

Benchmarking Made Easy

A VIEW users guide to benchmarking facilities through the EPA ENERGY STAR® Portfolio Manager

San Joaquin Valley Energy Leader Partnership, a.k.a. Valley Innovative Energy Watch

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A  Sempra Energy utility[®]



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Benchmarking Made Easy!

A VIEW users guide to benchmarking facilities through the EPA ENERGY STAR® Portfolio Manager:

- ✓ What is all this talk about benchmarking?
- ✓ Can I benchmark my facility?
- ✓ What do I need to start benchmarking?
- ✓ How do I get a Portfolio Manager account?
- ✓ What does Portfolio Manager need to know about my facility?
- ✓ Do I really have to update my portfolio every month? Isn't there an easier way to do this?
- ✓ So, I get it, but I'd still like to see this in action. Can you show me?
- ✓ Addendum 2: Okay, I love it! How do I create a benchmarking policy in my local government?

What is all this talk about benchmarking?

In September 2009, the California Public Utilities Commission (CPUC) issued directives to the Investor Owned Utilities to provide support for the California Long Term Energy Efficiency Strategic Plan (CEESP) in D.09-09-047 Directives - Energy Use Data. Those directives, as they relate to local governments include:

Local governments need facility specific data to benchmark their own facilities and prioritize them for retro commissioning

Local governments need aggregated data by sector (residential, commercial, etc.) to develop community inventories and profiles for development of GHG mitigation plans

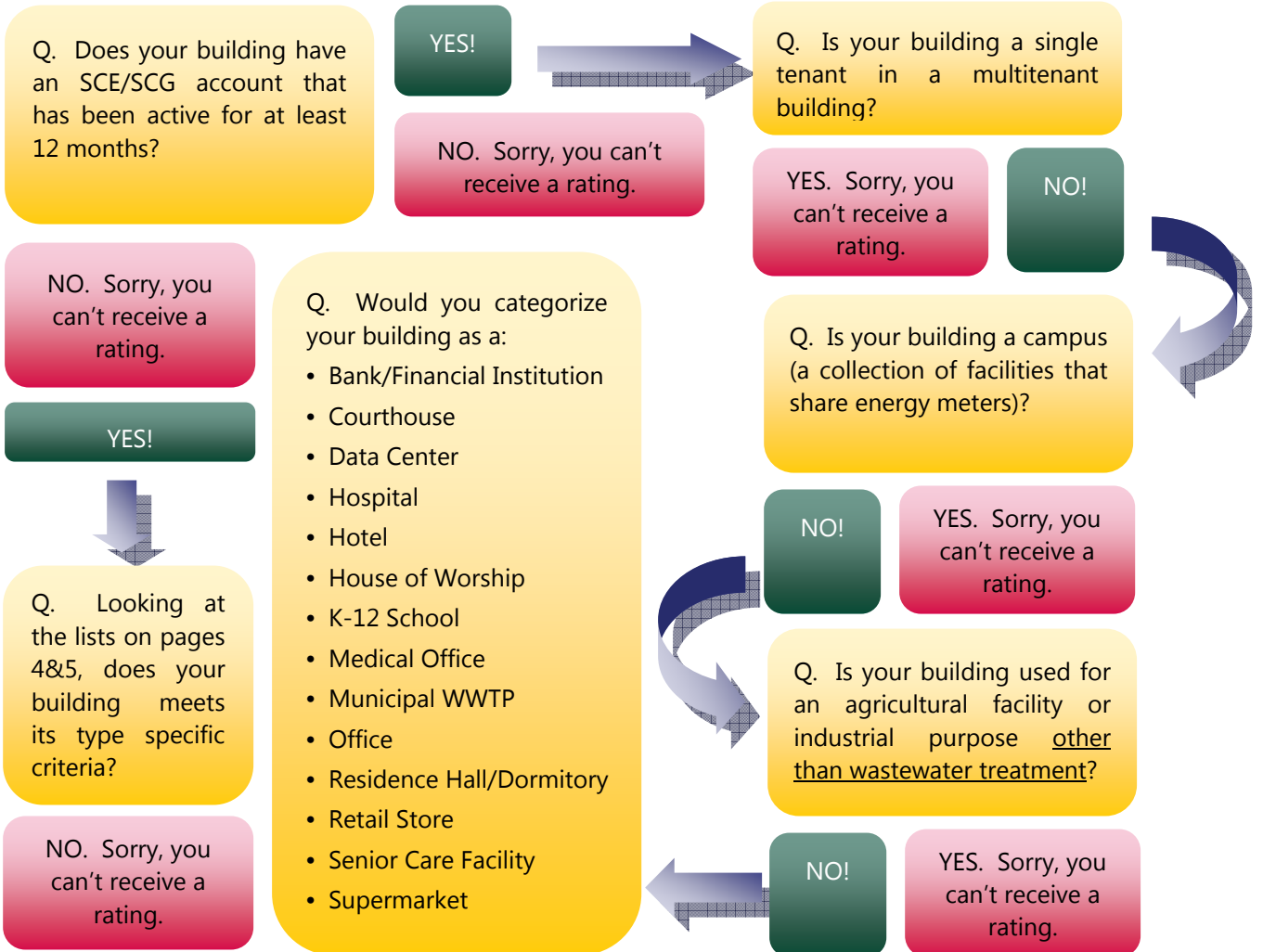
The utilities are required to work cooperatively with their local government partners to develop a cost effective plan to provide this information in a standardized way that also meets local government needs.

