



Office of Agricultural Affairs
U.S. Embassy, Paris

Biofuels in the United States Newsletter – July 2008

To our readers: The Office of Agricultural Affairs of the U.S. Embassy in Paris would be happy to facilitate your visits to the United States. If you advise of us your travel plans we can help you organize your itinerary. Also, please do not hesitate to share any questions with us on the issues raised below.

For further information on all of the following topics, please click on the titles to access websites.

1. Policy:

New Farm Bill Speeds Commercialization of Advanced Biofuels **([link to Department of Energy](#))**

Congress passed a new farm bill on May 22 that will accelerate the commercialization of advanced biofuels, including cellulosic ethanol, encourage the production of biomass crops, and expand the U.S. Department of Agriculture's current Renewable Energy and Energy Efficiency Program. Section 9003 of the Food, Conservation, and Energy Act of 2008 provides for grants covering up to 30% of the cost of developing and building demonstration-scale biorefineries for producing "advanced biofuels," which essentially includes all fuels that are not produced from corn kernel starch. Section 15321 of the bill establishes a new tax credit for producers of cellulosic biofuels, that is, biofuels produced from wood, grasses, or the non-edible parts of plants. The new cellulosic biofuel producer credit is set at \$1.01 per gallon and applies only to fuel produced and used as fuel in the United States. In addition, Section 9005 of the bill provides \$55 million in FY 2009 to support advanced biofuel production, increasing to \$105 million by FY 2012. It authorizes up to \$25 million per year in discretionary funding. The bill also provides \$35 million to encourage existing biorefineries to reduce their dependence on fossil fuels. It follows on the Biomass Research and Development Initiative, a joint effort of DOE and the U.S. Department of Agriculture that focuses on biofuels and bioproducts.

Links to comments from: - [Biotechnology Industry Organization](#)
 - [Center for American Progress](#)

More details on the new Farm Bill: [National Agricultural Law Center](#)

Global Bioenergy Partnership Meeting in Rio de Janeiro, June 18 ([link](#))

The Global Bioenergy Partnership (GBEP), launched as a result of the G8 Gleneagles Summit, held its fifth Steering Committee meeting in Rio de Janeiro, Brazil on June 18th 2008. The primary objective of the meeting was to discuss the GBEP work program on sustainability. The Steering Committee approved

a program of work on sustainability, which includes development of voluntary, science-based, global sustainability criteria, indicators, and benchmarks as well as a process to identify best practices related to biofuels sustainability. The day before the GBEP meeting, US delegation met bilaterally with Brazil in the first meeting of the Sustainability Taskforce of the US/Brazil Memorandum of Understanding. Discussion was centered on how to address sustainable biofuels in the international context.

2. Food/Fuel debate

USDA Officials Briefing with reporters on the case for food and fuels, USDA, May 19 ([link](#))

According to Agriculture Secretary Ed Schafer: ... “Developing diversity in our portfolio of fuels is, if anything, an even more urgent matter than it has been in the past, and it is one that remains central to both our energy security and our national security. And that is what our biofuels program is all about. For food products, higher oil prices mean higher costs of transportation, processing, packaging and distribution, and all the other intermediary steps that bring commodities from the farm gate to the retail store. Those steps account for approximately 80 cents of every retail dollar that is spent on food here in the United States. (...) On the international level, the President's Council of Economic Advisors estimates that only 3 percent of the more than 40 percent increase we have seen in world food prices this year is due to the increased demand on corn for ethanol.”

... “According to the International Energy Agency, the biofuels production that has been available to the United States and European markets over the last three years has cut the consumption of crude oil by one million barrels a day. At today's prices, that's a savings of more than \$120 million per day. (...) If you look at the consumer dollar for food purchases, you can see that a small portion of it, about a fifth, is attributed to the farm value of the underlying commodities. Much of it is of labor costs, advertising, energy costs and other factors.”

[Link to PowerPoint presentation](#)

[Link to briefing material](#) on food, feed and fuel prepared by USDA's Economic Research service.

