

BEFORE THE CALIFORNIA ENERGY COMMISSION

Development of the California Energy
Commission Investment Plan for the
Electric Program Investment Charge

Docket No. 12-EPIC-01
docket@energy.ca.gov

**COMMENTS OF THE TECHNOLOGY NETWORK (“TECHNET”) REGARDING THE
PROPOSED 2012-2014 TRIENNIAL INVESTMENT PLAN FOR FUNDS
ADMINISTERED BY THE CALIFORNIA ENERGY COMMISSION FOR THE
ELECTRIC PROGRAM INVESTMENT CHARGE PROGRAM**

October 26, 2012

I. Overview

The Technology Network, (“TechNet”), respectfully submits these comments regarding the staff report of the 2012-2014 triennial investment program for the Electric Program Investment Charge (“Report”). TechNet represents California’s leading technology companies in sectors such as hardware, software, smart grid, clean energy generation and biotechnology, all of which have an important role to play in California’s clean energy future. TechNet is also sensitive to achieving California’s energy goals in a market-oriented, cost-effective manner, as many of our members are consumers of electricity. TechNet’s mission is to implement public policies that foster innovation, allowing new technologies the opportunity to compete and scale.

TechNet supports the general direction of the Report, particularly those sections advancing applied research with respect to emerging clean energy, smart grid, energy efficiency, clean transportation and demand response technologies.

The global market for energy is intensely competitive – and growing more so. In the context of the state’s ambitious energy goals and the strength of international competition in clean energy sectors, the incentives provided by the state are limited. To build a strong clean energy economy and undertake compliance with the state’s ambitious environmental goals, it is critical that the state do everything it can to help companies efficiently scale, partnering with California’s clean energy companies to maximize resources available to develop and scale new technologies, and where possible further harnessing this partnership to match available federal resources.

As a general principal, to make the best use of limited funds, particularly in demonstration projects where the required investments are generally greater,

TechNet supports establishing incentives that are technology neutral and defined broadly enough to accommodate and support innovative new technologies. Technology neutral policies spur innovation and allow for out-side-of-the-box ideas that may not have even been conceived when the rules implementing research or deployment policies were written. Policy should set goals based on the critical performance objectives (e.g. reliability, cost) and environmental targets (e.g. reduced greenhouse gas and criteria air pollutant emissions) and then allow any technology that meets these goals to be eligible. Even where a particular technology appears especially promising, programs should be written in a way that does not close the door to leapfrog technologies.

With the caveat that time constraints have limited the ability of our members to fully review the Report, TechNet offers its perspectives on specific policy recommendations suggested therein.

2. Advancing new technologies – in sectors such as demand response, distributed generation and clean transportation -- to enable cost-beneficial energy choices on the consumer side of the meter

The research priorities in S.2 generally outline initiatives to support development of technologies to allow consumers to realize benefits from demand response, distributed generation, clean transportation and/or energy storage resources. In general, TechNet recommends that these investments – and tools that help consumers benefit from the new energy economy generally – be given high priority.

With electricity rates expected to rise, TechNet supports the objectives in S2 – providing for the development of technologies, tools and protocols to allow more customers (such as residences and small commercial enterprises) to participate in the ancillary service markets and maximize the tangible investments from home energy management, distributed generation and the use of clean transportation technologies like electric vehicles.

Clean distributed generation and clean transportation systems such as electric vehicles can substantially reduce greenhouse gas and criteria air pollutants. California is poised to lead the way. For example, a recent Pike Research report has indicated that nearly one in four of the electric vehicles sold in the U.S. between now and 2020 will be in California. Support for the development of clean transportation infrastructure in a way that provides consumers with tangible benefits is critical to the success and realizing California’s energy priorities and the Governor’s Electric Vehicle Action Plan.

In pursuing these priorities, TechNet recommends that the Commission communicate regularly and work with technology companies in these sectors, leveraging the research and work that they have done, being careful to avoid duplication, so that public resources are directed to filling gaps and solving problems not yet addressed by the private sector.

In the discussion in S3, the Report discusses the need to “evaluate innovative ideas to increase performance over existing DG technologies” and the shortcomings of some of the existing technologies, with a significant focus on combined heat and power (“CHP”) systems. TechNet urges the Commission to adopt a technology-neutral approach as it moves to implement the objectives in S3, setting goals based on emission reductions of greenhouse gases and criteria pollutants, and costs, then allow any technology that meets these goals to be eligible. The Report represents an improvement over the earlier draft by focusing on *objectives* such as enhanced reliability and reduced overall system costs. The Report discusses the need to increase total energy conversion efficiency, but it should reserve the option of funding technologies more efficient in converting fuel into electricity as well, where those efficiencies are especially promising.

For example, CHP typically has an overall efficiency of 80%, with 30-35% of the fuel energy going towards electricity, and 45-50% going to heat. To be cleaner than the California electric grid, a natural gas unit's efficiency needs to be greater than 50%. New, best-in-class boilers can have much higher efficiencies. Therefore, neither the electricity nor heat that is produced from CHP are necessarily cleaner than if they were produced individually in new high-efficiency electricity generation units. Additionally there are fuel cell technologies that have efficiencies exceeding that of the grid and therefore reduce GHGs compared to the grid. A focus on particular technologies like CHP could cause the state to miss more innovative approaches.