In that effort, the San Joaquin Valley Energy Leader Partnership, a.k.a. VIEW Partnership (VIEW) in cooperation with Southern California Edison, Southern California Gas Company, local government partners, and the implementer determined the best use of imbedded strategic funds would be to assist our local governments set up their benchmarking process.

The ENERGY STAR Portfolio Manager was determined to be the most user-friendly system, and accepted by the Partnership. Portfolio Manager is an online service that tracks a building's energy performance and compares it to similar buildings nationwide. Buildings are issued a score from 1-100, representing the building's energy efficiency. Some buildings won't be scored—there are minimum standards required to receive a score-- but don't worry, Portfolio Manager can still provide plenty of great information that will help you understand your building's energy performance.

Can I benchmark?

To answer this question, you need to ask yourself six more! So, take your building/facility and ask yourself the following questions:



YES!

Congratulations,
you can receive a
benchmark score!

The thing to keep in mind is that even if you hit the stopping point along the path, Portfolio Manager might not be able to give your facility a benchmarking score, but it can still help you make energy investment decisions by providing useful information, so enter all the data you can.

To move forward you'll need to know certain aspects about your building/facility so choose your building type from the following list and ask yourself the questions in the box to the right of the building type.

You will need able to answer 'yes' to the following questions about your space type.

Bank/Financial

- ✓ Gross floor area at least 1,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of personal computers at least one?
- ✓ Numbers of workers on main shift at least one?

Courthouse

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of personal computers at least one?
- ✓ Numbers of workers on main shift at least one?

Data Center

- ✓ Have a separate IT meter that has been in operation for at least the past 11months?

Hospital

- ✓ Gross floor area between 20,000-5,000,000 sq. ft.?
- ✓ Number of licensed beds between 16-1,510?
- ✓ Numbers of floors between 1 and 40?

Hotel

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Numbers of workers on main shift at least one?
- ✓ Number of rooms at least 1?

House of Worship

- ✓ Gross floor area at least 1,000 sq. ft.?
- ✓ Number of seats between 25-4,000?

K-12 School

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?

Medical Office

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per weeks?
- ✓ Number of workers on main shift at least one?

Office

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of personal computers at least one?
- ✓ Numbers of workers on main shift at least one?

Residence

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of rooms at least 5?

Retail Store

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of registers at least 1?
- ✓ Numbers of workers on main shift at least 1?
- ✓ Does your space have an exterior public entrance?

Supermarket

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Number of personal computers at least one?

