California Energy Commission

COMMISSION REPORT

ELECTRIC PROGRAM INVESTMENT CHARGE 2014 ANNUAL REPORT

CALIFORNIA
ENERGY COMMISSION

Edmund G. Brown Jr., Governor

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ENERGY COMMISSION

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ABSTRACT

The California Energy Commission is the state's primary energy policy and planning agency. As part of its overall work, the Energy Commission administers several clean energy research and development programs that drive innovation and advance science and technology in the fields of energy efficiency, renewable energy and advanced clean generation, energy-related environmental protection, energy transmission and distribution, and transportation. The Energy Commission is one of the administrators of the Electric Program Investment Charge (EPIC), which funds innovation investments in clean energy technologies and approaches for the benefit of electricity ratepayers of California's three largest electric investor-owned utilities. EPIC funding is initially authorized in the areas of applied research and development, technology demonstration and deployment, and market facilitation.

This report outlines the progress and status of Energy Commission activities funded by EPIC from January 1, 2014, through December 31, 2014. It has been prepared in accordance with California Public Utilities Commission Decision 12-05-037, as modified, in Rulemaking 11-10-003, Decision 13-11-025 in Application 12-11-001, as consolidated; and in California Public Resources Code Section 25711.5.

Keywords: California Energy Commission, Electric Program Investment Charge, energy research, innovation pipeline, RD&D, energy efficiency, advanced generation, renewable energy, demand response, energy storage, buildings, distributed generation, transmission, smart grid, transportation, environmental, climate change, smart infrastructure, ratepayer benefits, public interest program, electricity, energy policy, loading order, jobs, greenhouse gas, California Public Utilities Commission

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EXECUTIVE SUMMARY

One of the roles of the California Energy Commission is to administer research and development programs with projects to spur innovation in energy efficiency, renewable energy and advanced clean generation, energy-related environmental protection, energy transmission and distribution, and transportation. The Energy Commission is one of four administrators of the Electric Program Investment Charge (EPIC). The other administrators are the state's three largest investor-owned utilities: Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company. The California Public Utilities Commission (CPUC) established the EPIC Program to fund investments to advance pre-commercial clean energy technologies and approaches for the benefit of electricity ratepayers of California's three largest electric investor-owned utilities. EPIC funding is authorized in the areas of applied research and development, technology demonstration and deployment, and market facilitation.

The mandatory, primary guiding principle for these investments is to demonstrate the potential to produce electricity ratepayer benefits, defined by the CPUC in Decision 12-05-037 as promoting greater reliability, lower costs, and increased safety. Additional guiding principles include the following environmental and economic goals: provide societal benefits; reduce greenhouse gas emissions in the electricity sector at the lowest possible cost; support California's loading order to meet energy needs first with energy efficiency and demand response, second with renewable energy (both distributed generation and utility scale), and third with clean conventional electricity supply; support low-emission vehicles, transportation, and provide economic development; and use ratepayer funds efficiently. This report provides an overview of Energy Commission activities related to its administration of EPIC funds in calendar year 2014. It has been prepared in accordance with CPUC Decision 12-05-037, as modified; in Rulemaking 11-10-003, Decision 13-11-025 in Application 12-11-001, as consolidated; and in California Public Resources Code Section 25711.5.

Overview of Programs and Plan Highlights

EPIC funds an energy-pipeline approach to creating new energy solutions, fostering regional innovation, and bringing clean energy ideas to the marketplace for the benefit of California's investor-owned utility ratepayers. The coordinated administration of these funds consolidates the research, development, and deployment initiatives of the Energy Commission and the three largest investor-owned utilities in California, avoiding duplication in spending, providing for public interest considerations, and helping attain state energy policy goals. Overviews of the Energy Commission's administrative activities, investment areas, and funding levels are provided in Chapters 1 and 2.

The Energy Commission is committed to ensuring public participation in its research and development programs. This commitment reflects the rich and diverse characteristics of California, its people and its innovative spirit. Details on how Energy Commission staff seeks to meet this commitment are provided in Chapter 1.

Status of Programs

During calendar year 2014, EPIC administrators and the CPUC continued to work together to implement the administrators' approved investment plans. The Energy Commission's 2012 – 2014 EPIC Investment Plan (also referred to as the first EPIC Triennial Investment Plan) was approved as modified by the CPUC in Decision 13-11-025 in November 2013. Coordination, as well as guidance from state policy makers in 2012 and 2013, allowed the Energy Commission to continue to administer funds as approved by the CPUC and as authorized in Senate Bill 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012), Assembly Bill 110 (Blumenfeld, Chapter 20, Statutes of 2013), and Senate Bill 96 (Committee on Budget and Fiscal Review, Chapter 356, Statutes of 2013). In December 2013, the Energy Commission released a schedule of funding opportunities on its website at http://www.energy.ca.gov/research/upcoming_funding.html. This schedule is updated regularly and includes planned funding opportunities for the funding available for EPIC project awards.

The Energy Commission released solicitations totaling $192.8 million of EPIC funding in 2014. Of the $192.8 million, $151 million closed by December 31, 2014. In response to these solicitations, there were 321 proposals received in 2014, requesting a total of over $691.4 million in EPIC funding (more than four times the allocated amount). In December 2014, $9,995,832 was encumbered for the first seven project awards. In 2015, the Energy Commission will release up to an additional $139 million in committed solicitations, bringing the total encumbered and committed funding to $331.8 million.[1] The proposed Energy Commission's 2015-2017 EPIC Investment Plan, under consideration at the CPUC, describes strategic objectives and initiatives for investing another $349.92 million of EPIC funds.[2] The Energy Commission will release additional requests for comments and competitive solicitations in 2015 and will continue program development and implementation throughout the year and beyond.

[1] This does not include solicitations from the 2015-17 Investment Plan.

[2] Any additional funds that may be allocated to the Energy Commission as a result of any CPI (Consumer Price Index) adjustment will be used to increase the budget proportionally across all areas.

CHAPTER 1:
Introduction and Overview: A New Era of Energy Innovation in California

For electricity systems in California to make the leap from the status quo to achieving climate and energy goals while improving system reliability, affordability, and public safety, accelerated energy innovation is needed. Rigorous, public, and objective research and development (R&D), deployment, and market facilitation investments can help move innovations through the technology maturation pipeline from concept to market.

Through its transparent and public process for investment plan development and competitive selection process for project awards, the California Energy Commission administers Electric Program Investment Charge (EPIC) funds to support investments that advance the next generation of clean energy technologies, systems, tools, and strategies. These investments will provide benefits to investor-owned utility (IOU) electricity ratepayers in the form of cleaner, safer, more affordable, and more reliable electricity generation. Projects funded through EPIC will also reduce greenhouse gas emissions and reduce other air pollutants, and provide valuable societal, environmental, and economic benefits. These investments will put California on the path to achieve its energy, environmental, and economic goals.

Background on EPIC

The Importance of Energy Innovation

Energy innovation has a history of success in California. Investments through the Energy Commission and other research programs complement private corporate funding by providing guidance and signals relative to state policies, sharing results widely, and funding research not adequately addressed by competitive or regulated markets. R&D investments reduce risk to investors, accelerate the path to market for emerging technologies, address barriers, and support projects through energy innovation pipeline phases.

The Creation of EPIC

The Public Goods Charge which funded electricity research and renewable energy in California expired at the end of 2011.[3] Recognizing the importance and benefits of energy innovation and renewable energy programs that were supported by the Public Goods Charge, Governor Jerry Brown requested in 2011 that the California Public Utilities Commission (CPUC) take action under its authority to institute a new program, similar in size, but revised to "take into account the constructive ideas for program reform identified

[3] Public Utilities Code Section 399.8.

during the legislative process as well as ways to create jobs swiftly through investment in energy savings retrofits."[4]

Following a deliberative process, the CPUC adopted a decision authorizing collection of EPIC funds in December 2011 for renewables and research, development, and demonstration (RD&D) purposes (Decision 11-12-035, as modified). In May 2012, the CPUC adopted Decision 12-05-037, as modified, which provides the framework for CPUC oversight of the administration of EPIC. Investments funded by EPIC are administered by the Energy Commission and the state's three largest electric IOUs: Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E). In accordance with Decision 12-05-037, the administrators submitted their proposed first triennial investment plans for EPIC funds to the CPUC in November 2012.

The Energy Commission received authorization from the Legislature to spend EPIC Program funds in Senate Bill 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012) and Assembly Bill 110 (Blumenthal, Chapter 20, Statutes of 2013), and received program direction in Senate Bill 96 (Committee on Budget and Fiscal Review, Chapter 356, Statutes of 2013).

The Energy Commission's 2012 – 2014 EPIC Investment Plan for EPIC funds was approved as modified by the CPUC through Decision 13-11-025 in November 2013. Decision 13-11-025 incorporates requirements specified in SB 96 for the portion of the EPIC Program administered by the Energy Commission.

The Energy Commission posted a schedule of upcoming funding opportunities and opportunities for feedback on December 18, 2013. In 2014, the Energy Commission released competitive solicitations totaling $192.8 million. Another $139 million is planned for competitive solicitations in 2015 to further advance energy innovation in California.

EPIC Program Components

Investment Areas

CPUC Decision 13-11-025 approved Energy Commission administration of EPIC funds collected in 2012-2014 in the following program areas:

- **Applied Research and Development** ($158.7 million; three-year funding to the Energy Commission): This area is defined as activities supporting precommercial technologies and approaches that are designed to solve specific problems in the electricity sector, including technology advancements in efficiency, renewables, and smartgrid. Activities that address environmental and public health impacts of electricity-related activities, support building codes and appliance standards, and

[4] September 23, 2011, Governor Jerry Brown letter to CPUC President Michael Peevey.

support clean transportation with a linkage to electricity sector ratepayer benefits also fall into this area.

- **Technology Demonstration and Deployment** ($129.8 million; three-year funding to the Energy Commission and $86.6 million of three-year funding to the IOUs): This area is defined as the installation and operation of precommercial technologies or strategies at a sufficient scale to assess operational and performance characteristics, and financial risks. A minimum of twenty percent of the Energy Commission's 2012-2014 Investment Plan funds in this category will be set aside for bioenergy projects or activities.
- **Market Facilitation** ($43.3 million; three-year funding to the Energy Commission): This area is defined as a range of activities (including education and outreach, regulatory assistance and streamlining, and workforce development) to support clean energy technology and strategy deployment. CPUC Decision 12-05-037 further clarifies that this category should not necessarily be limited to renewables, but may include any other clean energy technologies and/or approaches.

The 2012-2014 investment period does not include EPIC funding for solar (photovoltaics) incentives for new residential construction under the Energy Commission's New Solar Homes Partnership (NSHP) program. However, the Energy Commission is providing information on the NSHP program in accordance with Chapter 6 of the Energy Commission's EPIC Proposed 2015-2017 Investment Plan. In Chapter 6 of the Proposed 2015-2017 Investment Plan the Energy Commission proposed options for funding the NSHP program using EPIC funds and/or funds through the California Solar Initiative proceeding (Rulemaking 12-11-005), and indicated that it would keep the CPUC informed on the status of the NSHP program and available program funding to help facilitate the CPUC's consideration of these options.

On September 1, 2014, the Energy Commission took over administration of the NSHP program from PG&E, SCE, and SDG&E. This decision was made to provide administrative cost savings for the program and a single point of contact for stakeholders, making the program more cost-effective and more efficient. Energy Commission staff estimate administrative savings of approximately $500,000 per year based on comparing the costs of the utility administration contracts to the incremental cost of redirecting existing staff to administer the NSHP program.

As of January 30, 2015, the Energy Commission has NSHP program funds totaling approximately $51.2 million.[5] This does not take into consideration those projects which are under review and requesting over $20 million in funding. In September 2014, Energy Commission staff estimated that all current program funds would be reserved by mid-2015. Over the past three years, the average total amount of NSHP funding reserved for projects

[5] Information on the status of NSHP funding is available online at http://www.gosolarcalifornia.org/about/nshp.php.

has averaged $44.7 million per year. In 2014, program participation was not as high as indicated by historical reservation amounts or stakeholder comments. In addition, many of the projects that expired in 2014 did not use their full reservation amount, allowing those funds to be returned to the program. Based on this historical activity and industry comments, the Energy Commission now expects to reserve all current program funds by fall 2015.

Total EPIC funding for the Energy Commission activities is summarized in Chapter 2.

