



Kansas' newest commercial wind farm is the Spearville Wind Energy Facility – a 100.5 Megawatt wind farm that went online in September 2006, for Kansas City Power & Light.

Photo courtesy of Phil Duncan, Kansas City Power & Light

Blowin' in the wind

Developing renewable energy in Kansas

Interest in one of Kansas' largest natural resources – wind – continues to occupy much of the Kansas Energy Office's resources and time.

The state is now home to three commercial wind farms – with the newest one near Spearville in Ford County going online in the fall of 2006. The Spearville Wind Energy Facility was developed by enXco of Palm Springs, CA, and is owned by Kansas City Power & Light (KCP&L).

The site's 67 GE wind turbines are capable of producing 100.5 megawatts (MW) of electricity, providing enough clean, renewable electricity to serve the annual energy needs of approximately 33,000 homes.

Headquartered in Kansas City, MO., KCP&L is a regulated provider of electricity in the Midwest. KCP&L is a wholly owned

subsidiary of Great Plains Energy Incorporated, the holding company for KCP&L and Strategic Energy, L.L.C., a competitive electricity supplier.

This brings the installed capacity of Kansas to 364 MW of wind.

Dedication of the 150-MW Elk River Wind Project near Beaumont was held on May 11, 2006. Developed by PPM Energy, a Scottish company with U.S. headquarters in Portland, OR, the power is being sold to Empire District Electric Company based in Joplin, MO.

Empire is an investor-owned utility providing electric service to approximately 162,000 customers in southwest Missouri, southeast Kansas, northeast Oklahoma, and northwest Arkansas.

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Blowin' in the wind

Developing renewable energy in Kansas – Continued from page 1

Kansas Energy Office (KEO) staff participated in the Windpower 2006 Conference in Pittsburgh, PA, in June. Organized by the American Wind Energy Association (AWEA), Windpower is wind's premier annual conference each year. There were over 5,000 attendees.

The U.S. wind energy industry experienced a record year in 2005 with 2,431 MW of new wind power constructed. AWEA expects another amazing period of growth in 2006 and 2007 under the current Production Tax Credit (PTC). With a growth rate averaging nearly 30% over the last five years, AWEA expects that wind energy will contribute to 6% of the U.S. electricity supply by 2020.

KEO Director Jim Ploger made numerous presentations on wind energy in the state during the year. These included such events as the Kansas Association of Counties Annual Conference, Kansas Bankers Association Ag Bankers Conference, Wichita Shepard's Center Workshop, an Ag Conference in Salina, Kansas Wildlife Federation Annual Meeting, Wichita Council of Engineering Societies, and the Kansas Soybean Association Annual Meeting.

Ploger has been involved as a member of the National

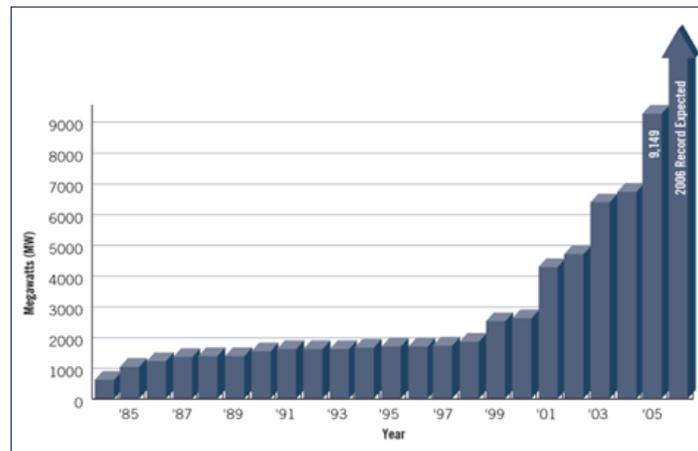
Wind Coordinating Committee's (NWCC) Steering Committee for the past several years. A U.S. consensus-based collaborative formed in 1994, the NWCC identifies issues that affect the use of wind power, establishes dialogue among key stakeholders,

and catalyzes appropriate activities to support the development of environmentally, economically, and politically sustainable commercial markets for wind power.

NWCC members include representatives from electric utilities and support organizations, state legislatures, state utility commissions, consumer advocacy offices, wind equipment suppliers and developers, green power marketers, environmental organizations, agriculture and economic development organizations, and state and federal agencies.

RESOLVE, a non-profit environmental dispute resolution organization, provides a full range of facilitation services to the NWCC. RESOLVE creates opportunities for NWCC members and other wind stakeholders to raise and address issues.

Ploger participated in a national Transmission Workshop, co-sponsored by the NWCC and the Western Governors Association (WGA) in July of 2006. ☼



The above chart illustrates the cumulative installed megawatts (MW) of wind power in the United States. According to the American Wind Energy Association (AWEA), there was a total of 9,149 MW of capacity installed at the end of 2005. AWEA estimates the industry was on track to install another 2,750 MW during 2006.

Tax credits for energy improvements available for consumers

The Energy Policy Act of 2005 (EPACT), signed by the President on August 8, 2005, offers consumers and businesses federal tax credits beginning with the 2006 tax year. The tax credits cover purchases of fuel-efficient hybrid-electric vehicles and energy-efficient appliances and products.

In December of 2006, Congress extended these tax credits to run through 2008.

Buying and driving a fuel-efficient vehicle and purchasing and installing energy-efficient appliances and products provide many benefits such as better gas

mileage – with the added benefits of lower gasoline costs, fewer emissions, lower energy bills, increased comfort and reduced air pollution.

Details about the incentives can be found by visiting www.energytaxincentives.org or www.energy.gov/taxbreaks - the official Department of Energy website. These tax incentives are available to purchasers of energy efficient appliances. Before buying new appliances for your home, be sure to check for qualifying products under the EPACT to take advantage of these incentives. ☼



7th Annual Kansas Renewable Energy & Energy Efficiency Conference

Some 450 people from 18 states attended the **7th Annual Kansas Renewable Energy and Energy Efficiency Conference**, sponsored by the Kansas Energy Office, at the Topeka Ramada Inn on Sept. 26-27.

Kicking off the conference was State Representative Carl Holmes, chair of the Kansas House Utilities Committee. He spoke on energy security and the role of renewables and energy efficiency.

Former Colorado Speaker of the House, Lola Spradley (R-West Pueblo), keynoted the conference on the role of public policy on energy. She co-chaired, along with Democratic Congressman Mark Udall, a statewide referendum for a renewable energy portfolio standard that Colorado voters approved in the 2004 election.

Bringing a Washington perspective was David Hamilton of the Sierra Club, Washington, DC. He spoke on potential federal energy legislation relating to global warming issues and its potential effect on Kansas.

Wrapping up the first afternoon of general sessions was a panel of Kansas legislators from the House and Senate Utilities and Agriculture Committees: Senators Roger Pine (R-Lawrence), Janis Lee (D-Kensington) and Marci Francisco (D-Lawrence); and State Representatives Carl Holmes (R-Liberal); Tom Sloan (R-Lawrence); Forrest Knox (R-Fredonia); Sharon Schwartz (R-Washington); and Joshua Svaty (D-Ellsworth). They discussed current energy issues and responded to questions from conference attendees.



KCC Chair Brian Moline welcomed the nearly 450 attendees to the 7th Annual Kansas Renewable Energy & Energy Efficiency Conference at the opening session on September 26.



A record crowd (448 participants from 18 states) attended the 7th Annual Kansas Renewable Energy & Energy Efficiency Conference in Topeka.



Kansas legislators participated in discussion of energy issues at the 7th Annual Kansas Renewable Energy & Energy Efficiency Conference. From left to right: Rep. Forrest Knox, Sen. Janis Lee, Sen. Marci Francisco; Rep. Sharon Schwartz; Sen. Roger Pine; Donna Johnson (moderator); Rep. Carl Holmes; Rep. Josh Svaty. Not pictured is Rep. Tom Sloan.

A highlight on Wednesday included four public forums on Kansas agricultural energy, transportation energy and energy conservation issues, and renewable portfolio standards. These forums were sponsored by the Kansas Energy Council, the state energy policy making body.

Other sessions included community and school wind; update on Kansas' two newest wind farms; energy efficiency programs; electrical transmission issues; hybrid autos; cellulosic ethanol; biodiesel; a joint KSU/KU solar house project; solar photovoltaics; and water issues. ☀

Around the Office

The Kansas Energy Office (KEO) had a year full of new challenges and new faces in 2006.

