

EERE Program News

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August, 2008

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Algae, the bane of these swimmers, may well be a primary biofuel resource of the future.

Photo courtesy of: **Associated Press**

[Pond scum](#) gains glamour as researchers learn more about algae's incredible ability to produce the building blocks of biofuel while also sequestering significant quantities of CO₂. ([Video 1](#)) ([Video 2](#))

[News](#) explores this development. It also looks into zero-net energy commercial buildings, mercury in compact fluorescents and tax credits for renewable energy.

[Features](#)

Flipping a switch to turn on an electrical appliance is one of the simplest things we do; building the system to bring electricity to that switch is among the most complex.

Transmitting electricity from wind farms or concentrating solar power plants is one of the major bottlenecks limiting large scale adoption of renewable energy. In the Midwest, alone, the [electricity transmission industry](#) is looking at a potential of as much as 5,000 megawatts of additional wind power ([Video](#)) coming on line in the not-too-distant future.

The maze of wires, high-voltage switches and transformers making up the U.S. electricity grid is extremely complicated, but even more daunting is the vast regulatory maze underlying how electricity is transmitted, bought and sold before reaching the final consumer.

This month's [Features](#) story gathers links and resources to help sort through the puzzle. In a related story, DOE is [investing \\$24 million](#) to develop products that interactively connect solar power systems with the electrical grid. The goal is to maximize the value of PV systems while offering consumers greater control over their electricity use.

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DOE pursues zero-net energy commercial buildings

Buildings use 40 percent of the energy in the U.S., so DOE has launched a [Zero-Net Energy Commercial Building Initiative](#). The goals are to develop new commercial buildings that produce as much energy as they use, and to make these buildings marketable by 2025.



Ferreira Construction headquarters building in New Jersey has been built to approach zero-net energy goals.

Photo courtesy Ferreira Construction

An early example of [zero-net commercial building design](#) was built in 2005 by [Ferreira Construction](#) as its corporate headquarters in Branchburg, New Jersey. Two hundred people work in the 42,000-square foot building. It has 1,200 photovoltaic panels on the roof, generating 223 kilowatts of electricity. This accompanies a solar thermal hot water system and a radiant HVAC system that incorporates nine miles of tubing within the slab floor. The condensing boiler operates at 95-percent efficiency. All this works hand-in-hand with an extensive, integrated showcase of energy efficiency systems. The building is net-zero electricity, not net-zero energy use; it does use natural gas for heating.

DOE will minimize energy use through cutting-edge building efficiency technologies, in addition to using on-site renewable energy generation.

To get the initiative underway, DOE has formed the National Laboratory Collaborative on Building Technologies (NLCBT). This will allow DOE and five of its national laboratories to work closely on the research, validation, and commercialization priorities critical to the success of zero-net energy buildings.

Argonne National Laboratory, Lawrence Berkeley National Laboratory, the National Renewable Energy Laboratory, Oak Ridge National Laboratory, and the Pacific Northwest National Laboratory will be working together under the NLCBT.

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What's happening with tax credits for renewables



With more wind farms coming on line in remote areas, adding new electricity transmission lines and the issues surrounding that expansion become more critical.

Photo courtesy of: [Donald Kinney](#)

The Senate has recessed for the summer session with no word on whether a bill to extend renewable energy tax credits will be addressed, leaving many in the industry to wonder about the future of clean energy.

In order to understand what is happening with this piece of legislation, let's first take a look at what it is, and also what kind of impact it has on renewables.

Q: What is the Renewable Energy Tax Credit Bill?

A: The short answer: The "Jobs, Energy, Families, and Disaster Relief Act of 2008" includes a request for a tax credit extension beyond December 2008 for companies investing in renewables.

The long answer: [S. 3335](#), A bill to amend the 1986 Internal Revenue Code, extending certain expiring provisions [for renewables], and other purposes.

