

State of California
California Energy Commission
Minutes of the December 11, 2013, Energy Commission Business Meeting.

The meeting was called to order by Chair Robert B. Weisenmiller. The Pledge of Allegiance was led by Chair Weisenmiller, after which he called for a moment of silence in memory of the late Nelson Mandela.

Present:

Robert B. Weisenmiller, Chair

Karen Douglas, Commissioner

J. Andrew McAllister, Commissioner

David Hochschild, Commissioner

Janea A. Scott, Commisisoner

With respect to Agenda Items 1b and 15, Commissioner McAllister disclosed that his wife is a University of California employee and that her department is not involved in any of the agreements with the University that are being considered today. In addition, Commissioner Douglas disclosed that in January she will be teaching at UC Davis Law School, which is likewise not involved in any of the agreements on the agenda today.

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. DELTA DIABLO SANITATION DISTRICT. Possible approval of Amendment 2 to Contract 500-10-034 with Delta Diablo Sanitation District to reallocate PIER funds originally intended for technology design and equipment procurement of Task 2 to other technical tasks in the scope of work. This amendment will not extend the term nor change the scope of work and will not increase the total PIER funding. (PIER electricity funding) Contact: Rizaldo Aldas.
 - b. THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, CIEE. Possible approval of Amendment 1 to Contract 500-10-048 with the Regents of the University of California, on behalf of the California Institute for Energy and the Environment to: cancel the project identified as Task 3 – Use of Solar Thermal for Efficient Combined Heat and Power, redistribute the remaining funds among four existing projects, and extend the contract end date by three months to March 31, 2015. The redistributed funds will augment the scope of four existing projects to advance solar hot water generation, and to improve the efficiency of heating, ventilation, air conditioning, and lighting systems. (PIER electricity and natural gas funding) Contact: Jeff Doll.
 - c. CITY OF HAYWARD. Possible approval of Amendment 3 to Agreement 004-11-ECF with the City of Hayward to extend the end term date of the agreement by three months to March 31, 2014. This amendment will not alter the total project cost, loan amount, energy cost savings, or payback of the Energy Conservation Assistance Account funded loan. This loan funds the replacement of 7,600 city-owned streetlights. (ECAA funding) Contact: Amir Ehyai.

Commissioner Douglas moved and Commissioner McAllister seconded approval of the Consent Calendar. The vote was unanimous. (5-0)

2. ENERGY COMMISSION COMMITTEE APPOINTMENTS. Possible approval of appointments to the Energy Commission's Standing Committees and Siting Case Committees. Contact: Kevin Barker. (5 minutes)

No action was taken on Item 2.

3. BOTTLE ROCK GEOTHERMAL POWER PLANT PROJECT (79-AFC-4C). Consideration and possible adoption of the Committee's Proposed Decision on the amendment petition filed on March 8, 2013, by Bottle Rock Power, LLC, concerning the Bottle Rock Geothermal Power Plant. The petition requests modification of the requirement to maintain a \$5 million closure bond and a \$10 million environmental impairment insurance policy and several other modifications to its Conditions of Certification. The project is a geothermal electricity generating facility with a permitted generating capacity of 55-megawatts located in Cobb, California, in the Geysers Known Geothermal Resource Area of Lake County. Contact: Paul Kramer. (30 minutes)

Following deliberation in closed session, Commissioner Douglas moved and Commissioner Scott seconded approval of Item 3. The vote was unanimous. (5-0)

4. CALIFORNIA ENERGY DEMAND 2014-2024 FINAL FORECAST. Possible adoption of the staff final report *California Energy Demand 2014-2024 Final Forecast*. The adopted electricity and end-user natural gas consumption and peak demand baseline forecasts and additional achievable energy efficiency scenarios support the Commission's *Integrated Energy Policy Report* process, the California Public Utility Commission's Long-term Procurement Process, controlled grid studies conducted by the California Independent System Operator, as well as other energy planning studies and assessments. The report presents forecasts for California as a whole, for each major utility planning area, and for distinct climate zones within certain planning areas. Contact: Chris Kavalec. (30 minutes)

Chair Weisenmiller moved and Commissioner McAllister seconded adoption of the report, with the exception of those portions of the forecast that are affected by the data provided for the SCE Transmission Access Charge area, which will be considered at the Business Meeting on December 19, 2013. The vote was unanimous. (5-0)

