

**Advanced Energy Job Stimulus Program**

A key component of Ohio's program to create new jobs and encourage economic development, the \$150 million Advanced Energy Job Stimulus Program is designed to support new technology projects on a fast track toward commercialization. As part of the \$1.57 billion job stimulus package signed into law by Governor Ted Strickland in June 2008, the goal of the program is to employ Ohio workers in the advanced energy jobs of the future. The \$150 million advanced energy funding (over three years) seeks to increase the development, production and use of advanced energy technologies in the state, and is divided into two parts:

- \$66 million for clean coal technology projects administered through OAQDA's Ohio Coal Development Office (OCDO) (reviewed by staff, outside reviewers and the Technical Advisory Committee and approved by OAQDA); and
- \$84 million for non-coal-related projects in three \$28 million annual appropriations administered by OAQDA (reviewed by staff and outside reviewers, the Development Finance Advisory Council, approved by OAQDA and brought before Controlling Board for final approval).

**Project Name:****Buckeye Silicon: BESI Toledo Project****Project Location:**

Toledo, Ohio (Lucas County)

**Applicant Information:**

Sphere Renewable Energy Corporation (SREC) is an advanced chemical materials technology firm that was founded in 2001. In October 2008, SREC expanded its operation by incorporating its wholly owned subsidiary, Buckeye Silicon Inc. (BeSi), in the state of Ohio and opened its office at the University of Toledo Alternative Energy Incubator. BeSi is the sole, exclusive licensee in North America for SREC's proprietary, patent-pending Reductive Combustion Process (RCP) manufacturing system that will be employed in this project. SREC is the parent organization for both BeSi and Sphere Renewable Energy Asia Pacific Corporation. The company receives the majority of its operating revenue from the licensing of the RCP system and various consulting fees.

**Project Description:**

Buckeye Silicon, Inc. is planning a two-phase implementation to establish manufacturing operations at the University of Toledo Alternative Energy Incubator. This project funding is for Phase 1 of the implementation plan and involves installing and operating one RCP highly pure, polycrystalline silicon, or c-polysilicon, manufacturing system to supply the solar cell production and wafer production industries. Polysilicon is the required material to produce 90 percent of the world's solar cells and modules. The BeSi system will produce 50 tons of polysilicon per year. Wafer and solar cell production is at the heart of the solar panel manufacturing process. At a dramatically lower cost, the RCP system's approach utilizes a light industrial, modular process that requires much less space and energy than a typical polycrystalline-silicon,



Solar-grade polysilicon and solar cell

petrochemical-type production facility. The polysilicon manufactured by Buckeye Silicon is predominantly targeted to photovoltaic producers in North America and Europe. As the required, upstream component of solar value chain, BeSi's polysilicon manufacturing business will help anchor northwest Ohio's photovoltaic ecosystem expansion into the larger, c-polysilicon based solar market.

**Funding Request:** \$18.5 million

**Approved Funding:** \$1,428,000 loan

**Total Projected Investment:** \$3,428,000

**Use of Stimulus Program Funds:** Installation of a polycrystalline silicon manufacturing system

**Jobs Created:** Phase 1 – 9 full-time jobs created; Phase 2 – about 150

**Type of Jobs Created:** Engineering/scientist, manufacturing and business professionals

**Qualifying Technology Category:** Solar, energy-efficiency

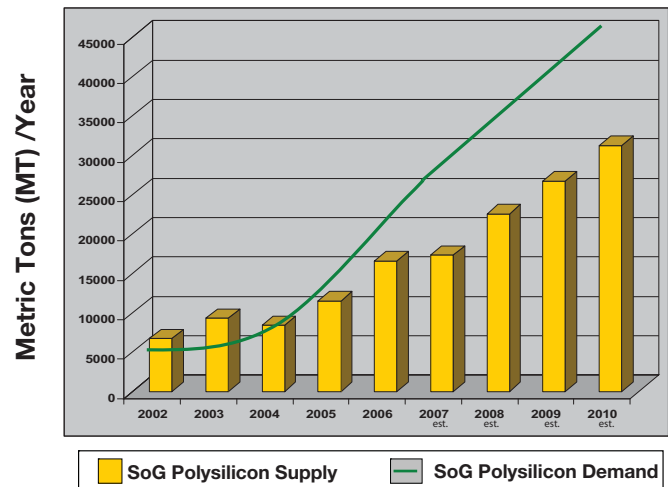
**Product to be Manufactured:** Highly pure, polycrystalline silicon

**Industry Sector Customers:** Photovoltaic producers

**Industry Sector Suppliers:** Metals, precision machining, phosphate mine waste and manufacturing



Buckeye Silicon's Reductive Combustion Process (RCP) manufacturing system



\* Source – Photon Int'l 2009

Solar-grade polysilicon supply-demand



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