

BENCHMARKING MADE EASY



a VIEW users guide to EPA Portfolio Manager

partnership overview

- ✓ 4,352,581 kWh saved, ≈ \$650,000 saved
- ✓ 508 KW saved
- ✓ Projects include: pump, well, lighting upgrades
- ✓ Project pipeline ≈ 3,000,000 kWh
- ✓ 8 community outreach events per year
- ✓ 2 EEC classes
- ✓ Strategic Plan support



why 3.1.1?

- ✓ Data becomes a roadmap

- ✓ Project investment
- ✓ Energy Action Plans
- ✓ Targeted awareness efforts

- ✓ Identifies problem users

- ✓ Tracks results of efficiency measures

- ✓ AB 1103

...and so much more...



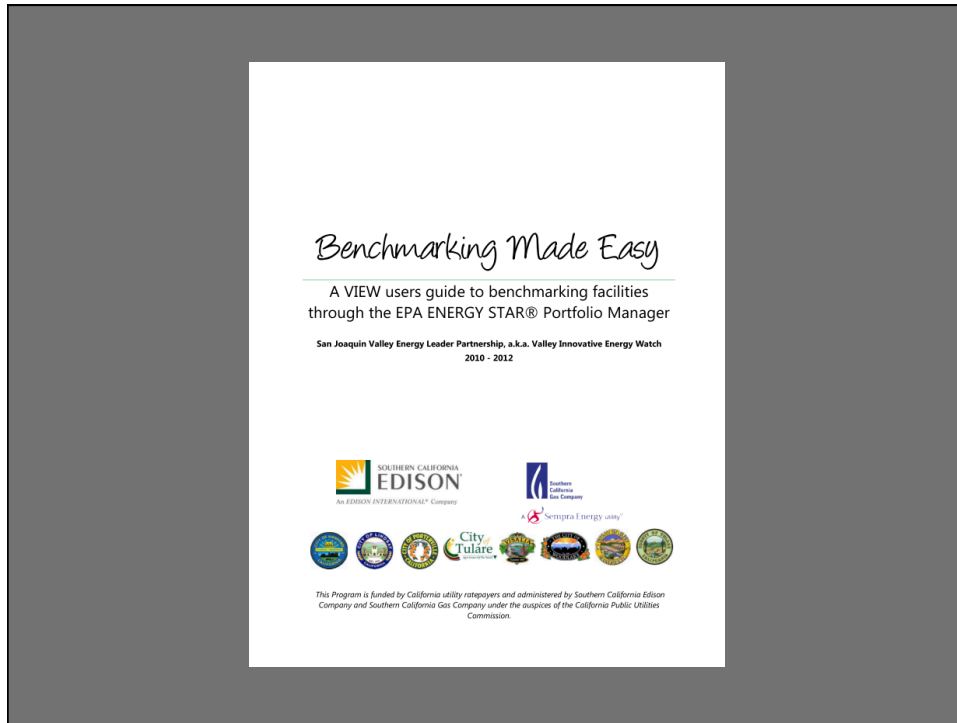
policies & procedures manual

"it's like building the airplane while learning to fly."

-anonymous
US DOE
contractor

- ✓ "Make it as easy."
- ✓ "Keep it brief."
- ✓ "Make it fun (if that's possible)."
- ✓ "Something colorful would be nice..."

With those directives in mind, we created...



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 1: What do I do when my Provider data doesn't match up?
- ✓ 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 D09-09-047 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.

Page 2

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:

Q. Does your building have an SCE/SCG account that has been active for at least 12 months?

YES! →

NO. Sorry, you can't receive a rating.

Q. Is your building a single tenant in a multi-tenant building?

YES. Sorry, you can't receive a rating.

NO!

Q. Would you categorize your building as a:

- Bank/Financial Institution
- Courthouse
- Data Center
- Hospital
- Hotel
- House of Worship
- K-12 School
- Medical Office
- Municipal WWTP
- Office
- Residence Hall/Dormitory
- Retail Store
- Supermarket
- Warehouse

YES →

NO. Sorry, you can't receive a rating.

Q. Is your building a campus (a collection of facilities that share energy meters)?

NO!

YES. Sorry, you can't receive a rating.

Q. Looking at the lists on pages 3&4, does your building meet its type specific criteria?

YES →

NO. Sorry, you can't receive a rating.