Warehouse

Refrigerated or Unrefrigerated

- ✓ Gross floor area at least 5,000 sq. ft.?
- ✓ Operating hours between 30-168 hours per week?
- ✓ Numbers of workers on main shift at least one?

Wastewater Treatment

- ✓ Average influent flow at least 0.6 MGD?
- ✓ Average influent BOD5 between 20 and 1,000 mg/liter?
- ✓ Average effluent BOD5 greater than 0 mg/liter?

Other

- ✓ This is the nifty space category that covers just about every other type of space imaginable: library, police station, auto dealership—all covered under 'other'. If your space isn't listed they even have a subcategory to 'other' that's called 'other'! Do not be surprised that the majority of your facilities will qualify as other. This only means you can't get a benchmark score, but does not mean you can't use Portfolio Manager to manage your energy data!

What do I need to start benchmarking?

Well, again that is going to depend on what type of building/facility you have. Locate your building type and then make sure you can check off each bullet point before you start.

Bank/Financial Institution

- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours
- ✓ Number of workers on main shift
- ✓ Number of personal computers
- ✓ Percent of gross floor area that is air conditioned
- ✓ Percent of gross floor area that is heated

Courthouse

- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours
- ✓ Number of workers on main shift
- ✓ Number of personal computers
- ✓ Percent of gross floor area that is air conditioned
- ✓ Percent of gross floor area that is heated

Data Center

- ✓ Zip code
- ✓ Gross floor area
- ✓ IT Energy Configuration (Location of IT Energy Meter)
- ✓ Annual IT Energy

Hotel

- ✓ Zip code
- ✓ Number of rooms
- ✓ Gross floor area
- ✓ Workers on Main Shift
- ✓ Number of Commercial Refrigeration/Freezer Units
- ✓ Presence of Cooking Facilities
- ✓ Percent of the Gross Floor Area that is Heated
- ✓ Percent of the Gross Floor Area that is Cooled

Hospital

(general medical and surgical)

- ✓ Zip code
- ✓ Number of licensed beds
- ✓ Gross floor area
- ✓ Number of floors
- ✓ Number of MRI machines
- ✓ Number of workers

Medical Office

- ✓ Zip code
- ✓ Number of workers on main shift
- ✓ Weekly operating hours
- ✓ Gross floor area

House of Worship

- ✓ Zip code
- ✓ Gross floor area
- ✓ Seating capacity
- ✓ Number of weekdays in operation
- ✓ Weekly operating hours
- ✓ Number of personal computers
- ✓ Presence of cooking facilities
- ✓ Number of commercial refrigeration/freezer units

Office

- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours
- ✓ Number of workers on main shift
- ✓ Number of personal computers
- ✓ Percent of gross floor area that is air conditioned
- ✓ Percent of gross floor area that is heated

Residence Hall/Dormitory

- ✓ Zip code
- ✓ Number of rooms
- ✓ Gross floor area

Retail Store

- ✓ Zip code
- ✓ Gross floor area
- ✓ Operating hours per week
- ✓ Number workers on main shift
- ✓ Number of personal computers
- ✓ Number of cash registers
- ✓ Number of walk-in refrigeration/freezer units
- ✓ Number of open and closed refrigeration/freezer cases
- ✓ Percent of the store that is heated
- ✓ Percent of the store that is cooled
- ✓ Exterior entrance to the public (yes or no)

Supermarket

- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours
- ✓ Workers on main shift
- ✓ Presence of cooking facilities
- ✓ Number of walk-in refrigeration/freezer units
- ✓ Percent of the gross floor area that is heated
- ✓ Percent of the gross floor area that is cooled

Warehouse-Refrigerated

- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours
- ✓ Number of workers on main shift

Warehouse-Unrefrigerated

- ✓ Zip code
- ✓ Gross floor area
- ✓ Number of walk-in coolers and refrigerators
- ✓ Weekly operating hours
- ✓ Number of workers on main shift
- ✓ Percent of gross floor area that is air conditioned
- ✓ Percent of gross floor area that is heated

Waste Water Treatment Facility

- ✓ Zip code
- ✓ Average influent flow
- ✓ Average influent biological oxygen demand (BOD₅)
- ✓ Average effluent biological oxygen demand (BOD₅)
- ✓ Plant design flow rate
- ✓ Presence of fixed film trickle filtration process
- ✓ Presence of nutrient removal process

Other

If you don't have a listed space type you can use 'other' and store your data. All you need is the basics to create an 'other' space type:

- ✓ Year built (installed)
- ✓ Zip code
- ✓ Gross floor area
- ✓ Weekly operating hours

Here's the thing: you can not have any of the above, or you can have more information. The beauty is 'other' catches everything a traditional space type can't.

