

The Oklahoma WinCharger

O k l a h o m a W i n d P o w e r I n i t i a t i v e

OWPI

A collaborative project between the University of Oklahoma and
Oklahoma State University

A Newsletter for Oklahoma Wind Stakeholders

May/June 2007

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Economic Impacts of Wind Development in Oklahoma



Mark Giesken, former OWPI employee, recently graduated from the University of Oklahoma with his master's degree in Geography. His completed master's thesis is titled "Economic Impacts of Wind Farm Development in Oklahoma." This research consists of four components: surveys, interviews, analysis of county tax records, and economic modeling. The survey was conducted in Weatherford and was designed to assess local knowledge of wind power and its potential economic impacts. Interviews of local officials and analysis of county tax records were also conducted to gain additional information regarding the wind farms and their impacts to the local communities. Survey results showed that the overwhelming majority of respondents survey support wind energy. For example, 85% of respondents stated that Oklahoma should do more to promote wind and other forms of renewable energy.

An economic modeling approach was used to estimate the economic impact of the wind farm development. Estimated economic impact during construction of the four operating commercial wind facilities has been over \$100 million. Further results show that the wind facilities continue to contribute an estimated \$8 million annually to the local economies. In addition to this, more than 800 construction jobs and at least 60 fulltime permanent jobs have been created. It is hoped that the results from this research will create a useful guide to community leaders and legislators regarding the specifics of the economic impacts of wind energy development in Oklahoma.

If you would like more information on this study, please contact Mark at chsm1g@yahoo.com. The entire report will also be posted on our website at www.ocgi.okstate.edu/owpi under the "OWPI Latest News" section.

OWPI Moving Update...

In the last issue of the WinCharger, we mentioned that OWPI was moving into a new building on the University of Oklahoma's campus. Our move-in date has been pushed back and we will not be in the new building until July. Our new address is below:

Oklahoma Wind Power Initiative
100 East Boyd Street
SEC Room 410
Norman, OK 73019

As mentioned before, OWPI's new phone number has yet to be determined. We will let everyone know our new number just as soon as we can. Until then, you can reach us at (405) 447-8412. Thank you.

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P o l i c y



More U.S. Political Support Would Make 635 GW Possible

The 2007 Outlook on Renewable Energy in America looked into the potential renewable energy resources we would have if more U.S. policies and market-based incentive were implemented in favor of renewable energy. The report showed that wind power could produce 248 gigawatts (GW), solar power 164 GW, hydro, ocean, and tidal energy 23 GW, geothermal 100 GW, and biomass and biofuels 100 GW. The Outlook on Renewable Energy in America was led by ACORE, the American Council on Renewable Energy.

The renewable energy sector can not reach this potential until U.S. politicians and policymakers change their views on renewable energy.

"We still have elected officials at the federal and state level who honestly believe that renewable energy cannot power the country...I think they're incorrect," said Michael T. Eckhart, ACORE president. "We believe that renewable energy can power this country, and the world, and provide the energy necessary to support economic growth."

Even though one-third of U.S. governors are supporting renewable energy policy, renewable technologies struggle to progress due to uncertainty in governmental policy and support for research and market sectors are limited by short-term commitments, and as a result, destabilizes industrial growth.

Randall Swisher, Executive Director of the American Wind Energy Association, commented on the importance of long-term policy, "Steady, long-term policy support is crucial to sustain this growth and attract investment. A national renewable portfolio standard and a long-term extension of the renewable energy production tax credit are measures that can be adopted now and would unleash billions of dollars in new projects and manufacturing plants, create tens of thousands of jobs and generate revenue for farmers and rural communities, while jump-starting cost-effective action against global warming."

The lack of long-term policy commitment is due to the belief of many politicians that renewable energy is not enough to power the country. "That is a misperception that is deeply embedded in the psyche of elected officials because they're being lobbied by other forces that want to persuade them that we cannot do the job. And this document is the beginning of that...sort of like the bugle coming across the horizon at you. This is where we're coming on; we're starting to pull the story together that yes we can do this job. Yes, we can deliver tremendous amounts of megawatts and gigawatts," said Eckhart.

According to official energy statistics from the Energy Information Administration (EIA), renewable electricity generation will stay steady at 9% in 2030 based on current policy.

Eckhart commented on the statistics, "The answer is not that the [EIA statistics] are wrong, they're exactly right. Their conclusion is renewable energy doesn't amount to much if we don't change policy. That's our whole point. That if we don't change policy we cannot expect a substantial difference in the outcome."

Editor's Note: The above is a summary from Renewable Energy Access May 2, 2007.

Senators Vote for National Renewables Portfolio Standard

In June the Senate is planning on voting whether or not to adopt a 15% national renewables portfolio standard (RPS). Half the Senate signed a letter stating the strong support for a national (RPS) to Energy Committee Chairman Jeff Bingaman (D-N.M.) and Ranking Member Pete Domenici (R-N.M.). Other Senators commented that they would be open to vote in favor for a national RPS when it is on the Senate floor.

AWEA Legislative Director Jaime Steve expressed his confidence in Bingaman and Harry Reid (D-Nev.) "Chairman Bingaman and Senate Majority Leader Harry Reid (D-Nev.) are both strong, long-standing advocates for setting a meaningful renewable energy requirement for the nation. Senators Bingaman and Reid have passed RPS legislation in the past, and we are confident in their ability to lead the Senate to approve the RPS again this year."

