



Energy Technologies Area

Lawrence Berkeley National Laboratory

Energy Efficiency Reporting Tool for Public Power Utilities

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Webinar

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¹American Public Power Association

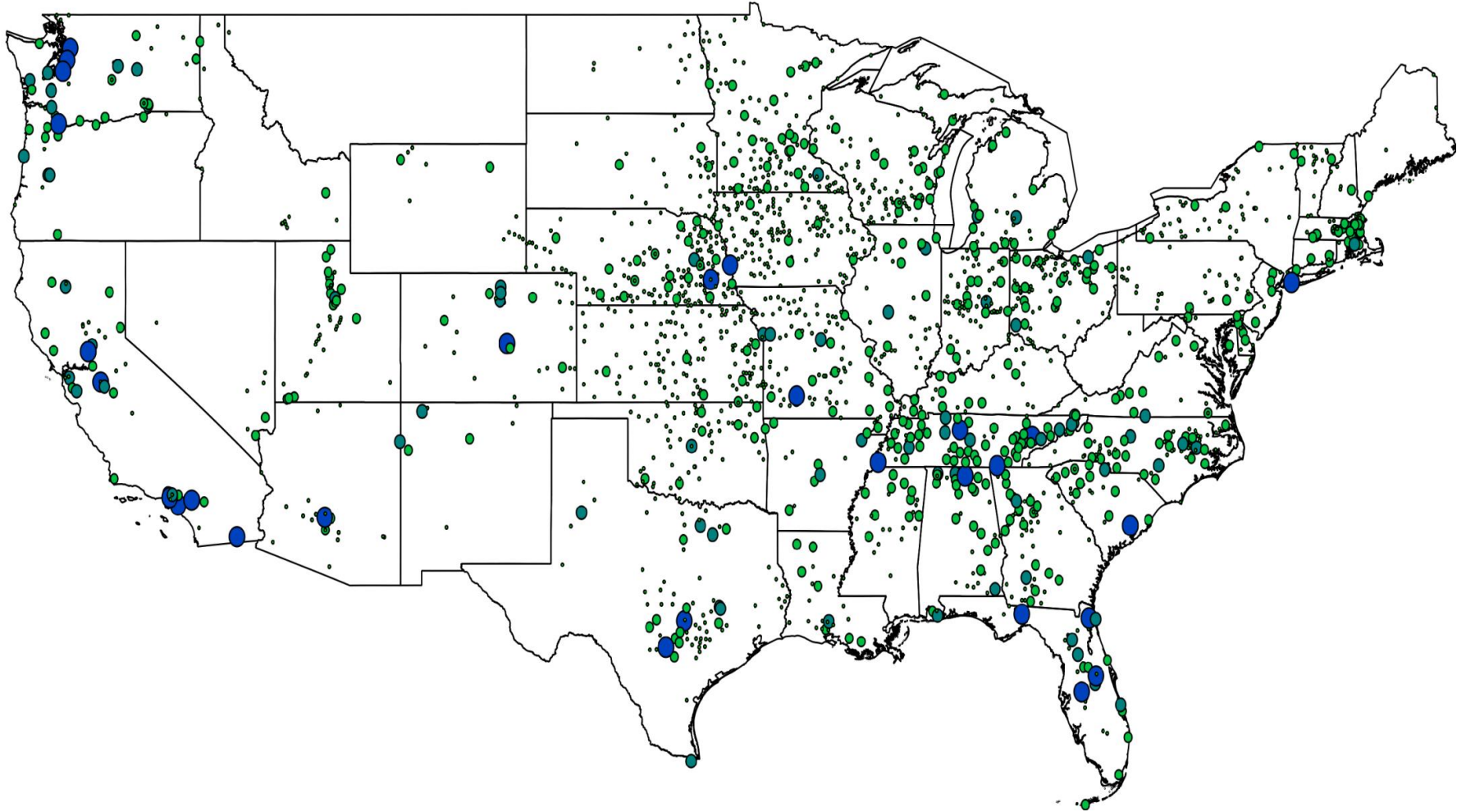
²Electricity Markets and Policy Group

Lawrence Berkeley National Laboratory

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Public Power Utilities – Innovative and Diverse



APPA's Efforts in Energy Efficiency

- ◆ DSMBenchmark
 - Currently being updated
- ◆ APPA's Demonstration of Energy & Efficiency Developments (DEED) program
 - Grant funding for energy efficiency research by member utilities
- ◆ APPA Energy Efficiency Resource Central (EERC)
- ◆ Energy Efficiency/Demand-Side Management Survey
 - Will be released this year!

