

EERE Program News

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July, 2008

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Do dolphin and whale fins hold the secret for improving wind turbine blade efficiency? Some engineers think so. The dolphin uses a high efficiency mechanism to generate large amounts of thrust by the action of its tail fins.

Photo courtesy of [Biology News Net](#)

Soaring fuel costs have given a shot in the arm to peoples' interest in renewable energy and energy efficiency. ([San Francisco Residential Wind Turbine Video](#))

When celebrities such as oil man T. Boone Pickens start talking about wind power as the nation's energy future, people start listening ([Pickens Plan Video](#)).

This sort of publicity, coupled with rising oil and natural gas prices, gives renewable energy and energy efficiency the best expansion opportunities in thirty years.

This month's [News](#) items explore unique energy stories such as the launch of "[EnergySmart Hospitals](#)" and a [\\$650 million energy efficiency bill signed in Pennsylvania](#), while [Features](#) looks into innovative developments in wind power, in both the U.S. and Europe. There is a great race going on for off shore wind development in several nations. ([Excellent Video](#))

Also, you might be wondering why a dolphin is swimming across the front of an energy newsletter.

[Bio mimicry](#), studying and incorporating nature's designs into human engineering, is probably thousands of years old. The Wright brothers, at the turn of the last century watched hawks flex their wing tips when soaring, then built that sort of control into their first successful aircraft.

Now scientists and engineers are finding that the [bumpy front surfaces of dolphin and whale flippers](#) might just make good models for future wind turbine blades.

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DOE launches "Energy Smart Hospitals"



Hospitals, relying on energy intensive technologies to save lives, and working 24-7 schedules, are looking for ways to reduce energy costs.

Photo courtesy of: [Energy Systems Group](#)

Hospitals are among the nation's most complex, diverse, and energy-intensive facilities. The nation's 8,000 hospitals spend more than \$5 billion annually on energy and produce over 30 lbs. of CO₂ emissions per square foot.

Hospitals must be fully operational 24 hours a day, seven days a week, able to maintain services during power outages, natural disasters, and emergencies that could force other facilities to close.

To support hospitals in addressing both these challenges, the Department of Energy (DOE) has created a comprehensive initiative – [EnergySmart Hospitals](#) – and its centerpiece, the industry-driven Hospital Energy Alliance.

EnergySmart Hospitals goals:

- Promote 20 percent improved efficiency in existing buildings and 30 percent in new construction over current standards
- Increase energy efficiency and renewable energy applications in hospitals
- Reduce energy use and operating costs
- Create healthier healing and work environments
- Maximize successful hospital upgrades and design strategies
- Ensure reliable backup power during disasters
- Improve environmental performance

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Pennsylvania governor signs \$650 million energy efficiency bill

At a time when conventional energy prices are at or near record highs, Governor Edward G. Rendell has signed into law a new fund that will save families and small businesses money on their energy bills by supporting investments in energy conservation and efficiency.

As part of [the \\$650 million package](#), residential consumers and small businesses will be eligible for \$92.5 million in loans, grants, reimbursements and rebates to support energy conservation and weatherization projects that can ultimately reduce energy bills. The Pennsylvania funding package helps leverage [technical assistance and funding available through DOE's Weatherization Assistance Program](#).

Another \$40 million is available to provide financial assistance through the state's Low-Income Home Energy Assistance Program (LIHEAP) and establish an energy efficiency loan fund through the Pennsylvania Housing Finance Agency.

Households and small businesses can also qualify for \$100 million to support the installation of solar energy technology.

Governor Rendell emphasized that these kinds of investments are particularly important today because consumers who now find it difficult to pay for gasoline, diesel fuel, natural gas and heating oil will only face greater financial hardship in the months and years ahead.

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University of Michigan solar car wins 2,400-mile race



The University of Michigan's winning car crosses the finish line of the 2008 North American Solar Challenge.

Photo courtesy of: 2008 North American Solar Challenge

The University of Michigan won this year's [North American Solar Challenge \(NASC\)](#), a competition to design, build and race solar-powered cars in a cross-country event. Racers left Plano, Tex., July 13 and took ten days to reach Calgary, Alberta, Canada, racing 2,400 miles.

Fifteen cars from the United States, Canada, Germany and the United Kingdom made it across the finishing line. The University of Michigan's winning car was followed across the finishing line (in order) by cars from Principia College, FH Bochum Solar Car Team, University of Waterloo, University of Minnesota, University of Calgary, Missouri University of Science and Technology, Iowa State University, Red River College, University of Arizona, University of Kentucky, Queen's University, Northwestern University and Oregon State University.