Editor's Note: The above is a summary from Wind Energy Weekly #1239.

NGA Report on State Policies Affecting Renewable Energy

The National Governors Association (NGA) Center for Best Practices released a report in early May describing the various actions different states have taken to promote renewable energy. Everything from renewable portfolio standards, renewable fuels standards, and governmental energy use regulations are discussed. The following is an excerpt from the report:

In Oklahoma the SEO [State Energy Office], known as the Department of Commerce Office of Community Development, was authorized by Governor Brad Henry to design and implement a low-interest revolving loan for both private and non-profit organizations that

are offering financial assistance for the acquisition of alternative fuel vehicles or alternative fuel vehicles conversions.

Although not mentioned in the report, Oklahoma also has a state production tax credit for qualifying zero-emission facilities and credits for small wind manufacturing facilities. If you would like to see more done at the state level regarding renewable energy, call your local representative or senator and let them know your opinions and concerns. The state report can be found on the NGA Center for Best Practices' website at www.nga.org.

\$19 Million in Grants for Value-Added Ag Ventures

Independent agricultural producers can receive aid to participate in value-added activities that also includes renewable energy; the \$19.5 million aid was introduced by U.S. Agriculture Secretary Mike Johanns. The Value-Added Agricultural Product Market Development grants allow agricultural producers to improve the revenue generated from their crops and other production. Enhancements like conversion to organic production, changing the use of farm crops to create forms of renewable energy, or making a finished product from a raw material.

Johanns commented on the grants "These grants are a vital tool to help support rural businesses, create new markets for agricultural products and help the United States become more energy independent. They represent the exciting new direction we're proposing for the energy and rural development titles of a new farm bill this year."



Agricultural producers can use the funds for business plans to make bio-based products from agricultural materials. The producer can be awarded for planning activities such as feasibility studies, or marketing and business plans to set up a value-added marketing opportunity. The maximum amount for a planning grant is \$100,000. Or, the producer can be awarded for working capital expenses used in operating a value-added business venture or, for farm-based renewable energy projects; the maximum for a working capital grant is \$300,000.

The applicants must offer matching funds of at least the same amount of the grant funds requested. Applicants include independent producers, agriculture producer groups, farmer or rancher cooperatives, or majority-controlled producer-based businesses. Please contact your local USDA Rural Development office for more information.

Editor's Note: The above is a summary from Renewable Energy Access April 26, 2007.

2007 Oklahoma Renewable Energy Legislation Update

HB 1387: This would create a state tax credit for small wind systems and photovoltaic systems. The bill reached the general conference committee on appropriations and failed to leave.

HB 1513: Calls for an amendment to the state ethanol tax credit. This bill was passed by both Senate and the House and has been sent to the Governor's desk.

HB 1764: Calls for the creation of the Oklahoma Renewable Energy Transmission Advisory Board to undertake a transmission study. This bill has been passed by both the House and the Senate and has been sent to the Governor's desk.

State Approves Tax Break for Biofuels

House Bill 1916 was passed by the Senate this week to help strengthen the role of biofuels in Oklahoma. The new legislation allows for a tax exemption for biofuel production, according to Senator Ron Justice (R-Chickasha), the principle Senate author of the bill.



Photo courtesy of NREL

"By running this bill, it helps put emphasis on the Ag producers in the fact that when they produce these products and use the oil or the biofuels and then blend those into the other products, it gives a tax exemption on the amount of fuel that is blended in, not on the total amount but on the percentage that's actually blended in," Senator Justice explained.

House author Phil Richardson (R-Minco) believes the legislation not only offers a tax exemption for producers, but also presents opportunities for research, jobs and more crops for farmers to grow.

Senator Justice commented on the impact the legislation will have, "The reality is that this legislation is far more reaching than just the tax exemption itself. It adds to our overall Ag economy in the State of Oklahoma. That's why I think it has some great potential. Honestly, right at this point there isn't a lot of this production, but if you look around at the interest across the nation and look at Oklahoma and the opportunities we have here I think it's something we need to be out front on and to really be involved in."

Editor's Note: The above is a summary from Oklahoma's Farm News Update by Ron Hays, April 19, 2007.

W i n d P o w e r

OG&E Dedicates Centennial Wind Farm



Photo courtesy of OG&E

The Centennial Wind Farm, located near Fort Supply, Oklahoma, was dedicated on April 20, 2007. The new wind farm consists of 80 turbines and produces 120 MW. Centennial, one of the largest wind farms in Oklahoma, was developed by Invenergy and uses General

Electric's 1.5-MW turbines. The addition of the new facility brings OG&E to a capacity of 170 MW, enough for more than 50,000 homes. Steve Moore, chairman and CEO of OGE Energy Corp., parent company of OG&E Electric Services, commented on OG&E's role in wind energy. "OG&E is committed to helping Oklahoma harness its abundant wind resources in a meaningful way. Our company has been, and will continue to be, a leader in developing wind-driven power generation as a way to further diversify our electricity-generating portfolio."

