Rebuild Hawaii

"Qualifying Energy Star Buildings"

By: Darren Kimura, CEM – Energy Industries

(With slide credits to Mr. Sam Rashkin, National Director EPA Energy Star Program)

ENERGY™ INDUSTRIES

Program History

- 1991 – Green Lights Program Introduced
- 1995 – Green Lights merged into Energy Star Buildings Program
- 1997 – Manufactured Homes Added
- 1999 – Office Buildings Added
- 2000 – Portfolio Manager Introduced
- 2001 – Acute care hospitals Added
- 2003 – New Homes Added
- 2004 – New Commercial Construction Included

A long history and the program gets better every year!

What is Energy Star

"A government program helping businesses protect the environment through energy efficiency"

- Appliances

  Washers – Ceiling Fans – Furnaces - Dishwashers – Audio Systems – Televisions – Fax Machines – Monitors – Lighting – Transformers – Refrigerators – Commercial Kitchen- A/C - Heat Pumps

- Homes

- Buildings

Recognized as the national symbol for superior energy performance.

Marketing Programs – Partner Companies – Rebates – Energy Guidelines

www.energystar.gov

(slide credit to Mr. Sam Rashkin, National Director EPA Energy Star Program)

Question

Is 10 MPG high or low for an automobile?

Answer: Common Knowledge

Is 80 kBtu/SF/YR high or low for a building?

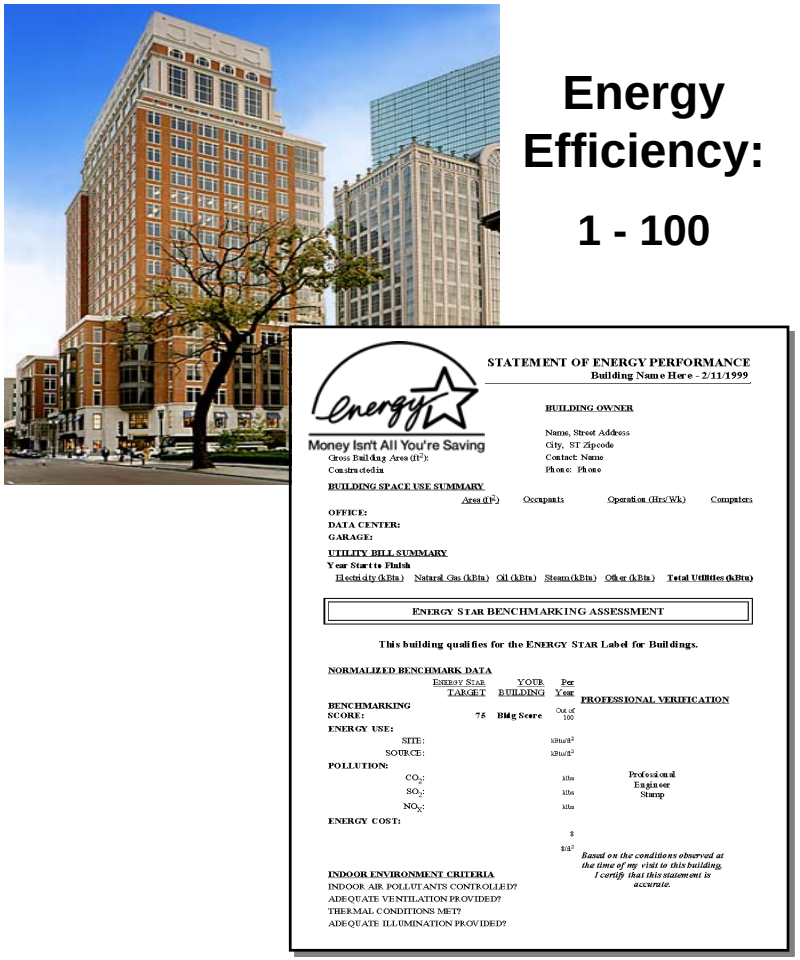
Answer: Even some facility experts don't know

(slide credit to Mr. Sam Rashkin, National Director EPA Energy Star Program)

Energy Rating System = Benchmark

Fuel Efficiency:

MPG



Energy Efficiency:

1 - 100

(slide credit to Mr. Sam Rashkin, National Director EPA Energy Star Program)

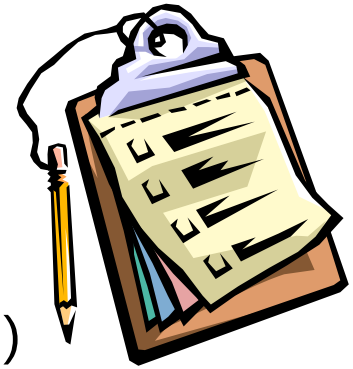
Encouragement for all users!

- Go for Qualification
  1. Lighting Retrofits
  2. Window Film
  3. Efficient and relatively New chillers
  4. VFDs
  5. Digital Programmable Thermostats
  6. Energy Management Systems
  7. Efficient Pumping

- Energy Information
  1. A great tool to help you achieve your energy goals.
  2. A good metric to use against competitive buildings across the country
  3. A good program which can help overcome General Manager/CFO objections

If you have a building – you should be using the program!

