

# Biobased Solutions

Summer 2007

FOR GOVERNMENT

## New Research Shows Americans Want to Know More About Biobased Products

### Public Looks to the Federal Government for Leadership on Biobased Products

A landmark public opinion study shows while American consumers' knowledge of biobased products is weak, their interest is strong. The nationwide research conducted by NuStats for the United Soybean Board (USB) also found that the public looks to the federal government to educate consumers, promote biobased products through education and funding as well as lead by example as a purchaser of these products.

*"This research affirms that Americans see the value of biobased products, which can be made from America's own soybeans to offer energy security, environmental, worker health and other benefits,"*

— Chuck Myers

Three-fourths (75%) of the 1,370 people surveyed in late May reported being unfamiliar with biobased products. However, eight out of ten (81%) of those surveyed with modest knowledge already expressed interest in learning more about them. Overall, 63% of those surveyed were interested in biobased products or in learning more.

"This research affirms that Americans see the value of biobased products, which can be made from America's own soybeans to offer energy security,

*continued on page 2*



photo credit: Porcupine Mountains Wilderness State Park

Porcupine Mountains Wilderness State Park Ranger Peter Kemppainen drives a tractor that is one of the facility's many pieces of equipment now using soy-based products. Located on the shores of Lake Superior, the Park has found environmental and cost benefits from switching to biobased products.

### Federal Biobased Purchasing Leads State Park to 'Go Green'

While dozens of Federal agencies and National Parks have used soy-based products for years, an increasing number of state and local governments are following their lead and turning to soybeans as part of their efforts to "go green". One such example is Porcupine Mountains Wilderness State Park located on the shores of Lake Superior in Ontonagon, Michigan.

Park staff learned about the benefits of soy-based products from Chris Case, facility manager at Pictured Rock National Lakeshore in Munising, Michigan. Now Porcupine Mountains

*continued on page 5*

## Biobased Technology Wins EPA's Presidential Green Chemistry Challenge Award

Cargill's BiOH™ brand polyols, the first commercially successful biobased polyols used in polyurethane foam cushioning, won the 2007 President's Green Chemistry Challenge Award. Winner in the Designing Greener Chemicals category, Cargill was one of five recipients honored in a June 26 ceremony at the National Academies of Science.

Sponsored by the Environmental Protection Agency, the Presidential Green Chemistry Award promotes innovative chemical technologies that reduce negative impacts on human health and the environment compared to the current state-of-the-art. An independent panel, selected by the American Chemical Society, judged the nominations.

*continued on page 4*



photo credit: Cargill

## Public Looks to the Federal Government for Leadership on Biobased Products

*continued from page 1*

environmental, worker health and other benefits,” said United Soybean Board Domestic Marketing Committee Chair Chuck Myers, a soybean farmer from Lyons, Nebraska. “The study clearly shows that consumer education and product promotion make an enormous difference in whether people will buy biobased products. Through their checkoff, soybean growers have helped research and bring many of these products to market as well as helped educate federal employees about them.”

The 2002 Farm Bill calls for the federal government to purchase biobased products. On July 27, the House of Representatives approved 2007 Farm Bill legislation, which seeks to enhance federal procurement of biobased products. Senate Agriculture Committee Chairman Tom Harkin (D-IA) is also working on biobased language for a Senate Farm Bill Energy Title.

Participants in the survey said they look to the federal government to educate consumers, promote biobased through education and funding, and lead by example as a purchaser of these products. Excluding those not certain of their level of support (ranging from 32% to 44%):

- **88% support the federal government's involvement in educating consumers about the availability and attributes of biobased products,**
- **88% support U.S. Congress increasing funding to the Agriculture Department to support promotion, education and research of biobased products,**
- **89% support the federal government becoming a prominent and visible purchaser of biobased products,**
- **88% support the federal government doing more to support biobased products so the general public can buy them,**
- **86% support the U.S. Congress passing a tax credit legislation for manufacturers to switch to biobased products as a replacement for petroleum, and**
- **91% support state and local government purchase of biobased products.**

An executive summary of the research is available at [www.soybiobased.org](http://www.soybiobased.org)

NuStats staff also compared the public opinion research to USB's ongoing federal procurement studies. They found that federal employees—many of whom have received information about biobased products—show much higher levels of familiarity with biobased products.



