Market Position & Business Model – Assess the Market

Description

Completing a market assessment is a critical first step in determining whether and how to launch a new residential energy efficiency program or adjust the course of an existing program. This handbook will help you assess what kind of energy efficiency activities and actors (e.g., home performance contractors, HVAC contractors, remodelers, retailers, utilities, lenders, and homeowners) currently exist in your community and the level of interest in new energy efficiency efforts. Using this information will ultimately help you determine if you should enter the market or change your current course, and if so, how to develop or modify your business model to yield economic, environmental, and energy benefits for your community.

This handbook will help you determine your organization’s market position by:

- Assessing the nature of current and potential demand for energy efficiency products and services (e.g., home assessments, energy efficiency upgrades, loans or products to finance upgrades, contractor training) in your community and what factors can influence this demand
- Determining how the market is already being served by other organizations and where your organization could provide value in delivering energy efficiency services
- Identifying your organization’s strengths, capabilities, and constraints in providing needed products and services.

A thorough market assessment—giving careful consideration to trends, opportunities, gaps, and barriers—will help you understand the role your organization can play in filling current or future demand for energy efficiency upgrades in your target market. If your organization decides to enter the energy efficiency market or significantly change its role in the market, you will want to undertake a more detailed market assessment to inform your program design and strategy (see the handbooks below for more information).
Find related information across other program components:

- **Program Design & Customer Experience – Assess the Market**
  Research and analyze the specific barriers, needs, and opportunities for a residential energy efficiency program in your community.

- **Marketing & Outreach – Assess the Market**
  Identify and prioritize potential target audiences based on their likely receptivity to your program’s services.

- **Financing – Assess the Market**
  Determine how your target audience currently funds energy efficiency services, to what extent upfront cost is a barrier, and whether improvements to their financing options would increase the uptake of energy efficiency measures.

- **Contractor Engagement & Workforce Development – Assess the Market**
  Learn about the capabilities and services of existing contractors and training providers working in your market.

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**Step-by-Step**

To determine your organization’s market position there are several important steps to consider.

**Assess potential market demand for energy efficiency products and services**

As your organization enters the residential energy efficiency market or expands its existing role, make sure you have a solid understanding of current and potential market demand for such services. A variety of factors can influence demand. Examples include:

- **Local, state, and regional policies (e.g., energy disclosure requirements, utility energy efficiency targets) that promote energy efficiency.**
  - The DSIRE database provides comprehensive information on state, federal, local, and utility incentives and policies that are in place to support renewable energy and energy efficiency.
  - The U.S. Department of Energy’s (DOE) 2007 report *State and Regional Policies That Promote Energy Efficiency Programs Carried Out by Electric and Gas Utilities* describes policies that could promote cost-effective programs, implemented by electric and natural gas utilities, to reduce energy consumption.
  - The National Action Plan for Energy Efficiency identifies key barriers limiting greater investment in cost-effective energy efficiency, describes policy recommendations to overcome the barriers, and documents policy and regulatory options for greater attention and investment in energy efficiency. The State and Local Energy Efficiency Action Network builds on the Action Plan by focusing on the assistance that states and local governments need to advance policies and practices that will bring energy efficiency to scale.

- **An existing market for home energy upgrade services, financing, or other aspects of energy efficiency programs.**
  - Information about local residential energy efficiency programs is available from Home Performance with ENERGY STAR and the DSIRE database.

- **High electricity, gas, or other energy prices and/or characteristics of the local climate that create demand for heating and cooling.**
  - The U.S. Energy Information Administration provides daily short-term and long-term energy prices and forecasts as well as information about heating and cooling degree days. The greater the number of heating or cooling degree days, or the trend toward more of either days each year, the higher the likelihood of interest in or demand for energy efficiency services.
Housing stock that would benefit from home energy efficiency upgrades.
- For state or local data, consult with your local government, real estate agencies, utilities or other ratepayer-funded efficiency programs, or with colleges or universities in your area to see if a local housing survey has been conducted recently.
- The following resources provide national snapshots of housing trends:
  - The Residential Energy Consumption Survey provides information on U.S. housing characteristics, including energy consumption data.