Russ Rudy heads FCIP

Russ Rudy was hired as the Facility Conservation Improvement Program (FCIP) Manager. Russ came to the Energy Office after many years of working in the energy-efficiency field. As a residential energy-efficiency expert, Russ brings to the office much-needed expertise on efficiency techniques for homes and businesses. As the FCIP Manager, Russ has taken the lead in developing many new projects, and since his arrival, several hundred thousand dollars of guaranteed savings have been acquired through the FCIP for Kansas public institutions.

In December, Russ was notified he received certification as a Business Energy Professional from the Association of Energy Engineers (AEE). Congratulations!

Russ is heading the work group to renegotiate the state contract for the FCIP. With Russ' leadership, the Kansas Energy Office expects to have a new contract ready by mid-2007. The new contract will update the current contract and allow for additional flexibility when working with smaller projects.

FCIP garners Best Practices designation

The Kansas FCIP program continues to draw accolades from across the nation. The Western Governors' Association Clean and Diversified Energy Advisory Committee (CDEAC) included the FCIP program as a "best practices" program in its energy efficiency report adopted by the 18 Western State Governors in June. KEO Director **Jim Ploger** served on the CDEAC at the request of Governor Kathleen Sebelius.

In November, Jim keynoted the American Government Leasing and Finance (AGL&F) Annual Fall Conference in California on the Kansas FCIP. AGL&F members often provide the private financing of public energy savings performance contracting projects.

Jim also made two separate presentations to the annual meeting of the National Association of State Energy Officials (NASEO) in Seattle in September on various aspects of the FCIP.

Jim continues to serve on the Board of Directors of two national energy organizations – the Energy Programs Consortium and the Energy Services Coalition.

Jerry VanAllen, Assistant Energy Program Manager, continues to serve on the Public Advisory Council for the Weatherization Assistance Program in Kansas.

Leslie Uhl joins staff

The Kansas Energy Office is also pleased to have **Leslie Uhl** as an Administrative Assistant for the office. Leslie headed the Kansas Warm Homes Project for the Energy Office for the winter of 2006-07. She took the lead in organizing the program, ensuring that more than 6,000 kits were obtained and delivered throughout the state. The kits will help low-income families stay comfortable in the cold winter months. This is the second year of the Kansas Warm Homes Project, and Leslie has done an outstanding job in continuing the success from the previous year.

Energy Kiosk developed

Education of Kansans on energy efficiency and renewable energy is a vital component to the mission of the Kansas Energy Office. In that regard, the Energy Office received a grant from the U.S. Department of Energy to promote the ENERGY STAR® label. The Energy Office used the funds to purchase a touch-screen kiosk and software for developing interactive programs to educate Kansans on energy efficiency.

The kiosk was unveiled at the 2006 Renewable Energy and Energy Efficiency Conference with the help of **Ryan**

Freed, who developed several interactive quizzes and tips to educate the public. This kiosk puts the Energy Office at the forefront of technology by providing an interactive educational tool for Kansans. Additionally, the kiosk can be continually updated and be used in conjunction with many other programs. The Energy Office looks forward to further uses of this new technology.

Kansas Energy Council staff join KEO

Liz Brosius, Director of the Kansas Energy Council, shares office space with the Energy Office. The Energy Office is pleased to work with Liz and the Energy Council and provides technical, financial and administrative support. The Energy Council, co-chaired by Ken Frahm and Lt. Governor Mark Parkinson, developed energy policy recommendations annually to the Governor, Legislature and KCC.

See the KEC website for more information at www.kec.kansas.gov.



Kiosk at annual Energy Conference.

Around the Office – *Con. from page 4*

KETA

In addition to supporting the Energy Council, the Energy Office also provides technical and administrative support to the Kansas Electric Transmission Authority (KETA), chaired by State Representative Carl Holmes.

KETA's mission is to ensure reliable operation of the electrical transmission system, diversify and expand the Kansas economy and facilitate consumption of Kansas energy through improvements in the state's electric transmission infrastructure.

The Energy Office is dedicated to providing support for KETA to ensure that Kansans can continue to experience high-quality, reliable electric transmission.

For more information see KETA website at www.kansas.gov/keta/.

If you want to keep up on energy-related news in Kansas, visit the Energy Office website (www.kcc.state.ks.us/energy/). The Energy Office updates the website daily with various energy-related news.

One new section recently added to the KEO website includes information on community wind, and the newly developed Kansas Community Wind Tool Kit. CD copies of the tool kit are also available by contacting the Kansas Energy Office. ☻



Kansas announces energy efficiency loan program

The Kansas Housing Resources Corporation (KHRC) has launched a statewide initiative to promote energy conservation and reduce home heating costs. The initiative is the Kansas Energy Efficiency Program (KEEP), which allows income-eligible homeowners to obtain low interest loans to purchase energy efficient heating systems and to make other energy conservation home improvements.

Households must be at or below the Kansas 100% Median guidelines based on number of occupants (see chart below).

"The most effective way to help homeowners reduce skyrocketing heating bills is to help them save energy," said Christine Reimler, KHRC's Homeownership Manager. "KEEP provides immediate assistance to Kansans who need it most, and encourages homeowners to make long-lasting, energy conscious improvements to their homes."

Funding for KEEP is \$2 million and is part of Governor Kathleen Sebelius' Warm Homes Project. KHRC funds half of the loan amounts, up to a maximum of \$7500. Total loan amounts could be higher as determined by the lender. The zero interest rate on KHRC funds translates into a lower blended rate than obtained through a normal second mortgage loan. KEEP begins immediately and will continue as funding is available.

"This is a great way to help Kansans keep costs down, stay warm through the winter and conserve energy," Sebelius said. "I hope many Kansas families consider this as an option."

KHRC announced that Sunflower Bank, a family-owned bank with 34 locations throughout Kansas and Colorado, is the official lender for KEEP. "Sunflower Bank is committed to the support of energy efficiency throughout our communities and the state of Kansas. We are extremely honored to be the official lender of KEEP," said Mollie Carter, President & CEO of Sunflower Bank.

Home improvements allowed under KEEP include:

- Installing specified ENERGY STAR furnaces, central air conditioners, heat pumps, water heaters and ventilation systems.
- Installing wall & floor insulation, new doors and windows and weather-stripping.
- Air sealing, duct work and the purchase of certain ENERGY STAR appliances such as refrigerators, washers, dryers, dish washers and programmable thermostats.

For more information about KEEP, interested applicants should contact Sunflower Bank directly at (888) 827-5564 or visit the bank's website at www.sunflowerbank.com. Certain restrictions apply to KEEP improvements. Applicants should consult KHRC's website for details: <http://www.kshousingcorp.org/programs/KEEP.shtml>.

KHRC's mission is to enhance Kansas communities with housing opportunities using a variety of strategies and approaches, including increasing homeownership opportunities, promoting energy efficiency improvements for owner-occupied and rental housing and providing affordable housing through rent assistance to low-income families and senior citizens. ☻

KANSAS ENERGY EFFICIENCY PROGRAM – 100% Median Income Guidelines

| 1 Person | 2 Persons | 3 Persons | 4 Persons | 5 Persons | 6 Persons | 7 Persons | 8 Persons | 9 Persons | 10 Persons |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| \$34,204 | \$44,728 | \$55,253 | \$65,777 | \$76,301 | \$86,826 | \$88,799 | \$90,772 | \$92,746 | \$94,719 |

Governor names Parkinson co-chair of Kansas Energy Council

Sebelius also calls for KEC to place emphasis on production of biofuels

Kansas' potential to be a leader in renewable energy production is ready to be tapped, says Governor Kathleen Sebelius.



Lt. Governor Mark Parkinson

As part of that effort, on Nov. 15, she announced Lt. Governor Mark Parkinson will lead the administration's energy initiatives by serving as co-chair of the Kansas Energy Council. "Kansas has outstanding potential to produce renewable energy, both from wind farms and from biofuels like ethanol and biodiesel. But the progress we've seen these past few years is only the beginning," Sebelius said.

"Energy will be a key focus of my second term, and Mark will lead our administration's efforts to promote renewable energy production and energy conservation," she continued. "I'm pleased with the work of the KEC under the leadership of Ken Frahm, and am encouraged Mark will take an active role in the group's continued efforts."

Parkinson said he looked forward to working with the Kansas Energy Council to expand renewable energy production.

