ACEEE Policy Toolkit
American Council for an Energy-Efficient Economy

Best Practices for Working with Utilities to Improve Access to Energy Usage Data

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The amount of electricity and fuel a building uses is recorded using meters. Utilities collect this information and use it to bill their customers. When tracked over time, the data provide information on trends in energy use. Tracking and analysis of these same energy data is valuable because it can be used to identify actions to address high energy costs and improve building performance. Working with utilities is essential to accessing and making the best use of this information. This toolkit 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. Many of the best practices and policies outlined in this guide may also apply to water use, but the focus remains on energy.

Who uses energy data and why is it important?

Access to energy usage data is critical to various parties working on energy efficiency across different levels of aggregation, from individual buildings to entire communities:

- A household in a single-family home can use their usage data to notice trends in their usage and identify changes in their behavior or equipment investments that will save energy and money. Energy data collected from a single meter are referred to as "account-level data."
- A multi-family or commercial building owner can use energy data to see the usage across an entire building, and separate the energy used in common areas in the building from that used in tenant units. Compiled data from an entire individually-metered commercial or multi-family building are called "building-level aggregated data."
- Aggregated data can also be presented across a community or neighborhood with multiple buildings. Many stakeholders are interested in using "community-level aggregated data" to develop programs and projects which can reduce consumer energy bills by increasing energy efficiency. These stakeholder groups include local governments, third-party efficiency programs, and consumer advocates.

Accessing energy usage data is only the first step in the process of identifying a building's or a community's energy-efficiency possibilities. To unleash the full potential, the usage data must be analyzed along with other data sources (e.g. weather data, information on other similar buildings) to identify patterns. Many efficiency service providers, energy use analysts, or software companies are capable of running this analysis and producing actionable results. They can unpack the usage data to show intensity across time, separate the energy usage across end-uses like appliances, lighting, or heating and cooling, and generate high-level recommendations for improving energy performance in the building or community.

Using Account-Level Data for Energy Usage Feedback and Program Evaluation

Account-level data are the most precise level of data available from the utility company, as they show electric or natural gas use pinpointed to the household or meter level. Depending on the meter installed, usage data can be available in increments ranging from monthly to real-time. Access to these data and the ability to analyze them in a variety of ways is critical to consumers wishing to make informed decisions about their energy use.

Once utility customers gain access to data, the next step they can take to identify appropriate and actionable energy efficiency measures is through an analysis of their own energy usage. Energy usage may be presented to a customer in many ways, but not every unit of measurement is easily comprehensible. Energy usage data should be

presented in a way that is easy to understand, such as in comparison to common uses or to the usage of their peers. Information on the relative cost of energy also helps customers to make decisions about when to use more or less energy. Customers should also be able to access their energy data and usage analysis at any time online, and/or receive regular updates, such as through a monthly mailing.

In many cases, customers may want to disclose energy usage data to a third party for detailed analysis, recommendations or to participate in efficiency programs. Some utilities automatically disclose energy use data to third parties with customer permission. Some utilities require customers to first download their data, then upload the information to a third party. Still other utilities have no policy for sharing data with third parties. Open EI shows a map of the variations in these data accessing policies.

Individual customers and policymakers may be hesitant to approve sharing of account-level information for fear that private information may also be shared, such as payment history and billing information, address, social security number, and other personal identity information. States or utilities can ensure that private customer information will be stripped from the energy-use data when shared with a third party, bringing customers peace of mind in disclosing energy use data.

BEST PRACTICES FOR WORKING WITH ACCOUNT-LEVEL DATA INCLUDE:

- *Leverage an existing data sharing format*. Use of a standardized format makes data sharing among utilities, customers, and third-parties timely and eliminates some soft business costs such as the need for time-intensive, custom reformatting of the data before analysis is performed.
  - As a standard data download and disclosure tool, the White House presented the energy industry with the idea of a "Green Button" which allows customers instantaneous access to energy use data in a common, standardized format. Green Button was then developed by the US Department of Energy as a standard data format designed to support sharing and analysis. The data can be shown in any increment of time the consumer may choose and customers may upload their data to any trusted third party. The full list of utilities which have committed to or have fully implemented Green Button is available at greenbuttondata.org.
- *Make account-level data easily comprehensible and accessible to the bill-payer*. When bill-payers can access and understand their energy usage data, they become educated about their usage trends and may become engaged to make energy-efficiency improvements in their homes or units.
  - Account-level energy usage data should be made available to each customer in an online platform and/or through the mail. Usage and its cost should be presented in a standard and intuitive way.
  - One example of many utilities which is currently implementing an energy usage dashboard for their customers is Connecticut Light and Power. CL&P mails or emails its customers with Home Energy Reports with the goal of engaging their customers to take ownership of their own energy use. CL&P customers also have access to an online portal, which collects customer's historic home energy reports, and provides them with additional tips and analyses of their usage.
- *Ensure the private information of bill payers is protected*. States or localities may create mandates for privacy protection, or utilities may take this practice on themselves.
  - California Public Utility Code Section 8380 ensures that an electric or gas company won't share customer usage data unless "all information has been removed regarding the individual identity of a customer (e-1)." A further decision, D.11-07-056, ensures that energy usage data is only shared for "the purposes of providing energy efficiency or energy efficiency evaluation services pursuant to an order of the Commission."

  - In states which have not written customer privacy laws, "Data Transfer Agreements" (DTAs) between utilities and third parties may be signed. An example of such a Wisconsin DTA is available here.
- *Provide a means to share approved data with trusted third parties.* States and utilities should develop simple mechanisms for customers to authorize automatic disclosure of their energy data to third parties. In places where no such policy is in place, individual customers should be able to access their own data and disclose them to a third party energy efficiency provider.
  - Many states still require customers to sign their consent to share energy usage data. In states such as those, automatic disclosure may be problematic. Xcel energy in Wisconsin has developed a consent form for customers to sign that authorizes safe transfer for a three-year or longer period. By signing this form, customers can have their monthly energy usage data automatically uploaded to the third-party of their choice.
  - For customers of utilities participating in Green Button, data can be easily accessed and uploaded to a trusted third party. The information downloaded through the Green Button can be analyzed to reveal actionable energy efficiency improvements above what an individual would consider independently.[1]

Using Aggregate-Level Data for Multi-Tenant Building-Level Energy Management

When energy usage data from many meters are combined across multiple accounts such as an apartment complex, or office building, the energy usage patterns are displayed as a total across that area, and individual contributions to the trends cannot be distinguished. This lump sum of energy use is called "aggregate-level" data. The average household usage, or blind average, can be extrapolated by simply dividing aggregate electricity usage by the number of dwellings in an area. This average offers no insight to a single unit's contribution, but it can enable energy management at the aggregate scale. Tenants in apartment or office buildings may be apprehensive of being included in the building's aggregate energy use. But, personal information is completely scrubbed from the aggregate-level data. Thus, these aggregated data can be disclosed to a third party or building manager without individual accounts being identified.

Multi-tenant buildings, which may be office buildings, condo blocks, or apartment complexes, can either be master- or individually-metered. In a master-metered building, the electricity for the entire building is measured through one meter. In that case, the data from the meter are presented on the aggregate level (as it encompasses all units and shared spaces). A third party or building manager would not be able to distinguish individual-tenant usage. For the most part, the energy bill in a master-metered complex would be paid by the landlord and the costs would be passed on in rent, as opposed to each tenant receiving gas or electric bills. After energy efficiency retrofits are completed, the landlord would see a savings on the overall energy bill.

In an individually-metered building, each suite's electricity usage runs through its own meter and the tenant is billed to an individual account. The energy used in common areas (hallways, elevators, etc.) runs through its own meter as well, which is paid by the landlord. Privacy laws are often in place to keep building owners from accessing tenants' usage data without their consent. It can become very time-consuming for the building owner to collect each individual account's usage data, and manually input those data into a benchmarking tool in order to understand the energy usage of the entire building.

[1] http://energy.gov/articles/measurement-verification-green-button-data

The continual tracking and recording of a building's monthly aggregate level data is called "benchmarking." Analysis of benchmarking data shows how a building uses energy over time. Analysis of benchmark data separates trends in energy use from incidences which may skew usage. Examples of confounding instances are unseasonable weather or unusual periods of vacancy. Building managers can also use benchmark data to become aware of and compare the energy intensity of their property or properties with that of similar buildings, or to track energy savings after efficiency improvements. The federal government provides building owners with an industry standard benchmarking tool called Portfolio Manager, through its ENERGY STAR program. Residential and Commercial building associations alike have endorsed Portfolio Manager as the industry standard.