The Residential Energy Consumption Survey

**ALL ENERGY** average per household (excl. transportation)

<table>
<thead>
<tr>
<th>Site Consumption million Btu</th>
<th>Expenditures dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>$2,500</td>
</tr>
<tr>
<td>ENC</td>
<td>$1,500</td>
</tr>
<tr>
<td>MI</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

**ELECTRICITY ONLY** average per household

<table>
<thead>
<tr>
<th>Site Consumption kilowatthours</th>
<th>Expenditures dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>$1,500</td>
</tr>
<tr>
<td>ENC</td>
<td>$1,250</td>
</tr>
<tr>
<td>MI</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

**CONSUMPTION BY END USE**

Since the weather in Michigan and the Midwest is cooler than other areas of the United States, space heating makes up a greater portion of energy use in homes compared to the U.S. average, and air conditioning makes up only 1% of energy use.

**MAIN HEATING FUEL USED**

- US
  - Other/None: 18%
  - Propane: 6%
  - Electricity: 41%
  - Natural Gas: 30%
- ENC
  - Other/None: 2%
  - Propane: 16%
  - Electricity: 52%
  - Natural Gas: 27%
- MI
  - Other/None: 1%
  - Propane: 17%
  - Electricity: 55%
  - Natural Gas: 1%

**COOLING EQUIPMENT USED**

- US
  - None: 100%
- ENC
  - Window/wall units only: 50%
  - Central air conditioning: 50%
- MI
  - Window/wall units only: 50%
  - Central air conditioning: 50%


- The American Housing Survey, sponsored by the U.S. Census Bureau and the U.S. Department of Housing and Urban Development, provides current data on a wide range of housing and demographic characteristics.
- The Joint Center for Housing Studies at Harvard University also provides several reports on the U.S. housing stock.
- The U.S. Department of Energy’s Buildings Performance Database is the largest national dataset of real building performance data, and enables users to perform statistical analysis on an anonymous dataset of hundreds of thousands of commercial and residential buildings.

- Energy efficiency or other sustainability initiatives in the community.
  - Local newspapers and community-specific newsletters, blogs, and Facebook pages, as well town energy committees like the Town of Bedford, New York Energy Advisory Panel, can provide information about local energy or sustainability efforts and can provide a means for gauging and leveraging existing interest.

- Green jobs initiatives or other complementary economic development programs and initiatives.
These can provide a means to developing a local contractor base and access to contractor training opportunities.

See Connecticut’s Green Job Funnel Initiative as an example.

State-Level Policies in Massachusetts Help Drive the Market for Energy Efficiency

Organizations should be aware of state policies that help drive investment in energy efficiency products and services and help build a strong customer base and source of well-trained contractors for conducting energy efficiency work. For example, Massachusetts' Green Communities Act in 2008 required that utility companies in the state offer energy efficiency services. See the three-year energy efficiency plan developed by local utilities in compliance with the act.

Also look for factors that can limit demand or your organization’s ability to provide energy efficiency services. Examples include:

- **Low energy prices or a moderate climate that limits the need for heating or cooling.** In such cases, payback periods (the amount of time before energy cost savings recoup the upfront costs of the energy upgrades) will be longer, and home energy upgrade projects might not be considered cost-effective or save that much energy. Home energy upgrades provide other benefits, such as increased comfort and safety, which customers may value more than lower utility bills.

- **Utility regulatory rules that limit the services that can be offered with ratepayer funding** (e.g., some utility cost-effectiveness test protocols).

- **Few or no contractors providing home performance services.** To assess the availability of contractors in your area, view the Contractor Engagement & Workforce Development Assess the Market handbook.

For additional information on understanding your target audience’s values and how to frame messages appropriately see the Marketing & Outreach component.

When conducting the assessment, define a service area that would be large enough to attract contractors and customers, but not so large that it might cause your organization to have a broader reach than it can handle.

- **In a comprehensive evaluation of over 140 residential energy efficiency programs across the country,** many of the programs found that restricting outreach to a defined geographic area unnecessarily limited program participation. Further, a neighborhood is generally too small to generate enough customer interest and activity to support a program. Many Better Buildings Neighborhood Program partners that began their programs with a focus on an individual neighborhood needed to expand citywide to find enough interested customers and contractors.

- **For contractor and partner acquisition,** a single city is often too small; larger, more business-savvy contractors are rarely interested in, nor necessarily able to, conform to varying qualifications and incentive rules that apply to a subset of the area in which they operate.

