

The business, programs and policies of moving new energy products into the marketplace

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Editor: [Jack Jenkins](#)

Associate Editor: [Carolyn Hinkley](#)

[News](#) reports on a potential new role for Google—an electricity middleman in the wholesale energy marketplace.

While Google follows the footsteps of other big companies seeking new ways to reduce their energy costs, its request for regulatory approval to buy and sell energy may facilitate the trend to further improve data center energy consumption.

This month's news also highlights national and regional progress toward energy independence and efficiency including new tools to [help consumers choose renewable energy](#) or evaluate their home's [renewable generation potential](#).

Sustainable energy development is also beginning to transform [college campuses](#). Our [Features](#) section highlights the continued increase in energy-related course offerings ([student video](#)) and university support for renewable energy, including a new Web site that offers schools a five-step climate action plan.

Those looking for green jobs will find support via recently enacted clean energy tax credits or from new clean-tech job maps that point to openings nationwide.



In the famous film, "The Graduate," Dustin Hoffman's character received the whispered advice to pursue "plastics." Today, he would probably be told "green technologies." [American universities are gearing up to meet the demand.](#)

Illustration courtesy of: GreenBeat

Index

[News](#)

- [Google seeks new role as electricity middleman](#)
- [DOE to invest \\$366M in energy innovation hubs](#)
- [Builders focus on homes requiring little energy](#)
- [Recovery in action: Energy squads in the Twin Cities](#)

- [Web site lets New Yorkers choose wind, hydro in three clicks](#)
- [Online tool calculates your home's solar, wind potential](#)

Features

- [Colleges learning how to promote sustainable energy](#)
- [Green classes thriving](#)
- [Interactive maps point to clean tech jobs, candidates](#)
- [Campus facilities opt for renewables, energy reduction](#)

EERE Program News Archive

- [December 2009 — Energy Empowers and opens personal opportunities](#)
- [November 2009 — Air Force Academy aims high — with net zero energy](#)

News Releases

Reader Comments

Speeches, Op-eds and Testimony

Events

News

Google seeks new role as electricity middleman

The wholesale electricity marketplace may have an influential new middleman if Google gets approval next month to buy and sell energy. The Internet giant's subsidiary, Google Energy LLC, [filed for approval](#) from the Federal Energy Regulatory Commission (FERC) in late December. According to the *Washington Post*, Google is seeking ways to lower costs for its energy-intensive data centers.



Data centers like these at the Oracle Corporation in Texas, or at internet search firms such as Google, consume large amounts of power, leading some companies to search for innovative ways to reduce energy costs.

Photo courtesy of: [electralink](#)

What this means for wholesale energy prices remains to be seen. In its filing before FERC, Google said its subsidiary "would act as a power marketer by purchasing electricity and reselling it to wholesale customers." The company said the move would allow the opportunity to engage in other "activities to facilitate efficient trade in the bulk power market, such as arranging services in related areas such as transmission and fuel supplies," reported Reuters.

Google told FERC it does not own or control any facilities that generate electricity to sell in the wholesale markets and the extent of its electric generation ownership is to provide power specifically for the company's facilities and emergency backup power. It hopes for approval next month.

If approved, Google would join the 1,500 other

high-tech companies that FERC has allowed to trade energy to control their power costs. Specifically, U.S. data centers doubled their energy consumption from 2000 to 2006 to reach a total of almost 61 billion kilowatt-hours (kwh) annually, according to a 2007 Environmental Protection Agency report to Congress. That accounts for about [1.5 percent of all U.S. electricity consumption](#).

To protect these systems and their vital functions, data centers also require energy-intensive HVAC systems, fire suppression systems, redundant/backup power supplies, redundant Internet connections, and high-security systems, all of which add to the large power consumption.

DOE's [Industrial Technologies Program](#) is working with 1,500 U.S. data centers to [reduce data center energy intensity](#) 10.7 billion kWh by 2011, enough electricity to supply about 1 million typical homes annually. DOE announced Jan. 6 that it [awarded \\$47 million for research](#) into how to improve data center energy efficiency.

These goals come at an opportune time. *Building Design and Construction* Contributing Editor Peter Fabris says in his article "Greening Data Centers" that the total number of installed servers in the nation is expected to grow [to about 15.8 million by 2010](#), nearly three times the number of installed servers in 2000, according to [market research firm IDC](#). That's leading many companies to explore sustainable building options for data centers, such as geothermal cooling mechanisms.

It's a topic that's also generating interest among bloggers such as Forbes.com blogger, [Ed Sperling](#), who edits several technology publications. In his Jan. 10 blog, he touted Yahoo for its precedent-setting air-cooled [data center](#) in New York. On his June 30 blog post, Yahoo CEO and co-founder David Filo touted the ["chicken-coop" design](#), which is cooled 100 percent by outside air.