"We really do have an opportunity to make Kansas a national leader in renewable energy, and the Energy Council has

done great work in soliciting input from producers, consumers and Kansans on how we take advantage of that opportunity," Parkinson said.

Sebelius has also asked the Council to make biofuels production a top priority as it also works to promote energy production and conservation in Kansas.

On October 26 Sebelius sent a letter to KEC Chair Frahm, asking the Council to make biofuels a top priority by creating a standing committee that will focus on ways to promote their production in Kansas.

"I can envision the time in Kansas when our agriculture industry is a national leader in both food and fuel production. By becoming a major producer of energy feedstocks we will provide the foundation for becoming a major biofuels producing state," Sebelius wrote.

Frahm has named Representative Carl Holmes as chair of the new committee. The committee consists of current KEC members, as well as organizations such as the Kansas Bio-Science Authority, Kansas Technology Enterprise Corporation, and the National Institute for Commercialization of Intellectual Property. ♻️



EPA Raises the Bar for New Homes to Earn Energy Star Label

Builders of new homes in the United States will have to significantly increase the energy efficiency of their homes to meet new Energy Star requirements that took effect July 1, 2006. Over the next 20 years, U.S. Environmental Protection Agency (EPA) estimates that this increase in energy efficiency for Energy Star qualified homes will save homeowners more than \$2 billion in utility bills, while eliminating more than 7 million metric tons of greenhouse gas emissions.

To qualify under the revised Energy Star specifications, new homes must have higher levels of insulation inspected for proper installation; complete framing and air barrier assemblies that enable insulation to perform at its full rated value; windows that meet or exceed Energy Star require-

ments; high-efficiency and properly sized heating and cooling equipment appropriate to the climate; and more energy-efficient water heating, lighting and appliances. The new specifications build upon many recent energy code changes and results from the nation's leading energy efficiency research program for new homes, the U.S. Department of Energy's (DOE) Building America program.

Energy Star is a voluntary program, managed by the EPA with assistance from the U.S. Department of Energy. The Energy Star label can be found on new homes, appliances, electronics, office equipment, lighting, heating and cooling systems, and buildings. For more information about Energy Star, visit: <http://www.energystar.gov>. ♻️

KCC pursues consumer energy efficiency programs

On September 11, 2006, the Kansas Corporation Commission (KCC) took formal action initiating an investigation to explore and determine how electric and natural gas utility companies can encourage and promote energy efficiency programs in Kansas. In its order the Commission stated, "In these times of high energy prices and anticipated need for new electric generation, there should be no doubt that efficient energy use by both natural gas and electric consumers is desirable."

In addition to all jurisdictional electric and natural gas utilities, the KCC has invited all non-jurisdictional cooperative and municipal utilities, the Citizens' Utility Ratepayer Board (CURB), the Sierra Club, and other interested parties to participate in this matter.

In its order, the Commission presents a set of questions for comment from the utility companies and other parties to determine the process and parameters by which to explore all the possible alternative approaches in making energy efficiency a key component of energy policy.

The Commission also must determine and clarify to what extent it has legal authority to require or encourage utilities to offer energy efficiency programs. Major areas to be addressed are: are there barriers to efficiency, and if so, what are they; program costs recovery and potential rate impacts; and

can the Commission consider costs and benefits beyond those directly related to energy generation in its calculations of rates that would fund energy efficiency programs.

"Developing a Kansas Energy Efficiency Plan will be a major undertaking for the KCC and the utilities we regulate," said KCC Chair Brian Moline. "It is imperative that all stakeholders and decision-makers work in a collaborative manner to develop new policies and mechanisms to effectively move towards real energy efficiency in Kansas."

This action follows two energy efficiency workshops held earlier in the year by the Commission. The workshops initiated discussion and began the process of identifying a few of the many possible alternatives in developing energy efficiency programs. There are many questions that must be answered such as, when and how should utility companies promote energy efficiency by their customers and what ratemaking treatment or special mechanism would be necessary and appropriate.

In August 2006, the Commission publicly endorsed the goals and objectives of a National Action Plan for Energy Efficiency developed by the National Association of Regulatory Utility Commissioners (NARUC). The Action Plan presented policy recommendations for creating a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organization. ☀

State Energy Officials to Kansas in 2008



The Board of Directors of the National Association of State Energy Officials (NASEO), at their Dec. 7, 2006, meeting, selected Kansas as the host state for its annual meeting in the fall of 2008. The 2007 annual meeting will be Atlanta.

NASEO is the only nonprofit organization that represents the Governor-designated energy officials from each state and territory. The organization was created to improve the effectiveness and quality of state energy programs and policies; provide policy input and analysis; share successes among the states; and be a repository of information on energy issues of concern to the states and their citizens.

Affiliated with the National Governors' Association, NASEO members are officials from the 55 State and Territory Energy Offices and affiliates from the private and public sectors. The nonprofit association was created by the governors as an "instrumentality of the states" to improve the effectiveness and quality of state energy programs and policies, and to be a collector and repository of energy-related information. NASEO meetings and communications offer a forum for energy officials, policymakers and others to exchange information and discuss issues with regional and national implications.

Two major meetings are held each year, a Winter Energy Outlook conference in Washington, DC, in February and the annual meeting in the fall.

Jim Ploger, Director of the Kansas Energy Office, submitted a bid to host the 2008 event. The meeting will be headquartered at the Hilton Garden Inn in Kansas City, Kansas, with sessions in the adjacent and newly remodeled Jack Reardon Convention Center. ☀

The future of energy savings performance contracting in Kansas

by **Russ Rudy**, FCIP Manager

The Facility Conservation Improvement Program (FCIP) is a streamlined program allowing public entities to quickly and easily use energy services performance contracting (ESPC) to access financing for planning and implementing of energy performance projects. Through the FCIP, the State of Kansas has in place a master agreement with four pre-approved Energy Services Companies (ESCO's) to provide one stop, turn key energy services from project identification and analysis to design and implementation, maintenance, and measurement and verification of savings.

The Facility Conservation Improvement Program is available to all public buildings in Kansas. Some examples of qualifying entities include: state agencies, cities, counties, public and private universities and colleges, public schools, community and technical colleges, and public hospitals. The FCIP has been in operation since 2000 and has completed over \$110 million dollars in energy improvement work, reducing Kansas public facility utility costs by nearly \$10 million dollars annually.

To market the FCIP, Energy Office staff has made various presentations and manned informational booths at such events as the United School Administrators of Kansas Conference; League of Kansas Municipalities events, Kansas Association of School Business Officials and many local board meetings.

In January of 2007, the Kansas Corporation Commission will be issuing a Request for Proposal (RFP) seeking the services of qualified ESCO's to carry the Facilities Conservation Improvement Program forward for the next five years. By July of 2007, it is expected there will be a new master agreement in place with pre-qualified ESCO's to continue the same good work that has been done on projects in Kansas. ESCO's that are interested in receiving bid forms may contact:

Mr. Galen Greenwood
Department of Administration Division of Purchases
900 SW Jackson, Room 102 N
Landon State Office Building
Topeka, Kansas 66612

Through the FCIP, our ESCOs have replaced older high wattage lights and ballasts with new high efficiency units in scores of public buildings. New lights, and the analysis conducted to determine the appropriate light fixture to serve the specific needs, have brought better lighting to desktops and brighter more effective lighting to gymnasium floors. We have replaced aging and inefficient boilers with new high efficiency units that

take up a fraction of the space in the mechanical room once occupied by the old units. As a part of many of our energy services performance contracts, we've added air conditioning to buildings that were either too hot, or were rarely used during the summer season.

FCIP projects have installed Ground Source Heat Pumps (GSHP) to provide the highest possible efficiency for both heating and cooling. A GSHP unit uses a heat exchange loop that is buried six feet down in a wide excavated area or installed in 200 foot deep wells to access the constant temperature of the ground to extract and deposit heat. A Ground Source system costs more to install, but GSHP efficiency and reliability are so high that the system will pay for itself during its lifetime, and operate with very low maintenance costs.

As we move toward our second FCIP contract with ESCOs we are looking toward including the latest in sustainable and green building techniques and technologies in our program. We hope to find ways to reward practices that cause buildings, both new and existing, completed under the FCIP to have a measurably reduced environmental impact. We plan to include recycling programs and environmentally friendly waste management programs as well as alternative energy strategies.