- **Partnering with utilities typically requires aligning with the entire range of the utility’s service area.**

### Assess how the market is served by other organizations and what gaps exist for your organization to fill

You need to understand what energy efficiency or related services are already being provided in your target market and by whom. In areas with market gaps in energy efficiency products or services currently offered, you may need to provide a broad range of services and focus heavily on building a market. In areas where many organizations are already operating, you may need to identify and focus on a particular under-served niche or help bring coordination and coherence to the market.

A useful framework for assessing current services and gaps is a value chain: a representation of a market that highlights all key participants and how they interact with one another, each providing value that ultimately reaches the customer. Key parts of the energy efficiency value chain include:

- **Products and services**—the end product delivered to the consumer (in this case, home energy upgrades).

- **Actors**—the participants who provide products and services in each segment.

- **Market enablers**—factors that influence the motivations and decisions of each actor.

In addition, the value chain includes five distinct segments or phases at which value is created in the industry:
- Manufacturing and product development
- Equipment supply
- Home energy upgrade design and consultation
- Home energy upgrade installation
- Final consumer

Understanding these parts will provide a complete picture of the complex elements that form the basis of your home energy upgrade market, highlighting where your organization can provide value in delivering energy efficiency services to your target customers.

**Residential Energy Efficiency Value Chain**

<table>
<thead>
<tr>
<th>VALUE CHAIN SEGMENT</th>
<th>PRODUCTS/SERVICES</th>
<th>ACTORS</th>
<th>MARKET ENABLERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Consumer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purchase products needed</td>
<td>Condo Building Owners</td>
<td>Economic Environment</td>
</tr>
<tr>
<td></td>
<td>Install products/Adjust systems (perform home energy upgrade)</td>
<td>Apartment Building Owners</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May also monitor results/savings</td>
<td>Renters</td>
<td></td>
</tr>
<tr>
<td>Energy Efficiency Home Energy Upgrade Design and Consultation</td>
<td>Perform energy efficiency assessment</td>
<td>None (Do It Yourself)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recommend specific systems/products for greatest efficiency</td>
<td>Remodelers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop remedial/home energy upgrade package</td>
<td>HVAC Contractors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monitor results/savings</td>
<td>Energy Efficiency Assessors</td>
<td></td>
</tr>
<tr>
<td>Equipment Supply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing and Product Development</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The home improvement market includes a variety of products and services that create value for energy efficiency services in each of the segments. You can adapt the generalized value chain framework to your local market to identify the products and services being provided, the actors involved in providing these services, and the existing enabling factors. This will allow you to identify gaps in products or services that your market needs.

Multiple actors from the private, public, and nonprofit sectors often provide overlapping services to the market. The [DOE Better Buildings Neighborhood Program](#) has developed profiles of several types of organizations that provide energy efficiency services which you can use to help determine who the main actors are in your particular market:

- **Remodeler**—a contractor whose core business is to provide a wide array of home improvements.
- **HVAC contractor**—a specialized contractor whose core business is to install and/or maintain HVAC equipment.
- **Home performance contractor**—a company whose primary business is to deliver, either themselves or via sub-contractors, the full suite of home energy upgrade services directly to the consumer.
- **Retailer**—a company that sells goods and services directly to consumers and contractors and may sell energy efficiency services to homeowners.
- **Utility program administrator**—a public or investor-owned entity providing energy to a range of customers that manages an energy efficiency program.
- **Non-utility program administrator**—an organization (e.g., government, non-governmental organization) that manages an energy efficiency program.
**Real estate agent** – an individual who acts as an intermediary for the sale and purchase of buildings and land and is uniquely positioned to provide energy efficiency program partners with access to a wide network of customers, contractors, home inspectors, and appraisers.

All of these actors respond to challenges and opportunities in the market in different ways. Your organization can often shape or influence enabling factors, which include:

- **Financing**—consumer access to financing and the terms associated with the financing (e.g., loans, equity, and cash).
- **Financial incentives**—the availability of rebates, grants, and tax credits for consumers to overcome the up-front cost of home energy upgrades.
- **Regulatory framework**—the certifications, standards, and requirements that govern the home energy upgrade process.
- **Information providers**—the education and marketing provided by government, NGOs, communities, and news media to consumers.
- **Transport and logistics**—the shipment and delivery of energy efficiency products and services.
- **Energy prices and seasonality**—the impact of varying energy prices on the attractiveness of energy efficiency savings.