IFPRI: Biofuels and Grain Prices: Impacts and Policy Responses (Testimony before the U.S. Senate Committee on Homeland Security and Governmental Affairs, May 7, 2008) ([link](#))

Various pressures on international grain markets have contributed to the rapid price increases during the past several years, and biofuels have been just one contributor—albeit a major one. Slowing supply growth and rapidly growing demand for grain for all uses (including food and feed), which have been made worse by policy-induced distortions, are long-term underlying factors that cannot easily be reversed. If the world food economy is to meet the increased demand for food, feed, and fuel that is being driven by rapid socioeconomic growth in the world's biggest and fastest-growing developing countries, and also cope with the future challenges of increasing land-use pressures and climatic change, agricultural productivity will have to grow significantly faster in the future than it has in recent years. The

United States can play an essential role in boosting agricultural growth by increasing investment in agricultural research and supporting reforms targeted at increased crop productivity on a global basis.

WorldWatch Institute report: Biofuels for Transport: Global Potential and Implications for Sustainable Agriculture and Energy in the 21st Century August 2007 ([link](#))

The increase in world agriculture prices caused by the global boom in biofuels could benefit many of the world's rural poor, according to the Worldwatch Institute. Growth in biofuels production may have unexpected economic benefits, according to the experts who contributed to the report. Of the 47 poorest countries, 38 are net importers of oil and 25 import all of their oil; for these nations, the tripling in oil prices has been an economic disaster. But nations that develop domestic biofuels industries will be able to purchase fuel from their own farmers rather than spending scarce foreign exchange on imported oil. The book concludes that the long-term potential of biofuels is in the use of non-food feedstock, including agricultural and forestry wastes, as well as fast-growing, cellulose-rich energy crops such as perennial grasses and trees. Following the model of Brazil's sugar cane-based biofuels industry, cellulosic ethanol could dramatically reduce the carbon dioxide and nitrogen pollution that results from today's biofuel crops.

Renewable Fuel Standard (RFS) recently questioned – U.S. Farm Industry Protests

Transportation fuels are required by federal law to contain a minimum amount of renewable fuel each year. This Renewable Fuel Standard (RFS), established by the Energy Policy act of 2005 and amended by the Energy Independence and Security Act of 2007, requires that 9 billion gallons of renewable fuels be blended into gasoline and other transportation fuels in 2008. However, high prices and tight supplies for oil, gasoline, and food/feed grains have raised concerns over whether the current RFS should be modified or eliminated. The Environmental Protection Agency (EPA) has the authority to waive the RFS requirements, in whole or in part, if certain conditions outlined in the law are present. The governor of Texas recently requested a waiver of the RFS because of high grain prices, and there is growing congressional interest in the EPA waiver authority. Links to various websites, which include farm industry reactions are as follows:

- Links to:
- [Congressional Research Service report](#)
 - [EPA and RFS website](#)
 - [American Farm Bureau Federation reaction](#)
 - [National Corn Growers Association \(NCGA\) reaction](#)

3. Research, 2nd Generation

Energy Biosciences Institute makes first 49 biofuel grants ([link](#))

The Energy Biosciences Institute is a consortium dedicated to the application of biosciences to the energy sector. Projects are being supported at all three of the public partner institutions – the University of California, Berkeley; the University of Illinois at Urbana-Champaign; and Lawrence Berkeley National Laboratory. The international energy company BP is funding the decade of work with \$500 million.

Research is being pursued in feedstock development, biomass depolymerization, biofuels production, and the socio-economic impacts of cellulosic biofuels development.

Sorghum for Fuel

The US Department of Agriculture is sponsoring an international conference in Houston, Texas, in August to examine sorghum's potential in ethanol production ([link](#)). As the biofuels sector has expanded rapidly over the last several years, there has been increasing interest in further developing additional feedstocks and their practical use as a bioenergy crop. Sorghum has significant potential as a feedstock, being highly energy efficient, productive, drought tolerant and able to grow in marginal lands, short-duration and requiring low-input. The objective of the International Workshop on Sorghum for Biofuel is to further evaluate the potential of sorghum as a biofuel feedstock, identify needed scientific advances and propose strategies to address them. Discussion topics will include current applications and research in conversion technology, potential for biomass production and impact, including economic viability, environmental sustainability and utilization for fuel, and crop genetic and agronomic issues, including available varieties, genomics, breeding and transgenics to enhance biofuel and bioproduct application.