This bill, introduced July 24, 2008 by Sen. Max Baucus (D-Mont.), builds on the Energy Independence and Tax Relief Act of 2008 (S. 3125), extends and expands production and investment tax credits for renewable energy," including a one-year extension for wind and a multi-year extension for various other renewables such as biomass, geothermal and solar.

The [Alliance to Save Energy](#), a non-profit coalition, has summarized the key provisions of S. 3335 as:

- Extension through 2008 of consumer income tax credits for energy-efficient upgrades to existing homes;
- Extension through 2013 of tax deductions for energy-efficient commercial buildings;
- Modification and extension through 2010 of the existing energy-efficient tax credit for appliance manufacturers;
- A new \$3,000 tax credit for qualified plug-in electric drive vehicles. The credit would increase by \$200 if the qualified vehicle draws propulsion from a battery with at least five kilowatt-hours of capacity, plus another \$200 for each kilowatt-hour of battery capacity above five, up to 15 kilowatt-hours;
- Employers could provide limited fringe benefits, such as storage, to employees who commute to work by bicycle; and

Accelerated depreciation (10 years instead of 20) for taxpayers who install smart electric meters and smart electric grid systems.

Q: What impact will S. 3335 have if it is passed? What if it's not?

A1: In May, the House of Representatives passed this bill (referenced as H R 6049) by a vote of 263 to 160. [Rep. Philip English \(R-PA\) commented](#) on the potential impact of this bill on both Americans and the U.S. economy.

"By using the tax code to promote energy diversification we can lower energy prices for Americans across the country and help community businesses make the transition to cleaner production."

A2: Researchers from the U.S. Department of Energy's Lawrence Berkeley National Lab warn about the negative impact should S. 3335 fail in the Senate, believing that:

"...failing to extend that tax credit would definitively slow domestic wind development and private R&D, induce higher installment costs, increase reliance on foreign manufacturing, and corrode incentives to expand transmission access to wind farms."

[San Francisco Chronicle, "Open Forum: Toward a sustainable energy policy"](#)

A3: [Roll Call](#), a congressional news source, that posted online a [letter](#) written to Sen. Harry Reid (D-NV) from one of his constituents urging the senate to pass S 3335.

"If you vote yes on S.3335 you will ensure that 116,000 clean energy jobs are not put at risk and that over \$19 billion in economic investment opportunity is not lost in 2009."

Q: So what's happening with S. 3335 now?

A: The bill failed, by a vote of 51-43, to make it to the Senate floor before Congress left for summer vacation. At this point Senators haven't even debated the bill. Congress returns to D.C. after Labor Day, just a few months shy of the upcoming expiration date. In order to beat the deadline, decisions about this bill will have to be made soon, or companies investing in renewable technology may significantly restrain future levels of interest.

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Algae-based biofuels offer exciting energy potential



NREL biotechnologist examines a flask of lipids (oils) produced by microalgae that can be converted into clean-burning biodiesel fuel

Photo courtesy: NREL PIX

Energy companies including Chevron, Conoco-Phillips, and Shell, are taking note of the [energy-producing potential of algae](#).

While an acre of soybeans holds the potential of producing 40 gallons of biodiesel and an acre of palm oil trees 500 gallons, algae holds the potential to yield as much as 5,000 gallons of the fuel per acre. At the same time,

algae, while growing, can pull significant amounts of CO₂ out of the environment.

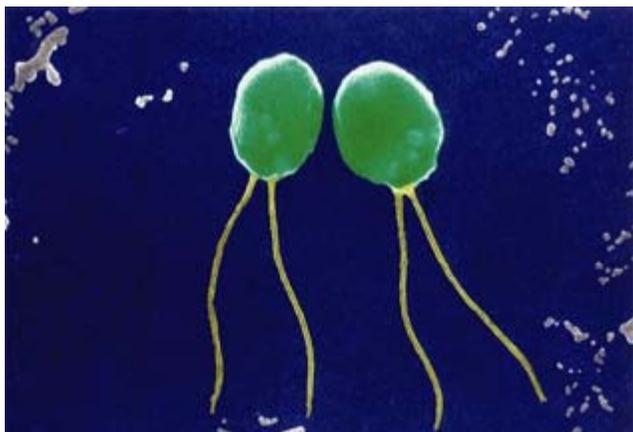
But don't rush out just yet to convert your back lawn into an algae pond. Significant research and development work needs to be done before algae-based fuels become common. There are more than 40,000 known strains of algae, and their abilities to produce the lipids from which biodiesel can be made vary wildly.

