

EERE-PMC News

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October, 2007

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The 2007 Solar Decathlon attracted thousands to explore high-tech, solar-powered homes built by collegiate teams from four countries.

PMC-News concentrates on news items only this month. In November we will resume the Features section with coverage of exciting breakthroughs in the FreedomCAR and Vehicle Technologies Program.

In this issue, be sure to investigate the funding opportunities now available in [Solar America Cities](#) and [Hydrogen Education](#).

Also, enjoy checking out the winning designs from the recent [2007 Solar Decathlon](#), including [virtual tours of the homes](#). All the collegiate teams built compelling, futuristic homes, with this year's top design coming from Germany's Technische Universität Darmstadt.

If you're thinking about a new vehicle either at home or for your fleet, the DOE and Environmental Protection Agency (EPA) [2008 Fuel Economy Guide](#) can help you sort through what vehicle might best meet your needs. Of special interest are the [mileage and fuel cost comparisons between E85 and gasoline](#) used in the same flex fuel vehicles.

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News

DOE announces solicitation for 2008 Solar America Cities

The 2008 [Solar America Cities](#) program will fund up to twelve cities that demonstrate their commitment to building a sustainable solar infrastructure. Application deadline is January 10, 2008.

DOE will provide up to \$2.4 million in financial assistance to the competitively selected, cost-shared, two-year projects. Additionally, DOE will provide up to \$3 million over two years in hands-on technical assistance to:

- Help cities integrate solar technologies into city energy planning, zoning, and facilities;
- To streamline city-level regulations and practices that affect solar adoption by residents and local businesses;
- To promote solar technology through outreach, curriculum development and incentive programs. The value of the awards, including cost share, is expected to reach \$7.8 million.



540-kilowatt PV system at Cal Expo in Sacramento, Calif. can power 180 homes while providing shaded parking for 1,000 cars.

DOE also announced the selection of two Solar America Showcases. The Department will provide technical assistance to the Northeast Denver Housing Center in overcoming barriers to installing solar photovoltaics on 80 affordable housing units. DOE will also assist Montclair State University in support of a 280-kilowatt "solar farm" at its New Jersey School of Conservation.

[Becoming a 2008 Solar America City or a Solar America Showcase:](#)

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German team wins 2007 Solar Decathlon

Germany's Technische Universität Darmstadt earned first place in DOE's [2007 Solar Decathlon](#) competition held on the National Mall in Washington, D.C. from Oct. 12-19.

The event challenged twenty university-led teams from the U.S. and as far away as Puerto Rico, Spain, Germany, and Canada to design, build and operate the most attractive and energy-efficient solar-powered home.



Germany's Technische Universität Darmstadt captured first in four out of ten categories -- Architecture, Engineering, Lighting and Energy Balance -- to win the 2007 Solar Decathlon.

Students competed in 10 areas, ranging from architecture, livability and comfort to how well the homes provided energy for space heating and cooling, hot water, lighting, and appliances. Technische Universität Darmstadt earned 888.45 points out of a possible 1,200 to win the competition, followed by University of Maryland with 872.45 points and Santa Clara University with 860.80 points.

Santa Clara's strong finish was the biggest surprise considering it was the 21st team selected and didn't join the competition until June '06 when California Polytechnic State University had to drop out.

While congratulating the teams at the [Closing Awards Ceremony](#), Energy Secretary Samuel W. Bodman announced over \$44 million to support the commercialization and promotion of advanced solar and other clean energy technologies. "I want to congratulate this year's Solar Decathlon champion Technische Universität Darmstadt and the 19 other teams for their innovative designs and application of solar technologies," Bodman said. "The Solar Decathlon is a great demonstration of the ways in which technology, science and design can be blended in the production of net-zero-energy homes."

[Download 2007 Solar Decathlon high-resolution photos:](#)

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DOE announces final rule for loan guarantee program

DOE has issued final regulations for the loan guarantee program authorized by Title XVII of the Energy Policy Act of 2005 (EPAct). The program is expected to spur further investment in advanced energy technologies.

DOE has invited 16 project sponsors who have submitted pre-applications to submit full applications for loan guarantees. These projects include advanced technologies involving biomass, fossil energy, solar, industrial energy efficiency, electricity delivery and energy reliability, hydrogen, and alternative fuel vehicles.

When making the announcement, Secretary of Energy Samuel Bodman said, "Loan guarantees aim to stimulate investment and commercialization of clean energy technologies to reduce our nation's reliance on foreign sources of energy. Finalizing this regulation for the Department's Loan Guarantee program puts Americans one step closer to being able to use new and novel sources of energy on a mass scale."

[Full details:](#)

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DOE seeks proposals for hydrogen education



Storing hydrogen, particularly crucial for fuel-cell powered vehicles, is a challenging scientific hurdle to a hydrogen-based economy.

To facilitate near-term market transformation and future commercialization of hydrogen and fuel cells, DOE seeks assistance in providing topical information to key target audiences. The Department's Hydrogen, Fuel Cells and Infrastructure Technologies (HFCIT) Education Subprogram has issued a funding opportunity announcement for:

- State and Local Government Outreach: "Hydrogen 101," state and local government partnership building
- Early Deployment and Education
- University Programs

Pending Congressional Appropriations, \$4.5 million in funding will be made available, with an expectation of up to 13 selected projects and an individual award ceiling of \$2.75 million.

