



**PUBLIC INTEREST ENERGY  
RESEARCH (PIER) BENEFITS  
ANALYSIS**  
*FOUNDATIONAL NEEDS AND  
POTENTIAL APPROACHES*

<b>DOCKET</b>
<b>11-IEP-1N</b>
DATE _____
RECD. <u>MAY 19 2011</u>

Presented by  
Vanessa Kritlow

# Welcome!



The intent of this presentation is to present ideas to innovate PIER's benefits analysis methodology.



# FOUNDATION AND NEEDS FOR FUTURE BENEFITS ANALYSIS

Work Plan integration

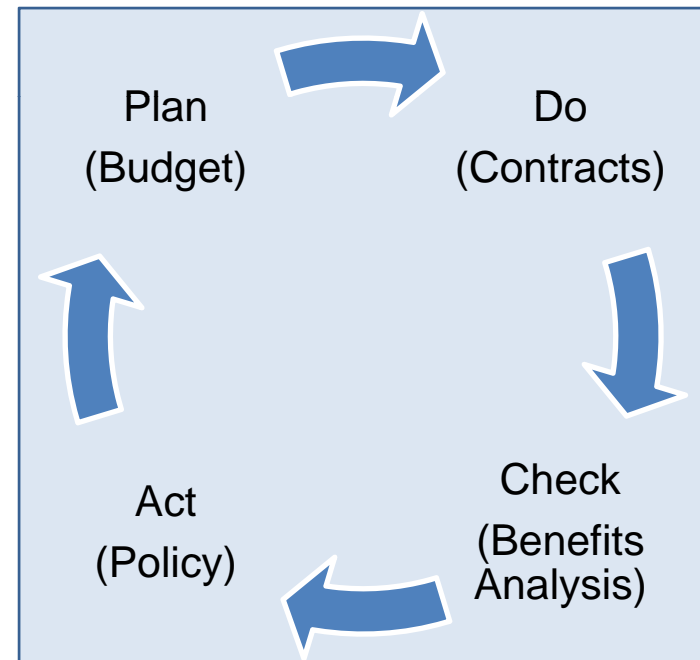
Training

Database Enhancement

Contracts

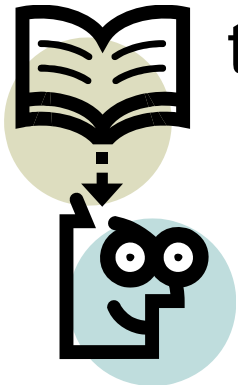
## Integrate Benefits Assessment into Work Plans.

- When used appropriately, benefits analysis can serve as an important feedback loop.



- Incorporate benefits training into PIER focus areas

- Ensure at least one staff person in each program area receives general benefits training



- This person becomes the “go-to” for questions regarding data and projects to include in reports and highlights.
    - Will aid in benefits information requests, as needed.
    - Training preferably to be administered in-person and online.

## FOUNDATION AND NEEDS FOR FUTURE BENEFITS ANALYSIS



- The PIER program should consider requiring contractors to report on pre-determined metrics before, upon completion, and after project completion for a specified amount of time in the future via a survey.
  - But for how long? 2 years? 5 years? 10 years? Dependent on type of research?



- Database Enhancements

- Incorporate tracking for *ex-ante expected benefits, realized benefits or indicators thereof, and future benefits* for individual projects.
  - Categories of metrics can be provided for easy fill-in or an open writing area where “other” non-quantitative benefits can be described.
- In addition, design placeholders for future data collection. Will be needed for annual data updates after project completion.



- Database Enhancements (cont.)

- Upon project completion, database to contain a box that can be auto-filled or checked by Contract Agreement Manager (CAM) for projects that: (1) Did not achieve expected benefits, explain why; (2) Expected benefits achieved proximate to the anticipated amount; or, (3) Exceeded benefits expectations.





# METHODOLOGY

Proposed Benefit Analysis Methods



Now we will look at a few favored approaches and some questions regarding benefits analysis methods....

