has not been compromised and some impressive features have been added. For instance, the car has anti-lock brakes and a driver seat airbag. In addition, the space frame construction provides impact and rollover protection.

The slick, bullet-shaped car resembles the cockpit of a jet fighter. It is 11.4 feet long, 4.1 feet wide and 3.3 feet tall. The price is estimated at anywhere from 20,000 to 30,000 Euros (about \$31,750 to \$47,622), which is expensive, but with today's soaring fuel prices that may turn out to be a good deal after all.

Volkswagen is one of many car manufacturers and individuals working towards a greener, more energy efficient future. Their one-liter car clearly demonstrates that dramatic improvements in gas mileage are possible with today's technologies. Fuel economy is also the concern of [Biofriendly Corporation](#), whose [Green Plus](#)<sup>®</sup> liquid fuel catalyst for internal combustion engines improves fuel economy, increases torque and reduces harmful emissions.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [one-liter car](#), [gas mileage](#), [energy efficient future](#)

## 20. Is Carbon Sequestration Biofriendly And What is it About?

07/11/2008

Fossil fuels, such as coal and gasoline, are hydrocarbons which means they contain both hydrogen and carbon. Burning a fossil fuel means burning both hydrogen and carbon. Burning hydrogen produces water, while burning carbon produces carbon dioxide (CO<sub>2</sub>). While the water is a [biofriendly](#) product and does not present a problem, the CO<sub>2</sub>, in too great a quantity does—it is a greenhouse gas that contributes to global warming. Oceans and plants absorb carbon dioxide, but that is not enough, it seems, as the proportion of CO<sub>2</sub> in the air has been climbing in recent years. According to author Debra Ronca, carbon dioxide emissions resulting from human activity have increased by 80 percent between 1970 and 2004. Having some CO<sub>2</sub> in the atmosphere is necessary, as it traps some of the sun's heat. In fact, without it the average temperature on Earth would drop to minus 22 degrees Fahrenheit. However, having too much CO<sub>2</sub> will raise temperatures above comfort levels. CO<sub>2</sub> levels in the atmosphere would drop if everyone stopped burning fossil fuels and relied only on clean, renewable energy sources, but that is not likely to happen in the near future, despite the best efforts of many innovators across the world. Most electrical power plants and automobiles burn fossil fuels and thus produce CO<sub>2</sub>. While CO<sub>2</sub> is not the only greenhouse gas, it is a major factor in the global warming effect. To combat rising CO<sub>2</sub> levels and warming of the atmosphere, scientists and engineers have come up with the idea of sequestering carbon dioxide. That is, they want to remove carbon dioxide from the air and store it somewhere, usually deep underground, where it will not have a warming effect. The three major steps in carbon sequestering are separating the CO<sub>2</sub> from other gases, transporting it to a storage facility and then storing it. Power plants are a major source of CO<sub>2</sub> emissions, so that is where most of the attention is directed at this time. Coal, natural gas, or oil is burned to turn water into steam, which drives the turbines that generate electricity.

Existing power plants can be retrofitted to capture CO<sub>2</sub> emissions, while new power plants can be designed to remove the CO<sub>2</sub> before combustion takes place, which provides a cost advantage. Both procedures reduce CO<sub>2</sub> emissions by up to 90%. Transportation of the captured CO<sub>2</sub> is generally done via pipeline. [CO<sub>2</sub> pipelines](#) are already in use in the U.S., with more the 1,500 miles of CO<sub>2</sub> pipelines in service. (3) Once the CO<sub>2</sub> arrives at its destination it is either stored underground or underwater in the oceans. While carbon sequestration can reduce CO<sub>2</sub> levels in the atmosphere and thus reduce the greenhouse effect, it is not without its drawbacks. It is costly to implement widely, it uses significant amounts of energy and accidents involving CO<sub>2</sub> escaping in large amounts into the air can have the lethal result of asphyxiation.

Carbon sequestration is at best an interim measure to reduce the immediate threat of global warming. It may buy some time to implement clean, renewable energy sources on a broad scale. Economizing on energy use is another approach to a greener environment. [Biofriendly](#) Corporation is one company with concern for the environment. Its Green Plus® liquid fuel catalyst produces a cleaner, more linear burn in internal combustion engines, which results in better fuel economy, increased torque and fewer harmful emissions.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [carbon sequestration](#), [CO<sub>2</sub>](#), [greenhouse gases](#), [global warming](#)

## 21. Can Offshore Drilling Lower the Price of Oil

07/04/2008

Several factors are contributing to the recent surge in the price of oil to more than double what it was a few years ago. One of these factors is the increased demand from heavily populated countries like China and India where more and more people are able to afford motor vehicles, along with the burgeoning industrial demands for energy.

Another factor is the political instability of many of the oil producing nations, which reduces the availability of oil on the world market. In fact, according to an article, titled "Blood Barrels", in the May/June 2008 issue of "Foreign Affairs", the author makes the case that the political stability of many oil producing nations is actually undermined by oil exports, due to increased corruption and other undesirable consequences of the sudden wealth increase.

A third factor is that the value of the dollar has dropped in relation to other currencies, such as the euro and the Swiss franc. This has driven the price of oil up, as it is valued in the US dollars.

With gasoline prices approaching five dollars per gallon in many parts of the U.S., there is an added incentive to find ways to reduce the price Americans are paying to quench their thirst for oil.

Recently, President Bush stated that while alternative energy is the only long-term solution to our energy crisis, Congress should open up exploration of currently off-limits off-shore oil fields, such as the California and Florida coastal waters and thus provide short-term relief.

This may seem like a quick fix to a serious problem, but according to a Newsday editorial, a federal government analysis found that any new off-shore drilling would take at least a decade to bear fruit. Not to mention the hazards of possible oil spills to marine life, such as occurred off the coast of Santa Barbara in 1969.

However, Investor's Business Daily argued that oil prices are set by commodity traders and that if the federal government were to announce it would open up new promising oil fields for exploration, the price of crude oil would plummet right away. Off-shore oil exploration might bear fruit in the future and improvements in drilling technology would greatly reduce the risk of harmful oil spills. However, it can only defer an oil-scarce future. Indeed, renewable alternative energy sources will be needed to meet worldwide long-term energy demands. Meanwhile, a more effective use of available fossil fuels will help to balance supply and demand.

One company that promotes greater energy efficiency is [Biofriendly Corporation](#), whose [Green Plus®](#) liquid fuel catalyst provides a cleaner, more linear burn of fuel in internal combustion engines, resulting in reduced harmful emissions, increased torque and improved fuel efficiency.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).  
Technorati Tags: [Biofriendly](#), [green plus](#), [Green Plus](#), [fuel catalyst](#)

## 22. Algae for Food and Fuel A Panacea 06/27/2008

PetroSun plans to extract algal oil on-site at the farms and transport it to company biodiesel refineries via barge, rail or truck. In 2008 the company plans to open more farms in Alabama, Arizona, Louisiana, Mexico, Brazil and Australia. Boeing is reported to be working with alternative fuel developers from around the world to accelerate alternatives to jet fuel, which has dramatically increased in price and is threatening the viability of airlines. Continental said it will conduct biofuel test flights next year and Virgin Atlantic has already flown a 747 with a partial biofuel mixture. Algae-based fuels are also being considered for military applications. Of all the options for future jet biofuel production, algae are considered the most viable. Algae yield 30 times more energy per acre than any other source of biofuel and don't require fresh water, arable land, or consumable food, giving a distinct advantage over ethanol. PetroSun asserts that an area the size of Maryland could produce enough algae biofuel to satisfy all fuel needs of the United States. The Texas farm is expected to produce at least 4.4 million gallons of algal oil and 110 million pounds of biomass per year. (2) Meanwhile, NRG Energy is testing a process involving algae at a coal-fired electrical power plant in Louisiana. While coal as a fuel is plentiful in the U.S. and therefore used extensively as a fuel for power stations, burning it produces large amounts of carbon dioxide, a greenhouse gas. Algae, however, absorb and thrive on CO<sub>2</sub>. So, instead of releasing the carbon dioxide emissions into the atmosphere, they are fed to algae, thus cutting down considerably on greenhouse gas emissions. Algae are harvested daily and can be used for conversion to biofuel or animal feed supplements. Roughly a third of all carbon dioxide releases come from power generation, with coal being the primary culprit. So, using algae to absorb carbon dioxide will go a long way towards cleaning up the environment. Paul Dickerson, chief operating officer of the Department of Energy's Office of Energy Efficiency and Renewable Energy finds it hard not to get excited about algae. "Its basic requirements are few: carbon dioxide, sun and water. Algae can flourish in non-arable land or in dirty water, and when it does flourish, its potential oil yield per acre is unmatched by any other terrestrial feedstock." (3) Algae are also a food source that could alleviate world hunger. The blue-green variety in particular, is considered by some nutrition experts to be the perfect food. It contains all essential amino acids as well as most of the non-essential ones, forming a complete protein. It also contains all vitamins other than D and E, as well as a host of minerals needed by the body in easily digested form. Available in health food stores, blue-green algae are sometimes referred to as "brain food" because people taking them routinely report increased mental alertness, improved memory and greater ability to communicate clearly. (4) Though algae may be capable of handling several of mankind's troubled areas, fossil fuels are still the predominant source of energy and there is a need to use those fuels effectively. Such concerns have led to the founding of Biofriendly Corporation, whose Green Plus<sup>®</sup> liquid fuel catalyst provides a cleaner, more linear burn of fuel in internal combustion engines, thus reducing harmful emissions and increasing torque and fuel economy. For more information on Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com). References:

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [biofuels](#)

### 23. The World Takes Another Look at Biofuels 06/19/2008

Across the world, food shortages have taken on crisis proportions. In the U.S. and Europe this has taken the relatively mild form of sharply increased prices, but in other parts of the world riots are breaking out and governments are nearly being toppled, because people are starving. The causes for these sudden food shortages are many. Climate changes have reduced the availability of food. For example, Australia, previously a major grain exporter, has suffered a drought condition for several years. Other food-producing countries have suffered from crop-devastating floods and other adverse weather conditions. Natural disasters, such as the recent earthquakes in China and hurricane damage in Myanmar, have made millions of people dependent on food aid. Increased prosperity in China and India has raised the worldwide demand for dwindling supplies of oil from the Middle East, pushing up the price of oil and consequently raising food prices, due to increased transportation costs. Increased prosperity in Asia also has increased the demand for meat and other previously considered "luxury" food items. Livestock animals are big consumers of corn, thus making less of it available for human consumption. According to a May 19, 2008, article in U.S. News and World Report, it takes about seven pounds of corn to produce one pound of beef. The same article states that since 1980 Brazilian meat consumption has more than doubled to 197 pounds per person per year and China's demand for meat has quadrupled to 109 pounds. Americans have an even stronger appetite for meat: 273 pounds per year. Clearly, a reduction in meat consumption would help alleviate food scarcity. The production of biofuels has also had an impact on food prices and availability. Because of soaring oil prices and reduced availability, the U.S. has implemented a program to produce ethanol from corn. Gasoline at the pumps is now increasingly supplemented with ethanol to relieve the soaring cost and reduced availability of oil. The Federal government heavily subsidizes this program and many American farms, particularly in Iowa, are now growing corn for ethanol. According to an April 2008 article in Time Magazine, soybean production in the U.S. has decreased as a result, leading to an increase in soybean production in Brazil, which in turn has led to farmland expansion at the expense of further encroachment on the dwindling Amazon rainforest. Brazil itself produces biofuels from sugar cane, which is claimed to be a far more efficient biofuel source than corn. In Europe and Asia, rapeseed and palm oil are used for biofuels, which also encroaches on existing forests, the clearing of which increases the emission of greenhouse gases. More biofriendly alternative sources of biofuels, that have less of an impact on the food chain and the environment, are being considered, such as grass, timber waste and algae. It is too soon to tell whether these alternatives will be commercially viable and capable of large-scale implementation. There do not appear to be simple answers to alleviating food and energy shortages across the planet. With over six billion human mouths to feed, there is a need to review food and energy policies worldwide and to work out effective steps to remedy hunger and energy scarcity. Many brilliant minds are at work to improve conditions in the direction of adequate food and energy supplies for all, but these improvements will take time to develop and bring to fruition. Meanwhile, it is important to use food and energy more effectively. Individuals in developed countries can contribute by reducing meat consumption and wasting less food and energy. Energy conservation is being taken seriously by [Biofriendly Corporation](#), whose [Green Plus®](#) liquid fuel catalyst provides a cleaner, more linear burn of fuel in internal combustion engines, thus reducing harmful emissions and increasing torque and fuel economy. For more information on Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [biofuels](#)

#### 24. Hypermilers Are A New Breed of Motorist 06/13/2008

According to the cleanmpg.com website, the term hypemiler was coined by veteran hypermiler, Wayne Gerdes to describe a driver who strives to exceed their vehicle's EPA fuel economy rating. Hypermilers accomplish amazing fuel economy, with some drivers doing better than 100 miles per gallon. While the average driver will fall far short of such spectacular results, a better and more biofriendly mileage can be achieved in most cases with relatively small effort. (1) Much of this activity is common sense, such as driving at a steady speed rather than sudden acceleration and sharp braking. Part of the discipline in hypermiling lies in paying attention to what goes on around one and the ability to predict what is going to happen. Like paying attention to the brake lights on cars ahead and adjusting one's speed accordingly, or adjusting one's speed to arrive at an intersection while the traffic light is green, thus avoiding the stops and starts that use up considerable energy. Other fuel saving tips include avoiding rush hour traffic, planning routes and travel times to avoid congestion and to combine errands into a single trip. Removing unnecessary items from one's car will reduce its weight and also add to fuel economy. Pumping the car's tires to the tire manufacturer's maximum allowable pressure, rather than the car manufacturer's recommended pressure will reduce rolling resistance and contribute significantly to reducing fuel consumption, albeit with a bit bumpier ride. Wayne Gerdes and his friends have made hypermiling into a fine art. For example, on a weekend in August 2005, Wayne and four other hypermilers got together in Pittsburgh for what they now call "the Prius Marathon". The five men managed to drive a Prius for 1,397 miles on a single 12.8-gallon tank of gas, which means an astounding 109 miles per gallon. Needless to say this was not achieved by just driving a little more attentively. An important step in improving one's fuel economy is to get a fuel consumption gauge, a device which tells you real time consumption as you accelerate, break, etc., if the car does not already have one. That way, motorists are able to tell what constitutes fuel-efficient driving and what doesn't and allows the drivers to get more miles to the gallon by improving their driving techniques. Such gauges are available for less than \$200 and are a worthwhile investment in these days of escalating fuel prices. (2) Hypermilers prefer a stick shift over automatic transmission, because of greater control and improved fuel economy. And of course it is best to start out with a fuel-efficient car, rather than a gas guzzling SUV. Some of the techniques used by hypermilers may be somewhat risky and may not be allowed in certain states, such as the draft-assisted forced stop (d-fas), where the hypermiler follows closely behind a big rig or other large vehicle to take advantage of the reduced wind resistance, turning off the engine and coasting along in neutral. However, the average motorist can attain considerable improvements in fuel economy without resorting to risky techniques and also become a better driver in the process.

Fuel economy is also on the minds of executives at [Biofriendly Corporation](#), who developed [Green Plus®](#), a liquid fuel catalyst that provides a cleaner, more linear burn of fuel in internal combustion engines, thus reducing harmful emissions and increasing torque and fuel economy. For more information on Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [hypermilers](#), [hypermiling](#)

25. **Zero Energy Buildings Are Gaining Ground** 06/06/2008

Automobiles, ships and airplanes aren't the only users of energy. Buildings account for about 40 percent of the energy use in the U.S. and Europe. A new concept is gaining ground—the biofriendly Zero Energy Building (ZEB). There are several interpretations of what exactly constitutes a zero energy building, depending on one's point of view. Some define it as a building that on average returns as much energy to the utility companies as it uses; others say it is a building with zero utility costs, yet another group will only consider buildings that are not connected to the utility grid at all. A different way of looking at it is a building that has zero carbon emissions. A building that has a zero net energy use as well as a zero net carbon emission is sometimes referred to as ZEB squared, or Z<sup>2</sup>.

(1) Many factors come into play when designing a zero or near-zero energy building, not the least of which are the prevailing climatic conditions. Some other factors are insulation, weatherization, building materials, building orientation and landscaping and energy-efficient appliances. Building designs are typically based on sophisticated 3-D computer modeling software in order to achieve the most optimum costs and benefits. Most ZEBs use a combination of energy conservation, such as superior insulation and energy generation, using solar and/or wind energy. They may be connected to the electric utility grid, if only to export surplus electricity when more power is being generated than needed. The zero energy concept applies to homes, as well as office buildings and may be expanded to include zero energy communities and even cities. One example is the Dongtan Eco-City near Shanghai in China.

(2) Passive solar heating and cooling are far more cost effective to implement than photo-voltaics (PV). Energy savings of 70 to 90% can be achieved using passive techniques, with only a small initial investment compared to PV. In California, the San Jose Z-squared Design Facility, commissioned by Integrated Design Associates (IdeAs) was officially opened and occupied in October 2007. This former bank building was upgraded using simple, affordable changes, such as best use of daylight, effective insulation, glazing of windows, heat pump cooling and energy-efficient computer equipment and appliances. Habitat for Humanity, an organization founded in 1976, has contributed to the zero energy cause as well. The organization has enjoyed phenomenal growth since 1984, supported by the efforts of former President Jimmy Carter and wife Rosalynn, in providing affordable homes for low-income families. Built entirely by volunteers, a house built near Denver, Colorado, in fact produced more energy than it needed.

(4) The ZEB concept, while attracting much interest and commitment around the world, is still in its infancy. It will take years before its effects will be felt in overall energy consumption. Meanwhile, the dependency on fossil fuels is still enormous.

One company, Biofriendly Corporation, is contributing to a greener planet with its Green Plus® liquid fuel catalyst, which produces a cleaner, more linear burn in internal combustion engines, thereby reducing harmful emissions, increasing torque and improving fuel economy. For more information about [Green Plus](#), visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com). References:

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## 26. Norwegian Company to Build Huge Offshore Floating Wind Turbine

05/30/2008

A Norwegian company, StatoilHydro, is planning to build Hywind, a floating wind turbine about 10 kilometers off the West coast of Norway. Hywind is to be the first full-scale biofriendly floating wind turbine. It will be built using existing offshore technologies. "We have drawn on our offshore expertise from the oil and gas industry to develop wind power offshore," states Alexandra Bech Gjørsv, head of New Energy in StatoilHydro. (1)

The wind turbine will be located in the open sea, because there the winds are stronger and more consistent. A 3-meter high prototype scale model was developed and tested in 2005. It turned out to be very successful and operated reliably in extremely adverse weather conditions.

The full-sized version is scheduled to become operational in 2009. The 2.3 MW wind turbine, made by Siemens, the Germany-based electronics giant, will be located on a mast atop a floating platform that will be moored to the seabed with three anchor points. The rotor blades of the turbine will be 80 meters (244 feet) in diameter and centered 65 meters (198 feet) above sea level.

The floating concrete platform installation can be operated in waters between 120 to 700 meters (366 to 2,134 feet) deep. It is to be assembled on land and towed out to sea with a tugboat, where it will be moored about 10 kilometers offshore. Cables on the seabed will conduct the generated electrical power from the turbines to the shore.

The purpose of this project is to test the feasibility of deep-water floating wind turbines, with the object of making wind power competitive with other power sources. If this pilot project turns out to be successful, the plan is to establish vast offshore wind farms of up to 200 turbines producing up to a thousand megawatts of power. While the results of the scale model were promising, the technology of floating wind turbines in the real world yet has to be proven. To be viable, they must be able to function reliably, even with big waves and be operated and maintained safely and economically.

The potential of offshore floating wind turbines is huge. If successful, it will be able to provide abundant clean energy. At this early stage many difficulties will need to be overcome and success will depend largely on ingenuity and available financial resources.

