Evaluation & Data Collection – Conduct Evaluation

Description

Conducting an evaluation requires that you work with a number of different parties, both internal and external, to ensure that:

- You and your evaluator(s) maintain a shared vision of the goals of the evaluation, and how you will get there
- Data transfers happen in a timely fashion
- Stakeholders are engaged in the act of conducting evaluations and are given an opportunity to provide input on scope changes and interim deliverables, so they are the more likely to find the results credible and act on the recommendations.

Evaluation & Data Collection

Stages:

Overview
1. Develop Evaluation Plans
2. Develop Resources
3. **Conduct Evaluation**
4. Communicate Impacts

This handbook describes the steps necessary and resources available for successful third-party evaluations, including overseeing evaluation activities, reviewing evaluation deliverables, identifying and managing potential risks and evaluation scope changes, and communicating progress.

Conducting an evaluation builds on the preparations you made before this stage. Reference the **Evaluation & Data Collection – Develop Evaluations Plans** handbook for guidance on identifying the right questions to ask, appropriate metrics to collect, and the processes needed to initiate third-party impact and process evaluations and see the **Evaluation & Data Collection - Develop Resources** handbook for information on how to identify and implement data collection systems and tools for an effective evaluation.

This handbook discusses the steps you should take to manage third-party impact and process evaluation activities. These steps include:

- Oversee evaluation activities
- Review evaluation deliverables
- Identify and mitigate potential risks
- Adjust scope and timeline to accommodate evaluation changes
- Communicate progress throughout the evaluation process.

Find related information across other program components:

- **Program Design & Customer Experience – Deliver Program**
  Ensure a positive customer experience with your program from launch through implementation over time.

- **Marketing & Outreach – Deliver Program**
  Implement marketing and outreach activities in coordination with other program components to generate demand for your program's services.

- **Financing – Deliver Program**
  Launch your financing activities in coordination with other program components.

- **Contractor Engagement & Workforce Development – Deliver Program**
  Implement contractor coordination and workforce recruitment and training in concert with other program components

Step-by-Step

Below are the critical steps for conducting an evaluation.

Oversee evaluation activities

As well as monitoring the progress of the evaluation and whether staff and the evaluation team are performing as agreed upon during contract negotiations, you will need to take several steps to oversee evaluation activities once they begin:

- Review each program component's evaluation plan, including the key data, metrics, and measurement strategies, and ensure that the evaluation team implements it.
- Host an initial meeting with the evaluation team. This should be in-person and should include at least the evaluator's project lead and your team's key contacts for the evaluation process. Use this meeting to make any necessary clarifications to the scope of work and timeline, as well as roles and responsibilities of key team members. Sharing information about the program itself is an important part of this meeting because it provides valuable context and perspective to the project team.
- Schedule periodic check-in meetings with the evaluation team to answer questions or provide clarification on evaluation deliverables and ensure that the original plans and any subsequent changes are understood and appropriately implemented.
- Coordinate the transfer of information from staff and subcontractors to the evaluation team to ensure that staff and subcontractors are complying with the protocols and procedures agreed upon in the contract negotiation and final scope of work. As the effectiveness of the evaluation depends on the quality and timeliness of information from your team, this coordination will be necessary throughout the evaluation period.
- Arrange for the evaluation team to contact and interview a sample of your program's contractors and customers. To be considerate of their time, ask contractors and customers if they are willing to be contacted about the program at a later date. Customers could be asked during the rebate or loan application process if they are willing to be contacted in the future. Be cognizant of how often contractors and customers are contacted for surveys or interviews, whether they are for quality assurance or an evaluation. If they are contacted too often to provide feedback, they may be less likely to participate.

Where to Find Evaluation Reports from Residential Energy Efficiency Programs

Reviewing evaluation reports from other residential energy efficiency programs can provide insights into the evaluation activities you should consider for your program. Here are some national and regional repositories of energy efficiency program evaluations:

- The **Better Building Neighborhood Program**'s **Evaluation Report webpage** provides links to grantee evaluation reports.
- The **California Measurement Advisory Council** (CALMAC) provides a **searchable database** of evaluation reports on energy efficiency programs in the state.
- The **Northeast Energy Efficiency Partnerships** (NEEP) EM&V Forum's **Repository of State EM&V Studies** contains links to historical and recently released studies and evaluation reports from across the northeast.
- The **Northwest Energy Efficiency Alliance** (NEEA) completed several **market research and evaluations reports**, including reports for initiatives in the residential sector.
- The **U.S. Energy Information Administration** (EIA) **State Energy Efficiency Program Evaluation Inventory** provides a report and searchable spreadsheet of EM&V reports, including annual reports and impact and process evaluation reports.