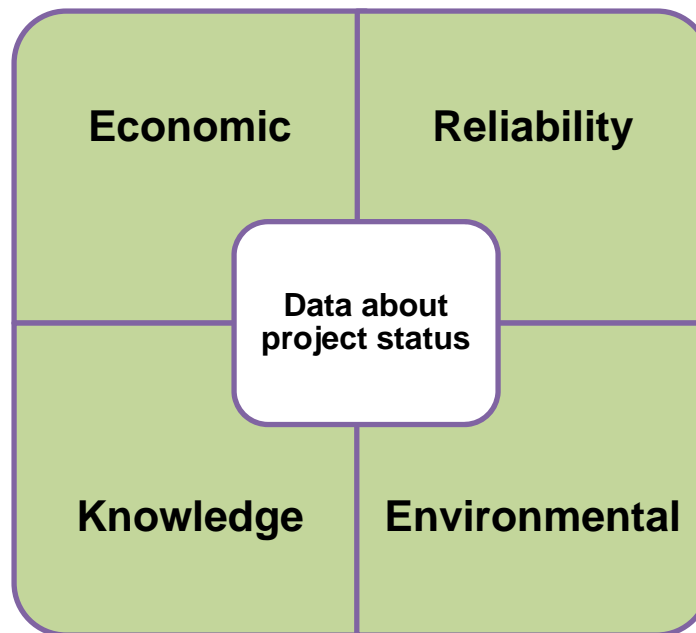
- Analysis can be done at the Program or Project Level
  - Project-by-project analysis by staff or contractor.
  - Comprehensive vs. stratified random sample analysis depending on budget and staffing constraints.
- Some elements of analysis, consider: (1) Whether the research yielded predicted savings and results; (2) How the market is looking to respond to those results at the time of completion; (3) What the benefits would be, noting also the costs. (4) Include uncertainty as part of final results for transparency.

# METHODOLOGY



- The PIER benefits group perceive most of the quantitative benefits of energy R&D fitting into four general categories: economic, security/reliability, environmental, and knowledge spillover benefits.
- Surveys are likely to provide qualitative benefits (how environmental/climate change studies are used for example).

**Please see the 'Potential PIER Metrics' handout for a list of metrics favored by the PIER benefits group.**



# METHODOLOGY



**Example of a visual representation of future PIER benefits categories:**

<b>Annual Benefits/Savings</b>	<b>Economic (\$M)</b>	<b>Security/Reliability (\$M)</b>	<b>Environmental (\$M)</b>
<u>Projected Benefits –</u> Contractor projection of benefits made ex-ante.	\$X.X	\$XX	\$X.X
<u>Realized Benefits –</u> Actual benefits. Post project completion.	\$X	\$X.X	\$XX
<u>On-Going Annual Benefits as Reported by Contractor –</u> Benefits as reported on an annual basis following project completion.	\$X	\$XX	\$X

- Macroeconomic impact modeling using input-output analysis at state and local levels
  - Answers the question, ‘What would the economic consequences of this project be?’
  - Input-Output models such as IMPLAN, use Social Accounting Matrices and Multiplier Models that allow us to measure local impacts and see them ripple through the economy to surrounding counties.
    - There are three types of effects measured with a multiplier: the direct, the indirect, and the induced effects.

The result of these types of models are that we are able to find out the total increase in economic activity from that ‘million dollar project’ and tell us how much each dollar spent is spurring it.

## The Question of Attribution

Cost sharing and public goods: When groups jointly fund a successful research effort, and each participant is critical, how are benefits weighed against costs?

How to evaluate PIER's role in making research happen?

- Detailed interviews with costs and potential bias?
  - Comparisons of awardees and non-awardees (how do you control for the fact PIER endeavors to select projects that would not occur without award)?
  - Technology cost or dissemination curves?
  - Other?
- Do you credit each partner's contribution according to their expense? (Does that favor expenditure over results?)

**WRITTEN COMMENTS DUE BY 5 p.m. on June 1, 2011**



**Please include the docket number 11-IEP-1N and indicate” PIER Benefits Assessment Workshop” in the subject line or first paragraph of your comments.**

Email:

Please send your comments in either Microsoft Word format or as a Portable Document File (PDF) by electronic mail to:

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**California Energy Commission  
Dockets Office, MS-4  
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**THANK YOU!**