Many other alternative energy sources are being tested and developed, as well as methods of utilizing existing sources more effectively and thus bring about a cleaner, greener planet. One company, [Biofriendly Corporation](#), has developed a liquid fuel catalyst, called [Green Plus®](#), which causes a cleaner, more linear burn in internal combustion engines, the result of which is more torque, fewer harmful emissions and improved fuel economy.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [floating wind turbines](#), [Hywind](#), [StatoilHydro](#)

27. **How Earth Day Got Started and How it Evolved** 05/23/2008

There are two Earth Days, as well as an Earth Hour. One Earth Day was proposed by John McConnell in 1969 at a UNESCO conference in San Francisco. This Equinox Earth Day is celebrated each year on the March equinox, around March 20. <sup>(1)</sup> The other Earth Day, which this article is about, was founded by Wisconsin Senator Gaylord Nelson. In the early 1960's Senator Nelson became concerned about the lack of interest by politicians in remedying the environmental degradations of the time. Americans were driving huge gas guzzling cars powered by leaded gasoline and industrial pollution was the order of the day, generally considered as the price one had to pay for prosperity. In official circles there was little interest in biofriendly matters. Senator Nelson brought the matter to President Kennedy's attention, who went on a five-day tour in eleven states to promote environmental conservation, but for various reasons the tour was not a success. The Senator also lectured across the nation in twenty-five states on the evils of environmental destruction and found great interest among the people, but no response among politicians. In Nelson's words, "The people were concerned, but the politicians were not." <sup>(2)</sup> By 1969, demonstrations against the war in , called "teach-ins," were springing up at college campuses all over and one day Senator Nelson hit on the bright idea that the same thing could be done for the environment. Following up on this idea, he announced at a 1969 conference in Seattle that a grassroots pro-environmental demonstration would take place in the spring of 1970 and he invited everyone to join in. The media carried the news and the response was amazing. The Senator's office was inundated with calls, telegrams and letters. "It took off like gangbusters," he recalls. He soon enlisted the help of environmental activist Denis Hayes to coordinate the event and handle the enormous amount of traffic. On April 22, 1970, the demonstration took place. It was a huge success and an estimated 20 million people participated all over . Following this event, President Nixon founded the Environmental Protection Agency (EPA) and Congress passed the Clean Air, Clean Water, and Endangered Species acts. Senator Nelson was later awarded the Presidential Medal of Honor for his role in creating environmental awareness. 1990 was another big year for the environment. With Denis Hayes' help Earth Day went global and this time about 200 million people took part in 141 countries across the globe. Recycling efforts worldwide received a strong boost and the event provided an impetus for the 1992 Rio de Janeiro U.N. Earth Summit. Assisted by the Internet, Earth Day 2000 was another mammoth event, where global warming and clean energy were key issues. Five thousand environmental groups from across the world took part and hundreds of millions of people from 184 countries joined in. On April 22, 2008, people all over the world once again expressed their commitment to a healthier, more biofriendly planet.

One company, Biofriendly Corporation, is making an important contribution to a cleaner environment. Their liquid fuel catalyst, Green Plus<sup>®</sup>, provides internal combustion engines with a cleaner, more linear burn that improves gas mileage, increases torque and reduces harmful emissions.

For more information on Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).  
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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [gas mileage](#), [earth day](#), [environment](#), [harmful emissions](#), [recycling](#)

## 28. Clean Coal Technology: What is it all About? 05/16/2008

Of all fossil fuels in common use, coal is by far the dirtiest and least biofriendly, but it also is a cheap and abundant fuel. The has the world's largest coal reserves that can be mined and provide enough energy for the next 236 years at the current rate of consumption. <sup>(1)</sup> Coal and electricity are closely linked. Ninety-two percent of the coal burned in the is used to generate electricity and fifty-four percent of power stations use coal as a fuel. <sup>(2)</sup> Coal is also the biggest polluter. The main pollutants from burning coal are:

- Carbon dioxide (CO<sub>2</sub>), a greenhouse gas
- Sulfur dioxide, which causes acid rain
- Nitrous oxides, causing smog and ground-level ozone
- Particulate matter, a fine dust that causes respiratory problems

Efforts are underway to reduce the harmful effects of coal. Clean Coal Technology (CCT) is the name given to these efforts. With recent concerns about global warming, carbon dioxide emissions from power stations are receiving much attention. The technology to reduce CO<sub>2</sub> emissions is called Carbon Capture and Storage (CCS). Several methods exist, each of which consists of pumping CO<sub>2</sub> deep underground. It can be pumped into coal mines that are no longer in use. Doing so displaces methane gas, which can be captured and used as fuel. CO<sub>2</sub> can also be pumped into oil fields, which enhances oil production, or it can be sequestered in saline aquifers (salt water underground reservoirs). Although successful, the cost so far has prevented large-scale implementation of CCS. The coal that arrives at a power plant is mixed in with other minerals that should be removed to reduce pollution and make the coal burn more efficiently. One method, called "coal washing" grinds the coal into small pieces and feeds it into a barrel containing a liquid that causes the coal to float and other minerals to sink to the bottom. Coal gasification is a technology to improve efficiency. Gas (mostly hydrogen) is extracted from the coal, which is burned to drive gas turbines that generate electricity. Excess heat from the gas turbines is used to produce steam that drives steam turbines and generates more electricity. Burning coal produces sulfur dioxide, which can be removed by spraying the flue gas with a mixture of water and limestone, which causes the SO<sub>2</sub> to combine with the solution to produce gypsum. The solid gypsum is collected and sold to the construction industry for use in drywall. Nitrous oxides levels are reduced by using special burners that restrict the amount of oxygen in the hottest part of the combustion chamber.

Ninety-nine percent of particulate matter is removed from flues by applying strong electric fields that electrically charge the particles and cause them to settle on the electrodes. Particles can also be removed with wet scrubbers and fabric filters. <sup>(3)</sup> While opponents of coal would rather not see any coal-generated power plants, energy demands and the low cost of coal make it unlikely that coal powered plants will be phased out in favor of renewable energy sources any time soon. And reducing pollution from coal power plants with CCT will contribute to cleaner air.

Biofriendly Corporation is taking a different approach to getting a greener planet. Their liquid combustion catalyst, Green Plus<sup>®</sup>, reduces harmful emissions and increases fuel economy and torque by causing a cleaner, more linear burn in internal combustion engines.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [green plus](#), [fuel economy](#), [harmful emissions](#), [clean coal technology](#), [CCT](#), [greenhouse gases](#), [particulate matter](#), [carbon dioxide](#), [CO<sub>2</sub>](#), [SO<sub>2</sub>](#), [NO<sub>x</sub>](#)

## 29. General Motor's Hy-wire: Car of the Future?

05/01/2008

Simplicity is the keyword in General Motor's futuristic, biofriendly vehicle, the Hy-wire. For starters, they eliminated the internal combustion engine and replaced it with four small electric motors, one for each wheel. Not only did that dispose of a big, heavy and bulky engine, but also the supporting equipment that goes with it: gearbox, transmission, starter motor, generator, oil pump, water pump, and so on.

In essence, what you need from an automobile is a way to move the vehicle and a way to control its speed and direction. In the past this used to be done mechanically. You had the engine, gearbox and transmission to move the car forward. You had a steering wheel that activated a rack and pinion to twist the front wheels in the desired direction. You had brakes that slowed down or stopped the car and an accelerator pedal that controlled the speed via the carburetor.

With an electric vehicle, such as the Hy-wire, things get much simpler. The electric motors turn the wheels; they receive power from fuel cells, whose fuel consists of hydrogen stored in pressurized tanks. Speed and direction are controlled electronically using the built-in computer. An important advantage of using hydrogen-powered fuel cells is that the only combustion by-product is water.

The result of all this simplification is a much different looking car. The bottom part of the Hy-wire looks like a skateboard. In fact, it is constructed in such a way that the top part can be detached and you could turn a car into a van, for example, using the same chassis, which contains the fuel cells, the fuel and the computer. The interior of the Hy-wire looks quite striking and very roomy. For example, there is a floor-to-ceiling windshield that gives a panoramic view of the environment. The floor is flat, giving lots of legroom to the occupants. There is no steering wheel and no brake and gas pedals. Instead, there is a joystick-like device for controlling both speed and direction via the on-board computer system. Instead of rear-view mirrors, it has closed-circuit video equipment. The video monitors also take over the functions of traditional gauges, such as speed and fuel level. The car is capable of speeds up to 100 miles per hour and currently has a driving range of 80 miles. The current model is a prototype, but there are some unresolved issues. For example, an interruption in electrical power could have catastrophic results and fail-safe protection needs to be incorporated. Also, there is currently no existing infrastructure for the distribution of hydrogen gas, nor have large-scale production facilities been established. Nonetheless, these obstacles can be overcome and General Motors is planning to make production models commercially available by 2010.

In the not too distant future, we can expect some radical changes in automotive design. With the Hy-wire, General Motors has provided one approach to creating a cleaner, more biofriendly planet. [Biofriendly](#) Corporation is another company making an important contribution in this regard. Their liquid fuel catalyst, [Green Plus](#)<sup>®</sup> provides a cleaner, more linear burn in internal combustion engines, with a resulting improved fuel economy, increased torque and reduced harmful emissions. For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [Hy-wire](#), [fuel cells](#)

### 30. Air Quality: Getting a Breath of Fresh Air

04/25/2008

An Air Quality Index (AQI) measures the degree of air pollution on any given day. Many countries have such an index. In the United States, the AQI was developed by the Environmental Protection Agency (EPA). It is a graduated scale with numbers ranging from zero to 500, where zero would represent totally clean air and 500 would be extremely polluted air. Color codes are used as follows:

- Green (Good) 0-50
- Yellow (Moderate) 51-100
- Orange (Unhealthy for sensitive groups) 101-150
- Red (Unhealthy) 151-200
- Purple (Very unhealthy) 201-300
- Maroon (Hazardous) 301 and above (1)

As mandated by the Clean Air Act, the EPA's indicator for air quality, the Air Quality Index (AQI), is based on six main air pollutants: ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide and lead. (2) Here is a brief discussion of each of these pollutants, how they come into being and the effects they have on health and the environment.

- Ozone is the main component of smog, consisting of oxygen molecules with three atoms (O<sub>3</sub>) instead of the usual two. Ozone can be good or bad, depending on where it is located. Up high in the atmosphere, the ozone layer is a good thing, as it protects us from excessive ultraviolet radiation from the sun. At ground level, however, it is unhealthy to breathe. Ozone is generated primarily by automobiles, power plants and industrial emissions. Ozone levels tend to be highest in the afternoons of hot, relatively windstill summer days.

- Particulate matter consists of tiny solid or liquid particles that float in the air, some as small as a thirtieth of the thickness of a human hair. These particles come from many sources, such as diesel engines, smoke from fires, but also from plants and trees (such as spores and pollen). They can cause breathing problems, particularly in people with asthma, as well as hay fever. Particulate matter can occur in all seasons and can cause a haze in the air that reduces visibility.

- Carbon monoxide (CO) is a colorless, odorless gas, generally the result of incomplete combustion of a carbon-based fuel. On the other hand, fully burned carbon generates carbon dioxide (CO<sub>2</sub>), which is a greenhouse gas, but not directly harmful to the human body. Carbon monoxide, though, is poisonous—at high levels it damages the nervous system and causes heart problems. Most of the carbon monoxide comes from vehicle emissions.

- Nitrogen dioxide (NO<sub>2</sub>) is one of a number of compounds of nitrogen and oxygen. It can sometimes be seen from a distance as a reddish brown layer hanging over a city. It is generated mostly by motor

vehicles, public utilities and industrial emissions. It is a contributory factor in the formation of ozone and acid rain and is also a greenhouse gas.

- Sulfur dioxide (SO<sub>2</sub>) is a gaseous by-product of burning fossil fuels. Most of it is generated by power plants. It causes heart and breathing problems and also contributes to acid rain.
- Lead can cause a wide range of serious health problems. In the past it was used extensively as a gasoline additive, but because of its toxicity has been removed from automotive fuels since the 1980s, causing a reduction in airborne lead of more than 90%.

Much has been done to improve air quality. Emissions of the six common pollutants mentioned above have declined by 52% since 1980. (3) This has been particularly noticeable in traditionally smoggy cities like Los Angeles. As the "green" movement is gaining momentum, we can look forward to even greater improvements.

Private industry is contributing to this cause as well. For example, Biofriendly Corporation provides Green Plus<sup>®</sup>, a liquid fuel additive for internal combustion engines, which improves fuel economy, reduces harmful emissions and improves horsepower.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: Biofriendly, Green Plus, liquid fuel catalyst, fuel economy, harmful emissions, greenhouse gases, air quality awareness week

# GREEN PLUS

### 31. San Francisco And Their Ambitious Plans for Reduced Emissions

04/18/2008

San Francisco has long been an environmentally conscious city. And recently it has unveiled plans to make the city even more biofriendly by investing in hybrid buses. The goal of the San Francisco Municipal Transportation Agency (SFMTA) is to reduce greenhouse gas emissions to 30% below 1990 levels by 2012 and to become 100% emission-free by 2020.

In a bold move towards that goal, SFMTA purchased 86 Orion VII diesel-electric hybrid buses, the first of which was unveiled on April 11, 2007. These buses operate in a similar manner to San Francisco's famous trolley buses, in that they are powered by electric motors. The difference lies in that these buses have a small diesel engine that turns a generator to supply the electricity, rather than having the overhead wires that power the trolleys.

These buses are called serial hybrids, which means that there is no mechanical link between the diesel engine and the wheels of the bus. The diesel engine drives the generator, which then supplies electrical power for the electric motors that drive the wheels. This is in contrast to the "parallel" system, as in a Toyota Prius, where the vehicle is powered by a combination of its engine and its electric motors. The diesel engine of the Orion bus is tuned to run at its most fuel-efficient and least emission-producing speed. When the bus uses less electrical energy than it needs to move, the surplus is stored in highly efficient batteries, for later use when extra energy is needed, as in climbing hills or acceleration. When the bus has to slow down, the electric motors are used as generators and feed power back into the batteries. This further improves fuel economy and reduces wear and tear on the brakes.

For SFMTA, the hybrid buses are a stepping stone towards the 100% emission-free vehicles. Plans are underway to upgrade to hydrogen fuel cell buses when they become commercially available for large fleets. Meanwhile, the diesel engines are powered with a bio-fuel mixture.

The improvements obtained with the switch to hybrids are considerable. The new hybrid buses emit 95% less soot than the old diesel buses, 40% less nitrous oxide and 30% less greenhouse gases. And of course there will be fuel savings too, as a result of the improved efficiency, estimated at 30%, or 20,000 gallons of diesel oil over 12 years.

There are advantages for the passengers as well. The floor of the bus is low enough that it does not require steps, which makes it easier and more comfortable to get in and out of. The hybrids also provide smoother and faster acceleration and less engine noise.

San Francisco's example is most encouraging. And, with the rapidly rising cost of fuel, many other cities are likely to follow suit. Another path to a cleaner environment is to improve the efficiency of existing internal combustion engines. [Biofriendly](#) Corporation has developed a liquid fuel catalyst, called [Green Plus®](#), which causes a cleaner, more linear burn that results in improved fuel economy, higher torque and reduced emissions.

For more information about Green Plus visit the Biofriendly Corporation website at [www.biofriendly.com](http://www.biofriendly.com). Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [hybrid buses](#), [SFMTA](#)

### 32. Environmental Stewardship no Longer a Grassroots Movement

04/11/2008

Not long ago, environmental activists used to be regarded as weird and perhaps over zealous. They were ignored, ridiculed and reviled by the mainstream media. This is no longer the case. The green, biofriendly movement has caught on and now is not only respectable, but enjoys broad official support in political, scientific and religious circles.

Today, the perception is that preserving the environment is not just a good thing to do, but is widely considered as a vital necessity for the future survival of the human race. According to some, we are poised on the brink of extinction and only fast, drastic action can save us. Even if such dire predictions may be exaggerated, it certainly behooves us to assume responsibility for the effects we create. In truth, it is all a matter of scale. Burning moderate amounts of fossil fuels is not going to mess up the atmosphere, nor is cutting down a few trees. Dumping a little bit of waste is not going to poison the soil or kill the fish in the rivers. But if billions of people are going to do the same thing, that is likely to cause dramatic, possibly irreversible effects. Stewardship over the Earth and the environment has long been part of religious tenets. Pope Benedict XVI is a strong supporter of environmental activism, as was his predecessor, Pope John Paul. In March 2008 the Vatican even added pollution as one of the new seven deadly sins. (1) Also in March 2008, 44 Southern Baptist leaders, in an official declaration, called for greater action on global warming—from individual lifestyle changes to responsible public policy. One signer of the declaration compared environmental destruction to “ripping pages from the Bible.” (2) Another religious leader, the Dalai Lama, made this appeal: “As people alive today, we must consider future generations: a clean environment is a human right like any other. It is therefore part of our responsibility towards others to ensure that the world we pass on is as healthy, if not healthier, than we found it.” (3) Queen Elizabeth, too, can be counted among the influential environmental supporters. In her 2008 annual Commonwealth Day message, she urged rich individuals and nations to help the poor in bringing about a greener planet. This important message was addressed to the Commonwealth’s 2 billion people in 53 nations. “Whatever we do, wherever we live,” the Queen said, “Our actions in defense of the environment can have a real and positive effect upon the lives of others, today and into the future.” (4) Around the world, people of all walks of life are lending support to obtaining a cleaner, greener planet. Many corporations are coming up with innovations that will have a positive impact on the environment. One such enterprise is [Biofriendly Corporation](#), makers of Green Plus®, a liquid fuel catalyst that causes a cleaner, more linear burn in internal combustion engines, which results in reduced fuel consumption, increased torque and fewer harmful emissions. For more information on Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel consumption](#), [environment](#), [pollution](#)

### 33. Earth Hour: Symbol for Environmental Awareness

04/04/2008

On March 29, 2008, at 8:00 pm local time, the world celebrated Earth Hour by turning off their lights and appliances as a symbolic gesture towards creating a greener, more biofriendly planet.

The Earth Hour idea originated in Sydney, Australia in 2007, when on March 31, more than 2.2 million individuals and 2,100 businesses turned off their lights and caused a 10.2 percent drop in electric power consumption. Because the majority of power stations are coal-powered, a routine reduction of that magnitude would significantly lessen air pollution and greenhouse gas emissions. (1)

The 2007 event was the brainchild of the Australian branch of World Wildlife Fund (WWF), a worldwide conservation network, which aims to conserve the planet's natural environment and to build a future where humans can live in harmony with nature.

In 2008, cities across the globe heeded the Earth Hour call to action. In all, more than 370 cities worldwide took part in this event. Starting at Christchurch, New Zealand, the wave of darkness traveled across the globe as lights were turned off in each time zone from 8:00 pm until 9:00 pm local time, and ending at San Francisco.

In the USA, the Coca Cola Company was a major contributor to the Earth Hour cause by turning off its Times Square billboard, as well as the lights in its Atlanta headquarters and contributing over \$2.5 million worth of advertising space. (2)

Google, on March 29, honored Earth Hour by sporting a search page with a black background to indicate their support and to demonstrate their commitment to environmental awareness and energy efficiency. They pointed out, however, that the gesture of a black background was symbolic in nature and that computer monitors use the same amount of power, regardless of what their screens display. (3)

As for environmental support, Australians head the list. According to a survey by AMR Interactive, 58% of adults in all of Australia's capital cities participated in Earth Hour. Of those participants 56% turned their lights off, 46% turned appliances off and 37% disconnected their cell phone chargers. Corporate participation and support was high as well, with all of the top property companies, 94% of the top corporations and five major banks all taking part.

But the most important message of Earth Hour is that individuals can make a difference in bringing about a greener, more biofriendly planet. Earth Hour is, in the words of WWF, "A global event created to symbolize that each one of us, working together, can make a positive impact on climate change." (4)

In the home, the most effective way to save energy is by doing less heating and cooling. In winter wearing warm clothes and setting the thermostat a little lower can make a big difference in heating bills. In summer there's no need to turn the home into an icebox: A good fan uses much less power

than an air conditioner. Moreover, in the US, most public utility companies offer free home energy audits that can lead to significant savings in both energy consumption and cost.

One of the many ways individuals can cut down on energy usage and minimize the so-called “carbon footprint” is to reduce fuel consumption. This can take many forms, such as using public transportation, car-pooling, combining shopping errands, avoiding peak hour traffic, or even buying a more fuel-efficient automobile. Using a bicycle for short distances, or walking, not only helps the environment, but also does miracles for one’s health.