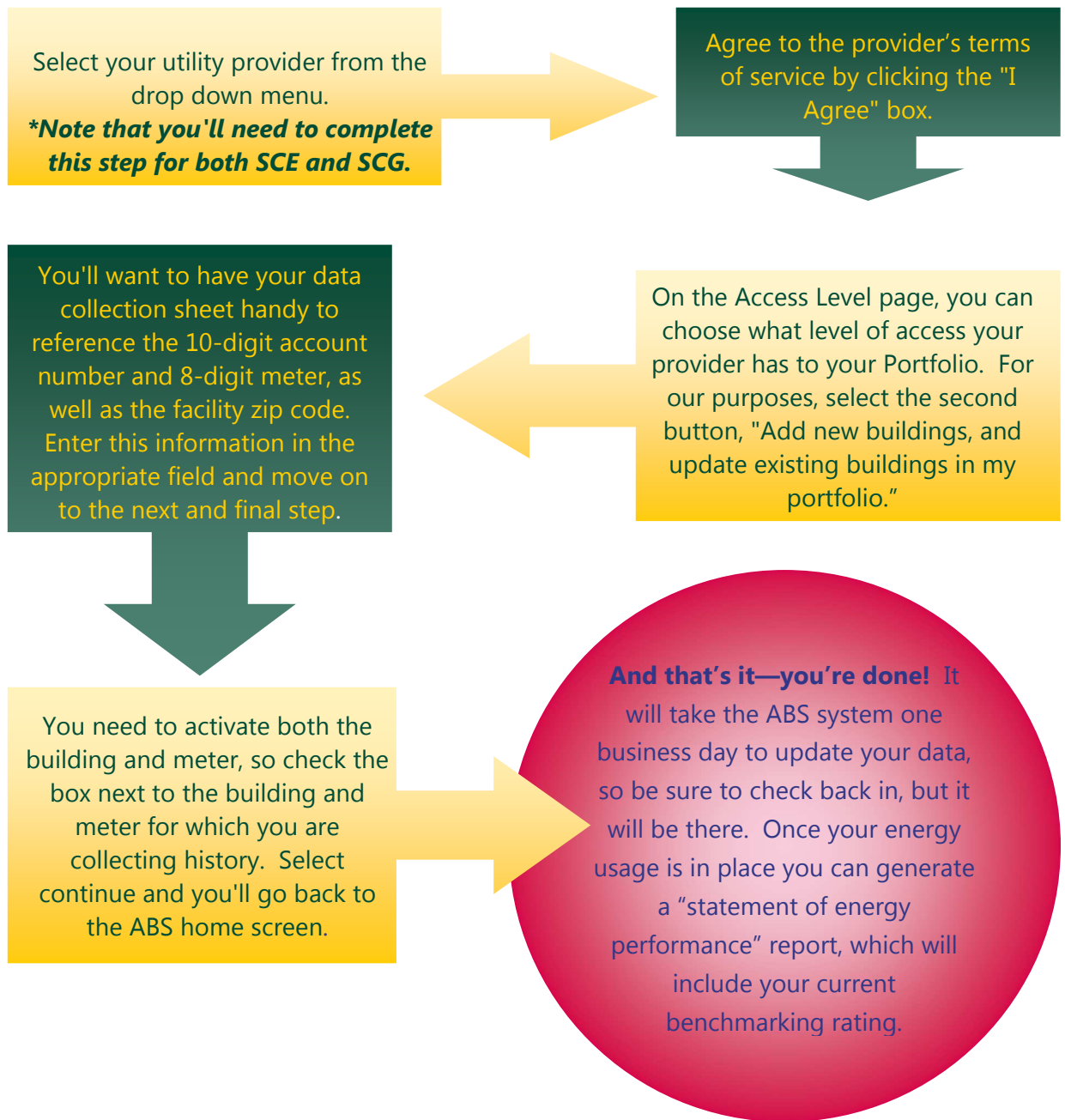
The beauty of being 'other'