Tracking and analyzing whole-building energy use data holds many benefits. Building owners can use these data to make a variety of retrofits to the units including weatherization or appliance upgrades which will lower the tenants' energy bills while adding value to the entire building. Building owners can also use the data to provide their tenants with educational programs, teaching them how they could alter their behavior to save money on their individual bills. Furthermore, if individual tenants have access to their own energy use, competitions among tenants can be designed to be based on the aggregate blind average. Analysis of public-space electricity usage such as hallways, elevators, washing machines, or other public amenities pinpoints where retrofits or upgrades could cut down owner operating costs.

Benchmarking whole buildings also directly benefits utilities. Many states require the utilities which operate within the state to conserve certain percentages of energy each year through a requirement called an Energy Efficiency Resource Standard (EERS). In order to achieve these required savings, utilities run ratepayer-funded energy efficiency programs. Benchmarking has been proven[2] to lead to engagement in energy management and implementation of energy efficiency actions. Thus, building managers may be apt to participate in additional utility-run energy efficiency programs which in turn helps utilities achieve their mandated targets. Benchmarking can also be a tool with which utilities evaluate their programs and verify their effectiveness[3]. The benchmarking data offer insight into the savings brought by their demand side management programs in order to help utilities improve their programs or to provide utilities with marketing material to engage new customers into energy efficiency programs.

Various public and private efforts are working to improve automated access to whole-building energy data. The Data Access and Transparency Alliance (DATA) is an alliance of non-profits and real estate associations working with utilities and various levels of government to promote electronic access to whole-building energy use data. NASUCA, a member of DATA, passed a resolution requesting that utility regulators and utilities themselves improve access to whole-building energy usage data. Another member, NARUC, passed a resolution requesting that regulators develop more comprehensive benchmarking policies. The US Department of Energy's Better Building Program recently launched the Energy Data Accelerator. The Accelerator aims to bring together local governments and utilities which are willing to partner with building owners to share standard approaches and best practices for access to data and whole-building benchmarking.

BEST PRACTICES FOR WORKING WITH AGGREGATE-LEVEL ENERGY DATA:

- *Encourage building owners to track building energy data*. Tracking and analyzing in the energy use of a building is the first step in lowering energy bills, adding value for the building owner and tenants alike.

[2] http://s146206.gridserver.com/media/files/IMT_Report_-_Utilities_Guide_-_March_2013.pdf
[3] http://www.epa.gov/cleanenergy/documents/suca/utility_data_guidance.pdf

- All building owners can use benchmarking tools like Portfolio Manager to track energy use and identify efficiency opportunities.
- Utilities and state and local governments can encourage building owners to voluntarily participate in whole-building benchmarking. Many places have begun doing so through programs and regional competitions. Examples of programs using Portfolio Manager are available here.
- Local governments can also require certain commercial and/or residential buildings to benchmark and disclose their energy use publicly or to the market for potential buyers or tenants. This disclosure allows energy usage to be included in the cost/benefit thought process in a purchase. Jurisdictions which require benchmarking and disclosure, and details on their polices, are listed at Buildingrating.org.

- *Provide a means for building managers to collect whole-building data*. Building mangers should be able to collect complete aggregated energy use for their buildings, whether their buildings be master- or individually-metered.
  - Utilities should partner with state and local governments to develop methods to automatically and systematically share whole-building aggregate data to use in automated benchmarking tools. This greatly decreases errors, saves time, and alleviates privacy concerns. For utility customers that support automated benchmarking, use of ENERGY STAR Portfolio Manager only requires a building manager to input building characteristic information, and then a request is sent to the utility company, which automatically uploads aggregate level building energy use from owner and/or tenant meters.
  - If a utility has not yet implemented an automatic benchmarking tool, building owners can circulate energy usage release forms to their tenants, which will allow a utility to aggregate the approved data and send them to the building manager. This method is less desirable, as it requires considerable time investments and may fall prey to non-response bias in that some tenants may not complete or understand the paperwork. Including the release forms in the upfront lease terms simplifies the process, but only captures new tenants.
  - Developing and establishing an aggregate standard helps to ensure privacy, easing the concerns of the account-holders and the utility. As an example, Austin Energy uses a grouping of four or more as a rule of thumb. Austin Energy states that individual contribution cannot be distinguished in a grouping of four or more, unless one user contributes 80% or more to the aggregate total. However, it is important to keep in mind that different types of data come with different privacy concerns, and standards may be different across residential and commercial properties.
- *Provide owners with insight into actionable improvements in a building* – Building owners can use analyzed energy use data to uncover appropriate energy efficient improvements for their buildings.
  - Continual benchmarking eliminates confounding variables from energy use data, which helps pinpoint where retrofits should be considered.
  - Analysis of energy use data can reveal which building updates or programs (infrastructural or behavioral) are most cost effective for the individual building. Several firms have developed growing businesses providing this service.
  - Sharing benchmarking data can help utilities document energy and cost savings achieved through programmatic improvements or behavioral interventions, helping to drive additional participation.
- *Engage utilities, local governments, and building managers to develop partnerships* – Working together with a variety of community stakeholders is often essential to develop common goals and city-specific mandates for sharing data and expanding adoption of benchmarking practices.