There are many companies that are working on ways to bring about a “greener” planet. One such company is Biofriendly Corporation, makers of Green Plus<sup>®</sup>, a liquid fuel catalyst that produces a cleaner, more linear burn of fuel in internal combustion engines. The result is greater fuel economy, higher torque and a significant reduction in harmful emissions.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: Biofriendly, Green Plus, liquid fuel catalyst, harmful emissions, torque, fuel economy, earth hour



# GREEN PLUS

### 34. Meeting Future Energy Needs With Biofuels

03/26/2008

With the recent sharp increases in the price of fossil fuels, there has been renewed interest in alternative biofriendly sources of energy. One category of alternative fuels goes by the name of biofuels. Biofuels are defined as fuels derived from plant or animal sources, but not including fossil fuels. Biofuels can be used to power vehicles as well as for heating and generating electricity. (1)

Perhaps the best-known biofuel is biodiesel, which is produced from combining animal fat or vegetable oil with alcohol. Biodiesel can be used in diesel engines as a direct replacement for diesel oil, or as a diesel oil additive. An interesting development in biodiesel is the use of recycled oil from restaurants, with some people creating their own diesel fuel from recycled cooking oil in their homes. (2)

Another well-known biofuel is ethanol, which in the USA is produced from corn, with federal subsidies. Ethanol can also be produced from soybeans, barley, wheat and other cereals. In Brazil, ethanol is made from sugar cane. Typically, ethanol is mixed with gasoline (90% gasoline, 10% ethanol) as an automotive fuel. Engines can be adapted for higher ethanol content, or even 100% ethanol, but because ethanol is highly corrosive modifications have to be made to minimize the corrosive effects.

Proponents of ethanol point out that it is a renewable and in fact carbon-neutral fuel. While it does produce carbon dioxide emissions when burned in the engine, the plants that are used to make the fuel absorb that CO<sub>2</sub> during their growth. This is known as the carbon cycle: plants absorbing CO<sub>2</sub> and converting it into carbon-based organic compounds while releasing oxygen, then later, when that organic material is burned, the carbon recombines with oxygen to produce CO<sub>2</sub>. Fossil fuels also have that cycle, but with the difference that there the CO<sub>2</sub> was captured millions of years ago.

Ethanol opponents claim that the net energy gain from producing ethanol is small, or even negative. It is also expensive. Another major objection is that corn grown for fuel takes away from corn grown as food, which is likely to lead to food shortages and/or high prices.

In these discussions, the word biomass frequently comes up. Biomass is defined as the raw material from which the biofuel is derived. Food crops are not the only form of biomass. Ethanol can also be produced from organic waste, such as sawdust, manure or corn stalks, for example. While producing ethanol from these sources is more complicated and expensive, they have the advantage of not reducing the food supply and lessening waste disposal problems.

An interesting development in waste processing is biogas, which is a mixture of gases, containing about 50% methane, as a result of decomposing organic matter in landfills. The effects of methane in the atmosphere are about 23 times as strong as carbon dioxide. In other words, one ton of methane produces as much warming effect as 23 tons of CO<sub>2</sub>. It is therefore in our interest to capture that methane and use it as a fuel. This is being done at many landfills. It has been calculated that the energy generated by a 3-megawatt biogas plant is the equivalent of taking 25,000 cars off the road. (3)

Biofuels are expected to play an important role in the quest for alternatives to fossil fuels, especially so because fuels like ethanol and biodiesel can be added to existing automotive fuels with little or no changes to the vehicles. This is vital in a world where oil supplies are dwindling and oil producing countries are often unstable.

Another angle to solving the energy problem is to use available fuels more effectively. This is where Biofriendly Corporation makes a contribution with Green Plus<sup>®</sup> liquid fuel catalyst. A product that causes a more complete, more linear burn of fuel in internal combustion engines, thereby reducing harmful emissions, increasing torque and providing better fuel economy.

For more information on Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: Biofriendly, Green Plus, liquid fuel catalyst, biofuels, biodiesel, ethanol, biogas, harmful emissions, CO2, fuel economy



### 35. Will Spray-On Solar Cells Transform the World?

03/21/2008

The sun is our best source of biofriendly, renewable energy. While solar cells, also known as photovoltaic (PV) cells have been around for decades, their expense and rigid glass-based construction has limited their application mostly to rooftops of buildings. However, in recent years new solar cells have been made with polymers (plastic) instead of glass. This plastic material can be sprayed onto surfaces, just like paint, which opens many promising possibilities. To begin with, these plastic-based solar devices can be applied to fabrics. They are flexible enough to be sown onto or woven into clothes, such as sweaters or jackets. Solar backpacks already exist and can be used to keep portable devices such as laptops charged. But soon your coat should be able to keep your cell phone charged as well. Sunlight delivers 10,000 times more energy than we need, according to National Geographic. And, with the added advantage of the polymer solar cells being that they are cheap, the possibility exists of future large-scale "solar farms" placed in deserts that would fill most of the world's energy needs. In the more immediate future, photovoltaic coatings can be applied cheaply to roofs and windows to provide power for appliances in the home. (1) Theoretically, polymer solar devices can also become more efficient than the glass-based cells, because they are capable of capturing the infrared spectrum of sunlight, which constitutes about half of the sun's radiant energy. Polymer photovoltaic cells open up many vistas of new possibilities. Not only can they be manufactured inexpensively, solar cells can now even be printed on surfaces with inkjet printers, as recently demonstrated by Konarka, an innovative manufacturer of solar devices. (2) Japan has big plans for solar power. While their current solar power generation amounts to less than one percent, they expect solar energy to fill 50% of their power needs by the year 2030. And in the USA, a Palo Alto, California, company has built the world's largest solar cell manufacturing facility, gearing up to produce enough solar cells each year to deliver as much as 430 megawatts of electrical power. (3) Solar energy, of course, is the ultimate clean renewable energy source. The sun has been shining on planet Earth for millions of years and we may as well take advantage of some of that sunlight to fill our energy needs. Not only will harnessing solar energy benefit industrialized nations by reducing greenhouse emissions and pollution; with cheap renewable energy, less developed countries will have a much better opportunity to create a workable infrastructure and raise their living standard. Effective use of solar energy, along with other renewable energy sources, holds much promise for a brighter future. For the time being, however, we are largely dependent on fossil fuels for our energy needs. [Biofriendly](#) Corporation, manufacturer of the [Green Plus®](#) liquid fuel catalyst, contributes to a greener planet by providing internal combustion engines with a cleaner, more linear burn, which improves fuel economy, reduces harmful emissions and improves performance.

For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel economy](#)

### 36. An Underground Connection Saves Energy and Roads

03/14/2008

Many of us have noticed how during the summer on hot days the asphalt of roads heats up dramatically, sometimes softening the surface to where it becomes almost liquid again. Asphalt is an efficient heat absorber, which is further assisted by its dark color. A Dutch company by the name of Ooms Avenhorn Groep BV hit upon the bright idea to make use of the heat-absorbing properties of asphalt to create a biofriendly way of saving energy. (1)

To understand how the Ooms system works, picture two underground reservoirs, one filled with cold water and the other with warm water. These two reservoirs are connected to a grid of pipes embedded in the asphalt-covered road. During hot summer days the road surface heats the water in the pipes, which is then routed into the warm water aquifer, where its temperature will be sustained for months.

When the cold weather arrives in the fall, the warm water is pumped up into buildings for central heating. The water is then routed through the pipes in the road, which help to de-ice it. The now cold water is then routed to a cold water storage tank. Using 200 yards of road and a parking lot, a total of 36,000 square feet in surface area, this system keeps a 160,000 square foot industrial park warm in winter. (2)

The system is not fully self-sustaining, because the water is not quite hot enough to centrally heat the buildings, so a gas-operated heat pump is used to raise the temperature of the water to the required level. However, the system uses 50% less fuel than would otherwise be required, with a corresponding 50% reduction in greenhouse gas emissions.

In summer the process is reversed, with cold water being pumped through the office building to cool it, then routed through the pipes under the road and the now warm water flows back to the warm water aquifer.

In addition to the biofriendly advantage of lower fuel requirements and resulting reduced emissions, there is the added advantage that no salt will be needed to de-ice the road in winter. Moreover, because the road surface is kept at a more even temperature, there is less wear and tear, resulting in a longer lasting, smoother surface that contributes to greater road safety and lower maintenance requirements.

Ooms Avenhorn has found a clever way to utilize existing resources to save energy and contribute to a greener, more biofriendly environment. Another important contributor to the environmental cause is [Biofriendly Corporation](#), whose Green Plus® liquid fuel catalyst creates a cleaner, more linear burn in combustion engines, which results in greater torque, better fuel economy and reduced harmful emissions.

For more information about Green plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).  
Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [increased torque](#), [fuel economy](#)

### 37. Coal-to-Liquid Technology: Not a Panacea

03/07/2008

Coal-to-Liquid (CTL) is not a new technology. Two German scientists invented the Fischer-Tropsch process of producing liquid fuel from coal in the 1920s. During World War II Germany and Japan used the process to fuel their war effort, as coal was far more abundant to them than oil. (1) In the 1950s, the Sasol Company was founded in South Africa and the Kellogg Corporation (USA) built a coal-to-liquid plant at Sasolburg. This was followed in the late 1970s by the world's largest synthetic fuel plant at Secunda. Sasol now employs over 30,000 people and has the largest number of PhD's in the Southern Hemisphere. (2) With the recent sharp increases in oil prices, Sasol's business has expanded significantly, with projects underway in Qatar and Nigeria, among others, and negotiations taking place with the USA. The major advantage of coal-to-liquid conversion is a reduced dependence on unstable and frequently hostile oil-producing nations, in addition to the looming prospect of oil depletion. The USA has vast reserves of coal. It is estimated that at the current rate of consumption it has enough coal to last 200 years. CTL is favored among politicians and presidential candidates. In fact, in December 2007, Congress approved a bill, which allocated \$2.2 billion in tax incentives for clean coal technology applications. (3) However, there are some major drawbacks to CTL. First, building CTL plants is very costly, requiring a large initial investment. So far, American companies have been unwilling to make such an investment without government subsidy. Second, the process from coal to burned fuel produces almost twice as much greenhouse gas per gallon as conventional fuel, as well as considerable other pollutants. Third, large-scale implementation would require increased coal mining activity, with consequent damage to the environment. Until recently, China, which has huge pollution problems combined with energy shortages, was eager to implement CTL processes, but lately has become concerned about the huge up-front investment and increased harmful emissions attendant to this technology, plus the fact that it is not a renewable energy source. Now the Chinese government is more interested in biofuels (fuels produced from plant or animal substances). (4) While coal-to-liquid may be a stopgap solution to rising oil prices and dwindling availability, its many drawbacks make it less than biofriendly and not optimum as a long-term answer to energy shortages. Renewable energy sources are the ultimate answer, but implementing them will require time. Meanwhile, fossil fuels should be used more effectively to buy that time. Green Plus® liquid fuel catalyst from [Biofriendly Corporation](#) provides a cleaner, more linear burn in internal combustion engines, with resulting improved fuel economy, reduced emissions and improved torque. For more information about Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com). References:

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel economy](#), [coal to liquid](#), [CTL](#), [Sasol](#), [Fischer-Tropsch](#), [environment](#), [fossil fuels](#)

### 38. Tata Nano: The World's Cheapest Car Makes its Debut

02/29/2008

On January 10th, 2008, at the New Delhi Auto Show, Tata Motors of India unleashed a bombshell. They unveiled their revolutionary new Nano car that will sell for no more than \$2,500. While this is good news for the people of India, many of whom may now be able to afford a car for the first time, it has many environmentalists worried, as it is likely to replace many of the biofriendly bicycles now in use. (1)

Asia is the world's most populous continent with almost four billion inhabitants. If only one person in a thousand ends up buying such a car, this will still add up to millions of new vehicles on the road, with attendant increases in pollution, greenhouse gases and demand for fuel. Like the original Volkswagen bug, the Nano is designed as a "people's car." In the unique design of this vehicle, the question that was being asked continually was, "Do we really need this?" Many people will find it hard to believe that a car can be produced for so little money, a car that some reviewers have said turns out to be quite attractive and an object of desire for Indian ladies. (2) The Nano seats four people and has four doors. It has a small 2-cylinder, 33 horsepower, 623 cc rear-mounted engine, made by the German Bosch Company. Maximum speed is 65 mph. It is rated at better than 50 mpg in the city and 60 mpg on the highway. The interior is roomy for a small car, but sparse. It has no radio, air conditioning or power steering and just a single windshield wiper. (3) In India, the Nano is expected to replace many scooters, bicycles and older polluting vehicles. The Nano was designed in Italy, with input from Tata. This vehicle follows the success of the popular and inexpensive Ace truck that Tata brought out in 2005. The company plans to export the Nano globally, with an initial production target of 250,000 annually.

While the Nano's emissions are quite biofriendly and lower than that of the Volkswagen and exceed European emission standards, there is concern among environmentalists that the availability of very cheap cars will increase pollution and greenhouse gases worldwide, as well as further accelerate the depletion of existing oil reserves. Others argue, however, that the developed nations should set the example in becoming more energy efficient, rather than begrudging emerging countries the conveniences they themselves enjoy. The bottom line is that there is a need to develop alternative energy sources and to make better use of remaining fossil fuels. Biofriendly Corporation contributes to using fossil fuels more effectively with its Green Plus® liquid fuel catalyst, creating a cleaner, more linear burn in internal combustion engines, with resulting improved fuel economy, reduction in harmful emissions and increased torque.

For more information about Green Plus, visit the Biofriendly Corporation website at [www.biofriendly.com](http://www.biofriendly.com).

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### 39. Air Powered Cars: Not Just Inflated Claims

02/22/2008

Guy Ngre, a former Formula-One engineer, has designed a biofriendly car that literally runs on air. Compressed air, that is. An obvious advantage of using air to power a car is that it does not pollute the air or produce greenhouse gases. (1) The compressed air engine is similar, in many ways, to the steam engine that once was used to drive locomotives and early automobiles, except of course that it uses air, rather than steam. The engine is much simpler than a gasoline engine, because there is no combustion. The engine has an air intake and exhaust, a piston inside a cylinder and a crankshaft that turns. The compressed air is contained in carbon-fiber high-pressure tanks at 300 bar (4351 psi) that with external compressors can be charged up in about three minutes. Using the on-board compressor that task takes about 3-4 hours. Carbon fiber tanks are much safer than metal ones. The worst that can happen if a carbon-fiber tank is smashed, is that it will crack open with a loud bang. (2) The driving range on a set of tanks is about sixty miles, but by heating the compressed air using any of a number of fuels, that range can be extended to about 500 miles, giving an equivalent of about 120 miles per gallon. The plan is to have service stations equipped with compressors to fill tanks that they can then sell to motorists.

The so-called OneCAT car (CAT stands for Compressed Air Technology) will sell for about \$6,000. An agreement has been signed with Tata Motors in India to manufacture these vehicles. Tata is the same company that will produce the super-cheap \$2,500 Nano cars. Tata may also use the compressed air technology for local power generation. So far, Nègre's company, Moteur Developement International (MDI), has spent about \$30 million on the compressed air vehicle development. Nègre wants various countries to set up their own manufacturing plants that would then sell their CAT cars direct to the public. Meanwhile, "down under" in Melbourne, Australia, Italian-born Angelo Di Pietro has been busy developing an air-driven rotary engine, similar to the Wankel design, but with fewer moving parts. This biofriendly engine weighs less than 30 lbs., is very efficient, and has very low friction. In fact, Angelo claims that the engine can be operated with as low a pressure as 1 PSI! (3)

Angelo suggests that his engine be used to directly drive the wheels of the cars, thus eliminating heavy and costly transmission systems. A muffler won't be required either, because the motor is so quiet. Speed and torque are controlled with an air intake throttle. Moreover, because expanding gases have a cooling effect, the engine runs very cool and can be used for air conditioning. (4) Angelo plans to license his engine to car manufacturers. He has received a letter of intent from China, as well as interest from an American car manufacturer.

The future looks bright for these air-driven vehicles. Meanwhile, gasoline and diesel engines are still the order of the day and because of dwindling oil supplies it is important to use the remaining fossil fuels effectively. California-based [Biofriendly](#) Corporation helps in that respect with its Green Plus® liquid fuel catalyst that improves fuel economy, reduces harmful emissions and provides increased torque in internal combustion engines.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [increased torque](#), [fuel economy](#)

#### 40. Hybrid Buses are Gaining Ground Across the Globe 02/15/2008

In 1991, in the infancy of hybrid technology, the Hino Corporation of Japan introduced its biofriendly Blue Ribbon Hybrid City Bus. (1) Since that time, many other companies have followed suit. Toyota released its Coaster hybrid bus in 1997. Other corporations involved in manufacturing hybrid buses include Mitsubishi, Nissan, Isuzu, New Flyer and General Motors. (2) A hybrid vehicle typically has a traditional internal combustion engine as well as an electric motor/generator and a battery storage device. Depending on the system, the drive power is provided by the engine or the electric motor. Excess energy is stored in the battery for later use when additional power is needed. Hybrid buses, like hybrid cars, have a number of advantages over more traditional diesel or gasoline-powered vehicles. For example, the Orion VII Next Generation hybrid bus uses 30% less fuel than regular diesel buses and emits 90% less particulate matter, 40% less NOx (nitrous oxide) and 30% less greenhouse gases. All that, plus a cleaner, quieter ride. (3) The Orion Company, now owned by Daimler, the world's largest bus manufacturer, started delivering biofriendly hybrid buses in 2005. Orion has combined manufacturing facilities in Canada and the United States. The body and chassis are assembled in Ontario, Canada, and then shipped to New York State, where assembly is completed by adding engine, transmission, seats, upholstery, electrical, etc. (4) Toronto, San Francisco and New York were among the first cities to order hybrid buses from Orion. And in December 2007, New York City and Ottawa placed orders for 1,052 Orion VII Next Generation hybrid buses. This will make the New York hybrid bus fleet the largest in the world and Ottawa's the third largest in Canada. General Motors is also a provider of hybrid buses. In May 2004, Seattle took delivery of the first of its order of 235 GM hybrid buses. These 60 feet long buses were assembled by New Flyer of Winnipeg. Over the estimated 12-year lifetime these 235 hybrid buses are expected to save 8 million gallons of fuel over conventional diesel-powered buses. According to GM estimates, if America's nine largest cities were to replace their diesel-powered buses with hybrids, they would save 40 million gallons of fuel a year. (5) Additional benefits, aside from fuel savings and cleaner air, are improved acceleration, a quieter and smoother ride, and reduced maintenance costs. Disadvantages include higher purchase price and a newer, more complex technology. The increased orders for hybrid buses seem to indicate that the advantages outweigh the disadvantages. Besides, the hybrid technology has been around for some time, which has made it possible to iron out some of the wrinkles and tended to push prices down. Moreover, many companies have made huge investments in this technology, giving them a vested interest in its success. And, not to forget, fears of global warming and dwindling oil reserves have given a strong impetus to reducing greenhouse emissions and the pursuit of renewable energy sources.

One company that has been active in making more effective use of our diminishing supply of fossil fuels is [Biofriendly Corporation](#), whose Green Plus® liquid fuel catalyst provides a cleaner, more linear burn in internal combustion engines, with resulting improved fuel economy, higher torque and a reduction in harmful emissions. For more information about Green Plus, visit the [Biofriendly website](#). References: (1)[http://en.wikipedia.org/wiki/Hino\\_Blue\\_Ribbon#Blue\\_Ribbon\\_HIMR](http://en.wikipedia.org/wiki/Hino_Blue_Ribbon#Blue_Ribbon_HIMR)

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#### 41. The Cold Fusion Controversy: Fact or Fiction? 02/08/2008

On March 23rd, 1989, two scientists at the University of Utah released a bombshell on the scientific community. Stanley Pons and Martin Fleischmann announced at a press conference that they had constructed a biofriendly device that generated excess heat that could only be explained by nuclear fusion at room temperature. (1) The announcement was all the more amazing, because of the simplicity of the device they had used: two electrodes in a jar of heavy water and connected to a battery. The findings of Pons and Fleischmann have been derided by many in the scientific community, for a number of reasons. Perhaps the most compelling reason for skepticism was that the results were not consistently reproducible, although evidence remained that something unusual was happening. Another reason for rejection was that the observed phenomenon did not fit any accepted scientific theories. Nonetheless, despite the many detractors, there were others who continued on the road begun by Pons and Fleischmann. So what is cold fusion exactly? To clarify this concept we should first examine the two known types of nuclear processes: fission and fusion. Nuclear fission is achieved by bombarding heavy unstable atoms, such as Uranium 235, with particles. As a result the heavy atom is broken up into lighter elements, releasing huge amounts of energy in the process. This is the principle used in nuclear reactors and nuclear weapons. While nuclear fission reactors have the advantage of not emitting greenhouse gases, the mining and refining of uranium is an expensive and cumbersome process and the waste products of nuclear fission are highly radioactive. While the radioactive waste can be sealed into special containers, it remains "hot" for thousands of years and who could guarantee to keep it sealed away safely for that long a time? And the radioactive fallout from exploding nuclear weapons would kill friend and foe alike. Nuclear fusion, on the other hand, is a process where light atoms (hydrogen) are fused together and become helium atoms, again with the release of vast amounts of energy. This is the type of reaction that takes place inside the sun and is what provides its heat. Attempts to artificially create hot fusion have not been very successful, as extreme heat and pressure are required to start the nuclear fusion process. Cold fusion is claimed to be nuclear fusion that takes place at room temperature and without creating harmful radioactive byproducts. With the billions of dollars that have been spent with little success on attempts at hot fusion, it is hardly surprising that the cold fusion claims by Pons and Fleischmann were considered by many to be mere wishful thinking. Recently, however, the cold fusion cause has received a shot in the arm when none other than the US Navy's Space and Naval Warfare Systems Center (SPAWAR) near San Diego published a paper in the respected journal *Naturwissenschaften*. In the article, SPAWAR's scientists Stanislaw Szpak and Pamela Mosier-Boss claimed to have achieved a low energy nuclear reaction that can easily be repeated and verified by other scientific researchers. The ability to duplicate and verify results is vital for broad acceptance of the phenomenon and can lead the way to funding for further research. (2) Even if cold fusion turns out to become a commercially viable way of generating cheap energy, it will likely take decades before it can be implemented on a significant scale. Until renewable energy sources become mainstream, it is important to make effective use of fossil fuels. [Biofriendly Corporation's Green Plus® liquid fuel catalyst](#) provides a cleaner, more linear burn in internal combustion engines, with resulting improved fuel economy and reduced harmful emissions.