Here's the thing, most of your utility accounts likely will not qualify for a benchmark rating. You'll probably go through the map on page three and become discouraged at how quickly you hit 'no'. Do not despair! There is much that Portfolio Manager can provide, even if you're not using the system to pursue an Energy Star rating. In fact, the rating is just "sizzle", the database system is the "steak". Use 'other' for ALL of your utility accounts—streetlights, pumps, anything and everything—and you turn Portfolio Manger into your very own Energy Management System! *(as long as you register with Automated Benchmarking Services...)*

Do I really have to update my account every month? Isn't there an easier way?

No, and yes! The California Investor Owned Utilities participate in the Automated Benchmarking Service (ABS). This program will save you time and headache, so it's pretty fantastic!

Before we go into the "how" of ABS there's one thing, above all else you must remember: **you have to—have to—enter your 10-digit account number as the "Meter Name."** Period. So long as you enter that 10-digit account number as your Meter Name, ABS more or less takes care of the rest! To use ABS, you have to enroll. To begin, select the Automated Benchmarking Services link on your home screen:



So, I get it, but I'd still like to see this in action. Can you show me?

For our purposes, I'm going to use the office building I work in.

My building has an SCE account that has been active for more than 12 months.

My building has an SCG account that has been active for more than 12 months.

My building is a single tenant in a single tenant building.

My building is not used for agricultural or industrial purposes.

My building is not a campus.

Looking at the building type criteria on pages three and four of this manual I can say that my building is in fact, an office.

- ✓ Gross floor area at least 5,000 sq ft? Yes! It's exactly 5,000 sq ft.
- ✓ Operating hours between 30-168 hours per week? Yes, we operate 60 hours per week.
- ✓ Number of personal computers at least one? Yes, we have 30.
- ✓ Number of workers on main shift at least one? Yes, we have 17.

Okay, now that I know what type of building type I am using I need to gather my data.

- ✓ Zip code: 93726
- ✓ Gross floor area: well, luckily I know this from trying to determine my building type—5,000 sq ft
- ✓ Weekly operating hours: again, already covered this, 60 hours per week.
- ✓ Number of workers on main shift: it's almost too easy! There are 17 workers.
- ✓ Number of personal computers: Ha—easy! 30 computers (I know, ridiculous compared to the number of employees!)
- ✓ Percent of gross floor area that is air conditioned: A little tougher, but fortunately, this is a greater than or less than question, and I know that more than 50% of our gross floor area is air conditioned, and that's all I need to know.
- ✓ Percent of gross floor area that is heated: This is the same as AC, so more than 50% is heated.

And just like that, I'm ready to go!

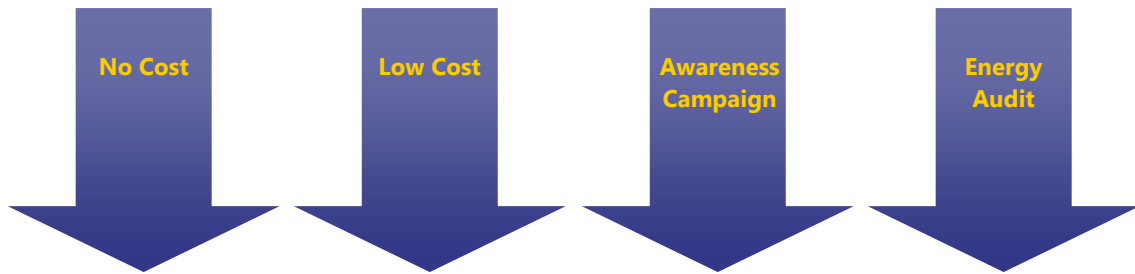
I love it! How do I create a benchmarking policy in my local government?