We are very much interested in finding ways that the engineering and financing expertise of our participating ESCOs can help bring community wind energy projects on line in those parts of Kansas that have appropriate levels of usable wind. We are also seeking ways to bring the benefits of energy services performance contracting to buildings and public entities whose projects have traditionally been considered to be too small for consideration for ESPC.

The FCIP and its energy services performance contracting programs have experienced great success in the state of Kansas. Thanks to the vision of the individuals who developed the programs and the effective interaction between our contracted ESCOs and State program managers, the state of Kansas has become a recognized national leader in energy services performance contracting in public buildings. We hope to build on our successes and move our program into a future of increased and expanded activity resulting in substantial reductions in energy use and a positive environmental impact in Kansas buildings. ♻️

A few examples of 2006 FCIP projects

Wichita State University

While all universities continue to struggle with rising energy rates, Wichita State University is utilizing the State of Kansas' Facility Conservation Improvement Program to redirect over \$20 million dollars during the next 15 years that would have otherwise been spent on utility and maintenance costs. Included in the major upgrades are new equipment and optimization of the boiler and chiller plant, lighting, expansion and enhancement of the energy management system, steam traps, variable speed and flow devices, and a multitude of other improvements.

The university selected Custom Energy, one of the FCIP's four Energy Service Companies (ESCOs) to evaluate the benefits of more than 200 energy efficiency and facility improvement measures. After several workshops and meetings, that list was trimmed slightly for the final project, but the vast majority of the improvements were able to be included.

"We're very excited about what we'll be able to accomplish with this program," stated Woodrow De Pontier, Direct of Physical Plant at Wichita State University. "We couldn't be more pleased with the professional way in which the project has been implemented to date, and we're looking forward to the benefits of energy savings and improved comfort control that these new systems will provide."

Manhattan Area Technical College

Faced with rising utility costs and aging equipment, Manhattan Area Technical College contacted the Kansas Energy Office and took part in the FCIP. Improvements at the college included lighting improvements, mechanical improvements, a comprehensive energy management system, and more.

Manhattan Area Technical College partnered with the Energy Office and TAC Americas to improve the facility and lower utility costs. Total cost of the project was more than \$450,000. However, as a part of the performance contract, TAC has guaranteed the college will see an annual savings on utility bills of nearly \$25,000.

According to officials, improvements at Manhattan Area Technical College have helped to create a better learning environment, a more comfortable atmosphere, and a much more economical way of running the campus.

Independence Community College

Independence Community College took advantage of the Facility Conservation Improvement Program (FCIP) to lower utility bills, and finance much needed improvements on their campus. These actions will enhance the learning and living environment in the Academic Building, Administration Building, Living Center, Cessna Learning Center, Daycare Building, Field House, Fine Arts Building, Residence Hall, Maintenance Building, and Student Union.

In total, \$2.7 million in energy-efficient facility improvements will be made. Some of the specific upgrades include new roof-top units to provide heating and cooling, new lighting, an energy management system along with new controls in several areas, roof replacements, new windows and doors, and vending machine controls.

The improvements are being installed as part of a performance contract with Custom Energy. Under the contract Custom Energy guarantees that the college will achieve over \$150,000 in annual savings. Those funds will be used by Independence Community College to help pay for the project over the next 15 years.

Allen County Community College

Allen County Community College (ACCC) was presented with a plaque recently in recognition of their dedication to their financial responsibilities and commitment to improving the learning environment for students. Energy saving upgrades have recently been completed in all ten of the campus buildings through the FCIP.

ACCC President, John Masterson, was in attendance to accept the plaque on behalf of the college. Prior to the project, the college was faced with a wide range of critical facility needs that required urgent attention. Rather than waiting for future budget dollars to become available while systems continued to age, the college engaged FCIP partner, Custom Energy, to find a creative solution.

Using performance contracting, Custom Energy guarantees that the college will save over \$120,000 in utility costs annually that can help pay for the improvements over the next 10 years.

In total, \$2.7 million in energy-efficient upgrades were completed at the college. Some of the specific improvements included replacing heating and cooling equipment,

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A few examples of 2006 FCIP projects

Allen County Community College – *Continued from page 9*

adding air-conditioning to the gymnasium, installing new unit ventilators and fan coil units, new lighting, and a campus-wide energy control system.

Additionally, Allen County Community College requested that “green” refrigerants be used on applicable systems, reducing the college’s greenhouse gas impact in the future. The estimated pollution prevention benefits from implementing this program include reductions of 732 tons of carbon dioxide, 5.7 tons of sulfur dioxide, and 2.5 tons of nitric oxides annually. The amount of energy the college will save is equivalent to planting 200 acres of trees every year.

The project is a reflection of Allen County Community College’s commitment to quality and access. Not only will the upgrades improve the quality of the facilities and the environment in general, but diverting existing utility dollars to help pay for the improvements keeps expenses down and allows the college to continue to be affordable for a wide range of students.

equipment supporting the gymnasium was upgraded to improve occupant comfort levels during large events. The project was assisted by a grant from the Kansas Energy Office to assist in covering some of the cost of the Investment Grade Audit.

Using the FCIP program to implement over \$400,000 of needed facility improvements, the District reduced the District’s energy and operation costs over \$33,000 per year to help fund the improvements.



Russ Rudy, FCIP Manager, presents a check in the amount of \$6,790 to Independence Community College President Terry Hetrick. The incentive award paid for half of the cost of the College’s Investment Grade Audit as a part of the FCIP.



Facilities Management and Business Management staff of Independence Community College join President Terry Hetrick in accepting the incentive check from the Kansas Energy Office.

Burrton USD

Located 15 miles east of Hutchinson, Burrton USD supports a student body of 265. Despite its modest size, Burrton’s proactive board and superintendent were determined to find a solution to repair leaking roof and improve aging infrastructure.

Although the District prides itself on maintaining a quality learning environment, some of the major heating/cooling equipment had outlived its useful life. Operating the older equipment was putting the District at risk, and causing the District to incur unnecessarily high utility bills.

Johnson Controls, Inc., (JCI) proposed an energy solution that would enable the District to utilize the State of Kansas’ Facility Conservation Improvement Program (FCIP) utilizing guaranteed energy savings to pay for system renovations.

JCI helped the USD by installing energy-efficient automation equipment and retrofitting the lighting fixtures in the buildings. In addition, JCI replaced aging chillers and boilers at the high school, repaired the leaking roof at the middle school, and made ceiling and lighting upgrades to improve the environment in the commons area and band room. Heating/cooling



Kevin Green, Vice President of Business Development with Custom Energy, presents a plaque commemorating successful completion of an Energy Savings Performance Contract to Allen County Community College President John Masterson. Masterson was joined by facilities and management staff in accepting the plaque.



Conference Sparks Interest in Community Wind

Over 200 Kansans participated in the Kansas Community Wind Workshop hosted by Cloud County Community College in Concordia on October 31. There were also Interactive Television sites at Community Colleges in Colby, Butler County, Dodge, and Goodland, and Pioneer Communications Center in Ulysses.

Numerous legislators, energy industry professionals, county and city economic development officials, farmers, landowners, and others interested in community wind attended. The workshop was sponsored by Cloud County Community College, Kansas Farmers Union, Kansas Farm Bureau Legal Foundation, Kansas Energy Office, Wind Powering America, and the Kansas Rural Center. The Kansas Board of Regents also assisted in planning and provided graphic design assistance.

Planning for the workshop was initiated by several people who had visited community wind projects in southwest Minnesota last summer as part of a joint tour organized by the Kansas Energy Office and the Governor's Rural Life Task Force. Participants on that trip became convinced that locally owned wind projects could greatly benefit our rural economy, if public policies can be changed to help instead of hinder their development.

Organizers brought in Jack Keers, a Pipestone County, MN, Commissioner; Lisa Daniels, Founder and Executive Director of Minneapolis, MN, based Windustry; and Tom Wind, a well-known community wind project consultant from Jefferson, IA. The three addressed the major policy and technical obstacles presented to those who wish to put together a project.

"It is no secret that wind energy has become developed, quite profitably," stated Dan Nagengast, Executive Director of the Kansas Rural Center, "in those states where utilities are required to purchase a percentage of their energy from renewable resources."

Tom Wind said he was quite envious of the tremendous Kansas wind resources, and made it clear that if Iowa or Minnesota had Kansas' wind, there would be an enormous effort to take advantage of it.

