

US EPA ARCHIVE DOCUMENT



Benchmarking Wastewater Facilities in Portfolio Manager Metrics for Success

U.S. Environmental Protection Agency

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Cheryl McGovern



Learn more at energystar.gov

Metrics for Success



- **Introduction**
- **Goals and Metrics**
- **ENERGY STAR Portfolio Manager**
 - **Creating Views**
 - **Tracking, Reporting, Sharing**



What is ENERGY STAR?

- Mission: reduce greenhouse gas emissions through energy efficiency using metrics
- ENERGY STAR sets -
- Specifications and labeling for Products; Home Improvements; Buildings and Plants; and New Homes; 12 Sectors through testing and measuring – wastewater beta testing since 2008
- Energy saving guidelines, technology information, target setting, recommendations, and contractor lists

ENERGY STAR Impact

- Americans, using ENERGY STAR, saved enough energy in 2007 alone to avoid greenhouse gas emissions equivalent from 29 million cars — saving \$17 billion on their utility bills.
- 80,000 + buildings have been rated using Portfolio Manager: schools, hospitals, offices, etc. - Score of 75 is considered energy efficient
- Over 6,000 buildings have earned the ENERGY STAR

Why Metrics Matter


- How well are you doing?
- How do you know how well you are doing?
- How can you demonstrate to others how well you are doing?

**What gets measured gets managed;
...and...**

What gets managed gets DONE.

Set A Target With ENERGY STAR

If rating is below 69, you can set a percent energy reduction target

**PORTFOLIO MANAGER**ACCOUNT INFORMATIONCONTACTSFAQ FREQUENTLY ASKED QUESTIONSCONTACT USHELPLOGOUT

[Home](#) > [My Portfolio](#) > [ABC Elementary](#) > **Set Energy Performance Target**

Set Energy Performance Target

Portfolio Manager provides the ability to establish an energy performance target by either defining a target rating or a target reduction (%). The energy use and costs displayed reflect required levels to meet either the target rating or percent reduction goal for this facility.

To establish a performance target, a [Baseline Period](#) must first be set.

Select "RECALCULATE" to refresh this screen after making any changes to target rating or percent reduction. Select "SAVE" to store the entered targets in Portfolio Manager.

Baseline Period (12 Months Ending): 12/31/2006 Modify Baseline Period					
Target (1-100 Rating)	Baseline Rating (1-100)	Baseline Energy Use (kBtu/year)	Target Energy Use (kBtu/year)	Energy Cost Savings (\$/year)	Target Reduction (%)
<input checked="" type="radio"/> 69	47	2,333,817	1,914,136	\$12,325	<input type="radio"/> 18 %

What is Portfolio Manager?



An assessment tool: measures your facility's energy efficiency now and over time; benchmarks it compared to similar U.S. facilities, scores 1-100

Dashboard for WWTPs – monitor, track, change
www.energystar.gov/benchmark

Mirror that reflects your facility in a new light



Portfolio Manager



- ENERGY STAR Portfolio Manager - interactive online energy management tool, free, 24/7, any computer
- Get baseline of energy use/GHG emissions
- Get reports of current energy consumption/GHG emissions
- Get reports and have a vehicle to share information among facilities and within cities
- Set a simple target that is easy to measure

Background



- Regression analysis – energy use (all forms) per unit of water treated based on modeling work by Water Research Foundation in 2004
- Normalized for external factors
- Wastewater – results against model shows statistical significance at 90% confidence level – some issues
- Energy generated onsite may or may not be part of calculation but needs to be added to reflect true energy efficiency
- 70 different values available to track over time

Benefits of Portfolio Manager



- Sets baseline, current energy use and costs, tracks use as reduced/clean energy projects are completed
- See how your facility compares to similar U.S. facilities, get a score from 1-100 (100 most efficient, 50 being average) on energy efficiency, easy message to send rate payers, board members, etc. Watch score improve
- Get GHG emissions baseline, current emissions, emissions over time as reduced/clean energy projects. Watch emissions go down

More Benefits



- U.S. drinking water and wastewater systems spend about \$4 billion/ yr on energy to pump, treat, deliver, collect and clean water – at ratepayer and municipal expense.
- Nationwide, drinking water and wastewater systems use 75 billion kilowatt hours/ yr – as much as the pulp and paper, and petroleum industries combined (enough electricity to power 6.75 million homes/yr).
- Reducing energy and water at wastewater facilities can make a significant difference for the environment and for the pocket book

What Can WWTPs Do Now?