Prepare (around 30 minutes)

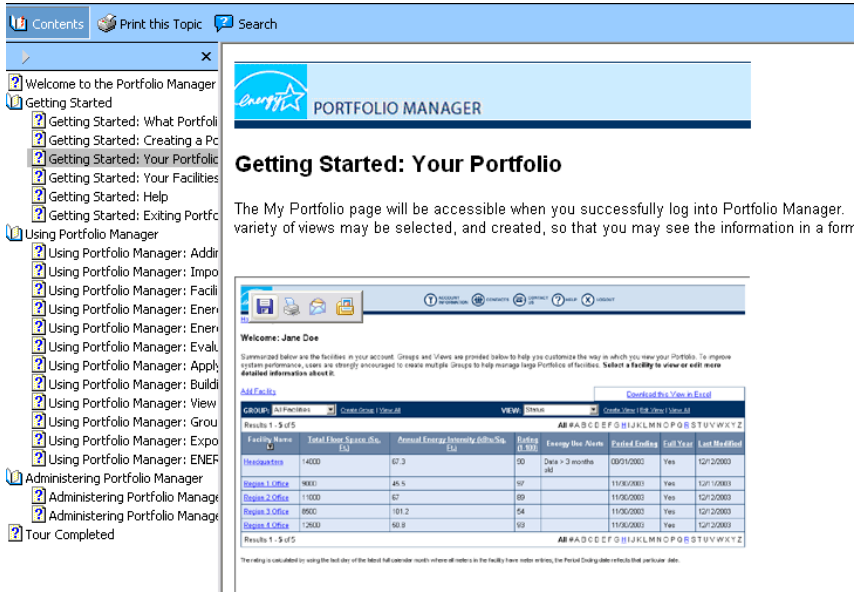


1. Gather facility information
   - Who owns building?
   - Who are the major tenants?
2. Have building wide support for this project
   - Education - Presentations
3. Gather ALL your energy meter bills - (cost/month)
   - Must have CURRENT statements and at least 12 months of total bills
   - Include all energy - electricity, Steam, Propane, LPG, Diesel
4. Know the REAL square footage of covered space
   - Know the load and coverage of each meter
   - Building functions (office, parking garage)
   - Layout the meters to the loads
5. Have a budget a licensed professional engineer will need to be hired.
6. Give yourself a little over an hour of uninterrupted data entry time
7. Have a high speed connection and a relatively reliable computer with printer
8. Enter into the Portfolio tool w/ the intention to PRACTICE first!
9. Or outsource the entire process

Go to: www.energystar.gov

The Benchmark Tool = Portfolio Manager

- The Portfolio Manager is an online tool
- Do the tutorial (5 Minutes) https://www.energystar.gov/istar/pmpam/help/Portfolio%20Manager%20Tour/Portfolio_Manager_Tour.htm



Portfolio Manager – Front Page – 1 Hour (Graphical User Interface)

PORTFOLIO MANAGER

ACCOUNT INFORMATION | CONTACTS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > **Energy Industries**

Facility Summary: **Energy Industries**

How do I use this page?

Building ID: 1067610
Level of Access: Building Administrator

1

General Information Edit

Address: 2660 Waiwai Loop
Honolulu, HI 96819

Year Built: 1980

Baseline Rating: N/A | **Current Rating:** N/A

4

Facility Performance Set Baseline Period | Set Energy Performance Target

Select View: Facility Performance Create View | Edit View

12 Months Ending	Actual Annual Energy Intensity (kBtu/Sq. Ft.)	Annual Energy Cost (US Dollars ($))	Rating (1-100)	Target Rating	Annual Energy Intensity (for Avg. Rating of 50) (kBtu/Sq. Ft.)
January Year	0.0	$44,000.00	N/A	N/A	0.0
February Year	0.0	$40,000.00	N/A	N/A	0.0

REFRESH VIEW

2

Space Use Add Space

Space Name	Space Type	Floor Area (Sq. Ft.)	% Floor Area	Alerts	
No Space Defined					

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

3

Energy Meters Add Meter | Download all Meter Data (Excel)

Meter Name	Energy Type	Space(s)	Last Meter Entry (End Date)	Alerts	
HECO METER #1	Electricity (kWh (thousand Watt-hours))	Entire Facility	12/31/2004	Data > 120 days old. more	Delete Meter