Al Darzins, NREL biomass researcher and Manager, Applied Sciences Group, said, "It's true that with the current high price of petroleum, a lot of people are exploring the lipid-producing capabilities of algae. In addition to the major oil companies, there are probably [at least 100 small firms](#) around the globe working to bring algae-based fuel products to market."

DOE has been exploring the energy production potential of algae for over two decades. Beginning in 1978, the Department's Aquatic Species Program (ASP), led by NREL and including many academic institutions, began exploring biofuel production from lipid-accumulating algae, an idea that has been around since the 1950s.

The ASP continued from the late 1970s through 1996. Researchers gathered over 3,000 strains of algae from various sites in the western and south-eastern states and Hawaii, representing a diversity of aquatic environments and water types. They then studied the collection, narrowing it down to the 300 most promising strains for further research.

NREL's algae research continues, within the framework of a [collaborative agreement with Chevron Corporation](#), to work together in advancing the technologies needed to produce algae-based, liquid transportation fuels. Chevron Technology Ventures, a division of Chevron U.S.A. Inc., is funding the initiative.



Single cell algae produce high concentrations of lipids and can replicate in a matter of hours, vs. months for a field crop such as corn or rapeseed, making them potentially an excellent feedstock for producing biofuels.

Photo courtesy NREL PIX

The research will run two to three years and will build on a variety of active research projects being conducted by Colorado scientists and students to find new ways of converting biomass into low-carbon transportation fuels.

Elsewhere, Royal Dutch Shell, one of the world's largest distributors of first-generation biofuels, has made a move into next-generation biofuels, this time going green with algae. The oil giant has formed a [joint venture with Hawaii startup HR BioPetroleum](#) to build a pilot facility to grow marine algae, producing vegetable oil for conversion into biofuel.

More recently, ConocoPhillips has signed a [\\$5 million, multi-year research agreement](#) with the Colorado Center for Biorefining and Biofuels (C2B2), a Colorado Renewable Energy Collaboratory research center. C2B2 is a joint venture of the University of Colorado at Boulder, Colorado State University, the Colorado School of Mines and the National Renewable Energy Laboratory.

The economics of higher-priced petroleum has clearly changed the picture for possible algae-based fuel production. As Darzins points out, "This is a very exciting field; it's going to grow exponentially over the next few years."

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What's the deal with compact fluorescents and mercury?



Minnesota's Carleton College installs compact fluorescent light bulbs in student dormitories and give free CFLs to students for their individual reading lamps

Photo courtesy: [Carleton College](#)

Some concern has recently been expressed about using compact fluorescent lights (CFLs) because they contain mercury. Are they a threat to our health? Do they pose a problem for the environment?

[National Geographic article](#)

The first fact to know is that mercury levels in a CFL are miniscule.

According to the National Electrical Manufacturer's Association an old-style fluorescent light tube, as typically used in an office or home setting, can contain up to 10 times more mercury than a CFL.

Not to mention the amount of mercury sealed within the glass tubing of a CFL is on average 4 milligrams, about enough to lightly coat the tip of a ballpoint pen.

Much of the current alarm centers around the fact that Congress has mandated a switch away from incandescent light bulbs to CFLs, phasing out Thomas Edison's famous version, by 2014.

There are several reasons for the change, most importantly, lighting accounts for about 20 percent of electricity used in a home. According to Energy Star, if every home in America replaced one incandescent with a qualified CFL enough energy would be saved to light an additional three million homes.

Another reason to switch is that it can save you money.