- Get your baseline, benchmark, and account
- Get an energy audit from USDOE's Industrial Assessment Centers, EPA
- Use EPA's 2008 Guidebook "Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities"
 - http://www.epa.gov/infrastructure/bettermanagement_energy.html
- Apply for SRF, DOE. PPA, State Public Purpose funds for energy efficiency and clean energy projects
- Create an Energy Team, Regional Partnerships

How to Get Benchmark

- Complete the Benchmarking Process
 - Log into Your Account (2 screens)
 - Enter Your Facility Information (8 screens)
 1. Zip Code
 2. Energy use for all fuel types – monthly for 16 months
 3. Average Daily Influent Flow
 4. Average Influent BOD and Effluent BOD – averaged over 12 months (mg/l)
 5. Plant Design Capacity – treatment design – mgd
 6. Fixed Film Trickle Filtration Process (y/n)
 7. Nutrient Removal (y/n)

Setting up Your Home Page

- Viewing Your Data – CREATE A VIEW

The screenshot displays the Energy Star Portfolio Manager interface for a facility named 'space1'. The page includes a navigation menu, a facility summary, general information, and a performance table.

PORTFOLIO MANAGER
[Home](#) > [My Portfolio](#) > **space1**

Facility Summary: **space1**
[How do I use this page?](#)

Building ID: 1613627
 Level of Access: Building Administrator

Electric Distribution Utility: Pacific Gas & Electric Co
 Regional Power Grid: [WECC California](#)
[Select my Power Generation Plant](#) to calculate my electric emissions rate
 Electric Emissions Rate (kgCO₂e/MBtu): 95.2 ([what is this?](#))

[Generate a Statement of Energy Performance](#) for uses other than applying for the ENERGY STAR.

General Information [Edit](#)

Address: 75 Hawthorne Street
 San Francisco, CA 94105

Year Built: 1990

Property Type: Water Utility/Wastewater Plant

Baseline Rating: 100 | **Current Rating: 100**

Eligibility for the ENERGY STAR

Not Eligible: Water Management Facilities are not eligible to apply for the Energy Star

Facility Performance [Set Baseline Period](#) | [Set Energy Performance Target](#)

Select View: Performance: Environmental [Create View](#) | [Edit View](#)

12 Months Ending	Current Rating (1-100)	Current Source Energy Intensity (kBtu/Sq. Ft.)	Change from Baseline: Adjusted Energy Use (%)	Change from Baseline: GHG Emissions (MtCO ₂ e)
December 2007 (Current)	100	N/A	N/A	0.00
Select Date		N/A		

Change

[REFRESH VIEW](#)

Space Use

Space Name	Space Type	Average Influent Flow	Alerts

General Facility Administration
[Track](#) Energy Performance Improvements
[Delete](#) this Facility from Portfolio Manager
[Contact](#) us

Pick Seven Metrics to Track

ENERGY STAR **PORTFOLIO MANAGER** ACCOUNT INFORMATION CONTACTS FAQ FREQUENTLY ASKED QUESTIONS CONTACT US HELP LOGOUT

Home > My Portfolio > Create New View

Create New View

[How do I use this page?](#)

Number of Facilities to display on each page:
 25 50 100 All (note: larger Portfolios will take longer to load)

To create/edit a custom View of your Facilities in Portfolio Manager, select **up to 7** columns from the list below. Use "Preferred Column Order" to set the order in which they will display in the View.

