Governor Sebelius Vetos Holcomb Coal Plant Bill

Kansans Come Out in Masses to Support Clean Energy Day

By Stephanie Cole

Late January, a bill was introduced that would attempt to overturn a landmark decision by Roderick Bremby, KDHE Secretary, to deny a permit for two coal-fired plants based solely on concerns of carbon dioxide emissions. The bill would not only allow the coal plants to be built, but would strip the Secretary of authorities necessary to protect the health and environment of Kansas.

On a few days notice, public health, faith-based and environmental groups organized to hold a press conference to voice concerns regarding the legislation. Craig Volland represented the Sierra Club at the press conference and delivered a clever line that was quoted by several reporters. “The real question, and the white elephant in the room nobody is talking about, is why is Sunflower still trying to build coal plants at all?,” Volland said. With 59 coal plants being cancelled, abandoned or postponed last year, Wall Street and the Rural Utilities Service second-guessing financing for coal plants and looming federal carbon regulations, Craig poses a good question.

After the press conference, activism continued a few days later at a rally that followed the hearings on the coal bill. “If we want clean air, renewable energy and conservation, we must work for it,” Tom Thompson, Sierra Club lobbyist, told the crowd. Thank you to Tom Thompson, James Roberts, Bob Eye and Dr. Walt Chappell for delivering such motivational speeches!

The legislation was eventually passed and subsequently vetoed by Governor Sebelius. She stated, “Of all the duties and responsibilities entrusted to me as Governor, none is greater than my obligation to protect the health and well-being of

See Clean Energy Day on page 4
Sierra Club info

Chapter Office
Sierra Club, Kansas Chapter
c/o Craig Wolfe
9844 Georgia
Kansas City, KS 66109-4326
913-299-4443
info@kansas.sierraclub.org

Legislative Coordinator
Tom Thompson
5001 Rock Creek Lane
Mission, KS 66205-3047
913-236-9161
Cell: 913-687-2405
tomnthompson@sbcglobal.net

National Headquarters
Sierra Club
85 Second St., 2nd Floor
San Francisco, CA 94105-3441
415-977-5500

Kansas Chapter Communications
• Craig Wolfe, Newsletter Editor,
Webmaster, Communications
Chair

Planet Kansas Newsletter:
send articles, events, and outings to
info@kansas.sierraclub.org

www.kansas.sierraclub.org 888-7-SIERRA

America needs a smart energy policy that increases our energy security and protects the environment. There is a better way. Congress should pass legislation that cuts our country’s dependence on oil, increases our use of clean, renewable energy sources like wind and solar power, protects our public lands, and modernizes the electricity grid to prevent future blackouts.

Join the Sierra Club today and add your voice to protect the planet.

Join today and receive a FREE Sierra Club Weekender Bag!

My Name___________________________
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Card Number_________________________

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F940 W 4600 1
Clearing the Air: Wind Power and Reliability

Article used by permission from its author Jeff Anthony, Manager of Utility Programs and Policy, and American Wind Energy Association (AWEA). March 25, 2008

In its February issue of Windletter, the American Wind Energy Association (AWEA) addressed questions about the reliability of wind power in an attempt to get the facts straight. Wind power, often regarded as too intermittent to be reliable as a major player in the electricity generation game is in fact proving to be an important part of the worldwide energy mix. In question and answer format, see the answers below to some of the most pressing questions and misunderstood issues about the reality of wind power today.

Can We Rely on Wind Power?

Yes. Wind power is currently supplying 48 billion kilowatt-hours (kWh) of electricity annually in the U.S., powering the equivalent of over 4.5 million homes. Wind power is an important part of electric utility generation portfolios. Yet some question whether wind power, being a variable resource (meaning it generates electricity when the wind is blowing, not on demand) can be relied upon as part of a system that provides reliable electricity to consumers without interruption. Based on a growing body of analytical and operational experience, the answer is a resounding “yes.”

According to many utilities and reliability authorities, wind power can readily be accommodated into electric system operations reliably and economically.

High Wind Penetration and Reliable Operation

In Europe, Denmark receives over 20% of its electricity from wind power, and in 2007 Germany received 7% of its electricity from wind power. Both Spain and Portugal had periods in 2007 when wind power provided over 20% of their electricity. In the U.S., Minnesota and Iowa both get close to 5% of their electricity from wind power. These examples provide real-world experiences with high penetrations of wind power, as a valuable part of a utility generation mix that supplies reliable electrical service to consumers without interruption.

Accommodating the Variable Nature of Wind Power

When wind isn’t blowing, reliable electrical service is maintained by turning up the output of other generators on the electric power system.
Craig Volland Honored with Conservation Award

By Stephanie Cole

As I’m preparing this article I’ve just received a message from Kim Hanson, chair of the True Blue Women environmental committee, in which she encourages her members to use a Holcomb coal plant fact sheet prepared by Craig Volland. In the message, Hanson writes, “Craig Volland rocks – what a smart guy!”

Hanson isn’t the only one who appreciates Craig’s efforts. His work caught the attention of the Daughters of the American Revolution, who recently honored Craig with a conservation award. “Craig Volland is a citizen truly making a difference for his community, country and fellow Americans,” said Suellen Smith, Conservation Chair of the Quivira Crossing chapter of DAR.

Leading up to the permit denial, Craig provided statements to the KDHE, spoke at press conferences, and completed countless hours of research to educate the public on the Holcomb coal plant expansion. After the permit was denied, Craig’s efforts didn’t cease, as he was quick to recognize there would be legislative attempts to overturn the permit denial. “In spite of his formidable gifts, Craig is a humble and approachable person who loves to share his extensive knowledge with others about conservation,” said Yvonne Cather, Chair of the Kansas Chapter of the Sierra Club.

In addition to the many hours Craig dedicates to the Sierra Club, he is also active in the KC Food Circle, a non-profit that promotes the development of a permanently sustainable local food system, and he is the president of Spectrum Technologists.

In the words of the DAR National Conservation Chairman, Elizabeth Hotchkiss, “Craig Volland is a true steward for conservation.”

Celebrate Kansas City EarthFest in the Park!

Kansas City area residents are cordially invited to come to the Kansas City EarthFest 2008 to celebrate Earth Day. This very special event will be held on Saturday, April 19th from 10:00 AM to 2:00 PM at The Theatre in the Park, located in the northeast corner of Shawnee Mission Park, 7710 Renner Road, Shawnee, KS. All of Kansas City is invited and admission is free.

The 12th Annual Kansas City EarthWalk, held in conjunction with EarthFest, starts at 9:00 AM; day of registration is at 7:30 AM. There are 2.7 or 1.5 mile options. For more detailed information on EarthWalk and EarthFest activities, visit the Bridging the Gap website www.earthdaykc.org.

The Kansas City EarthFest 2008 will feature live entertainment, games, crafts and activities for kids of all ages (and adults, too!). There will be a “Buy Fresh, Buy Local” Farmers Market this year and sing-alongs with Jim Cosgrove -- Mr. Stinky Feet himself!

Help do your part for Earth Day by planting a free tree from the Johnson County Park & Recreation District. Join Heartland Tree Alliance for a Tree Walk along the Tree Trail just outside The Theatre in the Park. Learn about native wildlife and view birds of prey and snakes up close. Find out what’s with the “Green Button” and become part of a new movement to help Kansas City go green! Visit the concession stand to find snacks, beverages and lunch that you can enjoy in the great outdoors.

Stop by the Sierra Club table and let us know you are a member. The Kanza Group will be hosting an educational booth at this event and we can always use more volunteers. Donate an hour of your time to assist our organization’s outreach efforts and spend the rest of the day enjoying activities at Shawnee Mission Park. To volunteer, please contact Elaine Giessel at elaine.giessel@kansas.sierraclub.org.

Clean Energy Day, continued from page 1

... the people of Kansas. That is why I supported the decision of the Secretary of KDHE regarding Kansas’ energy future.” In her statement regarding the veto, Sebelius explained, “We know that greenhouse gases contribute to climate change. As an agricultural state, Kansas is particularly vulnerable.” The day before Governor Sebelius received the bill 250 people assembled at the Statehouse from across Kansas to participate in Clean Energy Day.

