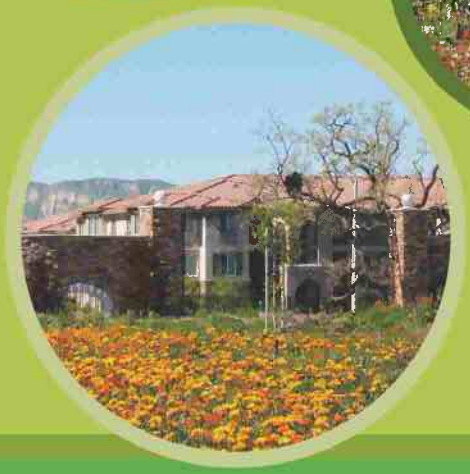
CITY OF SIMI VALLEY



Benchmarking
POLICY

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ACKNOWLEDGEMENTS

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This policy supports the California Long Term Energy Efficiency Strategic Plan Goal 3: "Local governments lead by example with their own facilities and energy usage practices." The policy specifically implements Strategic Plan Task 3.1.1: "Develop Energy Benchmarking Policies and Procedures to Enable Ongoing Benchmarking of All Local Government Facilities." The policy meets the Task 2.B. and 4.A. requirements as described in the "Strategic Plan Strategy Program" Statement of Work as approved by the Simi Valley City Council.

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EXECUTIVE SUMMARY

The City of Simi Valley has long been a champion of energy efficiency, by demonstrating a commitment to reducing energy use in its own facilities, and leading by example in the community. The City's commitment includes finding better ways to improve the energy performance of its operations and reduce spending on energy. This Benchmarking Policy will continue to support the City's energy efficiency principles and provide an opportunity to increase awareness of energy efficiency and best practices in all City facilities, as well as demonstrate to City residents and businesses the role that benchmarking a building can play in reducing energy use by actively tracking the pattern and amount of energy used over time. This Benchmarking Policy was developed to support the Simi Valley Energy Efficiency Strategic Plan, as well as California's Long-Term Energy Efficiency Strategic Plan. Benchmarking will assist the City in meeting energy efficiency goals identified in the Energy Action Plan, Green Community Action Plan, the Climate Action Plan and the General Plan.

Benchmarking is a tool that can be used to increase energy efficiency by establishing a baseline, or benchmark, of energy performance for a building and comparing that performance to the same building over a period of time, or comparing one building to a similar building in another location. Benchmarking energy performance in facilities is used to understand past and current energy use and to track future energy performance. Benchmarking can be used to determine strategies for making improvements and to measure the effectiveness of those improvements.

Staff from Public Works, Administrative Services and Environmental Services will coordinate to benchmark City facilities, with oversight by the City Manager. The results of facility benchmarking will be used to identify opportunities for additional energy savings, and results of benchmarking activities will be reported to the City Council on an annual basis.

The City has installed an energy management system that includes the ability to track energy use in eight major City facilities in fifteen minute intervals, and this data has been used to develop the initial energy usage benchmarks for the facilities. The City will use ENERGY STAR's Portfolio Manager as one tool to measure progress toward reducing energy use from the benchmarks. McKinstry's Enterprise Energy Management (EEM) tool will also be used to help determine energy conservation measure (ECM) opportunities and quantify the impact of implementing ECMs. The EEM tool will be integrated with a database developed by Los Angeles County (EEMIS) to further define facility performance and identify cost-effective improvement opportunities.

The Benchmarking Policy will provide a formal protocol for monitoring of energy usage and rates, allowing City staff to quantify the value of proposed changes in energy use in a more timely and accurate manner, thus making more cost-effective decisions on the implementation of energy efficiency strategies. It will also help to

quantify the impact of various programs the City is undertaking to reduce energy use and establishes a single source for the storage of historic and future energy use data for eight facilities operated by the City.

In addition, this policy will serve as a reference document for current and future City staff to understand and use the benchmarking process to continue to manage energy use in City facilities.

BENCHMARKING POLICY STATEMENT

Policy

The City of Simi Valley will develop expertise in energy management, identifying top-performing energy saving programs, policies, or procedures through pro-active monitoring of energy usage. The City will create an energy use benchmark in its main facilities through this energy management expertise and monitoring, and will use this benchmark to evaluate and measure all future energy-saving projects.

The City will use benchmarking to lead by example by understanding and taking responsibility for energy use in municipal facilities, and demonstrating the value of benchmarking as part of effective facility energy use management. The data and results developed through the use of benchmarking City facilities will be used to improve City operations and to integrate future energy reduction measures for implementation. The City will continue to track energy use in its main facilities on a monthly basis, and will use the expertise developed through benchmarking to continue to assess each facility's energy use against similar facilities locally and nationally to evaluate progress and identify areas of improvement.

The City has developed the Benchmarking Policy to support the California Long-Term Energy Efficiency Strategic Plan goal that local governments will lead by example in the use and management of energy in their facilities. The City will use benchmarking to support energy efficiency objectives in the Energy Action Plan and Green Community Action Plan, energy conservation policies in the General Plan, and reduction in greenhouse gas emissions through energy efficiency as identified in the Climate Action Plan.

City staff from Public Works, Administrative Services and Environmental Services will work together to develop benchmarks and to develop a standard procedure for regular monitoring of City facilites against their own benchmarks and regular comparison to similar facilities outside the City. The City will seek to develop ways to benchmark energy use to move and treat water to identify programs and projects to conserve energy as it relates to water use. The City Manager will support and monitor the efficacy of the Benchmarking Policy and the procedures used by staff to implement the policy.

The City Council will evaluate the usefulness and implementation of the Benchmarking Policy on an annual basis. City staff will develop an annual report to include how the benchmark data obtained in the previous year was used to:

- Identify opportunities and strategies to increase energy efficiency and reduce GHG emissions;
- Track and report progress toward the City's energy and GHG reduction goals;
- Identify and correct under-performing facilities; and,
- Identify and reward facilities with exemplary performance.

The City will endeavor to share best practices, strengths and limits of the Benchmarking Policy in order to assist building owners in Simi Valley and other local governments in better understanding and using benchmarking tools.

The City will initially use ENERGY STAR's Portfolio Manager measurement and tracking tool, as the main benchmarking tool to establish benchmarks for City facilities. City data will be entered into the Portfolio Manager Web-based application, and the Portfolio Manager tool will be used to develop and update energy performance, and compare that performance to the national database. The City will use McKinstry's Enterprise Energy Management (EEM) software, in conjunction with the County of Los Angeles' Energy Enterprise Management Information System (EEMIS) to augment the Portfolio Manager tool and track energy use in near real time and compare that use to similar regional facilities. These tools will be used to identify buildings that may need energy efficiency improvements or to identify facilities that are operating more efficiently than in previous years, so that the return on investment of energy efficiency projects may be measured.

Relation of Benchmarking Policy to Other City Policies

Other policies that are directly related to the benchmarking policy with regard to energy use and energy reduction measures for City facilities are:

1. **Energy Action Plan (EAP)**. The EAP outlines ECMs that have been completed from 2006 to the present and also recommends ECMs for future implementation. A comprehensive background on City energy use can be found in the EAP. Benchmarking will assist in tracking progress towards meeting EAP goals.
2. **Greenhouse Gas Inventory Policy And Reduction Strategies**. These documents provide background on GHG emissions tied to energy use in City facilities and makes recommendations for how they can be measured and reduced. Benchmarking can assist in tracking progress towards meeting GHG reduction goals.
3. **Retro-Commissioning (Rcx) Policy**. RCx is a systematic process for improving an existing facility's performance by identifying and implementing relatively low-cost operational and maintenance improvements. RCx is one of the tools that can be implemented to help achieve energy and GHG reduction goals. Benchmarking is required to receive incentives for RCx and can be used to measure the effectiveness of implementing RCx.

Beyond the above policies, the Benchmarking Policy will achieve or initiate energy efficiency actions identified in the City's Green Community Action Plan, Climate Action Plan, and General Plan.

Implementation Plan

In order for the City of Simi Valley to fulfill the goals of the Benchmarking Policy, the following measurable objectives will be implemented. These actions apply to eight City facilities: City Hall, Cultural Arts Center, Development Services, Police Department, Senior Center, Sanitation/Waterworks, Public Services Facility and Transit Facility.

The City's Energy Action Plan goal is to achieve a 20% energy use reduction, on an aggregate basis for these facilities, by 2020 as compared to 2006. The tool to be used for each action is indicated in parenthesis and consists of either ENERGY STAR's Portfolio Manager (ESPM) or McKinstry's Enterprise Energy Management (EEM) software.

1. Annual energy use will be measured and compared to a baseline year of 2006. Energy use will be measured at both the individual facility and aggregate levels (ESPM will be used).
2. Where possible, energy use trends will be investigated to assist in identifying future ECM opportunities. The time resolution of the measurements will be fifteen minutes (EEM will be used). Estimates for the energy and economic performance of potential future ECMs will be recorded in a standardized spreadsheet (Table 3).
3. Where possible, energy performance comparisons will be made between City facilities and a.) national averages for similar facilities (ESPM will be used) and b.) regional averages for similar facilities (EEM will be used).
4. The City will implement energy conservation measures (ECMs) where practical. The ECMs that are implemented will be monitored. This will be accomplished by estimating or measuring energy use before and after the implementation of the ECM. Energy use will be measured on a time resolution of fifteen minutes (EEM will be used). Results for the energy and economic performance of the ECMs will be recorded in a standardized spreadsheet (Table 3). A number of ECMs have been identified within the City's Energy Action Plan. Further ECMs may be identified through the City's Partnership with Southern California Edison and the process of retro-commissioning, which is outlined in the City's Retro-Commissioning Policy.
5. An annual report will be presented to the City Council, documenting the findings that result from the actions described above.

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BENCHMARKING BACKGROUND AND PURPOSE

Definition of Benchmarking

Benchmarking energy performance in facilities is used to understand past and current energy use, and to track future energy performance. Benchmarking can be used to compare:

1. The performance of a facility or group of facilities with other similar facilities.
2. The performance of a facility or group of facilities to a baseline.

Benefits of Benchmarking

There are numerous benefits to benchmarking facilities. Benchmarking is typically the first step in understanding energy performance and can be used to provide immediate insights into how to enhance performance. This is particularly true when performance data spans multiple years. It is common for facility performance to degrade over time and when performance is benchmarked against a baseline, performance trends become clearer.

Benchmarking a facility against other similar facilities provides an additional comparison metric that can be useful. However, due to the highly individual nature of how facilities are constructed and operated and the unique nature of their surrounding environment, comparisons to other facilities must be viewed with a level of caution.

Many benchmarking tools are Web-based; once accounts are established, they can be continuously fed electronic data in an automated fashion. This allows the benchmarking tool to be continuously updated and utilized when desired. The Web-based platform also makes information easily accessible and available for sharing between users. Ultimately, benchmarking can serve as the primary archive for energy use data, and the embedded analytical tools can associate seemingly disparate data to provide the "big picture" aspects of energy use and costs.

Benchmarking can be used to both identify energy conservation measure (ECM) opportunities and to measure the effectiveness of implementing them. Measurement and verification (M&V) of ECMs can be conducted for various time resolutions, ranging from years to minutes. For example, it is common to compare facility energy use on an annual basis. However, it may be difficult to discern if annual usage trends are specifically related to ECM implementation or to other operational or weather-based changes. Monthly energy use comparisons can provide a higher level of resolution and better correlation with ECMs. Fifteen-minute interval data, where available, provides high resolution M&V and is typically necessary to directly measure the impact of an ECM.

Some tools incorporate weather adjusted performance comparisons. This is an important function, as energy use can be highly dependent on weather. Benchmarking combined with M&V can be used to establish best practices that can be applied to other facilities. Facilities with exemplary performance become easily identifiable and can be recognized and rewarded.

In addition to energy use, benchmarking can also be applied to energy costs, GHG emissions, and water use and costs. In some cases, facilities must benchmark energy use in order to qualify for utility incentives.

Benchmarking Tools

The City has selected EPA's ENERGY STAR Portfolio Manager as its main benchmarking tool based on the following characteristics:

- Functionality consistent with City benchmarking goals.
- Status as one of the most widely used benchmarking tools in the nation.
- Energy performance score calculated based on the U.S. Department of Energy's (DOE's) Commercial Buildings Energy Consumption Survey (CBECS), a national study of energy use in commercial buildings, which can be used to compare City facility performance.
- Relative ease of use.
- Web-based platform.
- Automatic updating of utility data.
- Availability to the public at no cost.

A secondary tool that will be used by the City is McKinstry's Enterprise Energy Management (EEM) software, in conjunction with the County of Los Angeles' Energy Enterprise Management Information System (EEMIS). This tool supports Portfolio Manager and was selected based on the following characteristics:

- Ability to produce 15-minute interval power usage data for City facilities, where not available from existing Southern California Edison meters.
- Ability to use 15-minute interval power usage data in monitoring and verifying energy conservation measure performance.
- Has a regional Southern California database that City facility performance can be compared to.
- Web-based platform.

ENERGY STAR Portfolio Manager

In the late 1990s, the EPA developed Portfolio Manager to track energy use within individual buildings, as well as across an entire portfolio of buildings, using monthly data from utility meters. As of 2012, more than 60,000 Portfolio Manager accounts are in use, consisting of over 300,000 commercial buildings [4].

The Web-based tool informs building owners and managers about their facility's performance and assists in making informed decisions on implementing ECMs. For some space types, Portfolio Manager provides recognition opportunities for exemplary performance. However, "office" is the only space type that applies to City of Simi Valley buildings. Additional space types that can receive recognition are

listed in Appendix B-Criteria for Benchmarking. The tool is available at no cost to the public and is one of the most conventionally recognized and utilized benchmarking tools.

Benchmarking through Portfolio Manager can assess energy performance, water performance, and GHG emissions. Portfolio Manager can help set investment priorities, identify under-performing buildings, verify efficiency improvements and help the City receive EPA recognition for superior energy performance.

For many types of commercial buildings, energy data can be input into Portfolio Manager and a score can be calculated for a building on a scale of 1-100. This score is based on a comparison to similar facilities in a national database. These data are collected as part of DOE's CBECS, which consists of over 5,000 domestic buildings [5]. CBECS is likely the most comprehensive data set of building energy performance, with the highest level of quality control, in the nation. For many facility types, energy performance may be rated against a peer group of facilities, with adjustments for climate, facility size, equipment, hours of operation and number of occupants.

Portfolio Manager allows the performance of an entire portfolio of facilities to be viewed collectively. Performance can also be viewed on an individual facility basis. Users may also customize views, allowing the most relevant information to be displayed.

McKinstry's "Enterprise Energy Management"

In 2010, McKinstry acquired Itron's Enterprise Energy Management (EEM) software. EEM is Web-based software capable of monitoring, analyzing and managing energy consumption and costs. The EEM analytical and reporting tools use real-time energy consumption data and event-driven alerts. EEM provides large energy consumers with a single, scalable, enterprise-wide view of their organization's energy use, which can be used to drive energy savings.

Inputs into EEM include utility bill, meter, sub-meter, building management system (BMS), SCADA, energy production, real-time energy price and weather data. Power consumption can be tracked on a 15-minute interval basis to directly measure the impact of energy conservation measures. Outputs include a variety of energy analyses and reporting formats. Users can be immediately notified of operational anomalies through the use of proactive rules-based alerts and alarms. All reports can be automatically scheduled to run and can be viewed online, printed or exported to spreadsheet programs.