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## 42. German Kite Ship Sets Sail for Venezuela on Maiden Voyage

01/25/2008

On January 22nd, 2008, in the German port of Bremerhaven, the motor vessel Beluga SkySails was preparing to leave on a journey across the Atlantic Ocean to Guanta in Venezuela. This was to be no routine Atlantic crossing, however. It was to be a [biofriendly](#) maiden voyage of the first cargo ship whose engines are assisted by a huge kite.

The computer-controlled kite, with a surface area of 1722 square feet (160 square meters), is attached to the ship's bow with a long cable that allows it to hover at a height of up to 300 meters, where the winds are more constant and stronger than near the surface of the ocean. (1) SkySails GmbH in Hamburg manufactured the giant kite and has tested its prototypes on ships in the Baltic Sea. The next few months will tell how successful these kite-assisted hybrid ships are and will provide a more accurate picture of potential fuel savings. Stephan Wrage, SkySails' chief executive, estimates an average of 20% reduction of fuel consumption, which works out to about \$1,600 per day for the 10,000 ton Beluga. The reduction in harmful emissions is expected to be even more dramatic.

According to a University of Delaware study in 2003, ships around the world use more than 5 million barrels of oil a day, most of which is heavy fuel oil with a high sulfur content resulting in emissions of about 10 million tons of sulfur dioxide annually, in addition to about 5% of the world's carbon dioxide emissions. Thus, fuel savings in the shipping industry can have a dramatic biofriendly impact on the environment, in addition to cost savings. (2) Shipping companies are watching the MS Beluga SkySails' maiden voyage with interest and, if successful, many will line up to place their orders for kites. SkySails' Stephan Wrage is confident of positive results and wants to demonstrate to the world that economics and environment can work together for optimal results. He plans to further increase the size of his kites for even greater fuel savings. The Beluga Company is confident as well and has ordered two more kite-assisted ships. Meanwhile, shipping companies, as a result of soaring fuel costs, are slowing down their ships. A speed reduction of ten percent can result in a twenty-five percent reduction of fuel consumption, according to a Reuters report. Even though the journeys take longer, the savings are still considerable. One company saved so much in fuel that they could add another ship to their fleet and still save money. And by using less fuel, emissions and air pollution are cut as well, so once again the environment benefits. (3)

Other ways of saving on fuel are being explored as well, such as regularly cleaning the ships' hulls to reduce water resistance and choosing the most optimum shipping routes according to weather forecasts.

Another way to save fuel and benefit the environment is by using fuel additives. One such product is the Green Plus® liquid fuel catalyst from [Biofriendly](#) Corporation, which causes a cleaner, more linear burn of the fuel in internal combustion engines, with a resulting torque increase, reduced emissions and better fuel economy. Green Plus is in use by shipping companies across the globe. For more information on Green Plus, visit the Biofriendly website at <http://www.biofriendly.com>.

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### 43. Hybrid Taxicabs for New York City: A Biofriendly Move

01/18/2008

New York City has about 13,000 taxis in operation and visitors to the Big Apple are familiar with the sight of the famous yellow cabs. Those yellow cabs are now about to turn green. On Earth Day 2007, Mayor Bloomberg announced his plan to make the city more biofriendly by requiring all yellow taxis in New York City to be hybrids by the year 2012.

Hybrid vehicles will make a huge difference in creating a cleaner environment, as traffic congestion is a major problem in New York City and traditional gasoline-powered cars spew out fumes and burn up gas while they are stuck in traffic jams. However, with a hybrid vehicle things are different. When the engine is idling or the brakes are applied, unused energy is stored in electric batteries for later use in driving and accelerating. In fact, depending on the model, short distances may be driven entirely on electrical power, without even activating the internal combustion engine. In a city like New York this can add up to huge gasoline savings and much cleaner air. The Ford Crown Victoria is currently the most commonly used New York taxi vehicle, at 14 miles per gallon (mpg). Contrast that with the Ford Escape hybrid SUV, which does 36 mpg. According to mayor Bloomberg, implementing the proposed hybrid fleet of taxis will be equivalent to removing 32,000 gas-powered vehicles from the streets. (1) These are not the only environmental changes in store for New York City. The mayor also proposed charging an \$8 congestion fee for people who drive their own cars in heavily congested areas like Manhattan. Truck drivers would pay \$21; residents who live in the area would pay \$4. Currently about a million cars enter Manhattan on a daily basis. (2) Other cities around the world have already implemented congestion fees with positive results. For example, in London, levying congestion fees resulted in 30% less congestion, a 37% increase in traffic speed and a 20% decrease in fuel consumption and carbon dioxide emissions. (3) Meanwhile, the New York City Taxi and Limousine Company (TLC) ruled that from October 2008, all new taxicabs must have a rating of 25 mpg in the city, or better. By October 2009, the required rating for new taxicabs will become 30 mpg. Mayor Bloomberg's and TLC's ambitious plans in reducing congestion and fuel consumption, coupled with improved air quality, are to be commended. It is encouraging to see cities all over the world taking positive action to make the environment more biofriendly.

While fossil fuels are still the transportation mainstay, however, steps should be taken to optimize their use. Biofriendly Corporation helps to improve the environment with its The Green Plus® liquid fuel catalyst, which creates a cleaner, more linear burn in internal combustion engines, thereby reducing harmful emissions and improving fuel economy. For more information about Green Plus, visit the Biofriendly Corporation website at <http://www.biofriendly.com>.

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#### 44. The Many Biofriendly Advantages of Geothermal Power Generation

01/11/2008

Geothermal energy means energy derived from heat inside the Earth. That heat can be used to boil water and drive steam turbines that turn generators to make electricity. This is exactly what is done at The Geysers power plants, 72 miles North of San Francisco, in California. (1)

Geothermal power generation has many advantages over traditional fossil fuel-based plants. A huge advantage is that no fuel is required. And, as anyone living near an active volcano can attest, there is plenty of heat in the Earth and this energy source is not likely to run out any time soon. The fact that no fuel is burned also means that the energy is clean and biofriendly. The steam that drives the turbines can be condensed and turned back into water. And, unlike wind or solar power, geothermal energy is constant and does not depend on weather conditions.

The Geysers is the largest geothermal operation in the world. Built in 1960, it produces more than 750 megawatts, which is enough electricity to power about 750,000 homes. Another geothermal power complex in South Central California has a capacity of about 570 megawatts. Geothermal plants in Nevada total about 235 megawatts. Oregon, Arizona, Idaho, Hawaii and Utah also have geothermal projects. (2)

Over 20 other countries are using geothermal plants, including Iceland, Russia, New Zealand and the Philippines. While many of these plants generate electrical power, others produce hot water for heating homes.

Many homes now have their own individual geothermal systems that heat the home in winter and cool it in summer, providing significant energy savings. This is based on the fact that the temperature is relatively constant throughout the year at about 10 feet underground. In simple terms, here is how it works. A refrigerator has a cold side and a hot side. A so-called heat pump makes the inside of the refrigerator cold by moving heat to a radiator just behind it. Similarly, in summer you cool a house geothermally by pumping the heat from the house into the underground pipes outside. In winter, you reverse the process and pump heat from the underground pipes into the house. (3)

Geothermal power production holds much promise, especially in the geologically active Pacific Rim. While geothermal plants cost more to build than conventional coal-fired plants, the power can be competitively priced, as there are no fuel costs. Geothermal ranks well among other renewable energy sources. Even so, it will take time for this technology to be fully exploited. At this time fossil fuel is still the predominant energy source and it is important to use it effectively, both for environmental reasons and because it is in limited supply. The Green Plus® liquid fuel catalyst from Biofriendly Corporation contributes to that effort by causing a cleaner, more linear burn, which reduces harmful emissions and improves fuel economy. For more information about Green Plus, visit the Biofriendly Corporation website at <http://www.biofriendly.com>. References:(1) <http://www.geysers.com/> (2) [http://en.wikipedia.org/wiki/Geothermal\\_power](http://en.wikipedia.org/wiki/Geothermal_power) (3) <http://geothermal.marin.org/pwrheat.html>

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [renewable energy](#), [harmful emissions](#), [fuel economy](#)

#### 45. Concentrating Solar Power: Biofriendly Technology of the Future?

01/04/2008

Looking like a science fiction scene, the brilliantly lit giant solar collector tower near Seville, Spain, dominates the landscape. More than six hundred huge mirrors on the ground illuminate the 377-foot high concrete tower. The movable computer-controlled mirrors are angled in such a way as to point the beam of reflected sunlight and heat to a specific spot atop the tower. There it heats up water-filled pipes to create steam, which in turn drives turbines to generate electricity in a biofriendly manner.

As Europe's first solar power station it provides 11 megawatts of power—enough to power 6,000 homes. The plan is to ultimately provide enough power for all of Seville, a city with a population of about 600,000. (1)

An advantage of this method of harnessing the power of the sun is that the plant can continue to generate power for some time after sunset, because there is adequate steam remaining. However, the highest demand for electricity is for air conditioning during the day when the sun is at its hottest.

While this system is currently more expensive than coal-generated power, it is expected that prices will come down when more solar-powered plants will be built. The biggest biofriendly advantage is that it produces absolutely no air pollution or greenhouse gases. This plant is estimated to reduce carbon dioxide emissions by 16,000 tons per year, compared to conventional power plants. (2)

This is not the first concentrating solar power plant in the world. In the 1980s and 1990s, two solar power plants were built near Barstow in California. These demonstration plants were capable of generating 10 megawatts each. The second plant, named Solar Two, used molten salt to store the surplus heat in the day and released it after sunset. Using this enhancement, the plant could operate 65% of the year without the need for a backup fuel source, like natural gas, to generate steam during the night and on cloudy days. (3)

Concentrating solar power holds promise for a “greener” future, but currently we still rely on fossil fuels for most of our power needs. [Biofriendly](#) Corporation is making a significant contribution to using fossil fuels more effectively. Their liquid fuel catalyst Green Plus® provides a cleaner burn with resulting higher torque, improved fuel economy and reduction in harmful emissions.

For more information about Green Plus, visit the Biofriendly Corporation website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [renewable energy](#), [concentrating solar power](#), [harmful emissions](#), [fuel economy](#)

#### 46. The Florida Gulf Stream: A Biofriendly Source of Renewable Energy

12/20/2007

At 8 billion gallons per minute, the Gulf Stream off the Coast of Florida is one of the most powerful energy sources on the planet. Harnessing that biofriendly power is what the Florida Atlantic University has set out to do by embarking on an ambitious project to generate electrical power from those currents. Recently, the Florida Technology Research and Scholarship Board awarded the university a \$5 million grant to establish the Florida Center of Excellence in Ocean Energy Technology. The Center's purpose is to develop a cost effective means for generating clean, reliable and renewable energy.

The Center estimates that ultimately the system under development will use less than one thousandth of the available gulf power, yet generate 35% of Florida's electrical power needs. Currently, the Center is working on a scaled-down prototype consisting of a turbine with a rotor, 10 feet in diameter, to generate electric power. During the prototype phase the unit will be tested and its effects on marine biology and the Gulf Stream itself will be closely observed.

The turbine will be mounted underwater at a depth of about 30 feet, held in place by a buoy on the surface and weighed down by a 30,000 pound anchor. It is expected to spin at the rate of about 60 rpm. If these tests prove successful the team plans to install a large number of turbines with rotors 100 ft. in diameter. (1)

Ultimately, the Gulf Stream could fulfill a major portion of Florida's energy requirements. Using ocean currents to generate electrical power would benefit other Southeastern states as well, as the region cannot rely on wind power to supplement their energy needs, due to a lack of steady winds. The Gulf Stream, on the other hand, is an excellent power source in that it provides a reliable and constant water flow.

The world's oceans are a huge energy source that has remained almost untapped. It has the potential of filling the world's energy needs many times over, with no greenhouse gases, no air pollution, and no dependence on fossil fuels. This technology could transform the world by providing a practically inexhaustible supply of inexpensive, clean and renewable energy. Using ocean currents to generate electricity is but one of many emerging technologies that contribute to a greener planet. "We applaud the vision of this project," says Bob Carroll, CEO of [Biofriendly Corporation](#) in California. "But even if it proves to be successful it will take years to implement, and until then fossil fuels will remain in high demand. Biofriendly Corporation strives to reduce the impact that demand has on the environment."

Biofriendly's [Green Plus®](#) liquid fuel catalyst, causes a more complete burn of the fuel in internal combustion engines, with a resulting torque increase, reduced emissions and better fuel economy. For more information on Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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(1) <http://www.npr.org/templates/story/story.php?storyId=16713781>

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [torque](#), [emissions](#), [pollution](#), [fuel economy](#), [renewable energy](#)

#### 47. Replacing Coal with a Cheaper, More Biofriendly Fuel

12/19/2007

Coal is a cheap and abundant energy source, available in vast quantities all over the world with great potential as a fuel, as oil supplies are dwindling. Unfortunately, it is also the dirtiest of fossil fuels, a "gross polluter" that not only produces carbon dioxide (CO<sub>2</sub>), but many other harmful emissions as well, such as sulfur dioxide, nitrous oxide and airborne particles. (1)

Many power stations derive the energy they generate from burning coal and the fact that coal is cheap and plentiful makes it hard to replace. When faced with a choice between cheap dirty energy and expensive clean energy, most people will choose the former. But that's where Google comes in.

The Mountain View, California search engine giant has decided to improve the odds of switching to a clean renewable energy source by funding a project called Renewable Energy Cheaper than Coal. As the name suggests, the object is to come up with ways to provide alternative sources of energy at a lower cost than coal. (2)

Google has already started assembling a research and development team for this purpose. Their first task is to build a 1 gigawatt (enough electricity to power a city like San Francisco) renewable energy plant. Their emphasis will be on solar and geothermal technology, but they will also explore other potential energy sources. The company also plans to issue grants to and invest in companies engaged in developing low-cost renewable energy technologies.

Already the company has made inroads in reducing its own power needs by the use of evaporative cooling for their data centers, replacing incandescent lights with power saving fluorescents and optimizing the use of natural light. At their corporate headquarters they have also installed one of the largest solar panel arrays in the United States. (3)

The millions of dollars that Google is willing to invest in the future of cheap renewable energy may well be the catalyst needed to put the world firmly on the path to a greener planet. Google is one of many companies working towards a brighter future. Another company, [Biofriendly Corporation](#), provides a different way to reduce our dependence on fossil fuels. Their [Green Plus®](#) liquid fuel catalyst causes a cleaner, more complete burn of the fuel in internal combustion engines, which increases torque, reduces harmful emissions and improves fuel economy. In addition, Green Plus has been shown to reduce emissions and improve fuel efficiency in coal-fired utilities. For more information about Green Plus, visit the Biofriendly Corporation website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [renewable energy](#), [harmful emissions](#), [fuel economy](#)

#### 48. Former Chairman of California Air Resources Board Joins Biofriendly Board of Advisors

12/13/2007

December 12, 2007, Covina, CA – Biofriendly Corporation announced today that John D. Dunlap III has joined its Board of Advisors. Mr. Dunlap’s experience in air pollution control is extensive; he was appointed by former California Governor Pete Wilson to serve as Chairman of the California Air Resources Board (CARB) from 1994 to 1999, and earlier as Chief Deputy Director of the Department of Toxic Substances Control. In addition he served for over a decade at the South Coast Air Quality Management District (AQMD) in Los Angeles where he directed several key regulatory and public affairs programs.

During his tenure as CARB Chairman, John was responsible for the state’s response to both the California and Federal Clean Air Acts. He led innovative, ground-breaking regulatory programs in the fuels, consumer product and motor vehicle areas. These efforts serve to this day as the guide followed by regulators throughout the world. California’s air pollution control program has long been known as the world leader in clean air innovation, and CARB is the agency that is responsible for keeping California at the forefront.

When asked about his new position with Biofriendly, Dunlap said, “I am pleased to be part of Biofriendly’s Advisory Board. Their Green Plus® liquid fuel catalyst product line is a proven solution for the vexing air quality challenges we face today. I joined their Board because I have worked with the team for the past several years and am well-aware of their certified test and performance data. I believe that Green Plus is a very effective solution for reducing pollution and improving fuel efficiency.”

Robert W. Carroll, Biofriendly’s Chairman and CEO said, “We are honored to have an Advisory Board member of the caliber of John Dunlap. His integrity, experience and his expertise will make a valuable addition to our team.”

#### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide. Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

Links:

[http://www.biofriendly.com/how\\_green\\_plus\\_works.htm](http://www.biofriendly.com/how_green_plus_works.htm) [liquid fuel catalyst]  
[http://www.biofriendly.com/about\\_green\\_plus.htm](http://www.biofriendly.com/about_green_plus.htm) [Green Plus]

Technorati Tags: [Liquid combustion catalyst](#), [Green Plus](#), [Biofriendly Corporation](#), [greenplus](#), [Liquid Fuel Catalyst](#), [emission reduction](#), [liquid fuel combustion catalyst](#), [fuel enhancer](#), [fuel economy](#)

#### 49. Novel Truck Loading Technique Saves Energy and Cuts Emissions

12/12/2007

S. C. Johnson & Son, Inc., a Wisconsin-based provider of household goods, is a family business that has evolved an unusual biofriendly approach to improving the environment. By implementing their innovative Truckload Utilization Project the company has eliminated 1,882 tons of greenhouse gases over a 12-month period. In addition, they used 2,098 fewer trucks, cut fuel consumption by 168,000 gallons and saved \$1.6 million. (1)

This environmentally conscious company decided to look for ways to save energy. After a six-month study, they discovered that trucks could be loaded more effectively than in the past. A truck loaded with small but heavy items would not be filled to capacity, because of maximum weight restrictions, while a truck filled with bulkier but lighter goods would not be anywhere near its load carrying capacity. By devising a system to combine these different goods in a way that would optimize weight and volume, the company cut the number of trips required.

Then they found a way to improve efficiency even further. Many trucks have a sleeping compartment for the driver, but on trips that can be completed in a day that facility is not needed. By using so-called "day cabs" without sleeping facilities on shorter trips, the trucks gained another 3,000 pounds in carrying capacity that could be used for payload.

The effectiveness of the program was further increased by modifying their customer incentive program. Better and more effective loading of the trucks resulted in fewer road trips, with consequent reductions in fuel consumption, greenhouse gases and pollutants, as well as considerable financial savings.

S. C. Johnson's example demonstrates that biofriendly solutions to environmental problems do not always have to resort to unusual high technology methods. Often the simple solutions are the best. On a smaller scale, more effective use of transportation can also be accomplished by car pooling, using mass transportation, combining errands, and the like.

Of course, fuel savings can also be achieved making internal combustion engines more efficient. [Biofriendly Corporation](#) does this with their [Green Plus](#)<sup>®</sup> liquid fuel catalyst, which causes a more complete burning of the fuel. This results in improved torque, reduced emissions and better fuel economy.

For more information on Green Plus visit the Biofriendly Corporation website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [emissions](#), [greenhouse gases](#), [fuel](#)

## 50. Solar Vehicles Are Taking Off: A Biofriendly Transportation Method

12/10/2007

The Panasonic World Solar Challenge, an event held from October 21-28, 2007, consisted of an invitation to design, build and drive a biofriendly vehicle across the vast Australian continent, using only sunlight as fuel. The winning team from Delft Technical University in the Netherlands crossed the 3000 km trajectory from Darwin in the North to Adelaide in the South at an average speed of over 90 km/h. (1)

It was the 20th anniversary of this event and the fourth year in row that the Dutch team has won the race. A similar event, called the North American Solar Challenge is scheduled for 2008, where solar vehicles will "rayce" the 2400 miles from Dallas, Texas to Calgary, Alberta in Canada.

