

Leading the News

New Solar Plant Uses Mass-Produced Parts, Algorithms To Reduce Costs.

The [San Diego Union-Tribune](#) (8/6, Soto) reported on the Sierra SunTower solar power plant in Lancaster, which utilizes 24,000 mirrors to focus sunlight on two towers, and has a peak production of five megawatts. "By utility standards, the Sierra SunTower is small." However, developer eSolar, "has deals in place to build larger plants, about 600 megawatts of peak power production in California and the Southwest, plus a gigawatt in India." Bill Gross, the engineer behind eSolar, said "his plant...can produce electricity cheaper" than previous solar power efforts "because it is made from mass-produced elements, quickly assembled on site and controlled by powerful computers." Although eSolar does not disclose "at what price it sells electricity" or its building costs, "when PG&E asked state regulators to approve a deal for the output of a proposed 92-megawatt eSolar plant, it did not request a rate increase."

[Scientific American](#) (8/6, Biello) reported, "The key to eSolar's design are the mirrors," or heliostats. "By precisely calibrating the mirrors with computer algorithms driving shoe box-size motors, eSolar can build its sunlight-harvesting power plants with many more small, flat mirrors, roughly one square meter in size, as opposed to the large, curved specialty mirrors employed in other designs." However, "the multiplicity of mirrors could also prove the technology's weakest link." An official with the U.S. Department of Energy's National Renewable Energy Laboratory explained, "The question is going to be the maintenance of all those heliostats. ... You have orders of magnitude more heliostats that you're going to have to maintain and that you're going to have to track."

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Leadership and Management

GE Adding Operations As Part Of Plan To Manufacture More In US.

The [New York Times](#) (8/7, B3, Greenhouse) reports, "For the first time in decades, General Electric is adding new operations at two of its manufacturing hubs, underlining what the company says is a new commitment to producing in the United States." The two are a new "350-employee plant in Schenectady, N.Y., to make high-density batteries that will turn many locomotives into diesel-electric hybrids," and adding 420 employees in Louisville, KY, "to produce hybrid electric water heaters -- heaters now made in China." The decisions to add those operations "came only after its unions agreed to keep costs down by swallowing painful concessions." CEO Jeffrey R. Immelt "said the two new operations are part of his campaign to get corporate America to strengthen and expand manufacturing in the United States." Immelt "has in recent weeks voiced deep worries about America's sagging manufacturing base," and "has chided America's policy makers and corporate leaders for thinking the country could prosper by forsaking manufacturing and focusing on financial services." Immelt said that "the United States should aim to have manufacturing jobs represent at least 20 percent of all jobs, twice today's percentage." Immelt also said that "G.E. had outsourced too many operations in some areas."

Law and Policy

European Chemical Makers To Get No Further Reprieve On Registration Deadline.

[Bloomberg News](#) (8/7, Thomas) reports, "European chemical makers including BASF SE will get no reprieve from next year's deadline to register thousands of potentially dangerous chemicals used in goods from shirts to mobile phones, according to "Geert Dancet, the European Chemical Agency's executive director." Under current rules, "chemical companies have until the end of November 2010 to file detailed dossiers on their most heavily used and dangerous products. Dancet estimates about 9,000 to 10,000 substances fall into this category." The agency estimated that "the regulations will cost producers and users as much as 5.2 billion euros over 15 years."

North Carolina Expected To Extend Tax Credit For Renewable Energy Generators.

The [AP](#) (8/7) reports, "North Carolina lawmakers are close to extending and expanding a state income tax credit for renewable energy generators people install on their property" to apply until 2016. "The credit is worth 35 percent of the cost of the unit, which would include up to \$8,400 for the cost of home installation for a geothermal heat pump. The cost of installing a heat pump in North Carolina ranges from \$17,500 to \$27,000."

San Diego Judge Rejects Challenge To Desalination Plant.

The [AP](#) (8/7) reports, "The San Diego Superior Court has upheld a state commission's approval of the largest desalination plant in the western hemisphere in Carlsbad." The judge "threw out a lawsuit filed by the Surfrider Foundation and San Diego Coastkeeper," which challenged "the State Lands Commission's approval of the company's plans to mitigate for the uptake of sea water and harm to marine life."

Research and Funding

LHC Will Begin Operations At Half Power This November.

