

October 2009



## Earthrise Observatory

*Commentary on energy & environmental technology industry developments*

### ENERGY & ENVIRONMENT NEWS

#### ***Algal biofuels announcements***

"... Exxon Mobil Corp. in July announced it was investing \$600 million in a partnership with Synthetic Genomics Inc. of La Jolla, Calif., to develop commercially viable biofuels from algae.

That followed an announcement by Dow Chemical Co. in June that it was teaming up with Algenol Biofuels Inc. of Bonita Springs, Fla., to develop a \$50 million, algae-to-fuel pilot-scale plant.

Also in June, Solazyme Inc., of South San Francisco, Calif., said it raised \$57 million in a Series C funding round aimed at bringing its algae-based biotechnology to commercialization."

Source: *Wall Street Journal*, Sept. 13, 2009

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#### ***Algal biofuel outlook***

Most of the major oil companies, as well as Dow Chemical, have now announced partnerships with algae growers or researchers. The oil and chemical companies know the refining business well, making biofuel processing a logical new area for their research. That algae does not compete with food demand is a strong attraction, as is the nature of the end product – biodiesel -- which, unlike ethanol, can be stored and transported with the same methods and infrastructure as traditional petro-fuels.

Commercial development of algal biofuel is expected to take many years.

#### ***Geothermal setbacks:***

LANDAU IN DER PFALZ, Germany — "Government officials here are reviewing the safety of a geothermal energy project that scientists say set off an earthquake in mid-August, shaking buildings and frightening many residents."

Source: *New York Times*, Sept. 10, 2009

Switzerland experienced earthquakes in 2006 and 2007 related to geothermal drilling. In the US, geothermal explorer AltaRock halted drilling in CA after encountering rock strata that broke the drill bits.

#### ***Geothermal perspective:***

New geothermal exploration is focusing on low temperature geothermal in dry rock formations that may require injections of pressurized fluid through fractured rock.

Unlike traditional geothermal, the resource is not limited to a few sites (mainly around the Pacific Rim) where heat from geothermal liquids is relatively easily extracted through porous rock.

The new low temperature geothermal could be a large new energy resource but the engineering clearly presents challenges.

**ENERGY & ENVIRONMENT NEWS*****The downside of generous solar subsidies:***

HAMBURG (Reuters) – “SolarWorld, Germany’s third-biggest solar company by revenues, has called for a faster reduction of German solar subsidies after announcing plans to massively expand its solar module production.

“The speed of the drop (in subsidies) should be increased,” Chief Executive Frank Asbeck told a news conference in Hamburg during the European Photovoltaic Solar Energy Conference on Monday.”

***LED lighting progress:***

“The U.S. Department of Energy (DOE) announced today that the Bright Tomorrow Lighting Prize (L Prize) competition has received its first entrant, a product from Philips Electronics. Philips has developed, manufactured and will bring to market an LED replacement for the common 60-Watt incandescent light bulb.”

Source: [www.newscenter.philips.com](http://www.newscenter.philips.com), Sept. 24, 2009

“Lemnis Lighting Inc. plans to announce this week the full-scale release in the U.S. market of a light-emitting diode bulb, its entry in the race to replace 60-watt incandescent lights....

“Lemnis Lighting says its Pharox light looks like a traditional incandescent light, with a metal piece wrapped around the midsection of the light that acts as a heat-sink, keeping the LEDs cool and ensuring a long life of 35,000 hours, or about 20 years of normal household use. The bulbs are pricey though, costing about \$40 each.”

Source: *Wall Street Journal*, Sept. 30, 2009

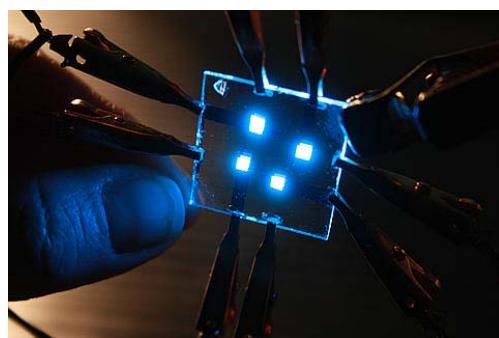
**EARTHRISE OBSERVATION*****Solar subsidy outlook:***

German solar companies including QCells and Solar World are complaining about the generous subsidies which have largely benefited Chinese solar manufacturers with their lower costs of production. Costs of a typical solar module declined 20% to 30% in the last two years amid global oversupply and less robust demand.

Earthrise thinks some reduction in subsidies in Germany and elsewhere is likely but that solar demand will resume rapid growth when economic activity accelerates.

***Shedding light on LEDs:***

Consumers have resisted replacing incandescents with compact fluorescents (CFL’s), which provide cooler light and have disposal problems since they contain small amounts of mercury. Electronic lighting has more attractive light quality, no toxic elements, and is even more efficient than CFL’s. While numerous companies are vying to replace 60W incandescents, we believe that at current price points, downlighting may be the most attractive entry point for LEDs .



**ENERGY & ENVIRONMENT NEWS**

**Natural gas industry wakes up:**

"The U.S. natural-gas industry, disappointed by the climate-change bill passed by the House of Representatives in June, is counting on new Democratic allies and a stepped-up lobbying campaign to push measures through the Senate that will favor gas over coal and oil....the gas-industry's goals in the Senate include incentives that will encourage power companies to switch to natural gas from coal and lead truck fleets to convert to natural gas from diesel....

"But the gas industry must overcome major hurdles. Other energy producers are also mobilizing. A major theme of the coal industry has been the relatively stable price of coal compared with volatile natural-gas prices.

Source: Wall St. Journal, August 21, 2009

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**Natural gas supply/demand:**

Natural gas faces a large oversupply and new discoveries which drove prices down to \$2.40 per MCF in early Sept. Since then the price of gas has rallied to close to \$5.00 per MCF on expectations of winter drawdowns. Large new discoveries have been made in Texas, Louisiana, Pennsylvania and other locations in the past two years. In addition, recognition is growing that shale gas is a huge new domestic resource for the U. S. given improved drilling techniques.

Earthrise expects growing demand for natural gas which is a relatively clean-burning fossil fuel abundant in the U.S.



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**Earthrise news**

Ann Partlow and Jim LoGerfo are participating in two upcoming investment conferences of interest to Earthrise:

**National Renewable Energy Lab 22<sup>nd</sup> Annual Industry Growth Forum**  
Denver, November 2-5.

*Ann Partlow served on the selection committee for presenting companies and will be a judge for the companies presenting.*

**Investors Circle Fall Conference**  
Washington, DC, November 15-17.

*Earthrise Capital is a sponsor of the conference and Ann Partlow served on the energy/environmental selection committee.*

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**Earthrise news (continued)**

**New York Hedge Fund Roundtable**

New York, NY, October 20

*Ann Partlow is a panelist at the New York Hedge Fund Roundtable "Investing in Green Energy" forum. The forum will be held at the Harvard Club from 8:30 am to 11 am. Ann will discuss the sectors in new energy and environmental technologies that are most attractive to Earthrise Capital now.*

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*Earthrise Capital Fund is a venture capital fund which invests in resource efficient technologies, including energy efficiency, clean energy, power conversion, energy storage, alternative fuels, and green chemistry.*

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