Review evaluation deliverables

Depending on the scope and scale of your evaluation, you may have several deliverables including interim and final reports. Take the time to review these to ensure that they meet the goals identified in your **evaluation plan** and provide the information expected by stakeholders.

You may need to distribute evaluation deliverables to key stakeholders for review. Reviewers should be identified and confirmed when you are developing your evaluation plans (refer to the **Evaluation and Data Collection – Develop Evaluation Plans** handbook.

- Provide reviewers with clear guidance on what to review, the review and evaluation schedule, and the process for providing feedback.
- Compile feedback for the evaluator to consider.
- Thank stakeholders and address any questions they raise with the evaluation team.

Identify and mitigate potential risks

Identify issues, events, or other circumstances that could put your evaluation project at risk of not meeting milestones.

- Certain events can have a major impact on evaluations—for example, government rule changes, budget cuts, or significant market changes can affect your original plan to complete the evaluation. Accommodate these events by adjusting your original evaluation plan.
- While it is important to involve stakeholders in the early phases of scoping evaluations, their expectations can change, especially when there is turnover in stakeholder staff. Stay in routine contact with key stakeholders, so that you can identify and act on any changes in their expectations whenever possible.

Continually monitor for risks and consider how to mitigate any issues that arise. Depending on their nature, these issues may be simply addressed through proactive communication, or may require some level of scope change and/or contract renegotiation.

Adjust scope and timeline to accommodate evaluation changes

Given the many moving parts and potential risks discussed above, you must be sure to capture their effect on the evaluation—from minor adjustments to the schedule to more substantial changes that could require contract modifications.

- Adjust timelines as necessary to accommodate reality, including all parts of the evaluation scope of work that will be affected by a change to any one of them. Be sure to review your entire timeline so that any change to an element is reflected in all related elements. Gantt chart software can automatically reflect timetable changes in related timetables.
- If contract modifications are necessary, follow your organization's contracting protocols to ensure that changes to scope, timeline, or budget are formalized and approved by both the contractor and your management.

Communicate progress throughout the evaluation process

Throughout the evaluation process, from kickoff to final report, it is critical to communicate progress to your staff, subcontractors, and stakeholders. As noted in previous steps, any changes to evaluation scope or timeline may impact the program resources you have identified to support evaluation activities. **Sharing evaluation progress with program managers** during the evaluation process allows program managers to learn about results on an ongoing basis and gives them an opportunity to ask questions. You should provide regular updates with information relevant to the audience, such as:

- Any schedule changes that impact the timing of interactions of key staff with evaluators.
- Any changes to scope or schedule that affect the type or schedule of deliverables and any necessary review from stakeholders.
- Any necessary framing of evaluation results so that they are well understood (see the **Evaluation & Data Collection – Communicating Impacts** handbook for more information).
- Interim report findings and recommendations that could guide process improvements (see the **Program Design & Customer Experience – Assess and Improve Processes handbook** for more information).