5. REVISED EFFECTIVE DATE OF 2013 BUILDING ENERGY EFFICIENCY STANDARDS. The 2013 Building Energy Efficiency Standards (2013 Standards), Cal. Code Regs., tit. 24, pt. 6, pt. 1, ch. 10 [assoc. admin. regs.], and affected provisions in pt. 11 [Cal. Green Building Standards Code], were previously noticed to become effective on January 1, 2014. Unanticipated delays have occurred in completing the 2013 Public Domain Residential and Nonresidential California Building Energy Code Compliance (CBECC) software for demonstrating performance compliance with the 2013 Standards. (See related items on this agenda.) To address this, the Energy Commission will consider changing the effective date of the 2013 Standards to July 1, 2014. No changes to the terms of the regulations are being considered (other than nonsubstantive corrections necessary to reflect the new effective dates). Contact: Christine Collopy. (20 minutes)

Commissioner Douglas moved and Commissioner Scott seconded approval of the Resolution for Item 5. The vote was unanimous (5-0).

6. ENERGYPRO VERSION 6.0 RESIDENTIAL COMPLIANCE SOFTWARE. Possible approval of EnergyPro 6.0 as an alternative calculation method for demonstrating performance compliance with the residential provisions of the 2013 Building Energy

Efficiency Standards (Public Resources Code Section 25402.1(b); Cal. Code Regs., tit. 24, pt. 1, ch. 10, Sections 10-109, 10-110). Contact: Martha Brook. (10 minutes)

Commissioner McAllister moved and Commissioner Douglas seconded approval of Item 6. The vote was unanimous. (5-0)

7. 2013 PUBLIC DOMAIN RESIDENTIAL COMPLIANCE SOFTWARE. Possible approval of the 2013 public domain California Building Energy Code Compliance (CBECC-Res) residential software Version 1d used to demonstrate performance compliance with the 2013 Building Energy Efficiency Standards, delegation of authority to the Executive Director to approve future updates to the software, and decertification of CBECC-Res version 1c. Among other improvements, Version 1d incorporates programming for residential additions and alterations. The software is available at http://www.energy.ca.gov/title24/2013standards/2013_computer_prog_list.html. (Public Resources Code Section 25402.1(a).) Contact: Martha Brook. (10 minutes)

Commissioner McAllister moved and Commissioner Hochschild seconded approval of the Resolution for Item 7 as modified by staff in today's presentation. The vote was unanimous. (5-0)

8. 2013 PUBLIC DOMAIN NONRESIDENTIAL COMPLIANCE SOFTWARE. Possible approval of the 2013 Public Domain California Building Energy Code Compliance (CBECC-Com) nonresidential software Version 1d used to demonstrate performance compliance with the nonresidential provisions of the 2013 Building Energy Efficiency Standards, delegating authority to the Executive Director to approve future updates to the software, and decertifying CBECC-Com Version 1c. The software is available at http://www.energy.ca.gov/title24/2013standards/2013_computer_prog_list.html. (Public Resources Code Section 25402.1(a).) Contact: Martha Brook. (10 minutes)

Commissioner McAllister moved and Commissioner Douglas seconded approval of the Resolution for Item 8 as modified by staff in today's presentation. The vote was unanimous. (5-0)

9. CITY OF LANCASTER ENERGY ORDINANCE. Possible approval of the City of Lancaster's building energy standards to require greater energy efficiency than the 2008 and 2013 Building Energy Efficiency Standards. (Public Resources Code Section 25402.1(h)(2); Cal. Code Regs., tit. 24, pt. 1, ch. 10, Section 10-106.) Contact: Joe Loyer. (5 minutes)

Commissioner Hochschild moved and Commissioner Douglas seconded approval of the Resolution for Item 9. The vote was unanimous. (5-0)

10. NEW SOLAR HOMES PARTNERSHIP GUIDEBOOK. Possible adoption of proposed revisions to the New Solar Homes Partnership Guidebook (NSHP Guidebook). The NSHP Guidebook describes the requirements for participating in the NSHP and receiving incentives for installing eligible solar energy systems on new residential construction located in specified investor-owned utility territories. Proposed changes to the NSHP Guidebook revise the program requirements and processes, and incorporate information from the Overall Program Guidebook that relates specifically to the NSHP. Contact: Le-Quyen Nguyen. (10 minutes)

