HELIOGRAPHS

25 Years

www.IllinoisSolar.org

Newsletter of the Illinois Solar Energy Association July 2006, Vol. 25, No. 2

$1 Million Available for Illinois Solar Energy Rebate Program

Gov. continues commitment to renewable energy

CHICAGO – Gov. Rod R. Blagojevich today announced that $1 million in new funding is now available for rebates on the cost of solar energy systems installed in Illinois. Through the Solar Energy Rebate Program, offered by the Illinois Department of Commerce and Economic Opportunity (DCEO), homeowners, small businesses, and other electric and gas utility customers in Illinois are eligible for awards of up to 30% of the cost of solar energy system installations, with a maximum grant of $10,000 per customer.

"As energy bills are continuing to climb, now is a great chance for families and businesses across Illinois to look to the sun to save money. Relying more on homegrown energy sources like solar power will not only make our air cleaner to breathe, but it will also put more people to work. Solar power is a viable and better option than importing energy from other countries," Blagojevich said.

The Energy Policy Act of 2005 includes 30% federal tax credits that are also available for residential and commercial solar energy projects. The federal tax credits are capped at $2,000 for residential systems, but are not capped for business taxpayers. Applicants for the DCEO Solar Energy Rebate Program are encouraged to seek both the federal tax credit, as well as the state rebate if eligible.

Modern solar panels utilize several different technologies and can produce either electric power or heat. Solar panels that produce electric power are known as photovoltaic (PV) systems. Increasingly popular also are "solar thermal" panels that produce heat for water and space heating, for home or business applications.

One solar thermal business in Illinois that has grown significantly as a result of the Solar Energy Rebate Program is Solar Service in Niles. Solar Service has grown from a one-man operation to a small business with 15 employees over the last several years largely as a result of this program, in combination with its customers' desires to save money on their energy bills and to reduce pollution.

"Many of our customers are both alarmed by rising home heating prices and seeking to be environmentally responsible and to reduce the pollution from their energy use," said Brandon Leavitt, the owner of Solar Service. "Through Gov. Blagojevich's support of the solar energy rebates, we have been able to help many homeowners reduce their energy bills."

Solar energy rebates are available for qualifying Illinois' commercial, industrial, residential, nonprofit, schools, and association applicants, as long as those applicants are customers of a utility that contributes to the Illinois Renewable Energy Resources Trust Fund (any customers of ComEd, Ameren, Mid-American, CWLP, Nicor and Peoples, as well as some other utility customers, are all eligible). The application period for this round of rebates will close April 30, 2007, or when funds are exhausted. For complete guidelines and application materials go to www.illinoisenergy.org

SOURCE:
State of Illinois - Press Release
www.illinois.gov

ComEd to Phase in Residential Price Hike Over 3 Years

Filing proposes annual hikes of 8%, 7% and 6% to 2009

Exelon Corp.'s Commonwealth Edison Co. proposed a plan to limit rising electric rates for Illinois customers for three years as the state moves to market-based prices in 2007, the company said.

ComEd's "rate stabilization" proposal would limit average residential rate increases to 8%, 7% and 6% in 2007, 2008 and 2009, the Chicago-based company said in a release. Power costs that exceed those limits would recovered between 2010 to 2012.

In a filing with the Illinois Commerce Commission, ComEd said its proposal will ease the impact of rising electric rates charged beginning in January.

Rates for customers of ComEd were reduced by 20 percent and frozen in 1997. Since then, electricity rates have risen across the nation with higher costs of natural gas and other fuel used to generate power, the company said. ComEd's costs will increase next year after it secures new supply through a state-approved competitive bidding process scheduled for September.

The plan "is the best way to help temper the transition to market rates for our customers," said Frank Clark, chief executive of ComEd in the statement. ComEd serves 3.7 million customers across northern Illinois, or about 70 percent of the state's population.

SOURCE:
Crain's Chicago Business (via Reuter's)
www.chicagobusiness.com

Chicago, City of Stiff Breezes, Tests Roof Turbines

Chicago has long been known as the Windy City. Now it's trying to determine whether it can save kilowatts by living up to the nickname.

Chicago plans to bolt four "aeroturbines" to the roof of the Richard J. Daley Center courthouse to measure, harness and convert into electricity the air currents barreling off Lake Michigan. At 684 feet, the building is the city's tallest public structure.

The result may lead to turbines on a skyline now known for North America's tallest building, the Sears Tower, as crude oil prices hover near record highs.

The new design of the machines - double-helix rotors caged in cylinders instead of exposed blades - is intended to limit bird kills, ice buildup, roof-rattling vibrations and howling noise.

The turbines, which their designer says will be the world's highest rooftop wind-power generators, are untested on high rises. Engineers are making custom brackets to prevent the 500- pound (227-kilogram) machines from coming loose over the financial district of the third most-populous U.S. city.

"Our machine is built to like turbulence," says Bil Becker, who designed the turbines and founded Chicago-based Aerotecture International Inc. "Turbulence looks like little tornadoes, and our machine looks like that."

The turbines use galvanized steel tubes five feet in diameter and 10 feet long to house a rotating plastic helix. They will contribute less than 2 percent of the Daley Center's power needs when installed in July, says Becker, 64, who teaches industrial design at the University of Illinois in Chicago.