It was incredible to witness the diversity of participants that made sacrifices to attend the event. “It seemed like the natural thing to do,” said Kate VanCantfort, who rode a bus from Hutchinson with her husband, Tracy Carpenter, and five month old baby, Emma. VanCantfort noted that the event provided a way for her family to get involved in an issue they are passionate about. With the family making efforts to recycle, eat organics and going to the Capitol, we will no-doubt see good things from baby Emma in the years to come. She’s already won the award for being the youngest clean energy fan!

Jim Schneweis, a teacher at Bishop Ward High School in Kansas City, said “I was energized by the number and experience of the people involved with the day.” Schneweis took the day off of work to travel to Topeka. He noted the
Volunteers Make Topeka Clean Energy Day Pay Off

Clean energy advocates gather at a rally to listen to Governor Sebelius speak.

James Roberts, KU Student and GPACE organizer, speaks to an applauding crowd during the February rally.

Craig Volland testifies on behalf of the Sierra Club at a hearing regarding energy legislation.

Dr. Walt Chappell speaks at a Statehouse rally in February.

Lieutenant Governor Mark Parkinson speaks at a rally at Clean Energy Day.

Tom Thompson, Sierra Club lobbyist, participates in a letter writing campaign with hundreds of fellow clean energy advocates.

Photos by Claus Wawrzinek from the Thomas Hart Benton Group in KCMO
Inter City Transportation Alternative

By Carey Maynard-Moody, member, KS Chapter Transportation Committee

Would you like to see enhanced passenger rail service in Kansas? If so, perhaps you would be interested in this initiative.

The Northern Flyer Alliance (NFA) is coordinating a three-state legislative transportation agenda effort. The effort seeks to reconnect passenger rail service in Kansas to form an unbroken route of intercity trains running from Illinois to Texas through Missouri, Kansas and Oklahoma. Currently Amtrak has a passenger rail route for its “Heartland Flyer”. It runs between Oklahoma City and Dallas/Ft. Worth. Why stop in Oklahoma City? Why not travel on to KC? The tracks are there. NFA has taken the first deliberate steps to encourage communities and state governments to embrace intercity passenger train connections stretching from Chicago to Kansas City through Lawrence, Topeka, Newton, Wichita, and south to Oklahoma City and Dallas/Ft Worth.

Imagine being able to have the opportunity to get out from behind the wheel and at the same time be able to bolster the regional economy of communities along the route of expanded passenger rail service in Kansas. It’s travel that is cleaner and greener, environmentally and economically.

Wind Reliability, continued from page 3

system. Electric utility companies serve as “system operators” that can be thought of as air traffic controllers of the power system. System operators can control, or dispatch, generators on their system such as natural gas-fired and hydro generators. They have always actively dispatched their systems in response to electrical demand, or load, which varies randomly over the course of an hour or day. Wind behaves similar to load in that it is “variable,” meaning its output rises and falls within hourly and daily time periods; and it is “non-dispatchable,” meaning its output can be controlled only to a limited extent.

Reliable electrical service can be maintained by system operators dispatching generators up and down in response to variation in load and wind generation. System operators also keep generation in reserve, called “operating reserves,” which can be called on in case of a shortfall. According to Paul Bonavia, Chief Operating Officer of Xcel Energy, one of the nation’s largest electric utility companies: “Wind energy is an integral piece of our power supply portfolio. It provides a hedge against fuel price volatility associated with other forms of electric generation. Our studies and experiences show that wind energy integrates effectively and reliably into our power systems with regional market operations to mitigate the impact of wind variability. In these cases even with 25 percent of the electricity on our system from wind we forecast cost for operating system reserves of approximately $5 per megawatt-hour, or roughly ten percent of the cost of the wind energy. As we gain experience with wind we keep seeking ways to achieve low integration costs.”

Is Energy Storage Needed?
No, while it is natural to think that batteries or other storage systems might be needed to supply steady power, it is not needed to integrate wind energy into electric power systems. The power system essentially already has storage in the form of hydro reservoirs, gas pipelines, gas storage facilities, and coal piles that can provide energy when needed. Storing electricity is currently significantly more expensive than using dispatchable generation. In the future, through advances in technologies such as batteries and compressed air, energy storage may become cost-effective. The prospect of plug-in hybrid electric vehicles holds great promise because the expense of their batteries would be covered by their fuel cost savings and they could provide many megawatts of storage for the overall electrical power system. This would allow wind power and

Well, funding is certainly the biggest hurdle to making this dream come true. Recently the U.S. Senate passed a major Amtrak reauthorization (S-294) that provides major funding increases for Amtrak and provisions for intercity passenger service compacts between States. Kansas and Oklahoma are in perfect alignment for a potential federal offset of up to 80% of the development cost and which is exclusive of other U.S. Department of Transportation funding. And check this out: while highway construction cost per lane is costing taxpayers $9 million per mile on Oklahoma, passenger rail service such as the Northern Flyer costs only $2.1 million per rail mile.

Amtrak would have to complete a feasibility study for the project. That’s another hurdle. Our KDOT has requested this, Amtrak has agreed to do it, and one may be ready as early as Fall 2008.

Even though the funding for this extended rail passenger service won’t be forthcoming for a year, the time is now for transportation agencies to seek the feasibility studies so that they are poised to apply for Federal funding. Expanding passenger rail services seems like a “no brainer” to many Sierra Club members. However, it represents a huge switch for KDOT, an agency that has created a Kansas transportation system dependent on climate stability and an inexhaustible supply of petroleum, both screeching to a halt.

Come on board and learn more by visiting the website www.northflyer.org.

Or you may call Evan Stair, Oklahoma Director Northern Flyer Alliance tel. 405.366.8957 or email him at evanstair@passengerrailok.org.

April / May 2008

See Wind Reliability on page 7
other renewable energy resources to displace consumption of foreign oil. Still, energy storage will best be used as a resource for the overall power system. It would not be cost effective or efficient to couple energy storage resources exclusively to individual wind plants.

Is Wind Less “Reliable” than Conventional Generation?

No. Conventional resources occasionally shut down with no notice, and these “forced outages” require operating reserves. For example, a power system that has 1,000-megawatt nuclear or coal plants will typically keep 1,000 megawatts of other generation available, to be ready to quickly supply electricity if a plant unexpectedly shuts down. The power system can still be operated perfectly reliably in this fashion. Thus, “reliability” is not specific to any single generation facility, rather it is measured on a system-wide basis.

As noted by Jon Brekke, Vice President of Member Services for Great River Energy, a utility that operates in Minnesota and Wisconsin: “Wind energy is a valuable part of our diverse and growing energy portfolio. When partnered with other traditional generation resources, wind energy is an effective way to provide reliable, clean and affordable power to our member cooperatives.

Geographic diversity of wind energy helps even out the variability of wind energy in the regional market. In addition, wind farms are typically made up of many individual turbines, which reduce the impact of outages. For instance, there are 67 1.5-MW turbines at our Trimont Wind Farm, so if one is down for maintenance only 1.5% of the total wind farm’s generating capacity is lost.”

Changes in wind energy output are not instantaneous, as are conventional generator failures. Because of the geographic diversity inherent with large numbers of wind turbine installations, it typically takes over an hour for even a rapid change in wind speeds to shut down a large amount of wind generation. This is a significant benefit when compared with the instantaneous tripping of conventional units. In addition, wind forecasting tools that warn system operators of pending major wind output variations are becoming widely used and better integrated into system operations.

What Is the Cost of Wind Integration?