Guiding Principles

The mandatory guiding principle of EPIC is to invest in clean energy technologies and approaches that provide benefits to electricity ratepayers by promoting greater reliability, lower costs, and increased safety. In addition, complementary guiding principles include:

- Societal benefits.
- Greenhouse gas emissions reduction and adaptation in the electricity sector at the lowest possible cost.
- The loading order.
- Low-emission vehicles/transportation.
- Economic development.
- Efficient use of ratepayer funds.

Also, principles articulated in Public Utilities Code Sections 740.1 and 8360 (which govern utility expenditures in the areas of RD&D and smart grid) serve as guidance. Section 740.1[6] states that, in evaluating RD&D projects, consideration will be given to:

- Projects that provide reasonable probability of ratepayer benefits.
- Minimizing projects with a low probability of success.
- Projects consistent with the utility corporation's resource plan.
- Projects that do not duplicate previous or current research by other electrical or gas corporations or research organizations.
- Projects that support one or more of the following objectives:
    - Environmental improvement.
    - Public and employee safety.
    - Conservation by efficient resource use or by reducing or shifting system load.

[6] Public Utilities Code Section 740.1: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=00001-01000&file=727-758.

- Development of new resources and processes, particularly renewables resources and processes that further supply technologies.
- Improve operating efficiency and reliability or otherwise reduce operating costs.

Section 8360 outlines the requirements for the state's electrical transmission and distribution system to maintain safe, reliable, efficient, and secure electrical service to meet future growth and demand in achieving:[7]

- Increased use of cost-effective digital information and control technology to improve reliability, security, and efficiency of the electric grid.
- Dynamic optimization of grid operations and resources, including appropriate consideration for asset management and use of related grid operations and resources, with cost-effective full cyber-security.
- Deployment and integration of cost-effective distributed energy resources and generation, including renewable energy sources.
- Development and incorporation of cost-effective demand response, demand-side resources, and energy-efficient resources.
- Deployment of cost-effective smart technologies, including real-time, automated, and interactive technologies that improve the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation.
- Integration of cost-effective "smart" appliances and consumer devices.
- Deployment and integration of cost-effective advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.
- Outreach to consumers with timely information and control options.
- Development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.
- Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.[8]

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[7] Public Utilities Code Section 8360: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=08001-09000&file=8360-8369.

[8] A smart grid consists of interactive equipment and communication protocols allowing electricity system operators and customers to adjust energy consumption and energy generation in response to price signals or information about the status of the electricity system to help maintain affordability, safety, and reliability of the electricity system.

Connections to the Electricity Value Chain

EPIC investments are mapped to the different elements of the electricity "value chain," which consists of grid operations/market design, generation, transmission, distribution, and demand-side management. Similar to the guiding principles above, each funded project must be mapped clearly to the appropriate section of the value chain, as stated in the 2012 – 2014 EPIC Investment Plan.

EPIC Investment Strategy

California energy policy frames a vision for the state's electricity future that includes a significant transition from fossil generation to renewable sources, highly efficient homes and businesses, and electrification of portions of the transportation system. The Energy Commission administers EPIC funds to help bridge gaps along the energy innovation pipeline through competitive project selection processes.[9]

Homes and businesses need high-quality and cost-effective efficiency products and services. Renewable generation and electric transportation must be seamlessly integrated into the electric grid at all levels of interconnection ranging from small-scale home applications to large central-station power plants. The Energy Commission's *Integrated Energy Policy Report* and ongoing analysis at the California Independent System Operator (California ISO), the CPUC, the United States Department of Energy (U.S. DOE), and the United States Environmental Protection Agency (U.S. EPA) identified key challenges to achieving this clean energy vision for California's IOU service territories. Described in Chapters 3-5 of the Energy Commission's 2012 – 2014 EPIC Investment Plan, each initiative addresses an important barrier and investment gap for clean energy.

Outreach Including Implementing Diverse and Inclusive Energy Innovation in California

The Energy Commission is committed to ensuring that a diverse range of applicants have the opportunity to participate in EPIC projects, including small businesses, women, minorities, and disabled veterans.[10] In his letter to President Peevey and the CPUC on November 7, 2013, Energy Commission Chair Robert Weisenmiller identified the following efforts, thereby committing to increasing the participation of businesses owned by women, minorities, and disabled veterans. The efforts also seek to increase the participation of businesses from a more diverse range of geographical regions under the implementation of the EPIC program:

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[9] As specified in Public Resources Code Section 25711.5, the Energy Commission is authorized to use non-competitive sole source and interagency agreement methods if certain conditions are met.

[10] Letter to CPUC President Peevey from California Energy Commission Chair Robert Weisenmiller, http://www.energy.ca.gov/research/epic/documents/2013-11-07_Letter_from_the_Chair_re_AB_340-Docket_12-EPIC-01.pdf.

- Initiate and implement an outreach plan to ensure that a diverse range of potential applicants know about, and understand how to participate in, EPIC Program activities, especially solicitations for projects.
- Target particular geographic regions within the state for certain program activities (for example, job training or energy efficiency retrofits in economically depressed communities).
- Include initiatives addressing energy-related challenges and opportunities in economically depressed communities.
- Track, monitor, and report on the participation of California-based entities, women-, minority-, disabled-veteran-owned, and small businesses for the recipients of EPIC awards using the same definitions used by the IOUs via CPUC General Order 156.[11] This will allow an apples-to-apples comparison from all of the EPIC administrators when submitting annual reports to the CPUC.

In 2014, the Energy Commission began implementing activities in support of the goals listed above. This included conducting a number of outreach activities to inform stakeholders about the funding opportunities provided by EPIC; strategies to prepare successful proposals; and other awareness strategies designed to assist potential applicants. Highlights of these efforts included the following:

- Four public outreach workshops held in Sacramento, Fresno, San Jose and Gardena in June and July of 2014. These workshops explained the EPIC application process, and highlighted the Energy Commission's commitment to diversity in the EPIC Program.
- Up to $9 million from the solicitation "Demonstrating Clean Energy Solutions That Support California's Industries, the Environment, and the Electrical Grid" was allocated for projects in communities with the poorest environmental quality, as defined by a CalEnviroScreen 2.0. Projects funded by this solicitation will demonstrate and deploy community scale generators, including combined heat and power and renewable generation technologies that are in the pre-commercial stage; and innovative energy management strategies to facilitate the integration of intermittent renewable energy and the reduction of peak power and energy demands.
- A draft solicitation released as part of Request for Comments on December 26, 2014, proposes to fund projects that will provide classroom and on-the-job training on the installation, maintenance, and operation of advanced energy efficiency technologies

[11] General Order 156 seeks to increase the participation of women, minority and disabled veteran-owned business enterprises (WMDVBE) in utility procurement, and requires the IOUs to submit annual plans to the CPUC for increasing WMDVBE participation in procurement and to submit annual reports on the implementation of those plans. Refer to CPUC Decision 13-11-025, p. 108.

and measures in existing buildings, specifically in disadvantaged communities where electricity costs represent a higher percentage of living expenses. Comments on the draft solicitation were due by January 15, 2015.

- Energy Commission staff developed and released a voluntary survey of EPIC funding recipients to better track current participation of self-reported California based entities, women-, minority-, disabled-veteran-owned, and small businesses. The purpose of the survey is to monitor participation by these groups and identify opportunities for future outreach efforts to encourage diversity within the program. The Energy Commission will encourage full participation in our diversity surveys. The survey was sent to the seven recipients that were awarded funding in December, 2014.
    - The survey results for the seven recipients identified that all awardees were certified California-owned entities, one awardee was a small business, one subcontractor was a small business, and one subcontractor was a women-owned business.
- Staff reached out to women, minority, and disabled veteran groups, sharing information from the EPIC webpage and encouraging their presence and participation in EPIC workshops. These groups included:
    - The African American, Hispanic, and Asian chambers of commerce in California.
    - The Association of Women in Water, Energy, and Environment.
    - California Association of Black Lawyers.
    - California Minority Counsel Program staff.
    - Hispanic Bar Association of Orange County.
    - National Association of Black Accountants.
    - National Society of Black Engineers.
    - Southern California Chapter of American Association of Blacks in Energy (AABE).
    - Three Squares, Inc. (who published an announcement about the Gardena workshop with stakeholders attending the Women in Green Forum).

PG&E, SCE, and SDG&E distributed information on the Energy Commission's "how to apply" workshops to clean energy vendors on their General Order 156 distribution lists. In addition to the targeted outreach outlined above, Energy Commission staff enhanced the Energy Commission website, expanded use of social networking platforms, and developed additional informational materials to further facilitate participation in EPIC funding opportunities. Highlights include:

- Updating the Energy Commission website to make information on EPIC funding opportunities more accessible and easier to find for applicants, especially those new to Energy Commission research programs.

- EPIC information was distributed by staff at key expositions and conferences in October and November of 2014, including:
    - Association of State Energy Research and Technology Transfer Institutions Fall Meeting, October 2014.
    - Emerging Technologies Summit, October 2014.
    - 2014 Data Center Efficiency Summit, November 2014.
    - Global Climate and Energy Project Symposium, October 2014.
    - The Connecting Point, November 2014.
- Developing and posting on the Energy Commission website Frequently Asked Questions about the EPIC Program and the Energy Commission's administration of EPIC. The Frequently Asked Questions can be found at http://www.energy.ca.gov/research/epic/faq.html.
- Updating the Energy Commission's Research homepage to include a statement about commitment to diversity.
- Posting on the Research homepage a presentation that explains the Energy Commission's solicitation process for EPIC funding opportunities.[12]
- Posting audio recordings of "how to apply" workshops to Energy Commission EPIC website page, in addition to posting step-by-step presentations and related materials.
- Announcing EPIC funding opportunities and workshops on social media such as Twitter to reach a broader and more diverse audience.

Looking to 2015, the Energy Commission plans to continue and enhance the efforts it started in 2014 and implement new activities to ensure that participation in the EPIC Program reflects the rich and diverse characteristics of California and its people. These plans include but are not limited to:

- Targeting particular geographic regions within California for a variety of program activities that will further the Energy Commission's outreach efforts, especially in Southern California and the Central Valley. These programs include job training associated with advanced energy efficiency retrofits in disadvantaged communities with details to be announced in 2015.
- Continuing to meet with small businesses, veteran, women, minority, and other interested groups to provide informational materials on partnering for success through the EPIC Program. The materials will also be available on the webpage.

[12] The slide deck can be found at http://www.energy.ca.gov/research/notices/2014-06-17_workshop/2014-06-17_EPIC_solicitations_presentation.pdf.

- Continuing to hold pre-application and pre-bid workshops to explain requirements for grant and contract funding opportunities, answer questions, and encourage networking and partnering among potential applicants.
- Ensuring certain materials are translated for non-English speakers and ensure opportunities are highlighted in other languages on multiple media platforms.
- Setting up a LinkedIn group page titled the "Energy Commission's R&D Networking Hub." This page will provide a user-driven platform to help potential applicants – including disabled veteran-, women- and minority-owned businesses – connect, collaborate and team up on proposals for solicitations funded through the EPIC Program.

EPIC Program Regulatory Process

The CPUC has regulatory authority over the Energy Commission's administration of EPIC funds, including the approval of investment plans. In addition, the Legislature must grant the Energy Commission spending authority to disburse EPIC funds for project awards and use EPIC funds for administrative expenses.

The Energy Commission is providing this annual report to the CPUC in accordance with Decision 12-05-037, as modified, in Rulemaking 11-10-003 and Decision 13-11-025 in Application 12-11-001, as consolidated. These decisions specify the outline of this report, as well as specific reporting requirements for projects awarded EPIC funds, to ensure consistent reporting among all administrators. The Energy Commission will also provide an EPIC annual report to the Legislature as specified in California Public Resources Code Section 25711.5 and make the report publicly available on its website.

The Energy Commission administers the EPIC Program according to all applicable state laws and standards and follows the 2012-2014 EPIC Investment Plan approved as modified by Decision 13-11-025 to administer EPIC funds collected in 2012 through 2014. In addition, the Energy Commission complies with other applicable guidance from the CPUC and the Legislature to ensure that innovations funded by EPIC provide IOU electricity ratepayer benefits and that EPIC investments are aligned with the electricity value chain.

Coordination

The Energy Commission is committed to ongoing coordination and collaboration with the IOU administrators of EPIC funds along with other energy innovation stakeholders during the development and implementation of its investment plans. This coordination is an important component to ensure EPIC projects funded by the Energy Commission address priority topics and critical funding gaps and leverage other public and private funding sources.