Chicago Conservation Plan

The turbines avoid the three-pronged propeller design that power companies use atop poles to generate electricity in rural areas where the wind is steady and blows from one direction.

Each rooftop turbine generates 1,000 watts in a 40 mph wind, reducing use of power from Exelon Corp.'s Commonwealth Edison. Four of the machines arranged on a rooftop 40 feet above the ground would generate 8,000 kilowatt hours a year, the amount needed to light a house, Becker says.

Doubling the height from ground level increases the generating capacity 15 percent because of added wind strength, he says. At 684 feet, the four turbines are capable of generating 24,000 kilowatt hours. He says the city will pay about $100,000 for the purchase and installation of the turbines, including a one-year service contract.

SOURCE:
Duncan Moore, Chicago Reporter
www.bloomberg.com

Growing Pains

Letter from the President

In the time since becoming President of ISEA, I am pleased to note the association's growth in response to public awareness of the benefits of solar, wind and other forms of renewable energy for the people and communities of Illinois. The ISEA continues to grow in membership, both individuals and businesses, now nearing 300. Nearly 50 people have attended the first two Solar 101 Workshops in Chicago and Oak Park, demonstrating the need and demand for quality education from potentially thousands of people ready to get serious about solar.

I want to thank the following people and businesses for their material and personal contribution to these workshops so far: David Gulyas, Joe Philip, Gail Prauss, Joel Freehling, Scott Cicora, Shorebank, Solargenix, Solar Service Inc., Spire Solar and Solar Patron. My apologies to anyone I inadvertently left off. We should have continued Solar 101 success at workshops in Batavia, Warrenville and the Chicago Center for Green Technology. There are also plans to take Solar 101 to central and southern Illinois.

The ISEA is developing more information packages. A Wind 101 Workshop is being developed for 2006-2007. Two-page brochures on renewable energy technologies are being created, thanks to Jeremy Slate, a student at Northeastern Illinois University. Also, in response to growing demand for a "canned show", a 30-40 minute overview presentation on solar and wind power in Illinois is being put together. We will need a speaker's bureau to help get the word out. Anyone interested and good at public presenting, please let me know.

Meeting growing public demand will require ISEA to grow like other large renewable energy organizations, such as the Midwest or Great Lakes Renewable Energy Associations. Some of the requirements for the coming year include the following:

- A physical location for offices, storage and conducting a growing array of workshops and seminars.
- Professional staff that will handle the many administrative and program activities that growth demands.
- Increased communications with individual and business members and the public through our newsletter and electronic correspondence.

With these resources, the ISEA can better serve the people and communities of Illinois in better advocacy for renewable energy, the staging of an annual renewable energy event in northeastern Illinois to complement the Illinois Renewable Energy Fair. This is taking us to a new level, especially financially. But we have the groundwork in place, and anyone who wants to help us get there is more than welcome to join us. Thanks very much for what you have done so far.

Mark Burger, ISEA President

Quotable:

"Recent action by some U.S. government agencies to effectively halt development of many pending wind energy facilities could lead to a *de facto* moratorium on the development of wind power in the U.S."

- American Wind Energy Association

Solar Energy Fans Get Behind - and Atop - Largest Laundromat

World's Largest Laundromat in Berwyn, a magnet for sightseers?

Sure, it's a great place for the dirty socks and undies set, what with 157 washers, 144 dryers, a dozen flat-screen TVs, a play area for children and a caged-bird area with doves and finches. But what was that crowd in one corner Saturday morning? And where did they go? They were, in a word, eco-tourists.

This has not been the easiest decade for the laundry operation, at 6246 W. Cermak Rd. On Aug. 29, 2004, in a fire probably caused by a malfunctioning dryer, the place burned to the ground, with no human injuries but a considerable loss of laundry. It reopened last December, bigger than ever.

On Saturday, 50 members of the Illinois Solar Energy Association, a non-profit group, spent two hours touring what they consider to be a wonder of modern technology. It is a thermal system that uses the sun's rays to provide a staple of the laundromat business, hot water.

As the program noted, the event began with 15 minutes of "mingling and discussion."

Then, for the intrepid, which most of them were, it was up, up and away.

"We're going to bring everybody up on the roof who is able and willing to climb," promised Brandon Leavitt, a staffer with Solar Service Inc., the system's installer, after a short speech of welcome by Tom Benson, the owner of the 50-year-old business.

One by one, after signing indemnity waivers, the visitors clambered up a metal wall-ladder, then squeezed through a hatch door onto a flat roof. What they had come to see was not the splendid view of West Cermak Road. It was the 36 tilted glass panels, in two rows, all aimed due south.

The laundromat's roof is the largest solar-energy installation in the state.

The 40-square-foot panels can be touched. They don't get hot, the visitors were told. Nor are they likely to blow over.

As guides noted, the panels have spaces between them, allowing for venting on even the gustiest of days.

"Do you keep records on this stuff?" asked Michael Stavey, prompting Leavitt to reel off figures about a system that is designed to at least preheat more than 2,400 gallons of water a day, saving thousands of dollars a year in gas bills. Even more, if gas prices rise.

What it needs from the sun, Leavitt said, is light, not heat.

"We had one day in January so bright that, even though it was 18 degrees outside, we were producing 120-degree water," Benson said. The system, which supplies about 20 percent of his energy needs, cost about $160,000. "It will pay for itself in five years," he said.