To address wind energy’s variability, some incremental generation may be required for system balancing. While this is not a reliability issue, it can add a modest amount to the overall cost of electricity service. The costs of this generation include the costs of keeping the generators available and ready to operate, and the fuel costs of operating them. The exact costs depend on the mix of generation on a given system and various other factors. In a document prepared by the Utility Wind Integration Group in coordination with the trade associations of all three utility sectors (investor-owned, public, and cooperative), the studies and experiences with utility wind integration are summarized as follows:

• “Wind resources have impacts that can be managed through

       • proper plant interconnection, integration, transmission planning, and system and market operations.
       • System operating cost increases arising from wind variability and uncertainty amounted to only about 10% or less of the wholesale value of the wind energy.
       • A variety of means — such as commercially available wind forecasting — can be employed to reduce these costs.
       • In many cases, customer payments for electricity can be decreased when wind is added to the system, because the operating-cost increases are offset by savings from displacing fossil fuel generation.”

Jeff Anthony is the Manager of Utility Programs and Policy at AWEA. Prior to joining AWEA in March 2007, he was the Manager, Renewable Energy Strategy with Wisconsin utility company, We Energies.

This article first appeared in the February 2008 issue of Windletter and was reprinted with permission from the American Wind Energy Association (AWEA).
Letter: Let’s start with the facts
By Governor Kathleen Sebelius
Published Sunday, March 30, 2008, in the Topeka Capital Journal

The Topeka Capital Journal has been my hometown paper for more than 30 years; and I will admit I don’t agree with the tone of every editorial, but in most cases I do respect the opinion.

However, when that opinion expressed is based on incorrect information to start with, I am greatly disappointed.

Specifically, on the coal bill debate, the editorial on March 28 describes the new Sunflower coal plant bill as “making concessions” and adding “several green energy provisions.”

Not true.

A “concession,” by definition, is to actually concede something. The bill I vetoed had elements that I firmly said I would not support. I made this clear in discussions and in my veto.

This most recent bill is not a concession — it’s an attempt to offer the same negative elements that caused me to veto it in the first place.

The “green energy provisions” the editorial writers championed are practically rendered obsolete by what’s in the rest of the bill.

By stripping the KDHE secretary of his powers, there is no one to hold the utility accountable to the commitments it has made. By removing the utility from regulation by the Kansas Corporation Commission, it would be pardoned from ever making good on its promise.

Furthermore, when the inevitable federal carbon tax occurs, by removing itself from KCC oversight, Sunflower would have the green light to pass those taxes directly onto its customers without limit.

The so-called “green” provisions don’t reduce the amount of CO2 the two coal plants will emit. They discourage additional wind power by allowing utilities to shut off a consumer’s power if the wind stops blowing. And while they require a utility to develop an energy efficiency plan, they don’t say what kind of energy savings need to be accomplished by the plan. The statute would actually allow an energy efficiency plan that doesn’t decrease energy use. How is this compromise?

I hope the next time the editorial board suggests it is time real concessions are made, and a real compromise is struck, they turn their attention to the proposal I put on the table in January and again in March.

I have extended the invitation to meet with Sunflower and work towards a compromise time and time again.

And while it may be too much to ask for the editorial writers to read the entire bill, I do expect them to read their own paper.

Lawrence Earth Day Parade
Saturday, April 19th
Mass Street/South Park

Walk the walk!
Join the Wakarusa Group in Lawrence’s Annual Earth Day Parade by “walking the walk” down Mass. Street at 11 AM. For details, contact Carey Maynard-Moody at 785-842-6517 or careymm@sunflower.com.

Plant the Plants!
In collaboration with Vinland Valley Nursery, the Wakarusa Group will be selling native plants for your garden. Stop by our booth from Noon to 4 PM in South Park. Proceeds benefit our local Sierra Club group!

http://kansas.sierraclub.org for the latest on issues, outings, and events

Wakarusa Group KS Chapter Sierra Club: serving Lawrence and outlying areas
Questions? Carey Maynard-Moody, Chair, 785-842-6517 or careymm@sunflower.com
Local Lore, Picnic Galore, Merriment Outdoors

The Wakarusa Group Sierra Club invites you to meet at 6 pm for a picnic followed by a presentation from Ken Lassman.

Author of Wild Douglas County Ken Lassman will share his expertise and family history of Wells Overlook Park dating back to 1850.

As darkness falls, participants will be able to view the first quarter moon and spring constellations through a telescope. A hiking trail is also available. Food and drink provided to those who bring their own serviceware. Donations always welcome.

Saturday, May 10th, 6 pm
Wells Overlook Park
The park is located 3/4 mile east of US59 on the south side of County Route 458 (N. 1000 Road).

Please contact George Brenner at gbrenner@sunflower.com or (785) 393-3828 to reserve a spot and receive directions and further details. Space in this outing may be limited.

What’s the best way to be more earth-friendly? Just ask Mr. Green!

Unless you have software or network hookups that require your PC to be on constantly, turn that sucker off. The sleep mode cuts energy use by 70 percent, but using the off switch reduces it even more—and turning off the power strip stanches the flow entirely. (Please don’t confuse power saving with screen savers; though the latter may feature a heartwarming picture, they do not save energy.) Since computers in the business sector alone waste more than $1 billion worth of electricity a year, it’s surprising that more fuss isn’t made about these simple steps.

Some people believe that restarting the computer each time you return consumes a significant amount of energy, but it’s really not enough to worry about. Think about it, if these devices actually required as much power to boot up as some believed, circuit breakers would be snapping like castanets and you’d be flamenco dancing back and forth to the fuse box instead of sitting there typing out pertinent questions to Mr. Green. It’s also rumored that turning a computer off and on repeatedly hastens its demise. This is simply not true. Even if it were, obsolescence would likely kill off your machine first. And when your desktop PC is put to sleep—permanently—consider replacing it with a laptop, which uses a lot less power.

Hey Mr. Green, I would like to encourage my son-in-law to turn off the lights when he leaves a room. To do that, I would have to show the cost benefit. Can you help? —Ruth in Watertown, Massachusetts

In olden times, a household authority figure would say, “Turn the lights out,” and that would be that. But today’s contentious whippersnappers apparently need a detailed financial analysis before flipping the switch. Fortunately, the math is on your side. Electricity rates are based on the number of kilowatt-hours consumed (1 kilowatt equals 1,000 watts).

All you have to do to find the daily cost of operating a light bulb is multiply its wattage by the number of hours it burns, then multiply that by the kilowatt-hour (kWh) rate printed on your utility bill and divide the result by 1,000. To summarize:

See Mr. Green on page 13
Biofuels: More Harm Than Good?

We had better do a quick reality check on biofuels. It may be doing much more harm than good. There is too much of a blind rush to praise the plant-to-energy phenom as our energy savior. As a result, its impacts on our biosphere are going ignored. Consider:

- Deforestation of the Amazon is the result of the land rush to convert forests to biofuel producing farm land.
- Deforestation accounts for 20% of all carbon emissions.
- Demand for biofuels is jacking up food prices. The grain to fill up an SUV can feed one person for a year.
- Demand for land to grow biofuel crops “forces” the use of irrigation to grow crops on land. In Kansas, that means depleting the aquifers at an increased rate.

Researchers who once hailed biofuels as a strong solution for the energy/fuel crisis are now viewing their recommendations in horror. The problem with biofuels is simple. Using land to grow fuel leads to the destruction of forests, wetlands, and grasslands that store enormous amounts of carbon.

The answer is also simple, but we haven’t added 2+2 yet to figure out the answer. Policy makers must look at the entire equation. Biofuel and plug in electric vehicles result in burning carbon that gets into the atmosphere. Until we start getting all our energy from solar and wind, we are still participating in the problem. It’s time for a Manhattan project on steroids to solve our energy and climate change crisis. In the mean time, the below chart breaks down a reality check on biofuels.