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

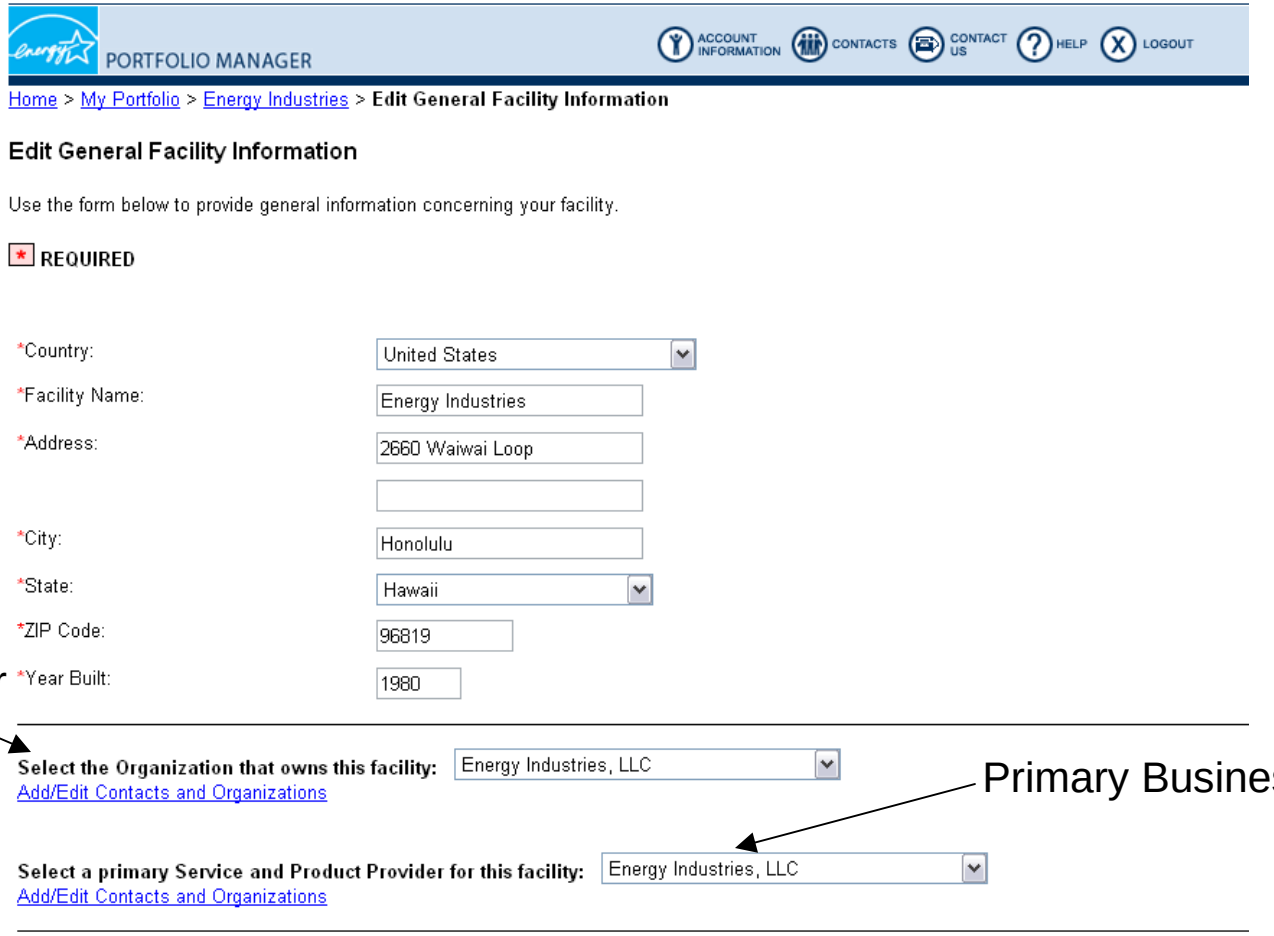
Sharing Data
Add user to share this Facility
Modify list of users
Transfer Facility to another user
View entire Access List for this Facility

Statement of Energy Performance
Generate a Statement of Energy Performance
View Statement of Energy Performance

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

Labeled Building Profiles
Create New/Update Approved Published Building Profile
Edit Draft Building Profile
View status of Building Profiles
Create/Edit Building Profile Accounts

Step 1: Define a Facility



Building Owner

Primary Business

Step 2: Add a Space

Some buildings will need to add several layers of spaces

PORTFOLIO MANAGER

ACCOUNT INFORMATION | CONTACTS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > Energy Industries > **Add a Facility Space**

Add a Facility Space: Offices

Values entered are used to generate a 1-to-100 rating of the facility's energy performance. As a convenience to Portfolio Manager users, default values for certain Facility characteristics which may not be known are provided. This feature enables estimated energy performance ratings to be calculated.

Please note: Using default values will not overwrite data that you have entered, however, while using the default values, your data will not be used in Space Use and Facility Performance calculations.

* REQUIRED

Space Name: Offices

*Required for Benchmarking What is this?

Space Attribute	Value	Use Default Value	Units	Effective Date (when this Attribute Value was first true) What is this? (MM/DD/YYYY)
*Gross Floor Area	2,000	N/A	Sq. Ft.	01/01/1980
*Occupants	17	☐	No Units	01/01/1980
*Number of PCs	17	☐	No Units	01/01/1980
*Operating Hours/Week	40	☐	Hours	01/01/1980

CANCEL SAVE

A Facility Space Must Know…

Select Facility Space Type:	
Space Type	**Description**
◉ Office (General)	Building space used for general office, professional, and administrative purposes. The majority of commercial U.S. office buildings fall within this category. Floor area for all supporting functions, such as staff cafeterias, lobbies, stairways, elevator shafts, etc. should be included in the total. Minimum total building size for this building type is 5,000 square feet.
○ Office (Bank Branch)	Building space between 1,000 square feet and 20,000 square feet in gross building size which is used for bank branch office purposes. Floor area for all supporting functions, such as staff cafeterias, lobbies, stairways, elevator shafts, etc. should be included in the total.
○ Office (Courthouse)	Building space used for Federal, state, or local courts and associated office space. Floor area for all supporting functions, such as staff cafeterias, lobbies, stairways, elevator shafts, etc. should be included in the total. Minimum total building size for this building type is 5,000 square feet.
○ Office (Financial Center)	Building space at least 20,000 square feet in building size which is primarily used as a financial center. Relevant businesses include bank headquarters, securities and brokerage firms. Floor area for all supporting functions, such as staff cafeterias, lobbies, stairways, elevator shafts, etc. should be included in the total.