### Dear Reader:

*We at the United Soybean Board want to thank all the federal employees who are working to use and promote biobased products. The public opinion research featured in this newsletter shows how important your leadership and example are to America's ability to shift toward purchasing biobased products.*

*This newsletter features how one federal employee—Chris Case—has already helped state and local governments make the switch. We look forward to publishing future articles about more federal employees are making biobased converts. Let us know if you are one of those employees!*

*It's also exciting to note that biobased products are winning prestigious awards like the President's Green Chemistry Challenge Award and the White House Closing the Circle Award. Furthermore, biobased products are literally beginning*

*to take the driver's seat with Ford Motor Company's announcement that soy-based polyurethane foam will be used in seating applications for the 2008 Ford Mustang. USB is proud to have worked with Ford's research team and other companies to make flexible foam technology a reality in Ford vehicles—without compromising the durability, stiffness or performance of the foam.*

*Stay tuned since Ford researchers are working to replace 40 percent of the standard petroleum-based polyol with soy-derived material. At this level, using this soy polyurethane is estimated to result in as much as \$26 million in annual cost savings for Ford. As for the environmental impact, according to the National Institute of Standards and Technology, soy polyols have only one-quarter the level of total environmental impact of petroleum-based ingredients.*

*Sincerely,  
Todd Allen,  
United Soybean Board  
New Uses Committee Chair*

## Soy Biobased Products Win 2007 Closing the Circle Awards



Federal Environmental Executive Ed Pinero (left) presents a White House Closing the Circle Award to Tim Trittschuh of Fort Custer National Cemetery and other Veterans Administration employees.

Keeping more than 90 pieces of equipment running smoothly at Fort Custer National Cemetery (FCNC), a 770-acre facility with more than 20,000 graves in south-central Michigan, is the job of mechanic Tim Trittschuh. Today, biodiesel blends and soy biobased lubricants have replaced petroleum-based fuel and lubricants at FCNC wherever possible. These efforts led to FCNC being honored in June with the prestigious 2007 White House Closing the Circle Award.

FCNC is one of seven winners and honorable mention recipients that are using biobased products, many made from soybeans, as part of their overall environmental stewardship efforts. In 2006, FCNC participated in one of a series of pilot projects using biobased products sponsored by the USB. Seeking ways to conserve oil in cemetery operations, Trittschuh was eager to try biobased products that were homegrown and less damaging to the environment. "All of the products we've used have worked as well- or better-than their non-biobased counterparts, and the equipment they are used in (or on) is performing normally," reports Trittschuh.

The winners and honorable mention recipients that use soy biobased products include: the U.S. Air Force; U.S. Marine Corps.; U.S. Postal Service; U.S. Department of Veterans Affairs; U.S. Department of Commerce; U.S. Department of Energy and U.S. Department of Agriculture. More information about all of the award winners can be found on the web at: [www.ofee.gov](http://www.ofee.gov)

Federal Executive Order 13101 "Greening the Government through Waste Prevention,

Recycling, and Federal Acquisition" established the Closing the Circle Awards program. The order has expanded and strengthened the Federal government's commitment to waste prevention, recycling and buying recycled content and environmentally preferable products and services, including biobased products. The Awards recognize government agencies and their employees' efforts to have a positive impact on the environment.

### Examples of "Closing the Circle" Award Winners Using Soy-Based Products

#### WINNERS

**Department of Veterans Affairs, Fort Custer National Cemetery, Augusta, MI, Biobased Fluids Pilot Project** At The Fort Custer National Cemetery (FCNC) biodiesel blends and biobased lubricants have replaced 100% petroleum based fuel and lubricants wherever possible. The cemetery participated in a series of pilot projects using biobased products, sponsored by the United Soybean Board (USB). The soy-based products they use include: bar & chain oil; two-cycle engine oil; hydraulic (universal tractor) fluid and hydrostatic fluid. FCNC was also honored with the Department of Veterans Affairs Environmental Excellence Award for Green Purchasing in April 2007. Go to [www.soybiobased.org/profiles/](http://www.soybiobased.org/profiles/) for a profile on FCNC's use of biobased products.

