

August 17, 2012

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 12-EPIC-01  
1516 Ninth Street  
Sacramento, CA 95814-5512Re: Electric Program Investment Charge: Comments of Pacific Gas and Electric Company on the California Energy Commission's First Triennial Investment Plan**I. INTRODUCTION**

Pacific Gas and Electric Company ("PG&E") appreciates the opportunity to provide comments to the California Energy Commission ("CEC") on its First Triennial Electric Program Investment Charge ("EPIC") Investment Plan ("Plan"). PG&E provides the following responses to questions posed to each panel during the course of the August 2-3, 2012 and the August 9-10, 2012 workshops on this topic.

PG&E looks forward to continuing its collaborative discussions with the CEC and the other investor-owned utilities ("IOUs") to ensure that the customer monies used to fund the EPIC are used in a manner that maximizes customer benefits by providing meaningful results. Achievement of California's aggressive clean energy goals will require that the limited research funds be used to leverage past research and target projects that will help us identify solutions to managing the grid with more intermittent resources, as well as adapt the electric system to changing demands. At the workshops, policymakers noted the complexity of the energy issues facing the state, while also indicating that there is no "one-size-fits-all" solution to addressing these challenges. Close coordination and collaboration among agencies is paramount if the state is to achieve its goal of reducing GHG emissions, while also ensuring that the electric grid can be operated in a safe and reliable manner and that customer energy bills are affordable.

**II. EPIC RESEARCH SHOULD BE FOCUSED ON PROJECTS THAT DIRECTLY BENEFIT RATEPAYERS**

In response to the numerous questions raised in the workshop agenda, PG&E provides the following:

*Questions for the breakout sessions:*

**1. *What are the major barriers to developing and commercializing clean energy technologies?***

The major barriers are the high capital requirements and related costs of new technologies and the lack of a track record to prove their durability, operating characteristics and safe, reliable integration into the electric system operations of the specific utilities whose customers are funding Research, Development, and Demonstration ("RD&D") on clean energy technologies.

**2. *Where should funding emphasis be placed to maximize the deployment of clean energy technologies? (i.e., where is technology innovation needed versus where is support for commercial scale-up the critical need?)***

There is a need for funding across the RD&D spectrum for all forms of clean energy technologies. However, ratepayer-funded investments should emphasize areas with the most direct applicability to ratepayer needs, i.e., demonstration and deployment of technologies and electric system integration applicable to the operations and services of specific utilities and their customers.

**3. *What specific initiatives are recommended to advance innovative energy technologies that benefit ratepayers?***

There is a need for initiatives across the value chain areas. Many of the initiatives will cut across multiple areas. Policy drivers in California will require many in the area of grid operations and market design to adapt the utility electrical system to integrate renewable energy, distributed generation, electric vehicles, demand response, and other changes to the way the grid operates, and to enhance the safety, reliability and affordability of electric service to utility customers. Initiatives in information technology (IT), distribution, and demand side management will accompany grid operation initiatives.

**4. *Define the ratepayer need for which EPIC investment should be targeted?***

Safety, reliability and affordability are always the first considerations and many investment initiatives will need to be directed at system reliability and the affordability of electricity due to the considerable changes in grid operations necessitated by the policy drivers identified above. A lower cost way of achieving those policy objectives should be included as a key criterion.

**5. *Prioritize initiatives and identify the benefits that should be anticipated and measured such as:***

- a. *Energy and cost savings***
- b. *Grid reliability***
- c. *Job creation***
- d. *Economic benefits***
- e. *Environmental benefits***
- f. *Likelihood of return on investment***
- g. *Other***

The priorities should be on RD&D projects and activities that focus on electric system safety (which should be added to the list above), reliability, and energy cost savings consistent with the State's clean energy goals.

**6. *What areas are already well covered by DOE and private funding?***

The electric industry has historically been underfunded for R&D. The biggest gaps in funding are at the utility-specific demonstration and deployment level and technology monitoring and evaluation, due to the large amounts of capital required for demonstrations or deployments of sufficient scale to be meaningful, and the lack of sufficient staffing to continuously monitor and evaluate new technologies and industry best practices.

***Energy Innovation Clusters***

*Questions to consider:*

**1. *What are the benefits of innovation clusters in supporting the development and deployment of innovative clean energy technologies?***

Innovation clusters have a long history of success in the U.S., especially in California. Clustering provides a more efficient way to grow an industry. Clusters create geographic concentrations of venture capitalists, specialized suppliers and a specially-trained workforce. Collaborations between universities, clustered new-technology companies, and local and regional governments can increase technology-based economic growth and create more jobs. The best example in the U.S. is California's Silicon Valley, where the semiconductor industry was created and continues to grow.

**2. *What are the pros/cons of the different models of energy innovation clusters to accelerate a successful path to market? (i.e., Technology Incubators, Innovation Hubs, Test Beds)***

The three types of innovation clusters identified have some overlap, but can have different roles in the clean technology industry at different points in the development of new technologies. Innovation Hubs are usually more closely identified with early stage R&D and Technology Incubators with developing companies. Test beds can exist either early in the process to share new developments academically or after technology is in production by sharing improved processes. The test beds are more difficult in the clean energy industry due to competitive issues.

**3. *Do you recommend funding for innovation clusters in the EPIC Program? Provide program specific recommendations.***

The CEC should consider funding certain energy innovation clusters as part of its market facilitation program, with an emphasis on Innovation Hubs or Technology Incubators, if the proposals meet the overall criteria and priorities for utility-specific RD&D listed above.

**4. *If this is meritorious for funding, how should EPIC measure ratepayer benefits for energy innovation clusters?***

One metric for energy innovation clusters would be the number of new technology companies that provide direct benefits to utilities and their customers and that are created or supported by the cluster that survive for a set number of years. The implication being that a company must be contributing to growth in the industry if it is surviving financially.