<table>
<thead>
<tr>
<th>BIOFUEL</th>
<th>WHAT’S IT COST? (per gallon, summer 2007)</th>
<th>HOW MUCH ARE WE MAKING? (gallons of expected U.S. production, 2007)</th>
<th>HOW MUCH CAN WE MAKE? (gallons, capacity under construction)</th>
<th>HOW MUCH LAND WOULD IT TAKE to replace 5% of U.S. gasoline consumption?</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASOLINE &amp; PETROLEUM DIESEL (for comparison)</td>
<td>$3.08 (gasoline); $2.79 (diesel)</td>
<td>136 billion (gasoline); 63 billion (diesel) (refinery yield)</td>
<td>143 billion (gasoline); 67 billion (diesel) (figures are 2012 estimates)</td>
<td>In 2006, the United States consumed 142 billion gallons of gasoline and 49 billion gallons of diesel</td>
</tr>
<tr>
<td>CORN ETHANOL</td>
<td>E85 (85% ethanol, the most common U.S. blend): $2.10; E100 (pure ethanol): $2.48</td>
<td>5.7 billion (note: all ethanols yield about a third less power than gasoline)</td>
<td>11.4 billion</td>
<td>117 million acres (roughly the size of Oregon and Idaho combined)</td>
</tr>
<tr>
<td>SUGARCANE ETHANOL</td>
<td>Roughly $1 in Brazil; not available in the United States, partly due to a tariff of 54 cents per gallon</td>
<td>4.2 billion in Brazil</td>
<td>No known plans to produce in the United States</td>
<td>41 million acres (the size of Wisconsin)</td>
</tr>
<tr>
<td>CELLULOSIC ETHANOL (from switchgrass, slath, and agricultural byproducts)</td>
<td>Not commercially available</td>
<td>Test production only</td>
<td>Unknown</td>
<td>If switchgrass, 35 million acres (the size of New York); if logging slath, 39 million acres (the size of New York and Connecticut combined)</td>
</tr>
<tr>
<td>SOYBEAN BIODIESEL</td>
<td>B20 (20% biodiesel, common blend): $2.53; B99/100: $3.31</td>
<td>292 million (estimate) (note: all diesels are 20–30% more fuel efficient than gasoline)</td>
<td>1.4 billion (the same facilities make biodiesel from soybeans and cooking grease)</td>
<td>138 million acres (the size of Arizona and Colorado combined)</td>
</tr>
<tr>
<td>COOKING GREASE BIODIESEL</td>
<td>Grease is a cheaper source than soybeans, but soybean production is subsidized so the price is essentially the same</td>
<td>52 million (estimate)</td>
<td>1.4 billion (the same facilities make biodiesel from soybeans and cooking grease)</td>
<td>Lots of greasy spoons</td>
</tr>
<tr>
<td>ALGAE BIODIESEL (experimental process using algae grown in large greenhouses)</td>
<td>Not commercially available</td>
<td>Test production only</td>
<td>Unknown</td>
<td>353,000 acres (about half the size of Yosemite National Park)</td>
</tr>
</tbody>
</table>

A dramatic article on this topic can be found at: www.time.com/time/magazine/article/0,9171,1725975,00.html
**Clean Energy Day, continued from page 4**

most important part of the day for him was meeting with his representatives.

VanCantfort and Schneweis were joined by a fourteen year old girl who wanted to spend her birthday at Clean Energy Day with her family, labor unions, including the United Steelworkers and Teamsters, college students and many others.

Participants wrote letters to their legislators, attended hearings, met with lawmakers and attended a rally at the end of the day. The rally was a much-deserved reward for attendees who were so patient during the day’s events (traveling in such a large pack often involves lots of line waiting!). The Lieutenant Governor, Mark Parkinson, addressed the crowd and stressed the importance of the people who attended Clean Energy Day.

He urged them to continue their efforts against the mega-dollar coal lobby. Parkinson joked that he rarely wonders why we don’t build more coal plants in KS on days it’s so windy his hat blows off of his head.

The day wasn’t over yet! Governor Kathleen Sebelius surprised clean energy advocates and appeared at the rally. She promised activists that their voices would be heard. The crowd erupted in applause and cheers when Sebelius stated she could “pretty well assure people what would happen to the bill” once it made its way to her desk.

Clean Energy Day was a true demonstration of how dedicated Kansans are to the environment, the economy and the health of future generations.

<table>
<thead>
<tr>
<th>WHAT’S GOOD ABOUT IT?</th>
<th>WHAT’S BAD ABOUT IT?</th>
<th>WHO’S BACKING IT?</th>
<th>HOW MUCH WOULD IT REDUCE GLOBAL WARMING? (percentage of greenhouse gases compared with petroleum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large supplies (for the moment). Massive industrial infrastructure in place.</td>
<td>Releases ancient carbon into the atmosphere, causing warming of the planet. Nonrenewable. Domestic production degrades wildlands; foreign production harms national security. Diesel soot is a major pollutant.</td>
<td>The major oil companies, OPEC, and the Bush administration</td>
<td>Leading cause of global warming</td>
</tr>
<tr>
<td>It’s homegrown, so it promotes energy independence. Politically popular, some infrastructure already in place.</td>
<td>Corn production can degrade soil, requires intensive fertilization, and encourages use of genetically modified varieties.</td>
<td>Agriculture giants Archer Daniels Midland and Monsanto; corn farmers; political candidates looking for Midwest votes; and the U.S. government, which subsidizes it at the rate of 51 cents per gallon</td>
<td>Figures vary widely depending on how the mill producing it is fueled: If biomass, the reduction is 54%; if natural gas, 22%; if coal, there is a 4% increase over gasoline. Average improvement is about 15%.</td>
</tr>
<tr>
<td>Most energy efficient of all the biofuels. Can be grown on marginal soils in a tropical climate.</td>
<td>Smoke from cane burned after harvest creates pollution and health hazards.</td>
<td>No effective lobby in this country (corn producers are very eager to keep it out of the U.S. market)</td>
<td>56%</td>
</tr>
<tr>
<td>Major greenhouse-gas reductions, plus some grasses can actually remove CO₂ from the atmosphere and store it in the ground.</td>
<td>Wide-scale utilization could displace native plants and wildlife habitat.</td>
<td>Many environmentalists; President George W. Bush, who promoted it in his 2006 State of the Union address; and Waste Management, Royal Dutch Shell, Dupont, and Goldman Sachs</td>
<td>90.9%</td>
</tr>
<tr>
<td>Biodiesel burns more cleanly than petroleum diesel, producing only half as much soot and 60–90% less of other air pollutants. Soybean oil is otherwise underutilized, as soybeans are grown primarily for meal.</td>
<td>Clearing of forests for planting could increase CO₂ and decrease biodiversity. Combustion produces dangerous soot (although only half as much as petroleum diesel) and 10% more nitrogen oxide.</td>
<td>Europe, where it is the dominant biofuel</td>
<td>59.7%</td>
</tr>
<tr>
<td>Recycles a material that would otherwise be discarded.</td>
<td>Combustion produces dangerous soot (although only half as much as petroleum diesel) and 10% more nitrogen oxide.</td>
<td>Favorite of do-it-yourselves, some of whom collect and refine cooking grease into fuel</td>
<td>75.6%</td>
</tr>
<tr>
<td>Algae can use CO₂ as food, so the process can recycle up to 80% of CO₂ from power plants. Doesn’t require arable land.</td>
<td>Well suited to desert areas, but large farms could reduce wild habitat. Requires significant amount of water, although water can be recycled.</td>
<td>GreenFuel Technologies, Algae BioFuels, and Solix Biofuels</td>
<td>Figure not available</td>
</tr>
</tbody>
</table>

**ILLUSTRATIONS BY PETER HOEY**

April / May 2008
CO2 Sequestration by Algae Reactors

Calling it unproved technology understates its problems

By Tim C. Liebert, P.E. Chemical Engineering, ExCom member, Kanza Group

Considerable hype surrounds the potential to reduce greenhouse gas emissions by using the carbon dioxide in stack gases to produce algae. Such schemes would remove the CO2 from stack gases, bubble these gases through ponds or tubes exposed to sunlight where the algae would grow by familiar photosynthesis. All of us have seen ponds clogged with algae during the summer and can easily imagine this being literally a ‘green’ solution that would allow us to continue burning fossil fuels. Unfortunately, getting from here to there is not that easy.