"We don't have a fixed meeting place," said Mark Burger, the president the solar-energy group, whose Web site is www.illinoissolar.org

But their 250 members have no shortage of interesting places to see, he added. The next outing (in June) will be to a wind farm.

SOURCE:
Jon Anderson, Staff Reporter
www.chicagotribune.com

Illinois 6th Worst for Global Warming

Illinois pumps more carbon dioxide into the atmosphere than all but five other states, doing its share to worsen global warming, a Chicago-based environment group reported Wednesday.

The state's annual emissions of the greenhouse gas - 224.7 million metric tons - were exceeded only by Texas, California, Pennsylvania, Ohio and Florida, Environment Illinois said.

Only three states - Texas, Florida and North Carolina - increased CO2 emissions more than Illinois from 1990 to 2001, the report said.

Cause: coal power, automobiles
Environment Illinois analyzed data from the U.S. Department of Energy's Oak Ridge National Laboratory. Although the period after 2001 isn't covered, DOE projects nationwide increases in CO2 emissions steepening by 11% over the 26 years ending in 2030.

Of Illinois' CO2 output, 40% comes from coal, nearly all of it burned by power plants; 37% from oil consumed by cars and trucks, and 23% from natural gas.

In the state as elsewhere around the world, "every day the threat of global warming comes into sharper focus," said Environment Illinois director Rebecca Stanfield at a news conference at the Chicago Center for Green Technology.

Fox News Chicago meteorologist Rick DiMaio noted that Chicago snowfall averaged 50 inches each winter between 1960 and 1980. Since then, the average has fallen to 35 inches.

Other speakers touted ways to combat climate change. Colleen Sarna of the Sierra Club blasted electric utilities' plans to build 15 new coal-fired power plants in Illinois, joining 23 existing ones.

Showing off solar panels able to supply power for 25 to 30 homes, Mark Burger of the Illinois Solar Energy Association said, "Less than 1 percent of the total land area of the U.S. - rooftops, parking lots, brownfields - could be covered [by solar panels] without touching one acre of green space."

SOURCE:
Gary Wisby, Environment Reporter
www.suntimes.com

80% of Americans Want Solar Option on New Homes, Survey Says

Eight out of 10 Americans believe that homebuilders should offer solar power as an option for all new home construction, according to a recent Roper survey commissioned by Sharp Electronics Corporation. The survey was conducted in May among 1,004 adults to measure their perceptions of solar power.

When it comes to the cost of solar energy, the survey showed that two-thirds of Americans are willing to pay a premium for homes that have solar systems installed, when told that solar homes have a proven higher resale value. One-half of those surveyed would spend up to 10% more for a solar-equipped house, indicating that the cost of a solar system will not prevent Americans from embracing forms of clean, renewable energy.

"Solar has been popular for a long time in areas like California and Arizona. Now we're seeing that the rest of the country is ready to embrace solar energy, and consumers want the option of having solar power their new home," said Ron Kenedi, vice president, Solar Energy Solutions Group, Sharp Electronics Corporation. "As the world's leading solar manufacturer, Sharp is encouraged to see that more and more Americans recognize the economic and environmental benefits of solar and understand that it is a vital part of the energy solution."

The survey also showed that given the current energy situation, three-quarters of Americans feel that solar energy is more important today than ever. The No. 1 reason for homeowners to utilize solar power is to save money on monthly utility bills, but respondents are also concerned with using solar to decrease the United States' dependence on oil.

The findings of the survey include:

- 79% feel that homebuilders should offer solar power as an option for all new homes.
- 84% of Americans ages 25-49 supported solar on new homes; 69% of those over 65 years agree.
- Those living in the South and West are more likely to favor solar on new homes (83%) than those living in the Midwest or Northeast (74%).
- After being told that solar homes have a proven higher resale value, 64% would be willing to pay more for home with a solar system.
- 73% believe that solar energy technology is more important today than ever.
- 42% say that saving money on monthly utility bills is the most compelling argument for installing solar power.
  Other respondents indicated it was to decrease the nation's dependence on oil (31%) or reduce environmental pollution (18%).

SOURCE:
www.sun-enews.com

ISEA Membership Meeting & BBQ Potluck

Saturday, 8/5, 12-2pm

Join the ISEA in Lisle, where we will enjoy a good ol' fashioned BBQ potluck at the home of ISEA member Jim Robinson.

Jim's home features **solar electric, solar thermal and small wind systems** in one residential location - among other sustainable conservation features of interest.

Jim Robinson's RE Home
4544 Ivanhoe Ave
Lisle, IL 60532

For more information, contact:
Ted Lowe
info@illinoissolar.org
(630) 260-0424

Lack of Turbines Could Put Drag on Wind Energy

ST PAUL - Demand for turbines used to turn wind into electricity is blowing by supply, which is hampering efforts to cultivate the alternative energy source in the state.

The shortage of the giant turbines is making them more expensive. Turbine manufacturer General Electric said it is booked for the next two years as are European manufacturers.

Ken Valley, president of Midwest Energy Finance, said the shortage is making the task tougher for developers of smaller community-based wind projects.

"One Midwestern wind developer is planning a project with seven turbines, but he can't get them," Valley said. "Midwest would have had more than $100 million worth of projects this year, but the shortage of turbines is getting in the way."