Commissioner Keers spoke of the benefits to their rural economy and tax revenues from community owned wind. He also discussed a caucus of energy producing counties which has had considerable success in influencing the Minnesota legislature to recognize the value of their wind resource, and



Presenting at the Community Wind Workshop was Joe Harkins, Special Assistant to Governor Kathleen Sebelius and Jennifer States of J.W. Prairie Windpower.

to pass legislation which encourages development of locally owned projects.

Other speakers included Joe King of Lawrence, introduced a new Community Wind Decision Toolkit; Jennifer States, from J.W. Prairie Windpower LLC, Lawrence (a

community wind developer working in Kansas); Joe Harkins, Special Assistant to Governor Kathleen Sebelius; and Ken Frahm, Chairman of the Kansas Energy Council.

Stuart Lowry, representing the Kansas Electric Cooperatives, and Colin Hansen, representing Kansas Municipal Utilities, discussed the issues surrounding the integration of wind into their member associations.

A legislative panel consisting of Rep. Josh Svaty, Rep. Sharon Schwarz, Rep. Tom Sloan, Rep. Dan Johnson and Rep. Carl Holmes closed out the program. Some participants took a brief tour of the Cloud County Community College Wind Energy Technology Program.

Organizers plan to continue meeting to explore ways to maintain momentum.



The Kansas Community Wind Tool Kit CD was developed by the Kansas Energy Office and the Kansas Department of Commerce, with funding support by Wind Powering America. CDs are available from the Kansas energy Office; or online at: http://www.kcc.state.ks.us/energy/comm_wind/index.htm.

http://www.kcc.state.ks.us/energy/comm_wind/index.htm. ☼

Development of Kansas BioProduct Roadmap

Carbohydrate based biofuels and bioproducts are viable replacements for oil today, and their value will only increase as oil prices increase. With this in mind, the Kansas Department of Commerce created a BioProduct Roadmap, which details the results of an inventory and survey of existing companies, utilities, legislators, and economic development officials.

– Continued on page 12

Development of Kansas BioProduct Roadmap – Continued from page 11

Funded by a grant from the Kansas Energy Office, the purpose of the survey is to assess the current bioenergy and bioproduct industry in Kansas. Also, it will help to determine projections for industry growth; the state's best role in assisting and servicing this sector; and ways in which the state can encourage growth.

Respondents expect bio-based products to be an important growth industry for Kansas. The industry is in its early stages and opportunities abound. In fact, 42% of the companies surveyed began their bio-based business in 2000 or later. Kansas universities were also contacted to quantify and map bioproduct expertise in the state. Kansas State University, Pittsburg State University and The University of Kansas all have active research programs in the bioproduct area and key researchers and centers have been identified.

The report summarizes the perceived opportunities and challenges for bioproduct development and production in Kansas, gives a brief overview of Kansas biomass resources, and provides a snapshot of key companies that are actively engaged in the field. The report is intended to establish the foundation for a biofuel and bioproduct development and manufacturing plan that will guide future actions.

In the next 25 years, the oil-based economy will change; with its long and distinguished history in agriculture and manufacturing, Kansas can be a leading developer of biofuels and other bioproducts. The opportunity is at hand; commitment and planning will lead the state to a bright, prosperous, and bio-based future. ☀

Solar lighting improvements made at state parks

Solar lighting provides the Kansas Department of Wildlife & Parks (KDWP) the ability to upgrade facilities in areas not accessible to a power source. With a solar light system in place, not only is the priority of accessibility addressed, but also the important issues dealing with security and safety. Most parks are in rural settings and officer safety and patron safety issues are addressed by providing high visibility for those facilities without power using the Kansas Energy Office (KEO) grants to purchase solar lighting.

State Parks that benefited by the funding in 2006 included Glen Elder State Park, Eisenhower State Park, Webster State Park, Clinton State Park, Milford State Park and Wilson State Park.

Glen Elder staff installed a solar light system above the boat ramp to provide not only a navigational marker but to increase safety for those using the boat ramp after dark. Also installed was an entrance light near the main entrance sign allowing vehicles to know where to safely turn into the park.

Eisenhower State Park installed an entrance sign light providing a well marked entrance turn off the highway. Webster State Park installed a restroom light system in a rural vault toilet, vastly improving security and after hours use.

Clinton State Park installed an area solar light in a rural area previously with no means of providing power.

Milford State Park and Wilson State Park both installed solar water pumps for filling small fishing ponds. The Department will monitor the use of the solar water pumps with the hope of increasing purchases in the future years. ☀

Kansas Hydro plant continues to make improvements

The Bowersock Mills & Power Company is the only and oldest operating hydroelectric generating plant in Kansas. Because of this, aged equipment is beginning to wear out. To this end, Bowersock desired to upgrade the seven Woodward Governors that date back to the 1920's.

In 2002, Bowersock replaced the governor of their #4 unit when a senior mechanical engineering class at the University of Kansas chose this as a project. After three years of operating this new design, Bowersock has discovered a few short comings of the original design. With the help of a grant from the Kansas Energy Office, Bowersock was able to upgrade three governors. The governors were completed in the summer of 2006.

Bowersock has received financial support through the grant process and hopes to qualify for other grants in the future to help off set the high capital costs of upgrading an old, historic, and "green" generating plant like ours. As always, Bowersock continues its renewable energy production as well as educating visitors to the plant of the benefits of hydroelectric energy. The Energy Office funds help to ensure a continued education and sustainable energy resources. ☀



KSU solar car races 2500 miles across North America

The KSU Solar Car Racing Team finished construction of their fourth solar car, Paragon, in the summer of 2005. Paragon was designed entirely in-house by KSU students and the vast majority of the construction was also performed by these same students. The Paragon featured a silicon solar array and a lithium-ion battery pack on the electrical side, as well as a chassis and body constructed entirely of advanced composite materials in the mechanical arena.

The support provided by the Kansas Energy Office (KEO) enabled KSU to purchase and use gallium-arsenide solar cells on the car for the first time in team history, giving them experience and expertise in this newer and more complicated solar technology.

In July of 2005, the Paragon raced across the North American continent during the North American Solar Challenge, a 2500 mile international race. The course stretched from Austin, Texas to Calgary, Alberta, Canada where the team finished in 14th place. The KSU Solar Car Racing Team, along with 16 other universities raced across North America on public roads and highways to promote the use of solar power in the automotive world.

The KEO has been a sponsor of the KSU Solar Car Team and their efforts in the North American Solar Challenge for 8 years. Jim Ploger, KEO Director remarked, "We are proud to continue our support for the KSU Solar Car Team. Their efforts not only bring attention to solar energy and its use in vehicles and homes, but also provide these students with lasting educational experiences that will, hopefully, propel them into careers in innovative and clean technologies like solar energy." ☀



KSU solar car being photographed during the 2005 North American Solar Challenge north of Topeka on Highway 75, a part of the route of the 2,500 mile international race.



KSU solar car team members fine tuning the vehicle during the North American Solar Challenge a 2,500 mile international race.

KSU Solar Car, Paragon, participated in the North American Solar Challenge qualifier at Topeka's Heartland Park.

Photos courtesy of John Aagaard, KSU Solar Car Team.



E-85 education continues in Kansas

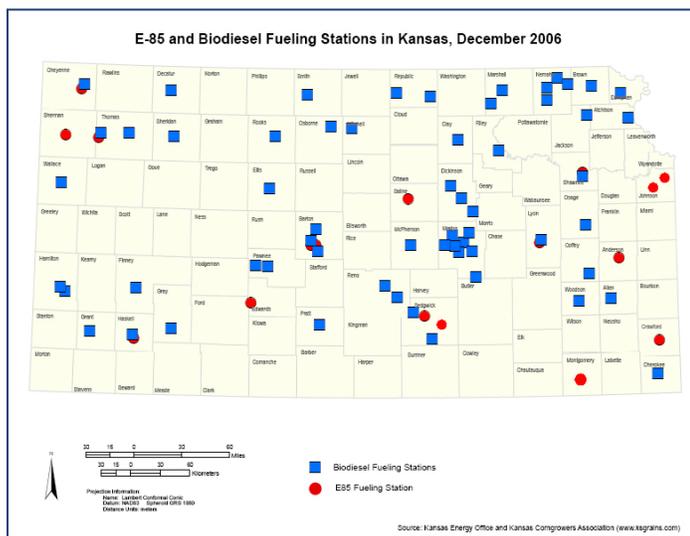
The Kansas Corn Commission utilized funding from the Kansas Energy Office to do numerous projects throughout the State of Kansas. One of the major events included an exhibit at the Kansas State Fair, which allowed more than 20,000 attendees to learn more about ethanol-blended fuel, receive printed materials and see ethanol-compatible vehicles on display.

