

Back-up Documentation for Business Meeting October 05, 2011

EISG Program Solicitation 10-02

TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of nine grants under CEC Contract 500-98-014, totaling \$714,120, from the Public Interest Energy Research (PIER) programs Energy Innovations Small Grants Solicitation number 10-02. These grants were competitively selected and are capped at \$95,000. The awards include innovative energy research projects in renewable technologies, building energy efficiency improvements, grid integration of renewables, and computer modeling of innovative energy technology solutions. (PIER electricity funding.) Contact: Michael Gravely. (5 minutes)

The specific proposed award is:

1. New Mexico State University, Stable Fully Distributed Multiagent Based Load Management Algorithm for Microgrids, \$49,991. This innovative technology supports California's Smart Grid of 2020 by determining the feasibility of designing and implementing a distributed load management algorithm to autonomously balance a microgrid's distributed resources and loads. It will provide greater stability and reliability than centralized schemes by eliminating single-point-failures and reduce distributed processing time.
2. Altaeros Energies Inc., Passively Stable Shroud for Airborn Wind Turbine, \$93,160. This innovative technology addresses California's thirty three percent RPS goal by determining the feasibility of using a helium-filled shroud, with passive buoyant lift, directional stability and efficient, cost-effective power generation, allowing simple and safe extraction of high altitude wind energy in California.
3. University of California, Berkeley, Smart Wind Turbines: A New System for Improved Energy Yield, \$49,560. The goal of this project is to prove the feasibility of using a new predictive technology for increased energy production from wind turbines through the use of numerical models with (Light Detection and Ranging) LIDAR technology.
4. nLiten Energy Corporation, High-Efficiency Thin-film Solar Cells on Nanostructured Substrates, \$95,000. The goal of this project is to prove the feasibility of growing thin-film three-dimensional solar cells using self-assembled nanowires onto a low cost substrate while increasing the efficiency by 20% and lowering production cost.

5. Duke University, Hybrid Solar System for Stationary Electric Power Generation, \$95,000. The goal of this project is increase the generation of clean energy in California by supplying a fuel cell with hydrogen generated from solar energy.

6. CHA Corporation, Microwave System for Hydrogen Production from Dairy Digester Biogas, \$95,000. The goal of this project is to demonstrate microwave-based hydrogen production from biogas for reciprocating engines and fuel cells.

7. University of California, San Diego, Tar Removal by Catalyzing gasification Bed Materials for Power Generation \$95,000. The goal of this project is to reduce the cost of biomass power generation by at least \$0.033/kWh through the removal of tar (condensed hydrocarbon) from the producer gas in the biomass gassifier.

8. University of California, Irvine, Monitoring and Feedback system for Improved Building End-Use Efficiency \$91,410. The goal of this project is to prove the feasibility of using a novel monitoring and feedback system to reduce end-use energy consumption in residential buildings in California. An estimated savings of 60W/month/home is proposed.

9. California State University, Northridge, Energy Harvesting from Ocean Currents Using Piezoelectric Elements \$49,999. The goal of this project is to determine the feasibility of using a new large-scale piezoelectric energy harvesting system to economically and efficiently generate power from ocean currents near the coast of California.