Capabilities of EPA's ENERGY STAR Portfolio Manager

Portfolio Manager can be used to organize and track energy and water data. Performance analyses can be conducted portfolio-wide, for a subset of facilities, or individually. For example, Portfolio Manager can be used to:

- Create individual building accounts.
- Create a common data source for all facilities.
- Share building data with other individuals.
- Track multiple energy meters for each facility.
- Customize meter names and key information.
- Make customized reports to track specific metrics.
- Be used for measurement and verification of ECMs.
- Benchmark facilities relative to past performance (on a gross basis or normalized for weather).
- Monitor energy and water costs.
- Enter operating characteristics, tailored to each space use category within each building.
- Use automated benchmarking services (ABS) to automatically enter utility data each month.

Portfolio Manager provides a platform to track energy use trends as compared with the costs of these resources. This is a valuable tool for understanding the relative costs associated with a given level of performance, helping to evaluate investment opportunities for a given building and identifying the best opportunities across a portfolio.

High-performance buildings that score 75 or greater when benchmarked in Portfolio Manager may qualify for ENERGY STAR certification. Buildings that achieve certfication can receive and display a label for each year that energy performance meets ENERGY STAR criteria. Only certain space types are eligible to apply for recognition as listed in Appendix B-Criteria for Benchmarking.

Future Portfolio Manager Development

Not all space types are eligible to receive a 1–100 energy performance score. EPA is working to develop score criteria for those additional segments of the commercial building market. For buildings that are not eligible to receive a score, EPA has created a provisional list of reference energy performance targets [6]. These references are based on median energy use calculations. These energy performance targets are not normalized for climate nor adjusted for activities that may affect energy use. All targets are expressed in energy use intensity and are derived from

a nationally representative data set, typically CBECS. Municipal buildings are included in this survey.

Future EEMIS Development

Through the City's participation in the EEMIS Expansion and Local Government Energy Efficiency Resources Plan Program with LA County, a strong baseline and benchmarking tool to measure the energy performance of the City's eight main facilities will be provided, and is expected to provide a method for benchmarking smaller buildings that are not be part of the Portfolio Manager Program. LA County will develop a coordination plan for all local government energy efficiency resource activities and develop an energy efficiency resources plan for participants, and establish recommendations for an organizational structure that can provide energy efficiency services to participants beyond the end of the CEESP program.

CITY OF SIMI VALLEY BENCHMARKING PROCEDURES

Criteria and Data Inputs

Portfolio Manager was used to measure and track energy consumption relative to a baseline for all City buildings. Specific data was input into Portfolio Manager based on each facility type. For example, a facility that is primarily office space, such as the City Hall, has different space and operational characteristics than the Sanitation/Waterworks facility.

The criteria used to select City facilities to be benchmarked are:

- The facility must be owned and operated by the City.
- The facility must be at least 10,000 square feet.

Eight City facilities met these criteria. All sites have one electricity and one natural gas service account unless otherwise noted below. In some cases, the utility service accounts at the site serve uses in addition to those strictly required by buildings, as outlined below. The eight facilities are:

1. City Hall.
2. Cultural Arts Center.
3. Development Services (two electricity and two natural gas service accounts).
4. Police Department.
5. Senior Center.
6. Sanitation/Waterworks (The electrical service account is associated with the Sanitation Plant's process loads and also serves the following buildings: Sanitation/Waterworks, Public Services Facility and Transit Facility. The actual Waterworks process loads are on other electrical service accounts. The natural gas service account is associated solely with the Sanitation Plant's process loads).
7. Public Services Facility (No electricity service account).
8. Transit Facility (The natural gas service account is associated with the fueling of buses and the electrical service account is associated with fueling equipment. These service accounts do not serve the Transit Facility building).

The data that were input into Portfolio Manager are shown in Table 1, below. (See Appendix A for details)

Table 1. City facility information inputs to Portfolio Manager.

Facility Name	City Hall	Cultural Arts Center	Development Services	*Police Department	Public Services Facility	Senior Center	Transit Facility	Sanitation / Waterworks
Building Area (GSF)	43,771	12,105	18,125	50,000	18,150	29,559	12,720	18,174
Year of Construction	1982	1910	1977	1998	1977	1984	1988	1962
Year of Renovation or Expansion	1987	1995	NA	NA	1996	1991 & 2006	2012	1972, 1987 & 2004
Space Type	Office	Other	Office	Other	Other	Other	Other	Water Treatment & Distribution
Weekly operating hours	55	72	55	55/168	55	55	80	N/A
Workers on Main Shift	112	6	72	90	50	10	30	N/A
Number of PCs	115	5	85	145	75	50	35	N/A
What percent of this space is air-conditioned?	50+	N/A	50+	N/A	50+	N/A	50+	N/A
What percent of this space is heated?	50+	N/A	50+	N/A	50+	N/A	50+	N/A
Average Flow	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.5 million
Natural Gas Service Account Numbers	1812138600-1812138600	0283139901-0283139900	0079142200-0000015793	0468311440-0468311400	2011142100-2011142100	1119138700-1119138700	1633931979-1633931900	0079142200-0000015793
Electricity Service Account Numbers	000-9628-04	010-1314-31	012-2965-23	014-3193-86	Electricity on Sanitation Meter	001-1590-47	2-18-957-3256	012-2965-23
ABS** Enabled	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

*The Police Department is comprised of two spaces, both of which are benchmarked under the Other Fire/Police Station space type in Portfolio Manager. The spaces are separated to account for one space staying open 24/7 (8,000 square feet) while the other space operates 55 hours a week (42,000 square feet).

**Automated Benchmarking Services

Energy Use Comparison (Implementation Plan Step #1)

Measuring annual energy use for each facility and as an aggregate for all facilities is the first step of the benchmarking implementation plan. This enables the City to track performance toward energy use reduction goals over time. Table 2 shows energy use data for each facility in 2006 and 2011 and the change from the 2006 baseline year. Electric and natural gas use is broken out for each facility. These values are then combined to give total energy use. The percent change is then calculated as a measure of performance compared to the baseline year.

Table 2. City facility information outputs from Portfolio Manager.

Facility Name	City Hall	Cultural Arts Center	Development Services	*Police Department	Public Services Facility	Senior Center	Transit Facility	Sanitation/ Waterworks	*Totals*
2006 Annual Electricity Usage (kWh)	1,062,012	234,720	439,400	1,504,738	Electricity on Sanitation Meter	445,120	159,544	7,891,940	***11,737,474***
2006 Annual Natural Gas Usage (Therms)	6,356	1,697	4,184	27,330	4,131	9,599	277,147	38,100	***368,544***
2006 Total Energy Usage (kBTU)	4,260,247	970,799	1,918,072	7,868,671	413,100	2,479,095	28,259,224	30,745,191	***76,914,399***
2011 Annual Electricity Usage (kWh)	971,067	197,647	433,840	1,430,850	Electricity on Sanitation Meter	500,880	166,046	7,374,786	***11,075,116***
2011 Annual Natural Gas Usage (Therms)	10,062	1,367	6,322	27,637	3,214	8,682	280,392	60,872	***398,548***
2011 Total Energy Usage (kBTU)	4,320,452	811,269	2,112,896	7,647,191	321,400	2,577,703	28,605,915	31,257,345	***77,654,171***
Change in Electricity Use. 2011 vs. 2006 (%)	-9%	-16%	-1%	-5%	Electricity on Sanitation Meter	13%	4%	-7%	***-6%***
Change in Gas Use. 2011 vs. 2006 (%)	58%	-19%	51%	1%	-22%	-10%	1%	60%	***8%***
Change in Energy Use. 2011 vs. 2006 (%)	1%	-16%	10%	-3%	-22%	4%	1%	2%	***1%***

Energy Conservation Measures (Implementation Plan Step #2)

Step two of the implementation plan is to implement and record the performance of energy conservation measures (ECMs). This will allow the City to better understand the impact and value of specific ECMs. A spreadsheet was developed to standardize the process of calculating and tracking ECMs (Table 3, following page).

The three ECMs in the table are generic examples that fall into the broad categories of controls optimization, component replacement and retrofit. All the fields that are input manually are shown in white and those that are calculated automatically are shown in yellow.

This spreadsheet can be used to estimate and rank the value of future ECMs using engineering analysis calculations or be used when implementing actual ECMs.

Table 3. Standardized energy conservation measure (ECM) tracking spreadsheet.

Facility Name	SC Edison Service Account #	SC Gas Service Account #	Measure Name/ Description	Details	Measure Status (Month & Year Implemented)	Annual Energy Savings (kWh/ yr)	Annual GHG Emission Reduction (Lbs CO_2/ year)	Annual Energy Cost Savings ($/ yr)	Installed Cost- Before Rebates($)	Rebates($)	Installed Cost- After Rebates ($)	Payback Period (Years)	Estimated Project Lifetime (Years)	Return on Investment (%)
City Hall	3-000-9628-04	NA	Controls: Optimized scheduling of HVAC operation	EMS used to schedule HVAC to operate on City "flex" schedule	9/2013	5,000	3,173	$ 600	$ 500	$ -	$ 500	0.8	5	500%
City Hall	3-000-9628-04	NA	Component replacement: Economizer dampers replaced	5 rusted out dampers replaced	9/2013	15,000	9,519	$ 1,800	$ 12,500	$ 1,500	$ 11,000	6.1	7	15%
City Hall	3-000-9628-04	NA	Retrofit: HVAC unit replaced	1 new 5 ton rooftop package unit replaced with 15 SEER unit	9/2013	10,000	6,261	$ 1,200	$ 10,000	$ 1,000	$ 9,000	7.5	15	100%
					Totals & Averages	30,000	18,953	$ 3,600	$ 23,000	$ 2,500	$ 20,500	5		205%

In order to measure and quantify the direct impact of an ECM, fifteen minute interval data will be used. These data will come from either EEM or SCE. An example of the measurement and verification (M&V) of an ECM can be found in Figure 1. Note the permanent 50 kilowatt power use reduction occurring after implementation of the ECM.

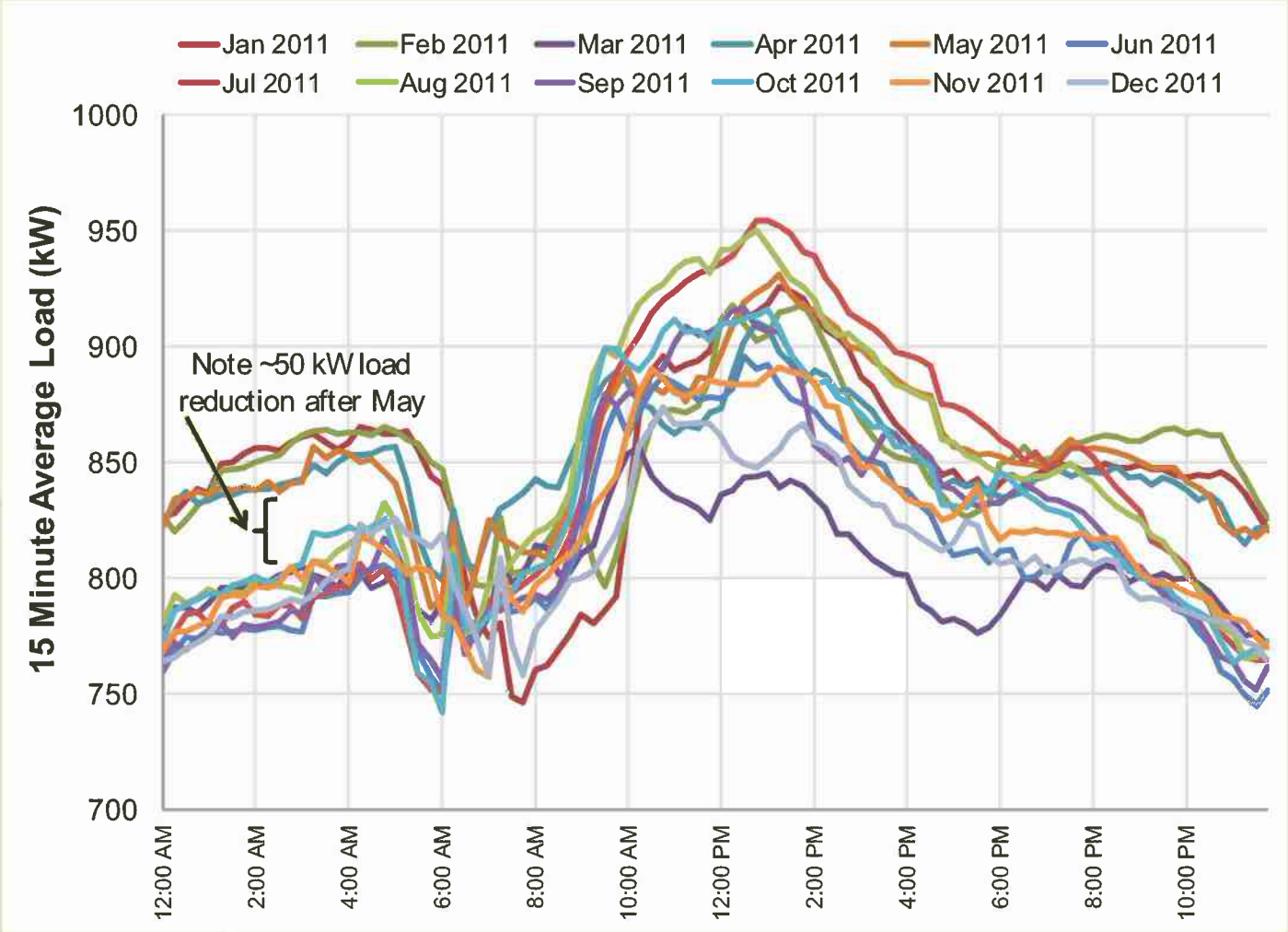


Figure 1. Measurement and verification of an ECM on the electrical Sanitation/Waterworks service account using average 15-minute power demand per month.

Energy Use Trend Investigation (Implementation Plan Step #3)

Step three of the implementation plan consists of investigating energy use trends with the intent of identifying new ECMs to implement. By examining 15-minute interval energy use trend logs, inefficiencies and anomalies can be found. These data will come from either EEM or SCE. An example of power use trending that has identified a potential ECM can be found in Figure 2. The high nighttime baseload power demand fluctuates by approximately 30 kilowatts, indicating that systems may be poorly controlled or operating unnecessarily.

