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# Flexible and Consistent Reporting for Energy Efficiency Programs:

## Introducing a New Tool for Reporting Spending and Savings for Programs Funded by Utility Customers

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Energy efficiency programs funded by utility customers spent \$7 billion in 2013 (CEE 2014), with spending projected to rise over the next decade (Barbose et al. 2013). Administrators of those programs document much of this spending and provide estimated energy savings in annual reports. This reporting is often incomplete and inconsistent across states.

This brief outlines the case for improved reporting by:

- 1) Reviewing reporting practices and characterizing key benefits of more consistent reporting practices, including policy questions that improved practices can address; and
- 2) Proposing core and supplemental (optional) data fields and standardized formats for annual reporting of results at the program level that states and program administrators can adopt.

This brief describes the Lawrence Berkeley National Laboratory (LBNL) Energy Efficiency Reporting Tool, a spreadsheet-based tool that helps electric and natural gas utilities and other efficiency program administrators report annual program savings, expenditures, and related information to state regulators and other utility oversight boards and stakeholders.<sup>1</sup> The tool is intended to help those states and program administrators that are ramping up energy efficiency activities as well as states that want to improve and standardize program-level reporting with more transparent performance metrics. The tool is available at <http://emp.lbl.gov/what-it-costs-save-energy>.

Primary audiences for this brief include state public utility commissions (PUCs) and boards for public and consumer-owned utilities that oversee energy efficiency programs funded by utility customers, energy efficiency program administrators, consumer groups and other stakeholders interested in energy efficiency. Some potential benefits of the tool include a consistent and clear reporting structure to present important data in a standard format, reduced time for PUCs and boards to assess reporting compliance, and the ability to benchmark and evaluate demand-side resource program strategies and efficacy of administration and implementation.

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<sup>1</sup> LBNL adapted the tool from a reporting template developed by staff of the Arkansas Public Service Commission.

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## Introduction

Program administrators of utility customer-funded energy efficiency<sup>2</sup> programs regularly report the spending and savings results to their regulators or other oversight entities.<sup>3</sup> These reports typically include a combination of a narrative that highlights achievements of the program administrator's portfolio of efficiency programs and summary tables and charts that provide quantitative details about spending, savings, and achievement of policy objectives (e.g., energy savings targets, cost effectiveness and participation levels). These reporting practices vary widely among program administrators and states.

A number of studies have noted that reporting of savings and cost results of energy efficiency programs by program administrators varies in comprehensiveness, transparency and rigor (Hirst and Goldman 1990; Joskow and Marron 1992; Eto et al. 1994; Nadel and Geller 1996; Eto et al. 1996; Friedrich et al. 2009; Molina 2014; Billingsley et al. 2014; Hoffman et al. 2015). These limitations reduce the utility of some reports by making it difficult for policymakers, regulators, administrators, and implementers to rely on past performance to guide future efficiency.

Following are illustrative examples of limitations in comprehensiveness of annual reports:

- As of 2014, less than 45 percent of efficiency program administrators for electric utility customers reported lifetime savings (Billingsley et al. 2014).
- Forty-one states use either the Total Resource Cost (TRC) test or the Societal Cost Test (SCT) as their primary determinant of cost effectiveness (Kushler, Nowak and Witte 2012; Hoffman et al. 2015). However, in half of these states, program administrators do not report program-level total costs or only report total costs at the portfolio level. In these cases, state regulators would not be able to confirm that individual programs are acquiring savings cost effectively under those tests. Many program administrators also do not document program participation or projects completed in annual reports, so regulators are not readily able to assess the extent to which energy efficiency programs are penetrating their target markets.

The disparity of reporting practices across program administrators and states underscores the need for a standard yet flexible tool. Such a tool should collect and deliver the information needed by regulators in a consistent, standardized fashion, but be able to accommodate reporting requirements that are unique to their jurisdiction and policy environment. LBNL has designed a reporting tool that can be customized by state regulators or program administrators, based on the reporting requirements and policies in place, to support improving the comprehensiveness, transparency and rigor of energy efficiency reporting. The reporting tool is available online at <http://emp.lbl.gov/what-it-costs-save-energy>.

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<sup>2</sup> Energy efficiency means using less energy to provide the same or an improved level of service to the energy consumer, or using less energy to perform the same function. Specifically, demand-side (or end-use) energy efficiency is reducing energy consumption at the point where energy is used, at consumers' facilities—such as a factory, home or office building—or at other locations such as street lighting and agricultural pumping. Measures that improve the efficiency of the electricity transmission and distribution system also can be considered demand-side efficiency.

<sup>3</sup> The term "regulator" is used to describe the entity overseeing the utility or other program administrator. The LBNL energy efficiency reporting tool was primarily designed for program administrators overseen by state regulators, though it may also meet the needs of other utilities (e.g., municipal utilities, non-regulated rural cooperatives) that have significant utility customer-funded programs.