View Name:	main	Set this View as My Portfolio Default:	<input type="checkbox"/>
Preferred Column Order	Facility Data	Preferred Column Order	Facility Data
ENERGY STAR Rating		Water	
1	Baseline Rating (1-100)		Indoor Water Cost (US Dollars (\$))
2	Current Rating (1-100)		Indoor Water Use (kGal)
	Target Rating (1-100) (N/A for Campuses)		Indoor Water Use per Sq. Ft. (kGal)
Period Ending Dates			Outdoor Water Cost (US Dollars (\$))
	Baseline Energy Period Ending Date		Outdoor Water Use (kGal)
3	Current Energy Period Ending Date		Total Indoor and Outdoor Water Cost (US Dollars (\$))
	Water Use Period Ending		Total Indoor and Outdoor Water Use (kGal)
Site Energy			Wastewater/Sewer Cost (US Dollars (\$))
	Baseline Site Electric Use (kWh)		Wastewater/Sewer Use (kGal)
	Baseline Site Energy Intensity (kBtu/Sq. Ft.)		Water Use Alerts (N/A for Campuses)

You Can Create/Track Different Metric Views

Source Energy		Performance: GHG Emissions	
<input type="checkbox"/>	Baseline Site Electric Use (kWh)	<input type="checkbox"/>	Water Use Alerts (N/A for Campuses)
<input type="checkbox"/>	Baseline Site Energy Intensity (kBtu/Sq. Ft.)	Performance: GHG Emissions	
<input type="checkbox"/>	Baseline Site Natural Gas Use (therms)	<input type="checkbox"/>	Baseline Direct GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Baseline Total Site Energy Use (kBtu)	<input type="checkbox"/>	Baseline Indirect GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Current Site Electric Use (kWh)	<input type="checkbox"/>	Baseline Total GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Current Site Energy Intensity (kBtu/Sq. Ft.)	<input type="checkbox"/>	Change from Baseline: GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Current Site Natural Gas Use (therms)	<input type="checkbox"/>	Current Direct GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Current Total Site Energy Use (kBtu)	<input type="checkbox"/>	Current Indirect GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	National Average Site EUI (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	Current Total GHG Emissions (MtCO ₂ e)
<input type="checkbox"/>	Target Site Energy Intensity (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	5
Source Energy		Building Characteristics	
<input type="checkbox"/>	% Difference from National Average Source EUI (N/A for Campuses)	<input type="checkbox"/>	Number of Students (N/A for Campuses)
<input type="checkbox"/>	Baseline Source Energy Intensity (kBtu/Sq. Ft.)	<input type="checkbox"/>	Number of Workers on Main Shift (N/A for Campuses)
<input type="checkbox"/>	Baseline Weather Normalized Source Energy Intensity (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	Total Floor Space (Sq. Ft.)
<input type="checkbox"/>	Current Source Energy Intensity (kBtu/Sq. Ft.)	Energy and Environmental Reduction	
<input type="checkbox"/>	Current Weather Normalized Source Energy Intensity (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	Change from Baseline: Adjusted Energy Use (kBtu)
<input type="checkbox"/>	National Average Source EUI (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	Change from Baseline: Adjusted Energy Use (%)
Financial Indicators		<input type="checkbox"/>	Change from Baseline: Adjusted Energy Use Intensity (kBtu/Sq. Ft.)
<input type="checkbox"/>	4	<input type="checkbox"/>	Change from Baseline: Energy Use (kBtu) (N/A for Campuses)
<input type="checkbox"/>	Annual Energy Cost (US Dollars (\$))	<input type="checkbox"/>	Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.) (N/A for Campuses)
Financial Indicators		Water Utilities and Wastewater Treatment Facilities	
<input type="checkbox"/>	Annual Energy Cost (US Dollars (\$))	<input type="checkbox"/>	% Difference from National Average Source EUI (N/A for Campuses)