3. Building the Smart Grid to enable broader Energy Efficiency, Clean Energy Generation and Clean Transportation

TechNet has long supported the development and deployment of Smart Grid technologies. TechNet supports the general research objectives in S6, S7 and S9, enabling a California to implement a robust Smart Grid by 2020. Together the goals in these sections will enable California to harness the Smart Grid to scale deployment of clean energy sources and clean transportation, for example, by advancing the deployment of plug-in electric vehicle infrastructure – and managing electric vehicle load in a manner that increases off-peak demand -- both of which represent important opportunities to enhance grid reliability and deserve high priority.

TechNet urges support for demonstrating prototype electric vehicle charging systems that will provide grid frequency regulation, helping to avoid blackouts and brownouts, and customer-side projects that demonstrate energy storage for peak load reduction, load management, demand response and integration of renewables.

As the Report notes, there is significant potential overlap with other efforts being undertaken in the regulated marketplace (for example, the portion of the EPIC program managed by the utilities) or at the federal level. TechNet appreciates the Commission’s efforts to closely coordinate its efforts and urges the Commission, in

the interest of making the best possible use of resources, to focus its resources on scaling technologies where there are potential gaps, such as the customer side of the meter.

4. Regional Testing and Verification

TechNet notes that in S10.2, the Commission envisions supporting regional testing and verification centers for early-stage technologies such as biomass, combined heat and power, photovoltaics and wind. The purpose of these centers will be to test the performance and safety of new systems. The ability to rapidly validate and demonstrate new technologies is critical for emerging technologies.

TechNet notes that new home area networking technologies must also be validated for interoperability with the electricity grid, an issue addressed by the Public Utilities Commission in its recent resolution of the issues related to the Home Area Networking (HAN) Advice Letters. The Commission may wish to explore coordinating with the Public Utilities Commission on an approach that combines these functions, particularly if the result would be to free up funds that could be used for especially critical priorities such as demonstration and deployment.

5. Technology Demonstration and Deployment

TechNet believes that the Commission's demonstration and deployment activities are especially critical to California's economic leadership in clean energy. The venture funding environment in the clean tech sector is becoming more challenging. In many cases investors are looking to make investments in companies that are twelve to eighteen months from revenue. With a sales cycle for many energy technologies that can extend from six to eighteen months, this requires investment after demonstration units are installed. There is a need for to help companies get through the demonstration "Valley of Death," as described in the Report.

The Report amply demonstrates the importance of a robust demonstration strategy to help emerging growth companies commercialize new technologies. For this reason, TechNet urges the Commission to focus particularly on the funding available for technology demonstration, better leveraging the applied research investments that are being developed in the private sector and helping them get to scale so that young companies can grow and compete.

TechNet supports S12 and the proposed efforts to identify and demonstrate promising energy efficiency and demand response technologies suitable for commercialization and utility rebate programs, including control systems. These efforts should include consideration to impactful technologies installed not only in commercial and industrial settings but in residential settings as well.

The ACEEE has estimated that access to real-time energy usage information and management tools can enable households to reduce energy use by up to 12%. With

more than 15 million smart meters deployed by the state's IOUs, California recently took the step of requiring utilities to provide consumers and their authorized third parties with access to their smart meter data, a step that should help foster a vibrant market for energy management services. But the obstacles to getting in-home energy management systems into every home remain sizeable. Incentives to encourage adoption will be important.

The Report correctly points out the importance of the reliability and quality of electric power. For consumers such as data centers or biotechnology manufacturing, reliability is paramount. TechNet supports efforts to demonstrate and evaluate clean energy generation technologies that can provide reliable power, as discussed in the first paragraph of S13.

TechNet is concerned that “[M]ost” of the solicitations for demonstration and deployment funds for clean generation “will be allocated to biomass-to-energy projects” within 13.1. Further, S13.2 appears to focus on CHP systems, without mentioning technologies such as fuel cells or other emerging combustion technologies that may be able to provide a higher proportion of output as high quality electricity. While TechNet fully supports use of biomass and CHP, TechNet reiterates its support for establishing incentives that are technology neutral, or at least drafted in such a manner as to accommodate and support new technologies meeting critical performance criteria. Otherwise, the state could unnecessarily limit its ability to take advantage of many promising generation technologies. Taken together, the limitations could be viewed as depriving California of the opportunity to lead on demonstrating other promising generation technologies. TechNet urges the Commission to drop the last paragraph on page 146 and to ensure that the references to CHP in S13.2 adopt a more technology-neutral clean energy definition.

TechNet appreciates the hard work the Commission has undertaken to move California's clean energy economy forward and the opportunity to comment on the Report. TechNet and its member companies look forward to working with the Commission to realize California's ambitious energy and environmental goals in a way that maximizes economic and job creation benefits for the state.

Respectfully submitted,



Jim Hawley
Senior Vice President