As you examine your market’s value chain and identify potential gaps for your organization to fill, talking to people in your local market who are familiar with consumer and industry interest in and need for energy efficiency services is likely to be some of the most valuable and influential research you can do. Ask them about their perceptions of the local market for energy efficiency services: What problems that they encounter as they do their work? What would be necessary to boost customer demand, increase contractor success selling services, etc.? Questions like these can help you to identify a needed role or gap that your organization could fill. Some or all of the following can provide valuable insights:

- State and local government offices, including:
  - State energy office staff
  - City council members, mayors, and other elected officials
  - Local chambers of commerce

- Labor-based organizations, including:
  - Contractor licensing entities, such as the [Building Performance Institute](https://www.bernal.org) and [Residential Energy Services Network](https://www.renergyservicesnetwork.org)
  - Contractor trade associations, such as the [Building Trades Association](https://www.buildingtrades.org)
  - Local trade unions such as the Laborers’ International Union of North America (LIUNA), the Plumbing-Heating-Cooling Contractors Association (PHCC), and the International Association of Heat and Frost Insulators and Allied Workers
  - Local training and employment organizations (e.g., workforce investment boards)
  - Veterans organizations and programs, such as [Green Collar Vets](https://www.greencollarvets.org)

- Local energy utility companies, which may already offer energy efficiency services to customers and work with a local contractor base

- Local community action programs and organizations, including:
  - Local clubs and community organizations (e.g., neighborhood associations, service organizations)
  - Local environmental groups

- Local real estate organizations or agents
- Local media
- Employers or colleagues of your primary audience.

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**In Their Own Words: Understanding Your Market**
Assess your strengths and capabilities to provide products and services in the market

Your organization needs to assess its strengths and capabilities for providing needed products and services to the market. With an understanding of potential market demand, the services already being provided in your market’s value chain, and existing market gaps, examine the products and services that your organization currently offers. Consider the following:

- What organizational strengths and capabilities enable your current operations? What can you transfer to residential energy efficiency program operations?
- What parts of the energy efficiency market look similar to your existing value chain? Where might you have a competitive advantage in applying your current approach to offering these services, even if you don’t already provide energy efficiency services?
- What are the required margins (i.e., how much of a markup is needed to break even or make money) on an average service offering?
- Note that the answer to this question will depend on your organization’s financial structure and is most applicable to utilities or private companies.
- What is the range of service offerings your organization currently provides that could fill a market need you identified?

Once you have a clear understanding of your organization’s strengths with respect to the market, consider the combination of capabilities you need to deliver a residential energy efficiency program, and start identifying potential partners with strengths that complement your needs. Uncovering untapped opportunities to expand core business offerings – or enter into partnerships – can reveal ways to increase customer traffic to and revenue for your program over time. Don't ignore what the market tells you!

Using Partners to Assess the Market

In an effort to better identify various customer and market barriers as part of their Wisconsin Energy Efficiency project, the Wisconsin Energy Conservation Corporation (WECC) formed partnerships with the cities of Milwaukee and Madison and Summit Credit Union. Using the partner cities' local knowledge of their residents and businesses, teams from each entity met as a coordinated brain trust to develop an approach for reaching the Wisconsin program's target audiences. By assessing the market in this coordinated manner, the program seeks to achieve higher-than-typical penetration rates among the target audience and attract more participants to the statewide program.
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.

Adapt your business model to fit your external environment

To develop a successful business model, Better Buildings Neighborhood Program partners found it critical to have a strong understanding of the external environment within which they operated. This included who their customers were, who their competitors and partners were, what key policies governed their work, and what trends were likely to impact their ability to accomplish their goals and fulfill their mission. Understanding the external forces that affected their market allowed the organizations to better identify services that met customers’ and partners’ needs and develop a more robust business model. Many organizations adapted their business model to overcome challenges and leverage opportunities as local conditions and their understanding of how their business operated within the market evolved.

- When the New Hampshire Better Buildings program began, there were numerous energy efficiency programs operating independently in the state (e.g., by multiple utilities), and only informal coordination among activities was occurring. Customers were often overwhelmed trying to determine which programs they qualified for, how to fill out all the required paperwork, and which contractors they were able to work with. The program quickly learned that their business model needed to be well-integrated with other energy efficiency programs in the state, in order to provide value to customers and contractors while enabling long term growth for the efficiency market.