Commissioner McAllister moved and Commissioner Scott seconded approval of the proposed revisions. The vote was unanimous. (5-0)

11. TREXA, CORPORATION. Possible approval of Agreement ARV-13-005 with Trexa, Corporation for a \$2,447,653 grant to build out and validate a pilot production manufacturing/assembly line for the Trexa Avatronex A1, which will provide a cost-

competitive all-electric vehicle platform which will be integrated into a variety of non-road and fleet applications. Trexa will refine and optimize the planned manufacturing line process, design and engineer custom equipment for the line, acquire commercial off-the-shelf and custom equipment, install and test the equipment, and manufacture test vehicles for assembly line de-bugging and validation. In addition the developed facility will be available for use on a contract basis by third parties (potentially start-ups and early stage companies) to accelerate their engineering development activities. (Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding)
Contact: Michelle Tessier. (5 minutes)

Commissioner Douglas moved and Commissioner Scott seconded approval of Item 11. The vote was unanimous (5-0).

12. CALIFORNIA EMPLOYMENT DEVELOPMENT DEPARTMENT. Possible approval of Amendment 2 to Interagency Agreement 600-08-008 with the California Employment Development Department (EDD) to augment funding by \$950,000, extend the term to end December 31, 2017, and revise the Scope of Work to include a new Career Ladders Pilot Project to promote career interest in alternative fuels and vehicle technology for pre-college students. The funding will provide additional workforce training under the ARFVTP, fund the second round of Regional Industries Clusters of Opportunities and Labor Market Information Division Programs, and fund implementation of the new Career Ladders Pilot Project. (ARFVTP funding) Contact: David Nichols. (5 minutes)

Commissioner Scott moved and Commissioner Hochschild seconded approval of Item 12. The vote was unanimous. (5-0)

13. SACRAMENTO MUNICIPAL UTILITY DISTRICT. Possible approval of Amendment 1 to Grant PIR-11-005 with Sacramento Municipal Utility District to allow the implementation of Phase II of the scope of work, which involves a solar energy project. The project team has completed the preparatory requirements needed to move forward with Phase II, including environmental review. This agreement will fund the demonstration and deployment of renewable energy technologies that will generate a total capacity of up to 5.2 MW from solar and biomass resources. This agreement provides cost-share for the recipient's American Recovery and Reinvestment Act (ARRA) of 2009 award, which exceeded \$5 million. (PIER electricity funding)
Contact: Rizaldo Aldas. (5 minutes)

Commissioner Hochschild moved and Commissioner McAllister seconded approval of Item 13. The vote was unanimous. (5-0)

14. ALTERNATIVE ENERGY SYSTEMS CONSULTING, INC. Possible approval of Contract 500-13-003 with Alternative Energy Systems Consulting, Inc. for \$450,000 to provide technical assistance for Senate Bill 1 eligible solar equipment lists. The Energy Commission maintains lists of solar photovoltaic modules, inverters, system performance meters, and performance monitoring and reporting services used to determine what equipment is eligible to receive incentives through the NSHP and solar energy incentive programs overseen by the California Public Utilities Commission and Publicly Owned Utilities. This three-year contract was awarded through a competitive solicitation. Reimbursement funds may be used in lieu of RRTF funds in subsequent years. (RRTF funding) Contact: James Folkman. (5 minutes)

Commissioner McAllister moved and Commissioner Hochschild seconded approval of Item 14. The vote was unanimous. (5-0)

15. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of the 12 highest ranking grant applications totaling \$1,135,862 from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grant Solicitation 13-02. There are two projects totaling \$190,000 under Transportation Electricity, one project for \$94,407 under Transportation Natural Gas, three projects totaling \$285,000 under Natural Gas, and six projects totaling \$566,455 under Electricity. These grants were competitively selected and are capped at \$95,000. (PIER electricity and natural gas funding) Contact: Raquel E. Kravitz. (10 minutes)
- a. Transportation Electric (13-02TE)
 - i) DCBpower, Palo Alto, CA, *Dual Chemistry Battery System*. Karim, Nad, \$95,000. This project will research using two existing, diverse battery chemistries: a high cycle battery such as Lithium Titanate and a high energy, low cost, low cycle battery such as Lithium Cobalt Oxide. If successful, the proposed technology has the potential to increase the range of electric vehicles by 50 percent to approach that of conventional internal combustion vehicles.
 - ii) University of California Riverside, Riverside, CA, *PEV-Based Active and Reactive Power Compensation in Distribution Networks*. Mohsenian-Rad, Hamid, \$95,000. This project will determine the optimal PEV-based active and reactive power compensation for mitigating issues on power distribution networks with high penetration of distributed renewable generation. If successful, this technology has the potential to reduce the cost and improve power distribution networks.
 - b. Transportation Natural Gas (13-02TNG)
 - i) University of California, Riverside, Riverside, CA, *Development of Fuel Sensing Technology for Variable-Blend Natural Gas Vehicles*. Park, Chan Seung, \$94,407. This project will develop a new on-line fuel property (Wobbe index) sensor technology, which will be used in a Variable-blend Natural Gas Vehicle. The Wobbe index is a measure of the interchangeability of gases when they are used as a fuel. If successful, the proposed technology has the potential to help attain the clean air standards in California by increasing the use of natural gas vehicles through the development of new sources of renewable natural gas.
 - c. Natural Gas (13-02G)
 - i) California State Polytechnic University Pomona, Pomona, CA, *Identification and Characterization of Effective Catalysts for Distributed Hydrogen Production*. Ravi, Vilupanur, \$95,000. This project will develop an efficient method of hydrogen production by identifying the most effective catalyst materials to lower capital and operating costs. If successful, this technology has the potential to be used for fuel cells in domestic residential level electricity production from natural gas.
 - ii) Eneron Inc., Palo Alto, CA, *Gas Range*. Huang, Lee, \$95,000. This project will research a novel gas stove top burner to achieve a 30 percent improvement over a conventional gas stove top burner. If successful, the proposed technology has the potential to save California 29 million therms of energy with the full deployment of the new gas range stove top.

- iii) Summers Consulting LLC, Auburn, CA, *Optimizing Biogas Production from Organics through RNA/DNA Molecular Testing*. Summers, Matthew, \$95,000. The goal of this project is to optimize biogas production through DNA/RNA analysis of four organic feedstocks: fats, oils and grease; toilet and septic tank waste; winery waste; and food waste. If successful, the proposed technology has the potential to save up to 100 MW of additional power and 3.5 MBtu of recovered heat from combined heat and power units fueled by biogas from the anaerobic digestion of these wastes that can total up to 26 billion gallons of wastewater and 600,000 tons of high moisture wastes.
- d. Electric (13-02E)
- i) Codd, Daniel, San Diego, CA, *Concentrated Solar Power on Demand (CSPonD) Proof of Concept*. Codd, Daniel, \$95,000. This project will design, test and validate a new class of high temperature volumetric molten salt receivers with integral thermal storage. The system enables efficient solar collection at high temperatures with semi-transparent molten salts as the receiving medium and extensive use of low-cost refractory materials for the receiver. If successful, this technology will address the need for more reliable renewable energy technologies to increase the generation and efficiency of clean energy in California.
 - ii) GreenTech Motors Corporation, Westlake Village, CA, *Manufacturing and Efficiency Advancements in Electric Motor Winding Design*. Pretlac, Ron, \$93,600. This research is intended to help advance the state-of-the-art for production of high efficiency electric motors with reduced motor losses while at the same time reducing manufacturing costs. If successful, the proposed building end-use technology has the potential to significantly increase the generation of clean energy in California as a result of more efficient motors and the potential to reduce electricity costs along with significantly decreasing harmful emission production in California.
 - iii) AGGIOS, Inc., Irvine, CA, *Unified Power Control for Set Top Devices*. Zivojnovic, Vojin, \$93,000. This project will demonstrate how power savings can be achieved in a set top box using mobile power management technology. The goal is to increase energy efficiency and monitoring of plug load devices beyond the current and planned EnergyStar and Department of Energy standards. If successful, the technology will reduce wasted energy and has the potential to significantly reduce the electricity in power consumption through power control and management technology.
 - iv) Thermaphase Energy, Inc., El Cerrito, CA, *Liquid Metal Thermal Energy Storage, Carrington, Russell*. \$95,000. The purpose of this project is to determine the feasibility of the use of TCON, a class of ceramic-metallic composite materials as a phase change energy storage material for liquid metal thermal energy storage systems. If successful, this proposed renewable energy technology has the potential to significantly increase the storage of clean energy for more concentrated solar power and to significantly reduce the cost of electricity for California ratepayers.
 - v) Shape Change Technologies, Thousand Oaks, CA, *Development of Shape Memory Effect Foam Actuator Heat Engines*. Jardine, Peter, \$94,855. This project will develop a one kilowatt heat engine using foam actuators, which

Shape Change Technologies recently developed. These open celled foam actuators are unique; when heated or cooled using low-grade hot water/steam, the foam struts rapidly heat and cool, while the macroscopic foam shape provides large output forces. If successful, this proposed energy technology has the potential to significantly increase the generation of clean energy and to significantly reduce the cost of clean energy for California ratepayers.