The Corn Commission also participated in the annual 3i Show, a agricultural and industry trade show held each spring in central or western Kansas.

The commission's utilization of AgriTalk, a national radio program, educated individuals throughout Kansas and the United States.

While ethanol may seem commonplace to some Kansans, the education process is far from complete, both at the consumer and station owner levels. This project was designed to address both levels and ultimately bring more ethanol fuel for Kansans to use.

According to the Kansas Department of Revenue, sales of ethanol-blended fuels have increased substantially from the previous year. Part of this success can be attributed to the efforts of this project and the funding received from the state, according to Jere White of the Kansas Corn Growers. "At these times of high fuel prices, it is imperative to continue efforts to promote ethanol, and other forms of alternative energy." ☺



Map of E-85 and Biodiesel retail fueling stations in Kansas, December 2006. Blue squares show biodiesel fueling stations and red circles show E-85 fueling stations.

Conservation kits distributed to targeted households

The Kansas Corporation Commission (KCC) through its Kansas Energy Office is continuing the Warm Homes project again this winter.

The Warm Homes project provides assistance to the state's most marginalized citizens, helping low-income Kansans make some modest changes to their homes that will help conserve energy and make them a little more comfortable.



This program had the added benefits of continuing to increase awareness of the need for the efficient use of energy and energy conservation.

The Warm Homes project provides over six thousand energy conservation kits statewide. Volunteer organizations in 50 Kansas counties - such as civic organizations, churches, and community assistance organizations joined together to help deliver the Warm Homes kits.

Qualifications for eligibility to obtain a kit were households that are below 150% of the Federal Poverty guidelines.

The kits included plastic sheeting to cover windows and doors, weather stripping for doors, rope caulking to seal cracks, switch plate insulators to stop drafts and improve the comfort level in older and substandard homes. The custom-designed energy conservation kit also includes energy savings devices such as a door sweep and four compact fluorescent light bulbs.

The energy conservation kits could also be installed by residents with minimal instruction needed. The Kansas Energy Office and the Kansas Housing Resources Corporation (part of the Kansas Development Finance Authority) teamed up to provide necessary funds to purchase the kits. ☺

KU studies energy use in transportation

As a part of the effort to assist the Kansas Energy Council, the Kansas Energy Office funded a study regarding energy use through transportation in Kansas. In order to meet the goals of the Kansas Energy Council, reducing energy use in transportation is vital. The study by the Kansas University Transportation Center provides valuable information on policy options and education techniques for reducing energy consumption.

The principal objective in compiling this report was to present data and information on energy use of Kansas transportation. The information was obtained from existing resources including professional literature from a variety of disciplines, state and federal reports, and data from state agencies.

The report was used as a decision-making tool by policy-makers to improve the efficiency in the use of energy resources to support transportation needs. Improved efficiency will affect virtually all sectors of society in the state.

Kansas has a wide variety of options available that will contribute to reducing the energy consumed in the transportation sector. Many of the options are well-tested techniques with documented costs and results. Given the history in the state, its geography, and its current development patterns, Kansas has the opportunity to make a commitment to make a significant impact in transportation energy consumed. *

Renewable energy credits examined

Kansas State University was commissioned by the Kansas Energy Council to examine potential impacts and value of tradable renewable energy credits (RECs) in Kansas for electricity generated from bioenergy resources and wind. Application of RECs and other environmental and pollution trading credits may help lower the cost of renewable energy development in Kansas within the next five to 20 years. Most analyses predict the REC market to increase significantly in the coming years.

Specifically, this project examined renewable energy basics, current companies/entities offering RECs, growth of the electricity market in Kansas and potential growth of both wind energy and energy derived from biological sources, current and projected (to 2010) prices relating to the carbon markets

in the United States, and the affect of a renewable portfolio standard (RPS) on renewable energy development.

There are at least two major scenarios that could impact renewable energy development and hence, affect the renewable energy credit markets. They are the adoption of some sort of a state or national-level renewable portfolio standards (RPS) and transmission expansion. Conclusions reached with respect to Kansas were 1) wind energy production in Kansas and the Great Plains will likely outpace the regional demand for the subsequent RECs in a voluntary market, suppressing their value; and 2) biomass offers many renewable energy and environmental attributes such as enhanced air, soil, and/or water quality depending upon the resource, but their electrical market penetration will mainly depend upon how they are monetized.

The study will help to evaluate the potential uses of Renewable Energy Credits in Kansas; and help expand the potential benefits, economic and environmental, of renewable energy. *



The Energy Hog

The Energy Hog hams-it-up at the Annual State Convention of the Kansas Association of School Business Officials (KASBO) held April 19 at the Topeka Capital Plaza. The Kansas Energy Office provided a variety of energy related educational information and materials utilizing its new display boards. *



SOLAR DECATHLON

Kansas selected for Solar Decathlon 2007

In late 2005, an interdisciplinary team of students and faculty from the Kansas State University's (KSU) Colleges of Engineering and Architecture, Planning and Design proposed to enter the U.S. Department of Energy's (DOE) Solar Decathlon (www.solardecathlon.org).

The Decathlon is a prestigious, limited entry competition where university-based student teams design and build a small, experimental solar-powered house.

The DOE's Office of Energy Efficiency and Renewable Energy is the primary sponsor of the Solar Decathlon. DOE's National Renewable Energy Laboratory (NREL) sponsors and manages the event. The American Institute of Architects (AIA), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), BP, and Sprint are title sponsors.

Of the nearly 40 entries submitted from worldwide, the Kansas proposal was one of twenty chosen to compete in the 2007 Decathlon. Along with the selection comes a \$100,000 grant toward the project from the DOE.

In its penultimate stage, the house is transported to the National Mall in Washington, D.C. to compete. Once the Decathlon is over, the competing teams are free to dispose of their solar home as they see fit. Some teams have donated their homes to charitable organizations; others have sold them. KSU proposes to return the home to Kansas as a facility for research and education for the public.

Assisting with the project is Dr. Mario Medina his staff and students with the University of Kansas' College of Architecture. Dr. Medina has been involved in developing energy efficient phase-change structural insulation panels (SIPS) for a number of years.

According to the DOE, the Solar Decathlon serves three purposes: 1) to educate students and the public of the benefits of renewable energy and energy-efficiency; 2) to raise awareness to the general public about renewable energy and technologies that will help reduce their use of energy; and 3) to help the United States maintain a technological competitive edge, and move solar energy technology further into the marketplace.

The Department of Energy's sponsorship of the project suggests that the competitors are garnering publicity and awareness at a national level. Project Solar House, the student organization charged with the State of Kansas entry, believes

that this project also can have an indelible impact on students and the public.

Project advisor, Todd Gabbard of the KSU College of Architecture, Planning and Design, estimates the total budget of the two-year project about \$433,000.

Financial support for the project is being handled through the KSU Foundation. ☼

Solar vehicle enthusiasts meet in Topeka

Nearly 70 representatives from 19 solar car teams from throughout the United States and Canada converged on Topeka in October for a weekend of planning and strategizing about future solar vehicle events.

Topeka, host of more solar vehicle events than any other city in the world, was selected because of its central location and support from the Kansas Energy Office.

"This was one of the best discussions we've had at a group meeting," said Dan Eberle of the Formula Sun Foundation and long-time solar vehicle organizer. "Before the meeting I was bummed about the prospects of having the resources to fulfill expectations of another challenge, as the North American Solar Challenge in the summer of 2005." "After seeing and hearing the enthusiasm from the attending teams I am encouraged," said Eberle.

Eberle thanked the Kansas Energy Office for helping putting the mini-conference together as well as the attendees from all the teams who made the effort to provide direct input. A number of former American Solar Challenges staff participated at their own cost.

The main funding source (DOE) for the NASC is no longer available and has dried up. Financial support is still needed for another event to be held.

Teams participating in the meeting included Kansas State University. ☼



FAST FACTS

ENERGY STAR: More than Lighting

Lighting is one of the easiest adjustments consumers can make at home. Saving energy at home is as simple as looking for the ENERGY STAR label because more than 40 product categories feature the government's ENERGY STAR label. To learn more, visit www.energy-star.gov or call 1-888-STAR-YES (1-888-782-7937).

