



December 11, 2013

1516 Ninth Street
Hearing Room A – First Floor
Sacramento, California 95814

10 a.m.

(Wheelchair Accessible)

THE COMMISSION WILL CONSIDER THE FOLLOWING ITEMS:

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.
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)
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)
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)
 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)
 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)
 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)
 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)

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)
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)
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)
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)
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)

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)
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.
16. Minutes: Possible approval of the November 14, 2013, Business Meeting Minutes.
17. **Lead Commissioner or Presiding Member Reports.** A Lead Commissioner on a policy matter may report to the Commission on the matter and discussion may follow. A Presiding Member on a delegated committee may report to the Commission on the matter and discussion may follow.
18. **Chief Counsel's Report:** The Energy Commission may adjourn to closed session with its legal counsel [Government Code Section 11126(e)] to discuss any of the following matters to which the Energy Commission is a party:
- a. *In the Matter of U.S. Department of Energy (High Level Waste Repository)*, (Atomic Safety Licensing Board, CAB-04, 63-001-HLW).
 - b. *Asphalt Roofing Manufacturers Association v. California Energy Commission* (Sacramento County Superior Court, 34-2012-80001195).
 - c. California Independent System Operator Corporation (Federal Energy Regulatory Commission, Docket No. ER12-2634).
 - d. *PECG v. Brown*, Alameda County Superior Court Case Nos: RG10494800 et al. (Furlough Litigation).
 - e. *American Public Gas Association v. U.S. Department of Energy*, Case No. 11-1485 (9th Cir. Dec. 23, 2011).

The Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and

circumstances exist that warrant the initiation of litigation; or that constitute a significant exposure to litigation against the Commission.

19. **Executive Director's Report.**
20. **Public Adviser's Report.**
21. **Public Comment:** People may speak up to three minutes on any matter concerning the Energy Commission, with the exception of items appearing elsewhere on this agenda or items related to pending adjudicative (certification or enforcement) proceedings.

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Adjournment of Hearings and Meetings: Depending upon time available and the orderly management of proceedings, the Commission may order adjournment (recess or postponement) of any noticed hearing or meeting, to be continued to the next day, another specific date or time, or to the next business meeting, as appropriate. Any such adjournment will be noticed at the time the order of adjournment is made (Government Code §§11128.5, 11129).