Name The View

Financial Indicators		Water Utilities and Wastewater Treatment Facilities	
<input type="checkbox"/>	(N/A for Campuses) National Average Source EUI (kBtu/Sq. Ft.) (N/A for Campuses)	<input type="checkbox"/>	(N/A for Campuses) Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.) (N/A for Campuses)
<input type="checkbox"/>	4 Annual Energy Cost (US Dollars (\$))	<input type="checkbox"/>	% Difference from National Average Source EUI (N/A for Campuses)
<input type="checkbox"/>	Cumulative Investment in Facility Upgrades (US Dollars (\$)) (N/A for Campuses)	<input type="checkbox"/>	Average Flow (MGD) (N/A for Campuses)
<input type="checkbox"/>	Cumulative Investment per Sq. Ft. (US Dollars (\$)) (N/A for Campuses)	<input type="checkbox"/>	Baseline Site Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Total Energy Cost per Sq. Ft. (US Dollars (\$))	<input type="checkbox"/>	7 Baseline Source Energy per Flow (kBtu/MGD)
Organizational Descriptors		<input type="checkbox"/>	Baseline Weather Normalized Source Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Building Owner (N/A for Campuses)	<input type="checkbox"/>	Current Site Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Building Profile Status (N/A for Campuses)	<input type="checkbox"/>	Current Source Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Building Type	<input type="checkbox"/>	6 Current Weather Normalized Source Energy per Flow (kBtu/MGD)
<input type="checkbox"/>	City	<input type="checkbox"/>	Effluent BOD5 (mg/l) (N/A for Campuses)
<input type="checkbox"/>	County	<input type="checkbox"/>	Influent BOD5 (mg/l) (N/A for Campuses)
<input type="checkbox"/>	Last Modified	<input type="checkbox"/>	National Average Site EUI (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Service and Product Provider (N/A for Campuses)	<input type="checkbox"/>	National Average Source EUI (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Shared By (N/A for Campuses)	ENERGY STAR Application Information	
<input type="checkbox"/>	State	<input type="checkbox"/>	Eligibility for the ENERGY STAR (N/A for Campuses)
<input type="checkbox"/>	ZIP Code	<input type="checkbox"/>	ENERGY STAR Application Status (N/A for Campuses)
		<input type="checkbox"/>	Energy Use Alerts

That's It!

Organizational Descriptors	
<input type="checkbox"/>	Building Owner (N/A for Campuses)
<input type="checkbox"/>	Building Profile Status (N/A for Campuses)
<input type="checkbox"/>	Building Type
<input type="checkbox"/>	City
<input type="checkbox"/>	County
<input type="checkbox"/>	Last Modified
<input type="checkbox"/>	Service and Product Provider (N/A for Campuses)
<input type="checkbox"/>	Shared By (N/A for Campuses)
<input type="checkbox"/>	State
<input type="checkbox"/>	ZIP Code

<input type="checkbox"/>	Baseline Site Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Baseline Source Energy per Flow (kBtu/MGD)
<input type="checkbox"/>	Baseline Weather Normalized Source Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Current Site Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Current Source Energy per Flow (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	Current Weather Normalized Source Energy per Flow (kBtu/MGD)
<input type="checkbox"/>	Effluent BOD5 (mg/l) (N/A for Campuses)
<input type="checkbox"/>	Influent BOD5 (mg/l) (N/A for Campuses)
<input type="checkbox"/>	National Average Site EUI (kBtu/MGD) (N/A for Campuses)
<input type="checkbox"/>	National Average Source EUI (kBtu/MGD) (N/A for Campuses)
ENERGY STAR Application Information	
<input type="checkbox"/>	Eligibility for the ENERGY STAR (N/A for Campuses)
<input type="checkbox"/>	ENERGY STAR Application Status (N/A for Campuses)
<input type="checkbox"/>	Energy Use Alerts (N/A for Campuses)
<input type="checkbox"/>	Full Year
<input type="checkbox"/>	Space Use Alerts (N/A for Campuses)

Reports

- Three Ways To Get Reports
 1. From My Portfolio – Request Energy Performance Report
 2. From the Facility Summary Screen
Generate a Statement of Energy Performance
 3. From My Portfolio – Download View Data into Excel
 - Create different views of different data you want to capture in Excel and download

Request Energy Performance Report

Portfolio Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Word Pad Internet Explorer

Address <https://www.energystar.gov/istar/pmpam/index.cfm?fuseaction=epreport.showEPRCriteria> Go Links >>

business day.