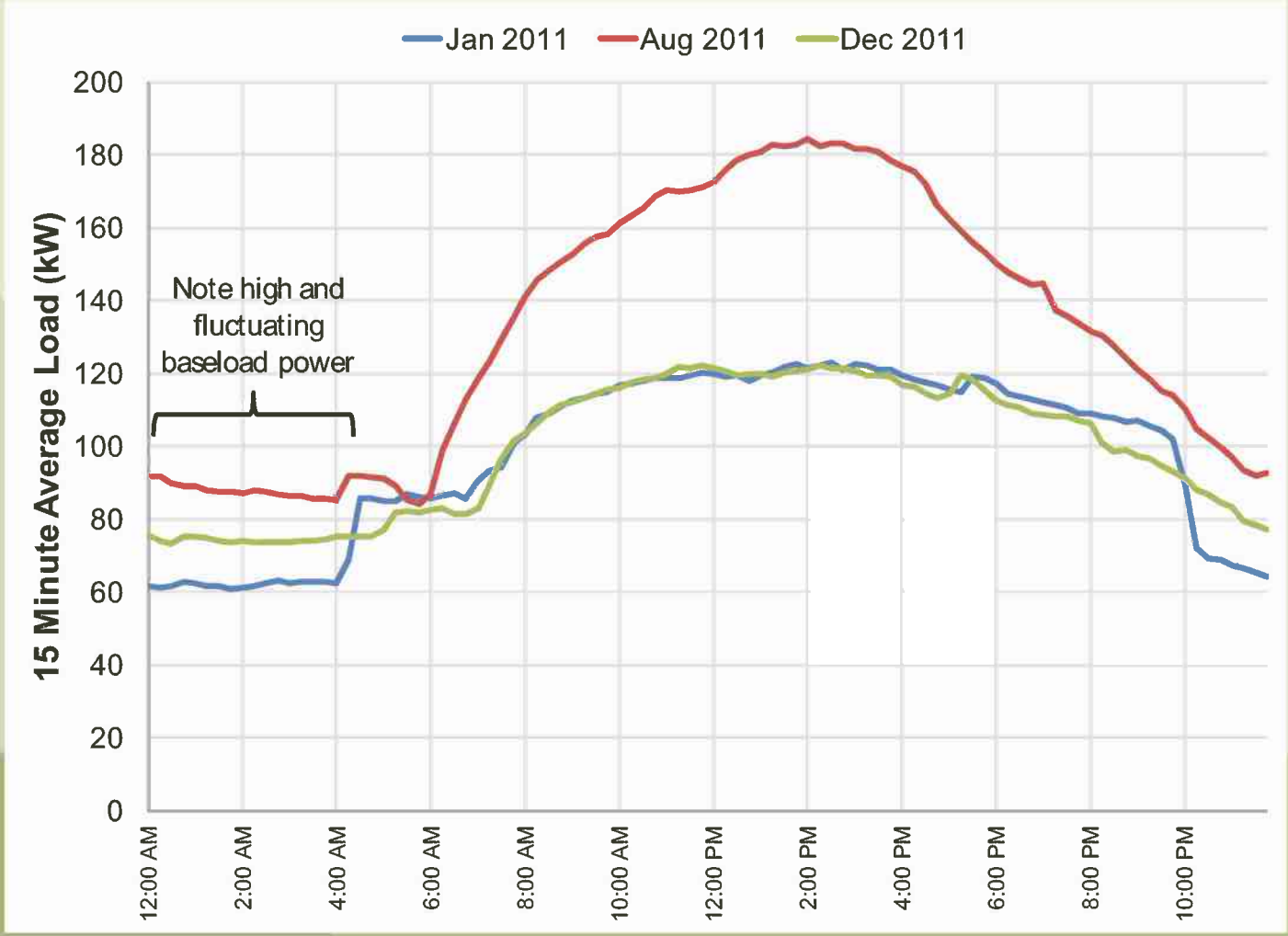
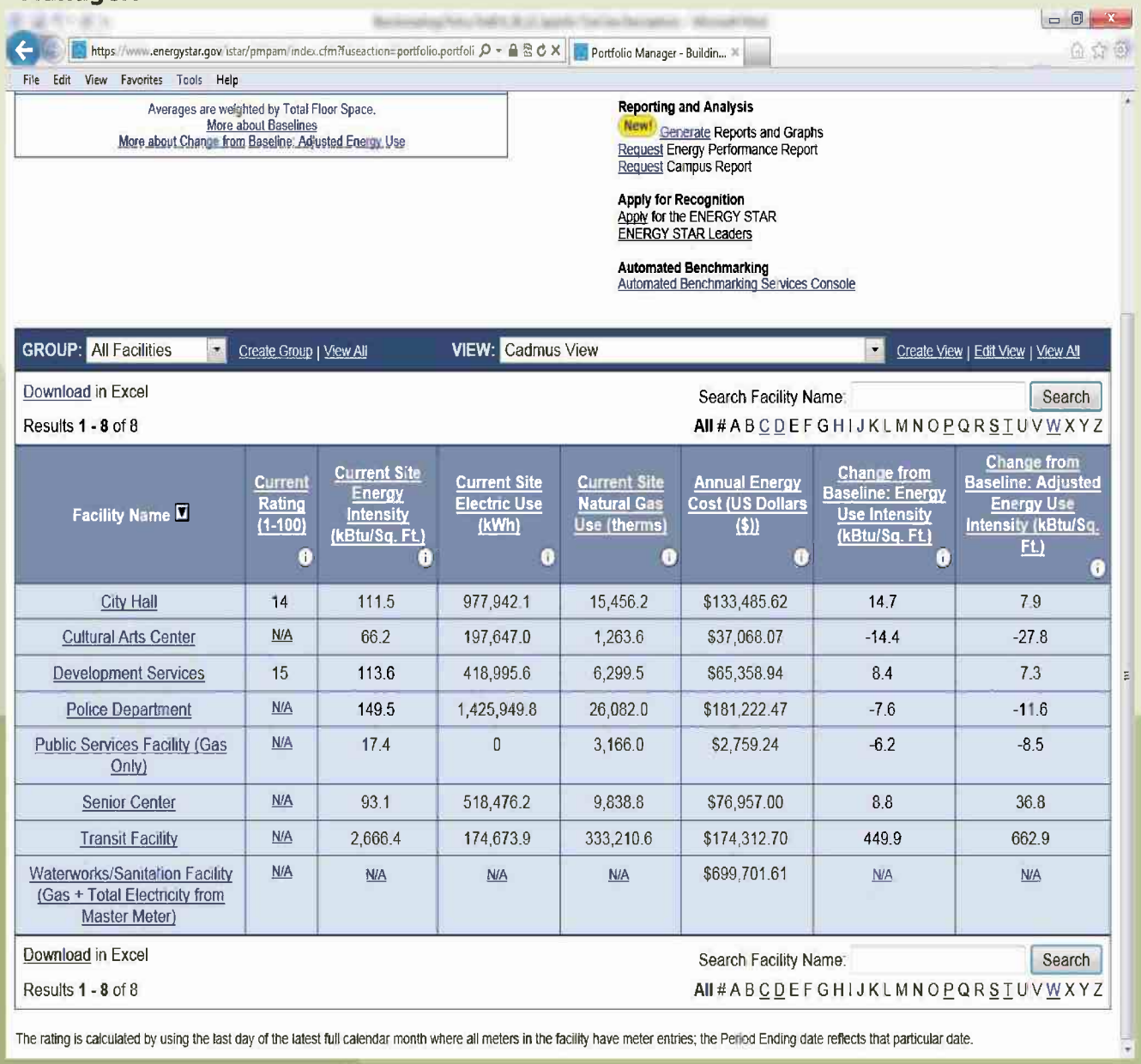


Figure 2. Investigation of average 15-minute power demand trends per month showing a potential ECM at the City Hall.

Energy Performance Comparisons (Implementation Plan Step #4)

Step four of the implementation plan consists of comparing the energy performance of City facilities to either national or regional averages for similar facilities. Portfolio Manager can be used to compare facilities to national averages, where the space types permit. Table 4 shows the performance of City facilities in comparison to national averages using Portfolio Manager. Performance is rated on a scale of 1–100, with 100 representing the highest performance.

Table 4. Benchmarking of City facilities against national averages using Portfolio Manager.



Facility Name	Current Rating (1-100)	Current Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Electric Use (kWh)	Current Site Natural Gas Use (therms)	Annual Energy Cost (US Dollars ($))	Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.)	Change from Baseline: Adjusted Energy Use Intensity (kBtu/Sq. Ft.)
City Hall	14	111.5	977,942.1	15,456.2	$133,485.62	14.7	7.9
Cultural Arts Center	N/A	66.2	197,647.0	1,263.6	$37,068.07	-14.4	-27.8
Development Services	15	113.6	418,995.6	6,299.5	$65,358.94	8.4	7.3
Police Department	N/A	149.5	1,425,949.8	26,082.0	$181,222.47	-7.6	-11.6
Public Services Facility (Gas Only)	N/A	17.4	0	3,166.0	$2,759.24	-6.2	-8.5
Senior Center	N/A	93.1	518,476.2	9,838.8	$76,957.00	8.8	36.8
Transit Facility	N/A	2,666.4	174,673.9	333,210.6	$174,312.70	449.9	662.9
Waterworks/Sanitation Facility (Gas + Total Electricity from Master Meter)	N/A	N/A	N/A	N/A	$699,701.61	N/A	N/A

At this time, only two City facilities match Portfolio Manager's space type options and can be benchmarked against a national population of similar buildings:

1. City Hall.
2. Development Services.

These facilities fall into the "office" category. All other facilities fall into the "other" category and cannot be directly ranked against national averages. It is anticipated that the Los Angeles County EEM model may have more comparable space types to rank City facilities against. The ranking of individual building performance over time is shown in Table 2.

A detailed list of the space types that can receive a 1–100 score can be found in Appendix B.

Annual Report (Implementation Plan Step #5)

The final step of the implementation plan is to compile the information generated in steps 1–4 into a final report. This report will be presented annually to the City Council. The report will contain general findings, progress toward City goals, challenges, opportunities and recommendations for the next year.

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REFERENCES

[1] City of Simi Valley. Green Community Action Plan, 2010.
http://www.simivalley.org/LiveGreen

[2] City of Simi Valley. Draft Climate Action Plan. Atkins. 2012.

[3] Cool California. Local Government Goals-Adopt a GHG Emission Reduction Target.
https://coolcalifornia.arb.ca.gov/implement-ghg-reduction-policies

[4] ENERGY STAR Portfolio Manager.
www.energystar.gov

[5] Commercial Building Energy Consumption Survey (CBECS).
http://www.eia.gov/consumption/commercial/

[6] EPA Reference Energy Performance Targets.
https://www.energystar.gov/sites/default/files/buildings/tools/2003_CBECS_PerformanceTargetsTable_0.pdf

[7] Southern California Edison ENERGY STAR® Portfolio Manager Helper Site
http://www. sce. com/business/ energy-solutions/portfolioma nag er. htm

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APPENDICES

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APPENDIX A – Data Handling

Data Collection Process

Data for Simi Valley facilities were collected from the following sources:

Electricity and natural gas use:

- Monthly electrical usage and cost data for 8 service accounts, from 2006 to 2011 (Source: Southern California Edison (SCE)).
- Monthly natural gas usage and cost data for 9 service accounts, from 2006 to 2011 (Source: Southern California Gas (SCG)).

Operational and equipment data (Source: City, Tax Records):

- Facility information, including space type(s), year built, year of renovation or expansion, major energy consuming systems, gross floor area, number of occupants, number of computers, number of servers, operating hours and percent heated and cooled.

An effective system for measuring and tracking energy consumption begins with efficient and detailed data collection. The EPA provides clear, detailed worksheets to assist with the process of inputting facility data into Portfolio Manager. Users should ensure that all types of energy consumption, even those not managed by the utility company, are metered, tracked, and entered into Portfolio Manager. For example, on-site energy system generation may not be metered by a utility.

Data Quality Control

Data quality was rigorously controlled in the process of acquisition and import to Portfolio Manager. All usage and cost data were directly sourced from the utilities. In a few cases, monthly data span two months instead of one. In these cases, the monthly data were averaged over the two month period. Going forward, all data provided from utilities should be checked for accuracy biannually. Data manually input into Portfolio Manager should be checked at time of entry. Common data quality control issues include:

- Gaps in energy data. Gaps of more than one day between the end of one meter entry and the start of another (i.e. Entry one: 8/1/2012. Entry two: 8/3/2012) should be investigated and fixed as Portfolio Manager will prohibit calculations if these gaps exist.
- Overlapping energy data. One day overlaps are acceptable (i.e. Entry one: 8/1/2012. Entry two: 8/1/2012), but any overlaps greater than one day will prohibit calculations.
- Abnormally high or low energy use values. If a service account typically reports monthly electricity consumption of 8,000 kWh, but reports 80,000 kWh the next month, data may be inaccurate.

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APPENDIX B – Criteria for Benchmarking

Due to the unique nature of facilities, there is no single benchmarking formula that can always be applied. The ENERGY STAR Portfolio Manager is designed to adapt to the location and needs of each facility. However, there are general guidelines that can help structure the process.

For many facilities, energy performance can be rated on a scale of 1–100 relative to similar buildings nationwide. Your building is not compared to the other buildings entered into Portfolio Manager to determine your ENERGY STAR score. Instead, statistically representative models are used to compare your building against similar buildings from a national survey conducted by the Department of Energy's Energy Information Administration. This national survey, known as the CBECS, is conducted every four years, and gathers data on building characteristics and energy use from thousands of buildings across the United States. Your building's peer group of comparison is those buildings in the CBECS survey that have similar building and operating characteristics. A score of 50 indicates that the building, from an energy consumption standpoint, performs better than 50% of all similar buildings nationwide, while a score of 75 indicates that the building performs better than 75% of all similar buildings nationwide.

EPA's ENERGY STAR Portfolio Manager, based on source energy, accounts for the impact of weather variations as well as changes in key physical and operating characteristics of each building.

In order to identify your building's group of peers, more than 50% of the building's gross floor area (excluding parking lots and garages) must be defined by one of the following space types:

- Bank/Financial Institution
- Courthouse
- Data Center
- Hospital (General Medical and Surgical)
- Hotel
- House of Worship
- K-12 School
- Medical Office
- Office
- Residence Hall/Dormitory
- Retail Store
- Senior Care Facility
- Supermarket
- Warehouse (refrigerated and unrefrigerated)
- Municipal Wastewater Treatment Plant
- Water Treatment and Distribution Utility

The remainder of your building may be occupied by other space types in Portfolio Manager, subject to the following restrictions:

1. The combined floor area of all *enclosed and not enclosed* parking structures cannot exceed the total gross floor area of the building (where the gross floor area of the building excludes the parking floor area).

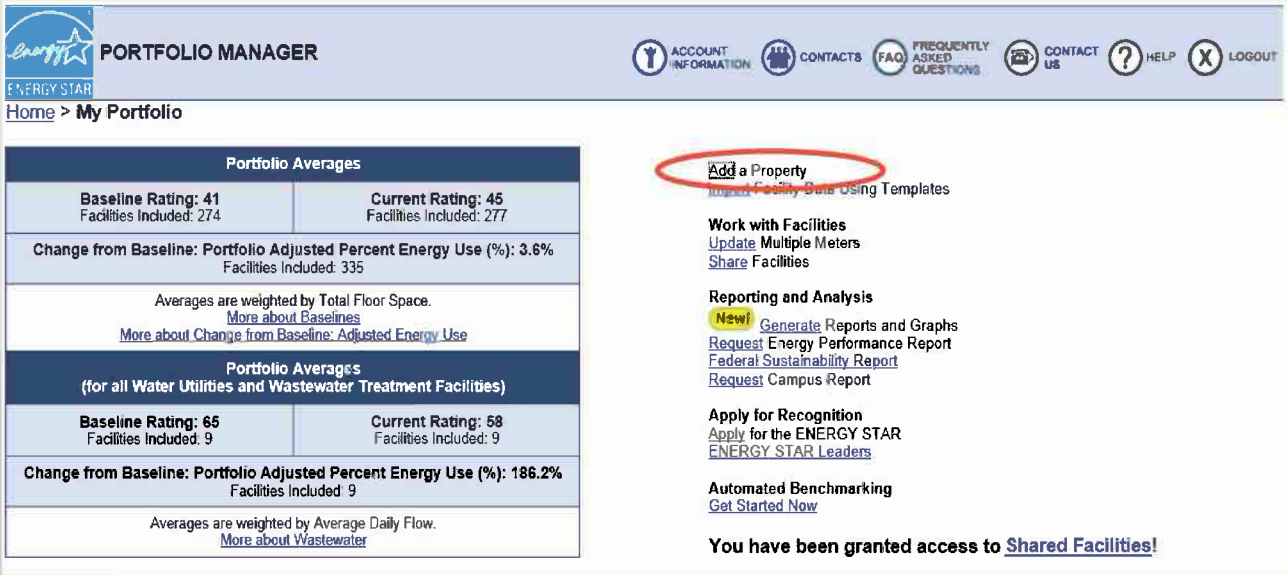
2. The combined floor area of any space classified as "Other" (e.g. library, restaurant, cafeteria, etc.) cannot exceed 10% of the total gross floor area of the building (where gross floor area of the building excludes the parking floor area).
3. The combined floor area of all Multifamily Housing spaces cannot exceed 10% of the total gross floor area of the building (where the gross floor area of the building excludes the parking floor area).
4. If your building is a Hospital (i.e. if Hospital accounts for more than 50% of your space) the only other spaces that may be entered are:
    - Data Center
    - Other
    - Parking
    - Swimming Pool
5. If your building is a Municipal Wastewater Treatment plant it cannot be combined with any other space types.
6. For properties consisting of multiple space types, please refer to ENERGY STAR guidelines.
7. Buildings in Portfolio Manager can be designated as "Other" space types, and, although they cannot receive a score, they can be compared to national medians as defined in the energy performance target table referenced above.