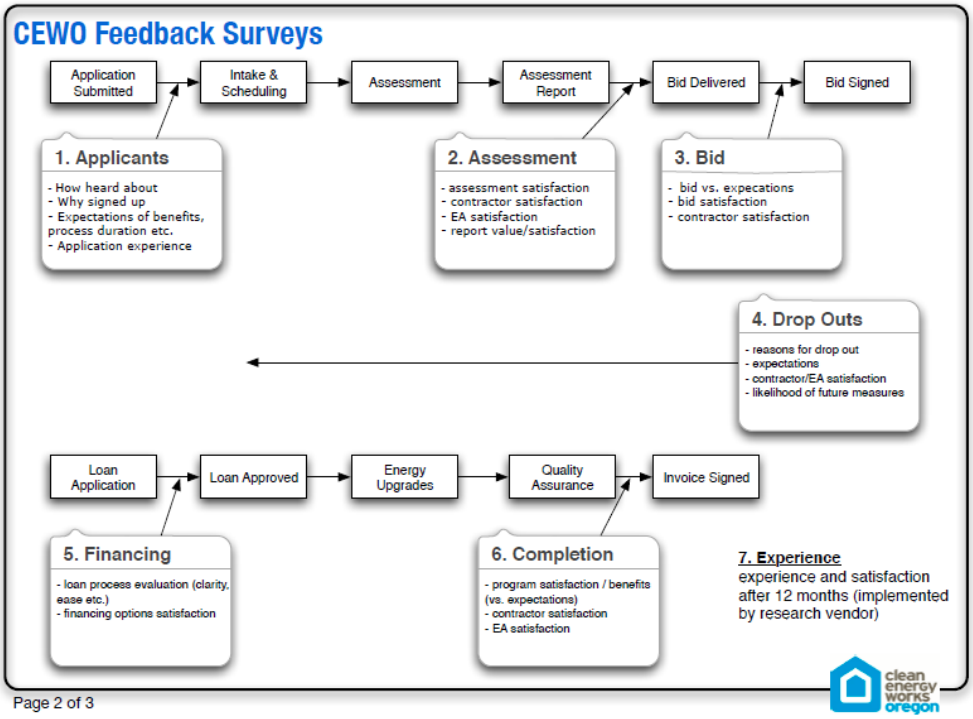
Tips for Success

In recent years, hundreds of communities have been working to promote home energy upgrades through programs such as the Better Buildings Neighborhood Program, Home Performance with ENERGY STAR, utility-sponsored programs, and others. The following tips present the top lessons these programs want to share related to this handbook. This list is not exhaustive.

Measure and evaluate performance at key points in the process

Measuring performance at key points in the upgrade process (e.g., assessments, conversion rates, and financing applications) has helped programs understand where their processes are working smoothly and where they are not. This information has helped them continuously improve their program design and implementation. To monitor progress, successful programs have combined information from their project tracking systems with customer surveys, information from call centers, and feedback from contractors and lenders to understand the customer experience. Make data accessible for program staff to track progress, identify successful strategies, and detect points of failure.

- Enhabit, formerly Clean Energy Works Oregon, established an extensive process for getting customer feedback at key points in the program delivery process to evaluate customer satisfaction and better understand why some homeowners chose to undertake upgrades while others did not. The program identified seven points in the program delivery process to gather information through feedback surveys and phone interviews: application, assessment, bid, drop-out, financing, completion, and experience after 12 months. The program credited this kind of customer communication and feedback as one of the keys to its ongoing success.



Source: Clean Energy Works Research Planning, Will Villota, CEWO, 2012 (Presented during January 19, 2012 Better Buildings Residential Neighborhood Program peer exchange call).

- Boulder County's EnergySmart program sent an online customer feedback survey to homeowners who had completed upgrades. Among other things, the customer surveys affirmed customer satisfaction and identified the opportunity for word-of-mouth marketing. Surveys found that the vast majority of the respondents would recommend the EnergySmart service to a friend or neighbor. The surveys also surfaced some weaknesses that the program resolved. For example, some respondents noted contractor's lack of response and professionalism as an issue, which led the program to develop guidelines for professionalism and customer contact. Surveys also noted that the assessment report was long and confusing, leading the program to develop a new, customized report that was easier to follow and clearer about next steps.

- Connecticut's **Neighbor to Neighbor Energy Challenge** used qualitative contractor and customer feedback combined with quantitative data to **evaluate how well its outreach efforts led to home energy assessments**. When informal contractor feedback alerted program managers that relatively few interested customers were following through to have assessments conducted on their homes, the program analyzed project data and found that only around a quarter of customers who expressed interest in an assessment had completed one. To diagnose the problem, the program analyzed data to see how customers were acquired, how long it took to send leads to contractors, and how long it took contractors to follow up with customers to arrange for an assessment. Through qualitative analysis, the program found, among other things, that customers didn't understand what they were signing up for and may have been unwilling to say "no" to young and enthusiastic outreach staff. The program also found that its staff wasn't following up quickly enough with people that wanted more information. In response, the program improved its process for distributing leads to contractors (e.g., linking contractors to homeowners in 1-2 days), created a "receipt" for interested customers outlining next steps, and set up a system to call non-responsive leads after two weeks. With these and other steps, the program increased its close rate 35% in one month after changes were implemented.

Ask customers about their program experience and for feedback on how your program can improve—and listen to their responses

Better Buildings Neighborhood Program partners found that conducting **surveys of program participants** that focus on tangible, **easy-to-answer questions**, such as the timeliness of service and the quality of work, resulted in better feedback. By including **open-ended questions** and questions about **non-energy benefits**, partners were able to garner a broader **range of information** and a better understanding of who their customers are and what they value (e.g., comfort, cost savings). Partners also found that administering customer surveys during or immediately following completion of the customer's energy upgrade led to a higher rate of response.

- **Enhabit**, formerly known as Clean Energy Works Oregon, requests feedback from all customers during the upgrade process to help assess how contractors can improve their customer service. Quarterly customer surveys of participants who have completed assessments and upgrades include questions about customer satisfaction with the contractor's work. This feedback enables the program to track what is working and what is not, and to respond with improvements quickly.
- **Local Energy Alliance Program** (LEAP) in Charlottesville, Virginia and Northern Virginia, dramatically modified its home energy upgrade process in response to homeowner feedback. Recognizing that many homeowners found a several thousand dollar investment challenging, LEAP implemented a "staged upgrade" process that allowed homeowners to implement home energy upgrades over a period of time, dividing the financial investment into smaller payments.