REQUIRED

Energy Performance Report Criteria

* Please select the type of report:

Summary for year ending: Month

Comparative for year ending: Month to year ending: Month

Partner of the Year comparative for year ending: Month

* Please select the facilities:

All facilities in my portfolio

Group:

I'll choose specific facilities from my portfolio

Select a facility location (optional):

State:

Or

Zip Code:

* Please select at least one report column:

Site Energy Intensity (kBtu/Sq.Ft.)

Weather Normalized Source Energy Intensity (kBtu/Sq.Ft.)

Site Electric Use (kWh)

Site Natural Gas Use (Therms)

CANCEL CONTINUE

Done

Start Cheryl McGovern... E:\Climate Chang... C:\Documents an... 3 Microsoft Offi... 1.28.09Benchma... Print Screen of g... Portfolio Mana... 4:32 PM

Generate a Statement of Energy Performance

Portfolio Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <https://www.energystar.gov/istar/pmpam/index.cfm?fuseaction=sep.showSummaryReportDateSelect> Go Links >>

The document can be read using Adobe Acrobat reader. If you do not have the free reader, you can download it from the [Adobe Web site](#).

Use this statement as appropriate to document your facility's energy performance for important activities such as:

- LEED for Existing Buildings (LEED-EB) applications
- Mortgage, sale, and/or lease transactions
- Energy service company performance contracts
- Tenant/owner/customer communications

PLEASE NOTE: NOT FOR USE WHEN APPLYING FOR THE ENERGY STAR. [Learn more](#) about applying for the ENERGY STAR.

REQUIRED

Indicate the Period Ending Date for which to Generate this Statement

*Period Ending Date:

Optional Contact Information:

Select the Organization that owns this facility:

Select the Primary Point of Contact for this statement:

Select the Certifying Professional for this statement:

[Add/Edit Contacts and Organizations](#)

Report Options:

* Select one or more of the following options:

- Statement of Energy Performance (for uses other than applying for the ENERGY STAR)
- Data Checklist
- Facility Summary

Done

Start Cheryl McGov... E:\Climate Ch... C:\Document... 3 Microsoft ... 1.28.09Bench... Print Screen o... ESPM Report ... Portfolio Ma... 4:38 PM

Download Data To Excel

- Select Option to Download From P M

Current Energy Period Ending Date	Current Total Site Energy Use (kBtu)
	<u>N/A</u>
3/31/2009	3,758,294.71
4/30/2009	20,547,828.29
4/30/2009	19,827,873.49
4/30/2009	7,611,142.20
11/30/2008	6,355,266.26
12/31/2008	79,743,751.88
12/31/2008	<u>N/A</u>
	<u>N/A</u>
4/30/2009	<u>N/A</u>
12/31/2008	<u>N/A</u>
	<u>N/A</u>
4/30/2009	404,858,507.04
4/30/2009	<u>N/A</u>
10/31/2008	51,689,705.03
	<u>N/A</u>
2/28/2009	114,547,268.16
3/31/2009	70,255,476.59
	<u>N/A</u>
2/28/2009	21,489,194.83
3/31/2009	25,376,604.67

(1)

Sharing Facilities

The Master Accounts feature allows master users to track progress of their constituents, such as local governments,

Home > My Portfolio

Group Averages	
Baseline Rating: 100 Facilities Included: 1	Current Rating: 100 Facilities Included: 2
Group Adjusted Percent Energy Reduction: 0% Facilities Included: 1	
Averages are weighted by Total Floor Space. More about Baselines More about Adjusted Percent Energy Reduction	

[Add](#) a Property

Work with Facilities

[Import](#) Facility Data Using Templates

[Update](#) Multiple Meters

[Share](#) Facilities

[Request](#) Energy Performance Report

Apply for Recognition

[Apply](#) for the ENERGY STAR

[ENERGY STAR Leaders](#)

GROUP: East Campus Cluster [Create Group](#) | [Edit Group](#) | [View All](#)

VIEW: General [Create View](#) | [Edit View](#) | [View All](#)

[Download](#) in Excel

Search Facility Name:

Results 1 - 3 of 3

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)	Current Site Electric Use (kWh (thousand Watt-hours))	Current Site Energy Intensity (kBtu/Sq. Ft.)	National Average Site EUI (kBtu/Sq. Ft.)	CO2 Reduced (pounds)	Number of Occupants	Total Floor Space (Sq. Ft.)
Best Building	100	86,000.0	2.1	62.7	0.00	0	141,000
Charles Building	100	106,050.0	3.6	71.8	0.00	0	100,000
Sample Facility	N/A	189,100.0	38.0	77.0	0.00	0	17,000

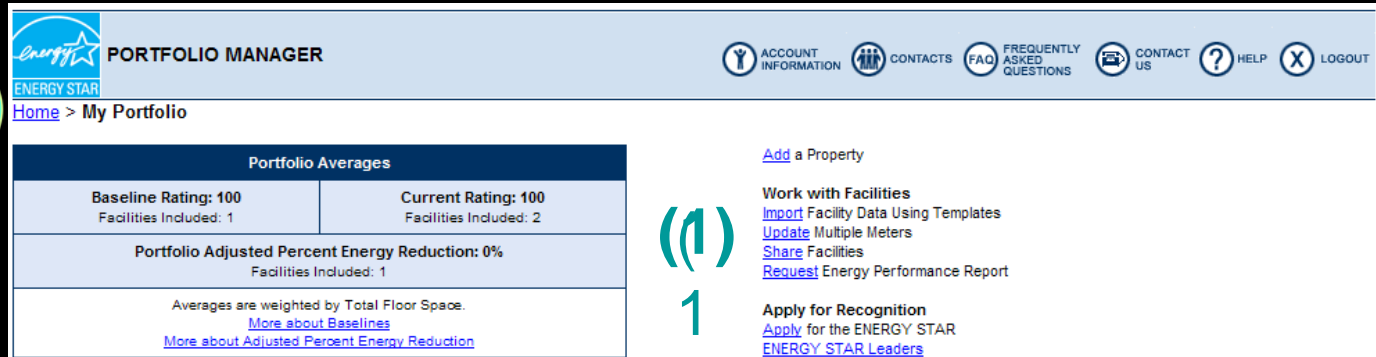
[Download](#) in Excel

Search Facility Name:

Results 1 - 3 of 3

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

Sharing Facilities (Continued)



PORTFOLIO MANAGER

Home > My Portfolio

Portfolio Averages	
Baseline Rating: 100 Facilities Included: 1	Current Rating: 100 Facilities Included: 2
Portfolio Adjusted Percent Energy Reduction: 0% Facilities Included: 1	
Averages are weighted by Total Floor Space. More about Baselines More about Adjusted Percent Energy Reduction	