EPIC Administrator Coordination

Administrator coordination meetings were valuable in developing the first and second investment plans to identify each administrator's area of focus and synergistic opportunities for further collaboration. During development of the 2015-2017 EPIC Investment Plan, Energy Commission staff worked collaboratively with the other three administrators (PG&E, SCE, and SDG&E), conducting conference calls, participating in each other's public workshops, and meeting periodically to coordinate investment plans. The following highlights EPIC Administrator coordination for 2014:

- Conference calls to prepare for the March 17, 2014, public workshop at the Energy Commission and the March 21, 2014, public workshop at SCE on development of the four proposed 2015-2017 EPIC Investment Plans, one from each EPIC administrator.
- Coordination to prepare a comparison matrix requested by the Administrative Law Judge in the consolidated proceeding for the four 2015-2017 EPIC investment plans proposed in Applications 14-04-034, 14-05-003, 14-05-004, and 14-05-005 by the Energy Commission, PG&E, SDG&E, and SCE, respectively. The four applications have been consolidated into a single proceeding. The Energy Commission filed the comparison matrix in A.14-04-034, et al, as consolidated, on behalf of all four EPIC administrators on July 28, 2014. The matrix compares the plans of all the administrators to ensure non-duplication of research.
- Conference calls to prepare for the July 31, 2014, public workshop at the CPUC to discuss the four proposed 2015-2017 EPIC investment plans.
- Other conference calls to clarify, coordinate, and respond to questions among EPIC administrators, including plans for future coordinated outreach to broaden awareness of EPIC funding opportunities among women, minority, and disabled veteran owned businesses, small businesses, and other topics related to implementation of the 2012-2014 EPIC Investment Plans.
- IOUs participated in the Energy Commission's workshops on topics related to electric vehicle charging, smart grid, storage, and electricity sector vulnerability. Further details on these workshops are described in later sections of this chapter.

In 2015, the EPIC administrators will continue to work together, as appropriate, using the following principles of coordination:

- **Information Sharing and Coordinated Planning.** The administrators will continue to work together to address common goals, consistent with the state's energy and environmental policies and the guiding principles for EPIC as stated in CPUC Decision 12-05-037. To this end, the administrators will share information regarding their investment plans, programs, and projects as much as practicable to maximize the efficient use of funds and facilitate dissemination of results for the benefit of electric utility ratepayers.

- **Leveraging Funding and Avoiding Duplication of Projects.** To the extent legally permissible, the administrators will work together to avoid unnecessary duplication of efforts, consistent with Public Utilities Code Section 740.1, and leverage funds for the benefit of electric utility ratepayers.
- **Coordinated Input and Advice from Stakeholders.** The administrators will continue to work together to schedule, solicit, and respond to comments and advice from stakeholders on their respective proposed and ongoing plans and programs.
- **Consistent Evaluation, Measurement, and Verification of RD&D Results.** The administrators worked together to establish consistent and common evaluation, measurement, and verification protocols for developing and reporting to the CPUC and stakeholders the performance and results of funded projects.

Coordination With Other Energy Innovation Efforts

In 2014, the Energy Commission engaged in a number of coordination efforts with other state and federal entities involved in similar RD&D activities, including:

- The Energy Commission assessed and scored U.S. DOE, ARPA-E (Advanced Research Projects Agency-U.S. DOE) and other federally funded energy storage research projects at the U.S. DOE Energy Storage Peer Review from September 17-19, 2014.

- On October 16, 2014, Energy Commission staff participated in a Technical Advisory Committee for the Dairy Digester Research and Development Program (DDRDP) at the California Department of Food and Agriculture (CDFA) and offered scientific and technical input to guide the development of the DDRDP and help ensure there is no duplication of efforts between the CDFA and the EPIC bioenergy research program.

- On October 24, 2014, the Energy Commission, along with ARPA-E and the U.S. DOE participated in the ARPA-E Annual Meeting to discuss related research programs in smart grid technologies, renewable integration and energy storage as well as opportunities to collaborate and leverage research funds.

- Energy Commission staff led a public workshop with the California ISO, CPUC, and the California Air Resources Board (CARB) to review the progress of research called for in the California Vehicle-Grid Integration Roadmap as part of the Governor's Zero-Emission Vehicle Action Plan on November 19, 2014. Participants discussed ongoing technical and regulatory barriers, progress of research and next steps.

- Energy Commission staff held a public workshop titled "An Exploration of Advancements in Energy Storage in California since the American Recovery and Reinvestment Act" on December 1, 2014. Presentations were made by federal and state agency representatives, energy storage researchers and developers, and utilities, including the CPUC, California ISO, Sacramento Municipal Utility District, and IOUs in California. State and federal agencies reviewed how the American

Recovery and Reinvestment Act are supporting the advancement of energy storage technologies in California. Researchers and developers presented lessons learned from recent energy storage technology research in California and utilities presented how their businesses will support the development of markets for energy storage technologies.

- Energy Commission and ARPA-E leadership and staff participated in an annual collaboration meeting on December 4, 2014, to discuss past successes resulting from collaborative efforts, current research priorities, and opportunities for future coordination. The Energy Commission has a memorandum of understanding with ARPA-E to ensure continued coordination between the research programs.

- In late 2014, Energy Commission staff reached out to CARB, South Coast Air Quality Management District, U.S. EPA, Department of Resources Recycling and Recovery (CalRecycle), U.S. Department of Agriculture, and the San Joaquin Valley Air Pollution Control District to participate as technical reviewers for proposals received under the solicitation titled "Demonstrating Bioenergy Solutions that Support California's Industries, the Environment, and the Grid".

- Energy Commission staff participated as a technical reviewer for several proposals submitted under the fourth California Solar Initiative RD&D solicitation, providing scores and constructive feedback in several evaluation categories. The California Solar Initiative's RD&D program is administered by Itron, Inc., on behalf of the CPUC.

- The Energy Commission participated in the Climate Action Team (CAT) Research Working Group, along with many other public agencies including the CARB, California Environmental Protection Agency, California ISO, CalRecycle, California Department of Public Health, California Department of Food and Agriculture, California Department of Water Resources, Natural Resources Agency, California State Water Resources Control Board and others. The working group produced the first-ever Climate Change Research Plan authored by a state and provided input and research ideas to shape California's Fourth Climate Change Assessment. Energy Commission staff also met with members and other interested stakeholders on issues related to the interconnections and interdependencies of the water and energy systems in California as a part of the Water-Energy Team of the Climate Action Team (WET CAT). The WET CAT communicates research needs, shares information from ongoing research, and raises pertinent policy, engineering and science issues.

- Energy Commission staff met with members of the Western Electricity Coordinating Council (WECC) to discuss potential impacts of climate change to the WECC electricity system.

Transparent and Public Process and Solicitation Activities

The Energy Commission is committed to a transparent and public process in all phases of EPIC administration, including investment plan development and approval, competitive solicitation processes, and project approval and management.

To help ensure a transparent and public process, the Energy Commission created a Web page (http://energy.ca.gov/research/epic/) that provides information about EPIC, including previous and upcoming workshops, public comments, upcoming events, how to sign up for the List-serve, and documents associated with the program. The page also serves as a resource for Energy Commission proceedings related to developing future triennial EPIC investment plans. Interested stakeholders can navigate to Energy Commission EPIC policy documents, presentations, funding solicitations, annual EPIC reports, workshop announcements and other resources that promote active participation in the program. EPIC solicitations and requests for comments to inform selected solicitation development are available online at http://www.energy.ca.gov/contracts/epic.html. Information on public workshops is available online at http://www.energy.ca.gov/research/epic/documents/.

Research Division EPIC Homepage

http://energy.ca.gov/research/epic/

All EPIC Related Documents

http://www.energy.ca.gov/research/epic/documents/

Investment Plan Development and Approval

In 2014, the Energy Commission submitted its proposed 2015-2017 EPIC Investment Plan to the CPUC for approval. Energy Commission staff issued a questionnaire to gather public input and held three public workshops to solicit input on developing the 2015-2017 EPIC Investment Plan. The workshops were held on February 7, 2014, and March 17, 2014, in

Sacramento and March 21, 2014, in Southern California. Along with oral comments provided at the workshops, the Energy Commission received more than 150 written comments. The input and comments were used to develop the proposed funding initiatives in a staff final investment plan released to the public on April 10, 2014, and adopted by the Energy Commission on April 22, 2014.

On April 29, 2014, the Energy Commission filed an application with the CPUC to consider approval of the proposed EPIC 2015-2017 Investment Plan. The CPUC consolidated the Energy Commission's application with the applications of the other three EPIC administrators into a combined proceeding (A.14-04-034, A.14-05-003, A.14-05-004, and A.14-05-005, as consolidated). The Energy Commission activities associated with this proceeding included the following:

- June 3, 2014. Energy Commission staff provided a briefing for staff from the CPUC Office of Ratepayer Advocates (ORA) on the proposed EPIC 2015-2017 Investment Plan.
- June 12, 2014. Energy Commission staff provided a briefing for CPUC Energy Division staff on the proposed EPIC 2015-2017 Investment Plan.
- June 12, 2014. The Energy Commission filed a reply to the ORA protest to Application 14-04-034.
- July 21, 2014. Energy Commission staff held a conference call with ORA staff to discuss the proposed EPIC 2015-2017 Investment Plan.
- July 28, 2014. On behalf of all four EPIC administrators, the Energy Commission submitted a joint comparison matrix of administrators' EPIC proposed 2015-2017 Investment Plans.
- July 31, 2014. The administrators held a workshop on their proposed EPIC investment plans for 2015-2017.
- September 17, 2014. The Energy Commission filed opening comments in support of its application for approval of its 2015-2017 EPIC Investment Plan.
- October 6, 2014. The Energy Commission filed reply comments in support of its application for approval of its 2015-2017 EPIC Investment Plan.

A CPUC proposed decision on the Energy Commission and the IOU applications for approval of their second EPIC investment plans is expected in early 2015. The Energy Commission plans to prepare opening and reply comments on the proposed decision. The CPUC's current schedule calls for it to consider this item at a business meeting early in 2015. The Energy Commission will begin implementing its 2015-2017 EPIC Investment Plan once the plan is approved by the CPUC and budget authority to spend the EPIC funds is approved by the state Legislature.

Competitive Solicitation Process and Activities

In 2014, the Energy Commission issued 14 solicitations to fund initiatives outlined in the 2012-2014 EPIC Investment Plan. To ensure a fair and transparent competitive solicitation process, Energy Commission staff conducted the following for each solicitation:

- Posted the solicitation on the Energy Commission's website, and notified interested parties of the solicitation through the Opportunity ListServ and the EPIC ListServer. The Opportunity ListServ contains 4,474 subscribers, and the EPIC ListServer contains 1,405 subscribers (there is some overlap).
- Held a publicly noticed workshop to review the solicitation's purpose, requirements, eligibility, and innovation topics with interested parties. The public workshop also provided an opportunity for potential applicants to ask questions about the solicitation and the application process.
- Provided interested parties the opportunity to submit written questions about the solicitation.
- Posted staff responses to solicitation questions on the Energy Commission's website to ensure that all potential applicants had access to the same information. These questions are also sent out to everyone on the Opportunity ListServ.
- Posted on the Energy Commission's website and sent to the Opportunity ListServ any revisions made to the solicitation.
- For solicitations where scoring was completed in 2014, a Notice of Proposed Awards (NOPA) was released by the Energy Commission identifying proposed funding recipients. For recipients not awarded funding for these solicitations, an opportunity was provided to receive a debriefing.

In addition to the administrative standards and practices listed above, the Energy Commission conducts additional activities to ensure the competitive solicitation process – including solicitation development – is done in a fair and transparent manner. As stated in the Energy Commission's proposed 2015-2017 EPIC Investment Plan, to benefit from coordination among EPIC administrators and ensure fairness for all bidders in competitive solicitations, IOUs may not submit bids to those solicitations they help to develop. Similarly, state agencies, universities, and other stakeholders that provide input on the development of a solicitation are precluded from submitting bids in that solicitation, unless the input is provided through a public forum (such as a workshop, webinar, or staff survey) in which other entities have the same opportunity to provide input. In 2014, the Energy Commission conducted the following activities to ensure stakeholder input on solicitations was conducted in a public and transparent manner:

- On June 6, 2014, staff posted a request for comments to identify needs and gaps for electricity-related clean energy workforce development and training programs. Commenters included the California Center for Sustainable Energy, California Community Colleges and the International Brotherhood of Electrical Workers.