Editor's Note: The above is a summary from Wind Energy Weekly #1237

Wind Tower Manufacturer Sets Up in Tulsa

DMI Industries, based in West Fargo, N.D., has made plans to open a wind tower manufacturing plant in Tulsa, OK after it receives the required permits. DMI will purchase an existing plant in Tulsa, and is aiming for the plant to open by early 2008. The precise location of the plant is unknown, but its proximity to the Tulsa Port of Catoosa will allow the company to ship towers by barge to the northern Midwest or south to the Gulf of Mexico.

DMI, an operating unit of Otter Tail Corp., produces heavy steel wind towers and equipment for a variety of industries. DMI has an existing plant in Fort Erie, Ontario, built in 2005, that began filling orders last May.

DMI president Lars Moller commented on DMI success. "DMI has achieved success in Canada and across the northern tier of the United States thanks to strong demand. We plan to do the same things in Oklahoma and the south-central United States that enabled that success. As for today, we're focused on finalizing this purchase, customizing the facility and serving the needs of our customers."

The new plant in Tulsa will eventually provide 450 jobs and when it is fully operational it will supply more than 3,000 MW of wind-project capacity per year.

Editor's Note: The above is a summary from an article by John Stancavage of World Business Editor, May 3, 2007.

Kiowas Sign on for a Wind Farm

The Kiowa Economic Development Board (KEDB) met with HARE & Associates and HDR Engineering of Omaha, Neb to

to discuss the wind resource at a potential site, and signed with the companies to develop a wind farm on tribal jurisdictional areas. HDR energy experts reviewed the wind resource data of the area, and the data showed a good potential energy source. KED Chairman Lincoln Aitson commented on the development. "I think this will be a historic program and a model for other tribes. This is the largest scale project for an American Indian tribe."

Editor's Note: The above is a summary from an article by Carolyn N. McBride of the Anadarko Daily, May 4, 2007.

OWPI Hosts Wind Workshop for 4-H Students

The annual 4-H Roundup was held May 23-25 at Oklahoma State University. Hundreds of 4-H students came to Stillwater to celebrate another year of hard work, attend educational workshops, and, most importantly, have fun. OWPI hosted a workshop titled "Wind Power for Ranch and Farm." Over 30 students came to learn about wind power in Oklahoma and the opportunities available for farmers and ranchers. After a presentation about wind power, the students were given a computer activity sheet where they could go online and analyze the Oklahoma Wind Resource Map, the Oklahoma wind and wildlife map, and aerial photos. Using these resources, the students could identify the wind resource in their area, locate sensitive habitats, and look at aerial photos to see if a wind farm could be developed in their hometown. OWPI looks forward to participating in future 4-H Roundups and other student agricultural events.



Photo courtesy of Stephanie Bitway

Steve Stadler teaching students at the 4-H workshop.

OWPI at ScienceFest

OWPI attended ScienceFest held at the Oklahoma City Zoo on April 19. The event was an opportunity for 4th and 5th grade students to visit different exhibits around the zoo and learn about the environment and how to conserve natural resources with renewable energy. OWPI demonstrated how wind turbines use the wind to produce electricity.

There were a total of 4,709 participants at ScienceFest, with 3,700 students, 779 teachers and chaperones, 81 presenters, 24 exhibitors, and 125 volunteers.

OWPI would like to thank the ScienceFest steering committee for allowing us the opportunity to participate in the event.

AWEA Ranks Annual Wind Power

On April 11, AWEA released the annual rankings of wind energy development. According to the release, the U.S. installed over 2,400 MW of power in 2006, making wind one of the largest sources of power generation at a time of high electricity demand. Wind power capacity in the U.S. now totals 11,600 MW, which is equivalent to powering 3 million average households. Below is a summary of the annual rankings:

- States that generate the most electricity from wind:
Texas: 2,700 MW
California: 2,361 MW
Iowa: 936 MW
Minnesota: 895 MW
Washington: 818 MW
Oklahoma: 535 MW
- Districts with the most wind power:
Texas 19th (Rep. Randy Neugebauer): 1419 MW
California 10th (Rep. Ellen Tauscher): 920 MW
Texas 11th (Rep. Mike Conaway): 847 MW
- The largest wind farm operating in the world is Horse Hollow in Texas, with a 735.5 MW capacity. Followed by Maple Ridge in New York at 321.75 MW capacity.
- The largest manufacturer of wind turbines is GE Energy with Siemens in a close second.
- FPL Energy owns the most wind power projects, 4016.2 MW, in the U.S. with the construction of 777 MW of new wind power projects.
- Xcel Energy uses 1323 MW taking the lead in wind power use, and Southern California Edison comes in second with 1026 MW.

"These wind power rankings tell the story of a vibrant industry that is growing fast, competing hard, gaining market share, and all the while powering a cleaner, stronger America," said AWEA Executive Director Randall Swisher. "Our new Congressional district rankings also serve as a reminder of the many benefits that wind power brings to local communities—new jobs, more local revenue, cleaner air, and an essential, home-grown contribution to fighting global warming."

The growth in the wind industry can be contributed to the long-term extension of the renewable energy production tax credit (PTC). In previous years the short-term extensions of the PTC have led to a boom-and-bust cycle that has created increasing costs for supplies in the wind industry.

Editor's Note: The above is a summary from Wind Energy Weekly #1236.