Sponsors of the 2008 race included Toyota and Crowder College. The event is designed to inspire young people to pursue careers in science and engineering. NASC's predecessors, the American Solar Challenge and Sunrayce, generally have been held every two years since 1990. With each event, the solar cars travel faster and further with greater reliability.

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It's the law: solar hot water on all new Hawaiian homes



Hawaii Governor Linda Lingle addresses her state's efforts to increase energy independence to a crowd outside the Department of Energy's National Renewable Energy Laboratory (NREL) in Golden, Colo., July 25.

Photo courtesy of: NREL

Hawaii has become the first state to enact a law that says all new homes must have solar hot water heaters.

The state passed the legislative mandate to support its goal of having [70 percent of the states' energy needs come from renewable energy sources by the year 2030](#). Hawaii Governor Linda Lingle believes the new law is "[an important step towards energy independence](#)."

To strengthen her stand on renewable energy and energy efficiency, the governor recently brought 30 top level state officials to NREL for a three-day seminar on the topics.

In a move similar to Hawaii's, a bill signed by California Governor Arnold Schwarzenegger would provide rebates to residents and businesses to support the installation of 200,000 solar water heating systems in the state by 2017.

According to [DOE's Consumer's Guide to Energy Efficiency and Renewable Energy](#), "On average, if you install a solar water heater, your water heating bills should drop 50 – 80 percent."

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Follow the clean energy money

Readers continue to ask us how to subscribe to SOLICITATIONS, an independent source of information about upcoming funding and available government solicitations for clean energy and energy efficiency projects.

You can subscribe by sending a subscription request to laurie.e.brown@comcast.net. Include subscriber's email address in the body of the message.

Laurie has edited SOLICITATIONS for many years, first with EERE and now as an independent contractor. SOLICITATIONS is emailed through Washington State University's Extension Energy Program. Subscribing, or unsubscribing, is straight-forward.

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What's a gallon of gas cost in cities around the world?



Drivers in many Asian nations face the same "sticker shock at the pump" as their American counterparts, though some are at least partially shielded by government subsidies on fuel.

Photo courtesy of: Korea Times

Wonder what people are paying for a gallon of gasoline elsewhere in the world?

The Los Angeles Times has pulled together a [map showing how much gasoline now costs in various countries](#). It shows some surprisingly high — and low — costs.

The map also gives a quick look at the top ten petroleum producing and consuming nations.

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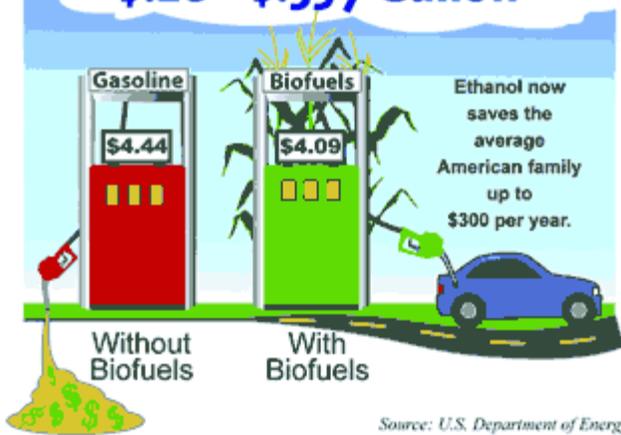
Biofuels give gas stations competitive edge

The automotive refueling business has become more competitive as gasoline prices have shot up. More grocery stores and discount clubs now offer gasoline at discounted prices as a way to attract customers to their stores.

In response, a growing number of traditional gas stations are regaining a competitive edge by installing biofuel pumps alongside their gasoline and diesel pumps. Customers view these stations as environmentally friendly and, equally important, selling biofuels can also attract repeat business from local vehicle fleets using E85 or biodiesel.

DOE estimates that the U.S. would use an additional 7.2 billion gallons of gasoline in 2008 if no biofuels were available.

Biofuels Cut Gas Costs \$.20 - \$.35 /Gallon



Efforts are being made by DOE to diversify our fuel supply with biofuels. Significant amounts of time, money and resources are being used to develop a vast supply of next-generation, cellulosic biofuels (non-food) made from resources such as wood chips, switchgrass, wheat straw, sweet sorghum and agricultural waste products not meant for human consumption.