- On June 30, 2014, staff held a public workshop with representatives from vehicle original equipment manufacturers, the CPUC, California utilities, and other interested stakeholders to discuss research initiatives for managed charging of plug-in electric vehicles and vehicle-grid integration under the 2012-2014 EPIC Investment Plan. Staff considered input received from the workshop to develop the scope for the solicitation related to Strategic Objective S9: Driving the Integration of Electric Vehicles to Maximize Benefits to the Grid.
- On July 24, 2014, staff posted a request for comments to seek input on potential research areas that will help California achieve policy goals related to Zero Net Energy (ZNE) buildings. Comments were received from 26 people who provided input on how to better target research in ZNE buildings.
- In August 2014, staff held three public workshops in different California locations to gather input from utilities, as well as public and private stakeholders, on proposed energy sector vulnerability and adaptation research under the 2012-2014 EPIC Investment Plan. The workshops provided an opportunity for public input to help refine the proposed research portfolio and identify additional gaps the research should address. Staff used information gathered from the workshop and written comments to finalize the research strategy for the solicitation related to Strategic Objective S5: Reduce the Environmental and Public Health Impacts of Electricity Generation and Make the Electricity System Less Vulnerable to Climate Change. The research will be conducted in support of California's fourth Climate Assessment.
- On September 17, 2014, staff posted a request for comments to solicit information on permitting barriers and innovative approaches and tools to improve planning and permitting for high-priority clean energy technologies within California IOU service territories.
- On December 10, 2014, a scoping workshop was held to gather public comments on two draft solicitations under the 2012-2014 EPIC Investment Plan. These solicitations will address initiatives under Strategic Objective S6: Develop Technologies, Tools, and Strategies to Enable the Smart Grid of 2020, and Strategic Objective S7: Develop Operational Tools, Models, and Simulations for Improved Planning of Grid Resources. A brief background and description of each solicitation was presented at the workshop, followed by an open discussion with questions and comments from the public.
- On December 26, 2014, staff posted a request for comments on a draft solicitation to fund workforce training for advanced energy efficiency, with comments that were due on January 15, 2015.

Project Approval and Management

After the NOPA is issued, Energy Commission staff work with each awardee to develop a grant agreement or contract. Before work can begin, the grant agreement or contract must be

approved by the Energy Commission at a publicly noticed business meeting. In 2014, the Energy Commission approved seven EPIC projects. All seven of these projects were approved at the Energy Commission's December 10, 2014, Business Meeting. Details of each of these projects are provided in Chapter 3 of this report.

Once agreements are approved, Energy Commission staff manages the agreement in a transparent manner. Project fact sheets, final reports, and other public documents related to, or supported by, EPIC funds will be publicly accessible on the Energy Commission's website to maximize transparency and increase value for the program and its projects. Except when valid reasons exist for confidentiality, the Energy Commission will make available upon request all data, findings, results, computer models and other products developed through the Electric Program Investment Charge Program, consistent with the treatment of intellectual property requirements.[13] In addition, each annual report includes summaries and metrics for all active projects and all projects completed during the past year.[14]

[13] As required in CPUC Decision 13-11-025, Ordering Paragraph 13.

[14] As required by Public Resources Code Section 25711.5 and CPUC Decision 13-11-025, Ordering Paragraphs 14, 23, and 27.

CHAPTER 2:
Budget

Authorized Budget

The CPUC approved a final EPIC budget for the first triennial investment cycle (2012-2014) in Decision 13-11-025. Table 1 shows the Energy Commission's total EPIC funding allocation of $368.7 million for funds collected in 2012-2014. The amount includes $331.8 million in project funds to be awarded under the three program areas, as well as $36.9 million for program administration. Decision 12-05-037, as modified, caps program administrative costs for each EPIC administrator at 10 percent. The Energy Commission administrative costs for EPIC include all research planning, project management, as well as administrative and program oversight work performed by Energy Commission staff for the EPIC Program including the following tasks[15]:

- Research available energy technologies and identify the most promising emerging technological solutions. Scope solicitations to reach performance targets and to attract proposals that provide the most promise in delivering energy technologies that are cleaner, safer, more reliable and affordable.
- Manage research agreements to achieve technological goals for the EPIC-funded grants, contracts, and awards. Research managers conduct site visits, evaluate technology progress to plan, and determine if research is on track. Corrective action is taken to redirect projects or stop work if research is not meeting expectations.
- Execute EPIC research, development and demonstration, and market facilitation program including planning, contracting and grant award activities as defined in the approved EPIC 2012-2014 Investment Plan.
- Conduct workshops, meetings, and web conferences on the current state of the energy market, policy impacts, and opportunities for renewable energy and other energy emerging technologies to assist in the development of competitive solicitations and to assist in preparing future investment plans' initiatives.
- Develop, coordinate, publish, and submit required annual reports and documents to the CPUC and the Legislature.
- Research, coordinate, develop, and submit to CPUC the proposed 2015-2017 EPIC Investment Plan.
- Participate in CPUC EPIC related proceedings and workshops.

[15] Energy Commission administrative costs are categorized differently than IOU administrative costs.

Table 1: CPUC-Approved Energy Commission EPIC Funding 2012-2014

Funding Element/Program Area	Total (in millions)
Applied Research and Development	$158.7
Technology Demonstration and Deployment	$129.8
Market Facilitation	$43.3
Sub Total	**$331.8**
Program Administration	$36.9
Grand Total	**$368.7**

Source: California Energy Commission

The Energy Commission must also obtain spending authority to disburse these funds from the Legislature each fiscal year. In fiscal years 2012-2013 and 2013-2014, the Energy Commission received a total state spending authority of $10.18 million for program administration and $159.3 million for project awards.[16] The Energy Commission received an additional $12.8 million for program administration and $172.5 million for project awards in the Governor's Budget for fiscal year 2014-2015.[17] This made the total state authorized budget for project awards through fiscal year 2014-2015 consistent with the CPUC's approved budget of $331.8 million for project awards. The Energy Commission has committed this full amount in completed, active, and planned solicitations.

The Energy Commission's proposed 2015-2017 EPIC Investment Plan calls for $349.92 million for project awards and $38.88 million for program administration over the three year period. See Table 2 for details.

Table 2: Proposed Energy Commission 2015-2017 EPIC Investment Plan Budget

Funding Element/Program Area	Total (in millions)
Applied Research and Development	$151.63
Technology Demonstration and Deployment	$145.02
Market Facilitation	$53.27
Sub Total	**$349.92**
Program Administration	$38.88
Grand Total	**$388.8[18]**

Source: California Energy Commission

[16] These amounts do not reflect funding for the NSHP.

[17] The Fiscal Year 2014-2015 Governor's Budget was announced on January 10, 2014.

[18] Any additional funds that may be allocated to the Energy Commission as a result of any CPI adjustment will be used to increase the budget proportionally across all areas.

Funding Commitments and Encumbrances

This section provides definitions for "commitments" and "encumbrances," provides information on completed, active, and planned upcoming funding opportunities, and reports expenditures for 2014 program administration.

CPUC Definitions of Commitments and Encumbrances

To clarify the difference between commitments and encumbrances for the EPIC Program, the CPUC adopted the following definitions in Decision 13-11-025:

> "'Committed funds' are funds identified during the planning of a solicitation for a specific project that will be needed to fund a contract or grant for that project at the conclusion of a planned or released solicitation.
>
> …'Encumbered funds' are monies that are specified within contracts and grants signed during a previous triennial investment plan cycle and associated with specific activities under the contract or grant. All activities carried out under a contract or grant during a specific triennial investment plan cycle need not be completed and funds need not be spent during that particular program cycle if the activities undertaken pursuant to the contract or grant are expected to be completed. Only funds that are committed or encumbered during the prior program cycle are eligible for being rolled into the following program cycle."[19]

Response to Funding Opportunities

Table 3 shows solicitations that closed during calendar year 2014, the amounts allocated to each solicitation, number of proposals received, and the amount of EPIC funding requested by applicants. In 2014, applicants showed a strong demand for EPIC funding – solicitations that closed by December 31 were oversubscribed by $539.7 million – more than four times the allocated funding.

[19] CPUC Decision 13-11-025, Ordering paragraphs 44 and 45, p. 143.

Table 3: 2014 Requested EPIC Funding

Solicitation Title	Strategic Objective	Solicitation Amount	Proposals Received	Total Funding Requested
Developing a Portfolio of Advanced Efficiency Solutions: Technologies and Approaches for More Affordable and Comfortable Buildings (PON-13-301)	Applied Research and Development (S1)	$30.4 million	120	$253 million
Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (PON-13-302)	Applied Research and Development (S8)	$7.3 million	37	$61.3 million
Advancing Utility-Scale Clean Energy Generation (PON-13-303)	Applied Research and Development (S4)	$10 million	18	$21 million
Demonstrating Secure, Reliable Microgrids and Grid-Linked Electric Vehicles to Build Resilient, Low-Carbon Facilities and Communities (PON-14-301)	Technology Demonstration and Deployment (S14)	$27.3 million	38	$131.1 million
Advancing Cleaner, Less Costly, More Reliable Distributed Generation to Enable Customer Solutions and Zero-Net Energy Communities (PON-14-303)	Applied Research and Development (S3)	$18.5 million	27	$38.8 million
Bringing Energy Efficiency Solutions to California's Industrial, Agriculture and Water Sectors (PON-14-304)	Technology Demonstration and Deployment (S12)	$27.1 million	46	$102 million
Demonstrating Bioenergy Solutions that Support California's Industries, the Environment, and the Grid (PON-14-305)	Technology Demonstration and Deployment (S13)	$29 million	23	$78.3 million

Analysis of Social, Cultural, and Behavioral Aspects of Achieving Energy Efficiency Potential (Phase 1: Residential Sector) (PON-14-306)	Market Facilitation (S18)	$2.1 million	12	$5.7 million
TOTAL		**$151.7 million**	**321**	**$691.4 million**

Source: California Energy Commission

Table 4 shows projects that were recommended for funding in 2014. A full list of projects can be seen in the Energy Commission's NOPA for each solicitation.[20] At the Energy Commission's December 10, 2014, Business Meeting, $9,995,832 in project awards were approved.

Table 4: Proposed EPIC Funding Awards in 2014

Prime Applicant	Project Title	EPIC Funds Recommended
Advancing Utility-Scale Clean Energy Generation (PON-13-303) Applied Research and Development (S4)*		
Halotechnics Inc.	Systems Integration of Containerized Molten Salt Thermal Energy Storage in Novel Cascade Layout	$1,500,000
University of California, Los Angeles	Low-Cost Thermal Energy Storage for Dispatchable Concentrating Solar Power	$1,497,024
The Regents of the University of California; University of California, San Diego	Solar Forecast Based Optimization of Distributed Energy Resources in the LA Basin and UC San Diego Microgrid	$999,984
Itron, Inc.	Improving Solar & Load Forecasts: Reducing the Operational Uncertainty Behind the Duck Chart	$998,926
The Regents of the University of California; University of California, San Diego	High-Fidelity Solar Power Forecasting Systems for the 392 MW Ivanpah Solar Plant (CSP) and the 250 MW California Valley Solar Ranch (PV)	$999,898
The Regents of the University of California; University of California, Davis	Improving Short-Term Wind Power Forecasting Through Measurements and Modeling of the Tehachapi	$1,000,000
Geysers Power Company, LLC	Investigating Flexible Generation Capabilities at the Geysers	$3,000,000
Subtotal		$9,995,832

[20] More information on proposed awards can be found at: http://www.energy.ca.gov/contracts/epic.html#closed.

Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (PON-13-302) Applied Research and Development (S8)		
Electric Power Research Institute (EPRI)	Validated and Transparent Energy Storage Valuation and Optimization Tool	$ 1,000,000
Eos Energy Storage LLC	Battery ES System	$2,156,704
Congenra Solar	Advanced Thermal Storage	$2,530,952
The Regents of the University of California; University of California, Los Angeles	High Temperature Hybrid CAES	$1,621,628
Subtotal		$7,309,284
Developing A Portfolio of Advanced Efficiency Solutions: Technologies and Approaches for More Affordable and Comfortable Buildings (PON-13-301) Applied Research and Development (S1)		
The Regents of the University of California; University of California, Berkeley	Very Low-cost MEMS-based ultrasonic anemometer for use indoors and in HVAC ducts	$2,488,964
The Regents of the University of California; University of California, Berkeley, Center for the Built Environment	Optimizing Radiant Systems for Energy Efficiency and Comfort	$2,939,964
Lawrence Berkeley National Laboratory	Solar-Reflective "Cool" Walls: Benefits, Technologies, and Implementation	$2,500,000
The Regents of the University of California; University of California, Davis, California Lighting Technology Center	From the Laboratory to the California marketplace: A New Generation of LED Lighting Solutions	$2,995,187
Philips Lumileds Lighting Company	Innovation for Disruptive Efficacy and Cost Improvements of CRI 90 LEDs And LED Lamps	$2,988,722
Lawrence Berkeley National Laboratory	Developing Flexible, Networked Lighting Control Systems That Reliably Save Energy	$1,875,000
CREE Santa Barbara Technology Center	Novel High-Efficiency, Low-cost LED Luminaries	$2,777,700
Electric Power Research Institute (EPRI)	Development and Testing of the Next Generation Residential Space Conditioning System for California	$2,993,005
Lawrence Berkeley National Laboratory	Direct Current as an Integrating and Enabling Platform	$1,000,000
Lawrence Berkeley National Laboratory	Comparing Attic Approaches for ZNE Homes	$1,000,000

BIRA Energy	Energy Efficient and Cost Effective Attic Design Suitable for New Homes in Hot and Dry and Moderate but Moist CA Climates	$1,000,000
Electric Power Research Institute (added after Nov 2014 NOPA)	Climate Appropriate Innovations for VRF Systems: Adaptive Cloud Controls, Advance Refrigerants, Dedicated Outdoor Air Systems (DOAS) and Indirect Evaporative Cooling for Enhanced Heat Recovery Ventilation	$2,834,721
Lawrence Berkeley National Laboratory (added after Nov 2014 NOPA)	High Performance Integrated Window and Façade Solutions for California Buildings	$3,000,000
Subtotal		$30,393,263

*Proposed awards for PON-13-303 were approved at the December 10, 2014, Energy Commission Business Meeting and have been awarded.

Committed Funds

Table 5 shows an updated tentative solicitation schedule for active and anticipated EPIC funding opportunities. This table is also available at http://www.energy.ca.gov/contracts/epic/.

Table 5: Active and Anticipated Solicitations for Energy Commission EPIC Funding Awards

Active Solicitations as of December 31, 2014[21]			
Solicitation Title	**Release Date**	**Program Area/ Strategic Objective**	**Proposed Funding Amount**
Driving the Integration of Electric Vehicles to Maximize Benefits to the Grid (PON-14-310)	December 18, 2014	Applied Research and Development (S9)	$4 million
Reduce the Environmental and Public Health Impacts of Electricity Generation and Make the Electricity System Less Vulnerable to Climate Impacts: Phase I (PON-14-309)	November 19, 2014	Applied Research and Development (S5)	$5.1 million

[21] Since December 31, 2014, some solicitations have closed. Please visit http://energy.ca.gov/research/epic/ for the current funding opportunities.

Guiding Future Energy Needs, Plans, and Programs through Commercial End-Use Surveys, Phase I (CEUS Phase I) (RFP-14-302)	November 4, 2014	Market Facilitation (S18)	$1 million
Demonstrating Clean Energy Solutions That Support California's Industries, the Environment, and the Electrical Grid (PON-14-307)	November 4, 2014	Technology Demonstration and Deployment (S13)	$21 million
Federal Cost Share (PON-14-308)	November 4, 2014	Applied Research and Development (S11), Technology Demonstration and Deployment (S15)	$10 million
Total			$41.1 million
Anticipated Solicitations[22]			
Market Analysis of Trends in IOU Load Shapes	Jan. 2015 – Mar. 2015	Market Facilitation (S18)	$2 million
Developing Operational Tools, Models, and Simulations to Improve Grid Resource Planning	Jan. 2015 – Mar. 2015	Applied Research and Development (S7)	$4.2 million
Conduct Energy Research Gap Assessment and Roadmapping	Jan. 2014 – Mar. 2015	Applied Research and Development (S10)	$3 million
Advancing California's Energy Innovation Ecosystems	Jan. 2015 – Mar. 2015	Applied Research and Development (S10)	$24 million
Clean Energy Research, Technology Showcase, and Policy Forums	Jan. 2015 – Mar. 2015	Market Facilitation (S18)	$1 million
Developing Technologies, Tools, and Strategies to Enable the Smart Grid of 2020	Jan. 2015 – Mar. 2015	Applied Research and Development (S6)	$8 million
Investing in California Communities through Building Energy Efficiency Workforce Development	Feb. 2015 – April 2015	Market Facilitation (S17)	$9 million

[22] Since December 31, 2014, some solicitations have posted. Please visit http://energy.ca.gov/research/epic/ for the current funding opportunities.

Developing New Technologies and Applications that Enable cost-beneficial Customer-Side-of-the-Meter Energy Choices	Feb. 2015 – April 2015	Applied Research and Development (S2)	$16.4 million
Connecting Emerging Technologies and Strategies to Market Needs and Opportunities	Feb. 2015 – April 2015	Market Facilitation (S18)	$3 million
Measuring Innovation Progress to Guide Future Investment	Mar. 2015 – May 2015	Market Facilitation (S18)	$1 million
Developing a Portfolio of Advanced Efficiency Solutions (Phase II)	Mar. 2015 – May 2015	Applied Research and Development (S1)	$6.9 million
Reduce the Environmental and Public Health Impacts of Electricity Generation and Make the Electricity System Less Vulnerable to Climate Impacts: Phase II	Mar. 2015 – May 2015	Applied Research and Development (S1 & S5)	$10.8 million
Reducing Costs for Communities and Business Through Integrated Demand-Side Management and Zero-Net Energy Demonstrations	Mar. 2015 – June 2015	Applied Research and Development (S1), Technology Demonstration and Deployment (S12 & S14)	$23.5 million
Establish Strategies for Enhanced Local Regulatory Assistance and Permit Streamlining that will Accelerate Deployment of Clean Energy	April 2015 – June 2015	Market Facilitation (S16)	$17.1 million
Electricity Sector Vulnerability Studies and Adaptation Options	April 2015 – June 2015	Applied Research and Development (S5)	$2.1 million
California End Use Survey, Phase II	April 2015 – June 2015	Market Facilitation (S18)	$7 million
Total			$139 million

Source: California Energy Commission

2014 Encumbered Program Funds

In calendar year 2014, seven projects encumbered a total of $9,995,832 from the 2012-2014 EPIC Investment Plan funds.

2014 Program Expenditures

There were no expenditures in 2014 by the seven projects funded in calendar year 2014.

2014 Administrative Expenditures

In calendar year 2014, the Energy Commission spent $7,502,387.27 for EPIC program administration.

Funding Shifts

In accordance with Decision 13-11-025, funds shifted between funding categories or program areas are limited to 5 percent.

In 2014, the Energy Commission did not shift funds between funding categories or program areas.

Uncommitted/Unencumbered Funds

Based on the definitions provided above, "uncommitted" and "unencumbered" funds are funds that are not identified in solicitation plans or encumbered into project awards. Additionally, these funds are considered "unspent."

As stated in Decision 13-11-025, "Given the shortened timeframe of the initial investment plan cycle, and for the purposes of the initial investment plan cycle only (2012-2014), the uncommitted and unencumbered funds that would, under normal circumstances be returned to ratepayers if legally permitted to do so, must be rolled over as if those funds were encumbered or committed. At the conclusion of the second investment plan cycle, if any funds approved for the first investment plan cycle are uncommitted or unencumbered, they must be credited against the approved budget for the third investment plan cycle."[23]

At the end of each investment plan cycle, any unspent funds will be rolled over into the subsequent investment plan cycle as required. In addition, EPIC administrators must explain in their triennial investment plans what caused any unspent funds in the prior investment plan cycle, and how the unspent funds would affect the program area(s) and projects.[24] Additionally, the investment plan cycle budget for 2017-2020 will be reduced by the amount of unspent funds from the 2012-2014 and 2015-2017 EPIC Investment Plans, to offset future program funding requirements.[25] In addition, the budget adopted for a subsequent investment plan cycle must be reduced by the amount of interest accrued in the

[23] CPUC Decision 13-11-025, Ordering Paragraph 39, p. 142.

[24] CPUC Decision 13-11-025, Ordering Paragraph 41.

[25] CPUC Decision 13-11-025, Ordering Paragraph 38 and 39.

previous investment plan cycle.[26] At the end of the third investment plan cycle, any unspent funds and accumulated interest should be returned to the ratepayers, if there is a legal means to do so.[27]

Regarding the means for returning accumulated interest to the ratepayers, Decision 13-11-025 states: "Because the CEC cannot administratively return accumulated interest, the CEC must report the accumulated interest in arrears from the previous investment plan cycle, and the IOUs must reduce the amounts transferred to the CEC during the next triennial investment cycle by the reported accumulated interest amount and return an amount equal to the accumulated interest to ratepayers."[28]

Decision 12-05-037, as modified, states: "[I]f administrative costs can be less than the cost cap, we expect the administrators to put those extra funds to good use for program purposes."[29]

All EPIC funding under the Energy Commission's 2012-2014 EPIC Investment Plan is encumbered or committed.

In the 2012-2014 investment cycle, the Energy Commission accumulated $95,019.91 of interest in arrears. In 2012, $7,140.02 of interest was accumulated, in 2013, $34,672.67 of interest was accumulated, and in 2014, $53,207.22 of interest was accumulated.

[26] CPUC Decision 13-11-025, Ordering Paragraph 42.

[27] CPUC Decision 13-11-025, Ordering Paragraph 43.

[28] CPUC Decision 13-11-025, p. 105.

[29] CPUC Decision 12-05-037, p. 66.

CHAPTER 3:
Projects

In calendar year 2014, the Energy Commission made seven project awards encumbering $9,995,832 of EPIC funds under the following categories:

- Thermal Energy Storage for Concentrating Solar Power – 2 projects, $2,997,024
- Solar and Wind Forecasting and Modeling - 4 projects, $3,998,808
- Geothermal Energy Generation Facilities - 1 project, $3,000,000

Figure 1: 2014 EPIC Awarded Projects

The following information has been provided for each project awarded EPIC funds in 2014. The information is provided electronically in spreadsheet format using the template provided in Attachment 6 of CPUC Decision 13-11-025:

a. Investment Program Period
b. Program Administrator
c. Project Name
d. Project Type
e. A brief description of the project
f. Date of the award
g. Was this project awarded in the immediately prior calendar year?
h. Assignment to Value Chain
i. Encumbered Funding Amount ($)
j. Committed Funding Amount ($)
k. Funds Expended to date: Contract/Grant Amount ($)
l. Funds Expended to date: In house expenditures ($)
m. Funds Expended to date: Total Spent to date ($)
n. Administrative and overhead costs to be incurred for each project
o. Leveraged Funds
p. Partners
q. Match Funding
r. Match Funding Split
s. Funding Mechanism
t. Intellectual Property
u. Identification of the method used to grant awards.
v. If competitively selected, provide the number of bidders passing the initial pass/fail screening for project
w. If competitively selected, provide the name of selected bidder.
x. If competitively selected, provide the rank of the selected bidder in the selection process.
y. If competitively selected, explain why the bidder was not the highest scoring bidder, explain why a lower scoring bidder was selected.
z. If interagency or sole source agreement, specify date of notification to the Joint Legislative Budget Committee (JLBC) was notified and date of JLBC authorization.
aa. Does the recipient for this award identify as a self-reported California-based entity, small business, or businesses owned by women, minorities, or disabled veterans?
ab. How the project leads to technological advancement or breakthroughs to overcome barriers to achieving the state's statutory energy goals.
ac. Applicable metrics.
ad. Update.