Renewable energy is catchall term for solar energy collection and conversion to useful heat and work. Most of us are familiar with conventional forms of renewable energy: Solar, wind, ethanol, biodiesel, wood, or hydrogen. CO2 to algae is another such form; that is, sunlight is used to reduce CO2 to carbon, thereby allowing the re-oxidation of the carbon by combustion to CO2, then potentially recovering the CO2 by the same algae production, yielding an endless chain of combustion and recovery with no net CO2 impact. There is no evidence at this time that such a scheme is not technically possible, but it is important to look at the fundamentals of the CO2 to algae process on the scale of the Holcomb plant to better understand how it fits into the pool of renewable energy methods from which our future will draw to maintain our way of life.

Since all renewable forms of energy come from sunlight, an important parameter is the conversion efficiency from solar radiation to heat or work of different forms of renewable energy. Solar cells (photovoltaics) can have efficiencies from 10 to 30 percent. Thermal collectors that heat a fluid, such as hot water heaters, have efficiencies of 50 to 80 percent. Current research in photovoltaics looks toward reducing the manufacturing cost and improving efficiencies. Biomass (ethanol, biodiesel, wood) has an average conversion efficiency of 0.1%. Agricultural crops are in the range of 1 to 2%. Due to the low efficiency, biomass requires long growing seasons and large crop growing areas to generate the quantities of energy needed to be economic or significant. Sugarcane production in Brazil has an efficiency of about 8% and for this reason is an economic form of CO2 mitigation in that region. Hydrogen as a renewable resource is produced electrolytically by taking electricity from a renewable generator (wind turbine, photovoltaic cell) and converting water to hydrogen and oxygen with about a 50% efficiency (overall the efficiency is 50% of the efficiency of the source of electricity, so it is 5 to 15% overall). The strong interest in CO2 to algae results from it alleged photosynthesis conversion efficiency of as much as 12%. This 120 times the average of all biomass; hence, the stam-pede of interest, research capital and press coverage. However, the only long term study conducted by NREL of algae farms resulted in an average efficiency of about 1.3%. The theoretical maximum conversion efficiency of biomass is 12%, so the press releases purporting to achieve efficiencies at the maximum physical limit must be viewed with skepticism. The ‘bioreactor’ technology hyped as a method of cleaning the Holcomb plant stack gases has a probable efficiency of 6%. Translating this into surface area required for the bioreactors yields a required absorption area of around 66 square miles. Two additional sources were found that provide data that allow the calculation of absorption area, and they both yielded similar results.

It has been estimated that the capital cost of algae bioreactors is approximately $190 per square meter. Hence, the capital cost of CO2 sequestration by algae for one 700-megawatt plant is $31 billion. One source projected that biodiesel would have to sell for over $800 per barrel for such a plant to be economic. No wonder the proponents of the Holcomb plant will not include commitments to construct the algae reactors in their permit applications.

One might be led to believe that there is justification for further research and that such research might lead to an economically justified project. Unfortunately, this is not the case. There is no reasonable scenario that would cause either the capital cost or the efficiency of CO2 mitigation to significantly improve. Any suggestion that the CO2 to algae to biodiesel process is close to commercial implementation must be vigorously challenged as erroneous and misleading. Further, to say that the technology is unproven is to overstate the case: the process is not feasible, and any claims to the contrary can be disproved.

The legislative supporters of the algae to biodiesel solution for the Holcomb plant greenhouse gas emissions can be faulted for not doing the necessary homework to investigate the claims of the process sponsors, but were most likely well intentioned in their desire to find a reasonable compromise that would allow construction of the plant while minimizing the health and environmental damages caused by the enormous release of CO2. It is less clear how the Sunflower Group, that had extensive engineering and technical resources at its disposal, could have been duped so badly.

The enormity of the CO2 mitigation facility and its cost is a vivid example of the scale of the problem caused by the stack gases from a 700-megawatt facility. This is a compelling reason that the Sierra Club fiercely opposes any new expansion of coal power plants. Whatever sequestration or mitigation technology is proposed is going to be massive, expensive and require enormous resources that may further compound the problem of climate change, not necessarily improve it.

Here are the two additional sources for the calculation of area required for the bioreactors.


Want to protect the health of the Haskell-Baker Wetlands?
Want to learn more about the Haskell-Baker Wetlands?
Participate in a service project to prune and repair parts of the Wetlands.
Activities may include: removal of invasive bushes, repairing the boardwalk, installing wood duck boxes, and pruning limbs on the north levee.
Plan to bring water and work gloves. Tools and light snacks will be provided.

Space may be limited.

Dr. Roger Boyd, Wetlands Coordinator, and the Wakarusa Group Sierra Club are sponsoring the event.
Please contact George Brenner at gbrenner@sunflower.com or (785) 393-3828 to reserve a spot and receive further details.

http://kansas.sierraclub.org/

Mr. Green, continued from page 9

(hours used ¥ watts ¥ rate) / 1,000 = daily cost.

So if a 100-watt bulb burns for ten hours a day, and the power company charges ten cents a kilowatt-hour, it costs a dime a day to keep lit. That’s about $3 per month, or $36 per year. Leaving a half dozen bulbs burning would waste more than $200 per year.

If your son-in-law turns off the lights and puts the annual savings into an account that draws 5 percent interest, in ten years he will have about $2,650, a nice little sum he could invest in some booming alternative energy company.

Hey Mr. Green, I know the Sierra Club encourages replacing incandescent bulbs with efficient fluorescents, but the former are readily disposable in the trash, while the latter contain mercury. So what am I supposed to do with my dead fluorescent bulbs? —Stew in Princeton, New Jersey

How many environmentalists does it take to change an efficient lightbulb? While your local hazardous-waste authority is the best source for information, many hardware stores will take back your old bulbs—sometimes at no charge if you’re buying replacements. Check www.earth911.org or call (800) CLEANUP to find a recycling location near you, or visit the EPA’s Web site at www.epa.gov/bulbrecycling for info. It’s worth the effort: Though fluorescents do contain mercury, a highly poisonous element that persists in the environment, burning coal to generate electricity puts almost fifty tons of the nasty stuff into the air each year. Since fluorescents are four times more efficient than regular bulbs—and last at least five times longer—replacing all household incandescents (and recycling all dead fluorescents) could cut mercury and CO2 emissions while saving the equivalent of at least 4 billion gallons of oil annually.

Hey Mr. Green, I am urging my employer to participate in a paper-recycling program. Can you tell me how many trees would be saved by recycling a thirty-gallon bin of paper? —Allan in Houston

As teenagers, my buddy Gordo and I and our trusty McCullough chainsaw whacked scads of innocent trees and shipped them to the mill in Dubuque. Toiling to answer this sort of question is a penance for such sins. Better to do it now than to stew in a vat of boiling pulp in the hereafter, taunted by environmental sermons blaring through raspy amplifiers.

See Mr. Green on page 19
Kansas Carbon Countdown: Meeting the Challenge

That’s the theme of this year’s silent auction

Friday • May 2 • 7-10 p.m.

Lenexa Conference Center,
11184 Lackman Road (College Blvd & Lackman)

- Special Presentation
  Bob Berkebile, nationally acclaimed leader in green architecture of KC’s BNIM architects, will present green building solutions.

- Great Bargains - Silent Auction
  Talk to businesses working to reduce our carbon footprint.

- Special Exhibitors:
  Talk to businesses working to reduce our carbon footprint.

- Fine Wine, Hors d’oeuvres & desserts

- Environmental Awards

- Admission:
  $25 at door
  $45 per couple at door
  $20 Advance registration. Go to www.kansas.sierraclub.org/Auction/

Kansas is in the middle of a landmark battle to stop coal plants in western Kansas that will impact Climate Change for decades to come. All this at a time when Global Warming is recognized as the most critical issue facing our planet. Sierra Club is dedicated to educating both the public and our policy makers on this critical issue.

Now, you can help make a difference.
Support Sierra Club’s Work. See you on May 2nd

You can help make our Silent Auction a success

We need your help on the Auction Committee to call members, ask for quality donations from merchants, and help with details of the event.

Interested?
Contact Craig Wolfe at 913-299-4474 or info@kansas.sierraclub.org
Spring Brings Out The Green – It’s Time To Pitch In!