These often futuristic-looking vehicles are not designed as production vehicles and are mostly developed by engineering schools and corporations like GM, Ford and Honda.

Solar vehicles are simple in principle. Sunlight strikes the solar (photovoltaic) cells on the car's surface, which generates electricity to power the electric motors that turn the vehicle's wheels. Surplus electrical energy is stored in rechargeable batteries, to be used when less sunlight is available or when extra power is needed, such as to climb hills.

The challenges in designing and building cars that operate on energy from the sun alone are considerable. Since these vehicles use solar power only, efficient design is vital. Weight is kept to a minimum, as are friction and aerodynamic drag. This makes them fragile and lacking in driver comfort. Their future viability depends to a large degree on the cost and efficiency of the solar cells that power them.

Promising developments are occurring in solar cell technology, such as spray-on solar cells that capture infrared energy. There is even the possibility of full-spectrum solar cells that could deliver up to 70% efficiency. This is about twice as efficient as the best photovoltaic cells available today. (2)

Meanwhile, motor vehicles with internal combustion engines are still the norm and technologies that make better use of them will improve the environment, lessen dependence on fossil fuels and limit costs. Biofriendly Corporation is a company whose Green Plus<sup>®</sup> liquid fuel catalyst causes a more complete burn resulting in reduced harmful emissions, increased torque and improved fuel economy.

For more information about Biofriendly Corporation and Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#), [solar cars](#), [World Solar Challenge](#), [North American Solar Challenge](#), [environment](#)

## 51. Cylinder Deactivation: Another Biofriendly Way to Save Gas

11/27/2007

The quest to improve fuel economy is an ongoing one, but on the other hand, many Americans love big cars with powerful engines. Fortunately, there is a way to reconcile these two conflicting trends. This biofriendly yet powerful technology is called cylinder deactivation.

The purpose of cylinder deactivation is to improve fuel economy and reduce harmful emissions in internal combustion engines. When driving under light load conditions, such as when coasting along a highway, a vehicle typically uses only about 30% of the engine's available power. Cylinder deactivation addresses this inefficiency by deactivating some of the engine's cylinders when there is low power demand. Simply put, this means that a 6-cylinder engine can run like a 4-cylinder engine, with resulting fuel economy of up to 20%.

Cylinder deactivation was first tried out during World War II and applied commercially in 1981 by Cadillac. The system would turn its 8-cylinder engine into a 6-cylinder, or even into a 4-cylinder under light load conditions. However, the system was plagued with technical difficulties and was soon discontinued.

Mitsubishi next developed their own cylinder deactivation system in 1982, which worked successfully, but was also discontinued, due to lack of buyer's response. In recent years Mercedes, General Motors, Chrysler and Honda developed their own variously named versions. According to a recent Yahoo article(1) Marie Czapiewski is the proud owner of a new 2008 Honda Accord. She claims to get 27 miles per gallon at high speeds on the highway with her powerful V6 engine using cylinder deactivation technology. Honda calls it Variable Cylinder Management (VCM). This system allows the V6 engine to run either on 3 or 4 cylinders, depending on road conditions. In addition, Honda has applied noise and vibration reduction techniques that make its automatic configuration switching almost imperceptible(2).

Along with hybrids, cylinder deactivation technology is another way to improve fuel economy in motor vehicles. Innovations like these illustrate humanity's ingenuity in dealing with environmental challenges.

Another approach is to make fuel combustion more efficient. This is what [Biofriendly Corporation](#) does with its [Green Plus](#)® liquid fuel catalyst, which makes fuel burn more completely, hence reducing emissions, as well as improving torque and fuel economy.

For more information on Green Plus, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Related links: [http://www.biofriendly-green-plus.com/biofriendly\\_detroit.html](http://www.biofriendly-green-plus.com/biofriendly_detroit.html)

[http://www.biofriendly-green-plus.com/biofriendly\\_adams.html](http://www.biofriendly-green-plus.com/biofriendly_adams.html)

[http://www.biofriendly-green-plus.com/biofriendly\\_faq.html](http://www.biofriendly-green-plus.com/biofriendly_faq.html) Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel economy](#), [internal combustion engines](#), [torque](#)

## 52. Will Biofriendly Fuel Cells Power Future Cars?

11/26/2007

At the November 2007 Los Angeles Auto Show, Honda unveiled its new biofriendly FCX Clarity fuel cell vehicle (FCV). Honda plans to lease a limited number of them in the summer of 2008. First developed in 1999, the 2008 model has many improvements, such as a 30% increase in driving range and a 25% increase in power-to-weight ratio. (1)

What makes FCVs attractive, compared to gasoline-powered cars, is that fuel cells use hydrogen as a fuel to produce electric power, with pure water as the only byproduct. This makes the FCV a perfect zero-emission vehicle, emitting no greenhouse gases or air pollution whatsoever. Other advantages include reduced dependence on fossil fuels, better energy efficiency and greater design flexibility.

Typically, an FCV has an on-board tank of hydrogen gas, while the needed oxygen is drawn from the surrounding air. In "burning" the hydrogen, the fuel cell produces electricity that powers one or more electric motors to drive the wheels.

Hydrogen is the most abundant chemical element in the universe. Unfortunately, most of it is combined with other elements, as with oxygen to form water, or with carbon to form organic compounds, such as coal, oil and natural gas. Hydrogen can be extracted from water, using a process called electrolysis, but this method uses electricity. As power stations generally use fossil fuels, this makes electrolysis a less than optimum solution.

National Geographic magazine mentions a different method of generating hydrogen. Researchers Logan and Cheng of Penn State University were able to extract 99% of available hydrogen from organic materials using bacteria. This new method of extracting hydrogen is not yet commercially viable, but is promising as it does not require much energy to produce the fuel, giving it a distinct advantage over ethanol and other biofuels. (2)

If the challenges of cost, fuel distribution and delivery can be overcome, fuel cell vehicles promise to become a way to combat energy dependence, fossil fuel depletion, air pollution and greenhouse gas emissions. However, while most vehicles are still gasoline-powered, and will be for some time, it is important to make more efficient use of what fuel we have. This will buy time for the needed research and establishment of better energy solutions.

For that purpose, [Biofriendly Corporation](http://www.biofriendly.com) has created [Green Plus](http://www.greenplusfuel.com)<sup>®</sup>, a liquid fuel catalyst that causes more complete burning, resulting in fewer harmful emissions and better fuel economy. For more information on Biofriendly Corporation and Green Plus, visit the website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [greenhouse gases](#), [fossil fuel depletion](#), [air pollution](#), [fuel economy](#)

### 53. Moving to a More Biofriendly Future: Hybrid Big Rigs Hit the Road

11/19/2007

History was made recently, when retail giant Wal-Mart took delivery of its first hybrid Class 8 big rig. The model 386 hybrid truck is the result of a joint effort between the Texas-based Peterbilt Motors Company, Eaton Corporation and Wal-Mart. Peterbilt has the truck-building expertise, while Eaton has developed the parallel hybrid system. The project was supported by Wal-Mart, which owns the nation's second largest private fleet of trucks.

The hybrid system charges the vehicle's batteries when the engine is idling, or when the brakes are applied. This stored energy is later used to power an electric motor, either to supplement the diesel engine's power or even to move the vehicle all by itself under certain conditions. Based on the current price of diesel fuel, estimated annual savings are around \$9,000 per vehicle. In addition to fuel savings, the hybrid is expected to require less maintenance, because of the reduced wear and tear on engine and brakes.

At third-party tests, the Eaton Hybrid Power System has typically shown a 5-7 percent fuel savings compared to non-hybrid models. During idling, fuel savings can be considerable. The batteries can be charged in minutes and the diesel engine needs to run only about five minutes of every hour to keep them fully charged, according to Peterbilt Chief Engineer Landon Sproull. (1)

Peterbilt, Eaton and Wal-Mart are to be applauded for helping to make the environment more biofriendly. Wal-Mart plans to replace its Peterbilt 386 big rigs with the hybrid version of the same model by 2009, potentially saving millions of gallons of fuel every year.

Kenworth and DAF, both sister companies of Peterbilt, are also presenting hybrid big rig trucks, as is Mitsubishi.

So, the green movement is gathering momentum. While a pollution-free environment and abundant energy are still a long way off, the hybrid big rigs are a move in that direction. Many other innovations will be needed, but as fuel prices keep rising, we can expect to see more and more practical ways of saving energy.

Fuel economy is a vital factor in today's world, as reducing fuel consumption will help to contain costs, improve air quality and reduce our dependency on foreign fossil fuels. One company that contributes to a greener planet is [Biofriendly Corporation](#), whose liquid fuel catalyst [Green Plus®](#) causes fuel in internal combustion engines to burn more completely and thereby reduces fuel consumption and harmful emissions.

For more information on Green Plus and Biofriendly Corporation, please visit the Web site at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel consumption](#)

#### 54. A Biofriendly Approach to Energy Efficiency

11/16/2007

Few of us will deny that being dependent on foreign oil supplies is undesirable. But it is not widely known that available oil supplies worldwide are dwindling, which drives the need for alternative ways of meeting our energy needs. While there is still a lot of oil in the ground, much of this is becoming harder and more costly to extract.

The term "peak oil" describes the concept that oil is a limited resource and at some point the available oil supplies will become less and less. According to some sources global oil consumption already outstrips viable new oil sources.

While we are not likely to completely run out of oil, newly discovered supplies will become less accessible and/or of lower quality, making it progressively more costly to extract. In addition, oil consumption is also on the increase as developing nations like China and India become more industrialized. Oil prices are therefore likely to keep rising.

The bottom line is that it is in everyone's interest to become less fossil fuel dependent. A first step in that direction is to become more energy efficient. Saving energy means a lessened dependency on fossil fuels, fewer pollutants, as well as saving money.

Greater energy efficiency can be achieved in many ways. For example, homes can be made more energy efficient with weatherizing and improved insulation, saving on heating and cooling costs. In the transportation arena, biofuels and fuel efficient hybrid cars are becoming more popular. Meanwhile, the Green Plus® liquid fuel catalyst from Biofriendly Corporation makes internal combustion engines more efficient by causing the fuel to burn more completely and thus reducing fuel consumption and harmful emissions.

For more information on Biofriendly Corporation and Green Plus, visit [www.biofriendly.com](http://www.biofriendly.com).

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• <http://www.biofriendly.com/about.htm>

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [fossil fuel](#), [energy efficiency](#), [harmful emissions](#), [fuel consumption](#)

## 55. Biofriendly Applauds Congress Call for Cleaner Air

10/31/2007

According to an article in [earthjustice.org](http://earthjustice.org) (1), 22 members of the U.S. House of Representatives sent a letter (2) to the Environmental Protection Agency (EPA), urging them to impose stronger limits on smog pollution. This is good news to environmental and other [biofriendly](#) groups, as well as the many individuals who are concerned about the threats posed to the environment and public health.

The EPA, the organization entrusted with protecting the environment in the U.S., is considering tightening up on the allowed smog levels, but hasn't yet decided by how much. Comments on their proposed standard were accepted until October 9th, 2007 and the final standard for smog pollution is due in March 2008.

In many cities, smog poses a serious health problem. Smog can aggravate existing heart and lung conditions, as well as cause eye, nose and throat irritation. The adverse reactions are most pronounced in the elderly and young children, causing an increased incidence of asthma and other respiratory afflictions.

Enforcing stricter clean air standards is a step in the right direction of a healthier environment. But it is not enough to expect our government to look after us. We, as individuals can be pro-active in bringing about a cleaner and healthier environment. We have a vested interest in doing so.

Internal combustion engines are a major source of smog and other forms of pollution and while many plans have been devised, such as hydrogen fuel, fuel cells and electric cars, for the time being we are stuck with polluting engines.

[Biofriendly Corporation](#) is one company that is doing something about improving the environment with their [Green Plus](#)<sup>®</sup> liquid fuel catalyst that reduces harmful emissions. Green Plus works at the molecular level to improve the fuel combustion process. It causes the available oxygen to mix more thoroughly with the hydrocarbon molecules, creating a more complete and more rapid burn, in turn resulting in increased power, more torque, better fuel economy and fewer harmful emissions.

For more information about the Green Plus liquid fuel catalyst, visit the Biofriendly website at [www.biofriendly.com/](http://www.biofriendly.com/).

(1) [www.earthjustice.org/](http://www.earthjustice.org/)

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [Greenplus](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#).

## 56. Biofriendly Cars: New Plug-In Hybrids

10/29/2007

With rising gas prices and air pollution, it is becoming apparent that more needs to be done to lessen our dependence on dwindling oil supplies. While Congress is taking steps to legislate greater fuel economy, [Biofriendly Corporation](#) is contributing with its [Green Plus](#)<sup>®</sup> liquid fuel catalyst, which improves fuel economy and reduces harmful emissions.

In June of 2007, the Senate voted to raise the required fuel economy average from 27.5 mpg for cars and 22.2 mpg for pickup trucks and SUVs to 35 mpg for new cars, pickup trucks and SUVs by 2020. This significantly raises fuel economy requirements for vehicle manufacturers for the first time in almost 20 years. In addition, half of their vehicles must be capable of running on 85 percent ethanol fuel by 2015. This is a controversial topic and automakers are protesting that these demands are unrealistic. (2)

Many attempts have been made, both at improving efficiency and at using alternative power sources. In the 1990s, some all-electric vehicles were manufactured, like the General Motors EV1 (3) but were later discontinued. Speculation is rife about why these electric vehicles were recalled and destroyed. (4)

A promising new development is the so-called plug-in hybrid electric vehicle (PHEV) (5), whose batteries can be charged either by plugging into a power outlet or from the built-in internal combustion engine. An example is the Chevy Volt(6), which can run 40 miles on a charge from household current, or 640 miles using gasoline to run the generator. This flexibility certainly reduces dependence on imported oil and cuts harmful emissions.

Even with these exciting new vehicles, it will take years before they will make a major impact on overall fuel consumption and air quality. Meanwhile, we can all do our part to become more energy-efficient. One company that is making inroads is Biofriendly Corporation with their Green-Plus liquid fuel catalyst, which reduces harmful emissions and improves fuel economy in internal combustion engines by promoting more complete burning of the fuel.

For more information about Green Plus visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Biofriendly](#), [Green Plus](#), [global warming](#), [liquid fuel catalyst](#), [fuel economy](#), [harmful emissions](#)

## 57. Ethanol: A Biofriendly Panacea?

10/17/2007

Most of us are aware that it is not a good idea to be heavily dependent on dwindling oil supplies from foreign countries. By mixing ethanol with gasoline, dependency on foreign oil can be reduced. We should also reduce fuel consumption, which is the [Biofriendly Corporation](#) approach. Before we look at the pros and cons of ethanol, let's take a quick look at what it is and how it is produced.

Ethanol is grain alcohol. It's the same type of alcohol you can buy at a liquor store, but in this context it is not for drinking, but for burning in automobile engines. In Brazil they make it from sugar cane, but in the U.S. it is generally made from corn. It can also be made from potatoes, wheat or other grains. The corn is ground to a pulp and with the addition of water, yeast and various enzymes is made to ferment, which turns the sugars into alcohol. The alcohol is then separated out by distillation. To prevent people from drinking the stuff, a small amount of gasoline is added. (1) Ethanol has been used as an engine fuel in some of the earliest automobiles, including the Model T Ford, which could run on either alcohol or gasoline. Most modern cars can run either on 100% gasoline or a mixture of 90% gasoline and 10% ethanol, often referred to as E10, without making any changes to the vehicle.

A fairly recent development is the so-called flex-fuel vehicle, which can run either on gasoline or a mixture of 85% alcohol and 15% gasoline (E85). While more and more flex-fuel vehicles are being produced, they are still a small proportion of the total number of vehicles on the road. Additionally, even fewer filling stations provide the E85 fuel mixture, so the vast majority of E85-compatible vehicles never get to run on anything other than gasoline.

So what are the pros and cons of ethanol?

Proponents say that producing more ethanol will reduce our dependence on foreign oil, provide a boost for Mid-West farmers and create jobs. Detractors say it takes more energy to produce the ethanol than it releases. Another factor is cost. Gasoline is cheaper. Ethanol production is heavily subsidized and even with the subsidies many ethanol farms have gone out of business. Perhaps the strongest argument from opponents is that it is impossible to provide enough ethanol to replace our gasoline consumption. Even so, while ethanol is not the complete answer, it is a healthy sign that Americans are now searching for alternatives to the oil we are running out of. The problem to be solved is how to harness some of the energy that is all around us and use it effectively in a biofriendly manner. Cutting down on fuel consumption will give us more time to do that. Biofriendly Corporation is doing something about alleviating these conditions as well. Their [Green Plus](#)<sup>®</sup> liquid fuel catalyst reduces harmful emissions from internal combustion engines and improves their fuel economy. Green Plus can be added to gasoline, diesel, biodiesel and ethanol-gasoline mixtures. For more information about the Green Plus liquid fuel catalyst, visit the Biofriendly website at [www.biofriendly.com](http://www.biofriendly.com).

Sources:

(1) <http://en.wikipedia.org/wiki/Ethanol>

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel economy](#)

## 58. Biofriendly's Quest Further Fueled by Federal Verdict

10/10/2007

In a recent Vermont district court case, federal judge William Sessions endorsed a California law that mandates lower greenhouse gas emissions from automobiles. The ruling also affects 13 other states, including Vermont, that have followed California's initiative.(1) The ruling lends support to the cause of [Biofriendly Corporation](#), whose product, the liquid fuel catalyst [Green Plus](#)<sup>®</sup> lowers harmful emissions and boosts fuel economy in internal combustion engines. Greenhouse gases are gases in the atmosphere that contribute to the warming of the earth's surface. These include water vapor, carbon dioxide, methane, nitrous oxide and ozone. While some of these gases occur naturally, others are produced by human activity, such as the burning of fossil fuels.(2) Many scientists have linked the increase in greenhouse gases in our atmosphere to global warming trends. The federal Clean Air Act explicitly grants California the right to set its own emissions standards and allows other states to adopt California's rules instead of the federal rules. The California standards require a waiver from the Environmental Protection Agency, which is currently reviewing California's petition.(3) In 2002, California passed a law requiring automakers to begin cutting carbon dioxide emissions and other greenhouse gases. Besides Vermont, other states that have adopted the same law include Connecticut, New York and Pennsylvania.

Automobile manufacturers had sued to block the standards in Vermont and California, citing many objections. Judge Sessions responded, "Plaintiffs have not carried their burden to show that compliance with the regulation is not feasible; nor have they demonstrated that it will limit consumer choice, create economic hardship for the automobile industry, cause significant job loss, or undermine safety."(4)

As to the automakers' claims that the regulatory program preempts federal law and intrudes on foreign policy, which is the province of the President and Congress, judge Sessions found both arguments "equally unpersuasive." Moreover, referring to the many existing technologies for reducing fuel consumption and harmful emissions, he considered it unlikely that the automobile industry would be unable to comply with the new standards.

One company that for many years has been a pioneer in the field of fuel enhancement is Biofriendly Corporation. Their liquid combustion catalyst, Green Plus has in extensive tests shown to reduce harmful emissions and improve efficiency through more efficient combustion.

For more information about Green Plus, visit the Biofriendly website at <http://www.biofriendly.com>.

Sources:

(1) <http://www.iht.com/articles/2007/09/13/business/enviro.php>

(2) [http://en.wikipedia.org/wiki/Greenhouse\\_gas](http://en.wikipedia.org/wiki/Greenhouse_gas)

(3) <http://www.reuters.com/article/GlobalEnvironment07/idUSN0325496020071003>

(4) <http://www.enn.com/business/commentary/23485>

Technorati Tags: [Biofriendly](#), [Green Plus](#), [liquid fuel catalyst](#), [harmful emissions](#), [fuel economy](#), [liquid combustion catalyst](#), [greenhouse gases](#), [global warming](#)

## 59. Mexico Engages in Serious Climate Change Measures and Biofriendly is Helping

10/03/2007

[An article on ClimateChange.com](#) reports that international pressure on Mexico regarding their slow climate change measures has resulted in commitments from the country to reverse the trend. At a high-profile ceremony in May 2007, Mexican president Felipe Calderón announced a new national strategy on climate change by putting on his gardening gloves. Concurrently, Mexico promised to plant 250 million trees across the country over the next 10 years as part of a plan that also incorporates moves to expand sustainable forestry by 2.6 million hectares a year, reduce fossil fuel use and increase clean energies.