Last year, a record-breaking 2,431 megawatts of wind power were installed nationwide, according to the American Wind Energy Association. GE-produced turbines accounted for about two-thirds of the total, with 1,005 turbines delivered around the United States.

Valley estimated that in the past 18 months wind turbine prices have gone up 50 percent per megawatt, partly because of demand outstripping supply.

David Morris, vice president of the Institute for Local Self-Reliance, said the wind industry isn't alone in its growing pains. "There's been an enormous increase in demand for turbines in the world, and there's a comparable situation with solar cells," Morris said. "The growth of the solar electricity industry has outpaced the production capacity of solar-grade silicon, so the price of solar cells has gone up in the last year and a half."

SOURCE:
Associated Press
www.ap.org

ISEA Offers *Solar 101* Workshops

Are you thinking about investing in a solar energy system, but want to be able to compare all the options?

Do you have friends, neighbors, prospective customers or just about anyone asking about all kinds of info about solar that you can't answer or just takes a lot of time?

The Illinois Solar Energy Association, a 501-C-3 organization dedicated to educating the public about solar, wind and other forms of renewable energy, will be conducting workshops around the Chicago metropolitan area this summer and fall.

The workshops, called ***Solar 101***, will provide comprehensive and generic information on how solar energy can be used. The workshops will be held on Saturday mornings and are designed for the following audiences:

- Home and business owners, and decision makers for public and non-profit facilities who are considering solar energy systems for their buildings.
- Architects, engineers, realtors, developers, contractors, government officials and other professionals who are seeking basic information about solar energy systems.

The workshop will cover a basic overview of how solar energy systems work in Illinois, the types of systems that provide heating, hot water, cooling and electricity, how to choose between different types of systems, economics and regulatory issues.

Information on dates, locations, costs & registration, contact:

info@illinoissolar.org
(708) 524-0799 (or)
(630) 260-0424

Or check our web site:

www.illinoissolar.org

Gov. Announces Funding For State's Largest Solar Panel Installation

Gov. Rod R. Blagojevich today announced $150,000 in funding for a solar thermal installation at Governors State University (GSU) in University Park. The solar thermal project, installed by Solar Service Inc. of Niles, will help reduce energy costs associated with heating the campus' Olympic-size swimming pool and will reduce the amount of natural gas used on the campus.

"With oil prices around $70 per barrel, the new solar panels at Governors State University will help demonstrate the promise and possibilities of energy independence," said Gov. Blagojevich. "We have a choice with our energy consumption. We can support businesses like Solar Service that bring jobs and investment to Illinois, or we can export our energy dollars for natural gas and oil. We are very pleased to help Governors State University use renewable energy in Illinois that protects our environment and saves money."

The $150,000 grant to Governors State University was funded through the Illinois Department of Commerce and Economic Opportunity (DCEO)'s Renewable Energy Resource Program.

The system's primary purpose is to pre-heat water for GSU's Olympic-size swimming pool, as well as provide domestic hot water for most of the University. The system is expected to displace approximately 40 therms per day over the next thirty years. When necessary, such as on cloudy days, the University's current heating equipment will automatically back-up the solar system.

Projected 2006 energy cost savings of $10,000 will increase over time as natural gas costs are expected to continue to rise for the foreseeable future. The solar system operation is completely automatic and will collect and deliver heat to storage whenever available.

SOURCE:
State of Illinois - Press Release
www.illinois.gov

ISEA Event Review
Crescent Ridge Wind Farm Tour (6/10/06)

In spite of unseasonably nasty weather, the ISEA Membership Meeting at Crescent Ridge Wind Farm was a great success. Over forty adults and children made the trip out.

Site Supervisor, Scott Jensen of RMC, LLC (the contracting group running the site) was gracious in his presentation in the farmhouse and a tour at one of the turbine towers.

We had a raffle of three Windustry posters, won by Eric Lai, Donna Bacidore and John Rosario. Afterwards, many of us repaired to the Tiskilwa Strawberry Festival to enjoy hot dogs, pulled pork sandwiches and strawberry shortcake. A great time was had by all.

A big thank you to Carol and Dave Gulyas for coordinating the logistics, Warren Ault of LM Glasfibre for donating the Windustry posters and the Apple Family Restaurant in Princeton for being the initial rendezvous.

Mark Burger, ISEA

Wind Farms Apparently Getting Green Light

Despite fears that new federal rules might halt the spin, developers of several local wind farms could be nearing clearance from regulators to begin work.

"At this point, we don't expect it's going to be an issue," said Mike Donahue, executive vice president of Chicago-based Midwest Wind Energy. "But we're watching the situation closely."

In the past few years, a series of companies, including Donahue's, have stepped forward to develop clusters of wind turbines, commonly known as wind farms, in La Salle and surrounding counties.

Donahue's Midwest Wind has already developed the 37-turbine Crescent Ridge project in Bureau County.

And now the company has plans on the board for two more wind farms, an addition of 41 turbines, called Crescent Ridge II, and a larger project, called Big Sky, which will run 125 turbines from Bureau into Lee County.

However, in coming years, projects could come under construction in the area under proposals by several other companies, including:

- 60-to 100-turbine project proposed by Portland, Ore.-based PPM Energy for Bruce, Farm Ridge and Deer Park townships in La Salle County
- 100-turbine project proposed by Chicago-based Invenergy for Brookfield and Grand Rapids townships in La Salle County
- 100-to 200-turbine project proposed by Houston-based Horizon Wind Energy near Cornell in Livingston County
- 82-turbine project proposed by Bruce and Joyce Papeich of Sublette, for land stretching from Mendota to Lee County

However, the local wind farmers are not alone in their quest to seize the wind, as a swarm of new turbines have been proposed nationwide.

