

HELI GRAPHS

www.IllinoisSolar.org

Newsletter of the Illinois Solar Energy Association ☺ May 2008, Vol. 28, No.2

Illinois Solar Energy Association Hires Executive Director

Michael Johnson Addition Positions ISEA for Continued Growth

The Illinois Solar Energy Association (ISEA) is pleased to announce the hiring of Michael R. Johnson as Executive Director. Johnson previously worked as Coordinator of Special Projects at the Chicago Department of Environment, where he led the department's climate change and renewable energy development initiatives.

He earned a master's degree in Environmental Management & Policy at Lund University in Sweden, and a bachelor's degree in political science from Augustana University in Rock Island, IL. He has recently launched a consulting firm, Recolo, Inc., which offers management consulting services related to greenhouse gas management and marketing support for renewable energy.

"This is a historic step for our association," said Mark Burger, President of ISEA. "With Mike's help we will be able to better accomplish our mission of increasing awareness and understanding of solar, wind and other forms of renewable energy in the state. We will be better equipped to oversee interns and other future staff, and leverage the efforts of our talented volunteers, while expanding the solar tour and our educational offerings. Having Mike on board will also enable us to have a bigger impact on public policy regarding renewable energy."

Small Wind Projects Get Help

By Tom Steever, *Brownfield Network*

A handful of Illinois wind energy projects are getting a financial boost. The seven small wind energy projects are to divvy up \$100,000, according to Illinois Governor Rod Blagojevich. The small projects will not only reduce energy costs for rural home owners and businesses, but will allow the state to evaluate the effectiveness of the turbines as a renewable energy source, said Governor Blagojevich.

The systems are small, rated at 100 kilowatts or less and are designed for homes, farms and small businesses, according to a news release issued Friday from the Governor's Office.

One grantee, Victor Zaderej of Oregon, Illinois, recently built a Zero Energy Home that serves as a model for future construction. The high elevation and available wind resource on Zaderej's turbine site maximizes the energy output of the system. In addition, by incorporating a small wind energy system into his design, Zaderej continues to promote sustainability through energy efficient design and the use of renewable energy.

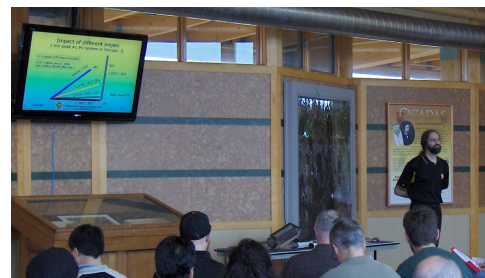
Dale E. Balder, another grantee, will use his small wind turbine to not only bring energy to his home, but also to promote his small business. Heavenly Winds, LLC, located in northwestern Illinois, is a renewable energy dealership specializing in solar photovoltaic installations and small wind systems.

The location of this small wind turbine

in close proximity to a utility-scale wind farm will also provide a comparative example of the many ways renewable energy can be utilized.

The grants range from \$6,284 to \$24,954.

-From January 18, 2008 issue
Brownfield Network



David Wokosin, one of ISEA's new '101' Instructors, presenting to a Solar 101 class at the Evelyn Pease Tyner Interpretive Center in Glenview in April.

Inside

Letter from the President	p. 2
UPDATE	
Solar, Wind 101 Workshops	p. 6
Calendar of Events	p.12

Put THAT in Your Pipeline and Use It

Letter From The President

You may have been following a proposal of to build a natural gas pipeline that will run from Alaska through Canada and terminate in Chicago. If approved within a year or so, this pipeline could be transporting natural gas as soon as 2019.

Many issues will be raised by this project, ranging from environmental and right-of-way impacts, to the need for this pipeline, and what else could be done with the billions of dollars that will be required to finance it. The pressure to use natural gas is considerable. A relatively clean fossil fuel, except for carbon dioxide content, it is extremely useful for residential, agricultural and industrial applications.

The U.S. faces a growing deficit of importing natural gas from overseas, requiring expensive and potentially hazardous conversion to liquid form for shipping. We are closing in on a 10 percent overseas import rate, which is growing at about one half percent per year, depending on heating and peak electricity needs. This import rate soon will grow to one per cent per year.

As seemingly bountiful as this resource might appear to be, it will not be a very long-term solution. If the trans-Alaska pipeline for petroleum is any indicator, the natural gas pipeline will be good for about 30 years of capacity shipping, before declining. It will delay, not avoid, imported fuel dependence, as continental and near offshore resources wane. It is still a fossil fuel with climate change implications.