The [New York Times](#) (8/6, Overbye) website reported, "The world's biggest physics experiment will begin doing physics this winter at half power, officials at CERN, the European Center for Nuclear Research, said Thursday." Because the Large Hadron Collider (LHC), which has been undergoing repairs, is "plagued by thousands of suspect electrical splices," officials decided to "play it safe" by running each beam at only 3.5 trillion electron volts. "The collider will run for an entire year; if all goes well, the laboratory said, the energy may be ramped up closer to five trillion electron volts by the end." According to the article, CERN will not operate the collider at full power "until after a prolonged shutdown, during which the technicians plan to fix all the faulty splices. In addition to the splice problems, many of the magnets that steer the protons around the ring have mysteriously lost their ability to withstand enough current to steer high-energy protons."

According to [New Scientist](#) (8/7, Shiga), even at half power, the energy is "much higher than physicists have ever probed in the laboratory before. The Tevatron accelerator at Fermilab in Batavia, Illinois, is the current record holder, with collisions at 2 TeV." While the LHC is not operational, "Fermilab has a window of opportunity to find the first evidence for the last unseen component of the standard model, the Higgs boson, which is thought to endow other particles with mass." Brown University's Greg "Landsberg says." However, "Fermilab could only beat the LHC to finding Higgs if the particle turns out to be relatively lightweight."

Japan To Use Unmanned Probes In Search For Minerals On Sea Floor.

[AFP](#) (8/7) reports, "Japan plans to deploy unmanned probes to scour the sea-floor around the resource-poor island nation for mineral deposits," according to "an official of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), which is set to start the project in fiscal year 2010." The hope is that the probes will "discover minerals such as manganese, cobalt, lead and zinc used in Japanese products from cars to the batteries in IT gadgets" and is seen as part of an effort to "break away from its dependence on foreign imports of raw materials and energy."

NASA Demonstrates Three Technologies For Lunar Nuclear Reactor.

[Space.com](#) (8/7, Malik) reports, "NASA has made a series of critical strides in developing new nuclear reactors the size of a trash can that could power a human outpost on the moon or Mars." According to the article, three tests have demonstrated "key technologies" for nuclear power plants in a "joint effort" by NASA and the Department of Energy. The first test "subjected a lightweight radiator panel prototype to the vacuum conditions it would experience in space" as it kept a potential reactor cool, while "a second fission power milestone included pumping molten liquid metal through a Sterling engine...to simulate how heat from a nuclear reactor could be shunted to a converter to generate power." This test was conducted at the Marshall Space Flight Center. A third test "bombarded a Stirling engine alternator with radiation, up to 20 times the cumulative dose allowed for today's fission power plants on Earth, to see how it would hold up." The next phase for the program is to combine these into a single "non-nuclear" demonstrator, currently scheduled for 2012.

Education

Study Finds Men, Women Drop Out Of Engineering At Equivalent Rates.

The [AP](#) (8/6) reported, "A new study upends a popular belief that women drop out of engineering programs at a higher rate than male students." According to Matthew Ohland, an associate professor in Purdue University's School of Engineering Education, "the research found the myths aren't true. Engineering programs retain as many students as other programs, and women are just as likely to stick around in engineering as men. The research was based largely on a database that includes information on 70,000 engineering students."

[Few Decide To Enter Engineering After Reaching College Level, Data Indicate.](#) [Ars Technica](#) (8/6, Ford) reported that although the retention rate varied "among years and institutions over the eight semesters covered," the analysis found that "women and men left engineering at the same (relative) rate, even though the percentage of women is so much lower in engineering fields." The "one finding [that] did separate engineering from other major fields of study was apparent in the percentage of graduates who had started college in their eventual major." The study found that "a full 93 percent of engineers began their academic career in engineering." The data also indicated "that next to no one decides to become [an] engineer once they reach the collegiate level, indicating that the low numbers of entry-level engineers is not one of retention, but one of recruitment."

Schlumberger Donates Energy Exploration, Production Software To University Of Wyoming.

The [AP](#) (8/6) reported, "Oilfield services company Schlumberger is donating energy exploration and production software worth \$73 million to the University of Wyoming." The university said that "the software will be used in the College of Engineering and Applied Science's EnCana Reservoir Simulation Laboratory," and that "using industry-standard geology and geophysics software will broaden the skill set of geoscience and petroleum engineering graduates."

Workforce

Weekly Jobless Claims Down.