Enter into the correct class before hand
because you'll lose data if having to go backwards

Step 3: Add a meter or meters

PORTFOLIO MANAGER

ACCOUNT INFORMATION | CONTACTS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > Energy Industries > **Add Meter**

Add Meter

* REQUIRED

*Enter Meter Name: HECO METER #1

*Apply this meter to the following (check all that apply):

- [x] Entire facility
- [ ] Offices

Select the Meter Type:

*Energy Type: Electricity

*Units: kWh (thousand Watt-hours)

Add this Meter to Total Facility Energy Use?

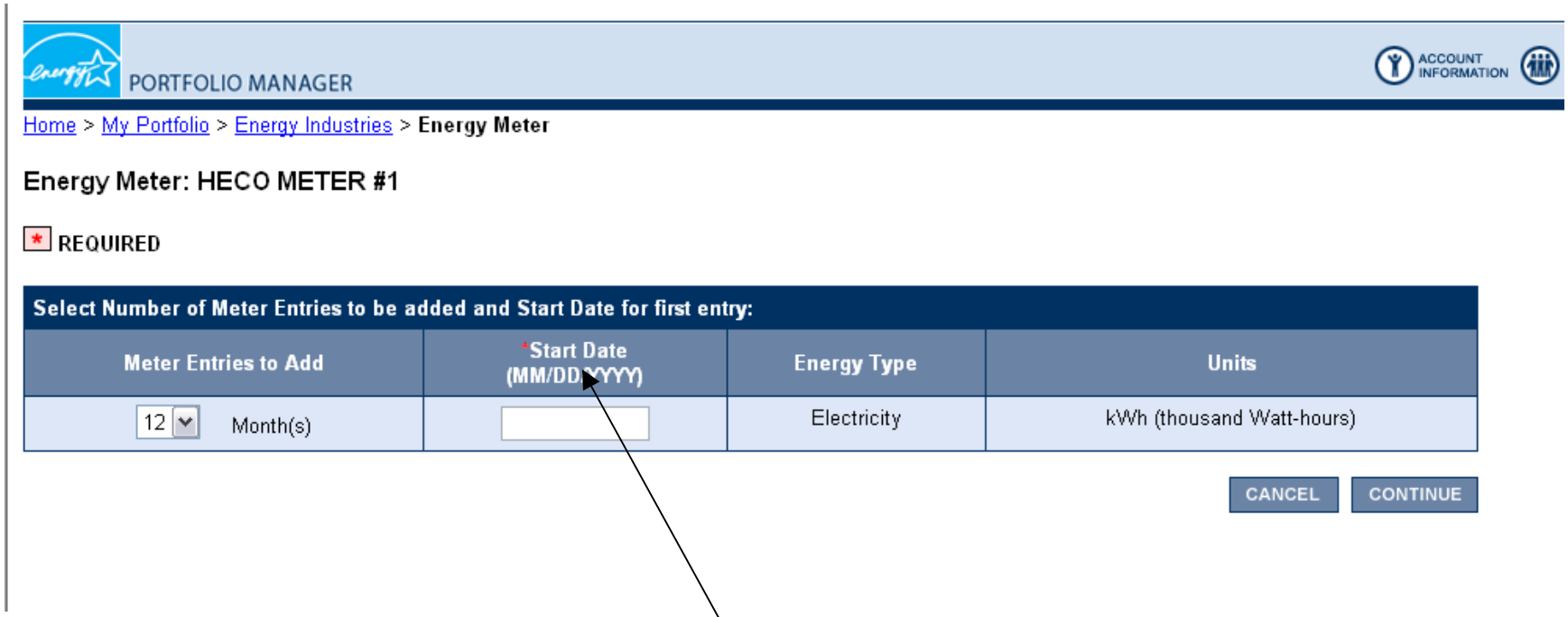
- (•) Yes, calculate this facility's total energy use by including this meter
- ( ) No, adding this meter to this facility's total energy use will inflate the actual value

Is this meter currently active?

(•) Yes ( ) No

CANCEL SAVE

Meter Tip



TIP: Start date of the meter data info
Example 6/15/2004

Portfolio Manager: Meters

Error! Must be current dates (not greater than 65 days)

PORTFOLIO MANAGER

ACCOUNT INFORMATION | CONTACTS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > Energy Industries > **Add Energy Use**

Energy Meter: HECO METER #1

Use the form below to add each unique meter entry for this particular meter. Portfolio Manager requires that entries be for consecutive time periods. The system will allow one day of overlap or one day of gap to exist between meter entries. Any additional overlaps or gaps will not allow Portfolio Manager to provide a rating using this Meter. Please note: if you are accounting for "sold" energy, indicate this by entering a negative energy use for the appropriate time period.