EE Reporting: Background

- ◆ Public power utilities regularly report what they spend and save to their city council or board.
- ◆ These reports typically include:
 - a narrative that highlights achievements of the utility's portfolio of efficiency programs
 - tables and charts that quantify spending, savings, and achievement of other objectives
- ◆ Issues:
 - Energy efficiency reporting practices vary widely among utilities and other program administrators and states.
 - Many studies of reporting practices for efficiency programs have identified issues of consistency, rigor and completeness
 - Challenging to determine whether a program administrator is achieving its energy efficiency goals

EE Reporting: Current Situation

Spending/Costs

- ◆ $> 1/2$ of states don't report total costs (i.e. program administrator costs *and* participant costs)
- ◆ $< 1/2$ of states report program cost breakdowns, although cost categories often differ

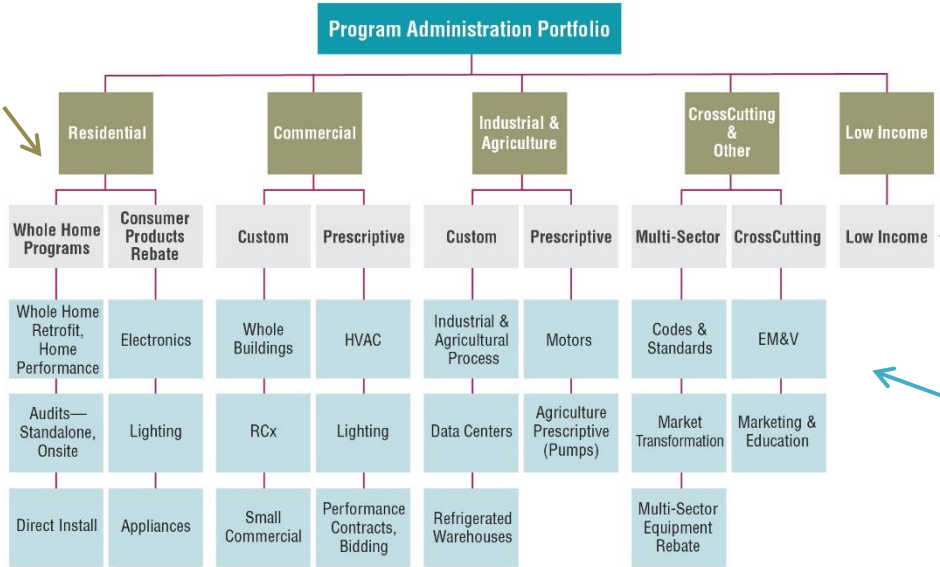
Energy savings

- ◆ Only $\sim 1/3$ of states report lifetime savings.
- ◆ “Net savings” often not defined in annual filings, and baselines are rarely defined



Issues in EE Reporting – Standardized Program Typology

7 sectors



27 simple categories

65 detailed categories

See LBNL Policy Brief: Energy Efficiency Program Typology and Data Metrics: Enabling Multi-State Analyses Through the Use of Common Terminology – at <http://emp.lbl.gov>