The user of the tool answers screening questions at the front of the reporting tool, customizing it so the user only completes data fields of interest and receives the specified outputs in reports and summary graphs.<sup>4</sup>

The tool offers many potential benefits, such as:

- Making better use of regulatory staff time in assessing policy compliance and program and portfolio performance;
- Enabling aggregation of efficiency program data across time and geography (e.g., statewide reports to legislatures and stakeholders);
- Demonstrating prudent spending of ratepayer dollars;
- Gaining insight into actual performance of energy efficiency resources compared to planned performance;
- Improving confidence in reported data for use in possible tracking and trading of emission reduction credits;
- Reducing asymmetry of information that exists for demand-side resources compared to supply-side resources;
- Categorizing spending more consistently than current practice in many states, enabling improved visibility into where program funds are going and for what purposes;
- Allowing benchmarking of programs over time and geographic regions; and
- Encouraging greater rigor in savings evaluation and reporting and providing more transparency in the data and how they were determined.

LBNL technical assistance<sup>5</sup> may be available to states that want to adopt standardized reporting using the tool and may include:

- Customization of the reporting tool to accommodate information or metrics linked to state policy objectives or adding and expanding features related to required state output reports (e.g., summary tables, graphs); and
- Augmenting numerical reporting with a standardized narrative document that provides for qualitative descriptions of the program administrator's efforts.

Utility customer-funded energy efficiency programs involve three stages: planning and design, implementation, and evaluation. This reporting tool is focused on reporting of program data to the regulator in the latter two stages, after implementation of approved programs and then after evaluation or verification of the anticipated or claimed savings.

The LBNL energy efficiency reporting tool is one of several ongoing efforts aimed at illuminating costs and energy savings of efficiency programs. A number of states have common reporting platforms. For example, the Northeast Energy Efficiency Partnership's (NEEP) Regional Evaluation, Measurement and Verification Forum collects energy efficiency and demand response program data in its Regional Energy Efficiency Database (REED).<sup>6</sup> The REED database is a regional repository for data from program administrators. The

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<sup>4</sup> For example, regulators or administrators are asked if they want to report gross or net savings or both and are also given the option of only reporting spending and savings from the most recent year, or including historic data from several previous years.

<sup>5</sup> Support for these efforts may be available through the Department of Energy's Office of Electricity Delivery and Energy Reliability's [Electricity Policy Technical Assistance Program](http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/electricity-policy-technical/get); technical assistance is provided based on available resources.

<http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/electricity-policy-technical/get>

<sup>6</sup> <http://neep.reed.org/>

Northwest Power and Conservation Council collect data from program administrators throughout the region to track annual program spending and achievements for comparison against its own modeled projections. The Consortium for Energy Efficiency collects energy efficiency and demand response program data from and for its members. Program administrators report energy savings and expenditure data to the Energy Information Administration (EIA) through its Form EIA-861. The EIA-861 data are reported at the portfolio and sector level, not at the program level. These efforts share some commonalities—spending totals, for example—but differ in level of detail and aggregation of reporting as well as definitions of some key inputs (e.g., annual energy savings and participant costs). The LBNL energy efficiency reporting tool builds on these efforts and shares common elements while providing for a more comprehensive, nationally applicable template.

The remainder of this technical brief is organized as follows. We discuss policy and regulatory rationales for including specific data in annual reports in Section 2. We describe our approach in Section 3. We provide an overview of the mechanics of the reporting tool in Section 4, including how a user interfaces with the tool, its functionality, and relationships between inputs and outputs. We discuss future work and next steps in tool development in Section 5. The Appendix describes and illustrates how the user's responses to screening questions in the tool menu allow the user to create a customized approach to data inputs and report outputs.

## Regulatory and Policy Questions

In this section, we focus on questions and issues of interest to state regulators and policymakers that are addressed in annual energy efficiency reports based on a standardized reporting tool. Table 1 highlights foundational questions that relate to the impacts and efficacy of energy efficiency programs: program energy savings (e.g., magnitude, impacts in various customer market sectors), analysis of program costs, and participation rates.

**Table 1. Regulatory and policy questions that relate to reported energy savings, expenditures, participation and ratepayer equity**

Category in Reporting Tool	Regulatory and Policy Oversight Questions	Relevant Information in Annual Energy Efficiency Report <sup>7</sup>
<b>Claimed Program Energy Savings</b>	What energy and demand resources were acquired?	Portfolio annual and lifetime savings
	Did the program administrator achieve the savings (or demand) target(s)?	Energy/demand savings in absolute terms or as a percent of retail sales
	Where are the savings coming from and how long will those savings last?	Program-level annual, lifetime gross savings and average program savings lifetime; comparison with portfolio-level savings; program description/accomplishments
<b>Actual Expenditures</b>	What was the cost?	Expenditures of the energy efficiency portfolio/programs
	How much of the incremental cost is being paid by the program participants?	Participant and total costs
	How much money goes to participants directly versus what is used by the program administrator and implementation and EM&V contractors?	Expenditure breakdown—e.g., incentives vs. administrative expenditures
<b>Participation and Market Penetration</b>	How many households and businesses participated in the programs?	Participation numbers by homes, business accounts, projects
	Were energy savings opportunities reasonably available to all customer classes?	Savings and participation by market sector and program type

<sup>7</sup> The content in this column represents the information that can potentially be provided in annual energy efficiency reports based on the LBNL reporting tool.