Facts and graphics about biofuels

A [new report](#) from the National Renewable Energy Laboratory (NREL) provides guidance to help station owners assess the profit margin they might expect to earn by selling E85, providing a checklist they can use to determine E85 profitability.

At a recent biofuels station dedication in Idaho Springs, Colo., Western Convenience Stores Director of Operations Bob Van Meter explained why his company is installing ethanol and biodiesel pumps.

Van Meter said, "Gasoline is already more than five dollars per gallon in California and the day will come when it is six, seven or eight dollars per gallon. Demand is not going away. Ethanol is a step in the right direction. We have to have change."

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Quickly find alternative fueling stations on your route



New EERE alternative fueling station locator makes finding alternative fuels much easier, both at home and on the road.

EERE has a new, online [Alternative Fueling Station Locator](#) that uses Google Map technology to allow users to quickly locate the nearest station offering an alternative fuel, within a user-specified search radius. Users can also map their route, finding the nearest fueling stations along the way, or use advanced options to refine their search by address, state, route, station status, or payment methods. The following fuels are included on the locator:

- biodiesel;
- compressed natural gas;
- electric;
- ethanol (E85);
- hydrogen;

- liquefied natural gas (LNG);
- liquefied petroleum gas (propane).

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Energy workforce development opportunities

As noted in last month's EERE Program News, businesses expanding into renewable energy and energy efficiency sometimes have trouble finding qualified workers who can hit the ground running.

To help answer this need, DOE's [Industrial Assessment Center \(IAC\)](#) program, supported by the Industrial Technologies Program, is working to develop at least part of tomorrow's skilled, energy workforce.

Each year over 200 engineering students receive hands-on training in energy efficiency under the leadership of seasoned professional engineers in the conduct of energy assessments at U.S. manufacturing plants.

The IAC program continues to be a successful launching pad for a new generation of engineers capable of tackling the energy challenges faced by this country in the 21st century. The program has helped create highly proficient energy professionals, with over 60 percent of graduates making careers in the energy field.

[General IAC program information](#)

[IAC students and alumni, including links to job opportunities, student resumes and recent articles on/related to the program](#)

[Recent feature article in the American Society of Mechanical Engineers magazine](#)

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Features



Wind-whipped clouds demonstrate nature's incredible, renewable power now being harnessed by U.S. wind farms. Since 2005, the U.S. has added more wind power to its electricity generation mix than any other nation.

Photo courtesy of Wikimedia commons

U.S. wind power, sleeping energy giant, awakens

For a long time, the dream of widely available electricity derived from wind existed only in the minds of a few visionaries working to develop the required technologies.

That has changed. Engineers, financiers, scientists and construction crews arrive almost daily in the U.S. wind corridors. They are part of a new energy "gold rush" in America's high plains, windy western valleys and mountain tops and ridges of the East.

Tens of billions of dollars have been shifted into U.S. wind energy development in the past five years.



The world's largest wind turbine is now the [Enercon E-126](#). This German turbine has a rotor diameter of 126 meters (413 feet). This new turbine is officially rated at 6 megawatts too, but will likely produce 7+ megawatts.

Photo courtesy of: [Metaefficient News](#)

Innovations and new technology developments in wind energy generation have been accelerating around the globe. At the end of 2007, installed world wind power capacity had reached almost 94,000 megawatts (MW).

A [WindEnergy Study](#) commissioned by Husum WindEnergy 2008, with the German Wind Energy Institute, estimates that there could be up to 718,000 MW of installed, world wind capacity by 2017.

Denmark was one of the earliest nations to make a commitment to wind power. Danish leadership in wind power development continues to stand out. The nation, proportionally, produces more of its electricity from wind than any other nation.

Last year the [Danish Wind Industry](#), with a total export of 4.7 billion euros, set another record, showing an increase of 1.1 billion euros or a 30.7 percent growth, compared to the year before. Close to 50 percent of the wind turbines in global use today came from Denmark.

To the south, Germany now leads the world in total MW of installed wind energy capacity.

The U.S. is fast closing that gap, with the world's fastest growth in installed wind power in the last five years. But the race goes on, with Germany, Denmark and other nations pushing ahead with even more wind projects,

particularly off shore, an area in which U.S. development is only getting started ([Delaware emerges as leader in offshore wind.](#))

German Transport Minister Wolfgang Tiefensee has said that [Berlin plans to build up to 30 offshore wind farms to meet the country's renewable energy targets](#). He told the Welt am Sonntag newspaper the near-term plan is to build some 2,000 windmills in the North Sea and Baltic Sea providing 11,000 MW of electricity. The first wind farm is to be erected off Borkum Island in the North Sea next year.

