

STATE OF CALIFORNIA
California Energy Commission

Minutes of the October 6, 2010, Energy Commission Business Meeting.

The meeting was called to order at 10:10 by Chairman Karen Douglas. The Pledge of Allegiance was lead by Chairman Douglas.

Present:

Karen Douglas, Chairman
Jeffrey D. Byron, Commissioner

Robert B. Weisenmiller, Commissioner
Anthony Eggert, Commissioner

1. CONSENT CALENDAR. (Items on the Consent Calendar will be taken up and voted on as a group. A commissioner may request that an item be moved and discussed later in the meeting.)
 - a. NASA AMES RESEARCH CENTER. Possible approval of Amendment 1 to Agreement PIR-08-047 with NASA Ames Research Center, modifying the terms and conditions to allow for advance payment, and reclassify classifications in the budget and statement of work for consistency with the National Laboratories contract terms and conditions. Contact: David Effross.
 - b. UNIVERSITY OF CALIFORNIA, CALIFORNIA WIND ENERGY COLLABORATIVE. Possible approval of Amendment 1 to Contract 400-09-015 with the University of California, California Wind Energy Collaborative for a six-month no-cost time extension to June 30, 2011. Contact: James Lee.
 - c. ICF INCORPORATED, LLC. Possible approval of Amendment 1 to Contract 600-09-002 with ICF Incorporated, LLC, to reallocate labor hours in the Scope of Work tasks and personnel, and correct the loaded labor rates currently shown in the contract. There is no change to the scope of work, contract term, or budget. Contact: Charles Smith.
 - d. GOVERNOR'S OFFICE OF PLANNING AND RESEARCH. Possible approval of Contract 150-10-001 for \$45,000 with the Governor's office of Planning and Research to provide writing and research services for planning and policy discussion documents regarding the state's future energy-related issues. (ERPA funding.) Contact: Mark Hutchison.

Commissioner Byron moved and Commissioner Eggert seconded approval of the Consent Calendar. The vote was unanimous. (4-0)

2. FIRST CARBON SOLUTIONS. Possible approval of Amendment 1, adding \$401,804 to Contract 400-09-020 with First Carbon Solutions to provide rebate processing and customer services to the Energy Commission for the California Cash for Appliance Program. This program is to provide rebates to eligible California consumers for the purchase of qualified, energy efficient home appliances. (ARRA funding.) Contact: Lorraine White. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Amendment 1 to Contract 400-09-020. The vote was unanimous. (4-0)

3. CITY OF MORRO BAY. Possible approval of Agreement 004-10-ECE-ARRA for a loan of \$80,000 to the City of Morro Bay to upgrade interior and exterior lights, replace HVAC systems, install programmable thermostats and replace reach-in refrigerators. These projects are expected to save the city \$16,886 annually in reduced energy costs with a simple payback of less than five years, based on the loan amount. (ECAA-ARRA funding.) Contact: Joji Castillo. (5 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Agreement 004-10-ECE-ARRA. The vote was unanimous. (4-0)

4. COUNTY OF DEL NORTE. Possible approval of Agreement 001-10-ECE-ARRA for a loan of \$216,462 to the County of Del Norte for mechanical systems upgrades at the county sheriff's office and jail facility in Crescent City. The projects are estimated to reduce annual energy expenditures by \$20,721. (ECAA-ARRA funding.) Contact: Amir Ehyai. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement 001-10-ECE-ARRA. The vote was unanimous. (4-0)

5. CITY OF SUISUN CITY. Possible approval of Agreement 005-10-ECA for a loan of \$578,898 to the City of Suisun City for energy efficiency upgrades at five city-owned facilities, and the installation of a 75 kilowatt solar photovoltaic system. (ECAA funding.) (5 minutes) Contact: Amir Ehyai.

Commissioner Byron moved and Commissioner Eggert seconded approval of Agreement 005-10-ECA. The vote was unanimous. (4-0)

6. CITY OF LANCASTER. Possible approval of Agreement 006-10-ECD for a loan of \$1,469,146 to the City of Lancaster for energy efficiency improvements. The city will upgrade athletic field lighting, upgrade HVAC, install weather stations to reduce water pump energy use, and install solar hot water. This project is estimated to save \$137,969 annually in reduced energy costs, with a simple payback of 10.65 years. (Bond funding.) Contact: Anne Fisher. (5 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Agreement 006-10-ECD. The vote was unanimous. (4-0)