KSU Energy Extension continues assistance to Kansas

Engineering Extension at Kansas State University celebrated its 26th year of service to Kansas energy consumers. KSU's Energy Extension provides technical assistance and educational outreach regarding energy efficiency, conservation and renewable energy. Their technical assistance to the state involved public presentations, telephone assistance, and a continual upgrading of the Engineering Extension web site, www.engext.ksu.edu, providing the latest energy and environmental information to the public.

KSU's Energy Extension office was actively involved in providing information to private citizens and public organizations detailing energy use and production on a global, national, state, and local scale. The Energy Extension office received more than 240 assistance requests about residential insulation, wind energy development, biodiesel/ethanol use, development, use of federal energy credits, and greenhouse gas emissions, to name a few.

In addition to assisting the public through answering direct questions, seven national radio spots were provided through interviews with the US Department of Agriculture's Cooperative Extension radio network and presentations were made at three energy-related conferences in Kansas.

More than 5,100 updated Tips on Building or Buying an Energy Efficient Home Brochures were distributed to over 1,500 builders, real estate agents and code officials in Kansas. These efforts continue to assist Kansans by providing up-to-date, technical information that can help Kansans lower energy consumption and save money. ☼

Kansas Soybean Association

Biodiesel Plant Development in Kansas

There is a great deal of interest in locating biodiesel plants in Kansas. The Kansas Soybean Association took a leadership role in providing the proper information to those interested. The goal of the project was to assist interested investors in obtaining the proper information and consultants to analyze their situation. This helps them to make a fiscally sound decision on whether to build a plant.

One plant near Goodland raised funds and is waiting for permits to begin construction. Biodiesel plant studies included possible plant locations in Brown County near Hiawatha, East Central Kansas (Lawrence), and the St. John. Boards have been formed to start raising funds for possible construction near Hiawatha and St. John.

The funds provided by the Kansas Energy Office provided the opportunity to interact with those interested in building biodiesel plants cooperatively working with the Kansas Department of Commerce on the effort. The Kansas Soybean Association has been able to provide accurate information on biodiesel fuel and biodiesel plant development including the markets for biodiesel, technology available and companies who can complete feasibility studies.

The Kansas Soybean Association has the expertise to provide guidance to the industry and will continue to provide leadership for the effort. ☼



FAST FACTS

ENERGY STAR: Change a Light and help Change the World

If every American household replaces just one traditional light with an ENERGY STAR-qualified bulb, we will save enough energy to light 7 million homes, save \$600 million in utility bills, and reduce greenhouse gas emissions equivalent to 1 million cars.

With the average home containing more than 30 light fixtures, lighting accounts for nearly 20 percent of energy costs.

To save more energy and money, replace your high-use light fixtures or the bulbs in them with ENERGY STAR qualified ones. Changing just five light fixtures in this way can save you more than \$60 every year in energy costs.

Pledge to Change a Light – Join many states and organizations in changing the world, one light – one step – at a time. Take the online Pledge to Change a Light at, www.energystar.gov/changealight.

Johnson County builds to LEED standards

Johnson County dedicated a new 129,000 square foot administration building that received a LEED Gold rating from the United States Green Building Council. The building, known as the Sunset Drive Office Building, is designed to operate with a utility efficiency 45% better than a standard code office facility.

The building uses conventional, but extremely high efficient, gas fired boilers and turbo core frictionless chillers for its state of the art heating and cooling systems. The building also employs a sophisticated computer controlled, high efficiency lighting system and a vast amount of daylighting to reduce artificial lighting loads.

While no renewable energy sources were planned for the building, it was the desire of the County to integrate a public demonstration of renewable power generation into the project. A small wind turbine, applicable for residential use, would broaden the building's already aggressive mission of public education in sustainable design issues. To this end, a 1.8 kilowatt wind turbine was erected on a 35 foot tall monopole just to the northwest of the new building. Its power is fed directly into the building's electrical system.

Information from the turbine, including factors such as current and historic power generation, wind speed and dollar value of power produced, is fed to and displayed in real time on a hosted web site. Further, a flat panel display information



Johnson County Sunset Drive Office Building.



kiosk in the building's lobby displays the same information for the education of visitors.

Partnership with the Kansas Energy Office through a modest grant was the catalyst that allowed the wind turbine project to be realized. Neal Angrisano, Deputy Director of Facilities for Johnson County, said "We feel that this type of cooperation and financial assistance is an outstanding way to further projects such as this for the benefits of the community and for environmental knowledge offered to the citizenry."

To learn more about the state-of-the-art building, go to: http://facilities.jocogov.org/projects/proj_sunsetoffice.htm.



Photos courtesy of Johnson County Facilities Management.



FAST FACTS

ENERGY STAR: Support Across the Country

Thousands of ENERGY STAR partners – retail stores, manufacturers, energy efficiency organizations, universities, and non-profit organizations – are marking Change a Light Day. Many partners are offering special deals on energy-efficient lighting throughout October and November in support of the national campaign.

Topeka Community Action promotes energy education

Through funding from the Kansas Energy Office, Topeka's Community Action, Inc., was able to continue energy education activities in Kansas. With the grant, Community Action was able to make presentations at Clay Center and Topeka Back-to-School Fairs. There were more than 5,500 participants at these events, and the information was very well-received.

Additionally, Kansas Energy Office funds were used to purchase Winterization Kits and distribute these to low-income families. Community Action was also a leader in the Kansas Warm Homes Project, and distributed additions kits to help low-income families be more comfortable in the cold winter months.

Energy Office support allowed Community Action to reach out to the Volunteer Center in Salina, the Red Cross and Hope Connection of Abilene, the United Way distributions system of Junction City, the North Central Area Agency on Aging in Manhattan, and many other volunteer and non-profit organizations.

The ability to reach these various groups has sparked an interest in energy conservation. As a result, Community Action is already receiving requests for window coverings for the winter. As Jewell Welch noted "It is refreshing to note that a connection to energy conservation and consumption has been made, not only with heating costs, but now with cooling costs." ☀

KACEE continues energy education training

The Kansas Association for Conservation and Environmental Education (KACEE) was successful in providing energy education training and materials to 287 educators in 2006. Participants included teachers, non-formal educators and pre-service teachers. KACEE was provided financial assistance from the Kansas Energy Office (KEO).

In addition, KACEE staff made an Energy Education Presentation at the Kansas Renewable Energy and Efficiency Conference in September, 2006. Another presentation was made on energy education at the annual Community Forum in Prairie Village with an appearance by the Energy Hog.

To work toward advancing energy education in our schools and communities, KACEE has worked intensively with teachers at all grade levels. By focusing efforts on an entire staff or district, the opportunities to insure implementation of energy education within those schools dramatically increases. Such projects have resulted in school-yard composting and recycling projects that have been tied into overall energy savings plans.

KACEE has also developed a guidebook for community members and educators on how to organize and host an energy fair in their communities. These energy fairs help to educate members of the community on energy savings techniques. Thanks to the continued support of the KEO, KACEE has continually served Kansas through intensive education of the community and educators. ☀

Energy Matters

Energy Tips to Help Your Pocketbook

According to the Department of Energy, household energy costs have increased a whopping 12 percent from 2004. Even more startling is the price of natural gas, which rose by 23 percent.

The good news is that there are many actions Americans can take to lower their energy bills, and at the same time help the nation become more energy independent.

Keep Your Cool This Summer

- Use a microwave oven instead of a conventional oven.
- Use a power strip to control your electricity use. A large

Facts & Tips from the U.S. Department of Energy

number of electrical products – especially home electronics – can't be switched off completely without being unplugged. These products draw power 24 hours a day. Plugging them into power strip to shut them off will save you money.

- Lower the thermostat on your hot water heater to 115 degrees and take showers instead of baths.
- Wash only full loads of dishes and laundry.

Landscape For Efficiency

- The shelter from three trees, properly planted around a

Kansas director appointed to national advisory committee

Jim Ploger, Director of the Kansas Energy Office, was appointed to the U.S. Department of Energy's State Energy Advisory Board (STEAB) by the Secretary of Energy Samuel W. Bodman in the spring of 2006.

STEAB is comprised of State energy directors, Weatherization directors, other state officials, representatives of state and local interests, and recognized experts in energy-related disciplines. The Board's statutory charge is to develop recommendations for the U.S. Department of Energy (DOE) and the U.S. Congress regarding initiation, design, implementation, and evaluation of federal energy efficiency and renewable energy programs and policies.

