Office of Agricultural Affairs
Embassy of the United States- Paris, France

Biobased Products in the United States Newsletter – June 2010

To Our Readers: The Office of Agricultural Affairs of the U.S. Embassy in Paris is available to answer any questions you may have concerning the information below, including facilitating contact with organizations mentioned. Also, do not hesitate to share comments or suggestions.

For further information, please access provided websites.

1. U.S. Policy

• March 2010: Renewable Fuels Reinvestment Act

The Renewable Fuels Reinvestment Act was introduced in the House of Representatives and provides extensions for the following federal tax incentives on bio-ethanol, to the end of 2015:

- Volumetric Ethanol Excise Tax Credit (VEETC), expiring at the end of 2010, of $0.45 per gallon available to oil and gasoline refiners for each gallon they blend;
- Corresponding secondary tariff on ethanol, set to end at the end of 2010;
- Small Producers Tax Credit, expiring at the end of 2010, of $0.1 per gallon available on the first 15 million gallons of ethanol produced by ethanol companies producing no more than 60 million gallons per year;
- Cellulosic Ethanol Producer Tax Credit, expiring at the end of 2012, eligible for both the $0.45 per gallon VEETC as well as an addition $0.56 per gallon producing tax credit.

To see the Renewable Fuels Association analysis, please visit: http://www.ethanolrfa.org/page/-/rfa-association-site/4940onepg.pdf.

• March 2, 2010: Obama Announces Steps to Boost Biofuels, Clean Coal [1]

President Barack Obama announced a series of steps his Administration is taking as part of its comprehensive strategy to enhance American energy independence while building a foundation for a new clean energy economy, and its promise of new industries and millions of jobs. At a meeting with a bipartisan group of governors from around the country, the President laid out three measures that will work in concert to boost biofuels production and reduce our dangerous dependence on foreign oil.

The Environmental Protection Agency (EPA) has finalized a rule to implement the long-term renewable fuels standard of 36 billion gallons by 2022 established by Congress. The U.S. Department of Agriculture

[1] Source: EPA http://yosemite.epa.gov/opa/admpress.nsf/0/3a91d20f44b4b2d2852576bf00711782?OpenDocument.

(USDA) has proposed a rule on the Biomass Crop Assistance Program (BCAP) that would provide financing to increase the conversion of biomass to bio-energy. The President's Biofuels Interagency Working Group released its first report – *Growing America's Fuel*. The report, authored by group co-chairs, USDA's Secretary Tom Vilsack and the Department of Energy's (DOE) Secretary Steven Chu, along with EPA's Administrator Lisa Jackson, lays out a strategy to advance the development and commercialization of a sustainable biofuels industry to meet or exceed the nation's biofuels targets.

Regarding this matter, President Obama stated, "Now, I happen to believe that we should pass a comprehensive energy and climate bill. It will make clean energy the profitable kind of energy, and the decision by other nations to do this is already giving their businesses a leg up on developing clean energy jobs and technologies. But even if you disagree on the threat posed by climate change, investing in clean energy jobs and businesses is still the right thing to do for our economy. Reducing our dependence on foreign oil is still the right thing to do for our security. We can't afford to spin our wheels while the rest of the world speeds ahead."

More information about current U.S. Biofuel incentives found in this article:

Renewable Fuels Standard EPA has finalized a rule implementing the long-term renewable fuels mandate of 36 billion gallons by 2022 established by Congress. The Renewable Fuels Standard requires biofuels production to grow from last year's 11.1 billion gallons to 36 billion gallons in 2022, with 21 billion gallons to come from advanced biofuels. Increasing renewable fuels will reduce dependence on oil by more than 328 million barrels a year and reduce greenhouse gas emissions more than 138 million metric tons a year when fully phased in by 2022. For the first time, some renewable fuels must achieve greenhouse gas emission reductions - compared to the gasoline and diesel fuels they displace – in order to be counted towards compliance with volume standards. To read this rule, please visit: http://www.epa.gov/otaq/renewablefuels/index.htm.

Biomass Crop Assistance Program USDA has proposed a rule for the Biomass Crop Assistance Program (BCAP) to convert biomass to bio-energy and bio-based products. USDA provides grants, loans and other financial support to help biofuels and renewable energy commercialization. BCAP has already begun to provide matching payments to folks delivering biomass for the collection, harvest, storage, and transportation of biomass to eligible biomass conversion facilities. To read this rule, please visit: http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap.