**Department of Commerce, Great Lakes Environmental Research Lab, Muskegon, MI, GLERL Ship Operations Group, Green Ship Initiative** GLERL's Ship Operations Group created a "Green Ship Initiative" in 1999 to explore innovative ways to reduce

the environmental impact of its ships and boats on the nation's greatest fresh water resource. In 2006, the benefits of this initiative were realized in a multitude of ways as three diesel powered research vessels were operated with exclusively biobased products. As GLERL's applications reached maturity, emphasis was placed on outreach and technology transfer, generating greater interest in environmentally friendly shipboard practices nation-wide. At the center of the "Green Ship Initiative" is the exclusive use of B100 biodiesel. During fiscal year 2006, GLERL vessels consumed over 16,000 gallons of B100 in a diverse list of diesel engine types on three vessels, representing 100% conversion from petroleum diesel fuel. GLERL has assisted other NOAA operating groups (NOS, NMF) and universities with the conversion to B100 fuel onboard six additional research vessels, accounting for another 9,000 gallons in 2006. In addition to fuel, all GLERL shipboard systems, including hydraulic, transmission, engine crankcase and maintenance products are now exclusively biobased products. A developmental bio/synthetic motor oil is being used in all engine crankcases. These products have been field tested under the rigors of the marine environment in both warm and cold climates and perform at least equivalent to petroleum products. Go to [www.soybiobased.org/profiles/](http://www.soybiobased.org/profiles/) for a profile of GLERL's use of biobased products.

**US Marine Corps, Headquarters, Washington, D.C., Fleet Management Team, Equipment Fuel Conservation** In FY2006 USMC Headquarters used 1,576,715 gallons of biodiesel. In addition, biodiesel is being introduced to MCB Quantico VA and

MCMWTC Bridgeport CA.- bases that consumes large quantities of diesel fuel. The Marine Corps commercial fleet switched to diesel from gasoline where alternative fuel vehicles are not available in order to use biodiesel fuel. A leader in DoD and the Federal Government, the Marine Corps team of installation Fleet Managers and Headquarters staff has achieved remarkable results in petroleum reduction in 2006 (28.5%), building on a history of success. For 2007, the Marine Corps expects to again prove to be a leader in reducing fuel consumption. EPA compliance will remain above 100%, ethanol, biodiesel and NEV usage will increase and ultimately the Marine Corps' fuel reduction rate will approach 30%.

**US Postal Service, Northland District, Minneapolis, E85 Alternative Fuel Usage in the Northland District** A B2 biodiesel blend is being used in 40 inner city tractor trailers in Minneapolis and in 25 tractor trailers in St. Paul.

### HONORABLE MENTIONS

**US Air Force, HQ US Air Force, Pentagon, VA, Alternative Fuel and Fuel Conservation in Transportation** The Air Force has led the way for all other military services, as well as other federal agencies, in the procurement and use of E85 and B20 in support of EO 13149. In FY06, Air Force vehicles used 3.7M gallons of B20. The

B20 totals sustained the 164% increased level in consumption achieved from 2003 to 2005. E85 and B20 consumption replaced 820K gallons of petroleum-based product, which represents 2,000 barrels of independence from foreign oil. By FY06, 56 Air Force locations were dispensing B20. In FY06, eight new alternative fuels infrastructure projects totaling \$3.1M were accepted for funding by the Defense Energy Support Center (DESC). In addition, the Air Force was involved in several initiatives to promote alternative fuels within International Standardization Organizations such as the American Society for Testing and Materials (ASTM).

**Department of Energy, Headquarters, Washington, DC, HSS, MA, and EE, DOE's Early and Continuing Promotion of Biobased Products** DOE has been an early and active promoter of biobased products as part of its long-standing environmentally preferable purchasing (EPP) program. The Department also provided early support to the nation's biobased program through research and development. DOE's National Bioenergy Center conducted research on biobased paints and sorbents, cleaning products, cream abrasives, detergents, and biodiesel. In addition, biobased foam insulation and biobased roofing sealant were evaluated and approved for use in DOE's Weatherization Assistance Program. In 2005, the number of DOE sites using biobased prod-

ucts increased from 15 to 19 and the types of products used increased from 9 to 15. In 2006, the number of DOE sites using biobased products increased from 19 to 24 while the types of products increased from 15 to 17. The types of biobased products purchased in 2006 include: general cleaners, windshield and wheel cleaners, lubricants, carpet, detergents, floor care products, absorbents, hydraulic fluid, strippers, roof sealant, insulation foam, and insulation cellulose, as well as biobased fuels and fuel additives. Go to [www.soybiobased.org/profiles/](http://www.soybiobased.org/profiles/) for a profile of Department of Energy uses of biobased products.