While a CFL is initially more expensive to purchase, it can last up to 10 times longer than a traditional light bulb. Changing to a CFL can save you about \$30 in energy cost over the life of the bulb.

You do, however, need to be aware of how best to dispose of CFLs when they burn out, or what to do if they break.

For what you need to know about CFLs and mercury, check the following web sites:

[Energy Star FAQs and clean-up steps](#)

[General Electric CFL information](#)

On a related note, looking ahead:

[Purdue study advances use of LEDs](#)

Researchers at Purdue University in West Lafayette, Ind., have developed a technique to create light emitting diodes (LEDs) on low-cost, metal-coated silicon wafers. If adopted, the achievement could cut the cost of LEDs by as much as 10 percent.

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[NREL gets new management firm](#)

DOE has selected the Alliance for Sustainable Energy (ASE) LLC as the management and operating contractor for the National Renewable Energy Laboratory (NREL). The cost-plus award-fee contract is valued at approximately \$1.1 billion, subject to annual appropriations, over a five-year contract period. The contract includes an option to extend it for up to five additional years.

ASE is a limited liability company consisting of Midwest Research Institute, the current NREL contract holder, and Battelle Memorial Institute.

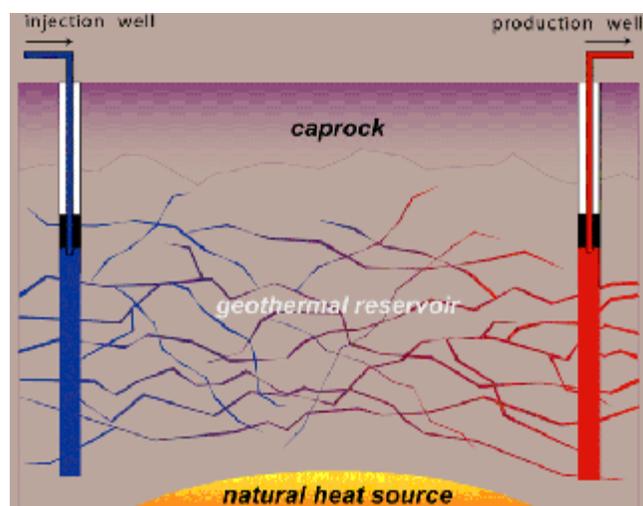
[Media release](#)

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Google supports enhanced geothermal energy development

Google, in a continuing commitment to clean energy, recently announced it will provide [\\$10 million to a geothermal energy company, AltaRock Energy, and a drilling company, Potter Drilling](#), to use enhanced geothermal systems (EGS) to generate electricity. Google's interest in this technology parallels DOE's own renewed efforts in EGS. [EGS animation](#)



Enhanced Geothermal Systems produce steam by injecting water in hot rock formations below the earth's surface; nearby wells then capture the hot water and steam to produce electricity.

Photo courtesy: [Utah Enhanced Geothermal Systems](#)

EGS was first proposed by DOE's Los Alamos National Laboratory in the 1970s, and now, with the return of higher oil prices, people are once again gaining enthusiasm for the technique. [In June, DOE announced \\$90 million in funding for EGS research](#).

With EGS, holes are drilled deep into hot rock, then water is injected into the cracks. Steam pressure forces the super-heated water up through other wells drilled nearby to run a turbine and produce electricity. Researchers explain that the technique will open up far more of the globe for geothermal energy development than now being explored.

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Features



Electricity transmission issues are complex and multiplying as more renewable energy comes on line in remote locations.

Photo courtesy of: [Smalldog Imageworks](#)

Sorting through the electricity transmission maze

When George Westinghouse built his alternating current (AC) transmission line to connect a hydroelectric generating station at Niagara Falls to Buffalo, 20 miles away, it was the first step in building our current electricity transmission grid.

Over the years, as local, statewide and regional electricity monopolies proliferated, federal, state and municipal governments have tried to keep up through regulating the often chaotic and highly competitive growth.

What has resulted is a maze of overlapping regulatory authority in some areas, with gaps in rule-making in others. Additionally, each new electricity technology advance or growth in end use adds new layers to the complexity.