As Amory Lovins said of fossil fuels, they're too valuable to be burned. Even if massive efficiency measures were taken, and its use as a space and water heater is replaced, natural gas still will be needed for industrial heating purposes and as an agricultural and industrial feedstock.

So what should the position of the renewable energy community be? Flat out opposition? Or, maybe consider something a little different: We should recognize that we will need energy and the need to transport it across considerable distances, so why not use the new pipeline for something that will allow an orderly transition to a greener economy?

The pipeline will cross areas of western Canada and the U.S. upper Midwest which will eventually have tens of thousands of megawatts of wind turbines. These turbines can use electricity to harvest hydrogen fuel. The hydrogen fuel can be used as a way to improve the overall dispatchability of wind power.

This would require a different grade of pipeline because hydrogen has greater tendency to leak, compared to methane. This type of pipeline will be more costly, but could be used for a far longer period of time and affect a smoother transition from nonrenewable to renewable energy. As part of the transition, hydrogen can be blended in low percentages with natural gas, called "hythane," and still work in nearly every appliance.

There can be other considerations: Parallel pipeline infrastructure should also be planned for biofuel, to reduce the energy cost of transport. This will also require different technology, as biofuel is miscible, (mixes with water), and so is subject to corrosion. In the meantime, a toll or fee should be levied on this project to encourage massive deployment of solar thermal, the best technology to replace low-temperature natural gas applications. Deployment of photovoltaic systems should also be supported, because they match peak electricity generation generally fuelled by natural gas.

Some may complain that this is an unfair expense to levy on natural gas to subsidize competitive technologies, and is unwarranted interference in market economics. This argument pales in the likelihood of massive subsidies—monetary and otherwise, that this pipeline will get, in the interest of continuing "affordable" energy. The very nature of piping

fossil fuels thousands of miles, or drilling under deep water, or seriously looking at extracting energy from tar sands and oil shale (another topic) shows that we are entering the societal phase of picking up sofa cushions and looking for loose change. The sooner we own up to this reality and use the pipeline as a bridge to a sustainable energy future, the better.

-Mark Burger, ISEA President

April ISEA Membership Meeting



By Carol Gulyas,
ISEA Vice
President

About 50 ISEA
members

celebrated the first good weather in weeks by driving 94 miles out of the city to Sublette, Illinois where we met at La Fiesta Restaurant for breakfast and then visited the GSG Wind farm a mile out of town. Mark Burger shared some information on wind energy in Illinois:

- There are eight working wind farms in Illinois, totaling 700 MW of power, enough to power 350,000 homes.
- There will be 9 working wind farms online by June, 2008 and 10 to 12 by December, 2008
- Wind energy will be an important component in meeting the newly adopted renewable portfolio standard (RPS) for Illinois
- Illinois's RPS requires that 2 percent of its energy come from renewable energy, and this percentage increases to 25 percent by 2025. The wind farms are also an important economic stimulant for rural towns.

After breakfast we drove to the wind farm's educational center, which was too small for our group. Joyce and Bruce Papiech, developers and owners of GSG Wind Energy, shared

an informative presentation on large wind energy.

The GSG wind turbines turn at a majestic rate of 11 rotations per minute, but the tips of the turbines move at 150 miles per hour (mph). The sound they make while turning is a pleasant low-frequency, low-volume continuous whooshing sound, comparable to the sound of a forced air furnace blowing at night in a quiet house.



The Papiiech's are developers who put together the financing, got permission from

landowners, and lease the land; they then sell the power to ComEd. They also sell Renewable Energy Credits to other states, such as New Jersey, who need to fulfill their own RPS. Now that Illinois has its own RPS, presumably more of GSG's wind power will go to Illinois.

One of the interesting facts we learned is that the turbines must be limited to one every 4 acres, so that they don't interfere with the wind reaching other turbines.

The higher one goes, the better the wind power. A National Renewable Energy Lab study showed that 90% of the U.S. has sufficient wind power to turn a turbine if the turbine is 90 meters tall. Turbines may have reached their maximum height for the time being because the cranes used to assemble the turbines can't lift blades higher than 100 meters.

The Papiieches have been measuring the wind at Sublette for five years. Illinois has good potential for wind power — in fact, Illinois has more wind capacity than California. Farmers can till the land up to within 12 feet of the tower, so they lose very little land from cultivation.

