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US DoE Takes a Shine on Solar Energy enabled by Rare Metals

In our ongoing efforts to provide you with broader communications and industry information, we are pleased to issue another Industry Bulletin discussing recent trends in the markets of various rare and strategic metals. In this edition, we report on the US Department of Energy's (DoE) major financial backing of Solyndra Inc, a solar panel producer based in California.

On March 20th, Solyndra announced that it is the first company to receive an offer for a DoE loan guarantee under Title XVII of the Energy Policy Act of 2005. Solyndra will use the proceeds of the \$535 million loan to expand its already 300,000 square foot solar panel manufacturing capacity in California. The funds will effectively cover 75 percent of the project expansion, which is expected to have an annual manufacturing capacity of 500 megawatts per year. Over the life of the project, Solyndra is expected to effectively produce panels capable of generating up to 15 gigawatts of electricity at a saving of some 300 million metric tons of carbon dioxide emissions. Furthermore, Solyndra estimates that the complex will engage some 3,000 construction jobs, create 1,000 operating jobs, and hundreds of additional installation jobs across the US.

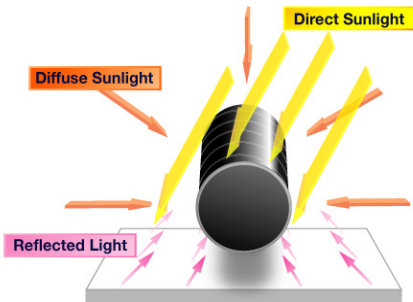
Friday's grant also makes good on new Secretary of Energy, Steven Chu's pledge to speed up processing of renewable energy loan guarantee applications.



Solyndra designs, manufactures and sells innovative cylindrical photovoltaic systems photovoltaic (PV) systems comprised of panels and mounting hardware for large, low-slope commercial rooftops. Using proprietary copper-indium-gallium-selenide (CIGS) modules and thin-film technology, Solyndra systems are designed to provide the lowest installation cost and highest annual electricity production per system.

While traditional CIGS cells have been known to degrade because of their vulnerability to moisture, Solyndra's design employs hermetic, glass-metal seals at the ends of each module, thereby eliminating moisture as an issue. The system is sold with a 25-year power warranty.

Solyndra panels employ unique cylindrical modules, which capture sunlight across a 360-degree photovoltaic surface capable of converting direct, diffuse and reflected sunlight into electricity, as illustrated below. As such, Solyndra claims its system can cover more roof and capture more light, resulting in more annual solar electricity generation.



In the U.S. alone, there is approximately 30 billion square feet of commercial rooftop surface available for PV systems, and there are those who project that it can be utilized to support in excess of 150 gigawatts of solar-powered electricity. Globally, this number could be two to three times higher. Solyndra's panels have also been certified for international use.

Solyndra CEO and founder, Dr. Chris Gronet commented in his announcement that "The DOE Loan Guarantee Program funding will enable Solyndra to achieve the economies of scale needed to deliver solar electricity at prices that are competitive with utility rates. This expansion is really about creating new jobs while meaningfully impacting global warming."

Until recently, standard solar panels were assembled from arrays of silicon cells. Silicon is, however, very expensive and relatively heavy compared to more modern thin-film photovoltaic cells, which are built on layers of material on plastic, metal or glass. Although an individual CIGS cell produces less electricity than a silicon cell would, they are cheaper to make and lighter weight.

<http://greenwombat.blogs.fortune.cnn.com/>

<http://redgreenandblue.org/2009/03/22/doe-offers-first-renewable-energy-loan-in-four-years/>

Avalon can benefit from the rapid development of CIGS type solar panel technology through exploitation of the gallium mineralization present on its Thor Lake project and the indium-gallium mineralization on its East Kemptville project. In the Basal Zone at Thor Lake, the gallium occurs both in feldspars and in micas, which will be waste products of REE production. On a whole rock basis, the Basal Zone deposit contains an average of approximately 100ppm Ga. The micas can likely be recovered by flotation to make a gallium concentrate and Avalon is planning to investigate this possibility as part of its on-going metallurgical research work on the Basal Zone ore. Gallium and indium occur in association with zinc at the Company's East Kemptville Tin-rare metals project in southwestern Nova Scotia. The tenor and recoverability of the gallium mineralization in this resource has also yet to be quantified.

This story has already been posted at www.raremetalblog.com. If you have any comments or questions on this article or the rare earths generally, please do not hesitate to post them on the blog or feel free to contact the company directly at office@avalonraremetals.com

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