7. RTC FUELS, LLC. Possible approval of Agreement ARV-10-008, for a grant of \$1,790,000 to RTC Fuels, LLC to install two new in-line biodiesel blending facilities at two existing petroleum distribution facilities in California. (ARFVTF funding.) Contact: Gary Yowell. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-008. The vote was unanimous. (4-0)

8. GREEN VEHICLES INC. Possible approval of Agreement ARV-10-007 for a grant of \$2,052,560 to Green Vehicles, Inc. to demonstrate improved manufacturing methods and processes in a pilot scale production line for a three-wheeled battery electric vehicle. (ARFVTF funding.) Contact: Miles Roberts. (5 minutes)

Commissioner Eggert moved and Commissioner Weisenmiller seconded approval of Agreement ARV-10-007. The vote was unanimous. (4-0)

9. QUANTUM FUEL SYSTEMS TECHNOLOGIES WORLDWIDE, INC. Possible approval of Agreement ARV-10-009, for a grant of \$1,371,679 to Quantum Fuel Systems Technologies Worldwide, Inc., to develop a manufacturing facility that will assemble and test electric drive components for use in plug-in hybrid electric, hybrid electric, and electric vehicles. (ARFVTF funding.) Contact: Miles Roberts. (5 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Agreement ARV-10-009. The vote was unanimous. (4-0)

10. ZERO MOTORCYCLES, INC. Possible approval of Agreement ARV-10-013, for a grant of \$900,272 to Zero Motorcycles, Inc. to develop an advanced electric motorcycle powertrain, establish a pilot scale production line and produce 30 electric motorcycle drivetrains. (ARFVTF funding.) Contact: Miles Roberts. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-013. The vote was unanimous. (4-0)

11. QUALLION LLC. Possible approval of Agreement ARV-10-010, for a grant of \$1,026,072 to Quallion. LLC, to develop a pilot automated manufacturing line capable of producing 10,000 kWh Lithium ion modules that can be used as the building block for many types of battery systems in electric vehicle applications. (ARFVTF funding.) Contact: Jonah Margolis. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-010. The vote was unanimous. (4-0)

12. ELECTRIC VEHICLES INTERNATIONAL. Possible approval of Agreement ARV-10-011 for a grant of \$3,881,244 to Electric Vehicles International, to develop and test an automated electric vehicle production process for the manufacture and assembly of battery packs, battery boxes, motors, motor controllers, drive trains, and vehicle management units. (ARFVTF funding.) Contact: Jonah Margolis. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-011. The vote was unanimous. (4-0)

13. COULOMB TECHNOLOGIES. Possible approval of Agreement ARV-10-012 for a grant of \$1,102,985 to Coulomb Technologies to develop and manufacture the hardware and software for the Charge Point Communication Processor, which will integrate the electric vehicle charging stations into smart grid technologies, and allow for demand response and peak load management capabilities. (ARFVTF funding.) Contact: Jonah Margolis. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-012. The vote was unanimous. (4-0)

14. EV CONNECT, LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY. Possible approval of agreement ARV-10-006 for a grant of \$415,185 to EV Connect, Los Angeles County Metropolitan Transportation Authority to install,

upgrade, and expand public plug-in chargers at five transit facilities in the Los Angeles County Metropolitan Transit Authority service area. (ARFVTF funding.) Contact: Jonah Margolis. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-006. The vote was unanimous. (4-0)

15. WEST YOST ASSOCIATES. Possible approval of Agreement ARV-10-014 for a grant of \$50,709 to West Yost Associates to conduct an economic feasibility study of proposed algae production at existing ponds and wetlands at the Stockton Regional Wastewater Control Facility. The study would assess the feasibility of growing algal species to use in biodiesel production. (ARFVTF funding.) Contact: Joanne Vinton. (5 minutes)

Commissioner Eggert moved and Commissioner Byron seconded approval of Agreement ARV-10-014. The vote was unanimous. (4-0)

16. UNIVERSITY OF CALIFORNIA, SAN DIEGO. Possible approval of Contract 500-10-025 for \$1.9 million with the University of California, San Diego, to assess the benefits, address barriers, and develop tools to design and implement natural ventilation in commercial buildings. (PIER electricity funding.) Contact: Golam Kibrya. (10 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Contract 500-10-025. The vote was unanimous. (4-0)

17. BMP ECOSCIENCES. Possible approval of Agreement PIR-10-047 for \$753,100 grant to BMP Ecosciences to provide information on the population viability and restoration potential of rare plants affected by solar energy development in California's Mojave and Sonoran deserts. (PIER electricity funding.) Contact: Misa Milliron. (5 minutes)