Elaine Giessel, Kanza Volunteer Coordinator

The Kanza Group is in need of volunteers for Earth Day celebrations and other Spring Green activities. The Sierra Club has numerous opportunities to meet the public and talk about the critical work we are doing to protect the Kansas environment. We have victories to celebrate and a lot more work to do! We’ll provide a tabling box with handouts and other materials promoting energy conservation/efficiency and renewable energy sources. New volunteers will get free on-the-job training and work with seasoned “tablers.”

It’s fun and gratifying to meet with the public and share your passion, even if you don’t consider yourself an expert. Check out the dates and locations below to find an event near you. You don’t have to be available for the whole event. If you are interested in helping or have questions, please contact Elaine Giessel at elaine.giessel@kansas.sierraclub.org.

- March 29, 9:00 am to 2:00 pm: Kansas City Food Circle 10th Annual Exhibition of Farmers at the Shawnee Civic Centre, 13817 Johnson Dr., Shawnee. Distribute our new “Let’s Curb our Fuelish Diet” brochure, meet local organic farmers, buy seedlings and sing along with eco-troubadour Stan Slaughter.
- April 12, 10:00 am to 3:00 pm: 8th Annual Prairie Village Earth Fair at Shawnee Mission East High School, 7500 Mission Road, Prairie Village. Lots of young people!
- April 12, 9:00 am to Noon: Overland Park Stream and Trail Clean-up at the Indian Creek tributary just east of Quivira. Meet at Oak Park on 106th and Bond and get muddy.
- April 18, 11:00 am to 1:00 pm: Earth Day Celebration at Sprint Campus, Town Square Courtyard, Leawood. Meet and greet Sprint employees with Sierra Club energy materials and our new handheld “Carbon Footprint” fans.
- April 19, 9:00 am to 2:30 pm: 12th Annual EarthWalk and EarthFest, Shawnee Mission Park; see related article in this newsletter.
- April 20, 8:00 am to 1:00 pm: Earth Day Celebration at The United Methodist Church of the Resurrection, 13720 Roe Avenue, Leawood. Preach our message!
- April 26, 8:00 am to noon: La Grande Bird Fiesta at Ernie Miller Park, 909 N. K-7 Hwy, Olathe, in conjunction with Outdoor Kansas Kids Day. Free family event with lots for kids to do. We’ll provide information on global warming. Enjoy a spring birding hike in the park with your kids. Bring a picnic.
- May 2, 7:00 pm to 10:00 pm: Kanza Group Silent Auction in the refurbished barn at the Lenexa Conference Center, Lackman at College. This is our only annual fundraiser and we really need folks to help with the bar, the food, the decorations and the auction set-up/tear-down. We’ll start preparations around noon. Volunteers get free admission!
Chapter & Group Leaders

Groups are the local body of the Kansas State Chapter

Chapter Executive Committee

Officers, Committee Chairs
*Elected ExCom member; **Appointed ExCom member,
***Group Representative to Chapter, ****Officer/Committee Chair

Yvonne Cather*, Chapter Chair, Council Delegate, (316) 945-0728, david.kirkbride@kansas.sierraclub.org
Craig Lubow*, Vice-Chair, Global Warming Chair, (913) 299-6620, craiglubow@kansas.sierraclub.org

Tom Kneil****, Secretary, (316) 744-1016, thomaskneil@kansas.sierraclub.org
Scott Smith*, ExCom Member, (785) 379-9756, spudspa@yahoo.com

Flint Hills Group (Manhattan Area)

Scott Smith*, Group Chair, Treasurer, (785) 539-1973, wizard13@cox.net
Larry Erickson, Vice Chair, Conservation Chair, Environmental Education, (785) 539-4424, lerrick@ksu.edu
Catherine Birkbeck, Chair, Group Chair, Global Warming Chair, (913) 299-6620, craiglubow@kansas.sierraclub.org

Kanza Group (Kansas City)

Frank Drinkwine*, Chair, (913) 385-0385, frank.drinkwine@kansas.sierraclub.org
Steven Baru*, Vice-Chair, (913) 814-0835, steve.baru@sierraclub.org
Richard Voss****, Treasurer, (913) 888-8517, richard.voss@kansas.sierraclub.org
Craig Lubow*, Conservation Chair, Global Warming Chair, Calendars, (913) 299-6620, craiglubow@kansas.sierraclub.org

Southwind Group (Wichita)

Dave Kirkbride*, Chair, Group Chair, (316) 945-0728, david.kirkbride@kansas.sierraclub.org
Ellie Skokan*, Vice Chair, Conservation Chair, (913) 744-0033, ellie_skokan@yahoo.com
Tom Kneil* Secretary, Alternate Chapter Delegate, Global Warming Chair, (316) 744-1016, thomaskneil@kansas.sierraclub.org
Stuart Bolt****, Treasurer, (316) 789-0739, justkathrynb@hotmail.com
Bill Cather*, Group Chair, Membership Chair, Program Co-Chair, Publicity Chair, (316) 789-0739, justkathrynb@hotmail.com
Bill Cather*, Group Chair, Membership Chair, Membership Chair, (316) 789-0739, justkathrynb@hotmail.com

Wakaruusa Group (Lawrence)

Carey Maynard-Moody*, Chair, Political Chair, (785) 842-6517, CareyM@aging.state.ks.us
Carolyn Binns*, Chair, Conservation Chair, Environmental Justice Chair, (785) 384-8218, Carolyn Binns@sunflower.com
George Brenner*, Outings Chair, (785) 384-8218, gbrenner@kansas.sierraclub.org

Topeka Group

Paul Post, Chair, (785) 354-1972, paulpost@paulpost.com
Bill Cutler, Treasurer, (785) 379-9756, spudspa@yahoo.com
Jack Smith*, Outings Chair, (785) 273-3138, kjkmsmith@aol.com
Jo Ann Van Meter, Conservation Chair, (785) 234-3023, worrybeads@aol.com
Patsy Samson, Membership Chair, (785) 267-3968, patsysamson@aging.state.ks.us
Phil Morse****, Political Chair, (785) 273-3138, pmorse@sbdglobal.net
General Meetings

Flint Hills Group
(Manhattan)
General Information
For information please call Scott Smith at 785-539-1973 anytime or email wizard13@cox.net.

Kanza Group, (Kansas City)
April 8. 7:00 pm.
New Developments in Hunting and Gathering
Local Organic Food
7:00 pm. Come early, and we will have snacks and good conversation.
7:30 pm. This meeting, coordinated by the Kansas City Food Circle will focus what's happening on the local organic food scene including the 2008 Farmers Expo, local food buying clubs, CSA's (Community Supported Agriculture), and the Kanza Group’s new “Let’s Curb our Fuelish Diet” brochure. We can improve our diet and reduce our carbon footprint at the same time. Where - Overland Park Lutheran Church, 7810 W. 79th Street. 8 blocks west of Metcalf at Lowell. Park on north side. Directions at www.kansas.sierraclub.org/kanzadirections.htm. Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org

Kanza Group (Kansas City)
May 2. 7-10 pm.
Silent Auction: Kansas Carbon Countdown - Meeting the Challenge
The Kanza Group’s major fundraiser, with this year’s theme to reduce carbon footprint. Speaker Bob Berkebile, nationally known expert on green building, will present. Special exhibitors working on carbon reduction. Great bargains. Fine Wine, hors d’oeuvres and desserts. Environmental Awards. $25 at the door. $20 pre-registration, directions and details at www.kansas.sierraclub.org/Auction/ Lenexa Conference Center at 11184 Lackman Road. Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org

Southwind Group (Wichita)
April 11. 6:30pm.
Miller Time -Recycling Opportunities in Sedgwick County.
Food & Conversation begin at 6:30 and the program starts at 7:30 at the Great Plains Nature Center. Presented by Darrel Bishop with special guests Paul and Margaret Miller. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

Southwind Group (Wichita)
May 9. 6:30pm. Meeting Topic TBA
General Meeting at the Great Plains Nature Center Program to be announced. Food & Conversation begin at 6:30 and the program starts at 7:30 at the Great Plains Nature Center. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