### Department of Agriculture, US Forest Service, Golden, CO, Rocky Mountain Region Sustainability Program

The Bighorn National Forest road maintenance crew piloted the use of biodiesel in FY 2006. The fuel is supplied by a local vendor. The goal is to establish a commercial biodiesel vendor in north-central Wyoming.

*Award-winning Marine Superintendent Dennis Donahue of Great Lakes Environmental Research Laboratory has tested biobased products under the rigors of the marine environment in both warm and cold climates. He reports their performance is equivalent to petroleum-based products.*



## Biobased Technology Wins EPA's Presidential Green Chemistry Challenge Award

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Derived from natural vegetable oils such as soybean oil, BiOH polyols help flexible polyurethane manufacturers reduce their environmental footprint and market their choice to downstream customers. Manufacturers are currently applying it to make flexible foam for bedding, furniture and automotive uses. Customers include some of the biggest names in those industries.

A preliminary life cycle analysis indicates that replacement of petroleum-based polyols with BiOH polyols results in 36 percent less global warming emissions, a 61-percent reduction in non-renewable energy use, and a 23-

percent reduction in the total energy demand. For every million pounds of BiOH polyol produced to replace petroleum-based polyols, about 2,200 barrels (nearly 700,000 pounds) of crude oil are saved.

This is the third time in two years that Cargill's BiOH polyols have achieved significant third-party recognition. In 2006, it earned a Technology Innovation Award from the Alliance for the Polyurethanes Industry. In March of this year, it won a Sustainability Award from the Society of Plastics Engineers.

In addition, this is the second time a Cargill business has landed a Presidential Green Chemistry Award. In 2002, Cargill's corn-based polymers business, NatureWorks (then known as Cargill Dow), won in the Greener Reaction Conditions category.



photo credit: Cargill

## Federal Biobased Purchasing Leads State Park to 'Go Green'

*continued from page 1*

Wilderness State Park has made changes to make the grass a little greener.

The park's diesel-powered equipment runs on B20 (a blend of 20 percent biodiesel with 80 percent petroleum diesel). Porcupine Mountains Parks & Recreation Supervisor Bill Doan says the benefits of this conversion are twofold. First, the equipment emissions are drastically reduced. Second, the biodiesel is commonly made from soybean oil—a reliable, renewable and environmentally friendly alternative which helps reduce our dependence on petroleum-based products.

In addition to B20, Porcupine Mountains has converted from petroleum-based products to soy-based alternatives in all aspects of park operations. Going beyond the use of biodiesel blends and hydraulic fluid, the park also uses a variety of other soy-based products, including two-cycle oil, bar and chain oil, penetrating oil, parts cleaning solution, bearing grease, air compressor fluid, degreaser, gear lube and fuel conditioners. In fact, the parts cleaner is so mild that one of the mechanics actually washes his hands in it—something he never would have done with the old petroleum-based product.

Porcupine Mountains has also incorporated the use of environmentally preferred products in cleaning the bathroom-shower buildings. Gone are the corrosive and acidic products of the past. The park has even been able to reduce the number of cleaning products from nearly a dozen, to three, saving money as well.

“These efforts are all part of our commitment to make Michigan's premier green spaces even more green,” adds Doan.



### Biobased Insulation is 'Energy Star' in HUD PATH Concept Home

Buddy Bisterfeldt, who operates J & B Foam Insulation, believes in customer satisfaction. He also believes strongly in his main product—biobased foam insulation used in the building construction trade. That's why this Kansas City businessman jumped at the chance to volunteer his company's time to provide insulation for a Housing and Urban Development (HUD) concept home in Omaha, Nebraska. His supplier, BioBased Insulation, of Rogers, Arkansas, supplied its product Biobased 501(TM.)

It's all part of a HUD program launched in 1998. The PATH (Partnership for Advance Housing Technology) moved from the theoretical to the applied stage with a concept model home in Omaha. Construction began in October 2006 and a ribbon cutting opening ceremony was held in June 2007.