Commissioner Eggert moved and Commissioner Weisenmiller seconded approval of Agreement PIR-10-047. The vote was unanimous. (4-0)

18. REDLANDS INSTITUTE. Possible approval of Agreement PIR-10-048 for a grant of \$350,000 to Redlands Institute, University of Redlands, to enhance a web-based decision support tool for assessing the effects of solar energy development on the desert tortoise. (PIER electricity funding.) Contact: Misa Milliron. (5 minutes)

Commissioner Byron moved and Commissioner Weisenmiller seconded approval of Agreement PIR-10-048. The vote was unanimous. (4-0)

19. FISCALINI FARMS, LP. Possible approval of Agreement PIR-10-046 for \$399,625 grant to Fiscalini Farms to demonstrate combined anaerobic digestion and power generation technologies that can operate effectively, efficiently and economically using multiple feed stocks while meeting environmental regulations. (PIER electricity funding.) Contact: Michael Lozano. (5 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Agreement PIR-10-046. The vote was unanimous. (4-0)

20. ARIZONA GEOLOGICAL SURVEY. Possible approval of Contract 500-10-024 for \$232,250 with the Arizona Geological Survey to provide a comprehensive evaluation of the potential of potential subsurface carbon dioxide (CO₂) storage sites in Arizona as part of the WESTCARB Phase III regional geologic characterization and CO₂ storage assessment activities. (PIER federal funding.) Contact: Elizabeth Keller. (5 minutes)

Commissioner Byron moved and Commissioner Eggert seconded approval of Contract 500-10-024. The vote was unanimous. (4-0)

21. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of two grant applications, totaling \$189,700, from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grants Solicitation. (PIER natural gas funding.) Contact: Diana Mircheva. (10 minutes)
- a. David Onstenk, Napa, *Multi-Fuel Super-Compound Engine Efficiency Analysis*, \$95,000. A project to determine the feasibility of flex-fuel supercharged compound cycle engines for use in light-truck vehicles. Software models will be developed based on performance testing on a stock engine and modified to a compound configuration.
- b. Multispark, LLC, San Diego, *Application of Novelty Spark Plug in Compressed Natural Gas Engines*, \$94,700. A project to determine the feasibility of modifying a patented spark plug for application in a compressed natural gas engine. Heat range value and tip geometry will be adjusted to optimize the performance of the spark plug.

Commissioner Byron moved and Commissioner Eggert seconded approval of the two grant applications. The vote was unanimous. (4-0)

22. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of seven grant applications, totaling \$664,381, from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grant's Solicitation 09-02. (PIER electricity funding.) Contact: Patrick McCarthy. (10 minutes)
- a. University of California Los Angeles, *Innovative Blade Design for Next Generation Wind Turbines*, \$95,000. A project to determine the feasibility of a novel blade design to improve the structural and aerodynamic performance of large land-based and offshore wind turbines.
- b. MetSpar, Inc., Solvang, *Meteorological Buoy Technology for Offshore Wind Resource Assessment*, \$95,000. A project to develop and validate technology for acquiring accurate wind speed data from a floating spar buoy in real-time, at reach heights comparable to those of potential offshore wind turbines.
- c. Texas A&M University, College Station, Texas, *A Low-cost Inverter with Battery Interface for Photovoltaic Utility System*, \$95,000. A project to determine the

feasibility of designing and fabricating a novel soft switched high frequency AC link converter in a battery-photovoltaic-grid interface.

- d. Solar Red, Sunnyvale, *Plug and Play Photovoltaic System*, \$95,000. A project to develop an all-parallel residential and small commercial flat-roof photovoltaic system. The proposed design and installation method provides seamless integration into roofing structures using existing construction tools and processes and would eliminate the need for specialty installations.
- e. University of California, Davis, *Microbial Fuel Cells to Generate Electricity from High Solids Food-Processing Wastes*, \$94,381. A project to determine the feasibility of producing electricity from stored or fresh food processing residues using a Microbial Fuel Cell.
- f. Craig Venter Institute, San Diego, *Microbial Fuel Cells for Sustainable Wastewater Treatment*, \$95,000. A project to determine the feasibility of a microbial fuel cell system that has variable orientations. It will target decreases in primary sludge volumes, secondary biomass production, and waste gasses during times of lower electrical demand, or efficient electricity generation during peak load.
- g. Roshan Energy, Fremont, *Solar Electric Power from Heat Pulses Applied to Silicon*, \$95,000. A project to determine the feasibility of a novel semiconductor concept to generate renewable electricity using concentrated solar heat.