[NBC Nightly News](#) (8/6, story 5, 0:35, Williams) reported on the "job situation in this country as we await" Friday's "report on unemployment for the month of July." NBC added that "these numbers are important, for last week, fewer people filed new claims for unemployment benefits down 38,000 to just over half a million. But the number of Americans continuing on the unemployment rolls was up by 69,000, to 6.3 million. That does not count the 140,000 who exhausted their regular benefits and were rolled over into the government's extended benefits program."

[ABC World News](#) (8/6, story 8, 0:30, Gibson) also said that "first time jobless claims dropped by 38,000 last week," but "the toll of the recession can be seen in a new report showing a record 34.4 million Americans, more than 10% of the country, are now receiving food stamps." The [Wall Street Journal](#) (8/7, A9, Lynch) says that the jobless claims data provide "another glimmer of hope that the economy may be on the road to recovery." And "the four-week average of new claims, which aims to smooth volatility in the data, fell by 4,750 to 555,250, the lowest level since Jan. 24." The [New York Times](#) (AP (8/7, B8) says that "many economists expect initial claims to continue to decline this year." The [Washington Post](#) (8/7, A14, Irwin, Shin), [Financial Times](#) (8/7, Baribeau) and [Reuters](#) (8/6) also report the story.

IT Professionals Said To Be Suffering Less From Slow Economy.

[Forbes](#) (8/7, Adams) reports, "As the worldwide economic crisis grinds on, companies continue to hire information technology professionals." Yazad Dalal, vice president of North American sales at Vault.com, "predicts that the number of IT jobs will increase by 50% over the next six years." The "biggest cluster of IT jobs is in New York City," and "another hot town for IT jobs" is Washington, D.C. and "Texas is an IT hot spot thanks to the plethora of banks." IT is said to be "suffering a hit from the downturn" as "less than half of computer science grads -- 48.7% -- landed jobs in 2009," though knowledge of Microsoft's .NET Framework is said to offer "zero unemployment."

Lack Of Experienced Developers, Installers Could Hinder China's Solar Plans.

[Dow Jones](#) (8/7, Shieber) reports, "China is on its way to becoming a solar power -- with financial incentives coming from every corner of the country -- but a lack of experienced project developers and equipment installers may cast a shadow over the growing industry." China is "a powerhouse when it comes to solar manufacturing, with several large solar cell and module manufacturers located in the country." However, "unlike the U.S. and Europe, China hasn't had much experience developing and installing solar projects." One analyst said that, "in the mid term, installers could be the key factor preventing China from expanding its global market share in annual solar installations at such a rapid rate as Spain did from 2005 to 2008." However, he added, "I don't think lack of installers will prevent China from reaching my 1500 (megawatt) 2011 target and then some."

Ethics

Vieques Residents Upset By Navy Cleanup Of Former Bombing Range.

The [New York Times](#) (8/7, A10, Navarro) reports that since "the United States Navy ceased military training operations" on Vieques, Puerto Rico "real estate prices and tourism have boomed," but "residents have squared off against the American military" as the Navy is "removing hazardous unexploded munitions from its old training ground by detonating them in the open air" and is planning to "burn through nearly 100 acres of dense tropical vegetation to locate and explode highly sensitive cluster bombs." Residents' "concerns about the cleanup are heightened by suspicions of a link between the contaminants" in air and soil from earlier bombing "and what Puerto Rico's health department found were disproportionately high rates of illnesses." Another problem is that "once the cleanup is over, Vieques's residents want to be able to use the land for housing and ecotourism, too," while the federal government intends it to be a wildlife refuge and others fear the risk of accidental explosion if not every unexploded piece of ordnance is located.

Professional Liability

New York City Sues Exxon Mobil For Contamination Of Wells With MTBE.

The [New York Times](#) (8/7, A14, Navarro) reports on New York City's suit against Exxon Mobil in which it alleges that "Exxon Mobil knew" that using M.T.B.E. as an additive in gasoline "would contaminate groundwater." In the case, being heard by U.S. District Judge Shira A. Scheindlin, the city argues that "the contamination of groundwater wells in Jamaica, Queens," was due in part to a decision by Exxon Mobil to use M.T.B.E. and that its own researchers warned of the risks of water contamination. The city further argues that it would cost \$250 million to build a facility to treat the well water. Exxon Mobil argues use of M.T.B.E. was due to a limited supply of ethanol and "serious concerns" that ethanol "would diminish vehicles' performance." The company also says "that the city does not intend to build the treatment plant and has other projects under way to provide other backup sources of water."

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