Table 2 highlights questions that relate to reporting of program cost-effectiveness from various perspectives and shows the connection to the information solicited in the LBNL energy efficiency reporting tool. Several cost-effectiveness tests are used to reflect the various economic perspectives of actors in the energy sector: the program administrator, non-participants, all system stakeholders, and society at large.

**Table 2. Regulator and policy questions that relate to cost-effectiveness of efficiency programs**

Category in Reporting Tool	Regulatory and Policy Oversight Questions	Relevant Information in Annual Energy Efficiency Report
<b>Cost Effectiveness</b>	What do we consider as benefits of energy efficiency and how are we accounting for them?	Listing and quantification of utility system, participant and societal benefits
	Can we estimate the net benefits to society, the utility and participating customers?	Total resource, program administrator and participant net benefits and benefit/cost ratios; other non-energy benefits that are more difficult to quantify
	How well are efficiency resource programs performing?	Program total resource cost (TRC), program administrator cost test (PACT) ratios and levelized costs
	Did society/utility customers get good value for their investment? How much money did utility customers save? Were the energy efficiency resources acquired cost effectively? What were the net benefits?	Societal cost test/TRC test ratios and net benefits
	How well is the program administrator performing relative to other program administrators in economic terms?	Portfolio TRC, PACT ratios and levelized costs

Table 3 highlights regulatory and policy oversight questions that may be of interest to state regulators and program administrators and lists the relevant data fields included in the LBNL reporting tool. These questions allow regulators to probe deeper regarding the underlying assumptions and basis for savings values (e.g., impacts attributable to the program administrator), review performance incentives that may be claimed by program administrators, and assess market and program trends over time.

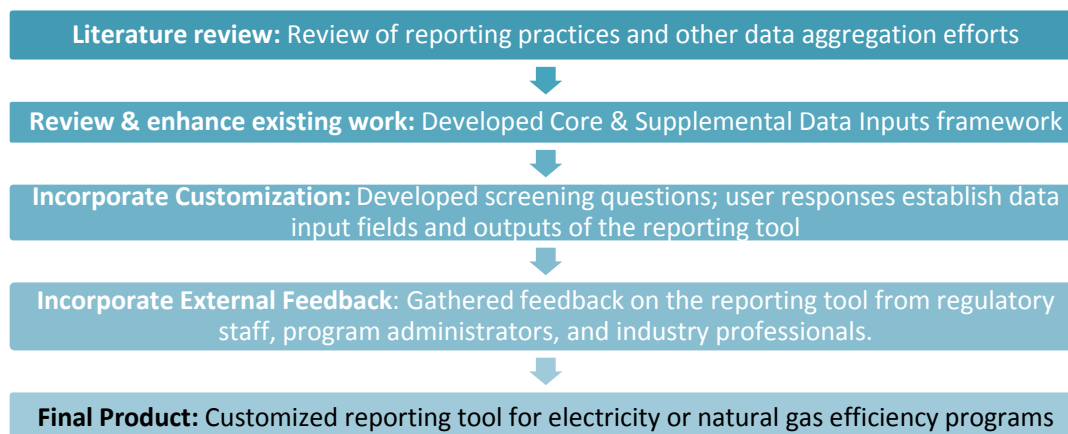
**Table 3. Regulatory and policy questions that relate to savings basis, planned vs. actual savings, and historical market and program trend analysis**

Category in Reporting Tool	Regulatory and Policy Oversight Questions	Relevant Information in Annual Energy Efficiency Report
<b>Interactive Effects</b>	Do electric energy efficiency programs affect savings from natural gas efficiency programs?	Interactive effects multiplier; energy savings with and without interactive effects
<b>Net-to-Gross Ratios</b>	What impacts of the programs are attributable to the program administrator?	Net savings; ex-ante/ex-post net-to-gross (NTG) ratios; which factors were considered—e.g., free riders, spillover
<b>Program Administrator Performance Incentive</b>	What performance incentive does the program administrator think is warranted and why?	Summary of achievements against performance criteria
<b>Evaluated Program Savings</b>	How do the evaluated savings compare to the reported/claimed savings levels?	Evaluated program savings compared to claimed program savings; references to recent third-party evaluations
<b>Planned Program Savings</b>	How well did the program administrator meet its targets?	Comparison of planned/budgeted savings and spending vs. actual spending and savings
<b>Historical Trends</b>	What are trends in program spending, expenditures and accomplishments over time?	Multi-year tracking of spending and energy/demand savings; comparison of achievements vs. targets

## Approach

Figure 1 shows the process LBNL used to develop our annual energy efficiency reporting tool, using our expertise in energy efficiency planning and reporting practices and tools developed through research projects and technical assistance for state regulators and policymakers over the last two decades.<sup>8</sup> We reviewed existing reporting and data aggregation practices and identified a reporting template that we could adapt and enhance—the Arkansas Public Service Commission’s template developed in 2012-2013, supported in part by DOE (Migden-Ostrander et al. 2013). We selected the Arkansas reporting template because it provides a useful starting place for key target audiences (e.g., states that are ramping up their efficiency programs and want to track progress using standardized reporting tools).