A soil analysis is done before a turbine is built to verify that the soil is strong enough to carry the load. A 56-foot diameter hole is dug, 8 feet deep, and steel rebar skeleton collar is placed on top of the hole, to which

cement is added. The structure will hold 1 million pounds.

The turbines are designed to last 20 to 25 years, at which time maintenance becomes more costly than replacement. The towers are designed to withstand tornado winds up to 200 mph winds; in winds beyond that, they are engineered to buckle in half instead of toppling over like a tree.

Towers over 200 feet are regulated by the FAA and have appropriate lighting so that airplanes will not collide with them. The tower blades are huge and turn very slowly so that birds and bats can sense and avoid them. They kill an average of one to two birds per turbine per year.

Green collar jobs are starting to follow the growth of wind turbines in Illinois. More education and training is needed, and both Sauk Valley Community College and Highland Community College are creating curriculum to help grow the work force for these clean energy jobs.

The GSG Wind farm consists of 34 1.5 MW turbines that generate enough energy to provide electrical power for 750 homes, based on 2 kW per house usage. These towers are shorter than the 2 MW towers we saw last year at the Crescent Ridge Wind Farm.

Illinois Ranks 3rd in Nation of States With Most New Wind Energy

American Wind Energy Association releases annual rankings of wind energy leaders

The American Wind Energy Association (AWEA) today announced that Illinois ranked third in the nation for the installation of new wind energy generation in 2007, behind only Texas and Colorado. Last year, Illinois added 592 megawatts of new wind power generation, increasing the total state wind generation capacity to 733 megawatts (MW).

In August of 2007, Governor Blagojevich signed into law one of the most aggressive Renewable Portfolio Standard (RPS) policies in the country, adopting a central plank of his energy independence platform. This renewable energy standard requires Illinois utilities to supply 2 percent of their power from renewable energy resources by 2008, 10 percent by 2015, and 25 percent by 2025, at least 75 percent of which must be generated by wind power.

"We're now beginning to tap the great potential of clean, renewable wind energy that is so critical to reducing our reliance on fossil fuels and cutting the greenhouse gas emissions that cause global warming," said Gov. Blagojevich. "The wind farms being built across Illinois are producing pollution-free energy, creating good paying jobs, boosting investment in rural communities, generating property taxes to support local schools and helping to protect consumers from volatile energy prices."

Illinois' 733 MW of wind power generation:

- Generates enough electricity to power over 183,000 homes
- Represents over \$1.3 billion in investment in Illinois
- Created over 3,500 jobs in Illinois.
- Generate \$7.3 million per year in property tax revenues for local governments
- Provides over \$2.9 million in annual lease payments to Illinois farmers who lease land to wind farm developers
- Reduces emissions of carbon dioxide by 1,463,588 tons/yr, of sulfur dioxide by 4,639 tons/yr, of nitrogen oxide by 1,772 tons/yr and toxic mercury by 100 lbs/yr.

The 138 megawatt Crescent Ridge Wind Farm in Bureau County is among the County's largest property taxpayers and the 396 megawatt Twin Groves Wind Farm in McLean County is the largest terrestrial wind farm east of the Mississippi River. Trinity Structural Towers, a company that

manufacturers wind towers in DeWitt County created 140 new jobs.

In addition to the 593 megawatts of wind generation installed in 2007, the RPS is spurring development of an additional 3,400 megawatts of wind energy projects in Illinois that will establish Illinois as a national leader in wind power generation. Once developed, Illinois will generate enough wind power to supply almost 1 million homes statewide.

"Gov. Blagojevich understands that investing in renewable energy is both environmentally and economically critical to Illinois' future. Investments in clean energy sources bring investments in clean energy jobs. In Illinois, we are expanding our economy by becoming a leader in clean energy technology," said Director of Commerce and Economic Opportunity Jack Lavin.

Nationwide, over 5,200 megawatts (MW) of new power generating capacity was installed in the U.S. in 2007, an investment of over \$9 billion. With total installed U.S. wind power capacity now over 16,800 MW, or enough to serve the equivalent of 4.5 million average households, wind is one of the largest sources of renewable energy in the nation.

AWEA's annual rankings highlights states, corporations and utilities that are doing the most to further the generation of electricity from wind.