Elizabeth Cory, a spokeswoman with the Federal Aviation Administration, noted that her agency expects to review more than 10,000 new wind turbines this year, compared to 4,343 in 2005 and just 1,982 in 2004.

However, earlier this year, wind farm developers - and particularly those in the Midwest - began to worry that a federal proposal could slow or even halt their projects.

In January, Congress mandated the Department of Defense and the FAA study how the proposed new turbines could impact aircraft radar, and particularly radar operated by the U.S. Armed Forces.

Supporters said the military was worried that the spinning of the turbines could create false radar images on radar screens.

However, the wind power industry feared the measure could be used by congressional opponents of wind power to shut down projects across the country.

"We always felt it was appropriate for the FAA and the Department of Defense to do this study," said Laurie Jodziewicz, a policy specialist for the American Wind Energy Association.

"But our concern was that it looked like they were saying, 'Don't construct any wind farms until we get the results back.'"

Indeed, 12 projects in the Midwest did come under an extended review process.

But local projects appear to have been largely unaffected.

Bruce Papeich said his project is on schedule to begin construction this fall.

"We're setting up to do a big splash announcement very soon," he said.

Invenergy representatives did not return repeated messages left by The Times.

And, since last month, it appears that federal regulators have begun to give a green light to several of the more closely examined projects.

But still other projects, including Horizon Wind's Cornell project, known as Blackstone, remain too preliminary to merit federal review.

Jodziewicz said such approvals appear to signal that the FAA has adopted a review process that examines each project on a site-by-site basis, an approach favored by the wind power industry.

"We hope this was all just a small speedbump in an otherwise record year," she said.

And that is good news for many local trades workers, said Dan Aussem, business manager for Iron Workers Local 444.

He said previous wind projects, including Crescent Ridge I, had generated a lot of work for his workers.

And they are looking forward to beginning work on the next projects, as well.

"It paid a lot of bills and put food on the table for a lot of my guys," said Aussem. "So we wouldn't want to see anything happen to prevent that from happening again."

SOURCE:
Jonathan Bilyk, Reporter
www.mywebtimes.com

From Biofuels to Wind, Quest for Energy Alternatives Steps Up

The future of energy is bright in Said Al-Hallaj's invention lab at the Illinois Institute of Technology. All around the facility are advanced alternative-energy projects that testify to the war on oil that's proceeding quietly at laboratories and research centers across the country.

A tiny two-passenger electric car stands ready to drive 25 miles on one charge of its custom-designed pack of lithium-ion batteries, not unlike the ones that power laptops. A research assistant who's working out kinks on an electric bicycle motors down a hallway at 20 mph, triple the speed of the hybrid fuel-cell scooter developed here.

Elsewhere, Al-Hallaj and another professor are converting an SUV into a plug-in hybrid vehicle using lithium-ion cells to double fuel efficiency and reduce emissions. And a team of students is converting a gasoline-powered lawnmower to use hydrogen as fuel.

Some of the projects could be manufactured commercially right now, said Al-Hallaj, research associate professor of chemical and environmental engineering and coordinator of IIT's renewable-energy program. The problem is cost, which keeps them from competing with oil - for now.

Midwest movers

Experts say the skyrocketing costs of oil and gas have given new momentum to the push to develop alternative fuels and alternative energy sources.

The efforts are readily apparent in the nation's heartland, where a boom in ethanol is expanding and scientists at laboratories far and wide are working to turn agricultural waste or "biomass" such as switchgrass, wheat straw and cornstalks into a fuel called cellulosic ethanol that could be produced commercially to reduce dependence on oil.

The runup in gas prices has softened for now the argument that ethanol isn't economically competitive without federal subsidies, and it has accelerated plans for ethanol plants by farmers' cooperatives and Archer Daniels Midland, the Decatur, Ill.-based agribusiness, among others.

Still, ethanol's potential is limited by cost and transport issues and the fact that even those seemingly endless fields of corn in the Midwest are finite. Experts say corn-based ethanol isn't ever likely to displace more than 10 % of the gasoline supply.

"We just don't have enough corn," said Dan Basse, an analyst for Chicago-based AgResource Co. "If you turned every corn plant in the country into ethanol, there still wouldn't be enough."

That's where biomass comes in. By using other crops and forest waste along with the entire corn plant, not just the kernels, the Department of Energy says enough cellulosic ethanol could be produced by 2030 to lower U.S. gasoline consumption 30%.

Scientists at the National Center for Agricultural Utilization Research in Peoria are among those on a mission to expand ethanol beyond a grain-based fuel, working intensely on how best to break down the cellulose of biomass into sugars and complex chemicals in order to produce ethanol economically. An optimal solution might still be a decade away.

At Argonne National Laboratory, 25 miles southwest of Chicago, a variety of biomass-related projects are being carried out with close involvement of not only the Energy Department but also large corporations such as ADM and energy group BP PLC. Teams immersed in biofuels research there for years have seen their efforts newly bolstered by high energy prices and by President Bush's call in this year's State of the Union Address for America to break its "addiction" to oil by developing alternative fuels.