Meter Information

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

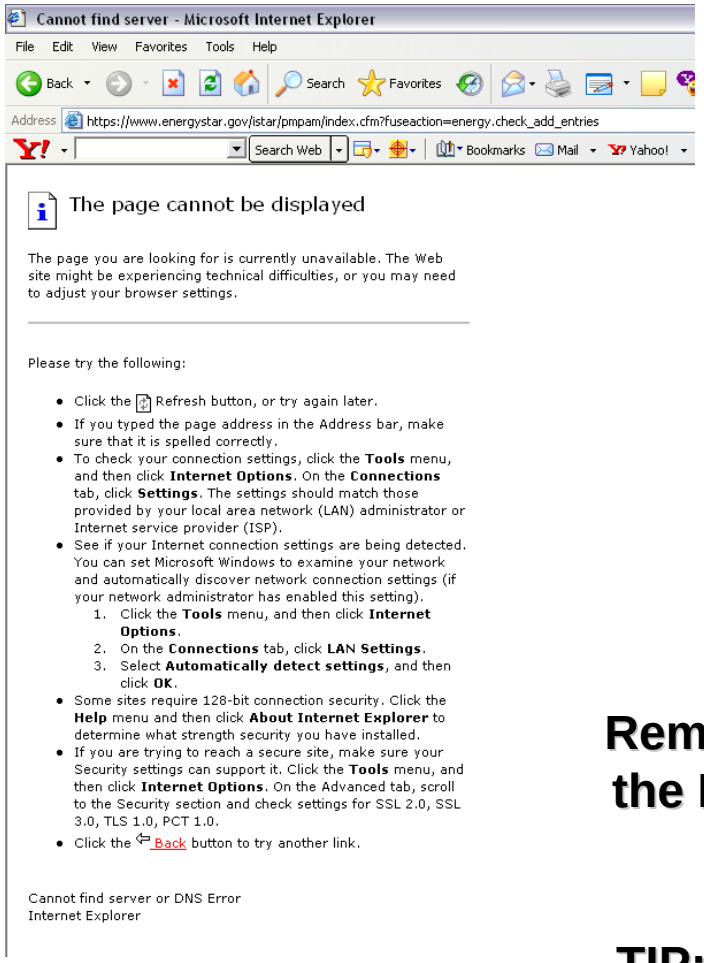
Add Energy Use:

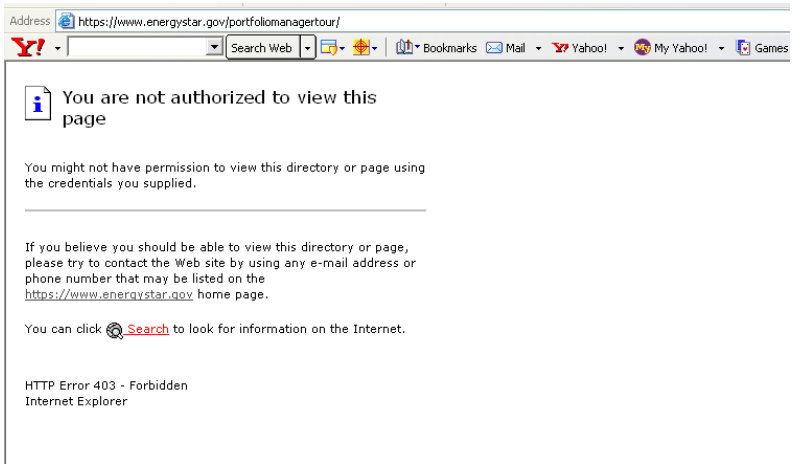
Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)
01/01/2004	01/31/2004		$
02/01/2004	02/29/2004		$
03/01/2004	03/31/2004		$
04/01/2004	04/30/2004		$
05/01/2004	05/31/2004		$
06/01/2004	06/30/2004		$
07/01/2004	07/31/2004		$
08/01/2004	08/31/2004		$
09/01/2004	09/30/2004		$
10/01/2004	10/31/2004		$
11/01/2004	11/30/2004		$
12/01/2004	12/31/2004		$

CANCEL SAVE

While this is optional it's wise to enter as much data you can now as this will help energy information

Errors!