Wind Industry Update

By Tim Montague



In August, 2007, Illinois joined the growing list of states that have a Renewable Portfolio Standard (RPS; Illinois Power Agency Act). This Act mandates that 25% of our electricity come from renewable sources by 2025 and that at least 75% of that energy come from wind power. The actual contribution of wind may

be upwards of 90% given the relative abundance of wind resources in Illinois. According to a report from Environment Illinois, *Redirecting Illinois's Energy: The Economic and Consumer Benefits of Clean Energy Policies*, achieving 25% renewable energy by 2025 will create upwards of 6,250 jobs each year in Illinois.

Wind is the fastest growing source of electricity in the world today with an annual growth rate of 34% (faster than coal, nuclear, and natural gas). This means wind turbine makers are running at full-capacity and global turbine supplies are sold out through 2008.

There are at least two local initiatives that will help the Illinois wind industry mature and grow. First, is the statewide advocacy group, Wind for Illinois (www.windforillinois.org). This group, in the early stages of development, has set its sights on shaping state-level policy and facilitating information and best-practices sharing within the industry. A membership meeting on March 6, 2008 in Chicago drew 40 people from a growing list of wind-interested companies and individuals. The organization will be officially launched this summer; for more information contact Kevin Borgia, kborgia@windforillinois.org.

One of the key roles that Wind for Illinois will play is to counter the opposition that has hurt wind projects locally and nationally. Susan Casey of the Center for Neighborhood Technology (www.cnt.org) gave an overview of opposition to the Crescent Ridge (Bureau County, IL) project at the Wind for Illinois meeting. She reviewed the attitudes and opinions underlying local resistance and gave recommendations on how developers can avoid these pitfalls in the future. Susan Casey's thesis on this topic is available online: www.neiu.edu/~srcasey/THESIS-FINAL.pdf.

The second initiative is Local Source Chicago, an effort to promote local manufacturing by organizing a wind turbine supplier conference to be held in Chicago this fall. There are

currently no wind turbine manufacturers in Illinois, but second tier companies like Texas-based Trinity are moving in. In Clinton, Illinois, Trinity is converting a long-vacant freight car plant to produce towers for wind turbines. Elgin, Illinois is now home to the U.S. operations of Winergy Drive Systems, producing gear units, generators, and power converters. Local Source Chicago is currently looking for strategic partners and funds to make this conference a reality. Contact Dylan Tuttle of the Jane Adams Resource Corporation dylant@jane-addams.org for more information.

ELPC Campaign Results in Solar-Friendly Interconnection and Net Metering Standards



The Illinois Commerce Commission has finally issued interim interconnection

rules to facilitate more small clean wind power, solar energy and cogeneration of up to 10 MW. In addition, as of April 1st, Illinois utilities are required to offer net metering to consumers, a key step for advancing more distributed solar energy. The Environmental Law and Policy Center (ELPC) is leading efforts to improve these important "rules of the road" that are vital for expanding renewable energy. The Commission is taking public comments to improve upon the current standards.

For more information, visit www.elpc.org/energy/repower/ModelRegulations.php

-April ELPC Newsletter

Into the Wind: Quad City Area Man Makes His Own Electricity

By Alma Gaul, *Quad City Times*

A strong wind blows across a high, open field on Stan Arnold's 75-acre farm. Atop a 33-foot pole, the wind catches the blades of a turbine, spinning them like a pinwheel, creating a whirring sound something like that of a distant siren.

It's a happy sound for Stan and Nancy Arnold because it means they are saving money on their utility bill.

As the blades turn, electricity is created, going right into their home's circuit breaker panel, which is connected to the MidAmerican Energy Co. grid. When the turbine produces more electricity than the Arnolds use, the bi-directional meter installed by MidAmerican "banks" the excess energy until a later time when they use more than the turbine produces.

With an average annual wind speed of 10 to 12 mph on their farm, the turbine can produce about 400 kilowatt hours of electricity per month, about half of what the Arnolds need. Since the turbine went online in October, they have seen close to a one-third savings on their electric bill. With wind speeds increasing in winter, they hope to see a 50 percent savings.

Stan Arnold, who is semi-retired, is among a "handful" of people who have installed turbines in the Quad-City region for their personal use, say representatives of the area's two major utility companies, MidAmerican and Alliant Energy.

They aren't for everybody, though.

In addition to the initial investment — Arnold spent a little less than \$10,000 — one needs a minimum of a half-acre of land, and the land needs to be free of obstructions (such as trees) that would cause turbulence that is hard on the turbine blades and cuts production.

One also needs to be in an area where average wind speeds are at least 10 mph (12 or more is best) and where zoning regulations allow such structures. Zoning was not an issue for the Arnolds because their agricultural land is exempt, and they were not required to get a building permit.