In response, the program took a collaborative approach to their business model design and partnered with the utilities’ rate-payer funded Home Performance with ENERGY STAR (HPwES) program. Combining programs leveraged the utility programs’ existing queue of upgrade projects, procedure for assessments and upgrades, and database for collecting information about each project. A single program and process also made the most sense for residential customers, who were more likely to move forward with a project if they did not have multiple programs and processes to figure out. The utility companies benefitted from the partnership because the additional funds from Better Buildings allowed them to expand their program’s reach. Combining efforts and utilizing each program’s strengths led to consistent marketing and messaging, more efficient processes for contractors, one-stop shopping for customers, and a streamlined approach to financing.

- The Neighbor to Neighbor Energy Challenge’s (N2N) original program design used community-based social marketing (CBSM) to acquire and feed leads into the existing ratepayer funded Home Energy Solutions (HES) assessment program. N2N expected that contractors would convince customers to take advantage of rebate programs to complete home energy upgrades; however, over the first two years of the program, they saw many of the leads they generated stall after the assessments. N2N realized that they had limited influence over the contractor network with this approach and that the HES program design did not incent contractors and customers to complete upgrades. They shifted their business model and focused marketing and outreach resources on new strategies, such as direct lead acquisition, in order to acquire customers who were more likely to proceed straight to completing upgrades.

Make sure there are enough customers in your target market to meet your goals and attract partners

Many programs that focused on a specific neighborhood or other small geographic areas have found it difficult to generate enough customer interest, partner interest, and upgrade activity to meet program goals. Regional or statewide approaches are often more attractive to contractors, lenders, utilities, and other partners than smaller markets defined by neighborhoods or city boundaries because they align with more typical service territories.

Programs have found that larger contractors often are not interested in working in multiple cities or towns that have varying qualifications procedures and incentive rules. Utility partners are often better able to engage with a program offering services across a large segment of their customers. Historically, credit unions, community banks, CDFIs, and national lenders already specializing in energy efficiency loans have been more receptive to partnerships with residential energy efficiency programs.

- Be SMART Maryland shifted away from a volunteer-driven, neighborhood-by-neighborhood approach in favor of marketing through contractors and local community organizations to a broader geographic area. The program found it difficult to manage marketing and outreach to diverse geographic locations with the neighborhood approach (e.g., volunteer networks were difficult to engage and inconsistent from community to community). The adjustment in marketing strategy and target audience definition expanded Be SMART Maryland’s service area, proved to be more effective in generating interested customers, and made the program more attractive to qualified contractors.
• **Community Power Works** (CPW) in Seattle found that its geographic scope was too narrowly focused when it first began providing services. At that time, CPW was focused on specific areas of the city, including many low-income neighborhoods. These geographic boundaries limited the number of potential customers, and many residents in these areas did not have the financial ability to invest in energy efficiency upgrades or access financing. CPW achieved significantly higher results once it expanded its geographic scope to the entire city in early 2012, more than doubling the number of eligible households. The expansion of the service territory—along with other program changes, such as simplifying and increasing incentives and offering new financing options—significantly boosted the number of upgrades per month from around 10 per month in late 2011 to around 50 per month in mid-2012. For more information, see Seattle Community Power Works’ [Fall 2012 Progress Report](#).

• **Energize Phoenix**, which focused its program on a central downtown light rail corridor, expanded its service area after a year of operations in late 2011 to increase the number of homeowners eligible for upgrades and unite neighborhoods that the previous boundaries had unintentionally divided. After the program launched, managers realized that the original program boundary, scaled down to better match funding amounts, divided close-knit neighborhoods and didn’t correspond to traditional media and market boundaries. The program found that it was hard to target its marketing and outreach only to residents in the service area without also reaching those ineligible for the program. Especially in tight-knit neighborhoods, this created discord over who qualified for the program and who did not. When the program expanded the service area in 2011 to cover entire neighborhoods, it increased its geographic area by 55% and increased the number of eligible residential parcels by 77%. This helped drive an increase in single family and multifamily upgrades in 2012 and 2013. After three years in operation, the program upgraded over 2,000 housing units. For more information on the program and the expansion of its service area, see Energize Phoenix’s [Energy Efficiency on an Urban Scale, Year Three Report: Results](#).

