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## KPPC Attends Southern Bioenergy Networks Meeting

Representatives from KPPC – Kentucky Pollution Prevention Center attended the Southern Bioenergy Networks Meeting on December 5 in West Memphis, Arkansas, that was co-sponsored by the Southeast Agriculture and Forest Energy Resources (SAFER) Alliance and the 25x'25 Alliance. The event brought together leaders of the region's bioenergy organizations, industries and institutions to examine the impact of federal policies on local project development, assess trends, prepare for changes and coordinate messaging with other Southern networks.

Much of the meeting focused on how best to utilize the South's biomass resources potential to make an economic development case for bioenergy and what bioenergy developers and advocates could expect from federal policies in the near future. Ernie Shea, Project Coordinator for 25x'25 Alliance, addressed the need to promote a "new energy future" that has the potential to create jobs, strengthen the economy and help rural America grow new markets. Shea believes that Congress must include biomass as an important component of future energy policies at the federal level.

Speakers at the meeting stressed the importance of bioenergy solutions as part of the nation's energy future. At the national level, public awareness of the need for increased renewable energy and concern for the effects of climate change have helped bioenergy organizations make a stronger case for future biomass projects. Opportunities to develop dedicated bioenergy cropping systems that can be grown on marginal land and new feedstocks that don't compete with food crops are promising areas for expanding biomass on a sustainable basis. Increased investments in research and development can also support new commercial-scale infrastructure to harvest, collect, transport and store biomass.

Tim Hughes, Director of the Biofuels Division of Kentucky's Department for Energy Development and Independence, was at the Arkansas meeting and was encouraged by what he heard. "Based upon remarks from several of the conference speakers, it is evident that the production of cellulosic biofuels is moving from the laboratory and pilot stage to commercial production. These developments present Kentucky with significant opportunities to be a part of this emerging industry." Hughes pointed out that Kentucky should look for new opportunities uniquely suited to its agricultural community, "Our next challenge is to find the best crops for these applications and to determine the most efficient agricultural practices and logistics to make this attractive for farmers and the project developers."

As the nation's bioenergy sector grows, there continue to be obstacles and

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challenges along the way. Cam Metcalf, Executive Director of KPPC, highlighted one of the potential challenges to growing feedstock for bioenergy that was covered at the meeting. Metcalf says, "I learned that some scientists and environmental groups warn that plants considered most promising as bioenergy feedstock may be highly invasive to native ecosystems. Our regional bioenergy organizations will need to address this and other concerns as they move forward."

While acknowledging the challenges, Southern Bioenergy Network members continued to call for coordination and consistent messaging from regional organizations to focus attention on the economic and environmental benefits of biomass as part of the nation's energy mix. They believe that the United States will be able to produce more than enough biomass to meet current bioenergy production goals without disrupting markets or having a negative impact on the environment. KPPC and KREC will follow developments on the bioenergy front and let our members know how those efforts are progressing.

A pdf of comprehensive notes from the meeting, with links to meeting presentations, is available from the Southern Growth website.

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## New project at UK: Biofuels Made on the Farm

*From Business Lexington News*

Sue Nokes, professor and department chair of biosystems and agricultural engineering at the University of Kentucky, and recipient of a KREC



competitive research grant in 2007, is heading up the research on a new project to produce biofuels on the farm. The idea of creating alternative fuels from biomass is not a new one, and it isn't new to Kentucky either, as many projects have bloomed over the past few years to study everything from switchgrass to sugar beets.

Producing biofuels on the farm, however, is a bit different. Dr. Nokes said the project is sponsored by the USDA National Institute for Food and Agriculture and was funded by a \$6.9 million grant received in July 2011.

The premise of the project is to take biomass grown, harvested and stored on the farm and convert it into a liquid composed of fuel and organic acids that would get picked up in much the same way milk is picked up at a dairy farm. The mixture would then be taken to a processing facility and refined into useable fuels and other products.