Q. Is your building used for an agricultural facility or industrial purpose other than wastewater treatment?

NO!

YES. Sorry, you can't receive a rating.

YES!

Congratulations, you can benchmark!

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 decisions by providing useful information, so enter the data you can.

Page 3

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 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?
- Number of workers on main shift at least one?

Courthouse

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

Data Center

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

Hospital
(acute care or children's)

- Gross floor area between 20,000-5,000,000 sq ft?
- Number of licensed beds between 10-1,510?
- Number of floors between 1 and 40?

Hotel

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

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?

Page 4

Medical Office

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

Municipal Wastewater Treatment Plant

- 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?

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?
- Number of workers on main shift at least one?

Residence Hall/Dormitory

- Gross floor area between 1,000 sq ft?
- Operating hours between 30-168?
- Number of rooms at least five?

Retail Store

- Gross floor area at least 5,000 sq ft?
- Operating hours between 30-168?
- Number of registers at least one?
- Number of workers on main shift at least one?
- Does your building have an exterior public entrance?

Supermarket

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

Warehouse
(refrigerated or unrefrigerated)

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

Page 5

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

Bank/Financial Institution

- Zip code
- Number of rooms
- Gross floor area

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
(acute care and children's)

- Zip code
- Number of licensed beds
- Gross floor area
- Number of floors
- Presence or absence of tertiary care

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

Medical Office

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

Page 6

Municipal Waste Water Treatment Plant

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

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-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

Warehouse-refrigerated

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

Page 7

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:

Select your utility provider from the drop down menu.
**Note that you'll need to complete this step for both SCE and SCG*

Agree to the provider's terms of service by clicking the "I Agree" box.

You'll want to have your data collection sheet handy to reference the 10-digit account number and 8-digit meter, as well as the facility zip code. Enter this information in the appropriate field and move on to the next and final step.

On the Access Level page, you can choose what level of access your provider has to your Portfolio. For our purposes, select the second button, "Add new buildings, and update existing buildings in my portfolio."

You need to activate both the building and meter, so check the box next to the building and meter for which you are collecting history. Select continue and you'll go back to the ABS home screen.

And that's it—you're done! It will take the ABS system one business day to update your data, so be sure to check back in, but it will be there. Once your energy usage is in place you can generate a "statement of energy performance" report, which will include your current benchmarking rating.

Page 8

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.

1. My building has an SCE account that has been active for more than 12 months.
2. My building has an SCG account that has been active for more than 12 months.
3. My building is a single tenant in a single tenant building.
4. My building is not a campus.
5. My building is not used for agricultural or industrial purposes.
6. Looking at the building type criteria on pages three and four of this manual I can say that my building is intact, an office.
 - a. Gross floor area at least 5,000 sq ft? Yes! It's exactly 5,000 sq ft.
 - b. Operating hours between 30-168 hours per week? Yes, we operate 60 hours per week.
 - c. Number of personal computers at least one? Yes, we have 30.
 - d. Number of workers on main shift at least one? Yes, we have 17.
7. Okay, now that I know what type of building type I am using I need to gather my data.
 - a. Zip code- 93726
 - b. Gross floor area: well, luckily I know this from trying to determine my building type—5,000 sq ft
 - c. Weekly operating hours: again, already covered this, 60 hours per week.
 - d. Number of workers on main shift: it's almost too easy! There are 17 workers.
 - e. Number of personal computers: Ha—easy! 30 computers (I know, ridiculous compared to the number of employees!)
 - f. Percent of gross floor area that is air conditioned: A little tougher, but fortunately, this is an 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.
 - g. 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!

Page 9

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

Second, **get your team together!** You'll want the team to determine your effort strategy to support your goals. Some options might include:

No Cost

Low Cost

Awareness Campaign

Energy Audit

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 [R] 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)

Page 10

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

Page 11

getting from idea to implementation

maureen hoff, project coordinator—prior to project



- ✓ CISR forms
- ✓ Combined utility account data
- ✓ One-time clean up of account portfolio
- ✓ Created template for PM upload
- ✓ Assisted jurisdictions to identify building characteristics
- ✓ Created portfolio manager account for each partner

making use of benchmarking

“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

ensuring sustainability



QUESTIONS?

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