Use compatible formats for data sharing and reporting, and work with partners to implement standard data exchange protocols

Many Better Buildings Neighborhood Program partners found that it was critically important to use compatible formats for data sharing and reporting with partners. Aligning data formats and collection plans with national data formats (e.g., **Home Performance XML schema** (HPXML), **Standard Energy Efficiency Data platform** (SEED), **Building Energy Data Exchange** (BEDES)) ensured compatibility for aggregation and reporting.

- For **Arizona Public Service's (APS) Home Performance with ENERGY STAR® Program**, a lack of transparency and access to data meant it took hours each month to compile progress reports. Coordination with trade allies was difficult for similar reasons–both the utility and its contractors lacked visibility into project status and task assignment, as well as the ability to identify program bottlenecks, which impacted APS customer service. Program delivery metrics, from administrative overhead to customer and trade ally satisfaction, were lower than expected. APS then began the search for a more dynamic software platform to engage customers, track and manage projects, empower trade allies, and analyze and report results. The program needed HPXML, an open standard that enables different software tools to easily share home performance data. The new HPXML-compliant platform, EnergySavvy's Optix Manage, resulted in higher cost effectiveness and greater satisfaction for the program, including 50% less administrative time to review and approve projects, a 66% reduction in data processing time for APS reporting, 31% less contractor administrative time to submit projects, and a three-fold increase in trade ally satisfaction. HPXML also had the added benefit that contractors can choose their own modeling software.

- The **New York State Energy Research & Development Authority** (NYSERDA) heard from home performance contractors and other stakeholders that a more streamlined data collection process was needed to reduce the paperwork burden and time spent on a per project basis. In response, the program launched the NY Home Performance Portal in July 2013. This web-based interface made it easier for customers to choose and apply for the home performance program and made the application process for a home energy assessment clear, fast, and simple. In 2015, NYSERDA further refined their data collection process and began processing of all projects in a web-enabled interface designed to facilitate program coordination. This new platform allowed NYSERDA to automate project approvals for 85-90% of projects. In addition, the platform supported HPXML which facilitates data sharing among multiple New York programs, thereby reducing the administrative burden for contractors participating in multiple programs. It allowed NYSERDA to automate the work scope approval process through validation of standardized data. An additional benefit of HPXML for NYSERDA was creating an open modeling software market.
- **Massachusetts Department of Energy Resources** (MassDOER) provides statewide oversight to energy efficient programs administered by utilities under the **Mass Save** brand. Originally, contractors from Conservation Services Group, Inc. and Honeywell International Inc. used audit software customized for the program in their home energy assessments. When MassSave piloted the **Home MPG program**, contractors were also required to generate an Energy Performance Scorecard for each home. The existing audit software, however, did not have this capability. To address this problem, software developers added the Energy Performance Scorecard capability, so the contractors could use the same software to record the audit results and generate the energy performance scorecard. Despite implementation delays, this solution allows the use of the Energy Performance Scorecards to potentially expand to statewide.

Establish data sharing relationships as early as possible

Though potentially challenging, establishing relationships for sharing energy consumption data is critical for evaluating program impact on energy and cost savings. Many Better Buildings Neighborhood Program partners found success by approaching utilities during the program planning phase, or at least several months in advance of when they planned to start collecting data, to outline shared goals, assets, tools, needs and constraints. Clear and concise data requests helped speed up utilities' response times for providing the data and alleviated utility concerns and questions regarding data needs.

- **Energize Phoenix** formed a partnership with the local electric utility, Arizona Public Service, while designing the program and coordinated with them throughout program development. Energize Phoenix found that understanding Arizona Public Service's concerns and challenges related to data sharing was a key ingredient in forging a successful partnership, as was instituting a formal agreement to clarify roles and responsibilities.
- **Southeast Energy Efficiency Alliance** (SEEA) found that not all of their programs were successful in obtaining utility bill data. Common obstacles included that the utility did not have the technology infrastructure to easily export the information, would only release data for a fee (based on how many records were pulled), or simply did not have the time or resources to provide the information even if the program had a signed client release form from the homeowner. Among SEEA's programs, those that were most successful in obtaining utility billing information–including **NOLA WISE** in New Orleans, Louisiana; **Local Energy Alliance Program** (LEAP) in Charlottesville, Virginia; Atlanta SHINE in Atlanta, Georgia; and **DecaturWISE** in Decatur, Georgia - consulted with the utilities to determine what information the program needed to include in the client release form. Additionally, some programs developed a written memorandum of understanding with the utility specifying data collection and transfer roles and responsibilities. SEEA programs also found it best to make data requests to utilities on a quarterly basis to minimize the burden on the utility as many utilities do not have staff dedicated to data exporting. Some programs received data more frequently, but in these situations the utility had the means to easily pull and export data.
- When local utilities Philadelphia Gas Works (PGW) and Philadelphia Electric Company (PECO) shared customers' energy usage data with **EnergyWorks**, all parties made sure that the proper data sharing requirements were observed and all parties signed the necessary forms. Philadelphia EnergyWorks built its customer data release approval language into the **program's loan application form** to minimize the number of additional forms that a customer or contractor would need to handle.
- **EnergySmart** in Eagle County, Colorado, successfully developed partnerships with utilities during and after the Better Buildings Neighborhood Program grant period, but in hindsight found it would have been more beneficial to engage utilities prior to submitting the original DOE grant application. By not fully engaging utilities up front, EnergySmart created the following environment where the utilities are only partially included in the program and retained similar or redundant in-house services. As EnergySmart continued forward, they were able to gain the trust of the utility by offering help, data, and information. EnergySmart also shared their results with the utility's management and board of directors. Through this gained trust, utilities were more willing to share data.