- For example, in the beginning of 2012, the Energy Efficient Buildings (EEB) Hub and the Philadelphia PUC met with PECO, the local Pennsylvania electric and gas utility, to share interests and concerns surrounding elements of energy efficiency planning. The series of meetings culminated in PECO committing to Green Button, Portfolio Manager, and developing an automatic data uploading system. The city of Philadelphia also passed a benchmarking and disclosure mandate for large commercial buildings.[4]

Using Community- and Regional-Level Data for Planning and Program Implementation

Aggregated community-level energy data from utilities can provide information to improve community planning processes and the development and implementation of energy efficiency programs. Analysis of community-level data can be used to establish and track energy savings goals, and in the implementation of strategies to achieve the goals. The trends and patterns identified can also be used to improve the delivery of efficiency programs, and for regional or community comparisons and competitions. Energy data in combination with other data, such as building characteristics and demographics, can be used to determine where efficiency programs may have the greatest impact, where outreach efforts should be targeted, or what kinds of programs are most needed in particular areas. Community-based programs can often achieve greater participation rates and energy savings than traditional efficiency programs, in part because of use of community data.

In order to first establish a baseline and then step-wise goals for achieving greater energy efficiency, aggregate data should be collected across the community. After the first collection of information, and as new iterations are produced, analysis can take place to present the results to stakeholders. Information can be presented through community maps or other methods for providing peer comparisons of energy use or savings.[5]

BEST PRACTICES FOR WORKING WITH COMMUNITY-LEVEL ENERGY DATA:

- *Allow data to be aggregated in multiple ways* – On the community level, aggregated data should be provided in any division conducive to individual projects.
  - As long as enough individual meters exist within an aggregation to ensure privacy, usage can be aggregated at the scale of the city block, neighborhood, zip code, town or region. These aggregations can be mapped for additional analysis and community engagement. Efficiency Vermont serves as a primary example of aggregate data mapping. To read more, please see the sidebar case study.
- *Aggregated data should be free and publicly available* – Many community stakeholders and businesses could provide additional services enabled by access to aggregated energy data.
  - States or regions should develop virtual warehouses, or online databases of account-level data points, which could be aggregated and displayed as needed in accordance with certain standards to provide adequate privacy protections.
  - Until a virtual data warehouse for a location becomes available, ad hoc agreements can be made between utilities and project planners for data sharing. An example of a project which used ad-hoc agreements to gather aggregate data is the Energize Phoenix program. To learn more about this program, please see the side-bar case study.

[4] http://s146206.gridserver.com/media/files/IMT_Report_-_Utilities_Guide_-_March_2013.pdf

[5] http://web.mit.edu/energy-efficiency/docs/EESP_Reul_MappingForEngagement.pdf

- *Use data for community-wide energy management and improvements in efficiency* – Energy usage data can be combined with other neighborhood characteristic data to further guide community energy efficiency engagement.
  - Energy usage maps can be layered with maps of different types of data to help community stakeholders pinpoint where action should be taken. Examples of other useful map data includes average income levels, average building age, tree canopy, etc.
  - Data can be used to analyze the results of policies or programs and to improve them. Policies such as benchmarking and disclosure result in considerable amounts of data which can be tracked over time to identify improvements in energy use and the impact of the policies themselves.
  - Many models of neighborhood competitions exist to lower energy use, but nearly all of them require access to aggregate usage data. Competitions can be where an individual household compares their account-level usage to the average based on the aggregate, or neighborhood against neighborhood. An example of a neighborhood competition to lower energy usage is the Delmarva Energy Challenge.