Terrabon breaks ground on biomass conversion test plant ([link](#))

In May, Terrabon, LLC announced that it has broken ground on a biofuels conversion facility in Bryan, Texas, that will test the scaled-up, commercial feasibility of its MixAlco technology, which converts non-food biomass into chemicals that can be processed into ethanol and other renewable fuels. The MixAlco technology uses non-food feedstocks such as municipal solid waste, sewage sludge, forest product residues and non-edible energy crops to create acetic acid and alcohols that can be converted into fuel. The new demonstration plant is designed to confirm the engineering for the technology on a larger scale. The new plant, which is expected to be operational by September 2008, will have a loading capacity of 400 dry tons of biomass, which equates to a loading rate of five dry tons per day. Sorghum will be the primary feedstock with the objective of producing organic salts and converting them to ketones. Current plans call for the process to run in two separate cycles, each about 80 days in duration.

BlueFire Ethanol Inc: cellulose-to ethanol company in California ([link](#))

BlueFire Ethanol Incorporated's ("BlueFire") use of the Arkenol patented process positions it as the only viable, world-wide cellulose-to-ethanol company with demonstrated production experience with ethanol from wood wastes, urban trash, rice and wheat straws and other agricultural residues.

Trillium FiberFuels, Oregon, wins grant for ethanol ([link](#))

A small Oregon startup company developing new technology to convert waste wood and grass into biofuel has won a \$100,000 federal grant. The U.S. Energy Department grant in May was the only one made to an Oregon company by the agency's Small Business Innovation Research program. Trillium was one of 360 companies receiving a total of \$36 million nationwide.

New cellulosic ethanol production developed by DuPont and Genencor ([link](#))

DuPont and Genencor, a division of Danisco A/S, are forming a global joint venture to develop and commercialize the leading, low-cost technology solution for the production of cellulosic ethanol. The partners plan an initial three-year investment of USD 140 million, which will initially target corn stover and sugar cane bagasse. Future targets include multiple ligno-cellulosic feedstocks including wheat straw, a variety of energy crops and other biomass sources.

XL Renewables debuts new algae system for fuel ([link](#))

The theory is that algae biomass can circumvent and relieve the food-for-fuel controversy because it appears to be a cost-effective source of high-grade oil for biofuel and edible oils and proteins for food and animal feed. The company is expected to go into production shortly on a full-sized, 40-acre plot. XL also plans to develop a 400-acre algae farm and processing facility in western Arizona. More than 20,000 tons of biomass could be processed at the proposed facility, and the company has more than 2,400 acres to expand production.

CleanTech Biofuels: Trash-to-ethanol firms get digging ([link](#))

CleanTech Biofuels has licensed and developed a group of technologies that used together can process municipal garbage into usable energy products. The company uses the cellulosic material in municipal garbage to make ethanol by first converting it into a sugar and water mixture. Its ethanol production technology uses acid hydrolysis process that recycles heat and acid from each stage of the process to efficiently make C5 and C6 sugars from cellulosic material. The resulting sugars are fermented and distilled into a fuel grade ethanol.

Fungus genome opens pathways to next-generation biofuels ([link](#))

A team of French and US researchers have completed sequencing the entire genome of *Trichoderma reesei*, a fungus which is best known for its ability to break down and convert plant biomass into simple sugars. The work, which is partly EU-funded, is expected to open new and more efficient avenues for producing biofuels using non-food plants. *Trichoderma reesei* contains a number of enzymes, known as cellulases that have potent catalytic properties for breaking down plants.

Plant genetic engineering for biofuel production: towards affordable cellulosic ethanol ([link to article published in Nature Reviews Genetics](#))

Conversion of cellulosic biomass, which is both abundant and renewable, is a promising alternative. However, the cellulases and pretreatment processes involved are very expensive. Genetically engineering plants to produce cellulases and hemicellulases, and to reduce the need for pretreatment processes through lignin modification, are promising paths to solving this problem, together with other strategies, such as increasing plant polysaccharide content and overall biomass.

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