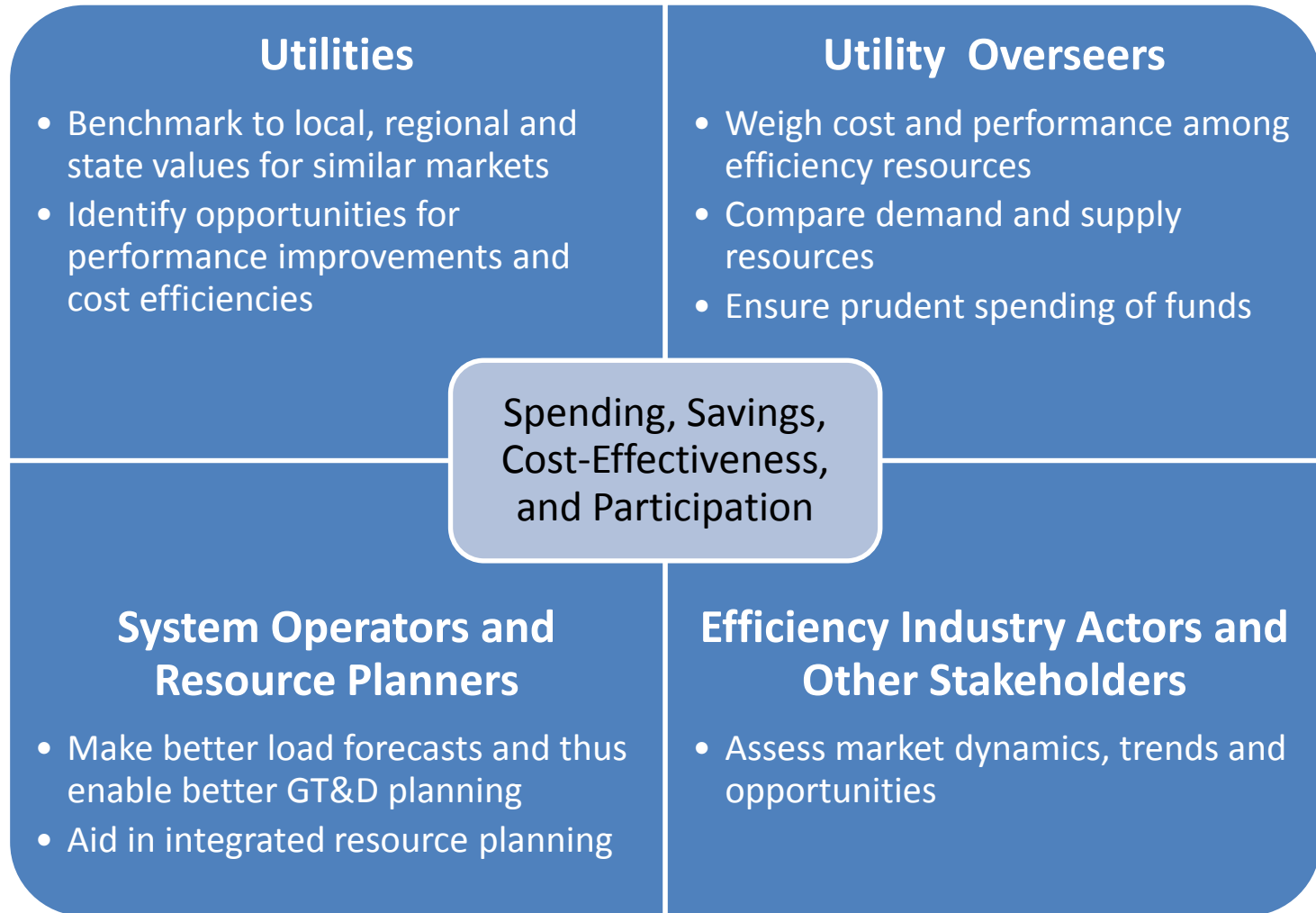
Program Type Categorization Level



EE Reporting Project Objectives

- ◆ Encourage more transparency and consistency in reporting EE program impacts and costs
 - Particularly for utilities that do not currently provide annual reports
 - Elevate the quality of reporting by utilities that are new to EE or just ramping up
 - Greater consistency: classification of spending and resource costs (administrative costs, incentives) and estimation of program impacts (e.g., net savings)
- ◆ Encourage comprehensiveness
 - More program-level reporting by utilities on total costs, cost effectiveness, customer participation, market penetration

Uses of Reported Energy Efficiency Data



Reporting-Related Questions

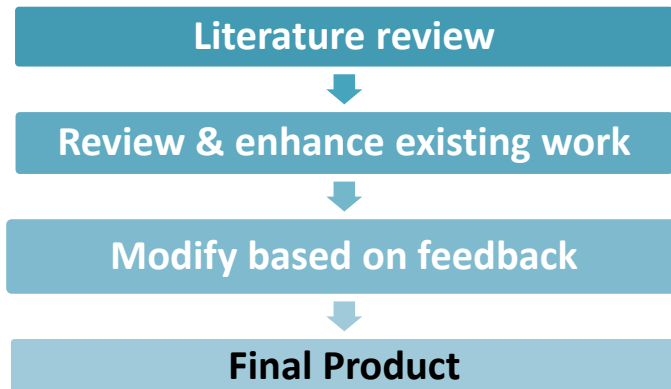
- ◆ How well are demand-side resources performing?
- ◆ Are demand-side resources producing more benefits than they cost and returning good value to ratepayers and other stakeholders?
- ◆ Are energy savings reasonably available to all customers?

