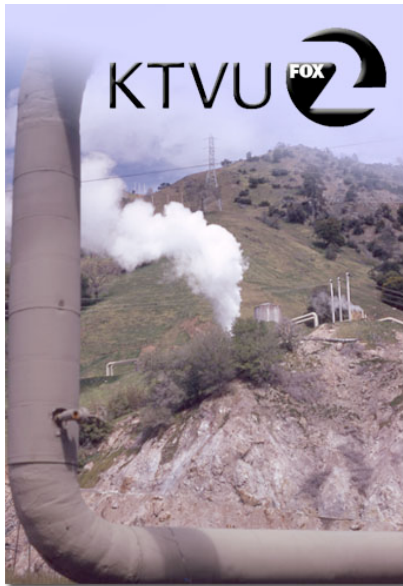


LAWRENCE LIVERMORE REPORT

A weekly collection of scientific and technological achievements from Lawrence Livermore National Laboratory: July 20-27, 2009.

KTVU features story on drop in energy use



Steam pipe to The Geysers geothermal plant in Sonoma County, Calif. Photo courtesy of Don Follows/Yellowstone National Park

KTVU reporter Tom Vacar recently tied the drop in energy use in 2008 to the declining economy and the push toward more efficient energy use.

"The drop we've seen in energy use is absolutely significant," said LLNL energy systems analyst A.J. Simon. Simon said the nation used 2 percent less energy in 2008 than in 2007 and the U.S. saw the biggest decrease in the petroleum sector because of a spike in oil prices that occurred in the summer of 2008.

In addition, there have been big investments in wind energy and existing wind turbines as well as biomass. Nuclear power plants, which emit no greenhouse gases, are running longer and more efficiently than ever before and new technologies are improving the quest for geothermal energy.

To view the story, go to
https://publicaffairs.llnl.gov/news/lab_report/movies/ktvu_energy_20jul2009.mov

LLNL's Ben Santer shares *Independent* thinking



Ben Santer

Lab atmospheric scientist Ben Santer, who authored one of the chapters of a recent report about how global climate change impacts in the United States, along with colleagues have issued warning messages for years that human activities are drastically affecting climate changes.

It's not the first time Santer has reported on these changes. Santer is an international expert who has authored dozens upon dozens of research papers linking human activities to to the dramatic changes in climate over the past century.

He speaks publicly every couple of weeks, on average, believing that he has a duty to communicate his research findings to the public directly.

The Independent recently published a profile on Santer. To read more, go to http://www.independentnews.com/uploads/pdf/1_16072009_1247927081.pdf (see page 4).

Lab's energy charts show U.S. use down in 2008



Americans used more solar, nuclear, biomass and wind energy in 2008 than they did in 2007, according to the most recent energy flow charts released by the Laboratory. The nation used less coal and petroleum during the same time frame and only slightly increased its natural gas consumption. Geothermal energy use remained the same.

The estimated U.S. energy use in 2008 equaled 99.2 quadrillion BTUs ("quads"), down from 101.5 quadrillion BTUs in 2007. (A BTU or British Thermal Unit is a unit of measurement for energy, and is equivalent to about 1.055 kilojoules.)

Energy use in the industrial and transportation sectors declined by 1.17 and 0.9 quads respectively, while commercial and residential use slightly climbed. The drop in transportation and industrial use -- which are both heavily dependent on petroleum -- can be attributed to a spike in oil prices in summer 2008.

Last year saw a significant increase in biomass with the recent push for the development of more biofuels including ethanol.

"This is a good snapshot of what's going on in the country. Some of the year-to-year changes in supply and consumption can be traced to factors such as the economy and energy policy," said A.J. Simon, an LLNL energy systems analyst who develops the energy flow charts using data provided by the Department of Energy's Energy Information Administration.

For more, go to https://publicaffairs.llnl.gov/news/news_releases/2009/NR-09-07-02.html

Former LLNL postdoc to receive presidential award



Lynford Goddard

Lynford Goddard, a former postdoc in the Lab's Engineering Directorate, has been named by President Obama as a recipient of the Presidential Early Career Awards for Scientists and Engineers (PECASE).

The prestigious award is the highest honor bestowed by the U.S. government on young professionals in the early stages of their independent research careers.

Goddard is currently assistant professor of electrical and computer engineering at the University of Illinois at Urbana-Champaign. He joined the Lab's Engineering Technologies Division (ETD) as a postdoc after receiving his Ph.D. from Stanford University in 2005, and worked at the Lab until 2007. He was nominated for his research conducted at the Lab on photonic integrated circuits (PICs) for secure communications and photonic sensors for trace gas detection.

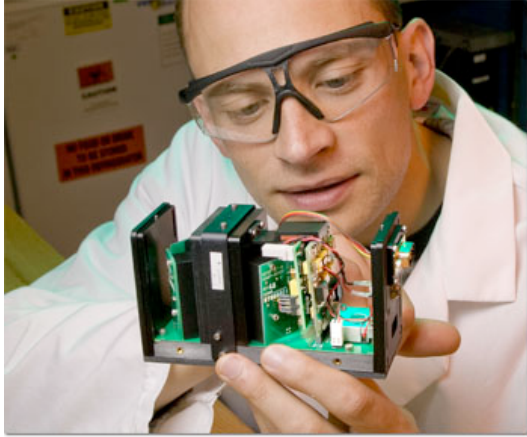
To learn more about Goddard and the PECASE award, go to <https://newsline.llnl.gov/rev02/articles/2009/jul/07.24.09-goddard.php>

Latest *Newsline* available



Newsline provides the latest Lab research and operations news. See the most recent issue at <https://newsline.llnl.gov>

Photo of the week



Journey to the bottom of the sea: Lab researcher Vincent Riot examines a compact autonomous electro-opto-mechanical device that can detect marine microbes such as archaea, bacteria and blue-green algae, which have significant effects on ocean chemistry and larger marine organisms.

LLNL is managed by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy's National Nuclear Security Administration.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

To send input to the Livermore Lab Report, send e-mail <mailto:labreport@llnl.gov>.

The Livermore Lab Report archive is available at:
https://publicaffairs.llnl.gov/news/lab_report/2009index.html