With the expected rise in technology and communication needs, Google and other IT companies' quests to better control energy costs are likely to generate more innovations in 2010.

[Comments:](#)

[return to index](#)

DOE to invest \$366M in energy innovation hubs

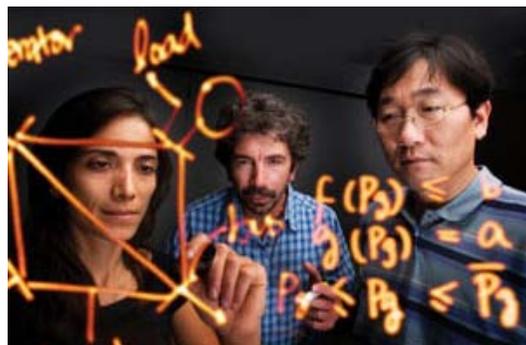
DOE labs, universities, non-profits and private entities are eligible to apply for the new [energy innovation hubs](#) designed as epicenters for research and development in three key energy areas. Secretary Steven Chu [announced his plans Dec. 22](#) to invest \$366 million in three energy hubs, which will focus on accelerating research in:

- production of fuels directly from sunlight;
- improving energy-efficient building systems design; and
- computer modeling and simulation for the development of advanced nuclear reactors.

Each energy hub, to be funded up to \$122 million over five years, aims to bring a multidisciplinary team of researchers together to shorten the timeframe from a product's scientific discovery to when it's deployed in the marketplace.

Applications are due in March, selections will be announced in June and funding will be awarded by the end of FY 2010.

[Comments:](#)



NREL researchers Caroline Chapman, left, Victor Diakov and Hyungseon Oh examine a formula used to develop models and tools that help provide insight on renewable energy technologies.

Photo courtesy of: NREL

Builders focus on homes requiring little energy

While many homeowners look at options to reduce their energy use, some may soon live in homes that use no energy or very little. The *Wall Street Journal* reported that [green builders](#) in Massachusetts just completed several duplexes that use almost no energy at all.



A single mother and her two boys stand in front of an energy-efficient Habitat for Humanity home in Denver.

Photo courtesy of: NREL

A range of organizations from non-profits to developers continue to get on the net zero energy bandwagon, which is changing the face of the housing industry. For example, the *Wall Street Journal* reports that nonprofit Rural Development, Inc., of Greenfield, Mass., completed eight of 20 planned duplex homes that use almost no net energy, eight of which have been purchased. Across the country in Berkeley, Calif., housing developer ZETA Communities Inc., has its sights set on building a 30-unit net zero energy apartment complex after opening a factory that can construct 400 to 500 prefabricated net zero homes per year.

In sunny Scottsdale, Ariz., Habitat for Humanity took on the challenge to build [a net zero energy home](#) in five days last November. A 5.2-kilowatt solar system donated by American Solar Electric is expected to generate 9,363 kilowatt-hours (kwh) the first year. Electricity generated by the solar electric system will be used to offset utility power, thereby reducing the cost of electricity for the new homeowner, the Valera family of Scottsdale.

For the lucky Valera family, who now own the donated net zero energy home, building costs weren't a factor. However, for others interested in

net zero energy homes, construction costs are estimated to be 15 percent higher. The advantage is that energy bills on these net zero energy homes are drastically reduced, from as much as \$2,700 to about \$700 annually, reported the WSJ.

Defining a net zero energy building seems simple: it's a building that produces as much energy as it uses. But beyond this elementary definition, it gets a little more complicated. According to Paul Torcellini, the U.S. Department of Energy's National Renewable Energy Laboratory's buildings researcher, [firm definitions](#) have been established for various types of net zero buildings:

Net zero site energy

A site zero energy building produces at least as much energy as it uses in a year, when measured at the site. The measurement time frame is annual.

Net zero source energy

A source zero energy building produces at least as much energy as it uses in a year, when accounted for at the source. Source energy refers to the

primary energy required to generate and deliver the energy to the site. To calculate a building's total source energy, imported and exported energy is multiplied by the appropriate site-to-source conversion multipliers.

Net zero energy costs

In a net zero energy cost building, the amount of money the utility pays the building owner for the energy the building exports to the grid is at least equal to the amount the owner pays the utility for the energy services and energy used over the year.

Net zero energy emissions

A net zero energy emissions building produces at least as much emissions-free renewable energy as it uses from emission-producing energy sources annually. Carbon, nitrous oxide and sulphur oxide are common emissions that net zero buildings offset.