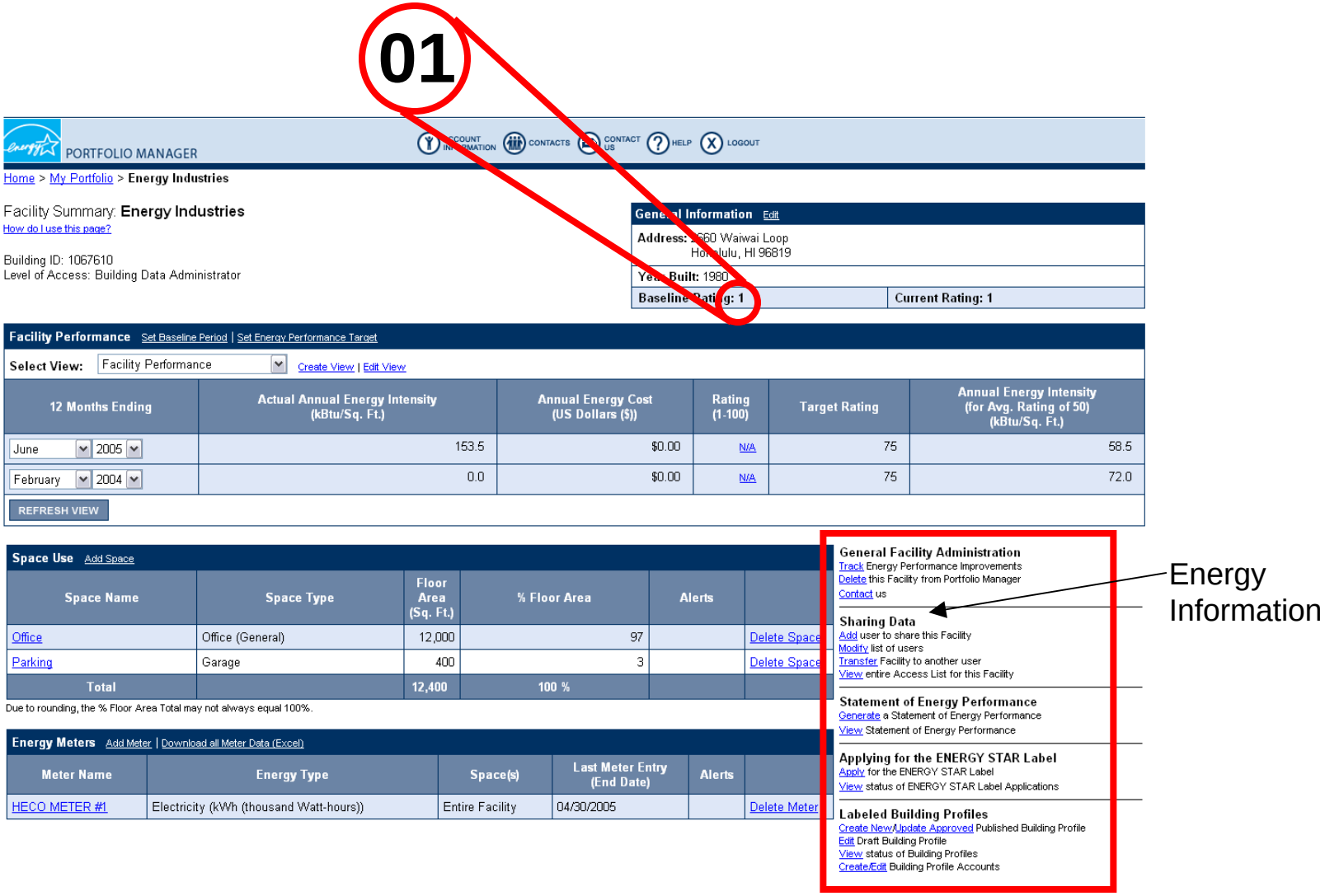


go back to previous screen
Or go back to (GUI).

Remember we're in Hawaii and the server is on the East Coast to the updates can occur in the middle of data input.