Commissioner Byron moved and Commissioner Eggert seconded approval of the seven grant applications. The vote was unanimous. (4-0)

23. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of one grant application, totaling \$94,967, from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grant's Solicitation 09-02G. (PIER natural gas funding.) Contact: Patrick McCarthy. (5 minutes)

- a. Rochester Institute of Technology, Rochester, New York, *A Natural Gas Fueled HCCI Engine for Hybrid Vehicles*, \$94,967. A project to determine the feasibility of using a natural gas fueled homogeneous charge compression ignition (HCCI) internal combustion engine for charging a plug-in hybrid electric vehicle battery pack. This project will model, design, and build a working prototype that aims to address HCCI engine control issues.

Commissioner Byron moved and Commissioner Weisenmiller seconded approval of the grant application. The vote was unanimous. (4-0)

24. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of five grant applications, totaling \$473,570, from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grant's Solicitation 09-03. (PIER electricity funding.) Contact: Patrick McCarthy. (10 minutes)

- a. Ambient Micro, Half Moon Bay, *Battery Prognostics for Small Scale Distributed Resource Applications*, \$94,984. A project to determine the feasibility of employing battery information as a component in a prognostic health management system that provides an accurate read-out of stored energy to enable the use of

small-scale renewable resources as reliable, dispatchable assets for grid managers.

- b. San Diego State University, *An Innovative Design for Cost and Energy Efficient Solar Cells*, \$95,000. A project to determine the feasibility of thin film metal-oxide sensitized solar cells as an alternative to conventional solar cells. This research is based on the principles of dye sensitized solar cells and seeks to address its three limitations: cost, efficiency, and stability.
- c. PLANT Solar, Stanford, *Solution Processed Solar Cells from Abundant, Non-Toxic Materials*, \$95,000. A project to determine the feasibility of using an alternative to silicon as the semiconductor for thin film solar cells. The proposed alternative material is an attractive, potentially disruptive solar technology that could replace Silicon and competing thin film materials because it has an ideal band-gap and high absorption coefficient.
- d. 09-03-72 University of California Riverside, *Wireless Sensors for Real-time Monitoring Of Induction Motors*, \$93,586. A project to determine the feasibility of a stand-alone, multi-sensor, wireless system for continuous real-time performance and condition monitoring of induction motors. The system will detect faults in their incipient stages and provide a low cost alternative to expensive condition monitoring technology available today.
- e. 09-03-17, SeaBotix Inc., San Diego, *Photo Thermal Voltaic Skylight*, \$95,000. A project to apply established sealing methods (the "lip" seal) to restrict end flow around vanes of a rotary motor. By limiting end losses, the anticipated increase in efficiency will establish the functionality of the rotary vane motor for residential scale solar thermal applications.

Commissioner Byron moved and Commissioner Eggert seconded approval of the five grant applications. The vote was unanimous. (4-0)

25. **Minutes:** September 29, 2010, Business Meeting Minutes.

Commissioner Weisenmiller moved and Commissioner Eggert seconded approval of the minutes. The vote was unanimous. (4-0)

26. **Commission Committee Presentations and Discussion:**

Commissioner Weisenmiller noted the passing of Victor Calvo and commented on his service as a member of the California Public Utilities Commission and the California Assembly. The Commissioner also reported on recent ACORE and CPUC events.

Commissioner Eggert reported his participation in panel discussions on renewable energy hosted by the San Jose Business Journal and a West Coast Green event focused on electric vehicles.

27. **Chief Counsel's Report:** Chief Counsel Michael Levy requested a closed session pursuant to Government Code Section 11126(e) to discuss *Western Riverside Council of Governments v. Department of General Services* (Riverside County Superior Court RIC10005849), ad to determine whether facts and circumstances exist that warrant the initiation of litigation; or that constitute a significant exposure to litigation against the Commission.

28. **Executive Director's Report:** None.
29. **Public Adviser's Report:** None.
30. **Public Comment:** None.
31. **Internal Organization and Policy.** None.

Appearances:

Mr. Jay Friedland, Zero Motorcycles, Inc.

Mr. Jeff Pelz, West Yost Associates

There being no further business, the meeting was adjourned to closed session.

Respectfully submitted,

HARRIET KALLEMEYN
Secretary to the Commission