Biofuels Working Group In May, President Obama established the Biofuels Interagency Working Group – co-chaired by USDA, DOE, and EPA, and with input from many others – to develop a comprehensive approach to accelerating the investment in and production of American biofuels and reducing our dependence on fossil fuels. Today the Working Group released its first report: *Growing America's Fuel* – a new U.S. Government strategy for meeting or beating the country's biofuel targets. The report is focused on short-term, solid government solutions supporting the existing biofuels industry, as well as accelerating the commercial establishment of advanced biofuels and a viable long-term market by transforming how the U.S. Government does business across departments and using strategic public-private partnerships. To read the full report, please visit:

http://www.whitehouse.gov/sites/default/files/rss_viewer/growing_americas_fuels.PDF

- **April 5, 2010: USDA Highlights Early Successes in Biomass BCAP[2]**

USDA Farm Service Agency Administrator Jonathan Coppess said that biomass producers, energy facilities and communities are benefitting from USDA's innovative BCAP. Through April 2, 2010, USDA approved 4,605 agreements for the delivery of more than 4.18 million tons of biomass and paid eligible biomass owners $165 million in matching payments under BCAP's first phase.

BCAP authorized USDA's Farm Service Agency (FSA) to help those who own biomass by providing matching payments for the collection, harvest, storage and transportation of eligible biomass delivered to approve facilities to convert it to biofuels. FSA service centers across the country have issued payments of up to $45 per dry ton for eligible biomass deliveries. Biomass is any organic matter that is available on a renewable or recurring basis including: agricultural commodities, plants, trees, algae, and other animal, vegetative and wood waste materials.

Established in the 2008 Farm Bill, BCAP was designed to spur new energy and economic developments in rural America by reducing the financial risk for farmers, ranchers, and foresters who invest in the establishment, production, harvest, and delivery of biomass crops to displace fossil feedstocks used for biofuels and renewable energy. BCAP matching payments began after a notice of funding availability was issued June 11, 2009, pursuant to President Obama's May 2009 directive. The proposed rule to implement the full BCAP was announced in early February 2010, with a 60-day public comment period ending April 9, 2010. After reviewing the comments, FSA will issue a final rule for the BCAP program this year.

Charts showing BCAP Collection, Harvest, Storage & Transportation Component and Summary Reports are available at www.fsa.usda.gov/bcap.

- **May 3, 2010: EPA Administrator and Agriculture Secretary Team Up to Promote Farm Energy Generation - Agreement will help cut greenhouse gas emissions[3]**

USDA's Secretary Tom Vilsack and EPA's Administrator Lisa Jackson announced a new interagency agreement promoting renewable energy generation and slashing greenhouse gas emissions from livestock operations. The agreement expands the work of the AgSTAR[4] program, a joint EPA-USDA effort that helps livestock producers reduce methane emissions from their operations.

EPA and USDA's enhanced collaboration will provide up to $3.9 million over the next five years to help the farms overcome obstacles preventing them from recovering and using biogas. The collaboration will expand technical assistance efforts, improve technical standards and guidance for the construction and

[2] Source: USDA http://www.usda.gov/wps/portal/usda/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os_gAC9-wMJ8QY0MDpxBDA09nXw9DFxcXQcAA_1wkA5kFaGuQBXeASbmnu4uBgbe5hB5AxzA0UDfzyM_N1W_IDs7zdFRUREAZXAypA!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfUDhNVlZMVDMxMEJUMTBJQ01IMURERDFDUDA!/?contentidonly=true&contentid=2010%2f04%2f0165.xml.

[3] Source: USDA http://www.usda.gov/wps/portal/usda/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os_gAC9-wMJ8QY0MDpxBDA09nXw9DFxcXQcAA_1wkA5kFaGuQBXeASbmnu4uBgbe5hB5AxzA0UDfzyM_N1W_IDs7zdFRUREAZXAypA!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfUDhNVlZMVDMxMEJUMTBJQ01IMURERDFDUDA!/?contentidonly=true&contentid=2010%2f05%2f0226.xml.

[4] For more information regarding the AgSTAR program, please visit: http://www.epa.gov/agstar/.

evaluation of biogas recovery systems, and expand outreach to livestock producers and assist them with pre-feasibility studies.