APPENDIX C – Generating a Portfolio Manager Account

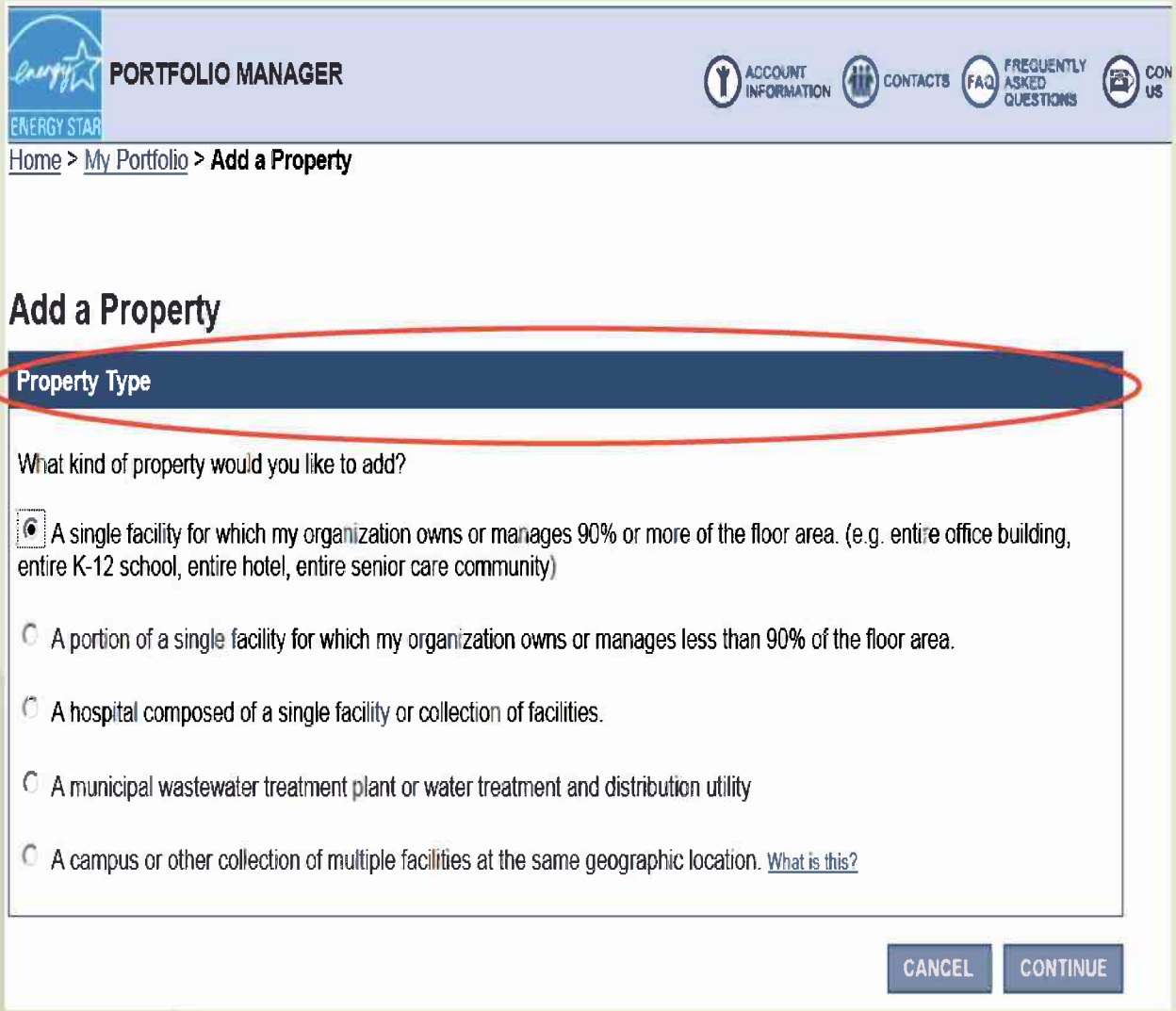
This section contains all the steps necessary to manually generate a facility's Portfolio Manager account. The Simi Valley City Hall is used as an example.

Developing Simi Valley City Hall Account

1. **Create a Portfolio Manager account.** You may have multiple facilities in one Portfolio Manager account, so this only needs to be done once per user. See the "Create an Account in Portfolio Manager" section for more information.
2. **Add a Property.** Click the "Add a Property" link on the My Portfolio Page (near the top center in the screenshot below).



3. Select the option that fits best your building type (most buildings will be in the first category). You may change this later, if necessary, by going to "Edit General Information" on the "My Facility" page.



4. Fill out the information on the following page. If this building belongs to a group of buildings or a campus (i.e. shares at least one energy meter with at least one other building), select the appropriate campus from the drop down menu. If you have not created a campus yet, you can leave that option as "Not in a Campus" and attach the building later.

ENERGY STAR **PORTFOLIO MANAGER**

ACCOUNT INFORMATION | CONTACTS | FAQ FREQUENTLY ASKED QUESTIONS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > **Add General Facility Information**

Add General Facility Information

Use the form below to provide general information concerning your facility.

* **REQUIRED**

*Type of Facility:

- (●) A single facility for which my organization owns or manages 90% or more of the floor area. (e.g. entire office building, entire K-12 school, entire hotel, entire senior care community)
- ( ) A portion of a single facility for which my organization owns or manages less than 90% of the floor area.
- ( ) A hospital composed of a single facility or collection of facilities.
- ( ) A municipal wastewater treatment plant or water treatment and distribution utility

*Is this facility owned, operated or leased by the Federal government?: (what is this?)

- (●) No
- ( ) Yes

Add this facility to a Campus: Not in Campus

Date facility became part of a campus: (MM/DD/YYYY)

5. Fill in the physical address information below. Year Built can be either the year this building was built or the latest major renovation date. If you are working with a Service and Product Provider, you can add that company information into the Contacts list by clicking the Add/Edit Contacts and Organizations link. Once information is entered, click Save at the bottom of the page.

This action completes the Add a Property step.

*Country: United States

*Facility Name: City Hall

☐ Use Campus Address:

*Address: 2929 Tapo Canyon Road

*City: Simi Valley

*State: California

County:

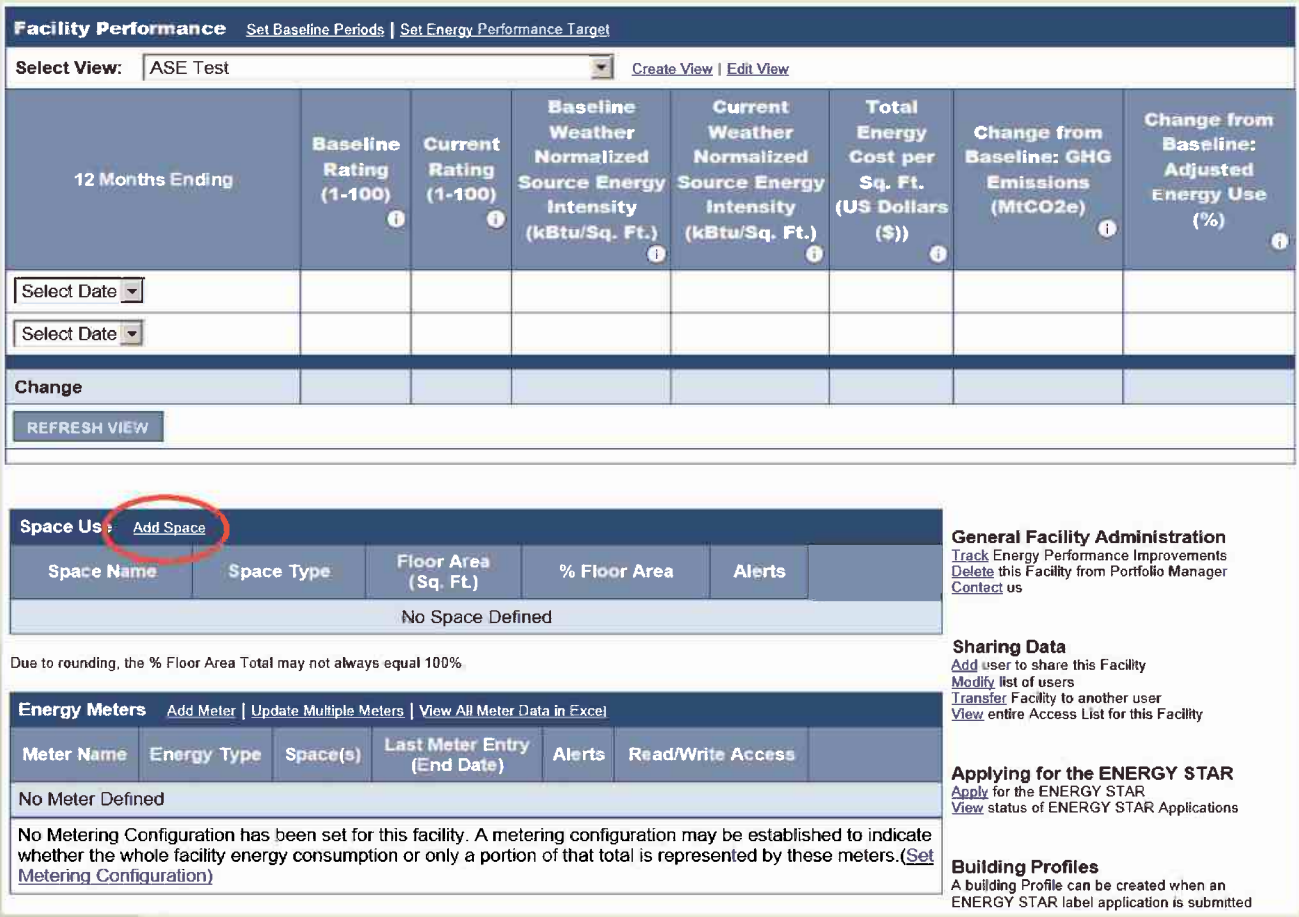
*ZIP Code: 93063 - (4-digit extension optional)

*Year Built: 1987

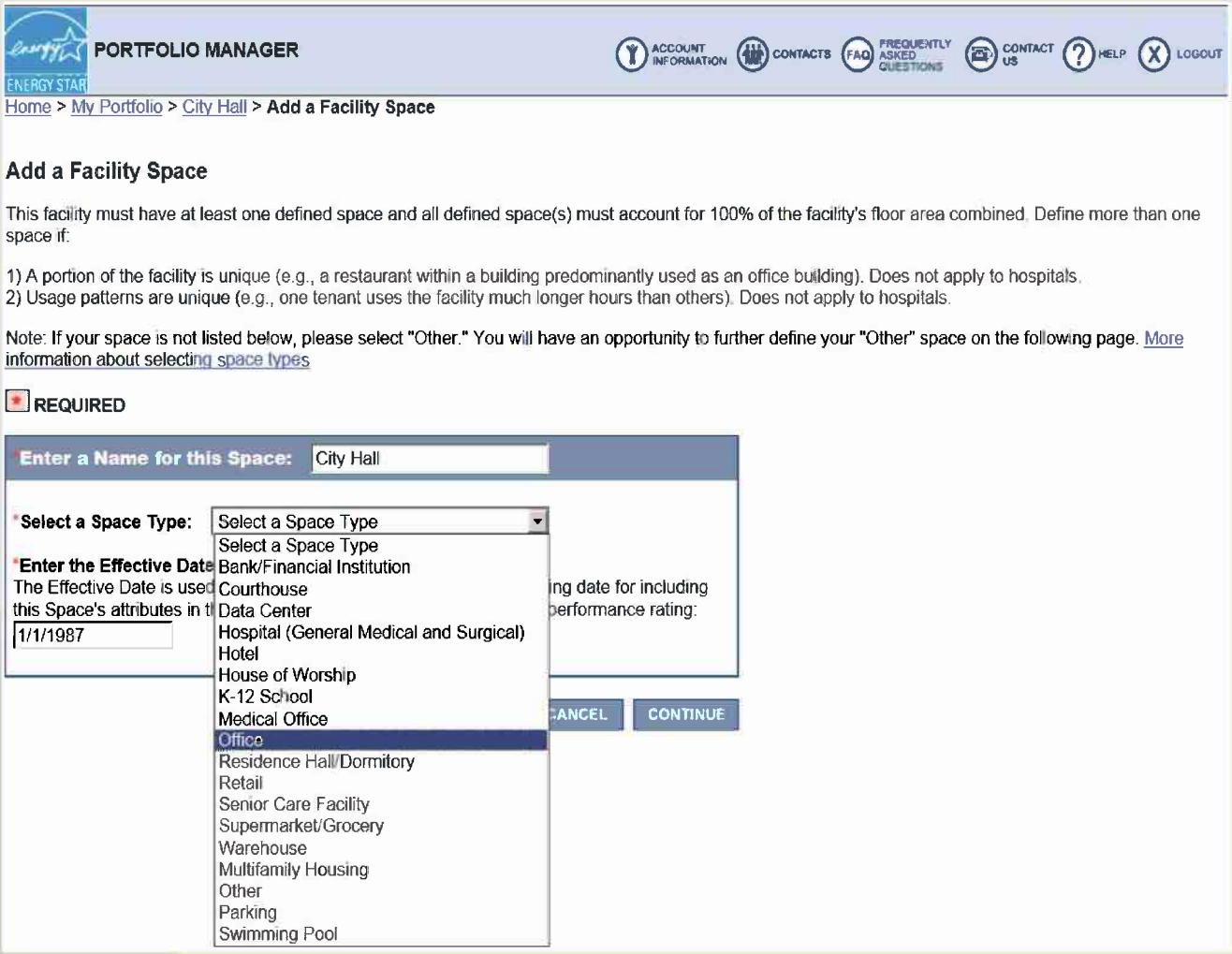
Select the Organization that owns this facility: Select Organization

Add/Edit Contacts and Organizations

6. You will be taken to the Facility Summary page. This page can be accessed later by going to "My Portfolio" and clicking the name of the facility.
7. **Add a Space.** Click the "Add Space" link in the Facility Summary page (near the left-center of the image below).



8. Enter the space name and select the primary space type for the building. If there are additional spaces, you will need to repeat this process for each space in this building. In this case, the City Hall functions primarily as Office space. Select a name, space type, and effective date and then click Continue.



9. In the next screen, you will need to enter data requested. Space attributes will depend on the space type selected. You may also select "Use Default Value" if you do not have the information, but using actual data is highly encouraged. Once you enter all space characteristics, click Save. This action completes the "Add a Space step."

Add Office Space: City Hall

Please provide values for each required attribute below. Values for optional attributes can also be provided, but they will not be used to generate an Energy Performance Rating. If the value you are providing is a **temporary value**, select the "For Temporary Use?" checkbox. Once the actual value is known, deselect this checkbox and provide the actual value. Facilities with temporary values may still apply for the ENERGY STAR.