“It is fantastic to see Mexico participating in the international effort to save our planet,” says Jim D’Arezzo, Senior VP of Sales and Marketing of Biofriendly Corporation. “We are also proud to be part of this effort with our Green Plus(R) liquid fuel catalyst in use in the Mexican state of Jalisco.”

The state of Jalisco, which includes Guadalajara, the country’s second-largest city, recently announced a major effort to clean up the state’s air quality. The city of Guzman, Jalisco, has already adopted Green Plus for all city vehicles, and Guadalajara, along with three other cities in the greater Guadalajara metropolitan area, have also committed to the adoption of the product.

Carbon emissions from traffic-related pollution are cited in the article as being responsible for a substantial amount of Mexico’s problem. Added to petroleum-based fuels such as gasoline or diesel fuel, Green Plus greatly reduces environmentally-harmful emissions from automobiles, trucks and ships. The problem is that hydrocarbon molecules within fuel tend to cluster, so oxygen cannot fully react with them. Green Plus’s catalytic action allows more oxygen to interact with these clusters resulting in a faster, more linear and more complete burn. The result is more engine power, more torque, better fuel economy and, most importantly, fewer environmentally-harmful emissions.

The city of Guzman has mandated that all city vehicles, private buses and taxis use fuel treated with Green Plus. Prior to the implementation of this program a certified test of the product was completed, and Ing Angel Ricardo Martinez, Director of Vehicle Environment Enforcement (Semades) for the state of Jalisco monitored and certified the pilot program that showed diesel opacity reductions of over 56%. Many further test results are available on the [Biofriendly website](#).

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Greenplus](#), [liquid fuel catalyst](#), [emission reduction](#)

## 60. Top TV Series Tackles Global Warming: Biofriendly Already There

09/24/2007

Television hero Jack Bauer is set to take on global warming in addition to his usual duties of single-handedly defending the free world against terrorists, assassins, and diabolically clever double agents. This story will be told in the coming season of Fox hit series 24(1). The 2008 season of the series will be incorporating environmentally-friendly messages into episodes as well as creating a "carbon-neutral" season finale. In a somewhat less dramatic fashion, Biofriendly Corporation has been tackling this problem for over 16 years.

"It is good to see a mainstream television series attacking this vital issue which affects us all," says Jim Arezzo, Senior VP of Sales and Marketing of Biofriendly Corporation. "It is because of the severity of problems like global warming that we at Biofriendly have spent the last 16 years and over \$25 million developing an effective solution: Green Plus® liquid fuel catalyst."

Green Plus helps solve a 100-year-old problem in the conversion of fuel to energy. The problem is that hydrocarbon molecules within fuel tend to cluster, so oxygen cannot fully react with them. Biofriendly's Green Plus liquid fuel catalyst slightly "unbundles" these hydrocarbon clusters, allowing more oxygen to interact with them resulting in a faster, more linear and more complete burn. The result is more engine power, more torque, better fuel economy and, most importantly, fewer environmentally-harmful emissions such as carbon dioxide, the main contributor to global warming.

In addition to over 4 billion proven miles of customer use, Biofriendly's Green Plus has undergone exhaustive testing by such independent laboratory organizations as California Environmental Engineering (CEE), Southwest Research Institute, and Olson EcoLogic.

Fox's efforts have not stopped at the series. Kiefer Sutherland, who portrays Jack Bauer, has also recorded a public service announcement on the effects of global climate change, and similar spots including other cast members of the series are in the works. Fox themselves have joined a growing list of major corporations in "going green" and are taking steps such as purchasing all of its energy from renewable power sources, integrating hybrid cars into its production fleet, and posting resources on the Web for viewers to learn how to reduce their own carbon use.

Biofriendly is proud to lend their name to the growing trend to save our planet.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Greenplus](#), [Liquid Fuel Catalyst](#), [global warming](#)

## 61. Biofriendly.com Becomes Even More User Friendly

09/18/2007

September 18, 2007, Covina, CA -- Biofriendly Corporation announced today the complete upgrade and revamp of its website [www.biofriendly.com](http://www.biofriendly.com). The new web home of the company that developed the revolutionary liquid combustion catalyst Green Plus<sup>®</sup> includes several new touches to make Green Plus even easier to understand and to help Biofriendly keep in communication with others who are also environmentally conscious.



The new [biofriendly.com](http://biofriendly.com) includes a complete redesign with the new corporate and product logos. The site now includes a [blog](#) that the company will use to keep track of biofriendly issues and report them to those who have an interest in the environment. There is also a complete online [brochure](#) to give a quick and simple overview of Green Plus and Biofriendly Corporation that can be easily viewed with Adobe Flash.

Perhaps the most exciting addition to biofriendly.com has to do with the consistent international growth that the company has seen. Biofriendly Corporation, now with over twenty [partners](#) on six continents is going multilingual. The website now includes a complete [Chinese](#) version, while the Spanish version, along with others, is forthcoming.

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly Corporation](#), [Green Plus](#), [Greenplus](#), [liquid combustion catalyst](#)

## 62. Fossil Fuel Catalyst Slows Fuel Consumption

09/05/2007

Announcements such as that from [Lawrence Livermore National Laboratory](#) which state that continuous use of fossil fuels, at the same rates as "business as usual" for the last several years, will have disastrous consequences such as the melting of polar ice caps, have spurred corporations and government agencies alike to begin taking stern measures to reduce the consumption of such fuels. Additionally, there is a finite amount of crude oil on the planet, and at some point it will run out. Hence, while viable alternative fuel sources are researched and found, products such as [Biofriendly's](#) Green Plus liquid fuel catalyst are vital.

"There is only so much fossil fuel to be had on our planet, and we must make it last," says Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "We must also find ways to drastically reduce the environmental harm caused by its use. Green Plus goes a long way toward assisting in both goals."

The now-famous climate and carbon cycle model simulations performed at Livermore also predicted a 14.5-degree hike in the Earth's mean temperature and a rise in ocean levels by 7 meters. And while such dire long-term predictions have been debated, the current effects of fossil fuel usage certainly cannot be denied. Simply look at the smog from any window in any large metropolitan area. The problem is that economic stability dictates that fossil fuel consumption must continue.

A partial solution is improved fuel efficiency. [Green Plus](#) added to fuel in vehicles increases fuel efficiency and reduces environmental waste. According to the U.S. Department of Energy, the thermal energy to mechanical energy efficiency of light-duty combustion engines is around 30%. Heavy-duty engines are only marginally better at 40%. The reason for this inefficiency lies at the molecular level—"oxygen is unable to fully reach fuel due to the composition of complex hydrocarbon molecule clusters. The result is an incomplete burning process, resulting in environmentally-harmful waste. Green Plus helps to slightly "unbundle" these complexes, allowing a more complete burn, reduced emissions and improved energy efficiency.

It is obvious that each and every individual and corporation must get the most out of the fossil fuel that we do have, and reduce harmful waste so that predictions such as those made by the Livermore Lab never come to pass.

Biofriendly's Green Plus is a fuel catalyst, which provides a solution to a problem we all share.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Fuel Catalyst](#)

### 63. Biofriendly Liquid Fuel Catalyst, Green Plus<sup>®</sup>, Passes Four Billion Mile Mark

08/31/2007

August 27, 2007, Covina, CA – Biofriendly Corporation announced today that its [liquid fuel catalyst](#), Green Plus, now has over four billion miles (seven billion kilometers) of safe on-road, on-ocean customer use. The biofriendly fuel enhancer, designed to reduce emissions while improving fuel economy and performance, has been available commercially since 2002 and has over fifteen years of research, development and testing behind it.

“We are very pleased to have reached this milestone,” said Bob Carroll, Chairman and CEO of Biofriendly Corporation, and one of the product’s inventors. “Our combination of certified independent laboratory test results combined with real-world use is convincing evidence that Green Plus is a solution for today’s global environmental challenges.”

Green Plus can be added to gasoline, diesel, marine fuels, heavy fuel oil and even coal. The billions of miles of successful use, along with toxicity and [emissions tests](#), including several certified, [engine “no-harm” tests](#), prove conclusively that Biofriendly’s Green Plus liquid combustion catalyst is not only effective in reducing emissions and improving fuel economy, but it is also safe for use in fuels.

#### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

[Green Plus](#) is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

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Technorati Tags: [Green Plus](#), [Biofriendly](#), [liquid fuel catalyst](#), [fuel enhancer](#), [reduce emissions](#), [fuel economy](#), [liquid combustion catalyst](#)

#### 64. National Safety Council Offers Sound Advice on Vehicle Emissions

08/22/2007

"Motor vehicles emit millions of tons of pollutants into the air each year," reads the [Auto Emissions Fact Sheet](#) on the National Safety Council's web site. The page points out that the driving of vehicles is the single most polluting activity. A liquid fuel catalyst like [Green Plus®](#) can better utilize our fuel, while reducing the adverse effect on the environment.

"Of course all of us must take measures such as reducing vehicle use, keeping vehicles in good running condition and going with newer, less polluting vehicles," says Robert W. Carroll, chairman and CEO of [Biofriendly Corporation](#). "But adding a product such as Green Plus will take pollution reduction to the next level."

When brought to a corporate or business level, the National Safety Council's advice could be (and probably is in many quarters) adopted as company policy. Implementation of company-sponsored carpooling, mandatory maintenance of company vehicles including keeping track of fuel economy, and purchasing of fuel-efficient vehicles are all vital activities. Additionally, the site advises traveling at moderate speeds and using cleaner fuels, such as reformulated or oxygenated gasoline and alternative fuels, when available.

Adding a product such as Green Plus greatly enhances such efforts. Green Plus added to fuel in vehicles increases fuel efficiency and reduces environmental waste. According to the U.S. Department of Energy, the thermal energy to mechanical energy efficiency of light-duty combustion engines is around 30%. Heavy-duty engines are only marginally better at 40%. The reason for this inefficiency lies at the molecular level—oxygen is unable to fully reach fuel due to the composition of complex hydrocarbon molecule clusters. The result is an incomplete burning process, resulting in environmentally-harmful waste. Green Plus slightly "unbundles" these complexes, allowing a more complete burn, reduced emissions and improved energy efficiency.

The National Safety Council's web page also notes that the Federal Highway Administration estimates that car operation costs between 22 and 29 cents per mile, and that idling and stop-and-go traffic costs vehicle owners an estimated 753 million gallons of gasoline a year. Such statistics highlight the difference that an effective fuel catalyst like Green Plus can make for fuel efficiency.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Fuel Catalyst](#)

## 65. Biofriendly Executive Jim D'Arezzo Recognized by the Mexican State of Jalisco

08/16/2007

[Biofriendly Corporation](#) announced today that Mr. James D'Arezzo, Senior Vice President of Sales and Marketing, has been officially recognized by the Congress of the State of Jalisco, Mexico for his work in assisting the state's Emisión Zero Program, a state initiative aimed at reducing harmful emissions.

When asked about the official recognition Mr. D'Arezzo said, "I am honored to be recognized, however it is the State of Jalisco itself that deserves the recognition. Emisión Zero is a bold and innovative program that will help all of the people of the State."

The government developed program was devised to help lower toxic emissions in the State of Jalisco, and has already begun in cities such as Guadalajara and Zapopan. The program requires government owned vehicles to produce a lower level of emissions. After months of certified testing and evaluation of available emissions reduction solutions, Biofriendly's liquid combustion catalyst [Green Plus®](#) was selected.

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus® liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States, Europe and Asia, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com)

Technorati Tags: [Biofriendly](#), [Green Plus](#), [greenplus](#), [Liquid Fuel Catalyst](#), [liquid combustion catalyst](#), [emission reduction](#)

## 66. The Long Term Scramble to Improve Fuel Combustion - Biofriendly Succeeds

07/31/2007

For over 100 years the challenge of improving the combustion of hydrocarbon-based fuels such as gasoline, diesel, and heavy fuel oil has baffled scientists worldwide. The importance of doing so cannot be overestimated: according to the U.S. Department of Energy, the thermal to mechanical energy efficiency of light-duty combustion engines is around 30%, and heavy-duty engines are only marginally better at 40%. This inefficiency results in higher fossil-fuel consumption and, most pertinent today, environmentally harmful waste. [Biofriendly's](#) Green Plus fuel catalyst, however, is stepping up to this age-old challenge and meeting it.

“With the advent of global climate change, most probably caused by carbon emissions, a product such as Green Plus could not be more vital,” said Jim D’Arezzo, Senior VP of Sales and Marketing of Biofriendly Corporation.

Many efforts to improve fuel combustion efficiency have come and gone, and still continue. In 2002, a [meeting of some of the world's top scientists](#) took place in Heidelberg, Germany simply to discuss possible options and solutions. Inventors continue to pour out claims of engines with improved efficiency, and special devices that can be added to engines, with claims to improve combustion. Hundreds of purported solutions can be found on the internet and in vehicle magazine advertisements.

Now with over 15 years of research, \$25 million spent, and over 4 billion miles of customer use, Biofriendly knows the way. The problem is that, hydrocarbon molecules tend to cluster, so oxygen cannot fully react with them. Biofriendly's Green Plus liquid fuel catalyst slightly “unbundles” these hydrocarbon clusters, allowing more oxygen to interact with them resulting in a faster, more linear and more complete burn. The result is more engine power, more torque, better fuel economy and, most importantly, fewer environmentally-harmful emissions.

Many companies and municipalities are already taking advantage. For example, the city of Guzman in Jalisco, Mexico has already adopted Green Plus for use in city vehicles, and Guadalajara, Mexico's second-largest city, along with three other cities in the greater Guadalajara metropolitan area, have also committed to the adoption of the product.

Biofriendly's Green Plus has undergone exhaustive testing by such independent laboratory organizations as California Environmental Engineering (CEE), Southwest Research Institute, and Olson EcoLogic. Test results can be found on Biofriendly's web site.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Fuel Additive](#), [Fuel Catalyst](#), [liquid fuel catalyst](#)

## 67. Can Fuel Additives Offset Higher Fuel Prices? Biofriendly Has the Answer

07/30/2007

Due to escalating fuel prices, businesses and especially consumers may be tempted by one of the many “fuel saving” offers found just about everywhere these days. Such offers may or may not be legitimate, and the Federal Trade Commission (FTC) offers [facts for consumers](#) on their web site regarding such products, what their claims may really mean and also tips for driving more efficiently. Working beyond the scope of a simple “fuel additive”, [Biofriendly's](#) Green Plus is a liquid fuel combustion catalyst, that has over 15 years of research, and more than 4 billion miles of consumer use behind it.

“We don’t make outrageous claims for our Green Plus product,” says Robert W. Carroll, Chairman and CEO of Biofriendly corporation. “We merely state the bare facts: Green Plus has been shown, in both certified testing and in consumer use, to significantly reduce emissions and improve fuel economy.” Plentiful test results can be found on Biofriendly’s web site.

Many fuel additives—and their claims—have come and gone, and there will surely be more. Acetone, for example, can be added to gasoline to boost octane levels, but can also break down the rubber seals of vehicle engines. Additionally, the 1990 Clean Air Act required some cities to use MTBE to reduce air pollution. However, MTBE has since been found to be a carcinogen. After leaking into ground water in many areas which, affected drinking water, most states have now banned MTBE.

Green Plus was designed to be extremely friendly to both engines and the environment by working at the molecular level within fuel. It slightly “unbundles” complex hydrocarbon molecule clusters to enable oxygen to better reach the fuel, causing it to burn more completely. The result is more power, more torque, better fuel economy and fewer harmful emissions.

Biofriendly’s [Green Plus](#), rather than just another fuel additive, is now being utilized as a fuel enhancement product throughout the world. It is being used in gasoline and diesel engines in vehicles ranging from small automobiles and light-duty trucks to the largest tractor-trailers and marine vessels.

Technorati Tags: [Biofriendly](#), [Green Plus](#), [Fuel Additive](#), [Fuel Catalyst](#), [liquid fuel catalyst](#)

## 68. The Science Behind Global Warming and the Biofriendly Solution

07/27/2007

While various ramifications and aspects remain in debate, the basic facts of climatic change have been established as a firm reality for some time. In 2005, the U.S. National Academy of Sciences along with 10 other National Academies of Science from around the world issued a [joint statement](#) that "the scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action." The report cites the burning of fossil fuels as a major emission source—and [Biofriendly Corporation's](#) Green Plus liquid fuel catalyst can be a major answer.

"As acknowledged by the U.S. National Academy of Science, carbon emissions are a primal cause of climactic change," said Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "Green Plus® liquid fuel catalyst greatly assists government agencies and private organizations alike in putting an end to this global problem."

A large percentage of carbon emissions come from automobiles, trucks and ships, and the basic cause has been the utilization of fossil fuels. For over 100 years, scientists have puzzled over the fact that light-duty engines only convert about 30% of the fuel they burn into mechanical energy, and heavy-duty engines are only a little better at 40%. A significant percentage of remaining emissions from the fuel is released as environmentally-harmful waste. At the root of the problem is the fact that hydrocarbon molecules within the fuel form into clusters and bundles that prohibit oxygen from reaching all of the fuel to permit complete combustion.

Green Plus mixes fully into gasoline, diesel or other hydrocarbon-based fuel and substantially increases the amount of energy produced from burned fuel. Green Plus slightly "unbundles" the hydrocarbon clusters that make up fuels so that these molecules are more fully exposed to oxygen, greatly increasing the efficiency of fuel burned. The results are improved fuel economy, more power, a more linear burn which helps to eliminate hot spots, and significantly reduced emissions. In fact, Biofriendly Corporation's Green Plus was found, in testing conducted at California Environmental Engineering (CEE), to reduce hydrocarbon emissions in light-duty vehicles by as much as 45.2%. Additional independent and certified testing has also proven that Green Plus substantially reduces emissions in heavy-duty vehicles and marine vessels.

Technorati Tags: [Biofriendly](#), [liquid combustion catalyst](#), [diesel engine fuel](#), [economy diesel additive](#), [fuel additive](#), [fuel catalyst](#), [green plus](#), [greenplus](#), [liquid fuel catalyst](#)

## 69. The Next Stage of the "Carbon Neutral" Trend: Biofriendly Green Plus

06/28/2007

For several years, numerous nonprofit groups such as [Conservation International](#) have promoted becoming "carbon neutral." Becoming carbon neutral means a business or family or even a single individual takes steps to offset their own carbon emissions through various means, such as recycling, use of more biofriendly materials, planting trees, and others. A product such as [Biofriendly Corporation's](#) liquid fuel catalyst, which greatly reduces personal and company vehicle emissions, is the next logical move in becoming carbon neutral.

"Becoming carbon neutral is a vitally important step for any person or corporation," says Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "It is one made all the easier with Green Plus liquid fuel catalyst."

Numerous corporations, individuals and even some prominent entertainment acts have become involved in carbon neutral programs. Search technology giant Google, Incorporated has just announced a major strategy to be completely carbon neutral by 2008, including plans to maximize efficiency of data centers, increase use of renewable energy, offset emissions that cannot be eliminated directly, and leverage assets to make an impact beyond the business.

[Green Plus](#) is already being utilized in sizeable programs. The state of Jalisco, Mexico, which includes Guadalajara, the country's second-largest city, recently announced a major effort to clean up the state's air quality. The city of Guzman, Jalisco, has already adopted Green Plus for all city vehicles, and Guadalajara, along with three other cities in the greater Guadalajara metropolitan area, have also committed to the adoption of the product.

Added to petroleum-based fuels such as gasoline or diesel fuel, Green Plus greatly reduces the amount of environmentally-harmful emissions from automobiles, trucks and ships. In the natural course of fuel combustion, oxygen cannot completely penetrate the hydrocarbon molecule clusters within such fuels, hence hydrocarbon molecules are not completely burned. Green Plus slightly "unbundles" the clusters and complexes so that hydrocarbon molecules are more fully exposed to the oxygen. Since unburned hydrocarbons are the major source of harmful carbon emissions, environmental impact is substantially lowered, and in addition Green Plus results in more efficient use of energy within the engine.

Carbon neutral programs are the next important wave for corporations in preserving our planet, and Biofriendly's Green Plus [liquid fuel catalyst](#) can be a vital factor in such programs.