Efficiency stressed

Environmentalists and scientists alike applaud the fact that alternative fuels and alternative energy sources have been put in the spotlight, but they say energy efficiency is still being neglected.

"There are many people who believe that biomass has the power to replace our appetite for gasoline," said Kimberly Gray, professor of civil and environmental engineering at Northwestern. "But that will only occur with significant improvements in energy efficiency and smart growth."

Without a trend toward more and smaller hybrid vehicles combined with high-density, walkable communities, Gray said, the suggestion by some experts that biofuels could virtually eliminate Americans' demand for gasoline by 2050 is unrealistic.

Another biofuel with promise is biodiesel, which uses vegetable oil and other nontoxic ingredients and can be blended with conventional diesel fuel. The trucking industry in particular has interest, and the Department of Agriculture says it can reduce carbon emissions by 78% .

But despite growing use in some areas of B11 - an 11% biodiesel fuel - overall consumption is still relatively tiny, and biodiesel is not likely to be an everyday alternative for motorists in the near future. Only a handful of large biodiesel plants exist nationwide.

Dayton Keyes of the central Illinois town of Maroa decided not to wait. Angry about prices spiraling ever higher, the 37-year-old police officer built a small biodiesel reactor in his garage last year and now tanks up his Volkswagen Golf with a homemade fuel concocted from used cooking oil.

The result is a fuel that costs him only about 70 cents a gallon, gets 45 miles per gallon and has converted him to a biodiesel booster. He is trying to get a full-fledged biodiesel plant up and running.

More support sought

Those now in labs trying to devise cheaper energy solutions applaud federal and state government support but emphasize that more will be needed if they are to succeed.

"A lot of people in government who ridiculed energy conservation and alternative energies ... are now investors," said Al-Hallaj. "The people who are funding these projects are the same ones who said, 'Drill and spend and forget about it.' "

Rather than a single breakthrough, experts say it will likely take a combination of energy developments to help break free of oil's grip.

"There are a lot of people out there who think there's a silver bullet to answer the energy challenge facing this country - one technology that will answer everything," said Gerald Groenewold, director of the Energy and Environmental Research Center in Grand Forks, N.D. "Some people say wind's the answer to electricity generation, ethanol's the answer to vehicle generation. We think it will be a mix of a lot of things."

SOURCE:
Dave Carpenter, Associated Press
www.ap.org

HELIOGRAPHS is published quarterly by the Illinois Solar Energy Association (ISEA). Edited by Jim Camasto.

Membership information, updated information, and assistance in locating resources can be obtained on ISEA's website:
www.illinoissolar.org

Please direct comments & questions to:

Illinois Solar Energy Association (ISEA)
P.O. Box 634, Wheaton, IL 60189-0634
(630) 260-0424
info@illinoissolar.org

ISEA Premier Business Members

This listing is provided as a Premier Business Member benefit and does not imply endorsement by ISEA. However, ISEA thanks these businesses for supporting our common goals of promoting renewable energy technologies & energy education.

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James Greenberger
10 S Wacker Dr, 40th Floor
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Email: jgreenberger@sachnoff.com
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Web: www.lmglasfiber.com

Advanced Geothermal Plumbing & Heating, LLC
Dirk Dypold, Manager
323 S. Commonwealth Ave.
Elgin, Illinois 60123
Phone: 847-695-1657
Email: geodd@sbcglobal.net
Web: www.advancedgeothermal.com

ISEA Business Members

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AMV General Contractors Tom Mulcrone 13430 Glen Entrance Homer Glen, IL 60491 Phone: 815-462-7372 Email: tom@amvcontractors.com Web: www.amvcontractors.com	**Baird & Warner** Anita Ilika 737 N Michigan Ave, Suite 1800 Chicago, IL 60611 Phone: 312-981-2815 Email: anita.ilika@bairdwarner.com Web: www.bairdwarner.com	**Baldwin Properties** John Porter 6134 W Roosevelt Rd. Oak Park, IL, 60304 Phone: 708-383-1888 Email: j.porter@comcast.net
Becker Renewable Energy Bil Becker Renewable Energy Engineer 2155 Wolpers Road Park Forest, IL 60466 Phone: 262-642-4707 Fax: 708-481-6178 Email: bilbecker@bigplanet.com	**Chicago Green Power Foundation** Rick Prohov 30 N. LaSalle St. Suite 4300 Chicago, IL 60602 Phone: 312-807-3965 Email: rprohov@chigreen.org	**Chicago Dept. of Environment** Sadhu Johnston, Commissioner 30 North LaSalle Street, Suite 2500 Chicago, IL 60602 Phone: 312-744-7606 Fax: 312-744-6451 Email environment@cityofchicago.org Web: www.cityofchicago.org/environment
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EcoLogical Products, Inc. Glenn Hunter, President and Sales Mngr 739 N Elmwood Oak Park, IL 60302 Phone: 708-445-0341 Fax: 708-445-1112 Email: info@ecopro.biz Web: www.ecopro.biz	**Evo Engineering** John Dorfman 1576 Ridge Ave. Apt. 703 Evanston, IL 60201 Phone: 847-523-4997 Email: johnd@evo-engineering.com	**Exposition Management International** Kathy Quasey 1126 W. Morse Ave. Chicago, IL 60626 Phone: 773-274-8748 Fax: 773-274-8744 Email: kquasey@comcast.net Web:www.expositionmanagementintl.com
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IBEW/NECA Technical Institute Kevin Lynch Electrical Program Coordinator 6201 W. 115TH Street Alsip, IL 60803 Phone: 708-389-1340 Fax: 708-389-2840 Email: klynch@in-techonline.org Web: www.in-techonline.org	**Illinois Clean Energy Community Foundation** Ed Miller, Program Director 2 North LaSalle Street, Suite 950 Chicago, IL 60602 Phone: 312-372-5191 Fax: 312-372-5190 Web: www.illinoiscleanenergy.org	**Illinois Dept. of Commerce and Economic Opportunity** Bryan Clow, Program Manager 620 E. Adams St., Springfield, IL 62701 Phone: 217-785-3420 Email: bclow@ildceo.net Web: www.illinoisbiz.biz/dceo/Bureaus/Energy_Recycling/Energy/Clean+Energy/rerp_program.htm