If you wish for Portfolio Manager to provide **default values**, select the "Use Default Checkbox" for that attribute. Facilities that use default values cannot apply for the ENERGY STAR.

* REQUIRED

Space Name: City Hall

*Required for Benchmarking What is this?

Space Attribute	Space Attribute Value (Temporary values should only be used if an Actual value is not currently known) What is this?	Use Default Value	Units	Effective Date (when this Attribute Value was first true) What is this? (MM/DD/YYYY)
*Gross Floor Area	43771 ☐ For Temporary Use?	N/A	Sq. Ft.	01/01/1987
*Weekly operating hours	55 ☐ For Temporary Use?	☐	Hours	01/01/1987
*Workers on Main Shift	112 ☐ For Temporary Use?	☐	No Units	01/01/1987
*Number of PCs	15 ☐ For Temporary Use?	☐	No Units	01/01/1987
*What percent of this space is air-conditioned?	50% or more ☐ For Temporary Use?	☐	No Units	01/01/1987
*What percent of this space is heated?	50% or more ☐ For Temporary Use?	☐	No Units	01/01/1987

CANCEL SAVE

10. **Add Meters.** On the Facility Summary page, scroll down and click "Add Meter" under the "Energy Meters" section.

Space Use Add Space

Space Name	Space Type	Floor Area (Sq. Ft.)	% Floor Area	Alerts	
City Hall	Office	43,771	100		Delete Space
Total		43,771	100		

Because more than 50% of your building is Office, your building is designated as Office within Portfolio Manager. This building may be eligible for a rating (Click to learn more). If you can see a rating for this building, please note that the rating takes into account all of the space types you have listed. If you cannot see a rating for this building, you can be compared to the national average for Office (Click to learn more).

Due to rounding, the % Floor Area Total may not always equal 100%.

Energy Meters Add Meter | Update Multiple Meters | View All Meter Data in Excel

Meter Name	Energy Type	Space(s)	Last Meter Entry (End Date)	Alerts	Read/Write Access	
No Meter Defined						

No Metering Configuration has been set for this facility. A metering configuration may be established to indicate whether the whole facility energy consumption or only a portion of that total is represented by these meters. (Set Metering Configuration)

Water Meters Add Meter | Update Multiple Meters | View All Meter Data in Excel

Meter Name	Units	Use	Last Meter Entry (End Date)	Alerts	Read Write Access	
No Meter Defined						

Green Power Purchases Add Green Power

Provider	Avoided GHG Emissions (MtCO2e)	Generation Location	Period of Generation	Fuel Type(s)	Quantity (MWh)	Action
No Green Power Purchases Defined						

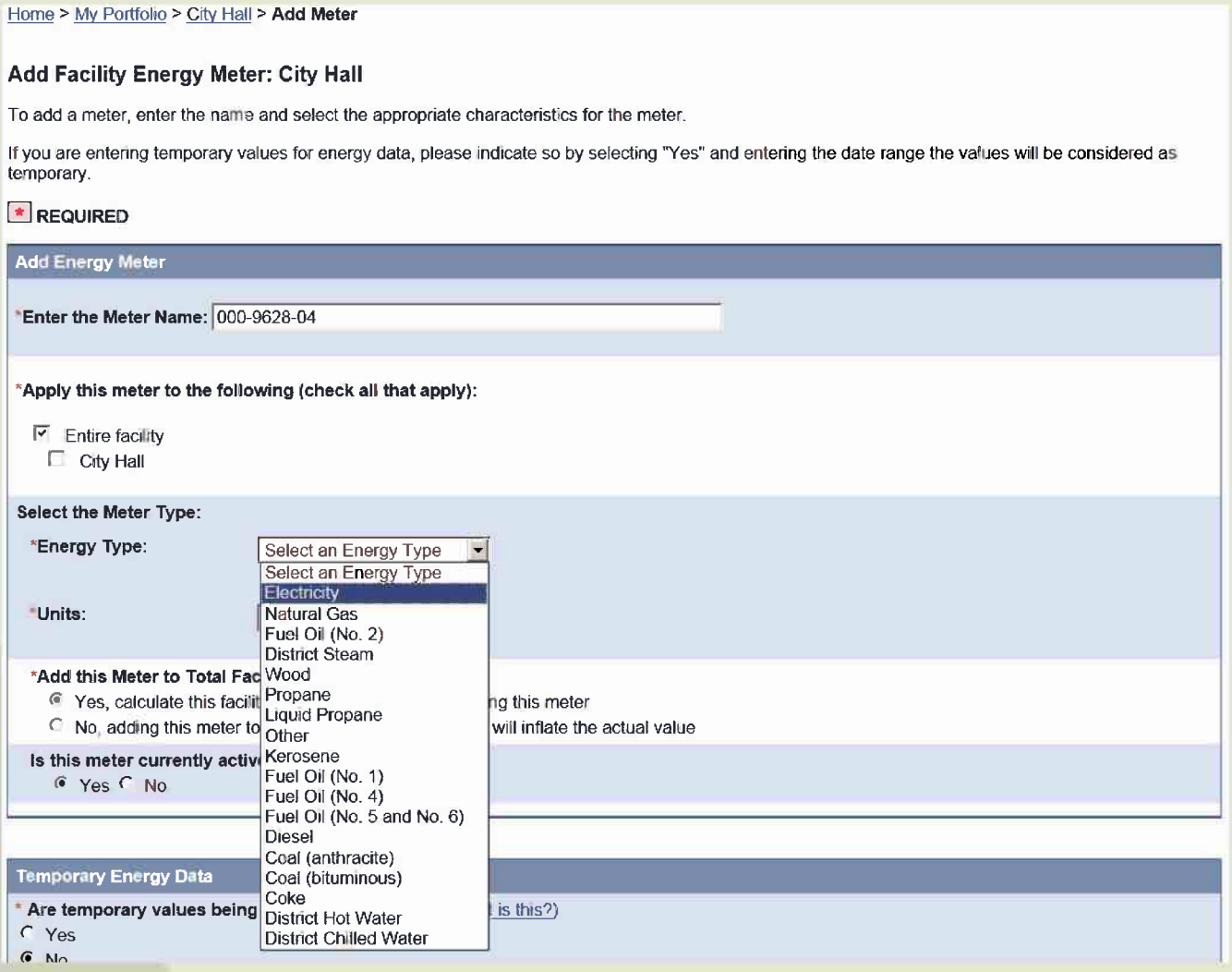
General Facility Administration
Track Energy Performance Improvements
Delete this Facility from Portfolio Manager
Contact us

Sharing Data
Add user to share this Facility
Modify list of users
Transfer Facility to another user
View entire Access List for this Facility

Applying for the ENERGY STAR
Apply for the ENERGY STAR
View status of ENERGY STAR Applications

Building Profiles
A building Profile can be created when an ENERGY STAR label application is submitted

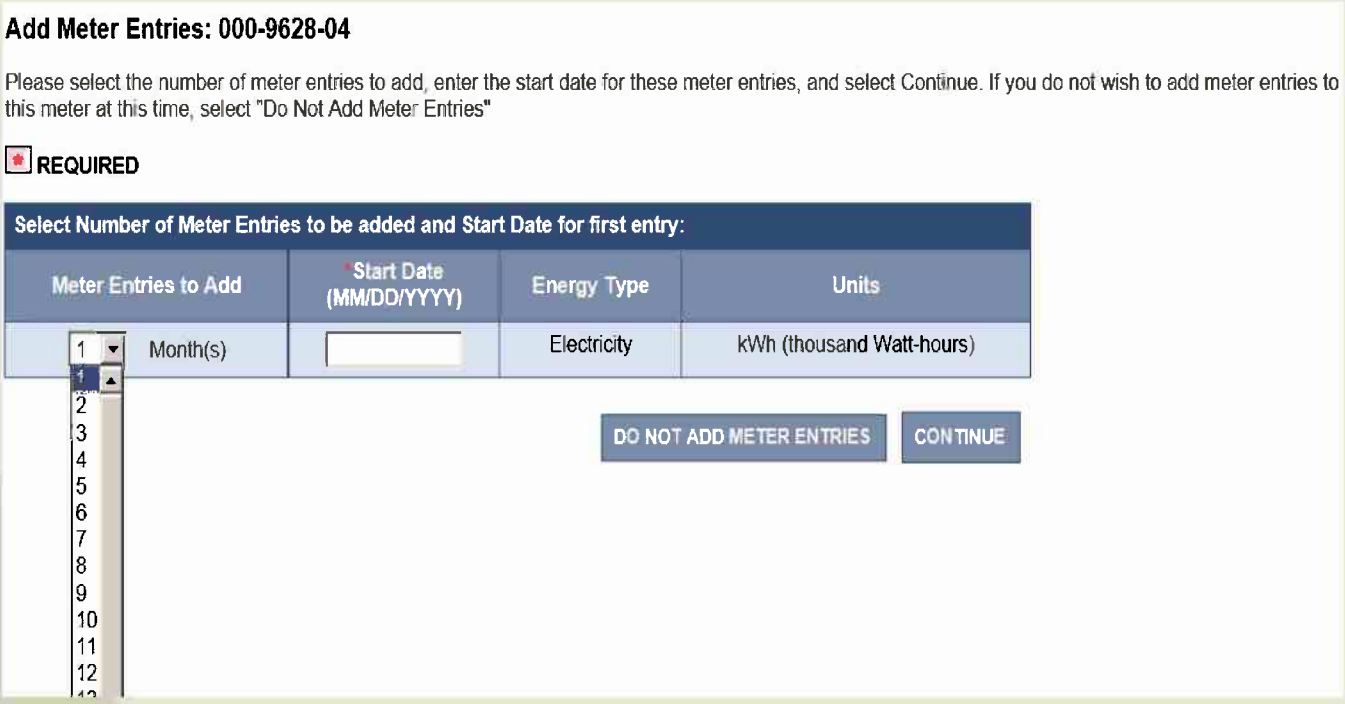
11. Each meter in a facility must have a unique name. For Simi Valley facilities, either the meter ID number or service account number was used. Enter a name for this meter, and select the energy type and unit. For this meter, the energy type was Electricity and the units are kWh.



12. Select Generation Method, if applicable. If you have onsite solar or wind production, please select the appropriate option as it will allow you to enter any amount that you may sell back to the grid. Do not subtract onsite electricity production from grid purchased electricity consumption. Click Save.

13. *Note:* If you have submeters (besides those owned by the utility company) for different sections in your building, you can still keep track of this information in Portfolio Manager. When creating such meters, select the "No, adding this meter to this facility's total energy use will inflate the actual value" option to avoid double counting. You can also inactivate meters that are retired or broken by selecting No for the question "Is this meter currently active?" This option would ensure that you will not receive an alert from Portfolio Manager about meters that have data that are more than 120 days old.

14. The next page will allow you to pick the number of months you would like to enter data for.
    - If you select "Do Not Add Meter Entries," then no data will be added at this time and you will be taken back to the "My Facility" page. You may add information to the meter at a later date. If you plan to establish and Automated Benchmarking Link with your utility company, select this option.
    - If you wish to manually add data now, select a value in the "Meter Entries to Add" column and enter a start date for these entries in the "Start Date (MM/DD/YYYY)" field. In this example, this option was selected.



15. The next page will allow you to enter energy cost and consumption values. These values should reflect values found on your utility bills. Portfolio Manager will automatically place start and end dates for each entry; you can change the start and end dates on this page if they do not have the same dates as your utility bills. If you change these dates, make sure that you leave no gaps or overlapping dates. Edit the dates as necessary, enter the usage and cost information, then click Save.

16. Repeat this process for every service account in the facility.

Home > My Portfolio > City Hall > **Enter Energy Use**

Enter Energy Use: 000-9628-04

Please enter the energy use for each meter entry below. Portfolio Manager requires that entries are for consecutive time periods; only one day of overlap or one day of gap can exist between meter entries to be eligible to generate an Energy Performance Rating.

Meter Information

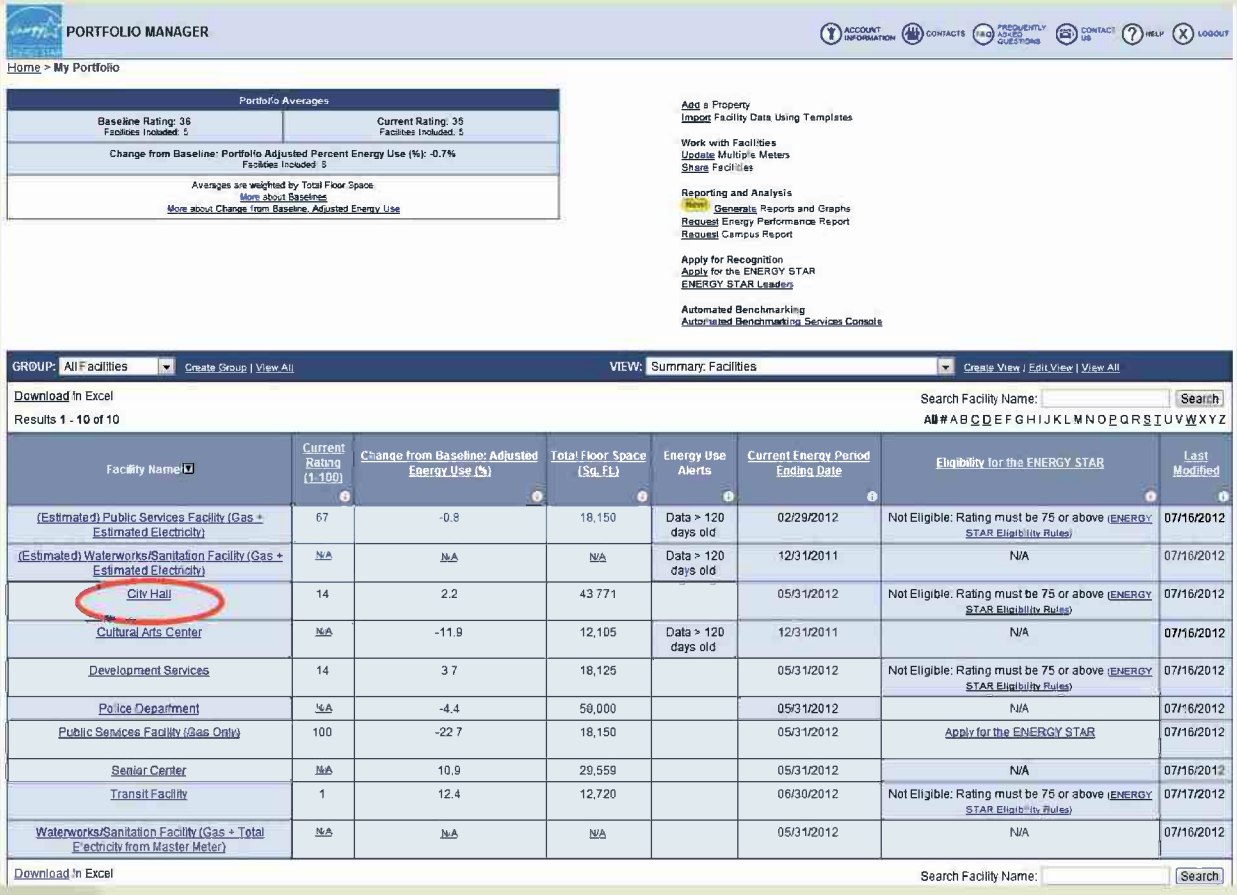
Fuel Type: Electricity, Grid Purchase (kWh (thousand Watt-hours))
Space(s): Entire Facility

Add Energy Use:

Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)
01/01/2006	01/31/2006		$
02/01/2006	02/28/2006		$
03/01/2006	03/31/2006		$
04/01/2006	04/30/2006		$
05/01/2006	05/31/2006		$
06/01/2006	06/30/2006		$
07/01/2006	07/31/2006		$
08/01/2006	08/31/2006		$
09/01/2006	09/30/2006		$
10/01/2006	10/31/2006		$
11/01/2006	11/30/2006		$
12/01/2006	12/31/2006		$

CANCEL SAVE

17. After adding all meter entries for the City Hall facility, it will appear on the facility summary page with energy consumption information as well as details on the building's eligibility for the ENERGY STAR. Buildings of an eligible space type with current meter entries and a score of 75 or over are eligible to apply for the ENERGY STAR.