By 2030, Germany plans to generate 25,000 megawatts of energy from offshore wind farms. The farms will cost more than \$1.5 billion each to construct, and will be located in relatively deep water.



Off shore wind power farms are being planned by more nations, with Denmark, Holland and Germany being particularly aggressive in such development, including Danish plans for deploying floating, deep water turbines.

Photo courtesy of: [Impact Lab](#)

To date, offshore wind farms have been situated in relatively shallow waters, but the race is on to construct and deploy fully floating, deep sea wind platforms similar to those used in oil drilling. Such platforms will allow future wind farms to be situated in deep water, further from shore, and in stronger, more regular wind flows.

In Norway, StatoilHydro, a North Sea oil producer, has decided to develop the [a full-scale floating wind turbine](#) that will be tested off the nation's Karmoy Island. Sway, another Norwegian company with deep water experience, is developing [another floating wind platform concept](#).

In December, the Dutch floating-turbine developer [Blue H Technologies](#) launched a test platform off Italy's southern coast; last month, the company announced its plans to install an additional test turbine off the coast of Massachusetts, and possibly begin constructing a full wind farm off the Italian coast next year.

Back on land, in the U.S., it's not just Plains states such as Colorado, Kansas or Texas (national leader in MW of wind power capacity) where the wind power boom is taking place.

In the Pacific Northwest, along the Columbia River Gorge, literally thousands of wind turbines dot the landscape. Equally significant, utilities and independent developers are poised to [more than quadruple the amount of wind power in the Northwest](#), a huge increase that underscores the region's push for renewable energy.

Because of the region's past history of large-scale hydro-electric power generation and the closeness of California's electricity-hungry consumers, the region has relatively robust power transmission lines, but that capacity is being stretched. The [Bonneville Power Administration](#) says it has only enough space on the grid for just one-third of the anticipated 4,700 MW of wind generation expansion.

Overcoming transmission limitations will be key to the advancement of wind power throughout the U.S. in the immediate future. (See [Texas electricity transmission](#) article.)

Another challenge is meeting the rapidly growing need to train wind turbine installation, operation and maintenance people.

[Oregon Wind Turbine School VIDEO](#) (great footage)

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Delaware emerges as leader in offshore wind

[Delaware lawmakers have approved legislation for an offshore wind farm](#), making it the first state in the U.S. to do so.

The new law supports a power-purchase agreement between utility company Delmarva Power and project operator Bluewater Wind, LLC in which Delmarva will be allowed to buy up to 200 megawatts of electricity per year, enough to light 50,000 homes for the next 25 years.

With this new law, Bluewater Wind could place up to 60 wind turbines 11 miles from the coastline and begin delivering power to Delaware customers by 2012. These new turbines will help utilities meet the state's legislated requirement that utilities get 20 percent of their power from renewable sources by 2019.

Further up the east coast, Massachusetts is also seriously considering offshore wind development. A [proposed wind farm in Nantucket Sound](#) is scheduled to be completed by 2011, but legal opposition and regulatory hurdles threaten to derail it.

ON the Southeast coast, engineers at the Georgia Institute of Technology recently completed a study of [wind power potential off Georgia's Tybee and Jekyll islands](#). Further study will be made to determine whether an offshore wind farm in the area would be financially feasible.

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Texas to invest \$4.9 billion to transmit wind power to cities



Texas, with its proposed investment of almost \$5 billion to build new transmission lines, is facing up to a bottleneck to renewable energy that other states and the nation also face.

Photo courtesy of: [Getty Images & Treehugger.com](#)

The Texas Public Utility Commission (PUC) voted this month to invest [\\$4.9 billion to build new electricity transmission lines](#) from the windy plains of West Texas to urban areas in the central and eastern parts of the state.

The new transmission lines will be capable of moving enough electricity to power more than 4 million homes. Supporters believe the project will spur new wind farms, create jobs and reduce pollution. Texas already leads the nation in wind power, generating about 5,000 megawatts annually.

This, added to oilman [T. Boone Pickens' recent embrace of wind power development](#), exemplifies the big-money commitments that are now starting to flow into expansion of U.S. wind power.

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NREL wind to hydrogen update



The goal of the NREL/Xcel Wind to Hydrogen demonstration project is to improve the reliability, usability and economics of renewable energy by storing it as hydrogen that can be used later to generate electricity.