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Illinois Solar Products, Inc. Ernie Nathan 1920 Northland Ave Highland Park, IL 60035 Phone: 847-612-2789 Email: ernie@illinoissolarproducts.com Web: www.illinoissolarproducts.com	**Kestrel Development Co.** Mark Burger 1042 Gunderson Ave Oak Park, IL 60304 Phone: 708-267-7965 Email: info@kestreldevelopment.com Web: www.kestreldevelopment.com	**City of Naperville** **Municipal Electric Utility** Allan L. Poole, Director 400 South Eagle St. Naperville, IL 60566 Phone: 630-420-6131 Fax: 630-420-6744 Email: poolea@naperville.il.us Web: www.naperville.il.us
NekoluxSolar John Berton 4807 N Hoyne Chicago, IL 60625 Phone: 773-334-7529 Email: nekoluxsolar@gmail.com Web: www.nekoluxsolar.com	**LM Glasfiber Co.** Warren Ault, National Account Manager 117 N Jefferson St., Suite 400 Chicago, IL 60661 Phone: 312-382-8440 Fax: 312-382-8442 Email: wau@lmglasfiber.com Web: www.lmglasfiber.com	**OCULUS Architecture P.C.** Paul E. Sterner, AIA 9525 South 79th Avenue Hickory Hills, IL 60457 Phone: 708-598-4255 Fax: 708-599-6440 Email: oculusdesign@att.net Web: www.oculusarchitecture.com
S.N. Peck, Builder, Inc. Neil Peck, President 1647 W. Fulton St. Chicago, IL 60612 Phone: 312-738-2600 Email: npeck@snpeck.com	**ReUseIt Center** Monica Jenkins 213 W. Walnut St. St Charles, IL 60174 Phone: 630-584-1996 Email: monica@mvnia.org Web: www.reuseitcenter.com	**Sachnoff & Weaver, Ltd.** James Greenberger 10 S Wacker Dr, 40th Floor Chicago, IL 60606-7507 Phone: 312-207-6499 Email: jgreenberger@sachnoff.com Web: www.sachnoff.com
Shamrock GREEN Electric Kevin O'Shea 1281 E Brummel Avenue Elk Grove, IL 60007 Phone: 847-593-6070 Email: kevin@shamrockelectric.com Web: www.shamrock-GREEN-electric.com	**Shorebank** Joel Freehling, Manager 4659 S Cottage Grove Chicago, IL 60653 Phone: (773) 420-4336 Fax: (773) 420-4780 Email: joel_freehling@sbk.com Web: www.sbk.com	**Solar Gold** Mary Eileen O'Keefe 1362 N State Pkwy Chicago, IL, 60610-6104 Phone: 312-482-9701 Fax: 312-482-9703 Email: maryeileenokeefe@aol.com Web: www.solar-gold.com
Solargenix Energy, LLC Joanna Rybus, Chicago Office Manager 3622 S Morgan St Chicago, IL 60609 Phone: 773-847-8333 Fax: 773-847-8555 Email: jrybus@solargenix.com Web: www.solargenix.com	**Solar Service, Inc.** Brandon Leavitt 7312 N Milwaukee Ave Niles, IL 60714 Phone: 847-677-0950 Fax: 847-647-9360 Email: bl@solarserviceinc.com Web: www.solarserviceinc.com	**Michael Stavy** **Consulting Energy Economist** 432 N Clark St, Suite 204 Chicago, IL 60610 Phone: 312-832-1631 Fax: 312-832-1632 Email: michael@michaelstavy.com Web: www.michaelstavy.com
Sun Ovens International, Inc. Paul Munsen, President 39W835 Midan Drive Elburn, IL 60119 Phone: 800-408-7919 Fax: 630-208-7386 Email: sunovens@execpc.com Web: www.sunoven.com	**SunWize Technologies, LLC** Mark W. Wilkerson VP Business Development #1 Sun Street, Stelle, IL 60919 Phone: 815-256-2274 or 1-800-683-4837 x-22 Fax: 815-256-2221 Email: mwwpv@stelle.net Web: www.sunwize.com	**Wynne D. City Power, Inc.** Robin Schulemann Director of Product Development 2035 S Racine Ave, Chicago, IL 60608 Phone: 312-243-6414 Fax: 312-243-6781 Email: robins@windycitypower.com Web: www.windycitypower.com

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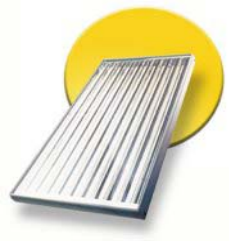
ISEA Charter Business Members

SOLARGENIX: Winston Series Collector Selected Top-10 Product



The Winston Series Compound Parabolic Collector (CPC) solar thermal collector, manufactured by ***Solargenix Energy, LLC*** has been selected as one of the BuildingGreen Top-10 products (2004). This annual award recognizes the most innovative and exciting green building products added to the GreenSpec® Directory during the past year.