PORTFOLIO MANAGER

Home > My Portfolio

Portfolio Averages

Baseline Rating: 36 Facilities Included: 5	Current Rating: 35 Facilities Included: 5
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): -0.7% Facilities Included: 5	

Averages are weighted by Total Floor Space.
More about Baselines
More about Change from Baseline, Adjusted Energy Use

Add a Property
Import Facility Data Using Templates

Work with Facilities
Update Multiple Meters
Share Facilities

Reporting and Analysis
New! Generate Reports and Graphs
Request Energy Performance Report
Request Campus Report

Apply for Recognition
Apply for the ENERGY STAR
ENERGY STAR Leaders

Automated Benchmarking
Automated Benchmarking Services Console

GROUP: All Facilities | Create Group | View All
VIEW: Summary: Facilities | Create View | Edit View | View All

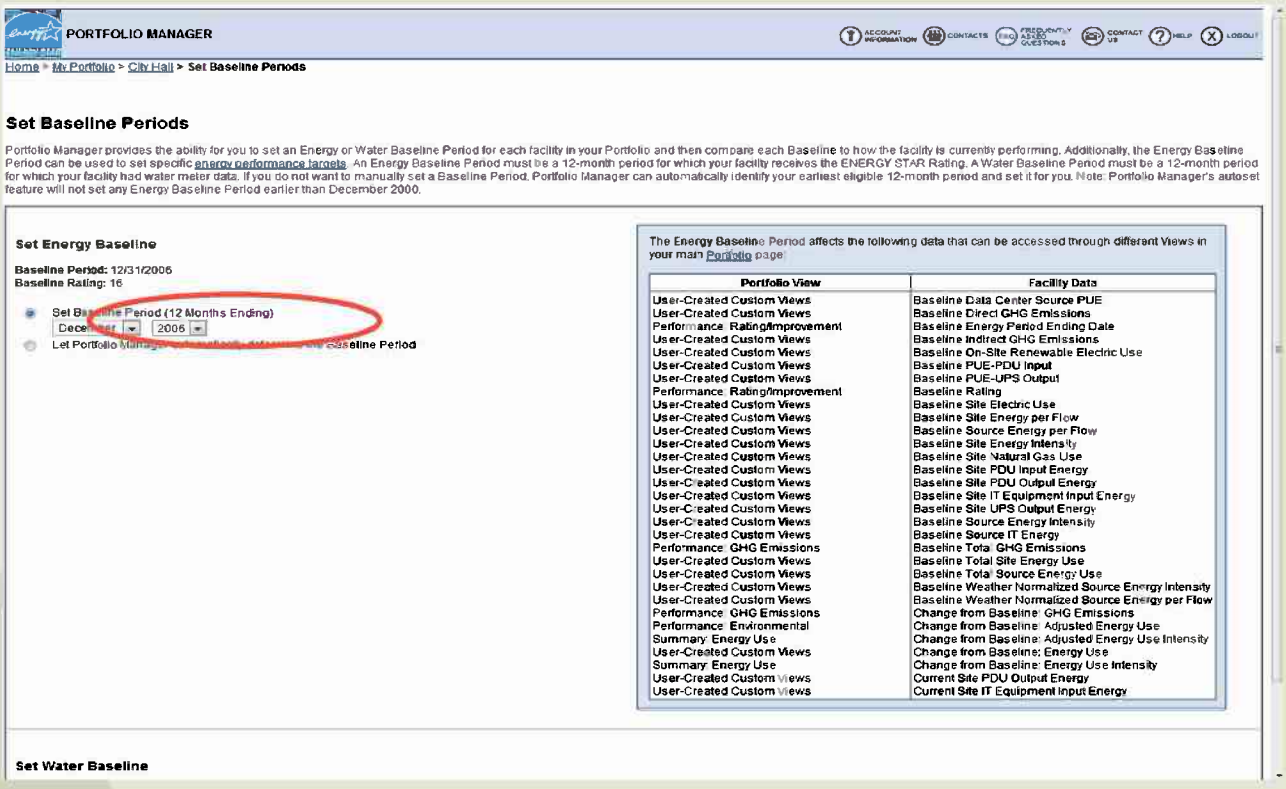
Download in Excel
Results 1 - 10 of 10
Search Facility Name: Search
All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Facility Name	Current Rating (1-100)	Change from Baseline: Adjusted Energy Use (%)	Total Floor Space (Sq. Ft.)	Energy Use Alerts	Current Energy Period Ending Date	Eligibility for the ENERGY STAR	Last Modified
(Estimated) Public Services Facility (Gas + Estimated Electricity)	67	-0.8	18,150	Data > 120 days old	02/29/2012	Not Eligible: Rating must be 75 or above (ENERGY STAR Eligibility Rules)	07/16/2012
(Estimated) Waterworks/Sanitation Facility (Gas + Estimated Electricity)	N/A	N/A	N/A	Data > 120 days old	12/31/2011	N/A	07/16/2012
City Hall	14	2.2	43 771		05/31/2012	Not Eligible: Rating must be 75 or above (ENERGY STAR Eligibility Rules)	07/16/2012
Cultural Arts Center	N/A	-11.9	12,105	Data > 120 days old	12/31/2011	N/A	07/16/2012
Development Services	14	3 7	18,125		05/31/2012	Not Eligible: Rating must be 75 or above (ENERGY STAR Eligibility Rules)	07/16/2012
Police Department	N/A	-4.4	50,000		05/31/2012	N/A	07/16/2012
Public Services Facility (Gas Only)	100	-22 7	18,150		05/31/2012	Apply for the ENERGY STAR	07/16/2012
Senior Center	N/A	10.9	29,559		05/31/2012	N/A	07/16/2012
Transit Facility	1	12.4	12,720		06/30/2012	Not Eligible: Rating must be 75 or above (ENERGY STAR Eligibility Rules)	07/17/2012
Waterworks/Sanitation Facility (Gas + Total Electricity from Master Meter)	N/A	N/A	N/A		05/31/2012	N/A	07/16/2012

Download in Excel
Search Facility Name: Search

Setting a Baseline Period in Portfolio Manager

1. From the My Portfolio page, select the name of the facility for which you wish to establish a baseline. The facility's summary page will open.
2. Select the Set Baseline Periods link located in the upper left portion of the page in the Facility Performance section. The Set Baseline Periods page will open.

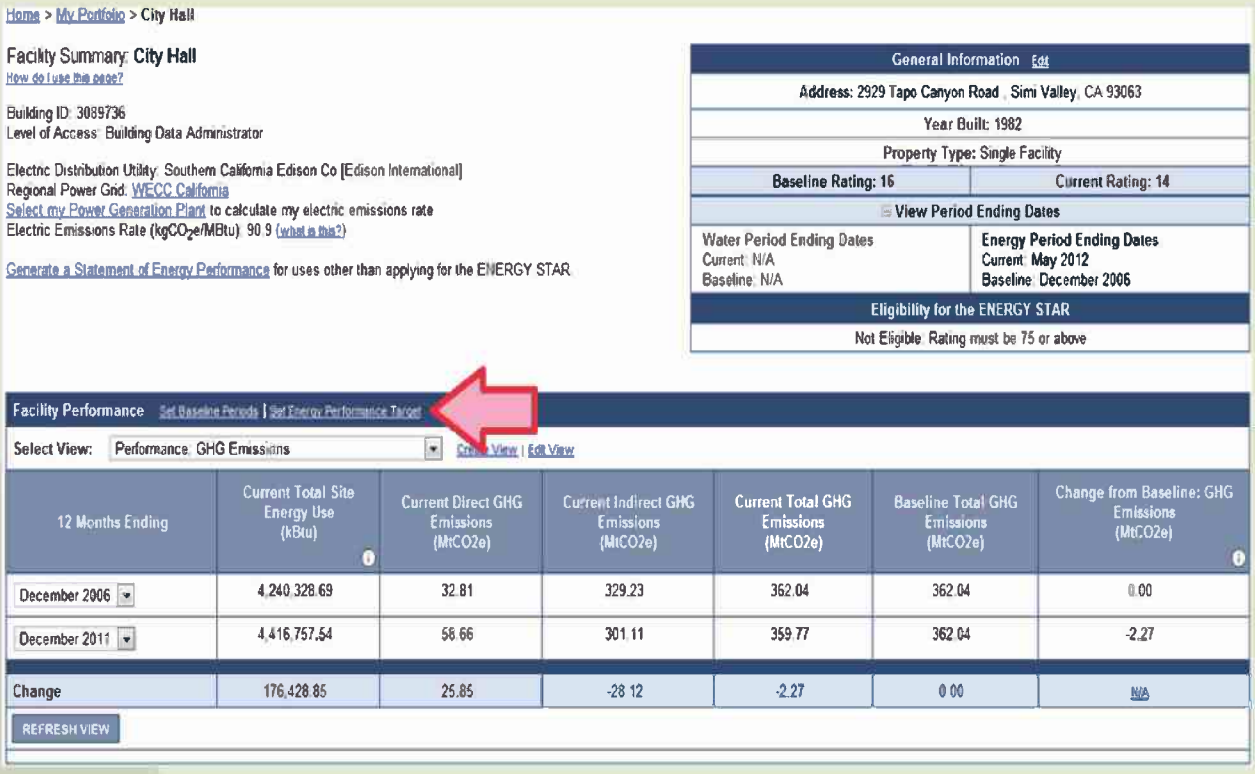


3. From here, you may either manually select the Energy or Water baseline periods, or you may let Portfolio Manager determine them automatically. For the City analysis, all facilities should have a set baseline of December 2006, if possible.

Setting a Target in Portfolio Manager

The following section will allow you to set energy reduction targets in Portfolio Manager. Energy reduction targets can be set to either reach a given level of energy reduction or to reach a specific rating within Portfolio Manager.

1. From the My Portfolio page, select the name of the facility for which you wish to establish a target. The facility's summary page will open.
2. Select the Set Energy Performance Target link located in the upper left portion of the page in the Facility Performance section. The Set Energy Performance Target page will open.



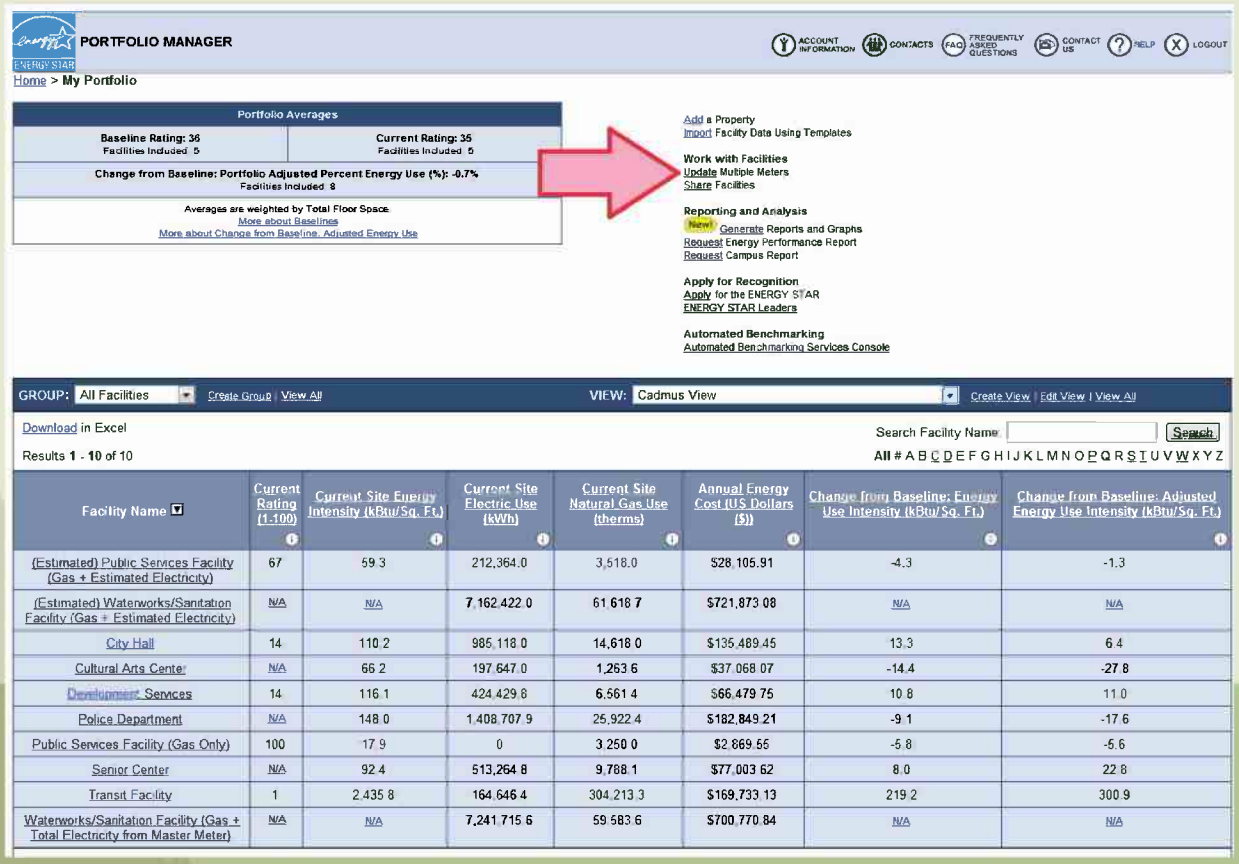
3. Indicate either a Target Rating between 1-100, or a percent reduction (0-100%).
4. *Note: Enter either a Target Rating OR a percent reduction. An energy baseline period must be defined for a facility before a performance target can be set.*
5. Select the Re-Calculate button. The page will update and the blank target will be defined, but will not be saved.
6. Once the desired target is established, select SAVE.

Multi-Facility Meter Update

The Multi Facility Meter Update (MFMU) feature provides the ability to easily update meter data for a large number of facilities, greatly increasing the efficiency for meter updates to large Portfolio Manager accounts, especially if updates are done on a monthly basis. MFMU will allow you to select the facilities in your portfolio (maximum of 250 per download) for which meter data needs updating. A Microsoft Excel spreadsheet will then be downloaded which will list each pre-selected facility and the specified number of meter data entries (billing cycles).

To update utility consumption data for buildings that are already being benchmarked in Portfolio Manager using Multi-Facility Meters:

1. After logging into Portfolio Manager, you will be taken to the My Portfolio page. On the right side, click on "Update Multiple Meters."