• The New Hampshire [Beacon Communities Project](#)’s original upgrade goals were based on the state’s Climate Action Plan and some general knowledge about the demographics of the three participating communities in the program. As the program began to unfold, however, the program noticed significant differences between the estimated number of projects and the actual level of demand. The projections were likely high because the original estimates were based more on need (i.e., how many buildings the state should upgrade), rather than an analysis of the existing market demand and potential for expansion. By the end of the grant period in 2013, a suite of efforts, including increased marketing and a statewide expansion of its residential program helped the program exceed its revised residential upgrade goals.
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

**A Business Case for Home Performance Contracting**
Author: Pacific Northwest National Laboratory
Publication Date: 2012
This report contains information on the market for home performance upgrades and the opportunities that exist for new home performance contractors; start-up needs and costs for firms entering the home performance contracting industry; home performance business approaches; and how established home performance contractors attract customers. It also contains detailed profiles of eight successful home performance firms across the United States.

**Trusting Neighbors**
Author: U.S. Department of Energy
Publication Date: 2011
Through its target audience research, Rutland, Vermont's NeighborWorks H.E.A.T. Squad learned that neighbors are the most trusted messengers of energy efficiency upgrade information, rather than governments or utilities.

Program Presentations & Reports

**Stepping Up: Benefits and Cost of Accelerating Fort Collins’ Energy and Climate Goals**
Author: Rocky Mountain Institute
Publication Date: 2014
This report examines the opportunity for accelerating Fort Collins’ energy and climate goals to reflect the community’s values, and capture economic, social, and environmental benefits.

Program Materials
None available at this time.
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

**CELICA Baseline Assessment Guide**
Author: U.S. Department of Energy
Publication Date: 2017
This guide provides a series of questions that will help to develop a baseline assessment in energy efficiency, renewables, or other services programs.

**Low-Income Energy Affordability Data (LEAD) Tool**
Author: U.S. Department of Energy
Publication Date: 2016
The Better Building Clean Energy for Low Income Communities Accelerator (CELICA) was launched in 2016 to help state and local partners across the nation meet their goals for increasing uptake of energy efficiency and renewable energy technologies in low and moderate income communities. As a part of the Accelerator, DOE created a set of low and moderate income (LMI) energy data profiles to assist partners with understanding their LMI community characteristics. This LMI energy policy and program planning tool provides interactive state, county and city level worksheets with graphs and data including number of households at different income levels and numbers of homeowners versus renters. It provides a breakdown based on fuel type, building type, and construction year. It also provides average monthly energy expenditures and energy burden (percentage of income spent on energy).

**Buildings Performance Database**
Author: U.S. Department of Energy
The Buildings Performance Database (BPD) is the largest national dataset of real building performance data, and enables users to perform statistical analysis on an anonymous dataset of hundreds of thousands of commercial and residential buildings from across the country. One of the most powerful applications of the tool is custom peer group analysis, in which users can examine specific building types and geographic areas, compare performance trends among similar buildings, identify and prioritize cost-saving energy efficiency improvements, and assess the range of likely savings from these improvements.

**The Residential Energy Consumption Survey**
Author: U.S. Energy Information Administration
Publication Date: 2014
This website provides information on U.S. housing characteristics, including energy consumption data.

**The American Housing Survey**
Author: U.S. Census Bureau; U.S. Department of Housing and Urban Development (HUD)
This website provides current data on a wide range of national housing and demographic characteristics.

**The DSIRE Database**
Author: U.S. Department of Energy; North Carolina Solar Center
Publication Date: 2014
This database provides comprehensive information on state, federal, local, and utility incentives and policies that are in place to support renewable energy and energy efficiency.
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

**Known Unknowns: Key Energy Efficiency Trends in the New Year**
Author: U.S. Department of Energy
Publication Date: 2017
This summary from a Better Buildings Residential Network peer exchange call focused on new trends or changes in the market for home energy upgrades heading into the new year. Speakers include E4 The Future, Building Performance Institute, Inc, and American Council for an Energy-Efficient Economy.

**Boom Chika Boom: Demand Response and Behavior Change (301)**
Author: U.S. Department of Energy
Publication Date: 2016
This summary from a Better Buildings Residential Network peer exchange call focused on changing homeowner behaviors to reduce energy demands. It featured speakers from City of Fort Collins Utilities, American Council for an Energy-Efficient Economy, and the Rocky Mountain Institute.