This year's BuildingGreen Top-10 covers a wide spectrum of products and applications. Some are used primarily in commercial buildings, others in houses. Some are considered green because they utilize renewable energy, others because they avoid toxic chemicals or are made from recycled or independently certified green materials, and others because they save energy or water.

A big driver in the development of green products is the U.S. Green Building Council's LEED® Rating System (Leadership in Energy and Environmental Design), which awards points for certain product characteristics or the energy or water savings they can achieve. Designers of LEED buildings are looking for green products, and manufacturers are responding,. said Wilson.

The Winston Series CPC solar thermal collector is the most advanced solar thermal product on the market. Manufactured at the Solargenix facility in Chicago, the collector is used for solar water heating, space heating, industrial process heat and solar cooling projects. The advanced science that allows the parabolic collector to be designed as a building integrated flat plate collector is the patented non-imaging optics developed at the University of Chicago by Dr. Roland Winston who now is on staff at the University of California at Merced.

The Winston Series CPC collector is the only solar collector used in the Solargenix water heating product line of active and passive solar heating systems. The aesthetical design, integrated mounting systems and quality materials gives builders and designers flexibility in use and installation of the solar collector array.

GreenSpec is the leading national directory of green building products. The 1,800-plus products included in the directory are selected by editors of Environmental Building News (EBN) based on criteria developed over the past 13 years. Environmental Building News, founded in 1992, is the oldest and most widely respected publication in the green building field.

SOURCE:
BuildingGreen
www.BuildingGreen.com
800-861-0954

ISEA Welcomes: Shamrock GREEN Electric

Shamrock GREEN Electric, a division of Sedco/Shamrock Electric, Inc., is dedicated to installing systems powered by renewable energy. Solar energy is currently the most cost-effective way to generate your own energy and regain more control over your energy costs.

Two of the top advantages to solar energy are tax incentives and the opportunity to sell energy back to the utility. Plus, as technology advances, the payback time on a complete system continues to shrink.

Shamrock GREEN Electric has partnered with Solar Network to be our design consultant and SunWize Technologies to be our equipment supplier. All together you can have a turn-key approach to designing and building solar system that's right for you. Turn to Shamrock GREEN Electric.

With half a century of success in the greater Chicagoland area, Sedco/Shamrock Electric, Inc. and its subsidiaries is a leader in electrical contracting for the full range of energy/electrical projects. From design/build to retrofitting, Shamrock Electric is your source for expert, safe, and high-tech energy/electrical contracting.

You Want Shamrock Electric

You're looking for sharp customer focus, superior workmanship and excellence in project design, management and budgets from an electrical contractor. You'll get these results and more from Shamrock Electric - one of Chicagoland's and the Midwest's top electrical contractors.

You've probably heard about Shamrock Electric and its strong reputation for reliability, attention to detail, competitiveness, and forthrightness in doing business.

For nearly 50 years, word about Shamrock Electric has spread from our numerous, enthusiastic customers - the majority of which being loyal, repeat customers from all areas of building design and construction.

You want more than competitive bids on quality, service and price. You want high value for your investment. *You want Shamrock Electric.*

Please tour our Web site to learn more, then call us about your next project. It would be our privilege to work with you.

Email: kevin@shamrockelectric.com
Web: www.shamrock-GREEN-electric.com

Upcoming Events

August 5 *Saturday, 12-2pm*	**Renewable Energy Home (ST, PV, Wind)** *ISEA meeting/tour/BBQ- Lisle, IL*	*See Page 4*
August 12-13 *Saturday, 9am-6pm* *Sunday, 9am-5pm*	**Fifth Annual Illinois Renewable Energy and Sustainable Living Fair** *IREA - Oregon, IL*	*See Page 6* *www.illinoisrenew.org*
August 12 *Sat, 9:30am -12:30pm* **August 26** *Sat, 9:30am -12:30pm* **September 30** *Sat, 9:30am -12:30pm*	**ISEA *Solar 101* Workshops** *NorthStar Credit Union - Warrenville, IL* *Chicago Center for Green Tech.- Chicago, IL* *Chicago Center for Green Tech. - Chicago, IL*	*See Page 5* *www.illinoissolar.org*
September 30 *Saturday, 10am -4pm*	**Chicago Bungalow & Green Home EXPO** *The Merchandise Mart - Chicago, IL*	*www.chicagobungalow.org*
October 7 *Saturday, 10am-5pm*	**ASES National Solar Tour** *See our website for Illinois Tour Site specifics (or view past "virtual" tours on-line)*	*www.illinoissolar.org/tour* *www.ases.org/tour*
July 7-12 (2007)	**Solar 2007 Conference** *American Solar Energy Society - Cleveland, OH*	*www.ases.org* *www.solar2007.org*

Illinois Solar Energy Association
P. O. Box 634
Wheaton, IL 60189-0634

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