Photo courtesy of: NREL

As reported some time ago, NREL and Xcel Energy are collaborating on a demonstration project focused on integrating wind and solar energy to produce and store hydrogen. This is then used to generate electricity when needed. Sensors have been added to various devices to monitor and record performance. Now, scientists are collecting the required data for systems efficiency analysis.

[Full project report with updates](#)

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EERE News Releases

July 14, 2008

[DOE to Provide up to \\$40 Million in Funding for Small-Scale Biorefinery Projects in Wisconsin and Louisiana](#)

July 13, 2008

[DOE Commits \\$850,000 to Support NGA Energy Initiatives](#)

July 09, 2008

[DOE Headquarters Receives Energy Star Recognition from EPA](#)

July 07, 2008

[DOE and Sweden Sign MOU to Advance Market Integration of Plug-in Hybrid Vehicles](#)

June 30, 2008

[DOE Announces Solicitations for \\$30.5 Billion in Loan Guarantees](#)

June 30, 2008

[DOE Expands International Effort to Develop Fuel-Efficient Trucks](#)

June 20, 2008

[DOE announces two utility companies join FreedomCAR and Fuel Partnership](#)

June 18, 2008

[DOE to invest up to \\$90 million in advanced geothermal energy technology and research](#)

June 12, 2008

[DOE announces \\$30 million for plug-in hybrid electric vehicle projects](#)

June 02, 2008

[DOE announces effort to advance U.S. wind power manufacturing capacity](#)

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Reader Comments

June issue:

Amazing, we had the ability to use solar power all these years, yet [it] never caught on until recent[ly]. Love the new DOE newsletter, that boat is the coolest. Love the idea of it "piercing" thru the waves and actually becoming submerged under the ocean. — **M.C.**

June issue:

This publication would have more value if it covered initiatives beyond DOE and the federal government. In general, at least with regard to deployment of practical and effective programs on the ground, the feds lag far behind state System Benefit Programs.

For example, it is a bit annoying to see a discussion of various DOE commercial building initiatives with absolutely no reference, or credit, to the fact that utility programs in New England, California, and the Northwest invented and refined approaches you find "innovative" (such as Whole Building Design) over 15 years ago.

While DOE is good at funding basic research, its role in deployment should be limited to migrating information about various successful state-based initiatives to a wider audience. DOE never has had, and never will have, any value as a program developer. It's just not in your organization's DNA. — **D.B.**

June issue:

Kudos to the team for this month's EERE news. It is very informative, easy to navigate, and I like the new comments feature. Especially helpful to me are the Farm Bill and Food vs. Fuel articles but all articles were relevant and interesting. Great job and keep up the good work. Thank you. — **J.S.**

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Recent Speeches

June 16, 2008

[Remarks by Secretary of Energy Samuel W. Bodman to the U.S. Chamber of Commerce's 4th Annual North America Forum](#) (Overview of North American energy choices)

"...the truth is we do not know precisely what North America's energy future will look like. But I believe we can say this: our energy mix will be more diverse, with a major focus on renewable energy sources and alternative fuels. ...Mexico, Canada and the United States share a strong commitment to harnessing the power of clean, renewable energy technologies, which I see as a real opportunity for regional cooperation...."

June 5, 2008

[Remarks by Assistant Secretary Alexander Karsner to the Southeast Industrial Energy Efficiency Summit at Oak Ridge National Laboratory in Oak Ridge, Tennessee](#) (includes video)

"...And if we think climate change isn't sufficient as a challenge [to develop renewable energy resources], certainly global geopolitical security [should be] as we jump from 600 billion dollars a year to 700 billion dollars a year in the amount of money that we export to the five leading nations of the world who send us our petroleum addiction and are hostile to our way of life. Interrupting that cash-flow supply chain is certainly at least as urgent to our economic security, to our national security, to our viability in the long term. And it's in our interest. We don't have to look at this as a defensive thing. It's something we ought to be leaning into with pride."

June 2, 2008

[Remarks by Acting Deputy Secretary Jeffrey Kupfer delivered to the GreenHunter Biodiesel Refinery grand opening in Houston, Texas](#)

"...As we open the nation's largest biodiesel refinery, we reach another milestone in our effort to make America more energy secure. Through substantial investments that companies like GreenHunter Energy are making in support of alternative and renewable energy, private enterprise is driving the very innovation this country needs. But the federal government has a role to play as well. Since the beginning of 2007, the Department of Energy has announced over \$1 billion of multi-year targeted investments to spark the growth of a robust, diverse and sustainable biofuels industry...."