Near zero energy

A near zero energy building produces at least 75 percent of its required energy through the use of on-site renewable energy. Off-grid buildings that use some non-renewable energy generation for backup are considered near zero energy buildings because they typically cannot export excess renewable energy generation to offset their fossil fuel energy use.

Comments:

[return to index](#)

Recovery in action: "Energy squads" in the Twin Cities

[Energy squads](#) are bringing low-cost, energy-saving measures to homeowners in Minneapolis-St. Paul, Minn., thanks to local utilities that began rolling out a weatherization program this month.

[Xcel Energy](#) and [CenterPoint's](#) Home Energy Squad builds on a similar program initiated last fall by two non-profits that was featured in the Minneapolis-St. Paul's *Star-Tribune* in December. In select Twin City neighborhoods, energy crews descend on homes to install energy-efficient light bulbs, wrap fiberglass blankets around water heaters and weatherstrip doors.

Using \$705,000 of \$3.9 million in Recovery Act funding recently given to the City of Minneapolis for energy efficiency improvements, the [Center for Energy and the Environment](#) and [Neighborhood Energy Connection](#) are helping improve homes in both Minneapolis and St. Paul. Both groups also receive grants from the Minnesota State Lottery. Xcel Energy and CenterPoint Energy pay both programs' labor costs as part of their efforts to meet state-mandated conservation goals.

Xcel and CenterPoint's Home Energy Squad is a limited version of the neighborhood-focused visits offered by the non-profits and will expand over the next three years. To qualify, homeowners must be a customer of Xcel or a CenterPoint gas customer.



Handheld infrared cameras detect heat radiation, letting weatherization specialists find air leaks or lack of insulation in homes.

Photo courtesy of: Trotec Thermography

The *Star-Tribune* reports that lucky homeowners receive these customized services for only \$30 after attending [a free workshop](#). Besides the installed products, they get utility-bill savings averaging \$127 per year.

Minnesota's new home energy efficiency efforts follow long-term efforts to assist low-income homeowners through DOE's Weatherization Assistance Program (WAP). Over the past three decades, WAP has weatherized more than 3,000 Minnesota households per year. In 2009, Recovery Act funding added an additional \$132 million to the Weatherization Assistance Program in Minnesota.

Marilou Cheple, Minnesota weatherization supervisor, says the Recovery Act money will help expand WAP benefits to an additional 10,000 low income homes this year. The ten-fold funding increase is also providing a much needed hiring boost to the locally depressed building and trades industry. Cheple says more than 340 new green jobs have been added to the state as a result of the increased flow of cash.

Qualified low income homeowners and renters receive energy efficiency services including energy education, energy audits, exterior wall and attic insulation and air leak sealing. WAP technicians also test the home's environmental safety, replacing or repairing energy-related mechanical equipment as indicated by the initial energy audit.

Comments:

[return to index](#)

Web site lets New Yorkers choose wind, hydro in three clicks



New York City residents can now easily choose renewable energy via a [new Web site](#) that lets them choose electricity from several green energy providers.

Photograph courtesy of: Jack Jenkins

have the Web site randomly choose an energy product for them. Actually, what they are purchasing are renewable energy credits, or the environmental attributes associated with generating 1 kilowatt-hour (kwh) of renewable energy. Prices range from 1 cent/kwh for wind and small hydro to 2.5 cents for 100 percent wind.

Comments:

[return to index](#)

Online tool calculates your home's solar, wind potential

Ever wonder how much renewable electricity your home is capable of generating? Now you have a free new tool to help you do just that. A new Web site called [In My Backyard](#) helps consumers estimate how much electricity they could generate with solar panels or

wind turbines.

The U.S. Department of Energy's National Renewable Energy Laboratory (NREL) developed [the tool](#) using Google Maps to provide estimates on how much renewable power your home could produce, depending on your system size, home's location and other variations. It then draws data for that location from one of NREL's renewable resource databases to estimate how much electricity your home could produce and what the energy bills might look like.

Comments:

[return to index](#)

Features



A bicyclist rides on the University of Ohio college campus where students can earn a master's degree in clean and renewable energy. Many universities, colleges and other institutions are showing increasing support for renewable energy-related courses and degree programs.

Photograph courtesy of: The Association for the Advancement of Sustainability in Higher Education

Colleges learning how to promote sustainable energy

This month's features section highlights how renewable energy-related funding is transforming college campuses. From an increase in renewable energy course offerings to new programs that support energy efficiency, schools are turning a new page of sustainability. These new course studies give traditional college-age students a chance to begin their working lives in a renewable-related field or the classes can motivate mid-career professionals to forge a new path.