<sup>8</sup> For example, in the 1990s, LBNL researchers collected annual reports from many utilities and examined levelized costs (in \$/kWh) for various types of efficiency programs (e.g., commercial lighting, commercial and industrial prescriptive rebate programs, demand-side management (DSM) bidding). In the 2007-2010 period, LBNL provided technical assistance to several state PUCs on annual DSM planning and reporting (PA, MD, OH, and WA). In 2011 and 2012, LBNL researchers collected efficiency program plans, evaluations and policies from all states with utility customer-funded programs as part of our study on the future of ratepayer-funded efficiency programs (Barbose et al. 2013). Through our Cost of Saved Energy Project in 2014 and 2015, we reviewed annual energy efficiency reports filed by program administrators in about 45 states and analyzed both the program administrator and total cost of saving electricity.



**Figure 1. Approach to developing the LBNL energy efficiency reporting tool**

Program administrators track and categorize their program and portfolio expenditures in different ways and at varying levels of detail. To reflect this reality, we defined a framework that includes core and supplemental data fields. Core data fields are expected to be completed by program administrators (e.g., claimed energy savings) and supplemental data fields are to be completed by those program administrators whose regulator or board seek such information (e.g., energy efficiency financing data). Furthermore, we allow input of expenditures at two levels of detail: 1) spending at a high level (incentive and non-incentive costs incurred by program administrators and participant costs) or 2) disaggregating expenditures into more defined spending categories.

## Mechanics of the LBNL Energy Efficiency Reporting Tool

This section addresses the functionality of the tool and how users can input and review program and portfolio data. We describe navigation (e.g., the basic structure of the tool and how to move around) and then explain how to customize the tool, input data, and review data outputs. We then describe key data input and output fields.

### *Structure and navigation of the template*

The tool is designed for ease and flexibility of data input by program administrators. The input data are reformatted into tables and figures in order to summarize program and portfolio energy savings, expenditure levels, and cost effectiveness metrics.

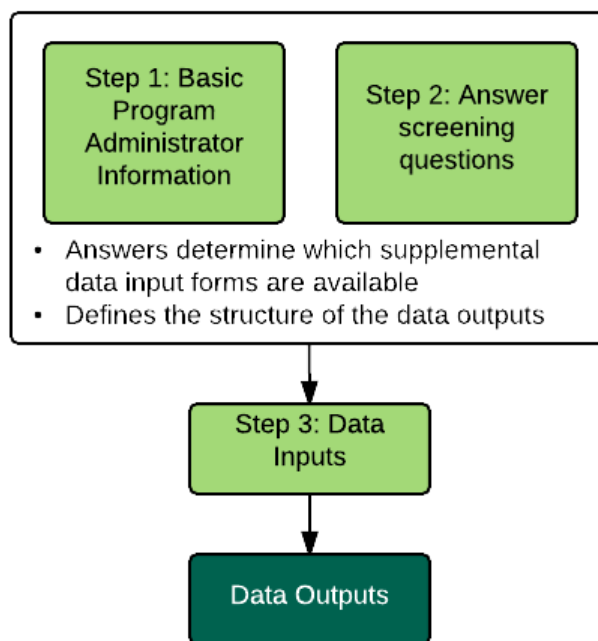
For ease of navigation, the energy efficiency reporting template is designed around one central worksheet (i.e., the “Main Menu”). The Main Menu can be thought of as a “home screen” for navigating to and from other worksheets and is designed so that the user can navigate using buttons as opposed to manipulating workbook tabs.<sup>9</sup> The user can return to the Main Menu using a button at the top of each worksheet.

<sup>9</sup> Instructions for how to change whether the sheet tabs are shown can be found in the “Instructions” worksheet, accessed via the “Main Menu.” To improve user experience, we recommend that the user does not show the sheet tabs.



Figure 2 depicts the three steps that the user takes to complete the template:

- Step 1: Fill out basic program administrator information (e.g., name of the program administrator, fuel type, docket number)
- Step 2: Answer screening questions to specify the types of information that users want to input and report (e.g., do you report net and gross savings or only gross savings?)
- Step 3: Fill in input data (e.g., claimed program energy savings, program expenditures)



**Figure 2. High-level flow chart of the annual energy efficiency reporting template**

User responses to the program administrator information and screening questions (Steps 1 and 2) serve to customize the Data Inputs (Step 3) that the user will provide and the Data Outputs that the tool will generate. Thus, after the first two steps are completed, the spreadsheet tool is automatically tailored to the specific reporting requirements of the user. The user then enters the requested data, and output tables and charts (dark green box) are created.<sup>10</sup>

### *Using the template*

Users enter key identifying information (Step 1) and answer screening questions (Step 2) in the Main Menu and then fill in the data input fields (Step 3). The data can be reviewed by looking at the Data Outputs worksheets, which can be accessed from the Main Menu.