[Funding information:](#)

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U. S. and China to cooperate on efficient vehicles

DOE and China's Ministry of Science and Technology (MOST) signed a five-year agreement on Sept. 20 to support the large-scale deployment of electric, hybrid-electric, fuel cell, and alternative fuel vehicles in both countries. DOE and MOST will focus on advanced batteries, alternating current motor control systems, fast charging batteries, advanced materials for vehicle systems, and vehicle charging and fueling infrastructure. The U. S. and China plan to conduct information exchanges, joint studies, technology demonstrations, and training sessions through collaborations with national laboratories, automotive industries, and other private industries involved in energy efficient transportation.

The U. S. is the largest producer and consumer of cars in the world. In 2006, China became the second largest consumer and third largest producer of vehicles in the world and could have more highway vehicles than the United States by 2030. About 9 million passenger cars are currently on the road in China, and by 2030, the country is expected to have as many as 147 million passenger cars on the road, a 16-fold increase. See the [DOE press release](#) and DOE's FreedomCAR and Vehicle Technologies program [Web Site](#).

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U.S. traffic congestion getting worse



Traffic congestion causes peak pollution and wastes almost 3 billion gallons of fuel each year in the U.S.

Seem like traffic is getting worse where you live? It probably is.

According to the [Texas Transportation Institute's Urban Mobility Report](#), 63 percent of travel during peak hours is congested.

Not only is this frustrating to those of us caught in the snarl; according to the Institute, "Traffic congestion creates a \$78 billion annual drain on the U.S. economy in the form of 4.2 billion lost hours and 2.9 billion gallons of wasted fuel—that's 105 million weeks of vacation and 58 fully-loaded supertankers."

It's also one of the leading causes of urban air pollution.

Based on 2005 data:

- 75 percent of travel in very large urban areas is congested, compared to 37 percent in 1982;
- 59 percent of travel in large urban areas is congested, compared to 21 percent in 1982;
- 42 percent of travel in medium-size urban areas is congested, compared to 18 percent in 1982;
- 28 percent of travel in small urban areas is congested, compared to 10 percent in 1982.

[Full report:](#)

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DOE to invest up to \$20 million for plug-in hybrid research

DOE announced on Sept. 25 it will invest nearly \$20 million in plug-in hybrid electric vehicle (PHEV) research. PHEVs have the potential to displace a large amount of gasoline by delivering up to 40 miles of electric range without recharging—a distance that includes most daily roundtrip commutes. Five projects will be cost-shared with the U. S. Advanced Battery Consortium (USABC), allowing up to \$38 million for battery research and development.



DOE hopes that new automotive technologies such as plug-in hybrid vehicles and improved battery technologies will increase fuel efficiency and performance.

The companies selected for the projects include EnerDel, Inc. in Indiana; A123Systems in Massachusetts; Compact Power Inc. in Michigan; 3M in Minnesota; and Johnson Controls – Saft Advanced Power Solutions in Wisconsin. The projects will focus on developing batteries and cells for 10- and 40-mile range PHEVs and building small cells to test new cathode materials.

In addition, the University of Michigan will receive nearly \$2 million to explore the future of PHEVs in a two-year study conducted with DOE's Pacific Northwest National Laboratory (PNNL), General Motors, Ford Motor Company and DTE Energy. The study will evaluate how PHEVs would share the power grid with other energy needs; monitor the American public's view of PHEVs and their driving behavior in such vehicles; assess the reduction of greenhouse gas emissions; and identify how automakers can optimize PHEV design to increase performance and reduce cost. See the [DOE press release](#), the [PNNL press Release](#), and the [Draft Plug-In Hybrid Electric Vehicle R&D Plan](#) on the FreedomCAR and Vehicle Technologies Program Web site.

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International Electric Vehicle Symposium, Dec. 2-5

Attend the International Electric Vehicle Symposium and Exposition (EVS 23) Dec. 2-5 at the Anaheim Convention Center, Anaheim, Calif. EVS 23 will attract business, policy, industry, and academic leaders from around the world who are interested in exploring and understanding the technical, policy and market challenges of electric transportation technologies, including hybrids and plug-in hybrids.

[EVS 23 information and registration:](#)

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DOE and EPA release the 2008 fuel economy guide



Consumers are gaining more choices at the pump as more flex fuel vehicles and fueling stations come online.

DOE and the U.S. Environmental Protection Agency (EPA) have released the 2008 Fuel Economy Guide, providing listings of the 2008 model year vehicles that are fuel economy leaders, both overall and by vehicle class.

Hybrid vehicles lead the way for overall fuel economy with the Toyota Prius and Honda Civic Hybrid topping the list, followed by a newcomer: the Nissan Altima Hybrid, which achieves a fuel economy of 35 miles per gallon (mpg) in the city and 33 mpg on the highway. With more hybrid models crowding the top of the list, the only non-hybrids to make the top ten fuel economy leaders are the Toyota Yaris, the Toyota Corolla, and the Honda Fit. See the [EPA press release](#) and the [Fuel Economy Web site](#).

This year's fuel economy estimates are based on new test methods EPA finalized in December 2006. The new methods are designed to better account for actual driving conditions that can lower fuel economy, such as higher speed driving, driving in cold weather and using air conditioning. The 2008 Fuel Economy Guide also includes a long list of flex-fuel vehicles that can burn either gasoline or E85, a blend of 85 percent ethanol and 15 percent gasoline. Consumption estimates are given for both fuels. See the list on the [Fuel Economy Web site](#).

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Content Last Updated: 09/26/2007