At [Laramie County Community College in Wyoming](#), you can earn an associate's degree to work as a wind technician, and at [four separate universities in Ohio](#), you can further your career by earning a master's degree to prepare for a job in the biofuels industry.

Having renewable energy training and knowledge is bound to come in handy as these students eventually begin looking for work in the industry. President Obama gave another

boost to the field when he announced [\\$2.3 billion in tax credits](#) for clean tech manufacturing and jobs. Labor Secretary Hilda Solis has also announced \$150 million in training grants to prepare workers for these renewable or energy efficiency industries.

Some of the newest clean energy jobs are now being highlighted on DOE's new [Energy Empowers](#) Web site. Those who are still seeking jobs in the industry can now find current openings via a [new interactive jobs map](#) or explore what qualifications employers are seeking.

We're interested in your experiences. Give us your feedback on whether you've changed careers recently or have begun thinking of going back to school to learn more about renewables or energy efficiency fields. We'd like to hear from you!

Comments:

[return to index](#)

Green classes thriving



University students show their enthusiasm for recycling. Sustainability-focused programs at U.S. colleges and universities showed unprecedented growth in 2009.

Photo courtesy of: [treehugger.com](#)

College in Wyoming with nearly \$200,000 in May 2009 for its Utility-Scale Wind Energy Technology program. Students can earn an [associate degree](#) in wind energy to prepare for jobs as wind technicians. In a "Current and potential workforce" presentation the college prepared in 2007, researchers estimated that about 17,000 to 40,000 megawatts would be developed in Wyoming by 2017, translating into about 1,700 to 4,000 jobs—the majority of which will be wind technicians.

Ten community colleges in Southern California will also soon be offering similar training, thanks to a \$1 million Green Jobs Education Initiative from Southern California Edison. According to a [SCE news release](#), the initiative provides funding for dozens of \$2,000 scholarships to help prepare students for solar panel installation, water and wastewater management, transportation and alternative fuels, biofuels production and farming, environmental compliance or sustainability planning.

The [University of Wisconsin in Madison Wis.](#) is also training the next generation of wind workers using a \$400,000 grant from DOE to develop a wind energy and power engineering curriculum. Students will be able to take courses in electric utility wind power integration and small wind turbine design.

Four schools in Ohio now [offer master's degree programs](#) in clean and renewable energy, reported [renewableenergyworld.com](#). The [University of Dayton](#), [Wright State University](#),

Look around college campuses today and you'll find more classrooms turning green. As renewable energy and energy efficiency gain prominence, universities and colleges are expanding their sustainability-related course offerings to launch the next generation of green workers into the workforce.

[USA Today](#) recently noted that U.S. colleges added more than 100 majors, minors or certificates in energy and sustainability-focused programs in 2009. That's quite an increase from only three such programs added in 2005, *USA Today* reported.

DOE has helped generate the interest by providing some colleges with [grants](#), such as awarding the Laramie County Community

[Central State University](#) and [Air Force Institute of Technology](#) have teamed up to develop the two-year program.

These programs build upon many front runners within academia. For example, DOE gave Illinois State University nearly \$1 million in 2008 to research renewable energy, create a [Center for Renewable Energy](#) and establish a [renewable energy major](#).

There, 65 students are majoring in renewable energy and electronics, electrical circuits and machines, information gathering systems and project management and weather. Graduates are prepared for jobs in biofuels, wind and solar energy or regulatory and other governmental agencies. Richard Boser, Department of Technology chair, was quoted in *USA Today* as saying that nearby employers, including those in wind energy, hope to hire future graduates.



In San Diego, students are showing more interest in sustainable studies and taking their energy-related message into the broader community.

Photo courtesy of: sandiegocolleges.org

2008. The collective's six teams work on activism and community outreach related to sustainability.

"Almost every day, students remind me and other university leaders and faculty that they want more opportunities to make a positive difference in the environmental stewardship of the campus," said Chancellor Marye Anne Fox on UC-San Diego's Web site.

Translating that desire into a job in the field could be challenging in today's battered economy. But jobs in the environment and renewable energy fields are getting additional help from the federal government. On Jan. 13, [Labor Secretary Hilda Solis \(video\)](#) announced \$150 million in [training grants \(video\)](#) part of a \$500 million Recovery Act initiative to prepare workers for careers in the energy efficiency and renewable energy industries.

For [Fiona Martin at the University of Ohio at Dayton \(video\)](#), who began her master's in clean and renewable energy this month, a job is already waiting. After getting training in conducting energy audits for residential and low-income housing and community organizations, she will work for Sieben Energy Associates in downtown Chicago on commercial building applications and the Leadership in Environment and Energy Design (LEED), or green building rating system. On the university's Web site she said, "I think education is really the key right now for our society to be able to switch over and understand how to be(come) more sustainable (and) how to be more energy-efficient."