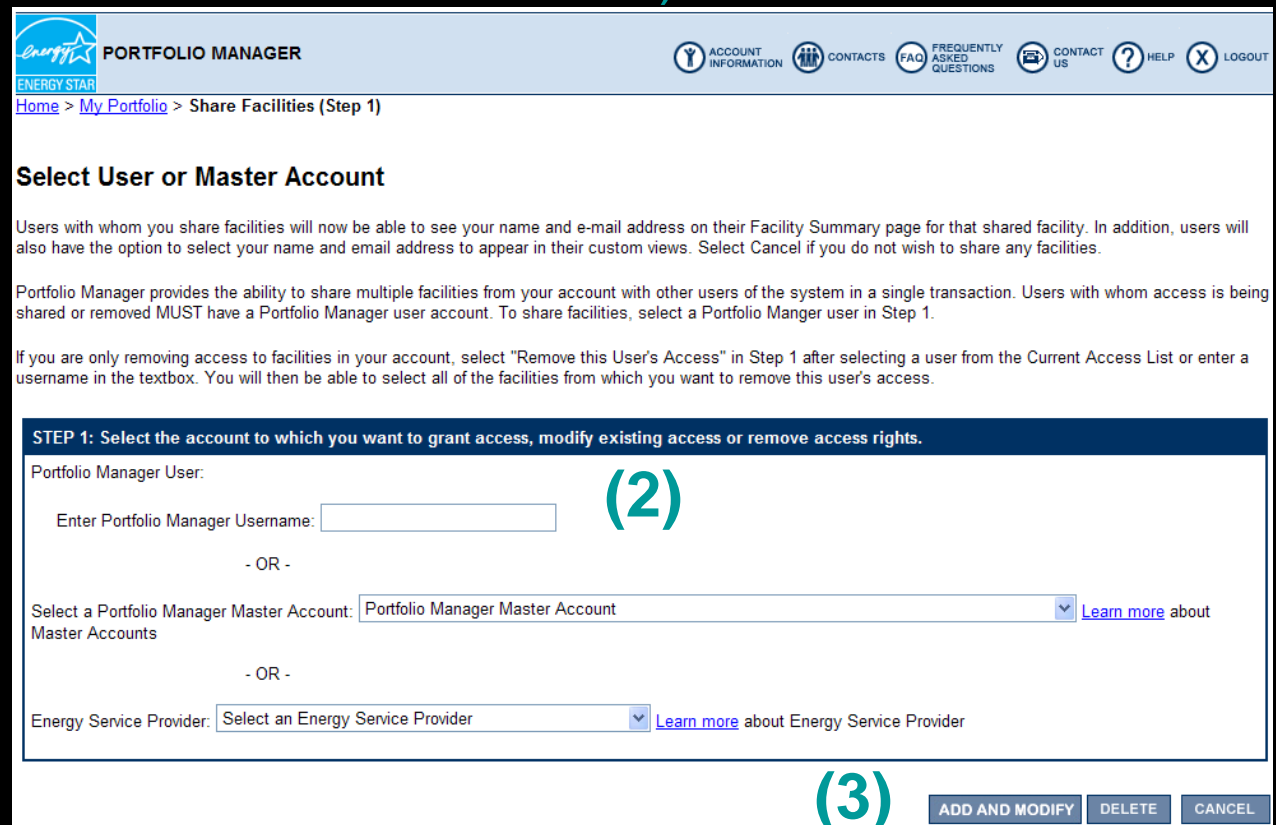
[Add a Property](#)

Work with Facilities

- [Import](#) Facility Data Using Templates
- [Update](#) Multiple Meters
- [Share](#) Facilities
- [Request](#) Energy Performance Report

Apply for Recognition

- [Apply](#) for the ENERGY STAR ENERGY STAR Leaders



PORTFOLIO MANAGER

Home > My Portfolio > Share Facilities (Step 1)

Select User or Master Account

Users with whom you share facilities will now be able to see your name and e-mail address on their Facility Summary page for that shared facility. In addition, users will also have the option to select your name and email address to appear in their custom views. Select Cancel if you do not wish to share any facilities.

Portfolio Manager provides the ability to share multiple facilities from your account with other users of the system in a single transaction. Users with whom access is being shared or removed MUST have a Portfolio Manager user account. To share facilities, select a Portfolio Manger user in Step 1.

If you are only removing access to facilities in your account, select "Remove this User's Access" in Step 1 after selecting a user from the Current Access List or enter a username in the textbox. You will then be able to select all of the facilities from which you want to remove this user's access.

STEP 1: Select the account to which you want to grant access, modify existing access or remove access rights.

Portfolio Manager User:

Enter Portfolio Manager Username:

- OR -

Select a Portfolio Manager Master Account: [Learn more](#) about Master Accounts

- OR -

Energy Service Provider: [Learn more](#) about Energy Service Provider

(3)

(1) In My Portfolio, click on "Share Facilities"