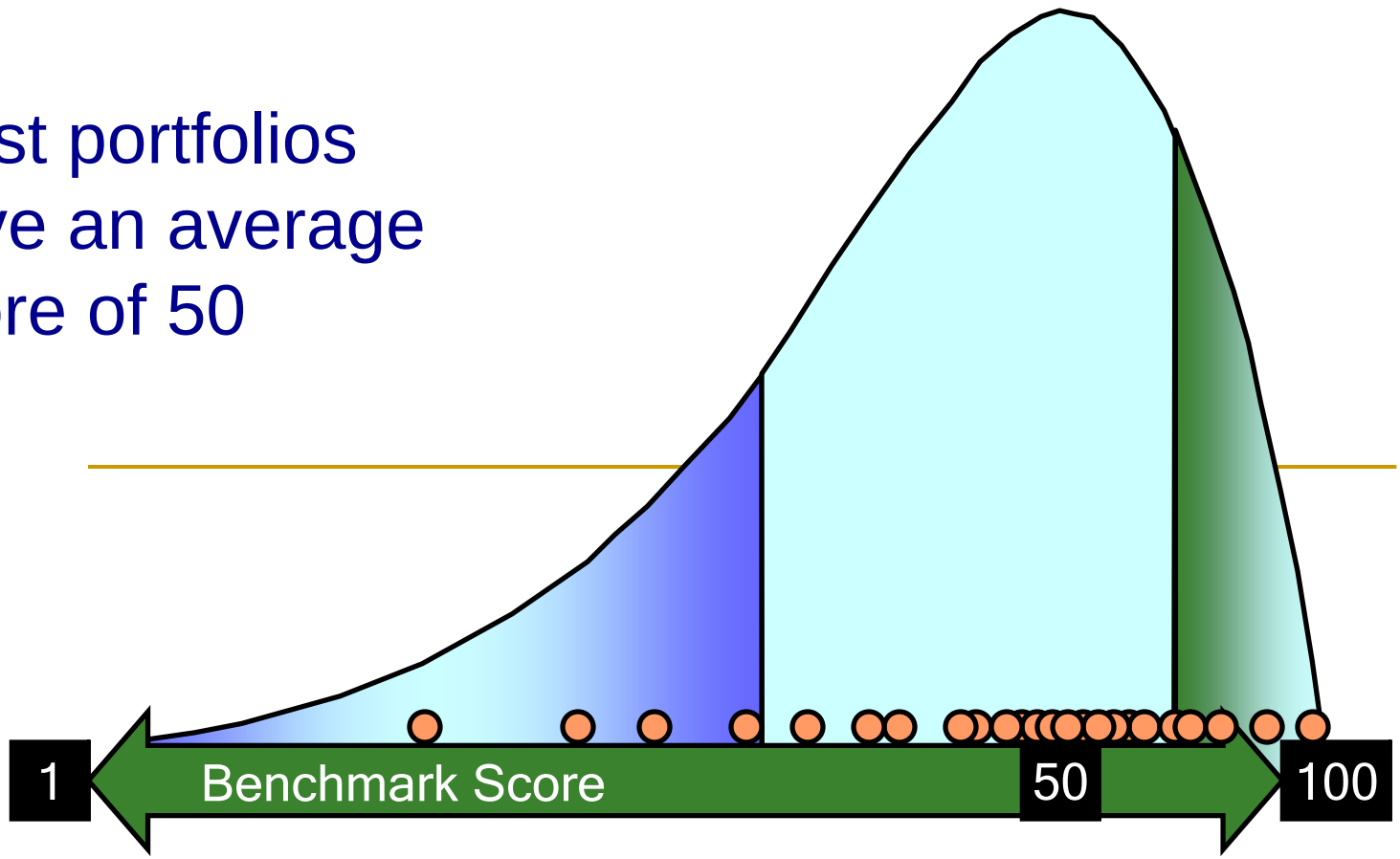
TIP: Printing screens w/ lots of data can come in handy!

A very, very bad example



Expect to Fit the Curve

Most portfolios have an average score of 50



(slide credit to Mr. Sam Rashkin, National Director EPA Energy Star Program)

A good case

98

Facility Summary:
How do I use this page?

Building ID: 1060661
Level of Access: Building Data Administrator

General Information Edit

Address: [illegible]815	
Year Built:	
Baseline Rating: 98	**Current Rating: 98**

Facility Performance Set Baseline Period | Set Energy Performance Target

Select View: Progress Create View | Edit View

12 Months Ending	Energy Savings (kBtu (thousand Btu))	Rating (1-100)	ENERGY STAR Label Eligibility	Label Application Status	Building Profile Status	Full Year
March 2005	0.00	98	Not Eligible: Less than one year since last Label. Eligible again on 03/31/2006 (Label Eligibility Rules)	Application - Label Sent (14-JUL-05)	No Status Available	Yes
Month Year						

REFRESH VIEW

Space Use Add Space

Space Name	Space Type	Floor Area (Sq. Ft.)	% Floor Area	Alerts	
Corridors/common area	Other	204,042	10		Delete Space
Office space	Office (General)	62,439	3		Delete Space
Parking Garage	Garage	290,680	15		Delete Space
sheraton server rooms	Computer Data Center	35,071	2		Delete Space
Sheraton Waikiki	Hotel (Upscale)	1,060,320	53		Delete Space
The Royal Hawaiian Hotel Rooms	Hotel (Upscale)	348,664	17		Delete Space
Total		2,001,216	100 %		

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

Energy Meters Add Meter | Download all Meter Data (Excel)

Meter Name	Energy Type	Space(s)	Last Meter Entry (End Date)	Alerts	
Diesel	Diesel (No. 2) (gallons)	Entire Facility	03/31/2005		Delete Meter
Electric	Electricity (kWh (thousand Watt-hours))	Entire Facility	03/31/2005		Delete Meter
SNG	Natural Gas (therms)	Entire Facility	03/31/2005		Delete Meter

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

Statement of Energy Performance
Generate a Statement of Energy Performance
View Statement of Energy Performance

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

Labeled Building Profiles
Create New/Update Approved Published Building Profile
Edit Draft Building Profile
View status of Building Profiles
Create/Edit Building Profile Accounts

Next step to the Star

If your building qualifies

PORTFOLIO MANAGER

ACCOUNT INFORMATION | CONTACTS | CONTACT US | HELP | LOGOUT

Home > My Portfolio > The Sheraton Waikiki and The Royal Hawaiian Hotel > **ENERGY STAR Label Application Status History**

ENERGY STAR Label Application Status History:

Current Label Application has been approved. You will be eligible to Apply for a Label again in March 2006.