Comments:

[return to index](#)

One graduate from UC-San Diego's [Environmental Systems Program](#), an undergraduate program that saw its participants double from 2008 to 2009, has proven that [sustainable studies can pay off \(video\)](#). A pioneer of the program who graduated in 2002, John Quenzer now works for D-Max Engineering, a San Diego-based environmental consulting company to help businesses manage outdoor spaces to prevent pollutants from washing away.

But students at UC-San Diego aren't just waiting for university faculty to provide them with an edge in the green marketplace. Students financed and formed a Sustainability Collective to develop a new [resource center](#) that opened in November

Interactive maps point to top clean tech jobs, candidates

A [new clean-tech jobs map](#) links you to jobs worldwide from a [manufacturing test engineer](#) in Sunnyvale, Calif., to a [senior advisor](#) for a sustainable development company in Belgium. The map is the latest addition to [Clean Edge Jobs](#)—an online jobs board for clean-tech job seekers, employers and recruiters.

Clean-tech job seekers can search a map for current openings at clean-tech companies such as SolarCity, OPOWER, Calera, Conergy, Ecos and Nexant as well as state and federal agencies, such as Bonneville Power Administration. Users can search the map manually or type in geographic terms or filter by industry, position type, and position level. In addition, employers and recruiters can view thousands of clean-tech candidates from around the world.

Earth2tech also developed [an interactive map](#) showing where wind manufacturing companies are located and how many jobs are expected to be created at each site. The map shows the company name and location, when it was founded, how many jobs are needed and links to news about the facility's opening.

President Obama hopes to accelerate the creation of these clean energy jobs. On Jan. 8, he announced [\\$2.3 billion in Recovery Act funding](#) for tax credits to 183 clean energy manufacturing projects, which he expects will lead to 17,000 of jobs in the advanced energy industry. Awardees include American Honda's test fuel cell project, [REC Silicon](#), a solar cell manufacturing company, and [Dupont's facility in Centerville, Ohio](#) to expand production of high-performance polyvinyl films, a key component in solar panels, said Ohio radio station WPCN.

Comments:

[return to index](#)

Campus facilities opt for renewables, energy reduction

Besides developing new green curriculums, universities are opening a new chapter of energy efficiency and renewable energy use on campus.

For example, [NREL partnered](#) with New York's [Cornell University](#) on a step-by-step [Climate Neutral Research Campuses Web site](#) to help campus facility managers reduce the energy consumed by machines that run 24/7 with extensive heating and cooling systems.

The Web site, developed under [Labs 21](#), a joint venture between DOE's Federal Energy Management Program and EPA, is a great tool for research campuses since they consume more energy per square foot than most facilities.

But energy reduction is just part of the picture. Universities are also generating energy or purchasing energy from renewable resources. South Carolina's [Clemson University](#) is using a \$45 million DOE grant for a 5- to 15-megawatt wind turbine drive train testing facility, set to begin operating in late 2012. Researchers will study how to enhance the performance and reliability of utility-scale wind turbines by testing the drive train, which takes energy generated by a turbine's blades and increases the rotational speed to drive the electrical generator.



Solar arrays on Catholic University's athletic center in Washington, D.C. give hands-on opportunities to students interested in renewable technologies.

The DOE grant, combined with \$53 million in matching funds, will support the facility

Photo courtesy of: John Keith

at the former Charleston, S.C., Naval Base. Officials expect the project to create about 113 temporary jobs associated with facility construction and 21 full-time jobs.

In Texas, [Southwestern University signed an agreement](#) this month with the City of Georgetown to meet all its electricity needs for the next 18 years from wind power.

Now Southwestern is the first university in Texas to have all of its electricity supplied by wind power and one of fewer than 20 universities in the country to have a totally "green" source of power, according to the [U.S. Environmental Protection Agency](#). The University of Maryland also is seeking to meet its energy needs from wind. The [Pittsburgh Tribune-Review](#) reports that US Wind Force is expected to begin construction on a \$131-million wind farm project in West Virginia as soon as a purchase agreement is signed with the university.

Other schools are turning to solar. [Rutgers University, the state university of New Jersey](#), opened a [1.4 megawatt solar farm](#) that generates approximately 11 percent of the electricity needed for the Livingston campus. The solar farm is one of the largest renewable energy systems on a U.S. campus. Similarly, the 294 kilowatts of solar arrays at [Catholic University in Washington, D.C.](#) are showing students a real-world application of solar energy generation.