***Regulatory Assistance and Permit Streamlining to Accelerate Clean Technology Deployment***

*Questions to consider:*

**1. *The Energy Commission anticipates that cities, counties, and regional governments will seek grant funding. Are there other entities that should be targeted for regulatory assistance funding?***

“Regulatory assistance” funding is not an appropriate role for energy RD&D funded by ratepayers, even under the “market facilitation” category. Instead, “market facilitation” funding should focus on pre-commercial, pre-deployment RD&D activities, such as technology testing, validation, standard-setting, and monitoring.

**2. *What local planning and permitting challenges do clean energy technologies pose now and in the future?***

Clean energy technologies, like other commercial projects, face similar challenges as other energy facility projects, including the need to provide local permitting agencies with sufficient information about the environmental and economic impacts of the project at a specific site and with a specific geographic “footprint.”

**3. *How can EPIC investments leverage current efforts rather than duplicate them (e.g. DOE SunShot Initiative and model frameworks from the California County Planning Directors Association and Governor's Office of Planning and Research)?***

As required by Public Utilities Code Section 740.1(d), each and every EPIC investment should be required to demonstrate that it is not duplicating or failing to take into account the results of other RD&D projects and expenditures, including RD&D funded by federal, state, or local public funds. A great deal of information is being gathered through the DOE SunShot Initiative, as well as other initiatives in California, like the Desert Renewable Energy Conservation Plan (“DRECP”). EPIC investments into data system architecture that would allow easy and long-term access to the variety of information being developed would help the state reduce costs to gather this information going forward. Today, we seem to restart the process each time, rather than leveraging the information that has been developed in other processes on desirable development locations.

- 4. *What, if any, local planning activities should EPIC invest in? What, if any, local permitting processes should EPIC invest in? What do these initiatives cost and how long do they take?***

EPIC should not invest in local planning activities, because such activities are not RD&D and are not an appropriate use of ratepayer funds. Instead, such activities are general governmental functions that should be funded by local or state tax revenues.

- 5. *If meritorious, how should EPIC measure ratepayer benefits for local planning and permitting assistance?***

See response to Question 4.

### ***Workforce Development to Accelerate Clean Technology Deployment***

*Questions to consider:*

- 1. *Does the clean energy sector shape employee training programs? What partnerships exist between training programs and employers to promote job placement, apprenticeships, and externships?***

The clean energy sector has many partnerships in workforce development. One example is PG&E's 2013-2014 Program Implementation Plan for its Energy Efficiency Portfolio Workforce Education and Training ("WE&T"). The Plan reinforces PG&E's commitment to clean energy workforce training through specific sector strategies in HVAC, lighting controls, building envelope, and other sectors that have an impact on California achieving its energy efficiency goals. Other collaborations exist, such as the SolarTech initiatives highlighted at the CEC workshop. In addition, PG&E's PowerPathway partnerships with Community Colleges and Disadvantaged Community Training Programs partner to deliver training that matches demand for jobs by the sector strategy approach.

- 2. *Significant investments are being made to develop a clean energy workforce. Should EPIC workforce development investments build upon these efforts? If so, how?***

The CEC should consider EPIC investments in workforce development as part of its market facilitation initiatives, both separately and as part of energy innovation cluster investments. Such efforts should be in collaboration and articulation with the IOU Sector Strategy Implementation Efforts, and should not duplicate existing workforce development efforts or divert funds from direct RD&D activities.

- 3. *Should EPIC fund the collection, storage and dissemination of a clean energy workforce information center? Would a clean energy workforce center connect the workforce to the employer?***

An EPIC-funded clean energy workforce information center is not necessary. The IOUs and others already provide that function (e.g.,

<http://www.pge.com/mybusiness/edusafety/training/>; <http://www.sce.com/CommunityandRecreation/Education/workforce-education-training.htm>; and <http://www.cewd.org/>).

**4. *Distributed PV and wind have industry recognized certifications (i.e., NABCEP). What technologies would benefit from similar certification programs?***

Energy efficiency, demand response, and energy storage would benefit from certification programs, although many certification programs are available for energy efficiency stakeholders today. The challenge is to determine which training programs fulfill specific CEC code compliance requirements (e.g., Title 24 Acceptance Testing) or are part of an industry consensus. Setting standards for the content of an acceptable certification program and a determination of whether ANSI accreditation is necessary would help sort out the abundance of certification programs. Some examples of Energy Efficiency Certification include: Certified Energy Manager, Building Operator Certification, NATE Certification, TABB Certification, CALCTP Lighting Installer Certification, LEED Certification, and Build it Green Certification.

**5. *How should EPIC measure ratepayer benefits for workforce development?***

The most immediate, short-term metrics are jobs placements of workforce development graduates and avoidance of duplication and confusion with already existing workforce development programs in the private and public sectors. The matching of the supply of trained individuals with job openings is crucial. Training should be based on needs assessment and filling of crucial gaps in performance with real-time performance consulting that shows the right training is offered to the right audience at the right time to improve efficiency, durability, health, safety, and comfort of retrofits. The unemployment rate in the utilities' service area is a mid-range metric, however, it is influenced by many other factors. Long term, the most direct measure of ratepayer benefits is a reduction in the number of ratepayers who qualify for care programs, which are subsidized by non-participating ratepayers. However, that number is also influenced by many other, unrelated, external factors.

### **III. CONCLUSION**

PG&E appreciates the opportunity to provide input on these issues. We look forward to continuing our collaboration with stakeholders on identifying appropriate areas for research that will maximize the benefit to our customers. Should you have any questions about PG&E's comments, please do not hesitate to contact me.

Sincerely,

/s/

Valerie J. Winn

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