Some Data Input worksheets will be filled out by all users; other Data Input worksheets' applicability depends on user answers to screening questions. Examples of data input fields that are common to all program administrators include description of programs, claimed program savings, actual program expenditures, cost-effectiveness test results, and key assumptions. See the Appendix for a more detailed description of the relationship between the screening questions and the Data Inputs and Data Outputs worksheets.

<sup>10</sup> It is also possible for program administrators to access intermediate tables, but this is typically not necessary.

### Descriptions of Key Inputs and Outputs

In this section, we provide short descriptions of the data input requirements, data output tables and figures.

#### Descriptions of basic program administrator information (Step 1)

The user provides the following information: program administrator name, program year, docket number, date that the docket was filed, contact information (e.g., email address and phone number), savings target information, and whether the utility is an electric, electric and natural gas (multi-fuel), or natural gas only utility. For multi-fuel utility programs, the program administrator submits a workbook for electricity efficiency program data and a workbook for natural gas efficiency program data.

#### Descriptions of the policy screening questions (Step 2)

Users are then asked to answer screening questions that provide information on policy and program design guidelines (e.g., net savings, which cost-effectiveness tests should be reported, whether there are performance incentives) and the level and detail of reporting required (e.g., planned vs. actual spending and savings, historical trends in savings and spending). Table 4 shows reporting topics and corresponding questions.

**Table 4. Topics included in screening questions**

Topic	Question
<b>Net-to-Gross</b>	How do you report your savings? Do your reported gross savings values account for naturally occurring energy savings?
<b>Cost-effectiveness screening</b>	At what level are your programs screened for cost-effectiveness for regulatory purposes?
<b>Cost-effectiveness screening</b>	What cost effectiveness tests do you provide in your annual report?
<b>Planned versus actual savings and spending</b>	Do you want to compare actual expenditures and claimed savings with planned values?
<b>Evaluated savings</b>	Are you also reporting evaluated savings?
<b>Historical savings and spending</b>	Are you comparing spending and savings for this program year with previous program years?
<b>Level of reported savings</b>	Do you report savings at site, or savings at the site plus transmission and distribution (T&D) line losses between the site and the power plant?
<b>Interactive effects</b>	Do you account for interactive effects in your reported savings values?
<b>Energy efficiency finance</b>	Do you have an energy efficiency program that allows customers to finance projects?
<b>Program administrator performance incentives</b>	Do you account for program administrator performance incentives?

## Descriptions of Key Data Inputs (Step 3) common to all program administrators

### Program Details & Descriptions

In this worksheet, the program administrator inputs energy efficiency program names and program types. The worksheet identifies programs that are jointly administered and with whom.<sup>11</sup> The program types are based on the LBNL program typology.<sup>12</sup> The user selects the target market sector for the program and then the detailed program type from within that sector. Three second-level worksheets can be accessed from this first-level worksheet. In the “Program Descriptions” worksheet, the user enters a short description of the program. Definitions of the various program types may be found in the “Program Type Definitions” worksheet. The structure of the LBNL Program Typology is mapped out in the “Program Typology” worksheet.

### Claimed Program Savings

In this worksheet, the user enters claimed program-level annual and lifetime energy savings and demand reductions. Users also can input the number of program participants/units installed, the number of eligible program participants, and define the basis for accounting for participation levels (e.g., a project, an account, a house). Depending on answers to the screening questions, the quantity of savings due to interactive effects may be reported for each program. If net savings are to be reported, net-to-gross ratios actually used for the program year can be entered in the “Claimed Net-to-Gross” (NTG) worksheet.<sup>13</sup>

### Actual Program Expenditures

The user enters program-level expenditures in this worksheet. Expenditures can be segmented into spending on program administrator costs or costs associated with a third-party program implementer. There are six expenditure categories: administrative; marketing, education, and outreach (ME&O); evaluation, measurement & verification (EM&V); incentives; participant costs; and other expenditures (e.g., potential contributions from other parties). The user also has the option of reporting administrative expenditures and incentives at a more disaggregated level. A second-level worksheet, the Energy Efficiency Charge Reconciliation worksheet, can be accessed, which allows reporting of the tariff rider for program costs that have been approved by the regulator and comparison to actual program expenses.

### Cost-Effectiveness Results

The user enters costs, benefits, and levelized costs for specified cost-effectiveness tests.<sup>14</sup> Users can enter these values at either a program or portfolio level, as determined by their answers to the screening questions. All values are entered as net present values for the program year.

### Key Assumptions

The “Key Assumptions” worksheet contains input fields that provide additional information on the approach used in cost-effectiveness test screening. For example, the user can specify the types of non-energy

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<sup>11</sup> An example would be a whole-home retrofit program that is jointly administered by an electric utility and a natural gas utility.

<sup>12</sup> The LBNL program typology consists of 7 simple market sectors, 8 detailed market sectors, 30 simplified program categories, and 73 detailed program categories and is used in the LBNL Cost of Saved Energy project: <http://emp.lbl.gov/sites/all/files/lbnl-6370e.pdf>.

<sup>13</sup> The user has the option of entering more detailed information on NTG ratios (e.g., free ridership, participant spillover, and non-participant spillover).

