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The Public Interest Energy Research (PIER) Program

LEGISLATIVE ANALYST'S OFFICE

Presented to:

Senate Energy, Utilities and Communications Committee

Hon. Alex Padilla, Chair





Overview of Presentation

- LAO's Analytical Approach to PIER Program Review.
- Electricity Research Prior to Deregulation.
- PIER Background and Statutory Guidelines.
- The California Energy Commission's (CEC's) Implementation of PIER Raises Issues.
- Is There Continued Role for Energy Research?
- Three Options to Make Investments in Research More Strategic.



Analytical Approach to Program Review

As part of our evaluation of the program, we address three main questions:

- Is there a continued state role for a public interest energy research program in the state today?
- If so, are the current statutory parameters guiding the eligible use of PIER funds and thus the program's focus still appropriate? If not, what should the program's focus be?
- Assuming program continuation, is the current process for allocating funds via the CEC best suited to achieve statutory objectives of the PIER program, including the creation of tangible electricity ratepayer benefits?



Electricity Research Prior to Deregulation

- Prior to deregulation of the state's electricity markets in 1996, most electricity research was driven by utilities and coordinated through the Electric Power Research Institute.

- During this time, California's investor-owned utilities (IOUs) were allowed to recover costs associated with this research activity through the rate-making process at the California Public Utilities Commission (CPUC).



PIER Background and Statutory Parameters

- ☑ ***Deregulation Legislation Established Public Goods Charge on IOU Ratepayers to Fund PIER.*** Chapter 854, Statutes of 1996 (AB 1890, Brulte), authorized the collection of a surcharge on IOU electricity bills in order to fund, among other purposes, a public interest energy research, development, and deployment program. After the law was enacted, CPUC decided administratively to eliminate most rate recovery of IOU research and development budgets.

- ☑ ***Statutory Objectives for PIER Program.*** Statute provides that the general goal of the program is “to develop, and help bring to market, energy technologies that provide increased environmental benefits, greater system reliability, and lower system costs, *and* (emphasis added) that provide tangible benefits to electric utility customers.”

- ☑ ***Focus of PIER Program Established in Statute.*** Statute requires that the program align with the state’s energy “loading order” and focus on six major areas:
 - Advanced electricity generation (such innovations as systems that recycle heat from power systems to produce electricity).
 - Climate change and the environment.
 - Energy efficiency and demand response strategies (the latter referring to mechanisms that serve to reduce customer demand for energy).
 - Renewable energy.
 - Transmission and distribution of power.
 - Transportation-related research.



The CEC's Implementation of PIER Raises Issues

Since the program's inception, PIER has funded nearly \$700 million in public interest research and development. It is not clear that the investment has resulted in a payoff to the state's electricity ratepayers.

- ☑ ***PIER Has Funded a Broad Spectrum of Research—Perhaps Too Broad.*** A broad array of research has been funded under PIER. However, some projects appear to have only a tenuous connection to the subject of energy.
- ☑ ***All Statutory Goals of PIER Not Being Met.*** For example, some funded projects do not appear to have provided tangible benefits to IOU ratepayers.
- ☑ **Other Issues**
 - The lengthy application process.
 - Uncertainty regarding ownership of results of PIER-funded research when both public and private funds are involved.
 - The inefficiency of having multiple public interest energy research programs in the state.



Is There a Continued State Role for Energy Research?

- Drivers of Energy Research Have Evolved Since PIER's Creation.*** Since the PIER program was created, many aspects of the California energy sector have changed. Subsequently enacted state legislation is driving the need for technological change and research to achieve breakthroughs in the energy area. Because of the state's various energy-related mandates, the IOUs now have a much greater incentive to invest in research in order to meet the state's energy goals.

- A Continued State Role in Energy Research Makes Sense.*** Meeting the state's energy goals will require continued investment by both the public sector (including the state) as well as the private sector.

- Investments in Research Should Be More Strategic.*** The Legislature has options to maximize publicly directed energy research investments. Each of these options has policy tradeoffs.



Options to Make Investments in Research More Strategic

Option One—Continue PIER Program Under CEC With a Tighter Focus

The Legislature may wish to consider maintaining the PIER program at the CEC, but requiring a more strategic focus for the program based on its current priorities, emphasizing research that will specifically address the current technological barriers to achieving the state's current energy goals. The Legislature may wish to consider transferring public goods charge revenues collected by publicly owned utilities (POUs) for research purposes to the PIER Fund.



Advantages

- Maintains the institutional knowledge that has been built at the CEC.
- Maintains the existing opportunities for legislative budgetary and policy oversight of CEC activities.



Potential Tradeoffs

- Potentially misses an opportunity to focus the program on cost-effective investments that would be more likely to maximize the benefits to ratepayers (an opportunity if investment decision making were more utility-driven).



Options to Make Investments in Research More Strategic

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Option Two—Allow IOU Rate Recovery of Public Interest Research

Because the IOUs have a greater incentive today to invest in research that is aligned with the public interest of pursuing the state's energy goals, the Legislature could choose not to reauthorize the collection of the public goods charge to fund public interest research, instead allowing the IOUs to recover their costs for this type of research through rates. Statute could still provide parameters for the type of public interest research for which this rate recovery would apply.



Advantages

- Provides the IOUs with flexibility in making research investments that may lead to the state achieving its energy goals more cost-effectively.
- Eliminates uncertainty over who would have the rights to research outcomes.



Potential Tradeoffs

- In effect, makes the CPUC the sole arbiter on behalf of the state of IOU research investments, resulting in loss of CEC's institutional expertise in informing research investment decisions.
- Likely reduced level of legislative oversight.



Potential Solutions to Tradeoffs

- Enact statutory parameters to guide the rate recovery process.
- Cap statutorily the amount of research costs that can be recovered through rates.



Options to Make Investments in Research More Strategic

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Option Three—Create a Public-Private Partnership for Electricity Research

A third option is a hybrid approach designed to provide more flexibility than is currently available to the utilities in making research investment decisions, while retaining ample public oversight over the process. This option has the following three main components:

- Reauthorize the collection by IOUs of a public goods charge for public interest research purposes, but provide that the monies remain with the individual utilities rather than being remitted to the PIER Fund at the CEC.
- Provide that the use of the collected monies would be subject to each utility developing a multiyear investment plan.
- Require the multiyear investment plans to be submitted to a newly created coordinating council which would replace the PIER program at the CEC. The coordinating council could be composed of representatives from the CEC, CPUC, CPUC's Division of Ratepayer Advocates, the California Independent System Operator, the POUs, and the IOUs.



Process for Making Research Investment Decisions. Under this option, the coordinating council and the utilities would each have their own distinct decision making roles:

- The coordinating council would deliberate and agree upon an appropriate research course for the state.
- The utilities would then develop their own research plans based on these discussions, and these plans would be subject to council approval.
- Decisions about funding *individual* research projects would be left to the utilities.



Options to Make Investments in Research More Strategic

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Advantages

- Creates greater opportunity to coordinate research efforts across the state.
- Provides more flexibility to the individual utilities regarding where to invest research dollars, helping to strategically focus funding on investments that are cost-effective.
- Expedites decision making about what research would go forward, since utilities would now be making such funding decisions themselves.



Tradeoffs

- Creates new administrative bureaucracy involving multiple state agencies, along with associated administrative costs. However, any new costs would likely be more than offset by savings on administrative costs due to the elimination of the PIER program at CEC.