STEAB maintains a close working relationship with DOE's Office of Energy Efficiency and Renewable Energy (EERE) and provides a conduit through which federal, state, and local voices can be heard at DOE and other offices of the federal government. STEAB also offers a forum for the exchange of ideas and information on energy issues and policies.

As a member of the Board, Ploger will have the opportunity to assist in meeting the current energy, economic, and

environmental needs while preserving the means to meet the needs of future generations.



The Board met with the newly appointed Assistant Secretary for Energy Efficiency and Renewable Energy, Alexander A. (Andy) Karsner, to explore innovative approaches to commercializing emergent technologies through various visionary push and pull strategies. The board also met with the Deputy Assistant Secretaries for Technology Development and Business Administration, the Buildings, Industrial Technology, and Hydrogen Program Managers, and the Director of the Technology Advancement and Outreach Office. The Board also received a presentation from the EERE Project Management Center (PMC) on an earlier resolution to ensure the preservation of Regional Office functions as they are incorporated into the PMC.

As a result of these interactions, the board developed and submitted three resolutions providing recommendations for: (1) promoting and supporting the expansion of an alternative fuel vehicles refueling network; (2) simplifying and making information on emerging technologies not yet commercially offered more easily available; and (3) developing a framework for the creation of a national renewable energy credit trading system.

Ploger has attended two meetings of the STEAB since being appointed – one in Washington, D.C., and one at the Oak Ridge National Laboratory near Knoxville, TN. ☼

Energy Tips to Help Your Pocketbook

– Continued from page 19

house, can cut annual heating/cooling costs up to \$250.

- Grow vines on trellises to shade windows, the side of a house or AC units.

AC, Appliances & Lighting

- Open windows, when conditions permit, and use fans instead of air-conditioning. Use a fan to maximize and spread the cooled air from air conditioner units.
- Use a programmable thermostat with the AC to adjust the unit at night or when no one is home.
- Keep lamps and TVs away from the thermostat. Heat from appliances and lamps could cause the air conditioner to run longer.

Shade the Windows

- Install white shades, drapes or blinds to reflect heat. Close curtains on southwest-facing windows during the day. Sunny windows can make an air conditioner work three times harder.

- Replace single- and double-paned windows with ENERGY STAR labeled windows to save energy and money for years to come. Install them before December 31, 2007, and qualify for a tax credit.

Weatherize

- Caulking and weather stripping will help keep out hot outside air, thus keeping indoor air cool. If you see holes in ducts, hire a professional to repair them.
- Add insulation around AC ducts in attics and crawl spaces.
- Consider investing in insulation for the whole house.

Whenever possible, purchase products with the ENERGY STAR label. The label means you are investing in energy efficiency, value, comfort and high performance.

Homeowners can save an estimated 30 percent (about \$450) a year on their home energy bill by using ENERGY STAR-qualified products.

For over 100 energy-saving tips, visit the Web site www.Energysavers.gov. ☼

Wichita West High School designs a wind turbine

Pre-engineering students at Wichita High School West designed and created a small-scale wind turbine system, made possible by a grant and support from the Kansas Energy Office (KEO) and several newly-established partnerships within the Wichita business community.



Wichita State University College of Engineering, Raytheon Aircraft Company and Westar Energy.

"All contributed resources and expertise to assist with the completion of the project," Hudson said. "In addition, West High pre-engineering students conducted three tours of the site to provide information and education about wind energy and

"This project would not have been possible without the critical assistance of the KCC Energy Office," said Joel Hudson, executive director of Secondary Career & Technical Education for the Wichita district. "From start to finish, the KEO staff provided excellent support and guidance to assist West High with completion of this project. The grant process was well organized, efficient and provided the additional support needed for first-time grantees."

As a result of this project, West High has developed new community partnerships with the



the turbine project to elementary students, middle school students and community partners."

The wind turbine met most of the milestones initially established, although some modifications to the power storage and transmission system were made, according to Hudson. "The finished product, which will provide an outdoor learning lab site for future wind energy projects, achieved the original intent of the project."

The final design of the system includes a 25 foot tower with supporting foundation and anchor support cables; winch/foundation and secure fenced area; a commercial generator on loan from WSU; three custom made turbine blades; a commercial diversion load system; an electrical system/battery storage system; and three outdoor flood lights powered by wind energy.

"The West High School-West Wind project served to provide a unique opportunity for students to learn about wind energy, and practice academic and workplace skills," Hudson said. "It was a very successful endeavor for our pre-engineering students, staff and the Wichita community." 🌟



ENERGY STAR: Qualified Compact Fluorescent Lamps (CFLs)

CFLs use at least two-thirds less energy than standard bulbs, last at least 6 times longer, and are backed by a minimum two-year warranty; saves \$25 over each bulb's lifetime; prevents 500 pounds of emissions over each bulb's lifetime, or about 500 pounds of coal.

And they provide the same amount of light (lumens) as incandescent bulbs, but use fewer Watts.

ENERGY STAR: Qualified Light Fixtures

These fixtures come in hundreds of styles including portable fixtures – such as table, desk, floor and torchiere lamps – and hard-wired fixtures – such as outdoor, cabinet, suspended, ceiling-mount, recessed, wall-mount, and ceiling fans.

They usually come with pin-based compact fluorescent light bulbs that last up to 10 times longer and generate 70 percent less heat than standard incandescent bulbs, only needing replacement every seven years on average.

**FAST
FACTS**



Home Energy Saving Tips

Reduce thermostat setting to 68 degrees

Reducing your thermostat setting can substantially lower your heating costs. Putting on those extra layers will help you stay comfortable while saving on your heating bill.

Set back thermostat

Setting the thermostat back 10 degrees at night or when the house will be unoccupied can save up to 15% on heating costs. The furnace will have to run more to reheat the house, but the energy saved while the home is cooler more than offsets the extra run time to reheat the home.

Install a programmable thermostat

Programmable thermostats allow you to reduce your home's temperature at night and during the day and still have the home warm when you wake up or come home from work. Some programmable thermostats cost less than \$50 and can be installed by homeowners.

Change furnace filter monthly

Clogged furnace filters lower the heater's efficiency by preventing proper airflow through the furnace. Low-cost filters are available from your local hardware store. Check filters monthly to see if they need changing.

Have your furnace "tuned up" annually

Having your furnace cleaned and tuned annually helps the heating system operate safely and efficiently. Tuning may involve resetting the fuel-air mixture for proper combustion as well as cleaning of the blower and burners to assure maximum airflow and complete combustion. New furnaces don't need to be cleaned and tuned for the first few years.

Let sunshine in south windows

Open drapes on the south side of your home during winter days and close them at night. Sun angles are low in winter, allowing substantial solar heating through all south windows. You may want to trim vegetation that shades south windows.

Check doors and windows

Air leaks around faulty weather stripping on doors and windows not only make your home drafty but they also increase heating costs. Check for drafts, and repair or replace worn stripping.

Close storm windows and doors

Storm windows installed over primary windows are almost as good as double-pane windows for reducing heat loss, but they only work if they are kept closed. Be sure all your storm windows are properly closed when cold weather arrives.

Operate kitchen and bath vents minimally

Bath and kitchen vents exhaust moisture, along with heated air, to the outside. If your home is dry during the winter, you may not need to operate these vents at all. However, if you have condensation on windows, operate the vents as needed to remove cooking and bathing moisture.

Lower the thermostat on your water heater

Keep water temperatures at about 120 degrees. You can check your water temperature by carefully placing the back of your hand under a steady stream of hot water—if you can't keep your hand there, your water is too hot.

Install a water heater blanket

Older water heaters may not have adequate insulation. Installing an insulating water heater jacket can save energy costs. Be careful to follow manufacturers' recommendations and don't cover the thermostat.

Reduce hot water use

Reducing hot water use reduces the cost of heating water. Low-flow shower heads save water and energy. Showers generally use less water than baths. Using the cold water setting on your washing machine and repairing leaky faucets will save on water and water-heating costs.

Home Energy Saving Tips prepared by Engineering Extension, Kansas State University, Manhattan, Kansas.

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This material was prepared with the support of the U.S. Department of Energy (DOE) Grant No. DE-FG48-02R830102. However, any opinions, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE.

01/07 Paid for with taxes or public funds.