<sup>14</sup> The four cost-effectiveness tests available for reporting are the Total Resource Cost test, the Program Administrator Cost test, the Societal Cost test, and the Ratepayer Impact Measure test. National Action Plan for Energy Efficiency (2007). *Guide to Resource Planning with Energy Efficiency*. Prepared by Snuller Price et al., Energy and Environmental Economics, Inc. <[www.epa.gov/eeactionplan](http://www.epa.gov/eeactionplan)>

participant and societal benefits that are included in a cost-effectiveness test. If savings are reported at the site and include T&D losses between the site and the power plant, then the user can specify the method for including T&D line losses and report assumed line losses by customer class for both energy (MWh) and demand (MW) impacts.

### *Descriptions of Key Data Inputs (Step 3) that may be specified by some users*

User answers to screening questions in the Main Menu may lead to additional data input tables that can be reported.

#### Planned Program Budgets

In this worksheet, users can enter the original program budgets that were approved for the program year. There are four expenditure categories: administrative; ME&O; EM&V; and incentives. If desired, planned administrative expenditures can be disaggregated into more detailed reporting of planned costs. A second-level worksheet labeled “Budget Reconciliation” can be accessed from this worksheet, which allows entry of post-plan adjustments to program budgets.

#### Planned Program Savings

Users can enter planned program-level annual energy and lifetime energy savings and demand reductions into this worksheet. Two second-level worksheets can be accessed from this worksheet. The “Savings Reconciliation” worksheet is where any adjustments to the planned energy savings for each program can be reported. The “Planned Net-to-Gross” worksheet is where, if net savings are being reported, users have an option of providing more detailed information on assumed NTG ratios (e.g., free ridership, participant spillover, non-participant spillover).

#### Evaluated Program Savings

Ex-post or evaluated program impacts—verified program-level annual and lifetime energy savings and demand reductions—are entered into this worksheet. Two second-level worksheets can be accessed from this worksheet. The “Evaluated Net-to-Gross” worksheet is where, if net savings is being reported, users have an option of providing information on recent evaluation results that provide more insight on NTG ratios (e.g., free ridership, participant spillover, non-participant spillover).

#### Program Data - Prior Two Years

Program-level energy savings, demand reduction, and participant data for the two years prior to the program year are entered into this worksheet.

#### Portfolio Data - Prior Five Years

The utility’s energy sales, revenue and system peak demand levels for the prior five years (including the primary program year being reported) are entered in this worksheet. The user may also enter energy savings, demand reduction, portfolio budget, and actual portfolio expenses for years prior to the primary program year being reported.

#### Energy Efficiency Finance

Users can enter energy efficiency finance program information into this worksheet. The user provides a description of the finance program, the average interest rate on loans, the types of financial instruments, the

types of credit enhancements, the quantity and source of capital, the number of loans provided, information on whether a green bank is used, and whether the finance program has been evaluated.

#### Program Administrator Incentive

If appropriate, the user enters the type of performance incentive mechanism(s) in place, the proposed or claimed performance incentive amount, the time period for the performance incentive, the method used for calculating the performance incentive, and the name/docket number for the related regulatory proceeding.

#### Descriptions of Key Data Outputs

The output tables provide summaries of claimed program savings and actual expenditures results at the program, market sector and portfolio level (see Table 5). Depending on user responses to the screening questions in the Main Menu, summary output tables may also include information on planned expenditures and savings, evaluated savings, net savings, and cost-effectiveness screening test results from various perspectives.

**Table 5. Summary Information included in Data Output Worksheets**

Worksheet	Description
<b>Table 1: Portfolio Savings, Expenditures, Cost Effectiveness, Goals &amp; Assumptions</b>	Summary information on portfolio-level energy savings, expenditures, and cost-effectiveness, including key assumptions and goals
<b>Table 2: Market Sector Savings, Expenditures and Cost Effectiveness</b>	Summary tables on energy savings, expenditures, and cost-effectiveness by market sector
<b>Table 3: Spending by Program</b>	Summary information on program-level expenditures
<b>Table 4: Portfolio Summary by Expenditure Type</b>	Summary information on program expenditures: administrative, delivery, ME&O, EM&V, and incentives
<b>Table 5: Results Detailed by Program</b>	Program-level energy savings, expenditures, and cost-effectiveness
<b>Table 6: Program Savings, Expenditures and Participation</b>	Three years of expenditure, energy savings, and participation data for each program with option to select and feature individual program results using a drop-down menu
<b>Table 7: Portfolio Expenditures and Savings by Year</b>	Historical trend information for up to five years of portfolio-level expenditures and energy savings
<b>Table 8: Comparison with Last Year's Data</b>	Comparison of current vs. prior-year program-level expenditures, energy savings, demand savings, and participant data

Program administrators typically submit annual energy efficiency reports to their regulator as an electronic document. The LBNL reporting tool offers data output tables and graphs that can be incorporated into



existing annual reporting documents. The data outputs are in graphical or tabular form (see Figure 3 and Figure 4 for illustrative examples of such outputs).