Technorati Tags: [Biofriendly](#), [green plus](#), [liquid fuel catalyst](#), [fuel catalyst](#), [greenplus](#)

## 70. EPA Spending 118 Million to Eliminate Greenhouse Gas Emissions

06/26/2007

The Environmental Protection Agency (EPA) recently released their \$7.2 billion fiscal year 2008 budget, \$118 million of which is earmarked for climate change programs to reduce U.S. greenhouse gas emissions. The programs build upon partnership efforts and contribute to the president's plan to reduce greenhouse gas intensity by 18 percent in 2012. [Biofriendly Corporation](#) now markets a product with which, starting now, greenhouse emissions can be drastically reduced, greatly contributing to this effort.

“As can be seen by the EPA’s budget, government agencies are now making the hard choices in relation to greenhouse gas emissions,” said Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. “We’re already well on board with our Green Plus liquid fuel catalyst.”

It’s a well-known fact that a large percentage of greenhouse gas emissions come from motor vehicles and marine vessels. These particular emissions occur as part of the combustion of gasoline, diesel fuel and other conventional hydrocarbon-based fuels—hydrocarbon molecules tend to bundle together into clusters which inhibit the amount of oxygen that can react with these hydrocarbons, keeping them from burning more completely. These incompletely burned hydrocarbons are released into the atmosphere as CO<sub>2</sub>, NO<sub>x</sub>, particulate matter and more, contributing to the environmental damage. [Green Plus](#) fully mixes with fuel, “unbundles” these complexes, and helps the hydrocarbons to burn more completely. Fuel efficiency and power are increased, the burning process is made cooler, and some emissions can be reduced by as much as 25%.

Interestingly, the [EPA’s budget](#), in addition to the \$118 million to eliminate greenhouse gas emissions, also includes \$35 million for National Clean Diesel Campaign grants to help meet the mandates of the Energy Act and promote more energy efficient technologies. Any vehicle using diesel fuel can greatly benefit from Green Plus as well.

The product has undergone rigorous testing on five continents, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Biofriendly Corporation’s Green Plusliquid fuel catalyst is designed for use in diesel, gasoline, heavy fuel oil, coal and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

Technorati Tags: [Biofriendly](#), [greenplus](#), [green plus](#), [liquid fuel catalyst](#), [liquid fuel combustion](#), [fuel additive](#), [fuel catalyst](#)

## 71. What Exactly Are Greenhouse Gases, and How Does Biofriendly Help?

06/20/2007

Per the U.S. Energy Information Administration web site, there are a number of chemical compounds found in the Earth's atmosphere that act as greenhouse gases. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation, or heat. Over time, the amount of energy sent from the sun to the Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of the Earth's surface roughly constant, but greenhouse gases absorb this infrared radiation and trap it in the atmosphere, causing conditions such as climactic change. Biofriendly Corporation's Green Plus liquid fuel catalyst greatly assists in easing greenhouse gas emissions, and assists in restoring the proper balance.

"Carbon dioxide emissions, resulting from the use of petroleum, represent 42 percent of total U.S. human-made greenhouse gas emissions," says Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "We are very pleased to offer a product which reduces such emissions and contributes to restoring our atmosphere to a more natural state."

According to the U.S.I.A. web site, concentrations of carbon dioxide in the atmosphere are naturally regulated by numerous processes collectively known as the "carbon cycle." "While these natural processes can absorb some of the net 6.1 billion metric tons of man-made carbon dioxide emissions produced each year, an estimated 3.2 billion metric tons is added to the atmosphere annually. The Earth's positive imbalance between emissions and absorption results in the continuing growth in greenhouse gases in the atmosphere.

A large percentage of carbon dioxide emissions come from automobiles, trucks and ships. The reason these vehicles create such a large amount of carbon dioxide emissions is that they only convert 30-40% of the fuel burned into energy, some of the wasted energy is converted into exhaust emissions such as carbon dioxide.

Green Plus converts more fuel into energy with a "positive domino effect" – that is, a more complete burn, a more linear burn and a cooler burn. This in turn delivers more power, more torque, better fuel economy and fewer harmful emissions. The best way to reduce carbon dioxide emissions is to burn less fuel and Green Plus can help to do this.

Technorati Tags: Biofriendly, liquid combustion catalyst, diesel engine fuel, economy diesel additive, fuel additive, fuel catalyst, green plus, greenplus, liquid fuel catalyst

## 72. The Science Behind Global Warming And the Biofriendly Solution

06/07/2007

While various ramifications and aspects remain in debate, the basic facts of climatic change have been established as a firm reality for some time. In 2005, the U.S. National Academy of Sciences along with 10 other National Academies of Science from around the world issued a [joint statement](#) that "the scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action." The report cites the burning of fossil fuels as a major emission source—and Biofriendly Corporation's Green Plus liquid fuel catalyst can be a major answer.

"As acknowledged by the U.S. National Academy of Science, carbon emissions are a primal cause of climactic change," said Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "Green Plus® [liquid fuel catalyst](#) greatly assists government agencies and private organizations alike in putting an end to this global problem."

A large percentage of carbon emissions come from automobiles, trucks and ships, and the basic cause has been the utilization of fossil fuels. For over 100 years, scientists have puzzled over the fact that light-duty engines only convert about 30% of the fuel they burn into mechanical energy, and heavy-duty engines are only a little better at 40%. A significant percentage of remaining emissions from the fuel is released as environmentally-harmful waste. At the root of the problem is the fact that hydrocarbon molecules within the fuel form into clusters and bundles that prohibit oxygen from reaching all of the fuel to permit complete combustion.

[Green Plus](#) mixes fully into gasoline, diesel or other hydrocarbon-based fuel and substantially increases the amount of energy produced from burned fuel. Green Plus slightly "unbundles" the hydrocarbon clusters that make up fuels so that these molecules are more fully exposed to oxygen, greatly increasing the efficiency of fuel burned. The results are improved fuel economy, more power, a more linear burn which helps to eliminate hot spots, and significantly reduced emissions.

In fact, [Biofriendly Corporation's](#) Green Plus was found, in testing conducted at California Environmental Engineering (CEE), to reduce hydrocarbon emissions in light-duty vehicles by as much as 45.2%. Additional independent and certified testing has also proven that Green Plus substantially reduces emissions in heavy-duty vehicles and marine vessels.

Technorati Tags: [Biofriendly](#), [liquid combustion catalyst](#), [diesel engine fuel](#), [economy diesel additive](#), [fuel additive](#), [fuel catalyst](#), [green plus](#), [greenplus](#), [liquid fuel catalyst](#)

### 73. NOx Emissions from Ships a Major Source of Air Pollution on the California Coast

06/06/2007

The California coastline is one of the most beautiful in the world. But instead of clean, fresh sea air, the cities and towns along the coast suffer from serious air pollution created by nitrogen oxides (NOx) emissions. Large ocean-going ships are one of the last unregulated sources of air pollution and, according to Santa Barbara County Air Pollution Control District (APCD) 2001 Clean Air Plan, are responsible for nearly 45 percent of the NOx emissions emitted along the coast—more than all road vehicles combined. By 2015, the Plan projects that NOx emissions from ships will be almost five times greater than those from on-road motor vehicles, and comprise more than 60 percent of the total NOx emissions inventory.

As a direct result of California's role as a major point of entry and departure for trade between the U.S. and Asia, there has been a remarkable increase in the number and size of ships plying their trade along this coastline. The larger vessels use massive two-stroke engines that can produce as much power as a small power plant and burn a heavy, dirty fuel oil.

A NOx Technical Code was adopted at a conference held in September 1997 under the auspices of the International Maritime Organization (IMO), the United Nations agency concerned with the safety of shipping and the prevention of marine pollution. According to material presented at a 2006 meeting of the California Air Resources Board, ship emissions are expected to double by 2020 and current international standards are seen as inadequate. The IMO and the U.S.

Environmental Protection Agency (EPA) were expected to establish stricter air pollution standards for large ships in the next few months, but both these initiatives have run into delays.

"California has a beautiful coastline and offers a unique lifestyle. We should be doing everything possible to protect it," said Bob Carroll, CEO of [Biofriendly](#), a California corporation that manufactures Green Plus®, a [liquid fuel catalyst](#) that reduces NOx emissions.

"There are cost-effective technologies on the market today that could significantly reduce these emissions and the effect ships are having on air pollution in the region."

Technorati Tags: [Biofriendly](#), [liquid combustion catalyst](#), [diesel engine fuel](#), [economy diesel additive](#), [fuel additive](#), [fuel catalyst](#), [green plus](#), [greenplus](#), [liquid fuel catalyst](#)

#### 74. EPA Urged to Clean Up Toxic Pollution from Diesel Ships and Trains

05/24/2007

Environmental Defense, a leading environmental group, has urged the U.S. Environmental Protection Agency (EPA) to finalize overdue new standards to reduce toxic pollution from diesel trains and ships by the end of the year. The new emission standards would apply to the nation's fleet of diesel locomotive engines, tugs, barges, ferries and recreational marine engines. The purpose of the new controls aims to reduce particulate pollution and smog-forming nitrogen oxides (NOx) from each engine by 80-95 percent.

NOx emissions cause a wide variety of health and environmental impacts. Children, people with lung diseases such as asthma, and people who work or exercise outside are susceptible to adverse effects such as damage to lung tissue and reduction in lung function. Ozone can be transported by wind currents and cause health impacts far from original sources.

Other impacts include damaged vegetation and reduced crop yields because of various compounds and derivatives in the family of nitrogen oxides, including nitrogen dioxide, nitric acid, nitrous oxide, nitrates, and nitric oxide.

"Trains and ships have long been a subject of interest for kids, but in fact they are producing tons of pollution that is a threat to their health," says Bob Carroll, CEO of the Biofriendly Corporation, manufacturer of Green Plus, a liquid fuel catalyst that has been proven to enhance fuel economy and lower harmful emissions. Biofriendly's Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels.

In 2006, locomotives released as much smog -forming pollution (nitrogen oxides) as 120 coal-fired power plants and as much particulate pollution as 70 coal-fired plants each year. Commercial shipping is responsible for about 1 million tons of smog-forming nitrogen oxides (NOx) and 40,000 tons of particulate pollution. Since diesel engines last for decades, there is a pressing need to clean up particulate and smog-forming pollution from both locomotive and marine existing engines when they are rebuilt.

Finding new "biofriendly" solutions that will lower the NOx emissions from locomotive and marine engines will go a long way towards fulfilling the standards on toxic pollution from diesel engines called for by environmental groups.

Technorati Tags: Biofriendly, liquid combustion catalyst, diesel engine fuel, economy diesel additive, fuel additive, fuel catalyst, green plus, greenplus, liquid fuel catalyst

## 75. Choice of Fuel Affects Emissions and Air Quality

05/23/2007

According to the US Environmental Protection Agency ([www.epa.gov/cleandiesel/](http://www.epa.gov/cleandiesel/)) if one third of all light-duty vehicles in the US today were to use diesel engines, the US would save about 1.4 million barrels of oil a day. With the price of gas climbing each week and the President's challenge to reduce dependence on foreign oil, that sounds very attractive.

Gas prices are not the only criteria however. Global warming, climate change and air quality are high on the list of issues tied to fuel choice. The Strategy Analytics Automotive Electronics Service report, "Diesel Challenges Hybrids in the US," shows upside potential for new diesel technologies allied with the availability of ultra-low sulfur diesel fuel in generating increased light-duty diesel vehicle sales across the US.

Diesel cars are extremely popular with European consumers wanting good fuel economy and there's increasing interest in the US. Automakers are looking toward diesel-electric hybrid powertrains, but the ever-tighter emissions standards, requiring the use of more expensive exhaust-control technology on diesels, which generally emit more pollutants than gasoline engines, are a problem. In October of 2006, the Environmental Protection Agency, (EPA) began requiring most diesel fuel used in the U.S. to have sulfur levels that do not exceed 15 parts-per-million (ppm), which represents approximately a 95 percent reduction from previous levels. The report predicts that once the latest reduced emission diesel engines have been approved diesel will challenge hybrid vehicles for the more cost conscious "green" consumers. One solution that could ease this dilemma is the development of fuel catalyst solutions that significantly reduce the NOx emissions from diesel (NOx is the primary component of smog). California Environmental Engineering (CEE), one of the few EPA and California Air Resources Board (CARB)-accepted laboratories in the country, tested the [liquid fuel catalyst](#) Green Plus on a CARB-certified Detroit Diesel Series 60 heavy-duty engine that had recently been rebuilt and already produced emissions levels that were close to or significantly below the emissions standards for CARB. With the addition of [Green Plus](#) to the fuel, the emissions were reduced even further. Volatile Hydrocarbons were reduced an average of 10.64%; Nitrogen Oxides were reduced 5.09%; and Total Particulates were reduced 8.35%. In addition, fuel economy was determined to improve 5% during a test simulating a typical over-the-road driving mode. CEE deemed the results "significant and noteworthy."

"The AVL Urban 8-mode test is extremely challenging, making it very difficult to produce lower emissions," said Bob Carroll, Chairman and CEO of [Biofriendly Corporation](#). "The fact that Green Plus improved the results this much on an exceptionally clean engine under these test conditions supports the much stronger results we achieve in the real world, where most diesel truck engines are far dirtier." If the emissions and pollution issue can be solved, diesel-electric hybrids could be a breakthrough technology that frees the US from dependence on foreign oil and protects the health of future generations.

Technorati Tags: [Biofriendly](#), [liquid combustion catalyst](#), [diesel engine fuel](#), [economy diesel additive](#), [fuel additive](#), [fuel catalyst](#), [green plus](#), [greenplus](#), [liquid fuel catalyst](#)

## 76. CARB Planning to Reduce NOx Emissions from Diesel Trucks

05/21/2007

A recent editorial in the San Jose Mercury News focused on the pollution from diesel engines and the effect this is having on California's air quality. "When it comes to air pollution from vehicles, it doesn't get more noxious than the soot from diesel engines. The black particles accumulate in people's lungs, contributing to asthma, heart problems and thousands of deaths in California every year.

After more than a year and a half of crafting the language that will constitute the new off-road diesel equipment regulations, the California Air Resources Board (CARB) will meet in Del Mar on May 25 to decide whether to adopt this language which targets what the Mercury calls 'smoke-belching construction equipment - bulldozers, graders and the like - along with other "off-road" vehicles used at airports, ski resorts and warehouses.

Regulators would have to work with affected industries to find ways to ease the expense of retrofitting or replacing nearly 180,000 vehicles by 2025. Cost estimates run from \$3 billion to \$13 billion - a sum that could make this the most expensive air regulation in California history, says the Mercury editorial.

The proposed CARB regulations, which have been revised multiple times, require a contractor's diesel engine fleet to meet fleet average emission rate targets for particulate matter (PM). Large and medium fleets (greater than 1,000 horsepower) would also be required to meet fleet average emission rate targets for oxides of nitrogen (NOx). Both targets decline over time, requiring fleets to reduce their emissions even further.

According to these proposed regulations a fleet that is unable to meet the NOx target, would have to turn over more than 10 percent of its fleet per year. Turn over, as defined by CARB, means to re-power with a cleaner engine, replace a vehicle with a new or used vehicle, designate as low-use or decrease fleet size.

"With the current state of air quality in California, these proposed regulations are a move in the right direction," said Bob Carroll, CEO of the [Biofriendly Corporation](#). "NOx emissions are a threat to the health of Californians and cost effective methods of reducing these emissions need to be found and implemented."

Green Plus®, the [liquid fuel catalyst](#) produced by Biofriendly is currently in use in Mexico and other countries that aim to reduce NOx emissions. Working at the molecular level to slightly "unbundle" complex hydrocarbon molecule clusters it enables existing oxygen to reach the fuel and react with the fuel more easily. Improving combustion processes results in a "positive domino effect" – that is, a more complete burn, a more linear burn and a cooler burn. This in turn delivers more power, more torque, better fuel economy and fewer harmful emissions.

Technorati Tags: [Biofriendly](#), [greenplus](#), [green plus](#), [liquid fuel catalyst](#), [liquid fuel combustion](#), [fuel additive](#), [fuel catalyst](#)

77. [Biofriendly's Sister Company Now Listed in UK Vehicle Certification Agency Register](#)

**Green Plus Laboratory is Listed in UK Vehicle Certification Agency Register**

**March 2, 2007** –London, England – Green Plus Limited, sister company of Biofriendly Corporation of California, announced today that its Aveley Emissions Laboratory (AEL) has been listed in the Vehicle Certification Agency (VCA) Facility Appraisal Register, having been appraised in accordance with VCA internal quality procedure WI 03-101. This indicates the laboratory’s acceptability for official witnessed tests and/or Conformity of Production (COP) purposes to VCA engineers. This means that the lab has met rigorous standardization and quality control requirements set by the UK and EU governments. Officially witnessed emissions tests conducted at the laboratory will now be recognized by government approval authorities. Green Plus Limited acquired the lab from the Ford Motor Company in 2006.

“We have invested heavily in refurbishing the facility so that it is state of the art,” said Noel Carroll, Managing Director of Green Plus Limited. “We can now conduct precise measurements of vehicle emissions to the Euro 4 standard.”

Tony French, who previously managed the Ford Motor Company laboratory for over 20 years and who is now managing the Aveley Emissions Laboratory said, “We have already begun emissions testing work with clients, and they have found that our systems will save them time and money due to the precision and the quality of the components. We’re pleased that VCA has recognized the lab.” French and two other managers, Alan Snow and Bill Young have over 50 years of combined emissions test experience.

**About Biofriendly Corporation and Green Plus**

AEL is located at South Ockendon, Essex near London, the 24,000 square foot facility is also used to test and validate the company’s liquid fuel combustion catalyst, also named Green Plus®. Green Plus is the world’s most effective and economical solution for significantly improving fuel economy and reducing harmful emissions.

Under development for over 15 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, smoother and more linear burn which results in greater mechanical efficiency. The product has undergone rigorous testing on five continents, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline, heavy fuel oil, coal and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

<http://www.aveleyemissionslaboratory.com/da/41773>

## 78. Alarming U.N. Report on Global Warming Due -- But Biofriendly Corporation is Reversing the Trend

02/14/2007

A U.N. Intergovernmental Panel on Climate Change is shortly due to release Climate Change 2007, a report in which 2,500 scientists from 130 countries indicate that the current potentially catastrophic trend towards global warming has been induced by, among other factors, the long-term use of fossil fuel. Fortunately, Los Angeles area-based [Biofriendly Corporation](#) has a product that contributes to reversing this trend.

"Global warming is a crisis which affects each and every one of us," said Robert W. Carroll, Chairman and CEO of Biofriendly Corporation. "Fortunately, our Green Plus liquid fuel catalyst can also assist each and every one of us to do something about it."

Automobiles are a major source of greenhouse gas emissions, and [Green Plus](#) was found in testing by California Environmental Engineering (CEE) to reduce emissions in light-duty vehicles by as much as 45.2 percent. The product has also been tested extensively and found to substantially reduce emissions in heavy-duty vehicles and marine vessels.

The product mixes fully into gasoline, diesel or other hydrocarbon-based fuel and substantially increases the amount of fuel actually burned. Environmentally harmful emissions result from hydrocarbon molecules within fuel forming into clusters and bundles, prohibiting oxygen from entering them and allowing them to fully burn. Green Plus slightly "unbundles" these clusters and complexes so that the molecules are more fully exposed to the oxygen, greatly increasing the quantity of fuel burned. The results are improved fuel efficiency, more power, a linear burning process that eliminates hot spots, and significantly reduced emissions.

Major metropolitan areas, concerned not only about global warming but also about their own air quality, are beginning to take notice and adopt the product. The city of Guzman, Mexico recently adopted Green Plus for all official vehicles, and Guadalajara, in the same state of Jalisco and Mexico's second-largest city, has also committed with three other Mexican cities in the greater Guadalajara metropolitan area to utilize the product.

Biofriendly Corporation's Green Plus liquid fuel catalyst is designed for use in diesel, gasoline, heavy fuel oil, coal and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information including extensive test results, please visit [www.biofriendly.com](http://www.biofriendly.com).

## 79. NOx Emissions Affecting California Air Quality

01/30/2007

Despite concerted efforts to reduce [harmful emissions](#) and improve air quality, California still holds the top three positions in the air pollution charts. While the Carl Moyer Program, begun in 1999, has made significant near term reductions in diesel NOx emissions by providing funds to diesel engine owners who clean up their engines above and beyond what is required by law, more needs to be done. According to the Union of Concerned Scientists website the more than 1.2 million diesel engines in operation in California powering cars, trucks, buses, off-road construction and agriculture equipment, trains, and ships, are still pumping out more than 1,462 tons per day (tpd) of NOx and 66 tpd of PM in California.