<table>
<tr><td colspan="2">Project Name:
Improving Solar & Load Forecasts: Reducing the Operational Uncertainty Behind the Duck Chart (EPC-14-001)</td><td>Recipient/Contractor:
Itron, Inc., dba IBS</td></tr>
<tr><td>Investment Plan:
Triennial Plan (2012-2014)</td><td>Program Area and Strategic Objective: Applied Research and Development
S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base</td><td>Assignment to Value Chain:
Generation</td></tr>
<tr><td colspan="3">Project Description:
This project plans to improve solar forecasts for grid-connected PV in California, use those improved forecasts to create enhanced net-load forecasts, and apply these enhanced forecasts to reduce scheduling errors for utilities and the California Independent System Operator (CAISO).</td></tr>
<tr><td colspan="3">How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:
The project will reduce resource scheduling uncertainty for California utilities and CAISO by first improving solar forecasts, then integrating those forecasts into enhanced net-load forecasts, and finally implementing the forecasts to quantify specific improvements and cost savings.</td></tr>
<tr><td colspan="3">Applicable Metrics:
Lower Costs:
The project aims to result in estimated near-term savings of $10 to $17 million annually by reducing the scheduling errors associated with forecasting PV power output and net-load for the California grid. (1c)
Greater Reliability:
The project will increase system reliability by significantly increasing the accuracy of solar PV forecasts and the associated net load forecasts. (5c)
Environmental Benefits:
Reduced requirements for regulation services and spinning reserves could help reduce GHG emissions by an estimated 2.7 million tons per year through reduced use of natural gas–fired peaker plants. (4a)</td></tr>
<tr><td colspan="2">Project Term:
1/15/2015 to 6/29/2018</td><td>Total Budgeted Project Admin and Overhead Costs:
$525,513
$525,513</td></tr>
<tr><td colspan="2">EPIC Funds Encumbered:
$ 998,926</td><td>EPIC Funds Spent:
$0</td></tr>
<tr><td colspan="2">Leverage Contributors:</td><td>Leveraged Funds: $0</td></tr>
</table>

<table>
<tr><td colspan="3">Match Partner and Funding Split:
• Clean Power Research: $2,400
• Itron, Inc.: $451,062</td><td>Match Funding:
$453,462</td></tr>
<tr><td>Funding Method:
Competitive</td><td>Funding Mechanism:
Grant</td><td>No. of Passing Applicants/Bidders:
12 of 18</td><td>Rank of Selected Applicant/ Bidder:
3</td></tr>
<tr><td colspan="4">If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.</td></tr>
<tr><td colspan="4">Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-001 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.</td></tr>
<tr><td colspan="4">Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.</td></tr>
</table>

<table>
<tr><td colspan="2">Project Name:
Investigating Flexible Generation Capabilities at the Geysers (EPC-14-002)</td><td>Recipient/Contractor:
Geysers Power Company, LLC</td></tr>
<tr><td>Investment Plan:
Triennial Plan (2012-2014)</td><td>Program Area and Strategic Objective: Applied Research and Development
S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base</td><td>Assignment to Value Chain:
Generation</td></tr>
<tr><td colspan="3">Project Description:
This project will investigate how the operation of Geysers geothermal facilities may be modified in order to address the greater demands imposed on the grid by the significant addition of intermittent resources. To do so, the project will develop an integrated model that simulates the effects of providing flexible operation on the geothermal reservoir, wells, pipelines, and power plants. The model will be tested at an isolated well(s), pipeline and power plant, and then at a cross-tied location, to determine the effects of flexible operation on the larger steam field. Results will be used to identify risks to geothermal structures and operations. Management and mitigation strategies needed to address specific flexible generation objectives will be identified and tested at a variety of representative problem areas. An evaluation of management strategies and costs will be developed to provide flexible generation and ancillary services.</td></tr>
<tr><td colspan="3">How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:
This project will result in the ratepayer benefits of greater electricity reliability and lower costs by determining if low carbon geothermal resources at the Geysers can cost-effectively be used to provide the flexible capacity needed to integrate renewable energy onto the grid.</td></tr>
<tr><td colspan="3">Applicable Metrics:
Lower Costs: Increased flexibility and increased renewable generation will result in lower electricity cost to ratepayers. (1c)
Greater Reliability: If successful, geothermal facilities will have electric generation flexibility allowing integration of intermittent resources and leading to greater reliability. (7d)
Environmental Benefits: Improved geothermal flexibility and increased generation from other renewable resources reduces fossil fuel generation, reducing air pollutants and greenhouse gas emissions. (4a, 4b)</td></tr>
<tr><td colspan="2">Project Term:
1/5/2015 to 3/31/2018</td><td>Total Budgeted Project Admin and Overhead Costs:
TBD
$525,513</td></tr>
</table>

<table>
<tr><td colspan="2">EPIC Funds Encumbered:
$3,000,000</td><td colspan="2">EPIC Funds Spent:
$0</td></tr>
<tr><td colspan="2">Leverage Contributors:</td><td colspan="2">Leveraged Funds: $0</td></tr>
<tr><td colspan="3">Match Partner and Funding Split:
Geysers Power Company, LLC: $3,000,000</td><td>Match Funding:
$3,000,000</td></tr>
<tr><td>Funding Method:
Competitive</td><td>Funding Mechanism:
Grant</td><td>No. of Passing Applicants/Bidders:
12 of 18</td><td>Rank of Selected Applicant/ Bidder:
4</td></tr>
<tr><td colspan="4">If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.</td></tr>
<tr><td colspan="4">Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-002 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.</td></tr>
<tr><td colspan="4">Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.</td></tr>
</table>

Project Name: Low-Cost Thermal Energy Storage for Dispatchable CSP (EPC-14-003)		**Recipient/Contractor:** The Regents of the University of California; University of California, Los Angeles
Investment Plan: Triennial Plan (2012-2014)	**Program Area and Strategic Objective:** Applied Research and Development S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base	**Assignment to Value Chain:** Generation

Project Description:

The innovation in this project is the use of a system cost-optimal approach that employs a robust and low-cost thermal energy storage (TES) fluid, elemental sulfur. Use of sulfur as a TES fluid will enable overall low system costs, long lifetime, and scalability for a wide range of concentrating solar power (CSP) applications and temperatures. The primary objectives of the project are to:

1. Develop an innovative and low-cost TES system for CSP systems using elemental sulfur; along with a system/cost model for system and market analyses.
2. Perform an on-site pilot-scale demonstration of a modular single-tank TES design along with laboratory and computational analyses to validate long-term component life and performance.
3. Develop a market strategy and intellectual property portfolio for the proposed system and single-tank thermal battery designs.

How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:

This project will develop a low-cost thermal storage fluid, elemental sulfur, which enables overall low system costs, long lifetime, and scalability for a wide range of concentrating solar power applications.

Applicable Metrics:

Lower Costs: This project aims to reduce the cost of TES to $15/kWh. Compared to current state-of-the-art, this leads to a decrease in levelized cost of electricity (LCOE) from 3.0 ¢/kWh to 0.4 ¢/kWh, providing $0.66 billion to $1.32 billion in annual savings depending on CSP penetration. (1c)

Greater Reliability: Use of TES allows excess harvested solar energy to be stored during the day to be used during peak or non-solar hours, which increases dispatchability of renewable resources and provides load shifting. (7d)

Economic Development: Assuming 5% to 10% penetration of CSP and deployment beginning in 2017, the 10-year net present value of this technology is estimated to be between $680 and $906 million. If success, the associated economic development would greatly benefit California. (3e)

Environmental Benefits: Assuming 5% to 10% penetration of CSP and 1,010 MWh of TES by 2020, significant GHG and criteria air pollutant reductions would be achieved: 2791 ton/MW of CO2, 37 ton/MW of SO2, 5 ton/MW of NOx, and 2.4 ton/MW of CO. (4a, 4b)

Project Term:	**Total Budgeted Project Admin and Overhead Costs:**
1/5/2015 to 3/15/2018	$198,528 $525,513

EPIC Funds Encumbered:	**EPIC Funds Spent:**
$1,497,024	$0

Leverage Contributors:	**Leveraged Funds: $**0

Match Partner and Funding Split:	**Match Funding:**
• Southern California Gas Company: $300,000	$300,000

Funding Method:	**Funding Mechanism:**	**No. of Passing Applicants/Bidders:**	**Rank of Selected Applicant/ Bidder:**
Competitive	Grant	12 of 18	3

If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.

Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-003 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.

Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.

Project Name: Systems Integration of Containerized Molten Salt Thermal Energy Storage in Novel Cascade Layout (EPC-14-004)		**Recipient/Contractor:** Halotechnics
Investment Plan: Triennial Plan (2012-2014)	**Program Area and Strategic Objective:** Applied Research and Development S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base	**Assignment to Value Chain:** Generation

Project Description:
The project aims to build, validate, thermally cycle, and pilot test a modular 75 kW, 6 hour (500 kWh) molten salt thermal energy storage (TES) system, using standard shipping containers and commercially available tanks and insulation. The project leverages a novel cascaded tank arrangement and high-volume manufacturing and factory assembly, to significantly reduce the installed cost of TES for concentrating solar power (CSP).

How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:
If successful, the Halotechnics thermal storage system will improve system design and modularity and reduce the cost of molten salt energy storage by 25% by reducing the required storage volume.

Applicable Metrics:
Lower Costs: At a 20 MW scale, storage tanks are the dominant cost of thermal energy systems. By deploying a cascade tank system, Halotechnics estimates an installed cost reduction of $8/kWh, which is equivalent to savings of $400,000 per system. (1c)

Greater Reliability: Storage will help grid ramping needs by replacing the use of peaking units during late afternoon hours of 3:00 pm - 7:00 pm. (7d)

Environmental Benefits: Assuming that 10 percent of RPS resources are CSP in 2020, a total emission reduction of 7,450,000 tons of CO2 over the 30-year plant life of a typical CSP system is estimated. (4a)

Public Health: Development of the Halotechnics thermal energy storage for CSP is expected to offset the emissions of 1,150 tons of NOx, 1,140 tons of CO, and 63 tons of SOx, and heavy metal particles compared to generation from natural gas peaker plants. (4b)

Project Term: 1/5/2015 to 1/14/2019	**Total Budgeted Project Admin and Overhead Costs:** $283, 080
EPIC Funds Encumbered: $1,500,000	**EPIC Funds Spent:** $0

<table>
<tr><td colspan="2">Leverage Contributors:</td><td colspan="2">Leveraged Funds: $0</td></tr>
<tr><td colspan="3">Match Partner and Funding Split:
• Halotechnics: $19,038</td><td>Match Funding:
$19,038</td></tr>
<tr><td>Funding Method:
Competitive</td><td>Funding Mechanism:
Grant</td><td>No. of Passing Applicants/Bidders:
12 of 18</td><td>Rank of Selected Applicant/ Bidder:
2</td></tr>
<tr><td colspan="4">If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.</td></tr>
<tr><td colspan="4">Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-004 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.</td></tr>
<tr><td colspan="4">Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.</td></tr>
</table>

Project Name: Solar Forecast Based Optimization of Distributed Energy Resources in the LA Basin and UC San Diego Microgrid (EPC-14-005)		**Recipient/Contractor:** The Regents of the University of California; University of California, San Diego
Investment Plan: Triennial Plan (2012-2014)	**Program Area and Strategic Objective:** Applied Research and Development S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base	**Assignment to Value Chain:** Generation

Project Description:
High fidelity solar forecasting tools developed at UC San Diego over the last six years will be integrated with the operation of controllable non-critical distributed energy resources into the UC San Diego microgrid and warehouse PV clusters projected in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Solar and net load forecasts will be used to optimize energy storage charge/discharge, electric vehicle charging with bi-directional communication, and demand response. A central goal of the project is to increase the value of distributed energy resources through solar forecasting.

How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:
The variable nature of solar power is of concern to electric grid operators in California. At the microgrid and distribution feeder level, solar generation is the primary contributor to net load variability, causing voltage issues affecting service quality and reliability. This project aims to improve solar energy forecast accuracy by 45% over the existing persistence forecast method to optimize the operation of distributed energy resources.