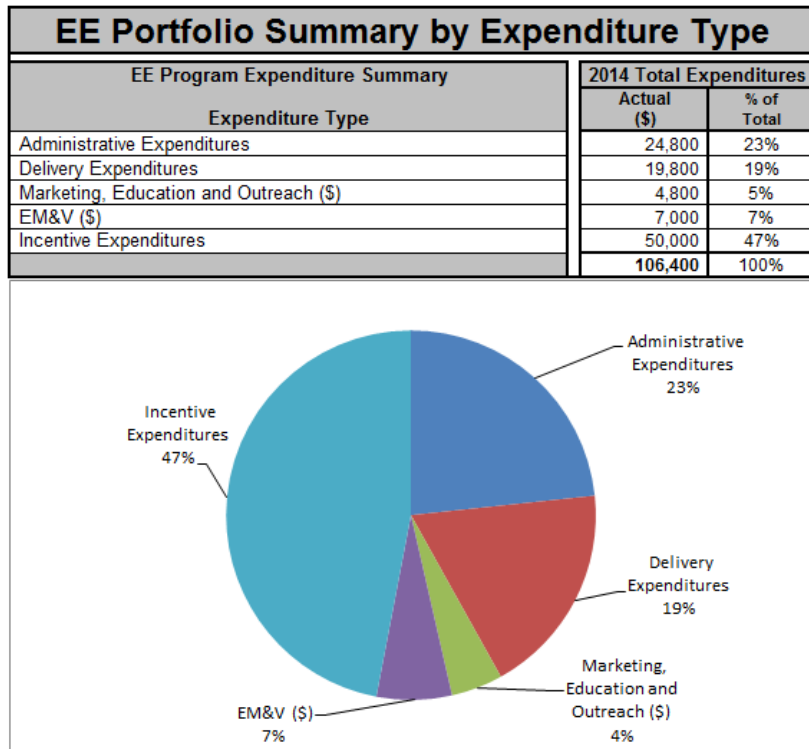


Figure 3. Sample table and graph of the energy efficiency portfolio summary by expenditure type.

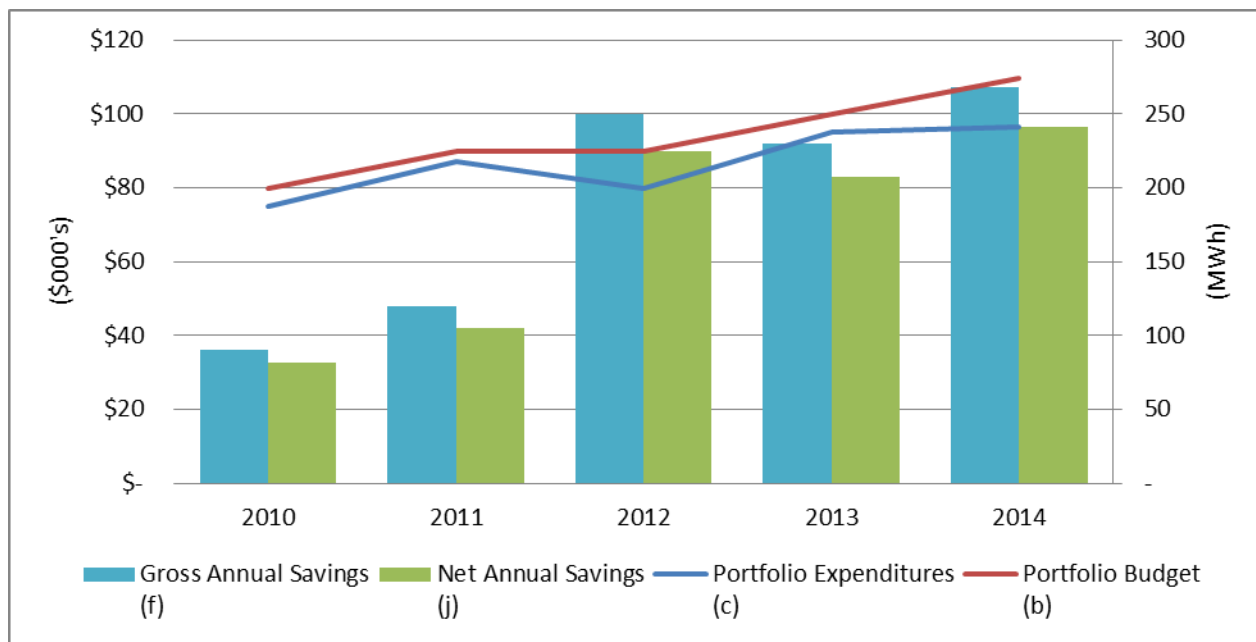


Figure 4. Sample of historical trends in actual (vs. planned) portfolio expenditures and gross and net savings.

## Future Work

This initial version of the LBNL Energy Efficiency Reporting Tool is intended to help states that are ramping up their efficiency programs or want to support program-level reporting of results. The needs of program administrators and state regulators are likely to change over time. Thus, we expect the LBNL Energy Efficiency Reporting Tool to be a “living document” which will evolve.