Other Resources

Account-Level Data Access Resources:

Prindle, B. & Flippen, P. 2008. *Utility Best Practices Guidance for Providing Business Customers with Energy Use and Cost Data*. ICF International: National Action Plan for Energy Efficiency. –This report is a guide for utilities and regulators. It is aimed to help its readers understand the benefits and challenges of increasing data access. It goes further to explain how data transmission should be administered

Michals, J., Sieper, P. & Stetz, M. 2010 EM&V Basics, Tools, and Resources to Assist EECBG and SEP Grantees. U.S. Department of Energy – This presentation dives into how levels of data collection and analysis are important to the Evaluation, Measurement, and Verification of efficiency measures. This presentation goes into the categories of savings, how to calculate them, and where they should be applied.

Whole Building Aggregate-Level Data Access Resources:

Krukowski, A. & Majerski, C. 2013. *Utilities' Guide to Data Access for Building Benchmarking*. Energy Efficient Buildings Hub and Institute for Market Transformation. – This report was written for an audience of utilities, regulators, and building owners, outlining best practices for data access. The report focuses on whole-building benchmarking while leaving individual accounts anonymous. This report outlines benefits, challenges, and potential solutions to utility data access.

State and Local Energy Efficiency Action Network. 2013. "A Utility Regulator's Guide to Data Access for Commercial Building Energy Performance Benchmarking." – This paper presents the benefits of data access and whole-building benchmarking to utility regulators. The policy recommendations are presented as a strong business case for utility partnership and participation with communities and businesses. The goal of this paper is to provide utility regulators with the tools to be able to rule in on state and local efficiency mandate development, and provide all customers with automatic data uploading for benchmarking.

Burr, A. 2012. *Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language*. Institute for Market Transformation, State and Local Energy Efficiency Action Network. – This guide begins by describing the benefits of benchmarking commercial and residential buildings and then continues by offering sample policy language that can be adjusted to be more region-specific.

Community-Wide Aggregate-Level Data Access Resources:

[DOE] U.S. Department of Energy. 2012. "Energy Benchmarking, Rating, and Disclosure for Local Governments." Fact Sheet. Existing Commercial Buildings Working Group. Washington, D.C.: U.S. Department of Energy – This fact sheet defines benchmarking, and covers the myriad benefits it offers in terms of EM&V and value-adding for both public and private buildings.

Lee, A. & Zafar, M. 2012. *Energy Data Center Briefing Paper*. California Public Utilities Commission. - This briefing paper overviews the benefit of access to more and more granular energy use data, especially to third-party energy efficiency providers. The paper also explains the dichotomy of account versus aggregated data, and offers the idea of an aggregated energy usage data holding place for increased ease of access for geographic and temporal analysis.

Case Study: ComEd's Energy Usage Data tool

ComEd, an Illinois-based electricity utility, provides a benchmarking tool with functionality beyond EPA's Portfolio Manager to its customers. The "Energy Usage Data" tool provided by ComEd is an automated benchmarking tool, which helps building owners collect energy usage data automatically, at whichever interval the owner may require (half-hourly, daily, monthly). This tool may be used to benchmark one building, or an entire portfolio of buildings which receive service from ComEd. This tool is useful because it allows building owners to compare electricity usage between properties in a portfolio, it outlines energy usage trends, and proves the value in a whole building energy-efficiency upgrade through a comparison of before and after data.

Case Study: Single-Family Chicago Home Data Tracking

ComEd provides an energy-use tracking tool to its single-family customers called MyHomeEQ. A user may request to have his or her home energy usage data uploaded to the tool where it is automatically compared to the community aggregate. The tool then makes physical and behavioral energy efficiency recommendations to the homeowner tailored to his or her actual energy usage. The goal of the tool is to connect homeowners with energy-efficiency contractors, save users money on bills, and improve the value of the home. MyHomeEQ is able to estimate energy use of a house based on its characteristics through the Home Energy Saver, a system developed by Lawrence Berkeley National Lab.

Another program available in Chicago is innovating the real estate market by building home energy reports for listed properties, just by entering that home's utility account number into the Multiple Listing Service. The report is generated in a format similar to vehicle information on the window sticker at an auto dealership. The information on the car window sticker outlines the total cost of ownership and operation. The information on the home energy report offers the same respective information, in terms of electricity and/or natural gas. Prospective buyers may access this energy use information for the uploaded properties while home-searching. For further more information please see the press release form the City of Chicago and ACEEE's associated blog post.