The project is just in the research phase and much of what is proposed is theoretical, but with an infrastructure basically in place, so far it seems to be very obtainable, according to Nokes. "The farmer would be processing the material into an intermediate product. The process is condensing the energy in the biomass so that what goes off site is a lot more energy dense than what we started with," she said.

Getting the biomass to this stage is important from an economical standpoint because it cuts down on transportation costs compared to moving the biomass separately, said Nokes.

Materials that could serve as potential fuel stocks include corn stover, wheat straw, switchgrass and miscanthus. The two grasses are widely known for their

use in biomass projects because of their high yields, which make them particularly attractive to this venture.

Nokes said that ultimately one of the end products produced from the project would be butanol that could be used as an alternative fuel for gasoline.

Read the entire article in the *Business Lexington News* online.

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## Energy Hub Under Development in Somerset

*From the Commonwealth Journal*

The city of Somerset has been approved for an \$8.5 million loan through the United States Department of Agriculture's Community Facilities Program to develop and construct a modernistic energy hub.

Somerset Mayor Eddie Girdler said the computerized energy center, first of its kind in Kentucky, will monitor the city's vast natural gas pipe-line network. It also will include offices for a new city hall.

The loan should be sufficient to build the energy hub and will be retired with natural gas revenues. No tax money will be involved, the mayor said.

The center will be energy self-sufficient with an adjacent natural-gas powered generating station that will provide more than enough electricity to operate the facility. Excess electricity produced by the generator will be put in Kentucky Utilities' electrical grid in a trade-off deal with the city, Girdler said.

The city is currently meeting provisions in a Letter of Conditions for the loan, a process that will take 60 to 90 days, Girdler said. He projected that with approaching winter, the project will be advertised for bids " ... not earlier than April 2013."

"Natural gas is being promoted as the energy of the future," said Girdler, and Somerset's natural gas business has grown to the point where we can make a major impact on Kentucky and the United States." Girdler predicted the natural gas expansion will create as many as 2,000 jobs in the region, mostly from Somerset east to Virginia and West Virginia.

Somerset made a major step into the natural gas business when during a natural gas shortage in the 1970s the city borrowed \$4.5 million from Farmers Home Administration to build a natural gas pipeline into eastern Kentucky. Transmission of natural gas from previously landlocked producers ended frequent natural gas shortages in Somerset and has proven a financial success. Read the article on the *Commonwealth Journal* website.

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## Soy as a Renewable Alternative



Soybeans have a long history as a food crop in the United States. The first soybeans came to the American colonies from China around 1765. Today, the U.S. produces approximately 35 percent of the world's soybeans, and they boost America's trade balance. Soy is the top U.S. agricultural export, with roughly 55 percent of the U.S. soybean crop going to customers abroad. China is the number one customer for U.S. soy.

At the same time, soybeans are helping create new opportunities for American manufacturing. The BlueGreen Alliance, a national partnership between labor unions and environmental organizations, commissioned a study, "The Economic Benefits of a Green Chemical Industry in the United States: Renewing Manufacturing Jobs While Protecting Health and the Environment." It cites bio-based chemicals as a means of reversing the decline in U.S. jobs in the chemical industry.

From the report:

Each year, the U.S. economy produces over 27 trillion pounds of chemicals, or about 86,000 pounds per person. By 2050, the volume of chemicals produced and consumed worldwide is expected to more than triple. In the U.S., approximately 4.2 million jobs are directly or indirectly linked to the productive activities of the chemical industry.

From 1992 to 2010, the chemical industry lost more than 300,000 jobs. However, if just 20percent of chemical production switched from making petrochemical-based plastics to plant-based plastics, 104,000 jobs would be created.

Moving to plant-based plastics creates jobs and allows companies to source materials from within the United States, instead of relying on imports of foreign oil. The American Chemistry Council (ACC) reports the important multiplier effect such jobs have for America. Every new job in the chemical industry creates 5.5 additional jobs elsewhere in the economy, according to ACC's analysis of federal studies.

Increasingly bio-based feedstocks are being seen as a key strategic need for the chemicals, polymers and other advanced materials industries—largely because of the price and supply volatility of traditional fossil-based petrochemical and natural gas feedstocks.