Publications

**Electric End-Use Energy Efficiency Potential in the U.S. Single-Family Housing Stock**
Author: National Renewable Energy Laboratory
Publication Date: 2017
This report documents the results of an analysis of the electric end-use energy efficiency potential in the U.S. single-family detached housing stock. Technical and economic potential estimates inform the role that residential energy efficiency plays in addressing the objectives of reliable, affordable, and clean electricity for residential end uses.

**$20 Billion Bonanza: Best Practice Utility Energy Efficiency Programs and Their Benefits for the Southwest**
Author: Southwest Energy Efficiency Project
Publication Date: 2012
This report explores the best practices that utilities should undertake in the development and implementation of energy efficiency programs. The report calculates the impact that investing in energy efficiency will have on jobs, household income, and state and regional economies, along with the other public health benefits such as reducing pollution.

**Market Segmentation and Energy Efficiency Program Design**
Author: California Institute for Energy and Environment
Publication Date: 2008
This report provides an overview of market segmentation purpose, examples and methodologies.

**Cryptic Barriers to Energy Efficiency**
Author: American Council for an Energy-Efficient Economy
Publication Date: 2013
This report characterizes and explores cryptic barriers to energy efficiency. These barriers are cryptic in the sense that they are hidden or unrecognized; they do not stem from the same market failures that have been the subject of extensive study and the target of many policy and program interventions. Cryptic barriers reflect several different underlying problems, including regulatory uncertainty, archaic or legacy regulations, and inaccurate ratings and standards. Drawing on case studies, the objective of this report is to suggest opportunities for policy actions that could improve residential building efficiency and to propose potential tools to eliminate cryptic barriers.
Powering the New Energy Future from the Ground Up: Profiles in City-Led Clean Energy Innovation
Author: Climate Solutions
Publication Date: 2012
This report profiles the early results of a diverse range of small- to medium-sized American cities with different economic and energy profiles that are pioneering the clean energy economy. Many communities used federal grants to jumpstart long-term strategies to test and refine various clean energy and energy efficiency solutions. Others developed innovative financing strategies in the absence of grant money. These city-led efforts to catalyze local clean energy economic development are important to watch as federal grants sunset, especially in the absence of a comprehensive national energy or climate policy.

Preliminary Process and Market Evaluation: Better Buildings Neighborhood Program
Author: Research Into Action, Inc.; NMR Group Inc.
Publication Date: 2012
This report presents the preliminary process and market evaluation of the Better Buildings Neighborhood Program. As part of the evaluation, the report identifies the factors most strongly correlated with the 10 most successful grantees' performance and offers recommendations to the Energy Department and grant recipients for the final program year.

Preliminary Process and Market Evaluation: Better Buildings Neighborhood Program (Final Report Appendices)
Author: Research Into Action, Inc.; NMR Group Inc.
Publication Date: 2012
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CharlestonSAVES: Market Assessment
Author: Environmental Finance Center at The University of North Carolina at Chapel Hill
Publication Date: 2010
This market assessment for CharlestonSAVES identifies the customers and potential demand for an energy efficiency upgrade financing program.

Author: RePower Bainbridge; Conservation Services Group; U.S. Department of Energy
Publication Date: 2014
This guide is designed to serve as a "how-to" reference for island communities (or small, similarly sized, more isolated communities) that want to develop and implement a residential energy-efficiency and conservation program. The purpose of this guide is to help communities chart a course for successful program development based on the lessons learned during implementation and operation of RePower Bainbridge, an energy-efficiency program on Bainbridge Island, Washington.

A Changing Landscape: The Regional Roundup of Energy Efficiency Policy in the Northeast and Mid-Atlantic States
Author: Northeast Energy Efficiency Partnerships, Inc.
Publication Date: 2015
This report represents NEEP's annual assessment of the major policy developments of 2014, as well as its look into the immediate future, where NEEP gauge states' progress toward capturing cost-effective energy efficiency as a first-order resource. While looking at the region as a whole, NEEP also provides summary and analysis of some of the biggest building energy efficiency successes and setbacks from Maine to Maryland — including significant energy efficiency legislation and regulations and changes in funding levels for energy efficiency programs.

Residential Retrofit Program Design Guide
Author: Oak Ridge National Laboratory
Publication Date: 2011
The Residential Retrofit Program Design Guide focuses on the key elements and design characteristics of building and maintaining a successful residential energy upgrade program. The material is presented as a guide for program design and planning from start to finish, laid out in chronological order of program development.

Webcasts
None available at this time.