Up until this project, PATH performed a very valuable service of bringing together the various residential segments of the construction industry, ranging from architects, to builders to building code developers, to identify the latest technologies and materials available to the industry. In 2004, PATH took the next step and developed an architectural model of a

PATH Concept Home, which turned into the Omaha model.

Open to the public this summer, some lucky family can buy it later this year. For those who can't make it to Omaha, virtual tours are available at [www.pathnet.org/concepthome](http://www.pathnet.org/concepthome).



“Our main objectives in building this house were efficiency (in construction and production), flexibility and sustainability,” states James Lyons, project manager for Newport LLC, the company that oversees PATH projects for HUD. The biobased insulation is an important part of our

sustainability goal. The fact that it's made from soybeans, a renewable resource, rather than petroleum, and has all of the qualities of any foam insulation is very important.”

Bisterfeldt says it's important to him, too. “I'm not exactly a tree-hugging environmentalist, I'm just an ordinary guy who gets it.” Why should we use petroleum when we can use a renewable resource like soybeans? I grew up in Kansas wheat territory and I like to do anything I can to help farmers, my customers and the environment.”

# USB Biobased Workshop Provides Important Industry Analysis

More than 50 representatives of large and small biobased manufacturing companies, agricultural groups and federal government agencies joined USB for a Biobased Stakeholders' Workshop on July 26-27 in Washington, D.C. The meeting provided an important educational opportunity for the groups to learn about and discuss federal biobased procurement programs and proposals.



USB's Biobased Products Development Director Mike Erker moderates a Stakeholders' Workshop session focusing on U.S. Department of Agriculture implementation of biobased procurement. From left, Erker; Barbara C. Lippiatt from the U.S. Department of Commerce; Iowa State University Industrial Specialist Steven L. Devlin; USDA Senior Economist Dr. Marvin Duncan; USDA Office of Energy Policy and New Uses Director Roger Conway; USDA Assistant Secretary for Administration Boyd Rutherford and USDA Special Assistant for the Federal Biobased Procurement Program Shana Love.

## UPDATE **Biobased Products Available Through GSA**

Based upon updated information available to the United Soybean Board, the following soy-based products can be purchased through the Government Services Agency's GSA Advantage!®.

### **Lubricants (including hydraulic fluids, penetrating oil, greases, and other lubricants)**

- Renewable Lubricants, Inc. (through S&L Products and Services, Inc.) - #GS-06F-0025T - *NEW as of February 1, 2007.*

### **Paint, Adhesive, Graffiti and Mastic Removers**

- Soy Technologies, LLC (through the A-1 Supply Co.) - #GS-07F-6074R
- Gemtek, LLC, Products - #GS-07F-5942R

### **Industrial Cleaners and Degreasers**

- Soy Technologies, LLC (through the A-1 Supply Co.) - #GS-07F-6074R

- Gemtek, LLC, Products - #GS-07F-5942R
- Renewable Lubricants, Inc. (through S&L Products and Services, Inc.) - #GS-06F-0025T - *NEW as of February 1, 2007.*

### **Cleaning Products**

- The Clean Environment Company - #GS-07F-0098K
- Soy Technologies, LLC (through the A-1 Supply Co.) - #GS-07F-6074R
- Gemtek, LLC, Products - #GS-07F-5942R

### **Soy-Backed Carpet**

*The following companies have carpet on GSA Schedule that is available with polyurethane backings containing a soy-based polyol:*

- Mohawk - #GS-27F-8440A
- Designweave (through Commercial Carpets of America) - #GS-27F-0053A
- Patcraft - (through Commercial Carpets of America) - #GS-27F-0053A
- Masland (The Dixie Group) - #GS-27F-5049C

### **Aircraft and Metal Cleaner and VPW- SC-1000 Concentrated Cleaner**

- Orison Marketing, LLC - #GS-07F-0079K

### **Roof Coatings**

- Green Products (through Roofing Resources, Inc.) - #GS-07F-5624P

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Because of the potential for biobased products to create new markets for soybeans, U.S. soybean farmers have invested millions of dollars to research, test and promote biobased products. Much of this work was done through the United Soybean Board (USB), which is composed of 64 U.S. soybean farmers appointed by the U.S. Secretary of Agriculture to invest soybean checkoff funds. As stipulated in the Soybean Promotion, Research and Consumer Information Act, USDA's Agricultural Marketing Service has oversight responsibilities for the soybean checkoff.