LBNL-APPA EE Reporting Tool

Flexible and Consistent Reporting for EE Programs

Spreadsheet-based reporting tool

Approach taken



Potential benefits of Reporting Tool:

- Reduced time for staff to assess reporting compliance
- Improved benchmarking of programs over time and different geographic regions
- Diagnostic for identifying higher/lower performing programs

LBNL Energy Efficiency Reporting Tool

- Simple and straightforward
- Consistent format
- Core data collection
- Raises the bar

Features

- ❑ Program category (sector, type)
- ❑ Program implementer
- ❑ Program description
- ❑ Claimed annual savings
- ❑ Claimed lifetime savings
- ❑ Measure life
- ❑ Number of participants/units
- ❑ Program expenditures by category

Utility Information Sheet

Program Data		Glossary		Notes		Program Administrator (PA) Information	
Program Administrator Name		ABC Utility					
State		WA					
Headquarters Address							
Street (Line 1)		123 Main St.					
Street (Line 2)							
City							
Zip Code							
Contact information							
Last Name							
First Name							
Title							
Phone (xxx-xxx-xxxx)							
Email							
Discount rate							
Cost of Capital (i.e., generally the weighted average of the cost of funds that otherwise would be used to purchase the energy and capacity avoided by the efficiency investment.)							
Source of Capital (e.g., ratepayer funds, municipal bonds, USDA/Treasury loans, etc.)							
Line losses							
Line losses (% of retails sales)							

Utility Information

- Name
- Contact information
- Discount rate
- Line losses

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**Navigation
Buttons**

Utility Information Sheet

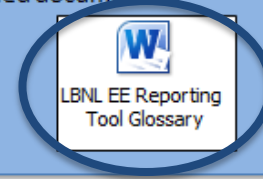
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Glossary
Built In

Glossary – Excel & Word Versions

Main Menu	Glossary	
Term	Definition	
# Participants	Total number of consumers participating in the subject program. For new construction programs, we classify "number of homes or buildings" as the number of participants. In some programs, the number of participants will be the number of structures or multifamily units that received efficiency measures through a program.	
# Units	Total number of measures installed or credited with savings in the subject program (e.g., number of CFLs for which savings are claimed in a lighting program). If the number of units reported for a new construction or retrofit program is defined as structures built or retrofitted to a higher level of energy performance, then these are not counted as units but as participants.	
Administration Costs (\$)	Actual spending by the program administrator (PA) on costs associated with planning, designing and implementing an energy efficiency program in a defined geographic area, unless some of those costs are specifically accounted for elsewhere. In general, these costs pay for the salaries, training and equipping of internal PA staff to administer and implement a program or oversee the work of an outside contract implementer. If evaluation, compliance and marketing, outreach & education costs are not reported separately, then they typically are included under program administration costs. When a program is being terminated, shut-down costs also should be included in administration costs.	
Air Quality Impacts	To some degree, power plants generally control emissions of some pollutants to the atmosphere; the balance goes up the stack. Some emissions are harmful to human health and welfare as they are emitted; others contribute to chemical reactions in the atmosphere, creating harmful contaminants while airborne.	