Topeka Group
April 22. 7:00 pm.
Butterfly and Hummingbird Gardening
Elaine Giessel will present a program on wildlife gardening, focusing on ways to attract hummingbirds and butterflies. April is a great time to start thinking about outdoor activities, so even members who aren’t gardeners should find this talk interesting. Elaine is a long-time member of the Sierra Club and holds leadership positions at both the state and local levels. Shawnee County Public Library, 1515 SW 10th Avenue. Optional dinner at Annie’s Place Restaurant in Gage Center is at 5:30. Paul Post, (785) 354-1972, paulpost@paulpost.com

Topeka Group. May 27. 7:00 pm.
Wild Utah: America’s Redrock Wildness
Bob Brister of the Southern Utah Wilderness Alliance (SUWA) will present a slide program documenting citizen efforts to designate public lands in Southern Utah’s spectacular canyon country as part of the National Wilderness Preservation System. Bob is the International Outreach Coordinator for SUWA. Shawnee County Library, 1515 SW 10th Avenue. Optional dinner at Annie’s Place Restaurant is at 5:30. Paul Post, (785) 354-1972, paulpost@paulpost.com

Wakarusa Group, (Lawrence)
General Information
The Wakarusa Group is limiting its general meetings in order to concentrate on holding special events. To get the most up-to-date announcements on our events, please add your name to our e-mail list. You can add your name to the list by contacting Carey Maynard-Moody at (785) 842-6517, careymm@kansas.sierraclub.org
Sierra Club Outings

General public is welcome to participate

Below is the combined list of all outings by the Kansas Chapter and Groups. The number in [brackets] indicates the area of the outing as shown on the map. Please contact the outing leader listed after the description by phone or e-mail before attending any of these activities. For trips requiring physical exertion, leaders need to know your ability and condition. Sierra Club policy also requires participants to sign a liability waiver or acknowledgement of risk prior to departing the trailhead.

A fun 8 mile loop near Beaver Lake in NW Arkansas. Will the dogwood be in bloom? We often stop at War Eagle Mill for cornbread on Sunday. $10 donation requested.. Kanza. Anne McDonald, (913) 384-6645, pam@kc.rr.com or Renee Andriani, 913-488-4445 randri@kc.rr.com

Come to the northern part of the Little Blue to learn about wild edibles. If you wish, bring a native wild edible or herbal plant, to exchange for other wild edibles activities throughout the year.. Kanza. Patty Brown, 816-737-2804, pbbrn5@sbcglobal.net

[1] Apr 12. 9:00 am. Service Outing at Haskell-Baker Wetlands
Want to protect a vital ecosystem and learn more about the Haskell-Baker Wetlands? Participate in a service project at the Haskell-Baker Wetlands. Dr. Roger Boyd, Baker Wetlands coordinator, will lead volunteers in several projects depending on the weather and other factors. Among the projects are tackling the invasive Tartaric Bush Honeysuckle, repairing bad spots in the boardwalk, installing wood duck boxes and pruning back limbs on the north levee. A number of people have signed up for this event, but we may still have a few spaces available. Please bring drinking water and work gloves. No toiletting facilities available in this primitive area. Tools and light snacks will be provided.. Wakarusa. George Brenner, (785) 393-3828, gbrenner@sunflower.com

[2] Apr 14. 5:30pm. Southwind at Caffe Moderne
Drinks and Conversation at the Cafe Moderne. 300 block of Mead in Old Town. Southwind. Kathryn Buck, (316) 789-0739, justkathrynb@hotmail.com

Join us for our 5th annual trip to this Bluegrass music Mecca nestled in the Ozark mountains. We'll camp next to Sylamore Creek at Blanchard Springs Caverns Recreation Area and visit the Ozark Folk Center State Park. Deadline to sign up for this outing is April 10. $10 donation requested.. Kanza. Dave & Kathy Patton, (816) 461-6091, davedahiker@yahoo.com

[1] Apr 19. 11:00 am – 4:00 pm. Earth Day Parade and Plant Sale
Join us in the parade down Mass. Street at 11 AM. Don’t miss the chance to show your commitment to the environment and march with other Sierra club supporters! Later, stop by our booth in South Park between noon & 4 PM. In collaboration with Vinland Valley Nursery, we will be selling native plants for your garden. Proceeds benefit our local Sierra Club group! For more details about Lawrence’s 8th Annual Earth Day Celebration, please see www.lawrencerecycles.org/.. Wakarusa. Carey Maynard-Moody, (785) 842-6517, careym@kansas.sierraclub.org

[2] Apr 19. 10:00 to 2:00. Earth Day Tabling
Earth Day Tabling at 1st United Unitarian Church, 7202 E. 21st St.. Southwind. Stuart Bolt, (316) 685-3492, stuart.bolt@cox.net

Join us on a leisurely afternoon hike to see this local wildland jewel in progress. Bring work gloves as we will pick up trash or pull honeysuckle along the way.. Kanza. Doris Sherrick, (816) 779-6708, djsher@fairpoint.net

For those of you who work weekends, we'll do a relatively easy trip at an Ozark location. $10 donation requested.. Kanza. Bob Wilshire, (913) 384-6645, rjwilshire@kc.rr.com

Destination TBA. Call or email for further details. $10 donation requested.. Kanza. Terry DeFraties, (913) 385-7374, theerustbucket@aol.com

We will meet at 6:30 pm for a picnic followed by a presentation from Ken Lassman, author of Wild Douglas County. Ken will share his expertise about the land and life in and around Wells Overlook Park dating back to 1850. Sierra Club will provide food and beverages to participants who bring their own plates and tableware. We also suggest that you bring a lawn chair or picnic blanket, as seating is limited. There are no bathroom facilities. As darkness falls, participants will be able to view the first quarter moon and spring constellations through a telescope.. Wakarusa. George Brenner, (785) 393-3828, gbrenner@sunflower.com

We will watch “Effective Cycling”, a bike safety video, followed by a Q & A session. Please make sure your bike is able to ride several miles without any problems. All riders must wear a bicycle helmet.
Mr. Green, continued from page 13

Anyway, a 30-gallon bin will generally hold around 80 pounds of computer paper, or up to 100 pounds if the paper is tightly packed. A typical tree used for pulp yields about 83 pounds of office paper, meaning your bin would essentially hold the equivalent of one tree. Since 10 to 25 percent of the mass gets lost in the paper-recycling process, you might not rescue a whole tree each time you fill a bin, but it's safe to say at least three-fourths of a tree could be saved per container. Now if you throw in a lot of crumpled paper that takes up extra space, you'll obviously fall short of that noble goal.

Of course, trees come in various sizes, and some species yield more pulp than others, so these are ballpark figures. Remember too that all paper is not created equal: virgin office paper requires twice as much pulp per pound as virgin newsprint. But any way you slice it, recycling paper saves a lot of trees, and we could save even more if we didn't trash over 45 percent of the 100.2 million tons of paper we produce each year.

Bob Schildgen, a.k.a. Mr. Green, is the author of the forthcoming Hey Mr. Green: Sierra Magazine's Answer Guy Tackles Your Toughest Green Living Questions, published by Sierra Club Books in April. The book will be available to Club members and friends at a special discounted price of $11.25 through the Sierra Club online store, http://www.sierraclub.org/books To ask Mr. Green a question, visit www.sierraclub.org/mrgreen

Committee Meetings

Kanza Group
(Kansas City)

Executive Committee
Apr 22, May 27 - 7:00 pm,
Frank Drinkwine, (913) 385-0385,
frank.drinkwine@kansas.sierraclub.org

Joint Action Committee
Apr 22, May 27 - 7:00 pm,
Conservation, legislative, and political
Craig Lubow, (913) 299-6620,
craig.lubow@kansas.sierraclub.org

Southwind Group
(Wichita)

Executive and Fundraising Committee
Apr 6, May 3 - 6:00 pm
7701 East Kellogg, Suite 880
Dave Kirkbride, (316) 655-8299,
david.kirkbride@kansas.sierraclub.org

Conservation Committee
Apr 15, May 20 - 6:00 pm
5825 Memphis St, Bel AireWichita.
Ellie Skokan, (316) 744-0033
ellie_skokan@yahoo.com

Wakarusa Group
(Lawrence)

Executive Committee Planning
Apr 6, May 4 - 7:00 pm
Location TBA. Carey Maynard-Moody, (785) 842-6517,
careymm@kansas.sierraclub.org.