"Nearly one-third of the energy used to run typical government buildings can be conserved. Local governments can achieve substantial energy cost savings across their facilities, demonstrate energy and environmental leadership, and raise public awareness of energy efficiency benefits associated with reducing GHG emissions. In addition to improving the efficiency of existing and new facilities, local governments can incorporate energy efficiency criteria into product procurement decisions."

--United States Environmental Protection Agency

First, **determine your goals** for your benchmarking data:

- ✓ We want to use that data to help determine a needs hierarchy for retrofits and investment spending to improve energy efficiency and save money
- ✓ We want to set a reduction goal to reach the next level in the Energy Leader Partnership Model



Third, **make your commitment** to energy savings formal.

As a participant in the Valley Innovative Energy Watch, **[your jurisdiction name here]**, California, has pledged to reduce the energy consumption of its portfolio of buildings by **[your goal percent based on ELP needs]** or more. As a result of our **RESOLUTION [#]** to participate in the San Joaquin Valley Energy Leader Partnership with Southern California Edison, Southern California Gas Company, and the San Joaquin Valley Clean Energy Organization, our city buildings have been entered in Portfolio Manager. Officials are using data from this tool to make decisions about energy upgrades and operations within their buildings. They are also incorporating energy efficiency best practices into new building designs. [City/County] officials are leading by example and demonstrating to local government agencies and businesses that they too can reduce their energy consumption while continuing to deliver quality services. (United States Environmental Protection Agency, 2009)

Fourth, **Track Progress**. When you access the 'General Facility Administration' section (located on the 'Facility Summary' page) on Portfolio Manager, you can track your improvements on energy saved and amount invested.

Using the 'Track Energy Performance' feature you can input not only current and future improvements, but past improvements too. And, while Portfolio Manager cannot attribute a specific savings to specific dollar savings it can show you a general overview which can tell you whether or not your investment strategy is working.

And finally, **Recognize Achievements!** It takes participation at all levels to reduce energy consumption across an entire jurisdiction building portfolio, so make sure you recognize those efforts. Depending on the culture of recognition within your local government you can choose to recognize on levels, for set criteria, and in type. Some ideas might include:

LEVEL	<p>INDIVIDUAL</p> <p>Those specific people who go beyond to support your goals</p>	<p>TEAMS</p> <p>Groups within your local government: departments, teams, etc.</p>	<p>FACILITY</p> <p>Compare like facilities, or recognize those top reducing buildings and the workers.</p>
CRITERIA	<p>INDIVIDUAL</p> <ul style="list-style-type: none"> ✓ best savings idea ✓ greatest reduction ✓ increased savings by set amount 	<p>TEAMS</p> <ul style="list-style-type: none"> ✓ best savings idea ✓ greatest reduction ✓ increased savings by set amount 	<p>FACILITY</p> <ul style="list-style-type: none"> ✓ best savings idea ✓ greatest reduction ✓ increased savings by set amount
TYPE	<p>INDIVIDUAL</p> <ul style="list-style-type: none"> ✓ Certificate ✓ VIEW window decal ✓ Newsletter feature ✓ Award ceremony 	<p>TEAMS</p> <ul style="list-style-type: none"> ✓ Certificate ✓ VIEW window decal ✓ Newsletter feature ✓ Award ceremony 	<p>FACILITY</p> <ul style="list-style-type: none"> ✓ ENERGY STAR label ✓ VIEW window decal ✓ Newsletter feature ✓ Award ceremony

With a simple, yet straightforward energy policy you'll be on your way to determining an investment strategy that will not just reduce energy, but save money too. And, you'll be working towards reaching the next tier in Energy Leader Partnership, leading to enhanced incentives, technical support, strategic plan support and more. We all know that saving energy saves money, and in a time of deep cuts in local government every saving counts. Use this guide as a map to meet your goals, and realize your local government's vision for savings and sustainability.