Due in large part to AgSTAR's efforts, about 150 on-farm manure digesters are now operating at livestock facilities across the U.S. In addition, EPA estimates there are about 8,000 farms across the United States that are good candidates for capturing and using biogas. If all 8,000 farms implemented biogas systems, methane emissions would be reduced by more than 34 million metric tons of carbon dioxide equivalent a year, roughly equal to the annual emissions from 6.5 million passenger vehicles. In addition, these projects could generate more than 1,500 megawatts of renewable energy.

- **May 4, 2010: USDA Invites Applications for Renewable Energy Funding[5]**

Secretary Vilsack announced that USDA is seeking applications to increase the production and use of renewable energy sources. Funding is available from four USDA Rural Development renewable energy programs authorized by the Farm Bill's Food, Conservation, and Energy Act of 2008. USDA is accepting applications for grants and loan guarantees in the Rural Energy for America Program (REAP) until June 30, 2010. More information on how to apply for funding is available in the April 26 Federal Register. REAP provides funds to agricultural producers and rural small businesses to purchase and install renewable energy systems and make energy efficiency improvements.

Eligible projects include installing renewable energy systems such as wind turbines, solar, geothermal, biomass, anaerobic digesters, hydroelectric, and ocean or hydrogen systems. Funding may also be used to purchase energy-efficient equipment, add insulation, and improve heating and cooling systems. In fiscal year 2009, this program helped fund 1,485 REAP projects in 50 states, the commonwealth of Puerto Rico and the Western Pacific Islands.

In addition to the REAP program, Secretary Vilsack announced that USDA is also planning to accept applications for three other renewable energy programs: the Biorefinery Assistance Program, Repowering Assistance Program and the Bio-energy Program for Advanced Biofuels. USDA is accepting applications for grants and loan guarantees in the Rural Energy for America Program (REAP) until June 30, 2010. More information on how to apply for funding is available in the April 26 Federal Register.

Other programs for renewable fuel funding and production include:

- USDA's Biorefinery Assistance Program provides guaranteed loans to develop and construct commercial-scale biorefineries or to retrofit existing facilities using eligible technology for the development of advanced biofuels. The amount of a loan guaranteed for a project under this program cannot exceed 80 percent of total eligible project costs.
- The Repowering Assistance Program is designed to encourage the use of renewable biomass as a replacement fuel source for fossil fuels used to provide process heat or power in the operation of eligible biorefineries (those biorefineries in existence on June 18, 2008 -- the date the 2008 Farm Bill was enacted).
- The Bio-energy Program for Advanced Biofuels works to support and ensure expanding production of advanced biofuels by providing payments to eligible advanced biofuels producers. Advanced biofuels are derived from renewable biomass, other than corn kernel starch. These include cellulose, sugar and starch, crop residue, vegetative waste material,

[5] Source: USDA http://www.usda.gov/wps/portal/usda/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os_gAC9-wMJ8QY0MDpxBDA09nXw9DFxcXQcAA_1wkA5kFaGuQBXeASbmnu4uBgbe5hB5AxzA0UDfzyM_N1W_IDs7zdFRUREAZXAypA!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfUDhNVlZMVDMxMEJUMTBJQ01IMURERDFDUDA!/?contentidonly=true&contentid=2010%2f05%2f0229.xml..

animal waste, food and yard waste, vegetable oil, animal fat, and biogas (including landfill gas and sewage waste treatment gas). This program is an important part of achieving the Obama administration's goal to increase biofuels production and use.

- **May 6, 2010: USDA, DOE Announce Funding for Biomass Research and Development Initiative[6]**

The USDA and DOE jointly announced up to $33 million in funding for research and development of technologies and processes to produce biofuels, bio-energy and high-value biobased products. These projects will support the Obama Administration's comprehensive energy strategy of increasing the nation's energy, economic and national security by reducing our reliance on foreign oil and reducing greenhouse gases.

USDA and DOE are issuing this joint funding announcement for several types of projects aimed at increasing the availability of alternative renewable fuels and biobased products. The projects will aim to create a diverse group of economically and environmentally sustainable sources of renewable biomass. Advanced biofuels produced from these projects are expected to reduce greenhouse gas emissions by a minimum of 50 percent, as determined by the Environmental Protection Agency.

Section 9008(e)(3) of the Food Conservation and Energy Act of 2008 provides direction and guidance on the technical areas addressed by the Biomass Research and Development Initiative, (BRDI). The technical areas are feedstocks development, biofuels and biobased products development analysis.