Applicable Metrics:
Lower Costs: The project will lower the energy cost by developing strategies to reduce electricity peak demand through system optimization including 1) peak (net) load shifting and 2) PV smoothing and ramp rate mitigation. (1c)

Greater Reliability: The project is estimated to result in greater reliability through peak load reduction of 37 MW and annual electricity replacement of 157.3 GWh to lower imbalances on the grid and resolve utility planning and operations challenges. (7d)

Economic Development: The project is estimated to help economic development by generating net present value of $131 million for each 100 MW of deployment. (3e)

Environmental Benefits: The project is estimated to result in environment benefits by reducing water use of 41 M Gals/yr. and GHG emission of 52,195 MT/yr. (4a, 4c)

Public Health: The project is estimated to improve public health by reducing air emission pollutants including reductions of 3.13 MT/yr. of NOx, 0.22 MT/yr. of SOx, and 1.66 MT/yr. of PM10. (4b)

<table>
<tr><td colspan="2">Project Term:
1/5/2015 to 3/15/2018</td><td colspan="2">Total Budgeted Project Admin and Overhead Costs:
$157,282</td></tr>
<tr><td colspan="2">EPIC Funds Encumbered:
$999,984</td><td colspan="2">EPIC Funds Spent:
$0</td></tr>
<tr><td colspan="2">Leverage Contributors:</td><td colspan="2">Leveraged Funds: $0</td></tr>
<tr><td colspan="3">Match Partner and Funding Split:
• University of California, San Diego: $173,338
• San Diego Gas & Electric Co.: $250,000
• Strategen: $93,614
• Itron, Inc.: $483,032</td><td>Match Funding:
$999,984</td></tr>
<tr><td>Funding Method:
Competitive</td><td>Funding Mechanism:
Grant</td><td>No. of Passing Applicants/Bidders:
12 of 18</td><td>Rank of Selected Applicant/ Bidder:
1</td></tr>
<tr><td colspan="4">If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.</td></tr>
<tr><td colspan="4">Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-005 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.</td></tr>
<tr><td colspan="4">Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.</td></tr>
</table>

<table>
<tr><td colspan="3">Project Name:
Improving Short-Term Wind Power Forecasting through Measurements and Modeling of the Tehachapi Wind Resource Area (EPC-14-007)</td><td colspan="2">Recipient/Contractor:
The Regents of the University of California; University of California, Davis</td></tr>
<tr><td>Investment Plan:
Triennial Plan (2012-2014)</td><td colspan="3">Program Area and Strategic Objective: Applied Research and Development
S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base</td><td>Assignment to Value Chain:
Generation</td></tr>
<tr><td colspan="5">Project Description:
This project comprises coordinated atmospheric field measurements and computational modeling improvements to improve the accuracy of prediction of short-term wind ramps (i.e. large, rapid changes in wind power production). The Tehachapi Pass Wind Resource Area will be the focus of the project. Since the area features complex terrain and meteorology, the findings can be readily adapted and applied to many other regions.</td></tr>
<tr><td colspan="5">How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals:
Improvements to accuracy of short-term (3-15 hours) and very short-term (0-3 hours) wind ramp forecasting would reduce generating reserves scheduled by grid operators, with corresponding decreases in grid operating costs and greenhouse gas emissions, and, simultaneously, increased grid reliability.</td></tr>
<tr><td colspan="5">Applicable Metrics:
Lower Costs: Reducing wind forecast error by a little as 10% is estimated to reduce annual grid integration costs by $28 million in the WECC (which includes California) at 14% wind penetration, and as much as $100 million annually at 24% wind penetration. (1c, 5c)</td></tr>
<tr><td colspan="2">Project Term:
1/5/2015 to 7/15/2017</td><td colspan="3">Total Budgeted Project Admin and Overhead Costs:
$247,542</td></tr>
<tr><td colspan="3">EPIC Funds Encumbered:
$1,000,000</td><td colspan="2">EPIC Funds Spent:
$0</td></tr>
<tr><td colspan="3">Leverage Contributors:</td><td colspan="2">Leveraged Funds: $0</td></tr>
<tr><td colspan="4">Match Partner and Funding Split:
• The Regents of the University of California, University of California, Davis: $90,325</td><td>Match Funding:
$90,325</td></tr>
<tr><td>Funding Method:
Competitive</td><td>Funding Mechanism:
Grant</td><td colspan="2">No. of Passing Applicants/Bidders:
12 of 18</td><td>Rank of Selected Applicant/Bidder:
7</td></tr>
</table>

If not the highest scoring applicant/bidder, explain why selected: Funds were awarded to passing proposals in rank order.
Treatment of Intellectual Property Pre-existing intellectual property identified in agreement EPC-14-007 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.
Update: Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.

Project Name: High-Fidelity Solar Power Forecasting Systems for the 392 MW Ivanpah Solar Plant (CSP) and the 250 MW California Valley Solar Ranch (PV) (EPC-14-008)		**Recipient/Contractor:** The Regents of the University of California, University of California, San Diego
Investment Plan: Triennial Plan (2012-2014)	**Program Area and Strategic Objective:** Applied Research and Development S4: Develop Emerging Utility Scale Renewable Energy Generation Technologies and Strategies to Improve Power Plant Performance, Reduce Costs, and Expand the Resource Base	**Assignment to Value Chain:** Generation
Project Description: This project will focus on the development and validation of tools capable of monitoring and forecasting the direct normal irradiance solar component and the power generation accurately, from 5 minutes out to 72 hours in the future, mainly at the Ivanpah Solar Thermal plant. The project will also include the development of tools for predicting wind speed that affects the heliostats' deployment and produce a generation forecast via a Resource-to-Power Model. The goal of this system is aimed at reducing uncertainties associated with operation, regulation and scheduling of Ivanpah. The new forecast models will be used to inform future system planning (such as serving as an input to the Resource-to-Power model in the solar field controls system), which will enable the solar field to preemptively position itself for weather transients.		
How the Project Leads to Technological Advancement or Breakthroughs to Overcome Barriers to Achieving the State's Statutory Energy Goals: The project will develop and validate forecast models optimized for direct normal irradiance, plane of array irradiance for large-scale concentrating solar power, concentrating photovoltaics, and tracking PV power plants. The application of this data and behavioral analysis will help optimize power plant operations.		

Applicable Metrics:
Lower Costs: The project will deliver models that will help utility scale costs associated with day-ahead scheduling, reduce plant operation costs associated with intra-day variability, and reduce ancillary service purchases needed to avoid forced outages. (1c)

Greater Reliability: The project will result in greater reliability by developing high-fidelity models that increase the accuracy of solar energy forecasting to decrease the number of forced outages of associated ancillary reserves. (5c)

Economic Development: The project will help economic development by reducing solar power plant operating cost by more than 10% and having the ability to substantially affect the effective solar capacity in California. (3a)

Environmental Benefits: The project is expected to lower GHG emissions by decreasing the uncertainty associated with solar power generation, and thereby diminish the need of fossil fuel generation. (4a)

Public Health: The project will improve public health by increasing level of renewable energy utilization which results in reduction of air emission pollutants generated from fossil fuel generation. (4b)

Project Term: 1/5/2015 to 3/15/2018	**Total Budgeted Project Admin and Overhead Costs:** $168,624		
EPIC Funds Encumbered: $999,898		**EPIC Funds Spent:** $0	
Leverage Contributors:		**Leveraged Funds: $**0	
Match Partner and Funding Split: • NRG Energy, Inc.: $460,000 • Itron, Inc.: $304,019			**Match Funding:** $764,019
Funding Method: Competitive	**Funding Mechanism:** Grant	**No. of Passing Applicants/Bidders:** 12 of 18	**Rank of Selected Applicant/ Bidder:** 5

If not the highest scoring applicant/bidder, explain why selected:
Funds were awarded to passing proposals in rank order.

Treatment of Intellectual Property
Pre-existing intellectual property identified in agreement EPC-14-008 (Confidential Products and Pre-Existing Intellectual Property Lists, Attachment C-2) will reside with the recipient. New intellectual property developed under this agreement will be subject to the agreement Terms and Conditions.

Update:
Project was approved at the December 10, 2014, Energy Commission Business Meeting. Work did not begin in 2014.

CHAPTER 4:
Conclusion

Key Results for the Year

Implementation of the 2012-2014 EPIC Investment Plan and development of the 2015-2017 EPIC Investment Plan achieved the following milestones in 2014:

- Energy Commission began issuing solicitations in March for FY 13/14 funds. The Legislature authorized the Energy Commission to award $159.3 million by June 30, 2015, consistent with SB 96.
- For FY 14/15, the Legislature authorized the Energy Commission to expend $12.959 million funds to administer its portion of EPIC funds and award up to $172.5 million by June 30, 2016, consistent with SB 96.
- In February 2014, the Energy Commission developed the intellectual property terms and conditions as specified in SB 96 and CPUC Decision 13-11-025.
- The Energy Commission filed its second EPIC Annual Report to the CPUC as required in April 2014 and its first EPIC Annual Report to the Legislature as required, also in April 2014.
- In coordination with the IOU administrators and the CPUC, the Energy Commission held two public workshops on EPIC in March 2014, one in Sacramento, and one in Southern California. These workshops met the requirement in CPUC Decision 12-05-037, as modified, to hold a meeting with stakeholders in March 2014 to discuss a draft 2015-2017 EPIC Investment Plan. As required, the annual report was published prior to these workshops to facilitate a "review and evaluation of previous annual reports and accomplishments."
- Also, in coordination with the IOU administrators and the CPUC, the Energy Commission participated in a CPUC public workshop in July 2014 to discuss the proposed 2015-2017 EPIC Investment Plans under consideration in CPUC proceeding A.14-04-034, etc., as consolidated.
- The Energy Commission held 25 workshops throughout California in 2014 to solicit stakeholder input on a variety of topics related to electricity research and development activities:
    - The Energy Commission held 13 public workshops, one or more for each solicitation, to explain open solicitations and answer questions before the due date for applications or bids.
    - The Energy Commission held 4 public workshops in 4 locations (Sacramento, San Jose, Fresno, and Gardena), to explain how to apply to Energy Commission EPIC Program Opportunity Notices for grants.

    - The Energy Commission held 8 workshops throughout California soliciting stakeholder input on the development and scope of 2015-2017 EPIC Investment Plan initiatives and solicitations developed under the 2012-2014 EPIC Investment Plan.

- The Energy Commission participated in the CPUC EPIC proceeding to consider the proposed 2015-2017 Investment Plans submitted by the EPIC program administrators, Application 14-04-034, et al., as consolidated into a single public proceeding.
- All EPIC funding under the 2012-2014 EPIC Investment Plan is encumbered or committed. The Energy Commission issued 13 competitive solicitations in 2014. Another 16 competitive solicitations commit the remaining funds from the 2012-2014 EPIC Investment Plan.
- At its public business meeting in December 2014, the Energy Commission approved 7 awards for $9,995,832, with $5,626,828 in match funding. These projects will advance thermal energy storage for concentrating solar power, solar and wind forecasting and modeling, and geothermal energy generation facilities.

Next Steps for EPIC Investment Plan

The Energy Commission's next steps for the continuation of EPIC administration include the following:

- The Energy Commission will continue to release competitive solicitations and requests for comment according to the schedule available on the Energy Commission's EPIC Web page (http://www.energy.ca.gov/research/epic/) and provide updates to the schedule as needed.
- Consistent with its investment plans, the Energy Commission will continue to release a NOPA for each competitive solicitation and approve each award at a public business meeting.
- The Energy Commission will hold public workshops no less than twice a year, both during the development of each investment plan and during its execution, consistent with ordering paragraph 15 in CPUC Decision 12-05-037, as modified.

Issues

As stated in Attachment 5, page 2 of CPUC Decision 13-11-025, the Energy Commission's EPIC annual report will include a discussion of issues "that may have major impact on progress in projects, if any." The Energy Commission has no issues to report at this time.

Appendix A:
Table of Energy Commission EPIC Requirements to Report for 2014

The California Energy Commission is committed to full compliance with all guidance and requirements pertaining to its management of Electric Program Investment Charge (EPIC) funds for the advancement of energy innovation. The following table lists Energy Commission responsibilities and requirements for its administration of EPIC in calendar year 2014. These requirements include those specified by the California Public Utilities Commission (CPUC) and by the Legislature in Senate Bill 96.