Examples

The following resources are examples from individual residential energy efficiency programs, which include case studies, program presentations and reports, and program materials. The U.S. Department of Energy does not endorse these materials.

Case Studies

None available at this time.

Program Presentations & Reports

Energy Pro3: The Economic Impact of Energy Efficiency Investments in the Southeast
Author: Southeast Energy Efficiency Alliance
Publication Date: 2013
This report provides an independent analysis of the economic performance of SEEA's 13-city, U.S. Department of Energy-funded energy efficiency upgrade consortium from 2010 to 2013. It estimates the net impacts of SEEA's energy efficiency programs on the economy of the southeast region as a whole, and on the economies of the states with participating programs.

Energy Pro3: Benchmarking Job Creation in the Southeast
Author: Southeast Energy Efficiency Alliance
Publication Date: 2013
This report provides an independent analysis of the job creation impact of DOE's investment in energy efficiency programs, from 2010 to 2013. The analysis calculates the job creation results that would have occurred in the Southeast, based on the prevailing economic conditions from 2010 to 2013, had DOE invested in sectors other than energy efficiency.

Energy Pro3: Productivity, Progress and Prosperity for the Southeast
Author: Southeast Energy Efficiency Alliance
Publication Date: 2013
This report demonstrates the results achieved to date by the Southeast Energy Efficiency Alliance. It highlights the experiences of Consortium programs, their successes driving further investments in energy efficiency improvements, and the challenges that hindered their progress. It also details the infrastructure, resources, and opportunities that support the deployment of energy efficiency programming, and the approaches that the Consortium has found best suited to the region.

Using Data to Monitor Market Transformation
Author: Melissa Glickman, Boulder County, Colorado (now EnergySmart)
Publication Date: 2012
EnergySmart Colorado uses surveys and a customer database to get feedback from homeowners that helps fine-tune program services and operations.

Collecting and Using Data to Improve the Program: Pecan Street Project
Author: Suzanne Russo, Pecan Street Project Inc.
Publication Date: 2011
Headquartered at The University of Texas at Austin, Pecan Street Inc. is a research and development organization focused on developing and testing advanced technology, business model and customer behavior surrounding advanced energy management systems. Their flagship effort is the Pecan Street Demonstration Project that began in an Austin community. This presentation discusses collecting and using data to assess and improve the Pecan Street Project.

Connecticut - Analyzing Outreach Effectiveness to Improve Program Design
Author: Kerry O'Neill, Connecticut Neighbor to Neighbor Energy Challenge
Publication Date: 2011
This presentation shares how the Neighbor to Neighbor Energy Challenge collected and evaluated data and used the results to improve its program.

Using Data to Monitor Market Transformation - Charleston WISE
Author: Betsy Kleinfelder, The Sustainability Institute
Publication Date: 2012
As part of its "intentional learning" process, Charleston WISE collects information from homeowners that helps the program systematically test assumptions and implement continuous improvement.

Energize Phoenix: Collecting and Using Data to Improve the Program
Author: Dimitrios Laloudakis, Energize Phoenix
Publication Date: 2011
This presentation outlines the techniques for collecting and evaluating energy efficiency program evaluation data, including data related to marketing efforts.

Listening to Consumer Behavior **(3 MB)**
Author: Kat Donnelly, Connecticut Neighbor to Neighbor Energy Challenge
Publication Date: 2010
This presentation outlines the steps Connecticut's Neighbor to Neighbor Energy Challenge program took to obtain and sort useful feedback from surveys and volunteer observations.