Universities that aren't generating renewable power are purchasing it for their facilities. [Harvard University](#) will buy about 24 million kwh per year, or half the power generated from the planned Stetson II wind farm in northern Maine, to meet 10 percent of the electrical needs of the Cambridge and Allston campuses.

In Colorado, the [Auraria](#) and [Regis](#) college campuses committed to buying 100-percent wind power. For Auraria, that equates to 40 million Renewable Energy Credits (RECs) under a three-year contract with [Renewable Choice Energy](#), and for Regis, it's 11 million RECs under a two-year agreement with [Community Energy](#).

These universities' precedent-setting achievements in renewable energy and energy efficiency may continue dominating headlines as the nation moves closer to achieving its energy independence goals.

Comments:

[return to index](#)



U.S. DEPARTMENT OF
ENERGY

News Releases

Jan. 21, 2010

[Secretary Chu announces closing of \\$465 million loan to Tesla Motors](#)

Jan. 21, 2010

[Secretary Chu announces more than \\$20.5 million for community renewable energy deployment projects](#)

Jan. 20, 2010

[Department of Energy to invest up to \\$12 million to support early stage solar technologies](#)

Jan. 19, 2010

[U.S. District Court upholds DOE's action against LG to enforce ENERGY STAR requirements](#)

Jan. 15, 2010

[Secretary Chu announces more than \\$37 million for next generation lighting](#)

Jan. 14, 2010

[Secretary Chu announces 69 early career scientists to receive up to \\$85 million in funding to support research](#)

Jan. 13, 2010

[Secretary Chu announces nearly \\$80 million investment for advanced biofuels research and fueling infrastructure](#)

Jan. 12, 2010

[DOE steps lead to significant increase in compliance with energy efficiency reporting requirements](#)

Jan. 8, 2010

[President Obama awards \\$2.3 billion for new clean-tech manufacturing jobs](#)

Jan. 8, 2010

[DOE announces clean energy projects for low-carbon communities of the Americas initiative](#)

Jan. 7, 2010

[DOE announces additional energy efficiency enforcement action to protect consumers](#)

Jan. 7, 2010

[Department of Energy announces inaugural ARPA-E energy innovation summit](#)

Jan. 6, 2010

[Secretary Chu announces \\$47 million to improve efficiency in information technology and communications sectors](#)

Dec. 22, 2009

[Department of Energy to invest \\$366 million in energy innovation hubs](#)

Dec. 18, 2009

[Secretary Chu announces efforts to strengthen U.S. electric transmission networks](#)

Dec. 14, 2009

[Chu Presentation at Copenhagen available on Facebook](#)

Dec. 9, 2009

[DOE announces tougher enforcement of appliance standards reporting requirements](#)

Dec. 7, 2009

[Secretary Chu announces \\$100 million for advanced research projects](#)

Dec. 4, 2009

[Secretaries Chu and Vilsack announce more than \\$600 million investment in advanced biorefinery projects](#)

Dec. 2, 2009

[DOE Launches Save Energy Now LEADER Program](#)

Nov. 24, 2009

[Secretary Chu announces \\$620 million for smart grid demonstration and energy storage](#)

Nov. 23, 2009

[DOE to invest \\$18 million in small business clean energy innovation projects](#)

Nov. 23, 2009

[Secretary Chu announces \\$45 million to support next generation of wind turbine designs](#)

Nov. 18, 2009

[Department of Energy announces more than \\$104 million for national laboratory facilities](#)

Nov. 18, 2009

[DOE and USDA select projects for more than \\$24 million in biomass research and development grants](#)

Nov. 17, 2009

[Obama administration announces nearly \\$40 million for energy efficiency and conservation projects in Florida and Maine](#)

Nov. 5, 2009

[Secretary Chu highlights support for clean energy and energy efficiency projects in Indian Country](#)

Nov. 4, 2009

[Hydropower upgrades to yield added generation at average costs less than 4 cents per kWh - without new dams](#)

Nov. 3, 2009

[Secretary Chu announces more than \\$155 million for industrial energy efficiency projects](#)

Nov. 3, 2009

[Obama Administration announces more than \\$38 million for energy efficiency and conservation projects in Alaska, Kansas, Utah and West Virginia](#)

Nov. 2, 2009

[DOE awards up to \\$5.5 million for X PRIZE to promote clean, energy efficient vehicles](#)

Oct. 29, 2009

[Department of Energy awards \\$338 million to accelerate domestic geothermal energy](#)

Oct. 27, 2009

[Secretary Chu announces \\$24 million loan for Tenneco Inc. for advanced vehicle technology](#)