A good starting point to learn more about electricity transmission is [Electricity Transmission, a Primer](#), published by the [National Council on Electricity Policy](#). Clearly written, it explores:

- Why electricity transmission has become so important;
- The process for building a transmission line;
- Paying for transmission;
- Physical and technical characteristics of transmission;
- Action items for state officials;
- Who plans, builds and owns transmission.

The Electricity Transmission Primer gives a clear overview of how the North American power grid is divided into four major subsystems (interconnections) and ten reliability regions. It explains how these sub-grids do and don't physically interconnect, and the possibilities for improvement.

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Renewable energy challenges the Transmission grid



U.S. night time electricity use shows the need to develop new transmission lines to move electricity from the plains to the more populated urban areas of the west coast and east.

Photo courtesy: NASA

The latest transmission challenge, really just beginning to be felt, is coping with intermittently generated electricity from wind farms or concentrating solar power plants. The action is currently centered in the Plains states and the West because that is where most of the wind farms are developing.

DOE, to better understand how renewable energy generators can be integrated into the grid, is working with the [Western Renewable Energy Zones \(WREZ\) project](#), launched by the Western Governors' Association.

DOE will contribute up to \$2.3 million over three years to identify renewable energy resources within the region and to expedite the development and delivery of those resources to consumers.

The California Energy Commission has set in motion its own [Renewable Energy Transmission Initiative \(RETI\)](#) to help identify transmission corridor projects needed to accommodate that state's renewable energy goals.

Governor Jim Gibbons of Nevada has signed an executive order creating a second phase of that state's [Renewable Energy Transmission Access Advisory Committee](#) to further efforts of identifying transmission corridors necessary for renewable energy development in Nevada.

At the federal level, DOE's National Energy Technology Laboratory (NETL) is addressing the critical issue of upgrading the nation's aging electricity transmission and distribution (T&D) system by developing a [nationally coordinated grid modernization framework](#), as well as managing T&D research and development projects.

At NREL, researchers study [Distributed Energy and Electric Reliability](#) and also support the Department's [Office of Electricity Delivery and Energy Reliability \(OE\)](#). The OE web site is a gateway to a wealth of transmission related issues, including:

- [Analysis and Outreach](#)
- [Renewable Energy Integration](#)
- [Climate Change](#)
- [Congestion Studies](#)
- [Distributed Energy](#)
- [Energy Storage](#)
- [Smart Grid](#)
- [Transmission Reliability](#)

In the private sector, more companies are beginning to see the opportunities in generation and transmission of electricity, particularly as it relates to renewable energy sources. ([See last month's story on T. Boone Pickens](#))

Denver's Anschutz Corporation of recently announced that it will enter the renewable energy industry through development of a [\\$3 billion transmission project](#) to take wind power electricity from Wyoming to Las Vegas, Southern California and Phoenix over a proposed 900-mile, 3,000 megawatt high-voltage transmission line. The TransWest Project, as it is known, will have the potential to meet 25 percent of the forecasted 2020 clean

energy needs for the Desert Southwest.

In the northeast, [Energy East](#) is investing in its transmission systems to maintain electricity reliability and to improve access to wind generation projects planned for Northern Maine and New Brunswick. Over the past year, the company has seen a greater than 50 percent increase in the number of customers participating in programs that allow them to purchase clean, wind generated energy.