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Events

If you have an event scheduled in the next year of regional or national interest to the energy efficiency and renewable energy communities, please contact us with pertinent information and a web link and we will include it in EERE Program News. — [Jack Jenkins](#), [John Horst](#), [Mariel Sala](#)

[GovEnergy](#)— Aug. 3-6, Phoenix, Ariz.

Annual federal energy training, workshops and trade show.

[Diesel Engine Efficiency and Emissions Research Conference](#) — Aug. 4-7, Dearborn, Mich.

DOE's primary mechanism for the public exchange of information about state-of-the-art advanced combustion engine research and development.

[Utilities' Roles in Promoting Geothermal Energy Technologies](#) — Aug. 11-12, Everett, Wash.

Workshop about integrating geothermal technologies with other electric utility energy sources, hosted by Western Area Power Administration (WAPA).

[American Coalition for Ethanol 21st Ethanol Conference](#) — Aug. 12-14, Omaha, Neb.

Conference and trade show focusing on ethanol, highlighting the best in public policy, technology and education.

[Short Rotation Crops International Conference](#) — Aug. 18-22, Bloomington, Minn.

Conference will initiate and provide opportunities for scientific exchange of producing both agricultural and forest crops for biofuels, bioenergy and bioproducts.

[National Association of State Energy Officials](#) — Sept. 7-10, Overland Park, Kan.

Meeting will provide opportunity for state, federal and regional energy officials and stakeholders to discuss energy related topics.

[Ethanol Fundamentals and Risk Management](#) — Sept. 9-10, Chicago, Ill.

Learn about ethanol production and the basic tools of risk management: futures, options, and derivatives, set in the context of ethanol.

[International Conference on Advanced Lithium Batteries](#) — Sept. 15-17, Argonne, Ill.

International Conference to enhance the global R&D effort on advanced lithium batteries for automotive applications.

[Laboratories for the 21st Century Annual Conference](#) — Sept. 16-18, San Jose, Calif.

The Labs21 Conference will cover laboratory sustainability.

[Platts Biomass Power Forum](#) — Sept. 18-19, Houston, Texas

Forum will explore biomass economics, biomass finance structures, meeting RPS standards with biomass power, and future opportunities for expansion and financial investment.

[West Coast Green](#) — Sept. 25-27, San Jose, Calif.

380 exhibitors and 6,000 building industry professionals joining to explore green building ideas and innovations. Three days open for trade only and one day for individual homeowners.

[31st World Energy Engineering Congress](#) — Oct. 1-3, Washington, D.C.

National event to assess the economic and market forces, new technologies, regulatory developments and industry trends shaping our energy future.

[2008 Geothermal Resources Council Annual Meeting](#) — Oct. 5-8, Reno, Nev.

International forum on latest advances in geothermal technologies. Companion (U.S.) Geothermal Energy Association Trade Show exhibits latest geothermal equipment and services.

[Solar Power 2008](#) — Oct. 13-16, San Diego, Calif.

Sponsored by the Solar Energy Industries Association (SEIA) and the Solar Electric Power Association (SEPA), conference will cover market opportunities for U.S. solar industry.

[International Distillers Grains Conference and Trade Show](#) — Oct. 19-21, Indianapolis, Ind.

U.S. Grains Council and USDA's ' Foreign Agriculture Service will bring together approximately 140 major foreign buyers, nutritionists, and feed ingredient importers.

[National Renewable Energy Marketing Conference](#) — Oct. 26-29, Denver, Colo.

Attended by power suppliers and marketers, renewable energy developers, utility executives, and equipment manufacturers, conference will address major issues facing the industry; will also announce 2008 Green Power Leadership Awards.

[2008 Fuel Cell Seminar & Exposition](#) — Oct. 27-30, Phoenix, Ariz.

An expected 2000 participants and 175 exhibiting companies will cover all phases of fuel cell development, including what's happening internationally.

[Wind Expo Latin American Wind Energy Association 2008](#) — Nov. 5-7, Guadalajara, Mexico

First Latin American Wind Energy Association (LAWEA) Wind and Renewable Energy Conference and Exhibition, organized by the Latin American Wind Energy Association.

[2008 Congress of Cities & Exposition](#) — Nov. 11-15, Orlando, Fla.

The National League of Cities' Annual Congress of Cities and Exposition is the municipal government marketplace for administrators, city managers, council members, department directors and mayors.

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