Report Shows Wind Energy Projects have Low Impact on Birds

On May 3rd the National Academy of Sciences (NAS) released a report on the benefits and impacts of wind energy in the Mid-Atlantic region. In a section titled "Bird Deaths in Context", the report stated that the percentage of bird deaths from wind farms totaled less than .003% in 2003.



Photo courtesy of NREL

"The report verifies the fact that wind energy development's overall impact on birds is extremely low compared with many other human-related activities. More than a thousand times as many birds are killed flying into buildings, for example, than wind turbines," said AWEA's Executive Director Randall Swisher.

John Flicker, President of the National Audubon Society, is a strong supporter of wind energy. In a column in the society's magazine Flicker expressed his support for wind power as a clean alternative energy and discussed how global warming impacts birds and other wildlife.

Swisher commented on the wind industry's sensitivity to the environment, "The wind industry is a conscientious and highly active steward of the environment and supports and funds ground-breaking wildlife research through collaborative agreements with conservation groups and foundations. Wind power is an essential element of the solution to both climate change and America's exponentially increasing demand for electricity. It's 100 percent clean, free and inexhaustible, and readily available and cost-effective source of energy throughout most of the U.S."

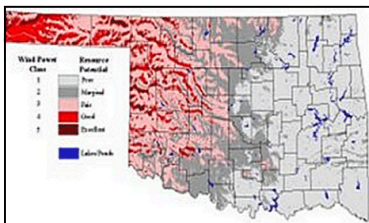
The report also notes the impact wind energy will have on reducing greenhouse gas emissions, the leading greenhouse gas being carbon dioxide. The report gives a scenario where wind electricity displaces 140 million tons of carbon dioxide annually by 2020. That is only 30% of the predicted increase of emissions from electricity for that year. In 2007 AWEA estimates that 19 million tons of carbon dioxide will be displaced by wind power.

The Mid-Atlantic Highlands was the area of focus in the report, which concluded that the effect on birds was low, though bats are somewhat still a concern. The report also looked at potential impacts wind industry could have on the environment, but neglected to include what actions were being taken by industry and special groups to reduce those impacts. AWEA suggests that NAS look at the impact all energy sources have on the environment and wildlife.

Editor's Note: The above is a summary from Wind Energy Weekly #1239.

Oklahoma Wind Resource Map In Wind Today

The Oklahoma Wind Resource Map was featured in *Wind Today*, a quarterly magazine that informs members of the wind industry's advances in equipment, research, and policy. The story was in issue #2



of *Wind Today* and discussed the data used to make the wind map and explained the wind power classes and resource potential. The article also summarized our installed wind energy capacity. You can view this article at OWPI's website: <http://www.ocgi.okstate.edu/owpi>.

3,000 MW for 2007

In AWEA's first-quarter market report the U.S. wind industry is projected to install over 3,000 MW for 2007. So far this year, 103 MW have already come online: 60 MW in Oklahoma, 33 MW in Maine, and 10 MW in Texas, where a 1,000 more megawatts are planned come on online this year.

AWEA Executive Director, Randall Swisher commented on this year's projection, "Clean, cost-effective, inexhaustible, and readily available, wind power is an essential element of the solution to both climate change and America's increasing demand for electricity. Texas recognized this business opportunity and successfully spurred wind power development with a renewable portfolio standard (RPS) and other forward-looking policies."

"The moment has come for the U.S. government to build on the example set by Texas and many other states, and enact a national RPS as part of any energy legislation it considers this year."

Fifty U.S. Senators are encouraging a national renewable portfolio standard (RPS). RPS uses market methods to guarantee that a percentage of electricity is produced from renewable energy. The economies of rural areas with wind farms are boosted by the steady income to farmers, ranchers, and other landowners.

Currently the U.S. is generating 11,699 MW which is estimated to be 31 billion kWh and that is enough to serve almost 3 million average households.

Editor's Note: The above is a summary from Wind Energy Weekly #1240.

OGE's Teacher Grant Program

OGE Energy Corp. wants to reward teachers for innovative ideas. O&GE awards grants of up to \$1,000 to K-12 public school teachers to fund inventive math, science and reading projects. Last year OGE received over 200 grant proposals, and over 100 public school teachers throughout Oklahoma have been awarded since 2003. For complete information about the OGE Teacher Grant Program please visit www.oge.com.

AWEA's WINDPOWER 2007

The American Wind Energy Association's annual conference, WINDPOWER '07, will be held June 3-6 in Los Angeles, CA at the Los Angeles Convention Center. An astounding 6,000+ attendees from every sector of the wind industry are expected to attend the conference. The exhibitor hall this year will be even bigger than last with over 400 booths ranging from manufacturing companies and consulting firms to academic and non-profit organizations. In addition to WINDPOWER '07, the Wind Powering America State Summit will be held on June 7. The State Summit will bring together wind professionals from numerous states and look at issues relating to wind on a smaller, more local scale.

For more information on these two events, visit www.awea.org/wp07 and/or www.eere.energy.gov/windandhydro/windpoweringamerica.