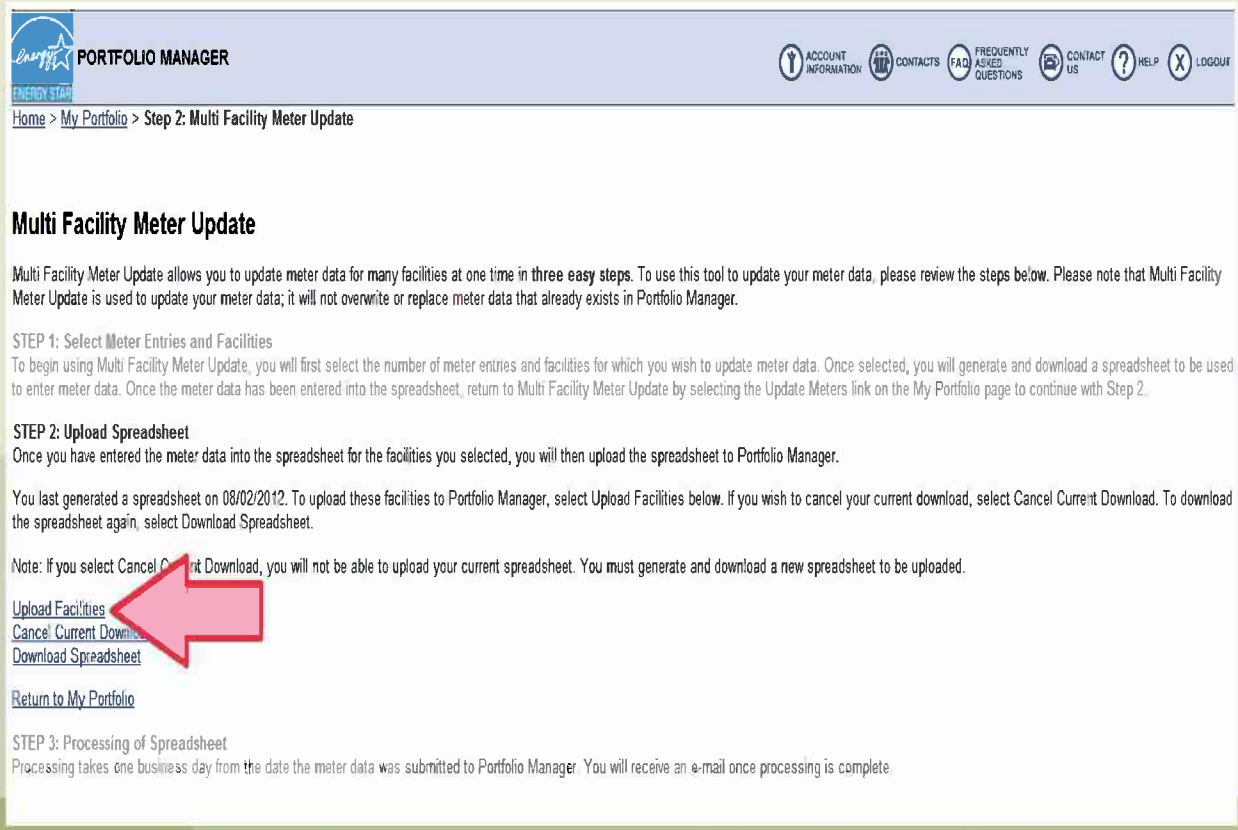
Facility Name	Current Rating (1-100)	Current Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Electric Use (kWh)	Current Site Natural Gas Use (therms)	Annual Energy Cost (US Dollars ($))	Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.)	Change from Baseline: Adjusted Energy Use Intensity (kBtu/Sq. Ft.)
(Estimated) Public Services Facility (Gas + Estimated Electricity)	67	59.3	212,364.0	3,518.0	$28,105.91	-4.3	-1.3
(Estimated) Waterworks/Sanitation Facility (Gas + Estimated Electricity)	N/A	N/A	7,162,422.0	61,618.7	$721,873.08	N/A	N/A
City Hall	14	110.2	985,118.0	14,618.0	$135,489.45	13.3	6.4
Cultural Arts Center	N/A	66.2	197,647.0	1,263.6	$37,068.07	-14.4	-27.8
Development Services	14	116.1	424,429.8	6,561.4	$66,479.75	10.8	11.0
Police Department	N/A	148.0	1,408,707.9	25,922.4	$182,849.21	-9.1	-17.6
Public Services Facility (Gas Only)	100	17.9	0	3,250.0	$2,869.55	-5.8	-5.6
Senior Center	N/A	92.4	513,264.8	9,788.1	$77,003.62	8.0	22.8
Transit Facility	1	2,435.8	164,646.4	304,213.3	$169,733.13	219.2	300.9
Waterworks/Sanitation Facility (Gas + Total Electricity from Master Meter)	N/A	N/A	7,241,715.6	59,583.6	$700,770.84	N/A	N/A

2. Click on "Select Meter Entries" on the left side of the page.
3. On the next screen, select the number of entries (billing cycles or months) you would like to input; click "Continue."
4. Select the buildings you would like to change and click "Generate Spreadsheet."

5. When finished, click "Done" or "Download Spreadsheet."

Once meter data are entered into the spreadsheet and saved, you can review and edit the uploaded data before submitting it to Portfolio Manager for processing. When you have verified that the data are correct, you can upload the spreadsheet back into Portfolio Manager by following the prompts under the Update Multiple Meters section. Portfolio Manager will provide spreadsheet data integrity checks during the upload process, to ensure data are complete and ready for upload. An e-mail will be sent to you once processing is complete.

6. Log into Portfolio Manager and return to the My Portfolio page. On the right side, click on "Update Multiple Meters."
7. Click on "Upload Facilities" in Step 2 on the left side of the page.

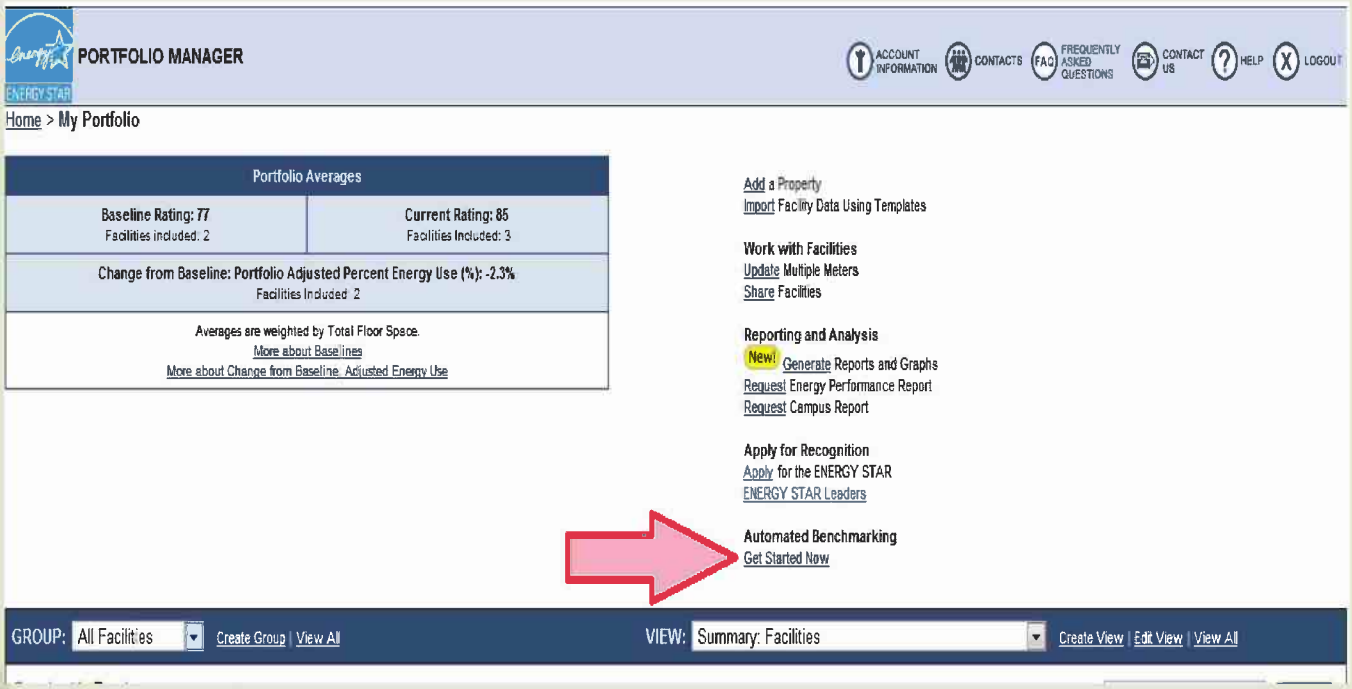


8. You may browse your computer to find the correct file name for your completed spreadsheet, then select the spreadsheet and click "Upload."
9. Your data will be processed and confirmation e-mail will be sent to you regarding your upload. Click "Confirm" to continue.

Mass updates for facilities and meter entries can be done using Automated Benchmarking Services. See Establishing Automated Benchmarking Services (ABS) below for more information.

Establishing Automated Benchmarking Services (ABS)

To begin, go to the "My Portfolio" page, and select the "Get Started Now" link. This will take you to the Automated Benchmarking Service Console. Different portions of the console are explained below.



Automated Benchmarking Service Console. Through the Automated Benchmarking Service Console, you will be able to:

- Authorize an energy service provider (ESP) for account, building or meter-level access.
- Select specific buildings and meters for each ESP.
- View the status of pending authorizations.
- Change or terminate authorization (i.e., disconnect from the ESP).
- View automated benchmarking activity for the past 30 days.

Once an ESP has been added (see Authorizing an Energy Service Provider), the Service Console is used to monitor and manage the connections.

Authorizing an Energy Service Provider

This is a feature within ENERGY STAR that allows an ESP to access and manage meter data. This function is used when the Portfolio Manager user has an active business relationship with an ESP (utility, energy information providers, and bill handling services) that provides Automated Benchmarking Services, and the Portfolio Manager user wants to permit the ESP to provide or retrieve building and/or meter data directly into the Portfolio Manager account.

ESPs can be authorized to access data in your account at three different levels:

- Account-level: The ESP can be authorized to set up new buildings in your existing Portfolio Manager account and provide all building, energy, or meter consumption data. (Note: If you were notified by your ESP to complete the registration for a new PM account, then your provider has account-level access).
- Building-level: You can authorize an ESP to "manage" buildings that already exist in your portfolio; i.e., add and edit building, meter, or energy consumption data.
- Meter-level: You can authorize an ESP (typically a utility company) to provide consumption data for specific meters that are already setup within buildings in your account.

Automated Benchmarking Activity Log

Through the Automated Benchmarking Activity Log, you will be able to:

- View all automated benchmarking activity from the last 24 hours or the last 30 days.
- View the specific activities related to a specific provider, facility or meter.
- Link directly to the Facility Summary screen for all buildings with activity.

Once an ESP has been added and they are authorized for specific buildings and/or meters, any transaction activity by that provider is logged. Activity from the last 30 days can be viewed from the Activity Log screen.

There are several ways to access this screen with different display filters applied.

- For example, say you had several SCE meters in your facilities. SCE offers a number of benchmarking assistance services on their website, including ABS services.

- To get started with the Automated Benchmarking Service, select the service provider (in this case SCE) from the dropdown menu in the Automated Benchmarking Service console and then click "Add."

- You will be taken to a page with SCE's Terms & Conditions. Read these carefully, then click "Continue." You will be taken to a screen similar to the one below.

Select Facilities/Campuses to Change Authorization

Select facilities/campuses to change the Automated Benchmarking authorization for Seattle City Light. Use the checkbox in the far left column to select the appropriate facilities/campuses and click the "Update List" button to add these to your list of Selected Facilities/Campuses.

Please note that you can only change the authorization for a maximum of 50 facilities/campuses at a time. If you have more than 50 facilities/campuses you may return to this screen and repeat the process for the additional facilities/campuses.

See Authorizing an Energy Service Provider for more information.

CANCEL | UPDATE LIST | CONTINUE >>

Results 1 - 10 of 10 — All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Select Facility/Campus	Facility/Campus Name	Building/Campus ID	Meter Authorizations	Selected Facilities/Campuses # Selected (Max 50)
	(Estimated) Public Services Facility (Gas + Estimated Electricity)	3097662	View Meter Authorizations	
	(Estimated) Waterworks/Sanitation Facility (Gas + Estimated Electricity)	3097676	View Meter Authorizations	
	City Hall	3089736	View Meter Authorizations	
	Cultural Arts Center	3089749	View Meter Authorizations	
	Development Services	3089727	View Meter Authorizations	
	Police Department	3089738	View Meter Authorizations	
	Public Services Facility (Gas Only)	3089769	View Meter Authorizations	
	Senior Center	3089740	View Meter Authorizations	
	Transit Facility	3089745	View Meter Authorizations	
	Waterworks/Sanitation Facility (Gas + Total Electricity from Master Meter)	3089755	View Meter Authorizations	

Results 1 - 10 of 10 — All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

CANCEL | UPDATE LIST | CONTINUE >>

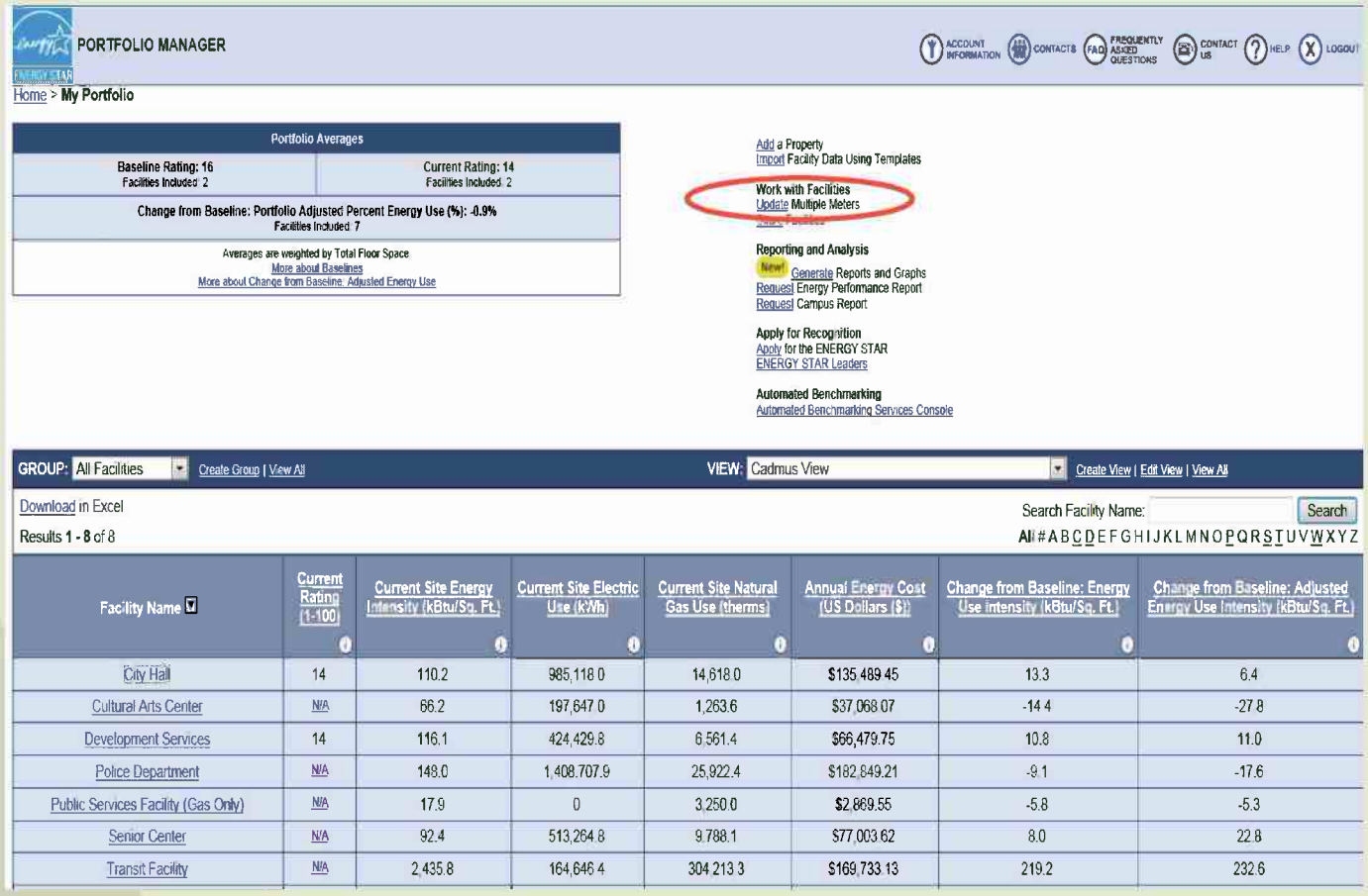
1. You will then be given a list of all facilities in the account. Select all facilities that you wish to grant the Automated Benchmarking Service provider access to. Click "Update List", and then "Continue".
2. On the next page, you will be able to select the individual meters that you wish to grant access to, as well as what level of permission (read meters, read/write meters, read/write meters and buildings, etc) you wish to grant. For this example, you would only want to grant SCE access to the service accounts for which they are the utility. Once you are satisfied with your selections, click "Continue".
3. The next page identifies the information required by your service provider. For SCE, you would need the following:
    - Customer Account Number, a 13 character number on your SCE bill.
    - Authentication Key, a 4 digit security code associated with the SCE account.
    - Service Account Number, another 13 character code found below the customer account number.

