

April 30, 2012

California Energy Commission Dockets Office, MS-4

Re: Docket No. 12-IEP-1C

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**DOCKET**

**12-IEP-1C**

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Re: California Energy Commission Docket No. 12-IEP-1C

WORKSHOP RE: The California Energy System Prepares for Climate Change

To California Energy Commission:

California's Public Interest Energy Research (PIER) program has provided scientific research on the environment that has been important to the state by providing information critical to addressing issues related to the demand, supply, transmission and reliability of power, as well as cost containment and general well-being of ratepayers. It is imperative that the state continues to fund scientific research to analyze the impacts of our energy generation and consumption on the environment and ratepayers.

- Demand / Reliability / Ratepayer well being: PIER research has shown that the average temperature in California has increased by 1.8° F over the past century and will continue to increase for decades. This will increase electricity demand for air conditioning, especially in urban Southern California and will also make it more difficult for the state to achieve the requirements of AB32 and the renewable portfolio standard. This information is critical to utilities as they plan for system reliability and to local jurisdictions to minimize impacts of extreme heat on ratepayers.
- Demand / Ratepayer well being: A study by Professor Max Auffhammer from UC Berkeley has shown, at a local level, how increased temperature would affect electricity demand in the residential sector. This information, together with information about socio-economic status is being analyzed to find options to reduce impacts to low income groups, the elderly, and other sensitive ratepayers.

- Supply / Transmission: PIER research has shown that higher temperatures will lower the efficiency of thermal power plants and reduce the capacity of transmission lines. This information will allow utilities to plan well in advance of the inexorable impacts and reduce ratepayers' costs.
- Transmission / Reliability: PIER research has predicted that large wildfires will become more frequent in the rest of this century and would therefore reduce the reliability of the electricity system. Maps have been created to show the transmission lines that are at greatest risk. This information will be used to minimize the risks of costly electrical interruptions in California for the benefit of electricity ratepayers and promote forest watershed health and clean drinking water. Some of the water from these watersheds is essential to generation of hydropower.
- Supply / Reliability: PIER research has shown that the timing of stream flows will shift to the early part of the year, reducing the amount of electricity that would be available from hydropower units to satisfy the summer peak demand periods. PIER supported modeling has shown, however, that some mitigation of this problem is feasible. For example, the use of probabilistic hydrologic forecasts and modern decision tools to manage large water reservoirs could accommodate some of these changes by reducing the energy penalties. More work is on-going.
- Demand / Supply / Reliability: The regional climate models that PIER has supported to develop climate scenarios for California that are adequate for both research and long-term planning are able to produce reliable forecasts of conditions in the summer about six months in advance. More work is underway to demonstrate how this capability could be useful to anticipate and solve potential problems with electricity supply in the summer peak season taking into account other factors such as change in snowpack conditions.
- Supply: PIER research on the Mojave ground squirrel and on birds and bats is producing information that can reduce conflict and resulting costs in the siting of solar and wind renewable energy facilities and transmission lines.
- Supply / Cost Containment: PIER research on salmon investigated the impacts of increased temperature and changes in hydrology on water and food conditions for salmon. This information will be critical for utilities in drafting permit conditions that minimize impacts on salmon in order to get approval by the Federal Energy Regulatory Commission for the 100+ hydropower units that will need to be re-licensed by FERC over the next decade in California.

- Ratepayer Cost Containment: PIER has funded research on options to reduce ratepayer costs for AB 32 compliance through mechanisms that could provide low cost allowances or offsets to energy utilities. For example:
  - In 2004, PIER completed a project evaluating the opportunity to increase carbon stocks in California through appropriate forest management or reforestation. Subsequently, the Air Resources Board adopted forest offset regulations for AB 32 implementation based in part, on this work. PG&E and other utilities plan to use forestry projects to lower their AB 32 compliance costs and/or add some operational flexibility, thus minimizing increased costs on ratepayers.
  - PIER has also funded projects that found that California farmers could reduce greenhouse gas emissions, potentially creating low-cost offsets for utilities. This information has been used to develop a new offset protocol for rice management for the AB 32 program.

Funding research on the impacts of our energy use on the climate and on the natural resources of California is important to providing reliable and affordable electricity to California ratepayers. Funding for this research is also a responsibility for the state because, power plants contribute about 25 percent of the greenhouse gas emissions in California, and the energy sector as a whole (commercial, residential, transportation, industrial sectors, and electricity generation) produce about 87 percent of the state's greenhouse gas emissions. If it were a country, California would be the 12<sup>th</sup> largest emitter of green house gas globally so what we do here matters.

The Nature Conservancy is concerned that the State's capacity to conduct research on the impacts of a changing climate on its people and the natural resources and energy upon which they depend may be reduced; we urge you to do all in your power to retain the state's climate change research program with a component focused on the natural environment.

The Nature Conservancy appreciates the opportunity to submit these comments. Please contact me at (415)-281-0439 or [lblumberg@tnc.org](mailto:lblumberg@tnc.org) to discuss any questions or issues these comments may generate.

Sincerely,

A handwritten signature in blue ink that reads "Louis Blumberg". The signature is written in a cursive, flowing style.

Louis Blumberg,  
Director, California Climate Change Program  
The Nature Conservancy