Kansas City Power and Light Plans for 400 MW of Wind Power

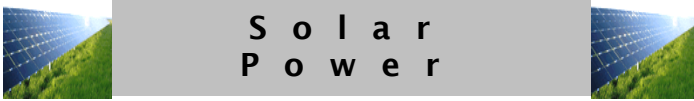
Kansas City Power and Light (KCP&L) is aiming to develop 400 MW in the Kansas or Missouri area. The projected timeline is to have 100 MW in 2008 and add 300 MW from 2009 to 2012. According to KCP&L, the wind projects will help boost the economy in rural areas where the wind farms are located, much like the company's first wind project, the Spearville Wind Energy Facility in Spearville, Kansas.

KCP&L has sent out the request for proposals (RFP) that state the requirements for firms to fulfill in their proposals. KCP&L added that the proposals should also meet the guidelines set forth by the Kansas Energy Council and the requirements in the permitting facilities handbook of the National Wind Coordinating Committee (NWCC). The handbook explains steps to seeking permits to develop and build wind farms in various locations.

In most utility ownership of wind projects, the RFP allows developers to place bids into the RFP by way of either a power purchase agreement (PPA) or a build transfer agreement. "Utility ownership of wind projects is a trend we are likely to see grow for many utilities. It makes sense for some utilities, while other utilities will continue to pursue the PPA option as their primary means of obtaining wind power for their customers," said Jeff Anthony, AWEA Manager of Utility Programs and Policy.

KCP&L Wind Project Manager, Phillip Duncan, told *Wind Energy Weekly*, "We will consider both the PPA and ownership options under this RFP. We see wind as just the latest generating technology to be added to our power supply portfolio. For us, wind power offers a number of benefits and positive attributes for our customers, including environmental and price stability aspects."

Editor's Note: The above is a summary from Wind Energy Weekly #1237.



Solar Power

Solar Power Sets in the West

The largest solar power system in North America, consisting of 70,000 solar panels, was built in late April on Nellis Air Force Base, located near Las Vegas, Nevada. The solar power system is financed, owned and operated by MMA Renewable Ventures and will sell the power to Nellis. The system is an advanced sun-tracking system designed by PowerLight Corporation, and is predicted to produce 25 million kilowatt-hours of solar power per year.

In Colorado, Governor Bill Ritter helped break ground for an 8.22 MW solar photovoltaic plant, located near Alamosa. The plant uses 27,000 solar panels from Suntech Power and is owned and operated by SunEdison. The plant was built to help Xcel Energy meet its renewable energy requirements.

Editor's Note: The above is a summary from EERE Network News, May 9, 2007.

Wal-Mart and Kohl's Go Solar

Kohl's Corporation and Wal-Mart Stores, Inc. recently made plans to construct solar power systems to install on their stores. Three solar suppliers will install systems on 22 Wal-Mart stores in California and Hawaii. SunEdison will be installing solar power systems on 24 Kohl's stores in California and eventually expand to 40 more stores in the future.

Editor's Note: The above is a summary from a press release from SunEdison, May 5, 2007.

Solar Manufacturing Expands in U.S.

As the demand for solar power grows, solar manufacturers expand production facilities to keep up with the demand. SolarWorld AG plans to build a solar cell facility in Hillsboro, Oregon in March. The facility will produce 500 megawatts (MW) of solar cells each year. The company also plans to expand its solar module factory in Camarillo, California to match capacity of its solar cell facility. In Westborough, Massachusetts Evergreen Solar, Inc. plans to construct a solar cell manufacturing plant to produce 70 MW of solar cells annually. As the construction of solar manufacturing plants progresses, the production of polysilicon also needs to increase. Polysilicon is an important raw material for solar cell production. Hoku Materials is building a facility in Pocatello, Idaho that will produce 2,000 metric tons of polysilicon per year. A new plant will be built in Bucks County, Pennsylvania by AE Polysilicon Corporation according to Governor Edward Rendell. Renewable Energy Corporation (REC) introduced its facility in Butte, Montana would add an additional 6,000 tons to its annual production. Hemlock Semiconductor, a subsidiary of Dow Corning, plans to produce 17,000 metric tons per year by 2010 at its polysilicon plant in Hemlock, Michigan.

Editor's Note: The above is a summary from EERE Network News, May 9, 2007.



Geothermal Power

House Legislation Seeks Geothermal Potential

In a House Committee on Science, Subcommittee on Energy and Environment hearing titled "Developing Untapped Potential: Geothermal and Ocean Power Technologies" a new bill, HR 2304, was introduced by R. Gerald McNerney (D-CA). The bill would authorize \$400 million for geothermal research for FY 2008 through FY 2012. Specifically, the new legislation would "direct the Secretary of Energy to conduct a program of research, development, demonstration, and commercial application for geothermal energy, and for other purposes."

The future of geothermal research was threatened when



Photo courtesy of NREL

the Office of Management and Budget (OMB) proposed to zero out the geothermal programs in the FY 07 and FY 08 budgets. Paul Thomsen, Public Policy Manager of Ormat Technologies commented on OMB's proposal, "The OMB proposal to terminate geothermal research is not only short-sighted; it just doesn't make any sense. By passing this legislation, Congress will recognize that we have just begun to tap the enormous potential of geothermal energy in this country."

Paul Thompson attended the hearing and not only spoke on behalf of his own company, but also the U.S. Geothermal Trade Association and the Geothermal Energy Association (GEA).