Citing bio-based products as one of the fastest growing economic sectors in the world, 98 counties in Arkansas, Kentucky, Mississippi, Missouri and Tennessee have launched a regional strategy to support the development of bio-based products in the Mississippi Delta.

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## Renewable Energy: Least-Cost Option for Millions

*From CleanTechnica*

The International Renewable Energy Agency has revealed a new policy brief which shows that renewable energy has become the most cost-effective way to generate electricity for hundreds of millions of people worldwide who are not on the grid.

Renewable energy is also the least-cost option for extending grid supply in areas with the necessary resources such as wind, sun and appropriate tidal options.

“A renewable revolution is underway,” says Dolf Gielen, IRENA’s Innovation Director. “Recent years have seen consistent, sometimes dramatic, falls in the cost of electricity from renewables – making it the cheapest option off-grid, and even on-grid in places with plentiful resources.

“The message is clear: renewable energy today is often the cheapest option to meet rising demand for electricity – even without subsidies. It is also healthier, and better for the environment. A renewable energy future is now bankable, and there are further cost reductions to come.”

Highlights of the IRENA publication, “Renewable Power Generation Costs” include:

- Biomass power generation has become competitive wherever low-cost agricultural or forestry waste is available, with the most competitive projects producing electricity for as little as USD \$0.06/kWh.
- Concentrating solar power, in which mirrors focus light over a large area into a central generator, has seen costs drop to as little as USD \$0.14/kWh.
- Hydropower, currently the world’s largest source of renewable energy, today often provides the lowest cost electricity of any generation source.
- Solar photovoltaics (PV), which has seen rapid development over the past two years, is set to achieve grid parity with residential electricity tariffs in many locations around the world. PV costs typically range from USD \$0.16 to \$0.36/kWh.
- The most competitive onshore wind power sites can deliver electricity costs at as little as USD \$0.04/kWh, making wind power the cheapest electricity option in many places.

Read more at CleanTechnica.

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## DOE's "EV Everywhere" Project

Three years ago, the U.S. Department of Energy announced an unprecedented



series of Transportation Electrification projects under the American Recovery and Reinvestment Act. Since that time, there has been an acceleration of the manufacturing and deployment of plug-in electric vehicles, batteries and components in America. And because of advancements in technology and increased manufacturing, battery costs have shrunk by 50 percent.

More recently, DOE launched the EV-Everywhere Grand Challenge, a national initiative to reduce the cost and increase the convenience of electric vehicles. Easy access to charging stations will be key to meeting these goals, and thanks to companies like ChargePoint, finding a charging station is getting more convenient than ever.

ChargePoint recently finished installing 4,600 U.S.-manufactured Level 2 charging stations in residential and commercial locations across the U.S. as part of its ChargePoint America Program - which was supported with a \$15 million grant from the Energy Department and dollar-for-dollar matches by ChargePoint. Level 2 chargers typically add 10-20 miles to the range of the electric vehicle per hour of charging. The company also worked with vehicle manufacturers

Chevrolet, Ford, BMW and Nissan to provide home charging station hardware at no cost to their customers in exchange for collecting operational data from the charging station.

The success of the ChargePoint America Program has enabled the Campbell, California company to raise more than \$50 million in investment from the private sector and grow from 16 ChargePoint employees in June 2009 to more than 150 employees today.

The ChargePoint America Program was deployed in 10 regions across the nation where installation costs were supported by private industry and state-level grants.

To find an EV charging station near you, check out the Alternative Fuels Data Center Station Locator, which is now on Energy.gov!

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## **Submit an Article to REnews!**

KREC would like to publish your thoughts on renewable energy and energy efficiency in Kentucky in the "Members' Forum". Please send your opinions, articles or news about RE happenings in the Commonwealth to [KREC@kppc.org](mailto:KREC@kppc.org). A short piece is preferable (300 or fewer words work best).

Make your voice heard – we want to give KREC members a forum to spread the word about renewable energy efforts and issues.

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