Oct. 27, 2009

[President Obama announces \\$3.4 billion investment to spur transition to smart energy grid](#)

Oct. 19, 2009

[Vice President Biden unveils report on expanding green jobs and energy savings for middle class families](#)

Oct. 16, 2009

[2009 Solar Decathlon winners announced](#)

Oct. 15, 2009

[2010 annual fuel economy guide now available](#)

Oct. 15, 2009

[Secretary Chu announces new investments in cutting-edge wind energy research facilities](#)

Oct. 13, 2009

[DOE announces steps to strengthen enforcement of energy efficiency standards](#)

Oct. 13, 2009

[Team California wins the communications contest at DOE Solar Decathlon](#)

Oct. 12, 2009

[DOE Secretary Chu issues call to action on carbon capture and storage](#)

Oct. 8, 2009

[DOE announces \\$87 million in funding to support solar energy technologies](#)

Oct. 7, 2009

[DOE announces new private sector partnership to accelerate renewable energy projects](#)

Oct. 1, 2009

[DOE Solar Decathlon coming to National Mall](#)

Oct. 1, 2009

[Obama Administration delivers nearly \\$72 million for energy efficiency and conservation projects in 7 states and territories](#)

[return to index](#)

Reader Comments

December

Texas smashes wind power generation

"Was there any 'curtailment' of this energy because of too much power when demand was low? If so how did the wind farms handle that? I would also like to know how the utilities handled the fluctuation of wind while meeting the demand.

I would like to see more articles on storage, because that aspect of the grid is what will make renewable energy viable for the US."

— **G. B.**

Irrigation farmers install big batteries to store wind energy

"If the batteries can only output power at a rate of 25 megawatts for 2 minutes, then they would be totally useless. Your article does not provide that crucial piece of information: how long can the batteries pump out 25 megawatts of electric power? Seriously - is it for 5 minutes? Maybe 10 minutes? How about one hour? Without this piece of information, we cannot tell if the project is valuable or a total waste of our taxpayer dollars."

— **T.G.**

Editor's note: This comment, and the one about the Texas, ask highly relevant questions. EERE Program News will follow-up in February with feature stories about renewable energy transmission and storage issues.

Deep sea wind power crosses the Atlantic

"I applaud DOE and Maine in pursuit of this technology.

I do wonder, however, if Statoil Hydro has deployed an operational 2.3 MW turbine, why is Maine starting from scratch to develop prototype 10 and 100 kW devices?

If the intent follows, 'We have a wonderful opportunity to leapfrog forward with this sort of development in Maine,' why not start at 2.3 MW and do better, or implement this existing technology into a deep sea wind farm off the Maine coast? Why not build on what has already been developed?

— **B.M.**

DOE should investigate the potential for ganging multiple vertical axis wind turbines (VAWT) in floating wind farms. The heavy top head and large wind shadows cast by current horizontal axis wind turbines (HAWT) incurs excessive platform, installation and mooring costs.

If VAWTs are constructed with light composites utilizing a unitary vane and tower configuration, or in a manner similar to the Aerogenerator in which shaft bearings and generator are mounted in the platform itself, the center of gravity is much lower. This configuration would allow use of much smaller floating platforms.

These smaller platforms could be closely spaced, cabled to each other and oriented to prevailing winds with much less mooring than required using giant HAWTs. Connecting smaller floating platforms would permit rapid deployment and also allow the mounting of wave and ocean current generators on the cables connecting the platforms together.

While some efficiency and size may be lost using VAWTs, the farms should ultimately produce more energy per developed area, due to the close turbine spacing. The cost per kwh produced might also be lower due to reduced platform material, deployment and mooring costs.

T.L.

Editor's note: The University of Maine's efforts are, at heart, research-oriented. The program will also build an Advanced Nanocomposites in Renewable Energy Laboratory (ANREL) to develop and test composite materials and components for use in offshore wind turbines.

[return to index](#)

Speeches, Op-Eds and Testimony

Dec. 10, 2009

[Elliott Mainzer, Executive Vice President of Corporate Strategy, Bonneville Power Administration, before the Senate Energy and Natural Resources Committee](#)

Subject: The role of grid-scale energy storage in meeting our energy and climate goals.

Dec. 8, 2009

[Kristina Johnson, Under Secretary for Energy, before the Senate Energy and Natural Resources Committee](#)

Subject: Consideration of draft Energy Technology and Efficiency Legislation

Dec. 3, 2009

[Jacques Beaudry-Losique, Deputy Assistant Secretary, Office of Energy Efficiency and Renewable Energy, before the House Science and Technology Subcommittee on Energy and Environment](#)

Subject: Marine and Hydrokinetic Energy Technology: Finding the Path to Commercialization

Comments:

[return to index](#)

Events

If you have an event scheduled 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](#) or [Carolyn Hinkley](#)

[Federal Energy Management Program \(FEMP\)](#) — holds technical workshops around the nation throughout the year, plus webinars; check this link for continuously updated information on these events.