Instruction: Click the icon to open the glossary as a separate file. Double-click attached document:



**Glossary
available as a
separate Word
file too**

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Notes

Notes Sheet

PA Information	Program Data	Notes
Instructions: Provide information about any aspect of the portfolio, reporting process, or other relevant information.		
Portfolio notes		<h2><u>Notes</u></h2> <ul style="list-style-type: none">• Portfolio notes• Reporting notes• Other notes
Reporting notes		
Other notes		

Program Data Sheet

Program Data					
Program General Information				Program Type	
				Program Type Definitions	
				Program Typology	
Fuel	Program Year	Program Name	Resource Program	Market Sector	Program Category
Electricity	2014	New Construction	Yes	Residential	Res: New Construction

Program Data Sheet

- Fuel
- Program Year
- Program Name
- Program Category

Key

Essential
Helpful

Program Data Sheet

Program Data Sheet									
Average Measure life (yrs)*		Claimed Lifetime Savings*				Claimed Annual Savings			
Electricity	Gas	Lifetime Electricity Savings (MWh)		Lifetime Gas Savings (therms)		Annual Electricity Savings (MWh)		Annual Gas Savings (therms)	
Average Reported Electricity Measure Lifetime	Average Reported Gas Measure Lifetime	Claimed Lifetime Gross Electricity Savings	Claimed Lifetime Net Electricity Savings	Claimed Lifetime Gross Gas Savings	Claimed Lifetime Net Gas Savings	Claimed Annual Gross Electricity Savings	Claimed Annual Net Electricity Savings	Claimed Annual Gross Gas Savings	Claimed Annual Net Gas Savings
10		200,000	170,000			20,000	17,000		

Program Data Sheet

- Program Measure life
- Energy savings
 - Lifetime & Annual
 - MWh and therms

Program Data Sheet

Expenditure Definitions									
Expenditures**									
Electricity Efficiency Expenditures (\$)									
Total Program Administrator Electricity Expenditures	Electricity Incentive Expenditures	Electricity Administration Expenditures	Electricity Delivery Expenditures	Electricity Marketing, Education & Outreach Expenditures	Electricity Evaluation Expenditures	Electricity Other Expenditures	Electricity Participant Expenditures	Electricity Total Resource Expenditures	Total Program Administrator Gas Expenditures
\$ 400,000.00	\$ 160,000.00	\$ 160,000.00		\$ 60,000.00	\$ 20,000.00		\$ 400,000.00	\$ 800,000.00	

Program Data Sheet

- Expenditures
 - Incentive
 - Administration
 - Delivery
 - Marketing, Education, and Outreach
 - Evaluation
 - Other
 - Participant

Program Data Sheet

Participants and Units					
Participants			Units		
Number Participants Electricity	Number of Participants Gas	Participant Definition	Number of Units Electricity	Number of Units Gas	Unit Definition
210		Homes			

- Program Data Sheet**
- Participant Count
 - Participant Definition
 - Unit Count
 - Unit Definition

Cowlitz PUD

Cowlitz PUD and Energy Efficiency

Pacific Northwest electric utility

- ❑ NW Power Act – NWPCC and regional targets (7th Plan)
 - Bonneville Power Administration (BPA) – implementation and reporting framework
 - Northwest Energy Efficiency Alliance (NEEA) – market transformation
- ❑ Washington Energy Independence Act – regulatory reporting requirement
 - Conservation Potential Assessment – planning tool and guide

Regional and State Standardization of Energy Efficiency Information

Benefits Regionally

- ◆ Consistency in reporting data and information.
- ◆ Understanding of past, present and future.
- ◆ Guides and supports energy efficiency program development.
- ◆ Leverages bodies of knowledge.

Benefits Nationally

- ◆ Aggregation of national EE/DSM effort (big data)
- ◆ Strategically drives research and new technology/practice
- ◆ Program development decisions are more comprehensive
- ◆ Stronger understanding and alignment of energy efficiency

Assuming large participation

Challenges & Solutions

- ◆ Time and effort to support
- ◆ Internal infrastructure
- ◆ Agreement

- ◆ Leverage opportunities
- ◆ Database system deployment & process improvements
- ◆ Key data point consistencies

Bigger Picture

- ◆ Alignment of grid-based solutions: flexibility, resiliency and capacity
- ◆ Demand Response becomes viable
- ◆ Stronger connection to carbon
- ◆ Shift of business model

Questions/Comments



<http://emp.lbl.gov/>

<https://emp.lbl.gov/what-it-costs-save-energy>

Project funded by DOE Office of Electricity Delivery and Energy Reliability, National Electricity Delivery Division

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<http://emp.lbl.gov/>
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