Karl Gawell, GEA Executive Director said of the importance of progress for geothermal research, "There are substantial needs for improvements in technology, resource information, and efficiencies for which federal research are vital. Rep. McNerney's legislation is urgently needed to ensure that federal energy programs work to tap the tremendous potential of our nation's geothermal energy resources."

The need for the new legislation was emphasized by Thomsen. "Today, we are tapping only 3.5% of the estimated hydrothermal resource base. Is that acceptable when our country imports 10 million barrels of oil a day and is 60% dependent on net petroleum imports? HR 2304 recognizes the answer is no and the time to take action is now."

Editor's Note: The above is a summary from Renewable Energy Access May 17, 2007.



B i o f u e l s



First Ethanol Plant Project Changes Locations

In August 2005 Enid leaders announced that the first large-scale ethanol plant in Oklahoma would be built in Enid. Now those plans have changed, and it will be built in Blackwell. Oklahoma Sustainable Energy (OSE) and Chaparral Energy, operating jointly as Oklahoma Ethanol LLC, accepted an offer to construct the new plant in Blackwell.

Mark Fischer, a manager of Oklahoma Ethanol and Chaparral president, commented on the decision, "Our decision to locate the plant in Blackwell is strictly a business decision based on what's best for our company and investors."

The original plans for the plant in Enid were postponed in late February due to an increase in construction costs and the high price of corn. The city of Enid offered help to Oklahoma Ethanol with its Tax Increment Finance district to help offset startup costs, and \$250,000 upfront seed money, though there were other locations offering similar incentives.

"I was aware they were exploring other options. We had inked our deal more than a year ago," said Jon Blankenship, executive director of Greater Enid Chamber of Commerce.

The Blackwell location offered a key component that Oklahoma Ethanol officials were looking for: transportation incentives. Blackwell is close to I-35 and provides rail access; Blackwell Northern Gateway Railroad provides a discount on rail access to all major markets for buying grain and selling ethanol and distiller's grains. The Blackwell site also has the ground work to supply water to the facility and wastewater systems to handle the facilities wastewater.

According to plant manager Mike Frickenschmidt of Oklahoma Ethanol, there will be a 240-acre tract of land for the company to build a double loop of rail tracks that will enable grain to be transported on the outside loop and ethanol on the inside loop.

"This is a huge labor and transportation costs savings," Frickenschmidt said.

Last month, interested contractors were giving presentations to Enid for a new wastewater treatment plant that will cost from \$26 million to \$42 million.

There are no hard feelings between Oklahoma Ethanol and the city of Enid, and the \$250,000 of seed money was returned to Enid City Manager Eric Benson's office.

Benson commented on the decision made by Oklahoma Ethanol, "The city respects their decision. I have a very high regard for the leadership of Oklahoma Ethanol and Chaparral Energy. Mike Maly (of Chaparral Energy) and Mike Frickenschmidt are distinct gentlemen. As a gesture of goodwill they returned the \$250,000 the city advanced to them. They could have waited until 2009. That shows they are men of integrity."

The city of Enid still holds hope for ethanol development in their area. State Rep. Mike Jackson (R-Enid) believes Oklahoma Ethanol will have something down the road for Enid due to the initial relationship left in good standing.

"Enid is still an excellent site for an ethanol plant. We plan on hopefully building a second one," Frickenschmidt said.

Editor's Note: The above is a summary from EnidNews.com by Scott Fitzgerald April 25, 2007.

New Biofuels Website at the OK Department of Commerce

The OK Department of Commerce unveiled their new Oklahoma State Energy Biofuels Website in early May. The website is a great resource for those interested in biofuels in the state. Users can access the following information:

- General information on ethanol and biofuels
- Incentives and funding opportunities for biofuel facilities
- Regulations and permitting of biofuel facilities
- Research currently underway on biofuels
- Important contacts in the biofuels industry

Take a few moments and visit the new site at www.okcommerce.gov/biofuels.

Grow

The Oklahoma governor's conference on biofuels, Grow, will be held at the Sheraton Hotel in Oklahoma City on October 16-17, 2007. The conference will cover topics such as proposed initiatives and funding for bioenergy research, new carbon control policies, feedstock and other energy crops in Oklahoma, biorefinery construction, petroleum and automotive industries' role in alternative fuels, advances in feedstock conversion technology, and other new developments in the biofuels industry. The registration fee for the event is \$45, for more information please call 1-800-203-5494 or visit www.growOK.com.

FAPC Plans to Hold Biodiesel Workshop

On June 12-13, the Food & Agricultural Products Center (FAPC) will hold a biodiesel workshop on the Oklahoma State University campus in Stillwater. According to Nurhan Dunford, FAPC oil/oilseed chemist and workshop chair, Oklahoma businesses and entrepreneurs are becoming more and more interested in biofuels.

"I do get a lot of questions on biodiesel production techniques, feedstock selection and feasibility of biodiesel production facilities from FAPC clients. This workshop is important because planning and constructing a biodiesel plant involve a decision-making process that entails a number of factors ranging from process selection, feasibility study and business planning to product quality," said Dunford.

Topics to be covered at the workshop are feedstock selection, preparation, biodiesel production techniques and quality issues.

Those speaking at the workshop are Nurhan Dunford, Jim Willits, Desmat Ballestra-North America; Ted Neuman, Westfallia Separator Inc.; Perry Alasti, Artisan Industries

Inc.; Gerg Warnica, Crown Iron Works; and Phil Kenkel, Bill Fitzwater Endowed Coop Chair, OSU Agricultural Economics.