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EERE News Releases

August 14, 2008

[DOE announces up to \\$15.3 million for long-term hydrogen vehicle development](#)

August 12, 2008

[DOE to invest up to \\$24 Million for breakthrough solar energy products](#)

August 05, 2008

[DOE to pursue zero-net energy commercial buildings](#)

August 04, 2008

[DOE announces contracts to achieve \\$140 million in energy efficiency improvements to DOE facilities](#)

July 31, 2008

[Climate Change Science Program issues report on climate models](#)

July 31, 2008

[DOE and USDA announce more than \\$10 million in bioenergy plant feedstock research](#)

July 30, 2008

[Assistant Secretary Alexander "Andy" Karsner announces resignation](#)

July 29, 2008

[DOE selects ASE to manage and operate its National Renewable Energy Laboratory](#)

July 24, 2008

[U.S. and New Zealand take steps to launch international partnership to further the development of clean energy on island nations](#)

July 23, 2008

[DOE launches EnergySmart Hospitals to promote improved energy efficiency in healthcare](#)

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](#)

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Reader Comments

July issue:

What help do such start up companies like Melis Energy, Valcent and Algenol get from the DOE. How can these technologies [algae-based biofuels] be enhanced and put into mass manufacture in the next few years? — **S.P.** (see: algae-based fuels story.)

July issue, Biofuels Give Gas Stations Competitive Edge:

Biofuels must be added to the fuel supply in a responsible manner and not at the cost of dumping more pollution runoff into the water systems or by clear-cutting thousands of acres of rain forest to plant more corn!

Bio fuels are not a silver bullet!

Look at the overall implications before you jump onto this corn wagon!!!!— **G.H.**

July issue, DOE launches "Energy Smart Hospitals":

If I know of a technology that is applicable to achieving this effort, who do I contact at DOE?
— **J.M.** ([contact: Patricia Ledonne, EERE Energy Technology Program Specialist](#))

July issue, Pennsylvania governor signs \$650 million energy efficiency bill:

[You say], "Households and small businesses can also qualify for \$100 million to support the installation of solar energy technology."

Please let me know when this is available. [I'm interested in] solar hot water systems, off grid solar power and geothermal systems. — **C.M.** ([contact: Pennsylvania Office of Energy and Technology Deployment](#))

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Speeches, Op-Eds and Testimony

July 27, 2008 (as printed in the New York Times)

[Breaking oil addiction: the Energy Secretary's views](#)

I agree with Mr. Friedman's assertion that we must break "our addiction to oil." But it is ridiculous and unfounded to claim that the president's response to this challenge consists only of an effort to expand offshore drilling. ...On the demand side, the president signed into law increases in fuel efficiency standards and financed critical research into gas-saving technologies like advanced batteries and hydrogen fuel cells. ...On the supply side, we've spent more than \$12 billion to advance alternative energy sources.... ...[and announced] the availability of more than \$30 billion in clean-energy project loan guarantees.

July 23, 2008

[Statement of Steven G. Chalk, Deputy Assistant Secretary for Renewable Energy, before the Committee on Energy and Natural Resources, United States Senate](#)

Topic: Reducing gasoline demand and transportation greenhouse gases.

July 17, 2008

[Statement of David Rodgers, Deputy Assistant Secretary for Energy Efficiency, before the Committee on Energy and Commerce Subcommittee on Energy and Air Quality, United States House of Representatives](#)

Topic: Buildings, energy efficiency and greenhouse gases.

July 15, 2008

[Statement of Alexander Karsner, Assistant Secretary for Energy Efficiency and Renewable Energy, before the Committee on Energy and Natural Resources, United States Senate](#)

Topic: The challenges and opportunities of clean energy investment.

July 10, 2008

[Testimony of Steven G. Chalk, Deputy Assistant Secretary for Renewable Energy, before the Subcommittee on Clean Air and Nuclear Safety Committee on Environment and Public Works, United States Senate](#)

Topic: DOE's research and development of the next generation of biofuels.

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](#)

[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.

[First 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.

[Investing In a Clean-Tech Economy](#) — Oct. 17, Jersey City, NJ

New Jersey's Annual Clean Energy Conference will highlight clean-tech, and investment and financing strategies that will help drive economic growth and help protect the environment.

[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.

[7th Annual Renewable Energy in America National Policy Forum](#) — Dec. 3-4, Washington, D.C.

This forum, held in the Cannon Caucus Room, US House of Representatives, offers an opportunity for renewable energy leaders to put on record their advice to the government; sponsored by the American Council on Renewable Energy.

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