BRDI requires that each proposed project integrate all three of the technical areas. The intent of requiring integration is to encourage a collaborative problem-solving approach to all studies funded under BRDI, to facilitate formation of consortia, identify and address knowledge gaps, and accelerate the application of science and engineering for the production of sustainable biofuels, bio-energy and biobased products.

The funding opportunity is available online at www.grants.gov. Applications are due July 13, 2010 and must be submitted electronically. Applicants will be notified by September 9, 2010.

2. Conferences

- **Biomass 2010 Conference, March 30-31, 2010, Arlington, VA**

More than 600 attendees were able to discuss some of the most pressing issues in the biomass community as well as recent accomplishments and the challenges that lie ahead. Presentations made at this conference are available on the Department of Energy website at:
http://www1.eere.energy.gov/biomass/biomass2010/

Plenary Sessions

- Session 1 (March 30, 2010 Morning) - Growing Biomass Innovation
- Luncheon Session (March 30, 2010) - DuPont Danisco Cellulosic Ethanol LLC

[6] Source: USDA http://www.usda.gov/wps/portal/usda/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os_gAC9-wMJ8QY0MDpxBDA09nXw9DFxcXQcAA_1wkA5kFaGuQBXeASbmnu4uBgbe5hB5AxzA0UDfzyM_N1W_IDs7zdFRUREAZXAypA!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfUDhNVlZMVDMxMEJUMTBJQ01IMURERDFDUDA!/?contentidonly=true&contentid=2010%2f05%2f0234.xml.

- Session 2 (March 31, 2010 Morning) - Creating Power from Biomass
- Session 3 (March 31, 2010 Afternoon) - Building a Biomass Industry

Technical Breakout Tracks

- Coordinating Basic/Foundational Science and Applied R&D
- Feedstocks
- Hydrocarbon Fuels
- Sustainability and the Environment

- **Global Advanced Biofuels Scale Up Summit, June 22-23, 2010, Washington, D.C.**

This conference offered solutions from governments, private investors and advanced biofuels producers for accelerating the commercialization of advanced biofuels. Themes discussed will include the opportunities for receiving government funding for advanced biofuel scale up projects, establishing the regulatory framework for creating a global market for advanced biofuels, identifying opportunities for attracting private sector investment, creating a market for advanced biofuels. Speakers will include representatives from the Department Of Energy (DOE), USDA, U.S. Department of Transport, the Environment Protection Agency (EPA), the European Commission, and private industry. For more information, please visit: http://www.advanced-biofuels-scale-up.com/index.asp.

3. Economic Reports

- **March 21, 2010: Global Renewable Fuels Alliance Releases 2010 Biofuels Production Forecast[7]**

The Global Renewable Fuels Alliance (GRFA) is an international federation representing more than 65 per cent of the world's renewable fuels production from 30 countries. Total fuel ethanol production for 2009 was 73.9 billion liters according to data assembled by F.O. Licht. The GRFA predicts global production will reach 85.9 billion liters in 2010 – growing by 16.2 per cent from 2009 production. This year ethanol production will displace the need for 370 million equivalent barrels of oil globally.

The United States is still the world leader in ethanol manufacturing with more than 45 billion liters of ethanol production projected for this year. At the other end of the spectrum, many developing countries including Nigeria and Malawi are turning to ethanol to boost their economies and secure their future energy needs.

[7]Source: Global Renewable Fuels Alliance http://www.globalrfa.org/pr_032110.php.

- **May 2010: USDA/Economic Research Service Report: Next-Generation Biofuels: Near-Term Challenges and Implications for Agriculture[8]**

This report assesses the short-term outlook for production of next-generation biofuels and the near-term challenges facing the sector. Next-generation U.S. biofuel capacity should reach about 88 million gallons in 2010, thanks in large measure to one plant becoming commercially operational in 2010, using noncellulosic animal fat to product green diesel. U.S. production capacity for cellulosic biofuels is estimated to be 10 million gallons for 2010, much less than the 100 million gallons originally mandated by the 2007 Energy Independence and Security Act. Near-term sector challenges include reducing high capital and production costs, acquiring financial resources for pre-commercial development, developing new biomass supply arrangements, many of which will be with U.S. farmers, and overcoming the constraints of ethanol's current 10-percent blending limit with gasoline.