There is a \$250 registration fee that covers lunch, refreshments, parking, and workshop materials. The seating is limited to 50 people. To register, contact Karen Smith, at (405) 744-6277, by fax (405) 744-6313, by email at karenl.smith@okstate.edu or visit www.fapc.biz/pages/biodieselworkshop.

"We are fortunate that nationally recognized experts in the field agreed to come to the FAPC and speak at this workshop," Dunford said. "I believe that this workshop is a tremendous opportunity for Oklahomans who are interested in biodiesel production directly from experts in the field."

Editor's Note: The above is a summary from FAPC news release, May 15, 2007.

R e n e w a b l e N e w s

Renewable Energy Has a Positive Influence on the Economy

In 2006 the Fraser Paper Mill in Berlin, New Hampshire closed down, terribly affecting the economy of the town. Now, plans to change the old paper mill into a biomass electrical generation facility with a 50 megawatt (MW) capacity could strengthen the economy of the town again. A New York-based developer of independent renewable power plants, LaidLaw Energy Group sees the plant as an easier and cheaper way to construct the facility. The biomass facility will create 500 indirect and 40 direct jobs in the surrounding area where the plant will be located.



Photo courtesy of NREL

Berlin City Manager Patrick MacQueen commented on the project, "Clearly this project would help the local economy and many of the folks who have relied on the paper industry over the years. The project will be great for job creation and actually maintaining the jobs that get built."

As New Hampshire is getting ready to pass its renewable portfolio standard (RPS), the University of New Hampshire

conducted a study titled, "Economic Impact of a New Hampshire Renewable Portfolio Standard." In the study, it concluded that when the 20 percent of the renewable energy is implemented it will create thousands of jobs, produce over \$1 million in state revenue and supply opportunities for residents to start businesses.

Charlie Bass, former New Hampshire Congressman and Special Advisor to LaidLaw Energy Group President said "I've always been active in supporting alternative energy sources, so I'm excited to be involved with [the Berlin] project. Development like this will truly benefit the state of New Hampshire and the rest of our country."

There have been other studies on the impact renewable energy on the economy, like the 2004 meta-analysis from the Renewable and Appropriate Energy Laboratory (RAEL) at the University of California, Berkeley. The analysis of 13 studies revealed that 240,000 jobs would be created if the nation passed a 20 percent RPS by 2020. The country would only create 75,000 when implementing more fossil fuels.

The director of RAEI and co-author of the meta-analysis, Dan Kammen, commented on the study, "We found that you get three to five times the amount of jobs in the renewables area than you do in fossil fuels. The finding was not that there's some incredibly intrinsic, wonderful

feature about renewables, even though I might think there is. It was that these benefits go to the first victors."

As the U.S. turns to the renewable energy sector more and more there will be many more diverse job opportunities like indirect manufacturing, construction jobs, operation and maintenance jobs. According to Kammen the Midwest and California will see the largest growth due to the push to support solar, wind and biofuel in those areas. The fossil fuel industries will eventually be affected and some jobs will be lost, but the change will be so gradual that workers will have time to adjust.

Kammen commented on fossil fuels companies adapting to the change, "Most of the big energy companies are rich—they are big and diversified. There are efforts going on among all the big oil companies to invest heavily in renewables. So I think you're not going to see job losses, you're going to see a shift, with the one exception of coal if the industry doesn't get on board with finding a way to make coal as close to carbon neutral as possible."

The biofuel industries are contributing to the economic boom to communities in the Midwestern corn belt, a recent report showed that \$4.9 billion in federal, state, and local taxes were generated, 163,000 jobs were created, and the federal trade deficit was reduced by \$11.2 billion in 2006.



John Urbanchuk, Director of LECG LLC and author of the ethanol report said, "The renewable fuels industry is creating economic activity, it's creating jobs, it's generating income, it's generating tax revenue and it's paying for itself. And since most of these plants are located in rural areas, they are a significant impetus to rural economic development and economic growth."

The hope is that the new biomass plant in Berlin will be an example for other communities to improve their economy through renewable energy. "There is simply too much talk and not enough action right now. Developing projects like the one Berlin is how you change the paradigm," said former Congressman Bass.

Editor's Note: The above is a summary from Renewable Energy Access April 20, 2007

Western Power Grid Improved for Renewable Energy

The Federal Energy Regulatory Commission was applauded by the Western Governors' Association for taking initiative to enhance the Western power grid. The improvement would help prevent power outages and ensure access to transmission lines for the region's renewable resources.

The commission has performed the following actions to improve grid reliability:

- Agreed to a proposal that delegates responsibility for mandatory grid reliability standards in the West to the Western Electricity Coordinating Council;
- Approved a proposal created by the California Independent System Operator that would make transmission lines to accessible to renewable energy sources like wind and geothermal;
- Made an agreement with the power industry, Western states, and Canadian provinces, for centers created for the purpose of ensuring grid reliability, should be independent of transmission owners and be eligible to receiving funds for their operations.

The Western Governors' Association has also strongly encouraged a federal law that would require electricity reliability standards and make sure that a Western electricity reliability organization would have the responsibility of writing and implementing standards in order to meet the region's energy needs.