Conservation Committee
Contact Carey Maynard-Moody, (785) 842-6517,
careymm@kansas.sierraclub.org.

Topeka Group, ExCom meets quarterly, TBA. Paul Post, (785) 354-1972, paulpost@paulpost.com

Kansas Chapter: (State), Executive Committee, May 17 (location TBA)
Yvonne Cather (316) 522-4741, yvonne.cather@kansas.sierraclub.org

Bring a bike, and join us for this Saturday morning workshop and ride. We'll reward ourselves by dining to lunch after the class. $5 donation requested.. Kanza. Claus Wawrzinek, (816) 517-5244, clausw@att.net or Paul Gross, 816-228-6563 wildwoodp@hotmail.com

[2] May 12. 5:30pm. Southwind at Caffe Moderne,
Drinks and Conversation at the Café Moderne, 300 block of Mead in Old Town. Southwind. Kathryn Buck, (316) 789-0739, justkathrynb@hotmail.com

We'll stay at the YMCA's scenic Camp Wood in Elmdale, where your choice of accommodations range from your own tent to a well-appointed cabin. A day trip to the nearby Tallgrass Prairie National Preserve will be a great opportunity to explore and learn about the region's fascinating history and prairie ecosystem. Sign up early so we can arrange accommodations. $10 donation requested. Kanza. Renee Andriani, (913) 488-4445, randri@kc.rr.com

Bring your compass and we will learn to set bearings to find unique trees in one of the most beautiful parks in the city. $5 donation requested.. Kanza. Eileen McManus, (816) 523-7823, eileen4250@sbcglobal.net

Hike at the Tallgrass National Prairie Preserve
Springtime in the Tallgrass Prairie, 6-mile backcountry hike at Tallgrass National Prairie Preserve with overnight tent camping at YMCA Camp Wood, Reservations required by May 24, $6 camping fee. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com
Calendar of Events

Below is a listing of all General Meetings (GM), Outings (Out), and Committee Meetings (CM) for the Kansas Chapter and Groups. For specific information, see General Meetings page 17, Outings page 18, and Committee Meetings page 19. For the latest update on events, go to www.kansas.sierraclub.org/EventsSearch.htm.

Out Apr 4-6. Beginner Backpack on Pigeon Roost Trail, War Eagle, AR. Kanza. Anne McDonald, (913) 384-6645, pamecdonald@kc.rr.com or Renee Andriani, 913-488-4445 randri@kc.rr.com

CM April 6. 5:00p.m. Southwind ExCom Meeting. Southwind. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

CM Apr 6. 7:00 pm. Planning committee meeting. Wakarusa. Carey Maynard-Moody, (785) 842-6517, carenym@kansas.sierraclub.org

GM Apr 8. 7:00 pm. New Developments in Hunting and Gathering Local Organic Food. Kanza. Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org

CM Apr 10. 7:15 pm. Energy Committee. Topeka. Phil Morse (785) 273-3614, pmorse@sbiglobal.net

GM Apr 11. 6:30 pm. Miller Time - Recycling Opportunities in Sedgwick County. Southwind. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

Out Apr 12. Little Blue Wild Edibles Hike & Garden Tour, Eastern Jackson County, MO. Kanza. Pattie Brown, 816-737-2804, pbbbrn5@sbcglobal.net

Out Apr 12. 9:00 am. Service Outing at Haskell-Baker Wetlands. Wakarusa. George Brenner, (785) 393-3828, gbrenner@sunflower.com

Out Apr 14. 5:30 pm. Southwind at Caffe Moderne. Southwind. Kathryn Buck, (316) 789-0739, justkathryn@gmail.com

CM Apr 15. 6:30 pm. Conservation Committee Meeting. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com

Out Apr 17-20. Car Camping, Mountain View, AR. Kanza. Dave & Kathy Patton, (816) 461-6091, davedahiker@yahoo.com

Out Apr 19. 11:00 am – 4:00 pm. Earth Day Parade and Plant Sale. Wakarusa. Carey Maynard-Moody, (785) 842-6517, carenym@kansas.sierraclub.org

Out Apr 19. 10:00 am to 2:00 pm. Earth Day Tabling. Southwind. Stuart Bolt, (316) 685-3492, stuartbolt@cox.net

GM Apr 22. 7:00 pm. Butterfly and Hummingbird Gardening. Topeka. Paul Post, (785) 354-1972, paulpost@paulpost.com

CM Apr 22. 7:00 pm. Conservation and Joint Action Committee. Kanza. Craig Lubow, (913) 299-6620, craiglubow@kansas.sierraclub.org

CM Apr 22. 7:00 pm. Kanza ExCom meeting. Kanza. Frank Drinkwine, (913) 385-0385, frank.drinkwine@kansas.sierraclub.org

Out April 27. Hidden Valley Park, Kansas City, MO. Kanza. Doris Sherrick, (816) 779-6708, dsjsher@fairpoint.net


GM May 2. 7:10 pm. Silent Auction: Kansas Carbon Countdown - Meeting the Challenge. Kanza. Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org

Out May 3-4. Ozark Stream Overnight Float Trip. Kanza. Terry DeFrates, (913) 385-7374, theerustbucket@aol.com

CM May 3. 6:00 pm. Southwind ExCom Meeting. Southwind. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

CM May 4. 7:00 pm. Planning committee meeting. Wakarusa. Carey Maynard-Moody, (785) 842-6517, carenym@kansas.sierraclub.org

CM May 8. 7:15 pm. Energy Committee. Topeka. Phil Morse (785) 273-3614, pmorse@sbiglobal.net

GM May 9. 6:30 pm. Meeting TBA. Southwind. Dave Kirkbride, (316) 945-0728, david.kirkbride@kansas.sierraclub.org

Out May 10. 6:30 pm. Spring Picnic: Looking Down on Wild Douglas County and Up at the Night Sky. Wakarusa. George Brenner, (785) 393-3828, gbrenner@sunflower.com

Out May 10. Urban Bike Safety Workshop and Ride, Crossroads District Kansas City, MO. Kanza. Claus Wawrzinek, (816) 517-5244, clausw@art.net or Paul Gross, 816-228-6563 wildwoodp@hotmail.com

Out May 12. 5:30 pm. Southwind at Caffe Moderne. Southwind. Kathryn Buck, (316) 789-0739, justkathryn@gmail.com

Out May 16-18. (Fri-Sun) Family Campout in the Flint Hills. Kanza. Renee Andriani, (913) 488-4445, randri@kc.rr.com

CM May 17. 9:00 am. Chapter ExCom Meeting. Chapter. Yvonne Cather, 316-522-4744, yvonne.cather@kansas.sierraclub.org

CM May 20. 6:30 pm. Conservation Committee Meeting. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com

CM May 27. 7:00 pm. Conservation and Joint Action Committee. Kanza. Craig Lubow, (913) 299-6620, craiglubow@kansas.sierraclub.org

GM May 27. 7:00 pm. Wild Utah: America’s Redrock Wildness. Topeka. Paul Post, (785) 354-1972, paulpost@paulpost.com

CM May 27. 7:00 pm. Kanza ExCom meeting. Kanza. Frank Drinkwine, (913) 385-0385, frank.drinkwine@kansas.sierraclub.org

Out May 31. Loose Park Champion Tree Compass Course, Kansas City, MO. Kanza. Eileen McManus, (816) 523-7823, eileen4250@sbcglobal.net

Out May 31. Contact Ellie Skokan for details. Southwind Hike at the Tallgrass National Prairie Preserve. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com

Kansas Chapter of Sierra Club
9844 Georgia
Kansas City, KS 66109-4326

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April / May 2008

Deadline for the next issue is May 15

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