Impact Evaluation: California Energy Commission's California Comprehensive Residential Retrofit Program
Author: DNV KEMA Energy & Sustainability
Publication Date: 2014
This report documents findings and recommendations from an impact evaluation of the California Energy Commission's California Comprehensive Residential Retrofit program, a statewide energy upgrade program funded by the American Recovery and Reinvestment Act of 2009. The program funded local and regional subrecipients to develop and test initiatives aimed at transforming the residential energy upgrade market and building an infrastructure for whole-building energy upgrades. These local and regional governments collaborated with California's major utilities to jointly conduct the statewide Energy Upgrade California program.

Energize Phoenix Energy Efficiency on an Urban Scale: Year One Summary Report
Author: Energize Phoenix
Publication Date: 2011
This report provides results, lessons learned and recommendations for driving energy efficiency in existing building on an urban scale based on the first year of the Energize Phoenix energy efficiency program.

Energize Phoenix Energy Efficiency on an Urban Scale: Year Two Summary Report
Author: Energize Phoenix
Publication Date: 2012
This report provides results, lessons learned and recommendations for driving energy efficiency in existing building on an urban scale based on the second year of the Energize Phoenix energy efficiency program.

Philadelphia EnergyWorks Residential Program Evaluation
Author: iSpring
Publication Date: 2014
The purpose of this report, prepared by sustainability consulting firm iSpring, is to provide the results of the EnergyWorks program to the contractors and auditors who participated, along with information on lessons learned over the course of the program that might prove helpful in their future work.

Multi-State Residential Retrofit Project: Process Evaluation Final
Author: National Association of State Energy Officials
Publication Date: 2014
The Multi-State Residential Retrofit Project is a residential energy-efficiency pilot program, funded by a competitive U.S. State Energy Program (SEP) award through the U.S. Department of Energy. The Multi-State Project operates in four states: Alabama, Massachusetts, Virginia, and Washington. During the course of this three-year process evaluation, Cadmus worked closely with NASEO and the four states to collect information about the programs from many perspectives, including: State Energy Office staff, program implementers, homeowners, auditors/contractors, real estate professionals, appraisers, lenders, and utility staff. This report discusses: the project's context; its goals; the evaluation approach and methods; cross-cutting evaluation results; and results specific to each of the four states.

Impact Evaluation of the Illinois Energy Savers Program for Large Multifamily Buildings
Author: Navigant, Inc.
Publication Date: 2013
This report presents impact evaluation results for the Energy Savers program for large multi-family buildings. The Energy Savers program is run by CNT Energy and Community Investment Corporation. Initiated in January 2008 and now in its fifth year of existence, the Energy Savers program involves a variety of services to promote energy efficiency improvements for multi-family residential buildings of 5-50 units in the affordable housing market segment.

Evaluation of Missed Energy Saving Opportunity Based on Illinois Home Performance Program Field Data
Author: U.S. Department of Energy
Publication Date: 2014
This report builds and expands off of previous research by collecting and evaluating data from 800 Illinois Home Performance (IHP) retrofits. This study investigates homeowner measure package choices in the Illinois Home Performance with ENERGY STAR® (IHP) program compared to cost-optimal choices determined through Building Energy Optimization (BEopt™) modeling software.

Seattle Community Power Works Evaluation Reports
Author: Washington State University Energy Program
Publication Date: 2012
Evaluation reports from the Seattle Community Power Works program. The city of Seattle worked to encourage efficiency upgrades for single-family and multi-family residences, small businesses, hospitals, and large commercial and municipal buildings.

Program Materials

RePower Bainbridge Upgrade Survey **(333 KB)**
Author: RePower Bainbridge
Publication Date: 2012
Homeowner data collection survey created by RePower.

Clean Energy Works Oregon (now Enhabit) Home Performance Data Intake Sheet **(131 KB)**
Author: Conservation Services Group
Publication Date: 2011
This data intake template spreadsheet provides a way to track home energy performance metrics.

Community Energy Services Experience Survey
Author: Community Energy Services
Publication Date: 2011
Survey for Minnesota home owners participating in Community Energy Services pilot program about their experience at their home visit.

Green Madison and Me2 Consultant Survey **(103 KB)**
Author: Green Madison; Me2
Publication Date: 2011
Survey for consultants participating in Green Madison and Me2 programs about their experiences with the programs.

Green Madison Contractor Questionnaire **(145 KB)**
Author: Green Madison
Publication Date: 2011
Questionnaire for contractors participating in the Green Madison program about their overall experience, level of participation, training, and available resources.

Me2 Participant Survey **(554 KB)**
Author: Me2
Publication Date: 2011
Participant survey sent to Me2 customers that have completed at least the initial Energy Advocate visit.