Information requested varies by Automated Benchmarking Service provider, and may include phone number, e-mail address, primary contact name, among other things. After providing the required information, SCE reviews each account and automatically enters energy usage data into a Portfolio Manager Account. Individuals are also able to receive more detailed reports of energy usage than what goes into Portfolio Manager.

Generating Reports

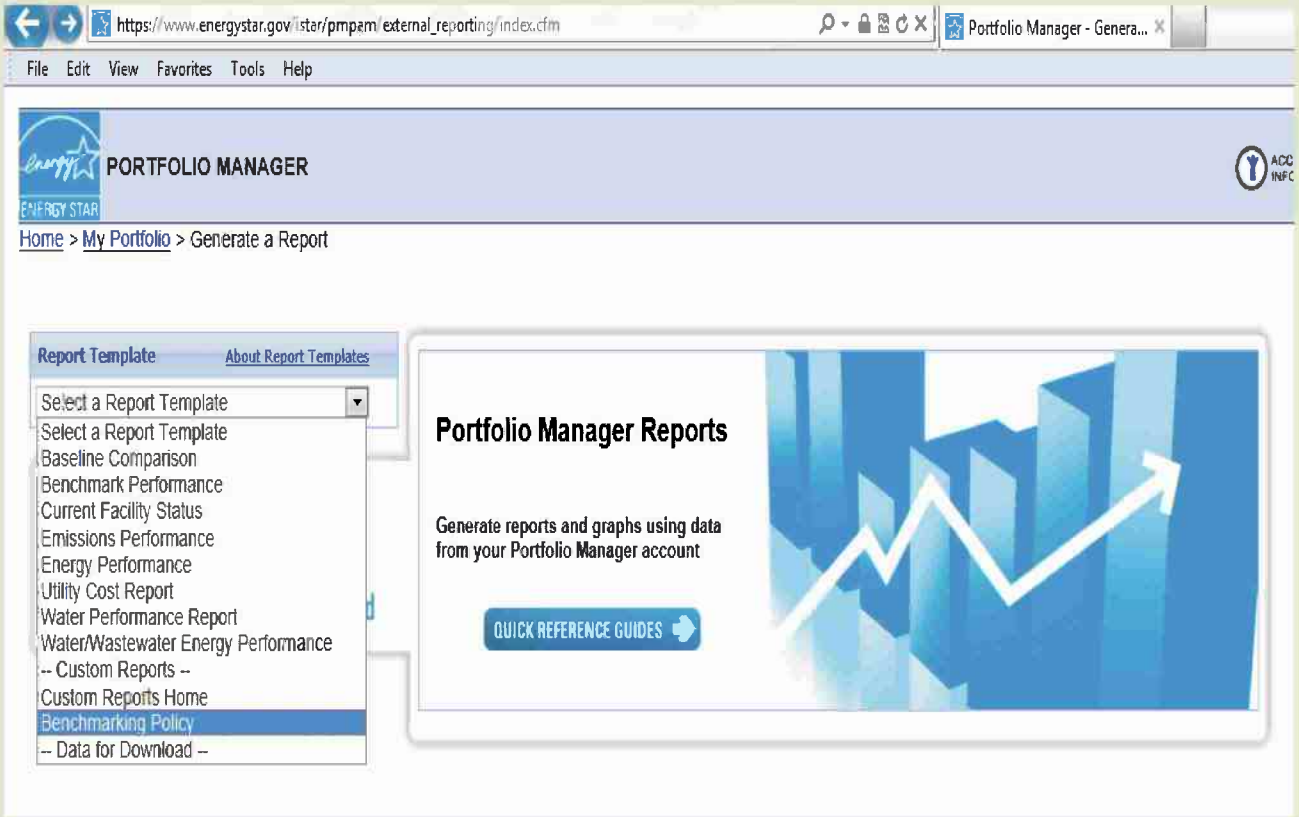
After all the required information is input into Portfolio Manager, reports can be generated to track progress towards goals.

1. To begin, go to the "My Portfolio" page. Click on "Generate Reports and Graphs."



Facility Name	Current Rating (1-100)	Current Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Electric Use (kWh)	Current Site Natural Gas Use (therms)	Annual Energy Cost (US Dollars ($))	Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.)	Change from Baseline: Adjusted Energy Use Intensity (kBtu/Sq. Ft.)
City Hall	14	110.2	985,118.0	14,618.0	$135,489.45	13.3	6.4
Cultural Arts Center	N/A	66.2	197,647.0	1,263.6	$37,068.07	-14.4	-27.8
Development Services	14	116.1	424,429.8	6,561.4	$66,479.75	10.8	11.0
Police Department	N/A	148.0	1,408,707.9	25,922.4	$182,849.21	-9.1	-17.6
Public Services Facility (Gas Only)	N/A	17.9	0	3,250.0	$2,869.55	-5.8	-5.3
Senior Center	N/A	92.4	513,264.8	9,788.1	$77,003.62	8.0	22.8
Transit Facility	N/A	2,435.8	164,646.4	304,213.3	$169,733.13	219.2	232.6

2. You will be taken to the Template Selection screen. From here, any report type can be selected, or click "Custom Reports Home" to list all custom report templates. In this case, a "Benchmarking Policy" report will be selected. This is a custom template created for this document.



The "Benchmarking Policy" custom template contains:

- Four required fields (Building ID, Facility Name, Period Ending Date, and Rating).
- Baseline, current, and total change in site energy use (kBtu).
- Baseline, current, and total change in GHG emissions (MtCO2e).

You will be taken to the "Generate a Report" screen. To begin, you must select a Reporting Period. There are three options:

- Single Period (one period). This will return data for the 12 months ending on the selected date. For example, if this option is selected and the date "Dec 2011" is selected, then the report will return data for the period January 2011-December 2011. This is what will be used in this example.
- Comparative (two periods). This will return data for the 12 months ending in each of the dates selected. For example, if you selected Dec 2010 and Dec 2011, then the report will return data for Jan 2010-Dec 2010, and for Jan 2011-Dec 2011, for each facility selected.
- Range (all periods within date range). This will return data for every 12-month period contained within the two dates provided. For example, if the dates Dec 2010 and Dec 2011 were selected, the report would return data for Jan 2010-Dec 2010, Feb 2010-Jan 2011, and so on until Jan 2011-Dec 2011.

The remaining options on the left side of the screen are filters. You may manually select what facilities or groups to include in the report, or filter the results based on location or primary space type. In this instance, we will run a Single Period report for Dec 2011, for only the City Hall facility. The baseline year is 2006.

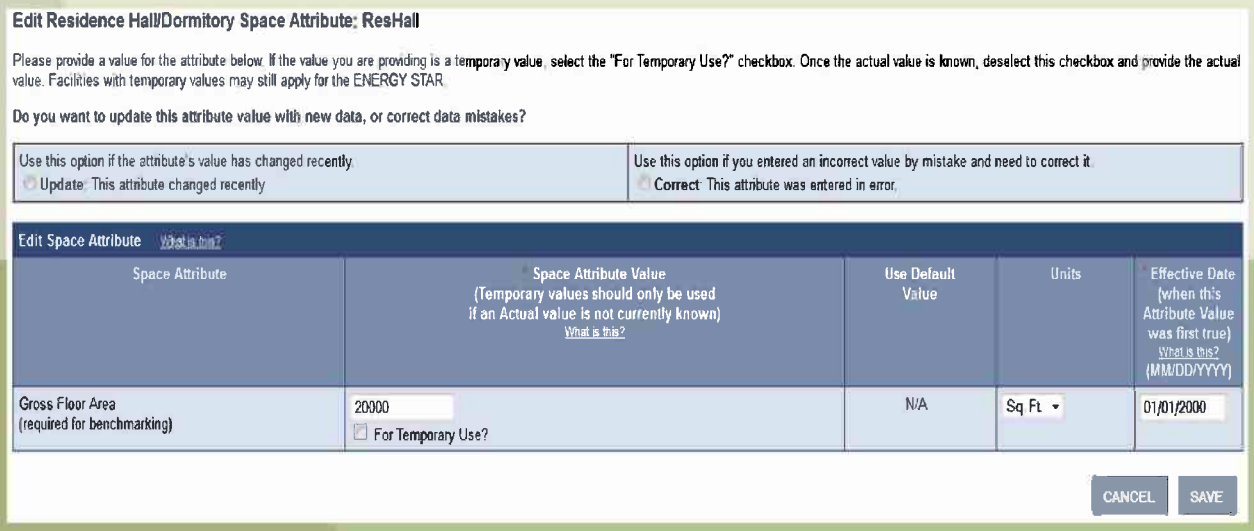
The results of the report will display in the window, once the Reporting Period is set. You can easily export these data in a variety of formats (Excel, XML, CSV, PDF).

Editing General Facility Information

To edit general facility information, such as date of construction or ZIP code, navigate to the "Facility Summary" page. Click "Edit" in the top right, at the top of the General Information section. Make any necessary corrections, and then click SAVE.

Sometimes, the Operating Characteristics of a Space may need to be changed. Reasons for this could include major renovations, new occupancy/vacancy on portions of the space, or even the normal drift of characteristics (# of PC's and Workers on Main Shift can change over time, even without any drastic changes to the space).

To edit a space, navigate to the "Facility Summary" page, and then click the name of the space. You will see a list of all space attributes present in the space, with a revision history listed at the bottom of the screen. Find the attribute you wish to change, and click "Edit" near the right for this attribute. You should see something similar to the image below.



Edit Residence Hall/Dormitory Space Attribute: ResHall

Please provide a value for the attribute below. If the value you are providing is a temporary value, select the "For Temporary Use?" checkbox. Once the actual value is known, deselect this checkbox and provide the actual value. Facilities with temporary values may still apply for the ENERGY STAR.

Do you want to update this attribute value with new data, or correct data mistakes?

Use this option if the attribute's value has changed recently.	Use this option if you entered an incorrect value by mistake and need to correct it.
Update: This attribute changed recently	Correct: This attribute was entered in error.

Edit Space Attribute What is this?

Space Attribute	* Space Attribute Value (Temporary values should only be used if an Actual value is not currently known) What is this?	Use Default Value	Units	* Effective Date (when this Attribute Value was first true) What is this? (MM/DD/YYYY)
Gross Floor Area (required for benchmarking)	20000 For Temporary Use?	N/A	Sq Ft	01/01/2000

CANCEL SAVE

Note the two options above "Edit Space Attribute." These are Update and Correct. Which one you choose depends on why you are editing the space.

Update: Select this option if the attribute has recently changed. For example, if a new facility was opened in 2000, and had 50 workers on the main shift, but 10 more workers were added to the main shift in 2005, you would select the Update option, enter "60" for the Workers on Main Shift attribute, and select an effective date in 2005, when the new workers were added.

Correct: Select this option if the initial value was entered in error. For example, if you estimated a value of 20,000 sq. ft. for floor area in 2000 and in 2005 it was determined that the actual area of the building is 24,000 sq. ft, this error must be corrected. In this case, you would select the Correct option, enter a value of "24,000" for the floor area, and select an effective date in 2000.

Occasionally, edits will be needed to energy meter data. Fortunately, editing energy meter data in Portfolio Manager is relatively straight forward. Simply navigate to the meter in question. You should see a screen similar to the one below.

Edit Energy Use: 000-9628-04

Please enter the energy use for each meter entry below. Portfolio Manager requires that entries are for consecutive time periods; only one day of overlap or one day of gap can exist between meter entries to be eligible to generate an Energy Performance Rating.

Meter Information Edit

Fuel Type: Electricity, Grid Purchase (kWh (thousand Watt-hours))
Space(s): Entire Facility

Automated Benchmarking Activity

Energy Service Provider: Southern California Edison (Read/Write)
View this Meter's Automated Benchmarking Activity

Download Meter Data in Excel

Edit Energy Use:

Edit Previous 24 Entries

Add Meter Entries

Remove Entry	Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)	Last Updated
	06/05/2012	07/05/2012	87237.00	$ 12,761.19	07/06/2012 by SCEDISON
	05/04/2012	06/05/2012	89627.00	$ 8,796.06	06/06/2012 by SCEDISON
	04/05/2012	05/04/2012	76598.00	$ 7,756.48	05/08/2012 by SCEDISON
	03/07/2012	04/05/2012	73572.00	$ 7,232.11	05/02/2012 by SCEDISON
	02/06/2012	03/07/2012	77232.00	$ 7,539.25	05/02/2012 by SCEDISON
	01/06/2012	02/06/2012	78163.00	$ 7,440.54	05/02/2012 by SCEDISON
	12/07/2011	01/06/2012	73939.00	$ 7,602.05	05/02/2012 by SCEDISON
	11/04/2011	12/07/2011	76427.00	$ 7,712.54	05/02/2012 by SCEDISON
	10/04/2011	11/04/2011	80616.00	$ 8,865.15	05/02/2012 by SCEDISON
	09/02/2011	10/04/2011	83484.00	$ 13,987.97	05/02/2012 by SCEDISON
	08/04/2011	09/02/2011	90891.00	$ 17,653.50	05/02/2012 by SCEDISON
	07/06/2011	08/04/2011	89913.00	$ 15,171.44	05/02/2012 by SCEDISON
	06/06/2011	07/06/2011	92960.00	$ 14,672.87	05/02/2012 by SCEDISON
	05/05/2011	06/06/2011	84017.00	$ 9,439.19	05/02/2012 by SCEDISON
	04/06/2011	05/05/2011	75204.00	$ 8,763.52	05/02/2012 by SCEDISON
	03/01/2011	04/06/2011	97776.00	$ 9,975.00	05/03/2012 by SIMI_VALLEY
	02/01/2011	02/28/2011	70423.00	$ 7,736.29	05/03/2012 by SIMI_VALLEY
	01/01/2011	01/31/2011	69956.00	$ 7,639.88	05/03/2012 by SIMI_VALLEY
	12/01/2010	12/31/2010	79350.00	$ 8,807.52	05/03/2012 by SIMI_VALLEY
	11/01/2010	11/30/2010	83356.00	$ 5,494.57	05/03/2012 by SIMI_VALLEY
	10/01/2010	10/31/2010	94970.00	$ 16,557.36	05/03/2012 by SIMI_VALLEY
	09/01/2010	09/30/2010	91138.00	$ 23,878.19	05/03/2012 by SIMI_VALLEY

From here, you can adjust the start or end dates, consumption, or cost. More options, such as changing the name of the meter or the consumption units, are available by clicking the "Edit" text in the top right.