(2) Type in Portfolio Manager User Name

or

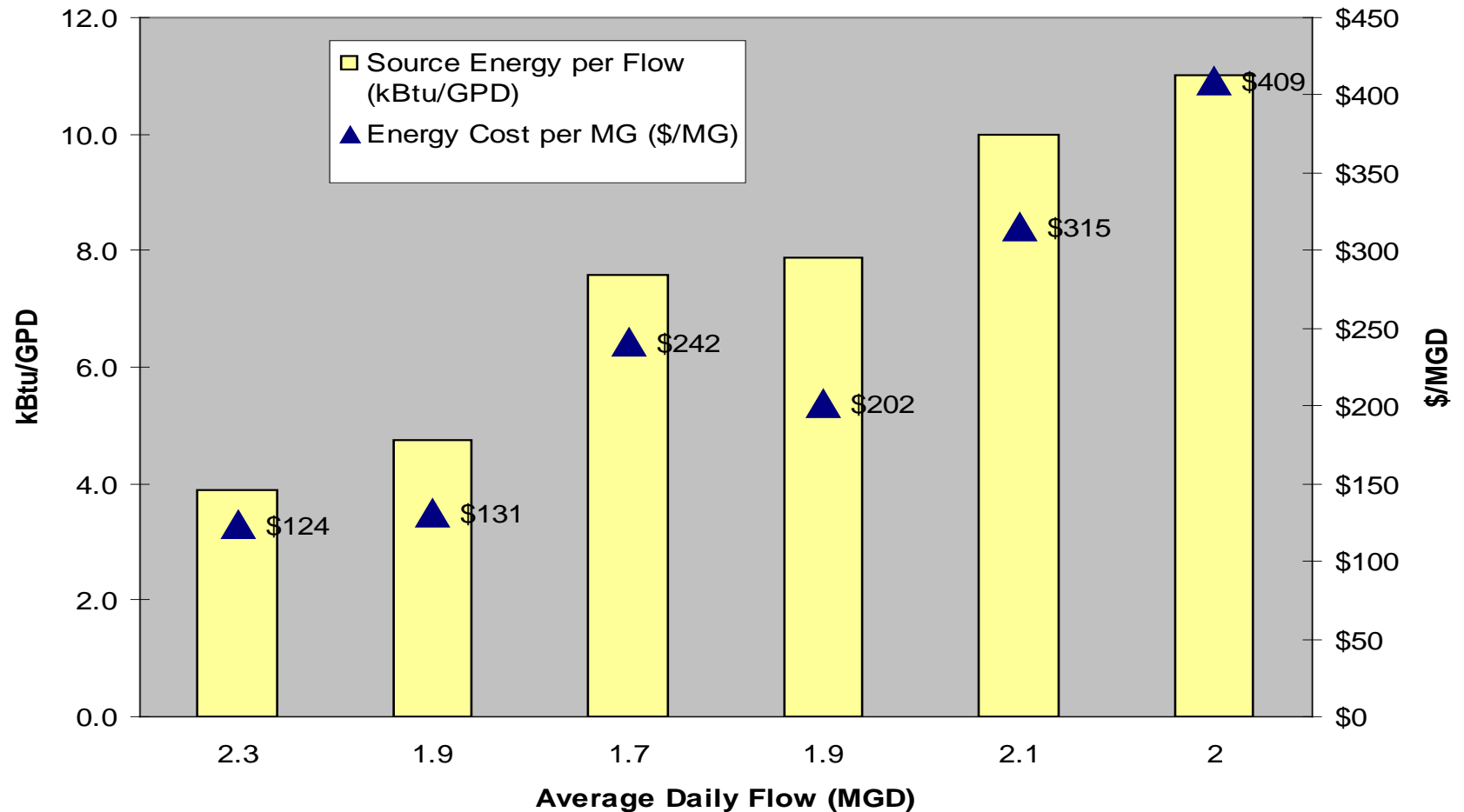
(2) Select a Portfolio Manager Master Account from the drop down menu

(3) Click "Add and Modify"

Energy Use at 6 Similar Plants

Energy Use and Cost vs Flow at similar sized plants

FY 2006 data



Identify and Move Toward Best Practices

**The metric isn't the destination,
Just the mile marker...**

**A hint that potential
Improvements exists.**

Still need to figure out where to go

- Apply expertise
- Investigate systems
- Devise and implement changes
- Assess performance



Contact Information

www.energystar.gov

buildings@energystar.gov

contacts:

Cheryl McGovern, EPA Region 9

mcgovern.cheryl@epa.gov

(415) 972-3415

www.epa.gov/region09/waterinfrastructure