[Industrial Technologies Program](#) — holds specialized workshops and on-line webinars year-around. Check this link for a continuously updated schedule.

[ASHRAE Winter Conference](#) — Jan. 23-27, Orlando, Fla.

The conference will cover energy conservation and alternative energy sources, sustainability, making humidity and load calculations.

[RETech 2010](#) — Feb. 3-5, Washington, D.C.

The American Council on Renewable Energy's Expo will feature wind, solar, hydro, ocean, geothermal, biomass, biofuels, waste energy and cross-cutting sessions on markets, finance and policy.

[Wind, Solar and Renewables Institute](#) — Feb. 3-4, Austin, Texas

The program will blend law, economics, technology, finance, tax and regulatory policy; aimed at industry, legal and financial advisors, and legislative and regulatory policymakers.

[Wind Power Finance and Investment Summit](#) — Feb. 10-12, San Diego, Calif.

Event will provide insights into wind power assets valuation, deal-making and financing.

[Harvesting Clean Energy Conference X](#) — Feb. 7-9, Kennewick, Wash.

A conference of agriculture and energy interests; will focus on practical steps to successful project development, from economic and feasibility assessments, to accessing technical support, and securing financing.

[NRECA TechAdvantage 2010](#) — Feb. 11-15, Atlanta, Ga.

Event is geared toward electric cooperative engineering, operations, information technology, purchasing and supply management professionals.

[American Public Power Association Legislative Rally](#) — Feb. 22-25, Washington, D.C.

Rally will offer attendees the opportunity to work together on federal legislative and regulatory issues affecting the industry. Briefings will be provided on key messages and on how to effectively influence decision-makers.

[Renewable Energy World Conference and Expo North America](#) — Feb. 23-25, Austin, Texas

Presentations will cover energy technologies, markets, business strategies and policy affecting the wind, solar, biomass, hydro, geothermal, ocean/tidal/wave, bio-power, bio-fuels and hydrogen sectors. It also includes a photovoltaics conference and expo.

[Better Buildings: Better Business Conference](#) — March 3-5, Wisconsin Dells, Wis.

Learn how to build homes that deliver the energy savings customers want, about renewable energy technologies that reduce energy costs and how energy efficiency and green building practices keep businesses competitive.

[NESEA's Building Energy 2010](#) — March 9-11, Boston, Mass.

The Northeast Sustainable Energy Association's annual conference will bring together professionals who help shape the practice of sustainability. Nearly 200 presenters will define the leading edge of smart building, energy efficiency and renewable energy.

[2010 IEEE PES Transmission and Distribution Conference](#) — April 19-22, New Orleans, La.

The conference and exposition will bring together the world's leading power system equipment manufacturers and technical professionals to display their products, explore new technology and enhance existing technologies.

[ACI Home Performance Conference 2010](#) — April 19-23, Austin, Texas

Affordable Comfort Inc.'s 2010 conference will present a variety of information and training sessions related to home energy efficiency, safety and comfort.

[National Green Builders Products Expo](#) — April 27-28, Las Vegas, Nev.

The National Green Builders Products Expo is a trade-to-trade only event.

[National Hydrogen Association Conference & Expo](#) — May 3-6, Long Beach, Calif.

The NHA Hydrogen Conference and Expo is the largest hydrogen conference in the United States and the longest running annual hydrogen conference in the world.

[Biomass 2010](#) — May 4-6, Minneapolis, Minn.

Biomass 2010 is sponsored by the DOE's Biomass Program and follows the success of Biomass 2009, which brought together more than 600 participants from government, industry, academia, and private and nonprofit organizations. It provides an opportunity for dialogue about applied R&D, feedstocks, hydrocarbon fuels, and sustainability.

[National Green Building Conference](#) — May 16-18, Raleigh, N.C.

Sponsored by the National Association of Home Builders, conference will feature a variety of speakers and companies involved in green building technologies and sustainable living.

[SOLAR 2010](#) — May 17-18, Las Vegas, Nev.

One of America's leading conferences on emerging trends, technology and opportunities that shape the new energy economy.

[13th Annual Nanotech 2010](#) — June 21-25, Anaheim, Calif.

The world's largest nanotechnology event, NSTI Nanotech 2010, delivers application-focused research from the top international academic, government and private industry labs.

[return to index](#)

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