Me2 Non-Participant/Drop Out Survey **(526 KB)**
Author: Me2
Publication Date: 2011
Survey for people who signed up to participate in the Me2 program for home performance assessments, but ultimately decided not to participate. The goal of the survey is to help improve services for future participants.

Toolbox

The following resources are available to help design, implement, and evaluate possible activities related to this handbook. These resources include templates and forms, as well as tools and calculators. The U.S. Department of Energy does not endorse these materials.

Templates & Forms

None available at this time.

Tools & Calculators

Best Practices Self-Benchmarking Tool for Energy Efficiency Programs

Author: Pacific Gas and Electric Company
Publication Date: 2013

The Best Practices Self-Benchmarking Tool can be used to identify in your own programs their strengths, areas of improvement needed, and strategies for improving them, based on the results of the Best Practices Study.

Emissions & Generation Resource Integrated Database (eGRID)

Author: U.S. Environmental Protection Agency
Publication Date: 2012

A comprehensive source of data on the environmental characteristics of almost all electric power generated in the United States.

Utility Data Access Map

Author: OpenEI
Publication Date: 2013

This map shows how accessible U.S. electric utility company electricity use data is for both residential and commercial customers. The map is updated regularly based on responses received to date.

The State and Local Energy Efficiency Action Network (SEE Action) Evaluation, Measurement, and Verification (EM&V) Resource Portal

Author: State and Local Energy Efficiency Action Network
Publication Date: 2013

The State and Local Energy Efficiency Action Network (SEE Action) Evaluation, Measurement, and Verification (EM&V) Resource Portal serves as an EM&V resource one-stop shop for energy efficiency program administrators and project managers. The resources focus on tools and approaches that can be applied nationwide, address EM&V consistency, and are recognized by the industry.

Building Energy Data Exchange Specification (BEDES)

Author: U.S. Department of Energy

The Building Energy Data Exchange Specification (BEDES, pronounced "beads" or /bi:ds/) is designed to support analysis of the measured energy performance of commercial, multifamily, and residential buildings, by providing a common data format, definitions, and an exchange protocol for building characteristics, efficiency measures, and energy use.

Home Performance Extensible Markup Language Schema (HPXML)

Author: Building Performance Institute
Publication Date: 2012

Home Performance Extensible Markup Language (HPXML) is a data transfer protocol. It was developed to simplify electronic data transfer between any party involved in a home performance program, including contractors, program administrators, utilities, and federal agencies.

Standard Energy Efficiency Data (SEED) platform

Author: U.S. Department of Energy
Publication Date: 2014

The Standard Energy Efficiency Data (SEED)™ Platform is a software application that helps organizations easily manage data on the energy performance of large groups of buildings. Users can combine data from multiple sources, clean and validate it, and share the information with others. The software application provides an easy, flexible, and cost-effective method to improve the quality and availability of data to help demonstrate the economic and environmental benefits of energy efficiency, to implement programs, and to target investment activity.

Topical Resources

The following resources provide additional topical information related to this handbook, which include presentations, publications, and webcasts. Visit **Examples** for materials from and about individual programs.

Topical Presentations

None available at this time.

Publications

Better Buildings Neighborhood Program Evaluation Report: Volume 1. Evaluation of the Better Buildings Neighborhood Program (Final Synthesis Report)
Author: U.S. Department of Energy
Publication Date: 2015
Volume 1 of the Better Buildings Neighborhood Program Evaluation Report provides findings from a comprehensive impact, process, and market effects evaluation of the program period, spanning from September 2010 through August 2013.

Better Buildings Neighborhood Program Evaluation Report: Volume 2. Savings and Economic Impacts of the Better Buildings Neighborhood Program
Author: U.S. Department of Energy
Publication Date: 2015
Volume 2 of the Better Buildings Neighborhood Program Evaluation Report comprises a measurement and verification process, as well as billing regression analysis on projects with sufficient utility bill data, to determine gross verified savings.

Better Buildings Neighborhood Program Evaluation Report: Volume 3. Drivers of Success in the Better Buildings Neighborhood Program—Statistical Process Evaluation Volume
Author: U.S. Department of Energy
Publication Date: 2015
Volume 3 of the Better Buildings Neighborhood Program Evaluation Report statistically identifies factors associated with successful residential energy upgrade programs using a survey sampling, cluster analysis, and multivariate regression approach.

Better Buildings Neighborhood Program Evaluation Report: Volume 4. Process Evaluation of the Better Buildings Neighborhood Program
Author: U.S. Department of Energy
Publication Date: 2015
Volume 4 of the Better Buildings Neighborhood Program Evaluation Report assesses the degree to which the Better Buildings Neighborhood Program met its process goals and objectives to identify the most effective program design and implementation approaches.