Each of these engines is responsible for producing tons of smog-forming nitrogen oxides (NOx) and toxic soot (particulate matter or PM) over their lifetime. In fact, while heavy-duty engines account for only 5% of California's vehicles, they produce approximately 40% of the state's NOx emissions, says the California Air Resources Board. (CARB) The health risks from diesel exhaust are severe and estimates that 70% of the airborne cancer risk in the state is attributable to diesel PM, prompting them to identify diesel exhaust as a toxic air contaminant.

One solution to these harmful emissions being used effectively across the border in Mexico is Green Plus®, a liquid fuel catalyst. [Green Plus](#) has been through the rigorous American Society for Testing and Materials (ASTM) tests, conducted with diesel fuel by an internationally recognized independent research and testing laboratory in the U.S. These tests and others concluded that Green Plus causes no harm to engines or engine components and it produces improved power output and a more linear burn, thus reducing emissions.

"With so much attention being placed on the health risks associated with NOx emissions the consistent test results across a wide range of vehicles, fuels, ships and other combustion devices are most encouraging," said Bill Carroll, Executive Vice-President and Senior Technical Officer of [Biofriendly Corporation](#). "These tests continue to confirm the efficacy of our liquid fuel catalyst in reducing the harmful NOx emissions that negatively affect our air quality."

# GREEN PLUS

## 80. Biofriendly's Green Plus Fuel Catalyst To Be Used By Four More Cities In Mexico

01/24/2007

[Biofriendly Corporation](#) announced today that four additional cities in Mexico will use the company's Green Plus® liquid fuel combustion catalyst to reduce air pollution and improve the air quality. The municipalities include Guadalajara, Mexico's second largest city.

Robert W. Carroll, Chairman and CEO of Biofriendly Corporation said, "California knows what harmful emissions can do to air quality and it is incumbent upon us as good neighbors to be concerned about the environment south of our border too. We're proud that a California company like Biofriendly can assist Mexico to reduce harmful emissions."

Four newly elected mayors who have agreed to the Letter of Commitment include the mayors of Guadalajara, Zapopan, Tlaquepaque and Tonalá. These cities make up a majority of the greater Guadalajara metropolitan area and represent a population of over 4 million people.

Emisión Zero is a program introduced by the State of Jalisco in 2004 to address growing concerns over air quality in Mexico. Biofriendly's Green Plus has been tested extensively by state and local authorities and has been proven to significantly reduce harmful emissions and improve fuel economy. Other aspects of the Emision Zero program include certification and monitoring of vehicles that become part of the Controlled Tune-up Program, and the use of lower emission vehicles and alternative fuels.

Congressman Luis Alejandro Rodriguez, President of the Commission on Environmental and Water Development Resources for the Congress of Jalisco said, "Emisión Zero has been gaining momentum. Now, with the commitment of the major cities of the Guadalajara area we can really begin to make a difference in the environment." By signing this agreement, all of the gasoline and diesel-powered official vehicles in these cities will use Green Plus to reduce pollution.

The agreement will be signed by Dr. Alfonso Petersen Farah, the mayor of Guadalajara; Ing Juan Sanchez Aldana, mayor of Zapopan; Lic. Jose Hernan Cotes Berumen, mayor of Tlaquepaque; Lic. Jorge Vizcarra, mayor of Tonalá; and Mr. Adolpho Farland, President of Correct Action International the official distributor of Green Plus in Latin America. Also in support of the program are; Congressman Jorge Urdapilleta; Ing. Raul Huerta Romero, Coordinator of Environmental Programs of the State Congress of Jalisco; Ing Salvador Rosas Pelayo, General Manager of Warehouse and Distribution for PEMEX, Pacific Area.

### About Biofriendly Corporation and Green Plus

Under development for over 15 years, Green Plus [liquid fuel combustion catalyst](#) achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing on five continents, and has over four billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Green Plus is designed for use in diesel, gasoline, heavy fuel oil, coal and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

### 81. Biofriendly Liquid Fuel Catalyst Tested By U.S. EPA and California Air Resources Board Accepted Laboratory

01/16/2007

The completion of initial tests by California Environmental Engineering (CEE) determined that exhaust emissions of a light-duty gasoline automobile showed significant reductions in harmful emissions when using the [Biofriendly](#) Corporation's liquid fuel combustion catalyst Green Plus®. Reductions of 39.9% in total hydrocarbons (HC), 45.2% in Carbon Monoxide (CO) and 9.4% reduction in Nitrogen Oxides (NOx) were achieved. At the same time, Green Plus demonstrated an improvement in fuel economy.

California Environmental Engineering (CEE) is an independent EPA recognized and CARB- accepted laboratory that has provided vehicle testing for many major automotive vehicle manufacturers. CEE is one of 31 Labs recognized nationally by the Environmental Protection Agency (EPA) as capable of performing emission testing in accordance with the Code of Federal Regulations (CFR). CEE participates yearly in the multi-laboratory cross check program sponsored by the California Air Resources Board (CARB) and typically registers in the top ten percent of test facilities that closely emulate the average emission readings of all participating Labs.

Mr. Joe Jones, Program Director for CEE wrote in his report, "The results for all the gaseous tailpipe emissions exhibit a significant improvement between the Baseline test(s) and those after mileage accumulation using Biofriendly's liquid catalyst 'GREEN PLUS'. Additionally, the improvement in the fuel economy is considered significant for a vehicle of its age and accumulated miles, especially since the vehicle was already running on a high-octane well-oxygenated fuel (indolene).

An overall reduction in emissions with mileage accumulation using the Biofriendly liquid catalyst is apparent. The substantial decrease in NOx and HC emissions is considered conclusive and noteworthy.

We believe the test data verifies the viability of the technology and that more dramatic improvement could be achieved through additional testing." The test protocol employed a chassis dynamometer and used the HOT-505 test procedure (First phase of a Federal Test Procedure-75 emissions test) to determine the exhaust emissions during the test cycle. This test includes low and high speeds and simulates hill climbing and other driving conditions during the 505 second run."

Under development for over 10 years, Green Plus employs nanotechnology (working at the molecular level) to achieve a breakthrough combination of improved fuel economy and reduced emissions. Biofriendly's Green Plus is a [liquid combustion catalyst](#) that is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over 4 billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

## 82. Green Plus Mandated in Mexican City of Guzman to Help Clean Air

01/15/2007

Biofriendly Corporation announced that the Mexican City of Guzman (population 120,000) has mandated that all city vehicles, private buses and taxis use fuel (gasoline and diesel) treated with Green Plus® liquid fuel combustion catalyst. Green Plus is designed to reduce harmful emissions and improve performance. Guzman is the first city in Mexico to implement the "Emission Zero" program recently passed by the State of Jalisco.

The public announcement was made by the President (Mayor) of the City of Guzman with the full support of the City Council (100% vote) in the presence of officials from other Mexican states and members of the Jalisco Congress and American Consul. Also present were representatives of major corporations including Coca-Cola, Bimbo, Comision Federal de Electricidad and Telefonos de Mexico as well as the Regional Director for Pemex, the national oil company.

Congressman (Diputado) Luis Alejandro Rodriguez, President of the State of Jalisco Congressional Environmental Commission said, "The City of Guzman inaugurates the start of our state program "EMISION ZERO" to clean up the air in Jalisco. We intend to be proactive about cleaning up our environment and we expect this to become a model for all of Mexico."

The Mayor of Guzman, Umberto Alvarez Gonzales said, "We have to stop robbing the clean air from our children and citizens, we are all breathing the same dirty air. "EMISION ZERO" gives us a chance to reverse this trend."

Prior to the implementation of this program a certified test was completed. Ing Angel Ricardo Martinez, Director of Vehicle Environment Enforcement (Semades) for the state of Jalisco monitored and certified the pilot program that showed diesel opacity reductions of over 56%.

Correct Action International; the distributor of Green Plus in Latin America has been invited to meet with another state congress and other cities that want to adopt the "EMISION ZERO" program.

The state of Jalisco includes famous cities like Guadalajara, Puerto Vallarta, Tequila, and now the City of Guzman, the first city to take action in support of "EMISION ZERO" using Biofriendly's Green Plus to clean up the air.

### About Biofriendly Corporation and Green Plus

Under development for over 10 years, Green Plus is a product that employs nanotechnology (working at the molecular level) to achieve a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over 350 million miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Biofriendly Corporation has introduced Green Plus, the world's most effective solution for significantly improving fuel economy and reducing harmful emissions. Green Plus is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit [www.biofriendly.com](http://www.biofriendly.com).

### 83. Green Plus Fuel Catalyst Reduces Emissions and Improves Fuel Economy in Heavy-Duty Diesel Truck Engine Test

01/14/2007

Biofriendly Corporation announced that it has completed a test on a heavy-duty diesel truck engine that successfully demonstrated the ability of its liquid fuel combustion catalyst, Green Plus®, to lower harmful emissions while improving fuel economy. The test was funded by a grant from the State of Texas Council on Environmental Quality. California Environmental Engineering (CEE), one of the few EPA and California Air Resources Board (CARB)-certified laboratories in the country, conducted the test.

CEE performed the test on a CARB-certified Detroit Diesel Series 60 heavy-duty engine. This engine was recently rebuilt and already produced emissions levels that were close to or significantly below the emissions standards for CARB. With the addition of Green Plus to the fuel, the emissions were further reduced. Volatile Hydrocarbons were reduced an average of 10.64%; Nitrogen Oxides were reduced 5.09%; and Total Particulates were reduced 8.35%. In addition, fuel economy was determined to improve 5% during a test simulating a typical over-the-road driving mode. CEE deemed the results "significant and noteworthy."

The testing was conducted using the AVL Urban 8-mode steady state cycle with and without Green Plus. This 8-mode test is designed to simulate the full United States EPA Federal Test Procedure. "We are very pleased with the test results," said Bob Carroll, Chairman and CEO of Biofriendly Corporation. "The AVL Urban 8-mode test is extremely challenging, making it very difficult to produce lower emissions. The fact that Green Plus improved the results this much on an exceptionally clean engine under these test conditions supports the much stronger results we achieve in the real world, where engines are far dirtier."

Mr. Carroll added that the company is looking forward to completing full EPA and CARB verification of Green Plus for use in diesel and gasoline engines.

Credentials of California Environmental Engineering (CEE) - Located in Santa Ana, California, CEE is an independent laboratory that routinely provides testing support for vehicle manufacturers, agencies of the State of California (CARB), the US Federal Government (EPA) and private institutions. CEE participates yearly in a multi-laboratory cross check program sponsored by CARB and typically registers in the top ten per cent of test facilities that closely emulate the average emission readings of all participating Labs. The laboratory is fully CARB certified and EPA registered to perform independent testing of many types of engines both in steady state and transient cycle test series.

Green Plus - Under development for over 10 years, Green Plus is a new product that employs nanotechnology (working at the molecular level) to achieve a breakthrough combination of improved fuel economy and reduced emissions. Green Plus is a liquid combustion catalyst that is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over 50 million miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

#### 84. Significant Reductions in Air Pollution Attained by Petroecuador in Test of Green Plus TM Fuel Catalyst

01/10/2007

Biofriendly Corporation announced the results of tests conducted by Petroecuador, the national oil company of Ecuador. The tests were designed to evaluate the effectiveness of Green Plus TM in reducing major combustion gas emissions in diesel engines. The Research Technology Development Unit of Petroecuador supervised the tests, with the participation of Chemeng, a government approved testing organization.

The Petroecuador report concluded that Green Plus TM demonstrated an ability to significantly reduce the four major toxic and gaseous emissions of diesel fuel combustion that can lead to serious health problems and climate-changing effects.

The tests were conducted on diesel buses as well as stationary engines utilizing certified test equipment. The results of the stationary engines showed Carbon Monoxide (CO) emissions dropped by an average of 52.27%, Nitrogen Oxide (NOx) emissions decreased by an average of 43.57%, and Sulfur Dioxide (SOx) emissions decreased by an average of 50.06%. On the mobile source bus engines, "The opacity of the smoke produced in the emissions of the two buses was reduced by levels of more than 90% in periods of five to fifteen days," according to Petroecuador, Carbon Monoxide was reduced by an average of 54.98%, Nitrogen Oxides reduced by 53 %, and Sulfur Dioxide by 4.66%.

According to the report, there is an "Urgent need to improve air quality" in Ecuador. Immediate and long-term reductions of respiratory diseases; decreases in the number of vehicles that emit large quantities of smoke; cleaner engines, buildings and cities; more tourism as a result of better air quality; and improved efficiency - are all potential benefits of using the Green Plus TM fuel catalyst.

Under development for over 10 years, Green Plus TM is a new product that employs nanotechnology (working at the molecular level) to achieve a breakthrough combination of improved fuel economy and reduced emissions. Green Plus TM is a liquid combustion catalyst that is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over 75 million miles of on-road/on-ocean use. Green Plus TM is now available commercially in Ecuador.

85. Biofriendly's Green Plus Achieves Significant Reductions in Emissions While Improving Fuel Economy

01/09/2007

Certified tests by the Beijing Automobile Research Institute conducted on a 4-cylinder passenger automobile, showed significant reductions in harmful emissions as well as a substantial improvement in fuel economy when using biofriendly Corporation's Green Plus™ liquid fuel combustion catalyst. Test results showed reductions of 29.7% in carbon monoxide, 27.9% in total hydrocarbons, 28.2% in nitrogen oxides and 10.1% in carbon dioxide. At the same time fuel consumption decreased by 6.4%. The tests were performed on a Clayton ECE-50 chassis dynamometer using a 2002 China FAW passenger car as the test vehicle.

"These test results from a certified national laboratory further confirm the worldwide benefits of our Green Plus liquid fuel catalyst," said Robert Carroll, Chairman and CEO of Biofriendly. "We're pleased with the results from China's automobile test laboratory. By adding Green Plus to the fuel, we are striving to attain emissions levels that are similar to the 'ultra clean' fuels found in areas such as California and Scandinavia. Green Plus provides more complete combustion, which lowers emissions, increases power and improves fuel economy.

More complete combustion also helps improve the performance and extend the life of other systems, such as catalytic converters on automobiles and exhaust gas re-circulation and particulate traps on trucks to achieve the lower emissions governments are seeking."

Under development for over 10 years, Green Plus is a new product that employs nanotechnology (working at the molecular level) to achieve a breakthrough combination of improved fuel economy and reduced emissions. Green Plus is a liquid combustion catalyst that is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over 75 million miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

GREEN PLUS

## 86. Green Plus Liquid Fuel Catalyst Shows Improved Combustion Efficiency In Coal-Fired Power Generator

01/08/2007

The recent report by E.ON Power Technology in the United Kingdom shows details of testing done on Green Plus, a [liquid fuel catalyst](#) that reduces harmful emissions, in a test boiler of a coal-fired power plant. Green Plus is a sister company to the Biofriendly Corporation in the US. The purpose of the test was to determine how the fuel catalyst's ability to improve combustion would affect the efficiency of the power plant. The report shows promising results when Green Plus is added to a coal-fired generator.

The report states, "The Green Plus Catalyst showed benefits in LOI (Loss on Ignition) carbon burnout, with no increase in NOx (Nitrogen Oxides) and in some cases, a small NOx reduction." LOI defines the amount of unburned carbon in fly ash. A lower LOI represents less carbon residue in the ash, which means the boiler is operating more efficiently, with lower emissions. During the test, Green Plus lowered LOI by at least 20%.

Alan Thompson, a member of the Test & Measurement Group from Power Technology stated, "This was a very interesting test where the Green Plus catalyst for pulverized coal firing showed benefits in LOI reduction with no increase in NOx." The fact that the research boiler at Power Technology is optimized for low LOI and low NOx makes the test result even more remarkable.

"Reducing the percentage of unburned carbon (LOI) without increasing airflow and keeping NOx emissions under control or even lower than before could be extremely useful to the power industry," said Dr. Colin K. Hill, Chief Consulting Scientist for Biofriendly Corporation. "It may give the industry new flexibility in fueling and power output options. We plan to confirm these research boiler test results on a full scale commercial power plant shortly," he added.

Decreasing unburned carbon may also increase the efficiency of the boiler without increasing the production of NOx in coal-fired power plants. This opens up an entire new market to Biofriendly Corporation and Green Plus Ltd, and it shows that Green Plus has additional potential applications when it comes to improving combustion. Furthermore, this test result is another in a long line of positive independent and certified tests of Green Plus. Each of these third party results supports the claim that Green Plus is the world's most effective and economical solution for significantly reducing emissions, improving fuel economy and enhancing engine performance.

About Biofriendly Corporation and Green Plus Ltd.

Under development for over 10 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over three billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

[Green Plus](#) is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit <http://www.biofriendly.com>.

## 87. Biofriendly Completes Combustion Efficiency Test

10/24/2006

COVINA, Calif. (PRWEB) October 24, 2006 – UM2 Performance Testing in Singapore completed a Combustion Efficiency Test on Biofriendly's Green Plus® [liquid fuel combustion catalyst](#) a product that significantly improves fuel economy and reduces harmful emissions. This test along with over thirty other independent, third party tests has proven the efficacy of Green Plus.

The latest in Biofriendly's series of third party tests is called a Combustion Efficiency Test. This test is designed to give a "to the second" analysis of the efficiency of an engine while on the road. UM2 Performance Testing normally uses this test to balance the cylinders of racecar engines in Singapore in order to improve efficiency. They often test fuel additives in order to find ways to make these engines more efficient. Green Plus was the first additive to do so.

The test was conducted on a gasoline-powered Toyota automobile using equipment made by TFX Engine Technology, Inc. in Canada. TFX personnel reviewed encrypted test data collected by UM2 Performance Testing and had this to say, "This is the first additive that we have ever seen improve performance in this type of test. The improvement was quite remarkable, the engine torque and power increased, and the engine ran significantly smoother."

The test results showed an increase of 5.13% horsepower and 4.84% torque when the vehicle was run with a wide-open throttle. When the Toyota was running at a steady state of 2,080 RPM, the results produced an increase of 13.25% in horsepower and 10.48% in torque. Among the factors that produced these results included maximum compression pressure occurring earlier, thus producing more power in the cylinder.

Positive results like these support over a dozen earlier certified tests on five continents that have shown the liquid fuel catalyst reduces emissions, improves fuel economy and overall engine performance. This is due to improved combustion caused by the addition of Green Plus.

In addition, results from respected institutions such as the University Of Southern California Keck School Of Medicine, Southwest Research Institute and the Russian Ministry of Health have shown that Green Plus causes no harm to engines or people.

"We are pleased to have completed yet another positive test on our product. Consistent test results across a wide range of vehicles, fuels, ships and other combustion devices continue to confirm the efficacy of Green Plus," said Bill Carroll, Executive Vice-President and Senior Technical Officer of [Biofriendly Corporation](#).

## 88. Biofriendly's Liquid Fuel Catalyst Passes Marine Engine Maintenance Testing

10/11/2006

MAN B&W, a leading marine engine manufacturer, recently completed a report showing the details of an engine maintenance inspection on a 14,063 ton container ship powered by a MAN B&W two-stroke engine after Green Plus, a liquid fuel catalyst, had been present in the engine for nearly one year. Green Plus is added to fuel to enhance fuel economy and lower harmful emissions. The report confirms that Biofriendly's Green Plus, a liquid fuel catalyst that reduces harmful emissions, does not cause harm to a Man B&W 2 stroke engine.

Although MAN B&W has a policy that does not allow the endorsement of individual products, the report led the company to issue a "Letter of No Objection" where the manufacturer states that, "Through the inspection by MAN B&W, it was concluded that the product does not have any harmful effect on engine components or the performance of an engine."

"This test should give customers confidence that their engine equipment will be safe. Green Plus not only enhances fuel economy and lowers harmful emissions, it keeps engines clean, resulting in a longer life," said Michael Carroll, Senior Vice President of Operations for Biofriendly Corporation.

This test result is another in a long line of positive independent and certified tests of the Green Plus liquid fuel catalyst. Each of these third party results supports the claim that Green Plus is the world's most effective and economical solution for significantly reducing emissions, improving fuel economy and enhancing engine performance.

### About Biofriendly Corporation and Green Plus Ltd

Under development for over 10 years, Green Plus liquid fuel combustion catalyst achieves a breakthrough combination of reduced emissions and improved fuel economy. Green Plus is added to the fuel in very small quantities in order to create a more complete, cooler and more linear burn. The product has undergone rigorous testing in the United States and Europe, and has over three billion miles of on-road/on-ocean use. Green Plus is now available commercially worldwide.

Biofriendly's Green Plus liquid fuel catalyst is designed for use in diesel, gasoline and other hydrocarbon-based fuels. This patent-pending product was invented by the same innovators who created Vortoil, the award-winning oil-water separator for offshore oil production. For more information, please visit <http://www.biofriendly.com>.