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
Project Reporting Requirements in SB 96 (Committee on Budget and Fiscal Review, Chapter 356, Statutes of 2013) and D.13-11-025, Attachment 6: A brief description of each project awarded or completed in the previous year, as well as an update for each project underway. Among other items, this includes: 1. The name of the recipient, project title, and date and amount awarded. 2. Comply with SB 96 (PRC §25711.5)(e)(1)-(6), provided later in the table.	This annual report identifies the required information for each EPIC project.	12/31/2014
CPUC project reporting requirements: Identify ratepayer benefits, any leveraged or matched funds, any intellectual property, and other information as specified in Attachment 6 of the CPUC final decision (D. 13-11-025), for each project. Specific formatting requirement for Project Status Reports: "The information below must be reported electronically in spreadsheet format. Information for each project must be listed on separate rows in the columns specified" in Attachment 6.	This annual report identifies the required information for each EPIC project.	12/31/2014
CPUC project metric reporting requirements: The EPIC administrators "may choose metrics on a project-by-project basis from those included as Attachment 4 or additional metrics where appropriate. However, the Administrators must identify in the Electric Program Investment Charge annual report the metrics used for each project." (D.13-11-025, Ordering Paragraph 27).	This annual report identifies metrics used for each EPIC project.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
CPUC project reporting requirements: Submit a final report for every project completed during the previous year, including a comprehensive description of the project, detailed findings and results, a summary of all data collected, and how the data may be accessed (D.13-11-025, Ordering Paragraph 14).	No EPIC project was completed in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
CPUC project reporting requirements: Identify the use of non-competitive awards (D. 13-11-025, Ordering Paragraph 15).	The Energy Commission made no non-competitive EPIC award, in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
CPUC project reporting requirements: Provide a justification for every non-competitive award made (D.13-11-025, Ordering Paragraph 18).	The Energy Commission made no non-competitive EPIC, in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
CPUC Annual Report Requirements: Follow the report outline agreed to by the EPIC administrators and DRA, and approved by the CPUC as contained in D.13-11-025 (Attachment 5).	This report follows the outline indicated in D.13-11-025 Attachment 5.	2/28/2015
CPUC Budget Requirements: 10 percent cap on administrative costs, excluding program evaluation costs (D.12-05-037, ordering paragraph 5). IOU in-house costs are not included in the 10 percent administrative cap (D.13-11-025, Conclusion of Law 40). D.13-11-025, Ordering Paragraph 31: "The administrative costs to grant and administer the Intellectual Property licenses and royalties are not subject to the Energy Commission's cap on the California Energy Commission's administrative budget for Electric Program Investment Charge."	Energy Commission administrative costs for 2012-2014 are less than the capped amount.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
CPUC Budget Requirements: 5 percent cap on fund shifting between the following category areas (D.12-05-037, ordering paragraph 14): applied research and development, technology demonstration and deployment, and market facilitation (D.12-05-037, ordering paragraph 12(b)(i) lists the program areas; program areas are defined in D.12-05-037 Findings of Fact paragraph 3, 4, and 6). In addition, D.13-11-025, Ordering Paragraph 36: EPIC Program administrators "must file a petition to modify to request authority to shift more than five percent of the adopted budget for each funding category/program area or to new categories of funding."	The Energy Commission did not shift any EPIC project funds between category areas in calendar year 2014.	12/31/2014
CPUC Budget Requirements: Report authorized budget (program administration and each category/program area), committed/encumbered funds (administration, program solicitations, and individual project awards), and amount spent. IOUs must also report in-house activities. All administrators must report uncommitted/unencumbered funds. (D.13-11-025, Attachment 5).	The Annual Report includes authorized budget, committed/ encumbered project funds, amount spent, and uncommitted/ unencumbered funds.	12/31/2014
CPUC Accumulated Interest Requirements: “Because the CEC cannot administratively return accumulated interest, the CEC must report the accumulated interest in arrears from the previous investment plan cycle, and the IOUs must reduce the amounts transferred to the CEC during the next triennial investment cycle by the reported accumulated interest amount and return an amount equal to the accumulated interest to ratepayers.” (D.13-11-025, p. 105)	In the 2012-2014 investment cycle, the Energy Commission accumulated $95,019.91 of interest in arrears.	Planned for completion in the annual report due 2/28/2015
CPUC Annual Report Distribution Requirements: File Annual Reports annually on 2/28/13 through 2/28/20 with the CPUC’s Energy Division Director. Annual reports shall be served on all parties in the most recent EPIC proceeding, all parties to the most recent general rate case of each electricity utility named above, and each successful and unsuccessful applicant for an EPIC funding award during the previous calendar year, except bidders for an IOU-administered EPIC contract that have signed a voluntary and informed waiver of the right to be served an EPIC annual report. (D.12-05-037, OP 16; D.13-11-025, p. 64 and OP 24).	The Energy Commission prepared the distribution list for this annual report in coordination with the CPUC and the EPIC IOU administrators to ensure the distribution list meets these requirements.	2/28/2015

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
CPUC Annual Report Distribution (additional): The CPUC Commissioners approving the final decision "encourage the CEC to make its reports accessible to the public on its EPIC webpage and through its Public Advisor." (D.13-11-025, p. 64)	The Energy Commission will post the EPIC annual report on its EPIC webpage and make the report available through the public adviser's office.	2/28/2015
CPUC EPIC Report Distribution: In Section 2.15 Annual Reports, the CPUC final decision states: "PRC Section 25711.5(e) requires the CEC to submit reports to the Legislature on its administration of the EPIC program. The CEC should promptly provide copies of each of these reports to the Commission through the Commission's Executive Director and Energy Division Director." (D.13-11-025, p. 63). In addition, in the section of the CPUC EPIC final decision discussing treatment of intellectual property interests developed and royalties derived from EPIC-funded CEC grants and contracts (Section 2.18.1), the CPUC EPIC final decision states: "As a condition of approving the CEC's 2012-2014 investment plan, we will require that the CEC provide the Commission (through the Commission's Energy Division Director) a copy of all reports prepared for the Legislature. (D.13-11-025, p. 71-72). In D.13-11-025 Ordering Paragraph 29(a): "The California Energy Commission (CEC) must: Provide to the Commission copies of the Electric Program Investment Charge (EPIC) reports to the Legislature required by Public Resources Code Section 25711.5(e)."	In progress.	2014 EPIC report to the Legislature planned for completion prior to 4/30/2015
SB 96 (PRC §25711.5(a)): Award funds for projects that will benefit electricity ratepayers and lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals and that result in a portfolio of projects that is strategically focused and sufficiently narrow to make advancement on the most significant technological challenges that shall include, but not be limited to, energy storage, renewable energy and its integration into the electrical grid, energy efficiency, integration of electric vehicles into the electrical grid, and accurately forecasting the availability of renewable energy for integration into the grid.	The Energy Commission made no EPIC funding award in calendar year 2013. All projects funded through EPIC in 2014 met this requirement. The Energy Commission will comply in 2015 and beyond.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
SB 96 (PRC §25711.5(b)): In consultation with the Treasurer, establish terms that shall be imposed as a condition to receipt of funding for the state to accrue any intellectual property interest or royalties that may derive from projects funded by the EPIC Program. The Energy Commission, when determining if imposition of the proposed terms is appropriate, shall balance the potential benefit to the state from those terms and the effect those terms may have on the state achieving its statutory energy goals. The Energy Commission shall require each reward recipient, as a condition of receiving moneys pursuant to this chapter, to agree to any terms the Energy Commission determines are appropriate for the state to accrue any intellectual property interest or royalties that may derive from projects funded by the EPIC Program.	Energy Commission staff consulted with the State Treasurer's Office to establish terms and conditions for intellectual property and royalties for EPIC funding awards.	2/2/14
SB 96 (PRC §25711.5(c)): Require each applicant to report how the proposed project may lead to technological advancement and potential breakthroughs to overcome barriers to achieving the state's statutory energy goals.	Each EPIC solicitation includes this requirement for each applicant.	Included in first EPIC solicitation released in March 2014 and each solicitation thereafter.
SB 96 (PRC §25711.5(d)): Establish a process for tracking the progress and outcomes of each funded project, including an accounting of the amount of funds spent by program administrators and individual grant recipients on administrative and overhead costs and whether the project resulted in any technological advancement or breakthrough to overcome barriers to achieving the state's statutory energy goals.	Management tools are in place to comply with these requirements. Energy Commission staff uses Attachment 6 of D.13-11-025 to report annual progress and outcomes of each funded project, including the information required by PRC§ 25711.5, subparagraph (d).	12/31/2013

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
SB 96 (PRC §25711.5(e)): Notwithstanding Section 10231.5 of the Government Code, prepare and submit to the Legislature no later than April 30 of each year an annual report in compliance with Section 9795 of the Government Code that shall include all of the following:	This report, including information required by SB 96, will be considered by the Energy Commission for adoption prior to April 30. The Energy Commission will submit the adopted version of the report to the Legislature no later than April 30, 2015.	Planned for completion prior to 4/30/2015
SB 96 (PRC §25711.5(e)(1)): A brief description of each project for which funding was awarded in the immediately prior calendar year, including the name of the recipient and the amount of the award, a description of how the project is thought to lead to technological advancement or breakthroughs to overcome barriers to achieving the state's statutory energy goals, and a description of why the project was selected.	This report provides this information for the projects awarded EPIC funding in 2014.	12/31/2014
SB 96 (PRC §25711.5(e)(2)): A brief description of each project funded by the EPIC Program that was completed in the immediately prior calendar year, including the name of the recipient, the amount of the award, and the outcomes of the funded project.	No EPIC project was completed in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
SB 96 (PRC §25711.5(e)(3)): A brief description of each project funded by the EPIC Program for which an award was made in the previous years but that is not completed, including the name of the recipient and the amount of the award, and a description of how the project will lead to technological advancement or breakthroughs to overcome barriers to achieving the state's statutory energy goals.	No EPIC project was underway in calendar year 2013. Projects awarded EPIC funds in 2014 are listed as required for PRC Section 25711.5(e)(1). The Energy Commission will comply in 2015 and beyond.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
SB 96 (PRC §25711.5(e)(4)): Identification of the award recipients that are self-reported California-based entities, small businesses, or businesses owned by women, minorities, or disabled veterans.	This report provides this information for projects awarded EPIC funds in 2014. Data was collected and identified that all awardees were self-reported California-based entities, one awardee was a small business, one subcontractor was a small business and one subcontractor was women-owned.	2/28/2015
SB 96 (PRC §25711.5(e)(5)): Identification of which awards were made through a competitive bid, interagency agreement, or sole source method, and the action of the Joint Legislative Budget Committee pursuant to paragraph (2) of subdivision (g) for each award made through an interagency agreement or sole source method.	No project was awarded EPIC funding in calendar year 2013. Competitive bids were used for all projects awarded EPIC funding in 2014.	12/31/2014
SB 96 (PRC §25711.5(e)(6)): Identification of the total amount of administrative and overhead costs incurred for each project.	Administrative costs for EPIC for calendar year 2014 are reported herein. However, the first EPIC project was awarded funding in December 2014. This report includes administrative and overhead costs incurred for each EPIC project through December 31, 2014.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
SB 96 (PRC §25711.5(f)): Establish requirements to minimize program administration and overhead costs, including costs incurred by program administrators and individual grant recipients. Each program administrator and grant recipient, including a public entity, shall be required to justify actual administration and overhead costs incurred, even if the total costs incurred do not exceed a cap on those costs that the Energy Commission may adopt.	Administrative costs for EPIC for calendar year 2014 are reported and justified herein.	12/31/2014
SB 96 (PRC §25711.5(g)(1)): The Energy Commission shall use a sealed competitive bid as the preferred method to solicit project applications and award funds pursuant to the EPIC program.	All EPIC solicitations released in calendar year 2014 used a competitive selection process.	12/31/2014
SB 96 (PRC §25711.5(g)(2)(A)): The Energy Commission may use a sole source or interagency agreement method if the project cannot be described with sufficient specificity so that bids can be evaluated against specifications and criteria set forth in a solicitation for bid and if both of the following conditions are met:	The Energy Commission made no sole source or interagency agreements for EPIC funds in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
SB 96 (PRC §25711.5(g)(2)(A)(i)): The Energy Commission, at least 60 days prior to making an award pursuant to this subdivision, notifies the Joint Legislative Budget Committee and the relevant policy committees in both houses of the Legislature, in writing, of its intent to take the proposed action.	The Energy Commission made no sole source or interagency agreements for EPIC funds in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014

Energy Commission Responsibility or Requirement	Status for portion of the EPIC funds administered by the Energy Commission	Date completed or anticipated completion date
SB 96 (PRC §25711.5(g)(2)(A)(ii)): The Joint Legislative Budget Committee either approves or does not disapprove the proposed action within 60 days from the date of notification required by clause (i).	The Energy Commission made no sole source or interagency agreements for EPIC funds in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
SB 96 (PRC §25711.5(g)(2)(B)): It is the intent of the Legislature to enact this paragraph to ensure legislative oversight for awards made on a sole source basis, or through an interagency agreement.	The Energy Commission made no sole source or interagency agreements for EPIC funds in calendar year 2014. The Energy Commission will comply in 2015 and beyond.	12/31/2014
SB 96 (PRC §25711.5(g)(3)): Notwithstanding any other law, standard terms and conditions that generally apply to contracts between the Energy Commission and any entities, including state entities, do not automatically preclude the award of moneys from the fund through the sealed competitive bid method.	This requirement is reflected in Energy Commission competitive solicitations for EPIC funds released in 2014. The Energy Commission will continue to comply in 2015 and beyond.	12/31/2014