4. Technical Studies

- **February 10, 2010: USDA and DOE Joint research Institute Scientists Sequence Genome of Biofuel Model Crop [9]**

USDA scientists and their colleagues at DOE announced that they have completed sequencing the genome of a kind of wild grass that will enable researchers to shed light on the genetics behind hardier varieties of wheat and improved varieties of biofuel crops. The research was published in the journal *Nature*.

The grass, *Brachypodium distachyon*, can be used by plant scientists the way other researchers use lab mice to study human disease—as a model organism that is similar to but easier to grow and study than important agricultural crops, including wheat and barley. The research also supports the USDA priority of developing new sources of bio-energy; the *Brachypodium* genome is similar to that of the potential bio-energy crop switchgrass. But the smaller genome of *Brachypodium* makes it easier to find genes linked to specific traits, such as stem size and disease resistance.

Brachypodium also is easier to grow than many grasses, takes up less laboratory space, and offers easy transformation, which means scientists can insert foreign DNA into it to study gene function and targeted approaches for crop improvement in the transformed plants. A major stumbling block in using switchgrass or any perennial grass as a biofuel crop is the difficulty in breaking down its cell walls, an essential step in producing ethanol from cellulosic biomass. *Brachypodium* may hold the key to finding ways to produce plant cell walls that are easy to break down.

[8]Source: Economic Research Service http://www.ers.usda.gov/Publications/BIO0101/.

[9] Source: Agricultural Research Service http://www.ars.usda.gov/is/pr/2010/100210.htm.

- **March 19, 2010: USDA/Agricultural Research Service Report Estimating Ethanol Yields from CRP Croplands[10]**

The scramble to find sufficient land for biofuel production has experts eyeing marginal croplands that have been placed in the Conservation Reserve Program (CRP). Now a study by ARS scientists indicates that plant species diversity and composition are key factors in potential energy yield per acre from biomass harvested from CRP land.

The ARS team studied plant species composition, species diversity, aboveground biomass, plant chemical composition and potential ethanol yield at 34 warm-season grassland sites across the major ecological regions of the northeastern United States. The sites were a mix of CRP holdings, wildlife refuges, state parks and other public and private lands. The researchers identified 285 plant species, most of them native, on the study sites. Switchgrass, big bluestem and indiangrass, which are all tall native prairie grasses, dominated the vegetation mix. There was an average of 34 different plant species per quarter-acre.

The results from this study demonstrated that the species composition of plant mixtures used in low-input, high-diversity systems affects both biomass production and chemical composition of the resulting feedstock. Including a large number of species with undesirable fermentation characteristics could reduce ethanol yields. The study also shows that CRP lands in the northeastern United States with a high proportion of tall native prairie grasses have the potential to produce more than 600 gallons of ethanol per acre. This energy can be produced while maintaining the ecological benefits of CRP grasslands.

Results from this study were published in the journal *Ecological Applications*.

- **April 13, 2010: ARS Researching Camelina as a New Biofuel Crop**

Agricultural Research Service (ARS) scientists have long-term studies underway to examine growing camelina as a bio-energy crop for producing jet fuel for the military and the aviation industry. This research supports the recently signed memorandum of understanding between the USDA and the Department of the Navy and interests of the Commercial Airlines Alternative Fuels Initiative.

Native to Europe, camelina (*Camelina sativa*) is a member of the plant family Brassicaceae and has been grown since ancient times for use as lamp fuel, among other things. The seed's high oil content has made it a promising candidate as a new source for biofuels. Since 2006, ARS researchers and university collaborators throughout the country have been examining how to incorporate camelina and other oil seed crops into existing crop production systems. Preliminary results suggest that current camelina varieties use about as much water as spring wheat, so growers would still need to leave land fallow in alternate years to build up water or accept possible yield losses for wheat grown in rotation. However, with appropriate breeding and selection for uniform, desirable agronomic and oil quality characteristics, camelina has potential to be a good oil seed crop for planting during fallow years.

Also, scientists have identified a few lines of germplasm from the ARS camelina collection that are suitable for rotations with cotton. ARS camelina germplasm research concentrates on identifying high-

[10]Source: Agricultural Research Service http://www.ars.usda.gov/is/pr/2010/100319.htm.

yielding lines that industry can use to develop new cultivars suitable for different growing conditions across the country.

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