Application for the ENERGY STAR Label

Calendar Year	Period Ending Date	Label Application Completed	Received by EPA	On Hold	Approved	Label Sent	Rating Received	
2005	03/31/2005	05/17/2005	06/10/2005		07/08/2005	07/14/2005	98	Download SEP Download Letter of Agreement

LOA = Letter of Agreement

SEP = Statement of Energy Performance

RETURN TO FACILITY SUMMARY

Ms. Natarsha Valentine
ENERGY STAR Label for Buildings
U.S. Environmental Protection Agency (6202J)
1200 Pennsylvania Avenue NW
Washington, DC 20460

Dear Ms. Valentine:

I hereby nominate, on behalf of the building's owner, the following building for award of the ENERGY STAR:

I have provided a copy of the *Professional Engineer's Guide to the Energy Star Label for Buildings* (available at www.energystar.gov) to our Professional Engineer for reference. As documented by the attached Statement of Energy Performance, the aforementioned building meets the conditions necessary to qualify as ENERGY STAR:

- **Energy performance** in the top 25 percent of similar existing buildings, as indicated by a minimum rating of 75 out of 100 determined through EPA's Portfolio Manager.
- **Thermal comfort** in accordance with the provisions in American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 55-1992, Thermal Environmental Conditions for Human Occupancy.
- **Indoor air quality** in accordance with the provisions of ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality.
- **Illuminance levels** in accordance with the Illuminating Engineering Society of North America, IESNA Lighting Handbook - 1999, Lighting Design Guide.

I am submitting this application within 4 months of the Year Ending Date on the enclosed Statement of Energy Performance. I will assist EPA, if requested, in verifying utility billing data. Furthermore, I agree to associate the ENERGY STAR name and logo only with the aforementioned building and to adhere to ENERGY STAR's Identity Guidelines.

Sincerely,

Signature _____

Signatory Name: Darren Kimura

Organization Name: Kyo-Ya Company, Ltd.

STATEMENT OF ENERGY PERFORMANCE

Building ID: 1060661
For 12-month Period Ending: March 31, 2005[1]

Date SEP Generated: May 17, 2005

Owner

Gross Building Area: 1,710,536 ft²
Year Built:

Facility Space Use Summary

Space Type	Area(ft²)	Number of Rooms	Cooking Facility
Computer Data Center	35,071	N/A	N/A
Garage	290,880	N/A	N/A
Hotel (Upscale)	1,408,984	2,228	Y
Office (General)	62,439	N/A	N/A
Other	204,542	N/A	N/A

Site Energy Use Summary

Electricity (kBtu)	100,452,010
Natural Gas (kBtu)	18,126,947
Diesel (No. 2) (kBtu)	24,549,993
Total Energy (kBtu)	**143,128,950**

Professional Verification

Licensed Number: -
State: HI

Results

Energy Performance Rating[3] (1-100) 98

Energy Intensity[4]

Site (kBtu/ft²-yr)	84
Source (kBtu/ft²-yr)	202

Emissions

CO_2 (1000 lbs/yr)	38,594

Indoor Environment Criteria[5]

Indoor air pollutants controlled?	Yes
Adequate ventilation provided?	Yes
Thermal conditions met?	Yes
Adequate illumination provided?	Yes

Professional Engineer Stamp

Based on the conditions observed at the time of my visit to this building, I certify that the information contained on this statement is accurate.

Notes:
1. Application for ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of ENERGY STAR is not final until approval is received from EPA.
2. Natural Gas values in units of volume (e.g. cubic feet) are converted to MBtu with adjustments made for elevation based on Facility zip code.
3. An energy performance rating of 75 is the minimum required rating to be considered eligible for ENERGY STAR.
4. Values represent energy intensity, annualized to a 365 day calendar.
5. Based on meeting ASHRAE Standard 62-1999 for indoor air quality, ASHRAE Standard 55-1992 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

Tracking Number: SEP200505170001011609

Search the site: Qualifying Program Professional Engineer or local partner

Engineering Review (30 Minutes)

- Engineer must be EPA Energy Star Partner
  - Check website for details
- Portfolio Manager Review of Accuracy
  - Energy statements
  - Building plans
  - Physical equipment
- Stamp SEP and send in to EPA for review (2 months).

Energy Star Classifications Today

- **Office (General, Bank Branch, Courthouse, Financial Center)**
- **K-12 Schools**
- **Hotels (Upper Upscale, Upscale, Mid-scale with Food & Beverage, Mid-scale without Food & Beverage, Economy).**
- **Hospitals**
- **Supermarkets/Grocery Stores**
- **Residence Halls/Dormitories**
- **Warehouses (Refrigerated and Non-Refrigerated) Office (General, Bank Branch, Courthouse, Financial Center)**
- **K-12 Schools**
- **Hotels (Upper Upscale, Upscale, Mid-scale with Food & Beverage, Mid-scale without Food & Beverage, Economy).**
- **Hospitals**
- **Supermarkets/Grocery Stores**
- **Residence Halls/Dormitories**
- **Warehouses (Refrigerated and Non-Refrigerated)**

Hawaii Energy Star Buildings

- Alii Place
- Sheraton Princess Kaiulani
- Sheraton Waikiki
- Royal Hawaiian Hotel
- Pacific Guardian Center
- Ambulatory Care Clinic
- Waikiki Beach Marriott
- Central Pacific Plaza
- Prince Kuhio Kalanianaole Federal Building & Courthouse
- Bishop Square
- 1132 Bishop
- More on the way!