- vi) Clean Energy Research Associates, Redlands, CA, *Concentrated Photo Voltaic Receiver for Solar Parabolic Troughs*. Gereau, Servando, \$95,000. This project will build, test and verify a new design for a concentrating receiver using parabolic troughs. This project will address the need for more innovative renewable energy technologies to increase the generation of clean, low cost, efficient energy in California. If successful, the proposed renewable energy technology has the potential to significantly reduce the cost of electricity and to significantly increase the generation of clean energy for California ratepayers.

Commissioner Douglas moved and Commissioner Scott seconded approval of Item 15. The vote was unanimous. (5-0)

16. **Minutes:** Possible approval of the November 14, 2013, Business Meeting Minutes.

Commissioner Douglas moved and Commissioner Scott seconded approval of the Minutes. The vote was unanimous. (5-0)

17. Lead Commissioner or Presiding Member Reports.

Commissioner Scott reported on a pre-event for the Los Angeles Auto Show where she was a panelist, and Lauren Greenwood, a new Executive Fellow in her office.

Commissioner McAllister discussed the upcoming consideration of the Prop 39 guidelines at the December 19 Business Meeting.

Chair Weisenmiller read a statement of his commitment to diversity in the proposed EPIC Investment Plan activities that was made on his behalf at the recent en banc meeting at the California Public Utilities Commission. In addition, he reported on his attendance at the recent meetings of the California Foundation on Energy and Environment (CFEE) and the Little Hoover Commission.

Commissioner Douglas also reported attending the CFEE meeting.

Commissioner Hochschild reported on plans for an upcoming event honoring Nelson Mandela planned for next week, and his recent site visits.

18. **Chief Counsel's Report:** None.

19. **Executive Director's Report.** Executive Director Rob Oglesby gave the report.

20. **Public Adviser's Report.** Public Adviser Alana Mathews gave the report.

21. **Public Comment:**

Mr. Pat Splitt, AppTech

Appearances:

Mr. Manual Alvarez, Southern California Edison

Mr. Karim Amrane, AHRI

Mr. Gary Andis, TABB

Mr. Mike Bachand, CalCERTS

Mr. Troy Bevilacqua, SunPower, New Homes

Mr. Dan Chia, Sun City
Mr. Paul Doppel, Mitsubishi/AHRI
Mr. Erik Emblem, Joint Committee on Energy and Environmental Policy
Mr. Tom Enslow, National Energy Management Institute Committee
Mr. Mike Francl, Sempra
Mr. Mike Gabel, Gabel Associates
Mr. Tom Garcia, CALBO
Mr. Kevin P. Gilleran, Gilleran Energy Management
Mr. John Hess
Mr. Ryohei Hinokuma, Daikin
Mr. Mike Hodgson, California Building Industry Association
Mr. Russ King, California Association of Building Energy Consultants
Mr. Martin Kleinbard
Dr. Catherine Kniazewycz, University of California, Office of the President
Mr. Brian Ludicke, City of Lancaster
Mr. Tom Meyer, NEBB
Mr. Don Mooney, representing Mr. David Coleman and Friends of Cobb Mountain
Mr. George Nesbitt, HERS Rater
Mr. Matthew Plummer, Pacific Gas & Electric Co.
Mr. Seth Seaberg, Trexa Corp.
Mr. Pat Splitt, AppTech, Inc.
Ms. Maria Stamas, National Resources Defense Council
Mr. Fred Stefans, Lennar/Sunstreet
Mr. Gene Thomas, Ecology Action
Mr. Ted. M. Tiffany
Ms. Meg Waltner, National Resources Defense Council
Mr. James Zhan, City of San Francisco
Mr. Steve Zuretti, Solar Industries, Inc.

There being no further business, the meeting was adjourned.

Respectfully submitted,

HARRIET KALLEMEYN
Secretary to the Commission