Future versions may add customizable modules that focus on:

- Estimates of emissions reductions;<sup>15</sup>
- Longer term efficiency plans and tracking toward multi-year cycle budgets and targets;
- More comprehensive and customizable historical reporting; and
- Fuller characterization of claimed benefits.

Technical assistance<sup>16</sup> is available to state regulators and utilities on a case-by-case basis if there is interest in adapting and customizing the reporting tool to meet state policy objectives and reporting requirements.

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<sup>15</sup> In August 2015, EPA issued its final Clean Power Plan rule, which includes energy efficiency as a compliance option. EPA has proposed requiring verified savings in megawatt-hours for generating emissions reduction credits for compliance purposes for states that choose a rate-based approach. After EPA issues its final rule on evaluation, measurement and verification (EM&V) protocols on guidance for crediting energy efficiency, LBNL will consider potential modifications to our energy efficiency reporting tool.

<sup>16</sup> Technical assistance may be available through DOE’s Office of Electricity Delivery and Energy Reliability’s [Electricity Policy Technical Assistance Program](#); technical assistance is provided based on available resources.

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## Appendix

The results of the basic program administrator information and the screening questions (Steps 1 & 2) impact different Data Inputs worksheets<sup>17</sup> (Step 3) using one of three different mechanisms.

1. Changing the availability of a worksheet—e.g., if a program administrator performance incentive is not reported, the button is hidden from the Main Menu.
2. Changing the existence or content of a data field within a worksheet—e.g., if the user does not report net savings, the user will not be asked to input net-to-gross ratios, nor will net savings be available in the outputs.
3. Changing a note or message within a worksheet—e.g., if energy savings are reported at the site-level, a note indicates this on all Data Input and Data Output worksheets that include energy savings information.

Table A-1 and Table A-2 show that the relationship of the results from the screening questions may impact the Data Inputs and Data Outputs, respectively.

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<sup>17</sup> Each mechanism is a means of altering the Data Inputs worksheets based on the program administrator information and the answers to the screening questions. Mechanism #2 and #3 also impact the Data Output worksheets, in addition to the Data Input worksheets.



Table A-1. Relationship of screening question responses (Step 2) to the Data Inputs (Step 3)

Screening questions (Step 2)	Worksheets from the Data Inputs (Step 3) section											
	Program Details & Descriptions	Claimed Program Savings	Actual Program Expenditures	Cost-effectiveness Test Results	Key Assumptions	Planned Program Budgets	Planned Program Savings	Evaluated Program Savings	Prior Two Years Program Data	Prior Five Years Portfolio Data	Energy Efficiency Finance	PA Performance Incentive
1) How do you report your savings?		●					●	●	●	●		
1b) Do your reported gross savings values account for naturally occurring energy savings?		●					●	●	●	●		
2) At what level are your programs screened for cost-effectiveness for regulatory purposes?				●								
3) What cost effectiveness tests do you provide in your annual report?				●	○							
4) Do you want to compare actual expenditures and claimed savings with planned values?						●	●		○	○		
5) Are you also reporting evaluated savings now?								●	○	○		
6) Are you comparing spending and savings for this program year with previous program years?									●	●		
7) Do you report savings at site, or savings at the site plus T&D losses between the site and the power plant?		○			○		○	○	○	○		
8) Do you account for interactive effects in your reported savings values?		●					●	●				
9) Do you offer an energy efficiency program that allows customers to finance projects?											●	
10) Do you account for program administrator (PA) performance incentives?												●

- = Screening question response impacts **all** access to worksheet
- ◐ = Screening question response impacts access to **data fields** in worksheet
- = Screening question response modifies **a note** (or field) in worksheet



**Table A-2. Relationship of screening question responses (Step 2) to the Data Outputs**

Screening questions (Step 2)	Worksheets from the Data Outputs section							
	Table 1: Portfolio Savings, Expenditures and Cost Effectiveness	Table 2: Market Sector Savings, Expenditures and Cost Effectiveness	Table 3: Spending by Program	Table 4: Portfolio Summary by Expenditure Type	Table 5: Results Detailed by Program	Table 6: Program Savings, Expenditures and Participation	Table 7: Portfolio Expenditures and Savings by Year	Table 8: Comparison with Last Year's Data
1) How do you report your savings?	●	●			●	●	●	●
1b) Do your reported gross savings values account for naturally occurring energy savings?					●			
2) At what level are your programs screened for cost-effectiveness for regulatory purposes?								
3) What cost effectiveness tests do you provide in your annual report?	●	●			●	●	●	●
4) Do you want to compare actual expenditures and claimed savings with planned values?	●	●			●	●	●	●
5) Are you also reporting evaluated savings now?							●	●
6) Are you comparing spending and savings for this program year with previous program years?						●	●	●
7) Do you report savings at site, or savings at the site plus T&D losses between the site and the power plant?	○	○			○	○	○	○
8) Do you account for interactive effects in your reported savings values?								
9) Do you offer an energy efficiency program that allows customers to finance projects?								
10) Do you account for program administrator (PA) performance incentives?								

- = Screening question response impacts **all** access to worksheet
- = Screening question response impacts access to **data fields** in worksheet
- = Screening question response modifies **a note** in worksheet

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