Personal turbines began cropping up in the late 1970s after passage of the federal Public Utility Regulatory Policies Act that requires utilities to connect with and purchase power from small wind energy systems.

Terry Harbour, a senior engineer with MidAmerican in Davenport, said people are not flocking to produce their own power, possibly because the cost of electricity has been "flat" for more than 10 years. Still, he says, "I field a lot of calls. A lot of people feel it's a good thing and they want to be a part of a good thing."

Arnold did not try to calculate his payback because that was not his overriding concern. Rather, he likes being on the cutting edge and feels "it is everyone's responsibility to protect the environment and help stop global warming."

He also has installed an energy-saving geothermal heating and cooling system to replace his propane furnace — "The best thing I ever did," he says — and put most of his land into the U.S. Department of Agriculture Conservation Reserve Program to reduce erosion and create wildlife habitat.

This spring, he expects to install a solar system to take advantage of the sun's energy to produce electricity during the summer when the wind speeds powering his turbine will be less.

Maybe the Arnold household will be energy-independent someday, he muses.

Installation was a DIY project

Arnold installed the Skystream 3.7 wind turbine last fall, buying it online

from Southwest Windpower, based in Flagstaff, Ariz.

He had long been interested in wind energy, but he did not care for the banks of batteries previously required for electrical storage. Recent advances allow residential turbines to connect directly to a utility's grid, doing away with the need for batteries, and that was a breakthrough for Arnold.

The 33-foot-high pole was delivered on a semi-trailer and the turbine with its 12-foot blades came via Federal Express.

Arnold did the installation himself, using a mini-excavator to dig the hole for the foundation. He also built a frame for the 6- by 6- by 4-foot concrete cube with steel reinforcing rods that holds the pole. The 5 1/2 yards of concrete was delivered by a ready-mix business.

Anyone with a little construction know-how could do the same, Arnold says, by following the detailed instructions from Southwest Windpower, which provides a primer to guide one through the process.

"They just walk you through it," he adds.

The primer includes instructions on contacting one's utility company and registering with the Federal Energy Regulatory Commission. The utility company conducts an impact study and a field test to make sure the turbine is compatible with its grid.

"This doesn't go up overnight," Arnold says. "It takes about four months of paperwork."

A hand-held remote lets Arnold control the turbine from his house. If there is a malfunction or a problem with the turbine, the remote can be hooked up to his personal computer to feed data to the company's tech support for troubleshooting and advice.

Southwest Windpower says on its Web site that one could get a payback

in four to 12 years, depending on electric use, weather conditions and rates.

Although this was not an overriding concern for Arnold, a reduction in his electric bill is more significant for him than most Quad-City region households because electricity powers his geothermal heating and cooling system.

Whereas most households are heated with natural gas or propane (the Arnolds used propane), the geothermal system relies on an electric heat pump.

Geothermal uses the constant temperature of the earth — about 50-55 degrees year-round in Iowa and Illinois — to heat and cool the home. In winter, an underground loop system containing a glycol fluid picks up heat that is transferred through an electric heat pump to the air in the home. In summer, the system reverses, with heat being transferred back into the ground to cool the home.

There were no rebates, tax credits or other incentives available to Arnold for his wind turbine, but he expects they will be around in the future and then paybacks will come more quickly.

-From January 27, 2008 issue, *Quad City Times*

More Midwest Schools Using Wind Turbines to Cut Energy Costs

By Molly Seltzer, *Medill Reports*

Some Midwestern schools think the answer to higher electricity bills is blowing in the wind.

K-12s, colleges and universities have been putting wind turbines on their campuses since 1993, mainly to combat rising energy prices. But they're also a learning experience, and those in Illinois are helping meet the state's renewable-energy goal.

There are between 400 and 500 wind-energy turbines operating in Illinois. They produce between 350 and 699 megawatts of electric power annually, depending, of course, on how the wind blows. More turbines are built each year, but they have yet to provide more than 1 percent of Illinois' energy needs.

Gabriela Martin, program officer for renewable energy at Chicago-based Illinois Clean Energy Community Foundation (ICECF), said, "If you have 699 megawatts, that's pretty good. That's like a coal plant."

There are no official figures for how many Illinois schools have turbines. However, the success of three schools in Illinois, two in Iowa and one in Michigan, demonstrate that wind energy is both educational and an economic benefit. At one high school, over half its electricity needs are produced by its own turbine. At least two other schools are in the process of exploring turbines.

