California Energy Commission

AGENDA INPUT FORM (GENERAL)

CEC 36 (Rev. 3-91)

Please print or type

DUE DATES: A listing of Commission Business Meetings and Contracts Office due dates are available from the Secretariat.

CONTACT PERSON: Raquel E. Kravitz	**Date due to Contracts Office: N/A**
PHONE NUMBER: 916-327 1450	**Date due to Secretariat:** February 22,2013
MS: 43	**Proposed Business Meeting Date:** March 20, 2013

AGENDA ITEM SUBJECT AND DESCRIPTION – This is the description that will appear on the agenda)

TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of the twenty highest ranking grant applications totaling $1,815,274 from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grant Solicitation 12-01. There are three projects totaling $276,420 under Transportation Electricity, and two projects totaling $188,177 under Transportation Natural Gas, six projects under Natural Gas totaling $540,928 and nine projects under electricity totaling $809,749.(PIER electricity and natural gas funding) Contact: Raquel E. Kravitz (10 minutes)

a) Transportation Electric (12-01TE)

i. Andromeda Power LLC, Costa Mesa, CA, *INCEPTIVE - Adaptive Electric Vehicle Fast Charging Station,* $95,000. This project is to determine the feasibility of using a fast charging station with alternative power for electric vehicles and demand response to avoid a peak demand fee.

ii. University of California Davis, Davis, CA, *New Portable Electricity Storage Units Using Nanostructured Supercapacitors,* $86,420. This project is to determine the feasibility of developing a processing method using vacuum filtration to significantly increase its energy storage capacity.

☐ **CONSENT** ☒ **DISCUSSION** Time needed for presentation: Minutes

☐ **CHECK HERE IF YOU NEED A COPY OF YOUR SIGNED RESOLUTION/ORDER**

SPECIFY AUDIO-VISUAL EQUIPMENT NEEDED FOR PRESENTATION	**DEPUTY DIVISION DIRECTOR SIGNATURE** _____ Laurie ten Hope Date:

iii. Tour Engine, Inc., San Diego, CA, *Tour Engine: High Efficiency Split-Cycle Engine for BEVx Applications, $95,000.* This project is to determine the feasibility of a new crossover valve that will enable an increase in efficiency by 20%.

b) Transportation Natural Gas (12-01TNG)

iv. SolidMasters, Fullerton, CA, *Crashworthy Subframe CNG Freight and Passenger Locomotive Fuel Tank Enclosure,* $93,218. This project is to determine the feasibility of using under frame mounted CNG tanks in safety enclosures that meet current Federal Railroad Administrative side impact and derailment crash safety guidelines.

v. C/e Solutions, Inc., West Sacramento, CA, *Biodiesel Production Via Poly Functional Reactive Distillation, $*94,959.This project is to determine the feasibility of simplifying biodiesel production into a single, cost-effective unit.

c) Natural Gas (12-01G)

vi. University of California, Berkeley, Berkeley, CA, *Achieving High Efficiency Through Solid State Microwave Assisted Spark Plugs*, $95,000. This project is to determine the feasibility of using microwave enhanced spark ignition to allow leaner combustion that will result in increased efficiency and reduce harmful emissions

vii. Rhotech Solar, South San Francisco, CA, *Low Cost Glazed Polymer Solar Water Heater,* $66,300. This project is to determine the feasibility of adding a glazing layer to improve thermal performance for heating domestic water by at least 70%.

viii. San Diego State University, San Diego, CA, *Electroporation of Algal Biomass to Enhance Methane Gas Production*, $95,000. This project is to determine the feasibility of using electroporation as a pretreatment method for algal biomass used as a feedstock for anaerobic digesters to increase methane gas yield.

ix. University of California San Diego, San Diego, CA, *Improved Energy Efficiency of Natural Gas/Producer Gas Fuel Mixtures,* $95,000. This project is to determine the feasibility of predicting the amount of methane to help improve energy efficiency in power production.

x. Humboldt State University, Humboldt, CA, *Waste Heat Reformation of Renewable Feedstocks to Offset Natural Gas*, $ 94,993. This project is to determine the feasibility of using renewable biomass to convert waste heat energy into chemical energy.

xi. Olsen, Rolf, Individual, San Diego, CA, *Two-Track Heat Storage: Very Hot Solar Thermal Storage*, $94,635. This project is to determine the feasibility of adding new fluid flow devices into packed bed heat storage units to make heat storage units that can integrate with utility scale solar thermal power plants at low cost and across a wide range of temperatures, including those too high for state-of-the-art molten salt heat storage.

d) Electrical (12-01E)

xii. Negawatt Consulting, Inc., San Diego, CA, *HVAC Management System with Dynamic Energy and Demand Optimization,* $95,000*.* This project is to determine the feasibility of a cost-effective control system and strategy for buildings with multiple package unit HVAC systems that reduce either peak demand and energy consumption or operating cost by at least 10%.

xiii. Torrey Hills Technologies LLC, San Diego, CA, *Enhanced Light Extraction of LEDs Through Ultra-Fast Laser Nano-Fabrication*, $94,954. This project is to increase the amount of light given off from LEDs and reduce the manufacturing costs by applying more effective material to LED.

xiv. Nano Hydrophobics, San Francisco, CA, *Cooling Tower Fouling Prevention through Surface Modification of Fill Media*, $95,000. This project is to determine the feasibility of improving evaporative cooling tower efficiency by up to 30% through the development of nano-scale polymeric coatings.

xv. University of California, San Diego, San Diego CA, *Static/Dynamic Compilation for QoS and Energy Efficiency in Datacenters*, $95,000. This project is to design and develop an effective software system to improve data center energy efficiency by improving server utilization.

xvi. Bioenno Tech, LLC, Santa Ana, CA*, High Performance Lithium-Ion and SIC-Based Powerpack for Renewable Energy*, $95,000. This project is to determine the feasibility of designing a powerpack made up of a Lithium-ion battery with battery management, and a silicon carbide based inverter to improve energy efficiency and reliability for residential and commercial renewable energy applications.

xvii. Sun Synchrony, Alameda, CA, *Tracking Optimization of Self-Orienting High-Concentrating Photovoltaic Elements*, $95,000. This project is to determine the feasibility of building a low-cost solar tracker with higher tracking precision.

xviii. InterPhase Solar, Moorepark, CA, *Crystallization of Electrodepositied CIS Thin Films on Flexible Foil*, $95,000. This project is to develop a pulsed laser annealing tool to crystallize thin films of Cadmium Indium Selenide (CIS) solar cells to increase the efficiency and lower the cost.

xix. Butler Sun Solutions, Solana Beach, CA, *Optimum Design of SOE for Concentrating Photovoltaics*, $94,900. This project is to determine the feasibility of a new Secondary Optical Element (SOE) design for use in concentrating photovoltaic systems that will increase the daily-generated energy by more than 5 % and lower the levelized cost of Energy by more than 4 %.

xx. EZ Green, Foster City, CA, *Low-Cost Energy Management System for Small Commercial Buildings*, $49,895. This project is to determine the feasibility of a low-cost energy management system that provide sufficient energy savings to result in a payback period of less than 1 year for small commercial buildings.