"Western Governors established a clear path some time ago that would ensure our electric power system is reliable and utilize diverse resources. We thank the commission members for implementing steps necessary to achieve our goals," said Gov. Mike Rounds (S.D.), chairman of the Western Governors' Association.

WGA's Vice Chairman, Gov. Dave Freudenthal (Wyo.) commented on the reliability the grid needs, "It is critical that the people who are impacted by power outages have a say in determining the reliability of the power system serving them."

Freudenthal also added, "Reaching many of the West's vast, clean-energy resources will require significant transmission access order, FERC has recognized that both efficient use of the grid and future expansion are needed. We expect the commission will cooperate with the states as we seek those expansions."

Editor's Note: The above is a summary from Western Governors' Association news release April 25, 2007

Summary of Reports

Emerging Biofuels: Outlook of Effects on U.S. Grain, Oilseed, and Livestock Markets.

- Center for Agricultural & Rural Development
- Iowa State University
- www.card.iastate.edu

Environmental Impacts of Wind Energy Projects.

- National Academy of Sciences
- National Research Council
- www.nap.edu

PepsiCo. Makes a Big Green Power Purchase

PepsiCo set a record with the largest green power purchase under the U.S. EPA's Green Power Partner Program. Pepsi purchased more than 1.1 billion kilowatt-hours (kWh), which is enough power to run 90,000 average American homes each year according to the EPA. A leading retail provider of renewable energy, Sterling Planet is partnering with PepsiCo and managing the renewable energy certificates (RECs) for Pepsi. RECs are credits created when producers generate electricity using renewable energy sources.

Sterling Planet President and CEO Mel Jones commented on the partnership: "We are pleased to join with PepsiCo to make history with this largest-ever purchase of clean, renewable energy certificates. Sterling Planet will be working closely with PepsiCo to support the strategic decision to match the RECs to their geographic use of electricity in the U.S. This approach should help the local communities where PepsiCo has a presence to grow local renewable energy sources."

Since the purchase PepsiCo now leads the EPA's Fortune 500 Challenge that consists of companies in the Fortune 500 that have made green power purchases. PepsiCo also leads the "100 Percent Green Power Purchaser" list; to be eligible for this list an organization must be buying enough green power to meet 100% of their purchased electricity use.

The Green Power Partner program works with 700 partner organizations that buy green power in order to help the environment.

Editor's Note: The above is a summary from Wind Energy Weekly #1239

Get a Degree in Renewable Energy Technology

Students looking for a degree in renewable energy can look into Arizona State University; in the fall of 2007 undergraduate and graduate degree programs in Alternative Energy Technologies involving solar, wind, ocean, geothermal, and biomass will be available to students.

The new program is available in ASU's College of Science and Technology's Electronic Systems Department and will inform students about engineering concepts, components and materials in renewable energy sources.



The students will get a close look at the renewable energy system that works best in Arizona, a pollution-free system called the "solar-hydrogen" cycle. The system uses solar energy as its primary source and hydrogen as a carrier.

Students will also get direct experience with various systems through the Photovoltaics Testing Laboratory and the fuel cell research laboratory on campus. Right now there are 20 supervised undergraduate and graduate students are working on the Polytechnic campus in applied research projects related to alternative energy.

ASU's Polytechnic campus also offers degree programs through Morrison School of Agribusiness and Resource Management, East College, College of Science and Technology, and School of Educational Innovation and Teacher Preparation.

Editor's Note: The above is a summary from Renewable Energy Access April 4, 2007

Submit a Story to the WinCharger

Do you have a story, comments, or photos that you would like to share with the rest of the Oklahoma WinCharger readers? Visit our website at www.ocgi.okstate.edu/owpi and click on the "OWPI Newsletter" and submit your story to us!

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ALL OF US AT OWPI!**

Calendar of Events

- June 3-6** **WIND POWER 2007**, Los Angeles Convention Center in Los Angeles, California. For more information please visit www.eshow2000.com/awea.
- June 13** **Meeting of the Oklahoma Renewable Energy Council**, 10 A.M. to noon, OK DEQ, multipurpose room. See www.ocgi.okstate.edu/orec or call 405-447-8412 for more information.
- June 12-13** **Biodiesel Workshop**, Hosted by the Food & Agricultural Products Center, in room 201, in Stillwater, Oklahoma. For more information please contact Karen Smith by phone (405) 744-6277, fax (405) 744-6313, or email at karenl.smith@okstate.edu. Please visit www.fapc.biz/pages/biodieselworkshop.
- June 20-21** **4th Annual Renewable Energy Finance Forum**, Hosted by the American Council On Renewable Energy (ACORE) and Euromoney Energy Events in the Waldorf-Astoria Hotel, in New York City. For more information please call 1-800-437-9997 or visit www.reff-wallstreet.com.
- July 25-27** **Financing Wind Power: The Future of Energy**, Hosted by the Institute for Professional and Executive Development, Inc. in the Eldorado Hotel and Spa, Santa Fe, NM. For more information please visit www.ipedinc.net.
- Oct. 16-17** **Grow Oklahoma Governor's Conference on Biofuels**, Sheraton Hotel in Oklahoma City, OK. For more information please call 1-800-203-5494 or visit www.growOK.com.

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