Better Buildings Neighborhood Program Evaluation Report: Volume 5. Market Effects of the Better Buildings Neighborhood Program
Author: U.S. Department of Energy
Publication Date: 2015
Volume 5 of the Better Buildings Neighborhood Program Evaluation Report provides findings from a comprehensive impact, process, and market effects evaluation of the program period, spanning from September 2010 through August 2013.

Best Practices for Working with Utilities to Improve Access to Energy Usage Data
Author: American Council for an Energy-Efficient Economy
Publication Date: 2014
This resource provides best practices and highlights case studies for how utilities, policymakers, building managers, and community stakeholders can improve access to energy usage data while working towards the goal of improving efficiency in their communities.

The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures
Author: National Renewable Energy Laboratory
Publication Date: 2013

This report provides a set of model protocols for determining energy and demand savings that result from specific energy efficiency measures or programs. The methods described are among the most commonly used approaches in the energy efficiency industry for certain measures or programs; they draw from the existing body of research and best practices for energy efficiency evaluation, measurement, and verification (EM&V).

Analysis of Installed Measures and Energy Savings for Single-Family Residential Better Buildings Projects
Author: National Renewable Energy Laboratory
Publication Date: 2015

This report presents an analysis of data for residential single-family projects reported by 37 organizations that were awarded federal financial assistance (cooperative agreements or grants) by the U.S. Department of Energy's Better Buildings Neighborhood Program. The report characterizes the energy-efficiency measures installed for single-family residential projects and analyzes energy savings and savings prediction accuracy for measures installed in a subset of those projects.

Verifying Energy Efficiency Job Creation: Current Practices and Recommendations
Author: American Council for an Energy-Efficient Economy
Publication Date: 2015

Among the many benefits ascribed to energy efficiency is the fact that it can help create jobs. Although this is often used to motivate investments in efficiency programs, verifying job creation benefits is more complicated than it might seem at first. This paper identifies some of the issues that contribute to a lack of consistency in attempts to verify efficiency-related job creation. It then proposes an analytically rigorous and tractable framework for program evaluators to use in future assessments.

Webcasts

EM&V Basics, Tools and Resources to Assist EECBG and SEP Grantees
Presentation, **Media** **(43 MB)**, **Transcript**
Author: Julie Michals, Northeast Energy Efficiency Partnerships, Inc.; Phil Sieper, The Cadmus Group, Inc.; Mark Stetz, Stetz Consulting
Publication Date: 2010

This webinar offers an introduction to EM&V basics, including data collection, tracking tools, M&V approaches, and reporting energy savings.

Energy Efficiency and Conservation Loan Program Webinar Series: #1 Overview and Cost Effectiveness
Presentation, **Media**, **Transcript**
Author: U.S. Department of Agriculture; U.S. Department of Energy
Publication Date: 2014

This webinar is the first (in a series of six) hosted by USDA Rural Utility Service (RUS) and focusing on the Energy Efficiency and Conservation Loan Program (EECLP). This webinar provides an overview of the Energy Efficiency and Conservation Loan Program. It covers the requirements and benefits of the program and also discusses steps you can take to evaluate the cost effectiveness of energy program options.

Energy Efficiency and Conservation Loan Program Webinar Series: #2 Evaluation, Monitoring & Verification
Presentation, **Media**, **Transcript**
Author: U.S. Department of Agriculture; U.S. Department of Energy
Publication Date: 2014

This webinar is the second (in a series of six) hosted by USDA Rural Utility Service (RUS) and focusing on the Energy Efficiency and Conservation Loan Program (EECLP). This webinar covers the key concepts of Evaluation, Monitoring & Verification (EM&V), gives an overview of the full process, from estimating savings before programs are implemented to measuring and verifying the savings at the end. The webinar also covers EM&V framework, evaluation plans, technical reference manuals and measurement and verification studies.

Energy Efficiency and Conservation Loan Program Webinar Series: #4 Residential Energy Efficiency Deep Dive, Part Two

Presentation, **Media**, **Transcript**

Author: U.S. Department of Agriculture; U.S. Department of Energy

Publication Date: 2014

This webinar is the fourth (in a series of six) hosted by USDA Rural Utility Service (RUS) and focusing on the Energy Efficiency and Conservation Loan Program (EECLP). The second in a two-part series, this webinar shares best practices from the more than 40 competitively selected state and local governments who participated in the U.S. Department of Energy's Better Buildings Neighborhood Program. This webinar focuses on data collection and continuous improvement, partnering with financial institutions, community-based outreach, and quality assurance of contractor work. It also features a case study from Jackson Electric Member Corporation about their audit tools, rebates and loans, tracking and reporting, and marketing and advertising strategies.