Case Study: Energize Phoenix Program

Energize Phoenix is a partnership among the City of Phoenix, Arizona Public Service (APS), and Arizona State University (ASU). The partnership, initially funded by the Better Buildings Neighborhood Program (BBNP) through the US Department of Energy, offers a group of programs promoting and strongly subsidizing energy-efficiency measures across homes of any income level along a 10-mile corridor in Phoenix. Energize Phoenix is a three-year program, and the first two years have been completed. At the end of the second year: 154 commercial buildings, 7 single-family homes, and 182 multi-family units have been completed. The third year will expand to finish retrofits in 73 new homes, ~1,000 new apartment units, student dorms, and municipal housing.

To evaluate the energy and dollars saved across the program, data must be collected on the aggregate and account levels. Aggregate level data identify where new programs are needed, and provides an average at which to compare account level usage. When a program is put in place, before and after account-level data are used to account for the actual level of energy savings. To collect data on the city-block aggregate level, BBNP signed a legal MOU with APS. To collect monthly account-level data from APS, BBNP customers signed authorization waivers, which were

accepted by the utility. All in all, the residents engaged in the program saved 10% on their energy bills in comparison to the baseline year.

Case Study: SimpleEnergy

Simple Energy, based in Boulder, Colorado, offers electric utility customers an online engagement platform outlining each customer's electricity usage, comparing them to a blind average, and motivating them to action. SimpleEnergy receives aggregated energy usage data from its utility partners, and collects smart-meter data from individual customers who have authorized data sharing. SimpleEnergy motivates its customers to become more energy efficient by using social comparison and competition. By comparing account-level data to a blind community average, individual households can engage in a competition to increase efficiency. An example of SimpleEnergy's model in action is the Delmarva Energy Challenge. SimpleEnergy partnered with Delmarva Power in Wilmington, DE to help customers lower their levels of energy use and learn how to make their homes more energy efficient. SimpleEnergy used account-level data (as authorized by the customers willing to participate, and provided by Delmarva Power) normalized to the aggregate. The goal of the competition was for customers to lower their energy use, relative to other players. To further foster this neighborhood competition, SimpleEnergy offers valuable prizes to their most efficient customers. The competition ended May 2013, and the results of the Delmarva Energy Challenge should be available by the end of 2013.

Case Study: Efficiency Vermont Town Energy Data Project[6]

Efficiency Vermont, the state-wide energy efficiency program administrator operated by the non-profit Vermont Energy Investment Corporation (VEIC), has a the goal of reaching 2.2% annual energy savings state-wide by providing technical assistance and rebates to Vermonters who wish to increase their energy efficiency and lower their utility bills. Efficiency Vermont has been collecting energy usage data since 2006, and with that information, developed a state map of electricity usage and savings. The map offers basic information about any regions of interest, shows where energy efficiency measures have been installed, and the resulting energy savings. The data sharing policy set forth in VPSB Docket 7307 requires the electric utilities to share town-scaled aggregate data with VEIC on a monthly basis. This data is used to pinpoint which communities have achieved the greatest saving through efficiency, and also how much the need for new electricity generation has been reduced. The mapping tool also helps target communities where new efficiency measures are needed by comparing communities to their regional averages.

Case Study: Build Smart, Washington, DC

Build Smart DC is an online database profiling the energy use of the municipal building portfolio of Washington, DC. This database is built in accordance with the Clean and Affordable Energy Act of 2008. The act requires that public and private buildings be ENERGY STAR rated, and that benchmarking results be disclosed annually. All of DC's commercial and multifamily buildings over 50,000 ft^2 will fall under his requirement. DC has put together this toolkit for gathering whole-building data from Pepco, and account-level data from the tenants.

The Build Smart DC database includes information about efficiency projects completed and ongoing, as well as building energy data. Washington Gas Energy Services (WGES), Pepco, and the DC Department of General Services (DGS) have partnered to provide data from public buildings to the database in 15-minute or hourly intervals. The data are presented to the public either in energy use per square foot or aggregated over the entire

[6] http://aceee.org/sector/state-policy/vermont#Energy Efficiency Resource Standards

building. Citizens can see directly where their tax-dollars are working, and also how much each building is saving on energy costs, not to mention the productivity, environmental, aesthetic and capital improvement benefit.