"The wind market is really crazy right now. It's like the housing market two-three years ago," Martin said.

The ICECF has awarded 25 wind feasibility study grants, generally used to determine if sites are windy enough. The majority of these grants — 20 of the 25 — have gone to schools, for a total of \$507,000.

Three colleges in the state were awarded turbine installation grants, totaling \$1.9 million; three schools were awarded grants totaling \$2.5 million.

Turbines have turned heads in the Illinois legislature. Roger Brown, program manager of the Illinois Institute for Rural Affairs at Western Illinois University, noted a new law: "The Renewable Portfolio Standard requires that a percentage of Illinois' power or electricity must be generated from renewable energy, that is, 25 percent by 2025. I believe 75 percent of that renewable [energy] must be from wind. It starts out at 2 percent this year... that's a fairly aggressive situation."

Though federal and state governments, recognizing that wind power isn't yet a profitable business, have been working sporadically to make windfarms economically viable — mainly through tax credits — school administrators said the uncertain government policies and lack of commercial viability don't concern them, since they aren't commercial operations.

Terry Gutshall is the superintendent of Bureau Valley Community Unit School District, based in Manlius, Ill., 130 miles southwest of Chicago. It's the first Illinois K-12 school to get a turbine.

"We can see the volatility in the world market," he said. "We can see what the impact of energy consumption is, and we're trying to do our part to help our taxpayers out and help renewable energy."

Bureau Valley's turbine has been turning since 2005. It can produce 660 kilowatts per year, making it one of the larger residential-scale models. It is 220 feet from the base to the top, with blades 76 feet in length.

The \$1 million turbine provides "well over half, if not two-thirds" of the electricity consumed at Bureau Valley High School, Gutshall said.

"Our net savings are around \$20,000. You know, that's almost a teacher," he said. "The gross savings were \$100,000 and we're looking at... for sure between \$70,000 and \$100,000 as far as net savings."

-Excerpt from March 12, 2008 issue, *Medill Reports*

U of I Students to Build Solar House

By Patrick Chapman, *ACES News*

A team of University of Illinois students and faculty has been selected as one of 20 teams to compete in the 2009 Solar Decathlon.

Each team will receive \$100,000 start-up funds from the Department of Energy to design, build and operate an energy efficient, fully solar-powered home. Approximately \$500,000 more will need to be raised in order for the U of I team to compete.

The team will spend almost two years designing and building about an 800-square-foot home. In the fall of 2009, they will transport their solar house to the National Mall in Washington D.C. and compete against the other institutions, including the previous winner from the 2007 Decathlon Technische Universität Darmstadt, from Darmstadt, Germany.

"The '09 competition will be more practical in that the house will be connected to a power grid, instead of relying on batteries during time of little or no sun," said Patrick Chapman, professor of electrical and computer engineering in the U of I College of Engineering. "We have enough students remaining from the '07 team to carry forward some experience, get off to a good running start and make

fewer mistakes. We'll also be collaborating heavily with Katrin Klingenberg, from the PassivHaus Institute, US, which is located in Urbana. This collaboration should give us a strong advantage in passive house design." During the 10-day competition, students will test their homes in contests and be juried by experts in 10 categories including architecture, livability, comfort, and how marketable the home would be to the public. The winner of the competition is the team that best blends aesthetics and modern energy conveniences with maximum energy production and optimal efficiency.

-Excerpt from February 5, 2008 issue, *ACES News*

**Illinois Solar Energy Association
Board of Directors**

Mark Burger, President
Carol Gulyas, Vice President
Mark Hasen, Treasurer
Lisa Albrecht, Secretary
James T. Gill
Thomas Kranz

Brandon Leavitt
Mary Eileen O'Keefe

**Michael Johnson, Executive
Director**

HELIOGRAPHS is published quarterly by the Illinois Solar Energy Association (ISEA). Edited by Sarah Lozanova and Deny Reynolds.

Membership information, updated information, and assistance in locating resources can be obtained on ISEA's website: www.illinoisolar.org
Illinois Solar Energy Association (ISEA)
800 W Evergreen Ave, Chicago, IL
60622-8245 (312-376-8245)

Submissions are encouraged, preferably by electronic means. Please email submissions for the July issue by June 12 to editor@illinoisolar.org. Priority is given to articles about solar, wind, or other renewable energy occurring in or influencing Illinois.