

State of Arkansas

Strategies for Energy Program Reporting and Management



Key Concepts – Part 1

Energy Efficiency Reporting

	Topics	Learning Objectives
Part 1	<ul style="list-style-type: none">• Reporting requirements• Focus on data<ul style="list-style-type: none">– Creating reports and views with Portfolio Manager– Reporting to meet Act 1494 Data Call	<ul style="list-style-type: none">• Understand the State of Arkansas reporting requirements for energy efficiency• Create custom reports in ENERGY STAR's Portfolio Manager for annual reporting• Be able to import data from Portfolio Manager into the reporting template

Key Concepts – Part 2

Strategic Energy Plan Strategies

	Topics	Learning Objectives
Part 2	<p>Focus on actions</p> <ul style="list-style-type: none">• The role of the Energy Team• Categories of action• Strategy examples to incorporate into the Strategic Energy Plan• Identifying Strategic Energy Plan updates	<ul style="list-style-type: none">• Understand roles, capabilities, and potential contributions• List the four categories of ongoing actions• Identify areas of improvement for Strategic Energy Plans• Understand how to report updates to the Strategic Energy Plan in the reporting template



Overview

State Requirements

- Advance Arkansas energy efficiency programs, Lead by Example
- Protect financial & environmental resources
- Comply with [Act 1494](#) of 2009
 - Reduce water, electricity, and natural gas use
 - 20% by 2014
 - 30% by 2017





Overview

State Reporting Requirements

Two types of information required:

- Report **data** (energy use / performance)
- Report **actions** taken towards energy efficiency (StEP narrative modifications)





Data Overview

Portfolio Manager

The Two Major Inputs:

- **Space Attributes**
 - Gross floor area, number of workers on main shift, number of PC's, etc.
- **Actual Energy Use**
 - Taken from energy utility bills

Source: U.S. EPA ENERGY STAR

Space Attributes

Add Office Space: General Office Space

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:

*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	<input type="text"/> <input type="checkbox"/> For Temporary Use?	N/A	Sq. Ft. <input type="button" value="v"/>	<input type="text" value="01/01/1957"/>
* Weekly operating hours	<input type="text"/> <input type="checkbox"/> For Temporary Use?	<input type="checkbox"/>	Hours	<input type="text" value="01/01/1957"/>
* Workers on Main Shift	<input type="text"/> <input type="checkbox"/> For Temporary Use?	<input type="checkbox"/>	No Units	<input type="text" value="01/01/1957"/>
* Number of PCs	<input type="text"/> <input type="checkbox"/> For Temporary Use?	<input type="checkbox"/>	No Units	<input type="text" value="01/01/1957"/>
* Percent air-conditioned	Select <input type="button" value="v"/> <input type="checkbox"/> For Temporary Use?	<input type="checkbox"/>	No Units	<input type="text" value="01/01/1957"/>
* Percent heated	Select <input type="button" value="v"/> <input type="checkbox"/> For Temporary Use?	<input type="checkbox"/>	No Units	<input type="text" value="01/01/1957"/>

Actual Energy Use

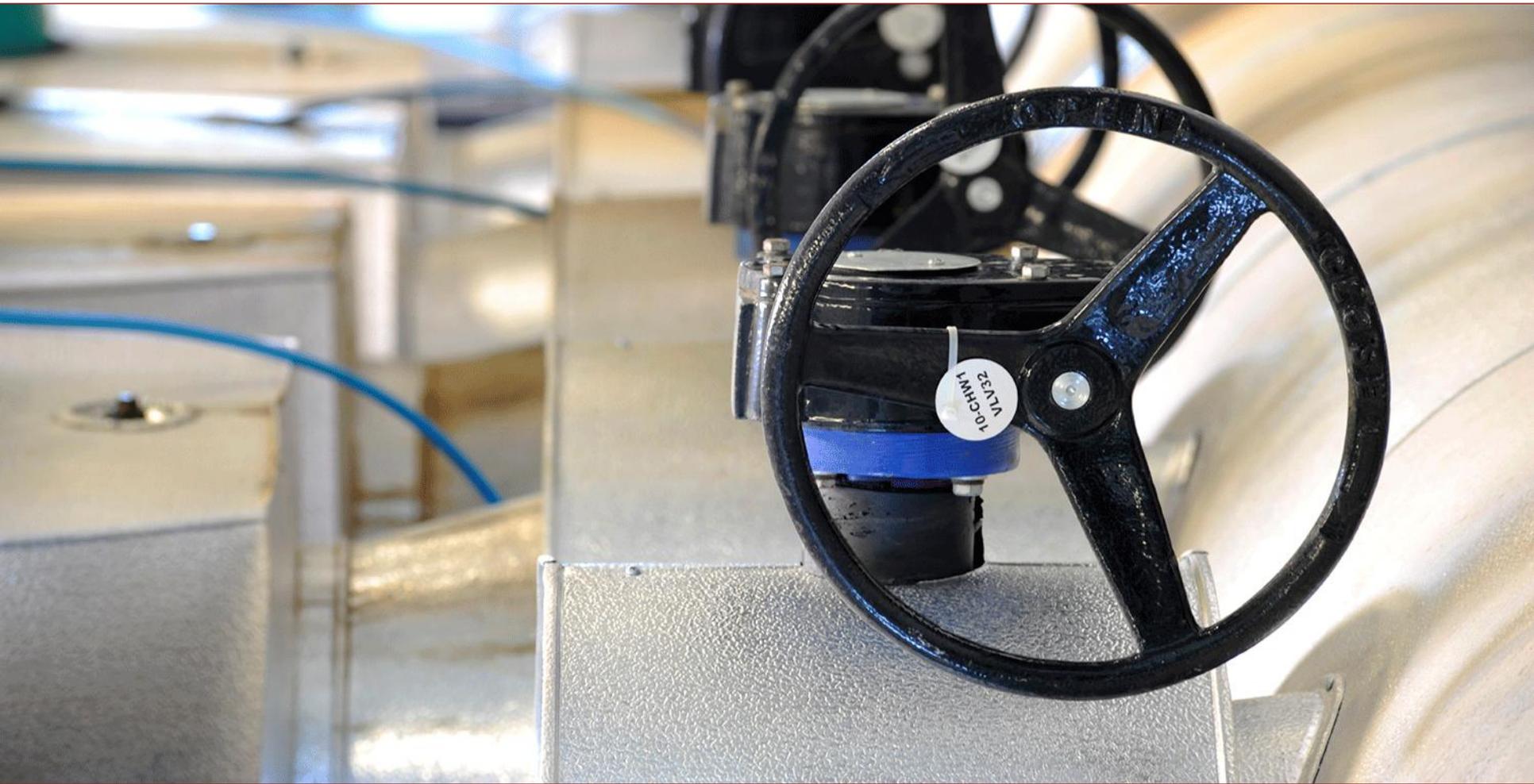
Meter Data

Add Energy Use:			
Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)
<input type="text" value="01/01/2010"/>	<input type="text" value="01/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="02/01/2010"/>	<input type="text" value="02/28/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="03/01/2010"/>	<input type="text" value="03/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="04/01/2010"/>	<input type="text" value="04/30/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="05/01/2010"/>	<input type="text" value="05/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="06/01/2010"/>	<input type="text" value="06/30/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="07/01/2010"/>	<input type="text" value="07/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="08/01/2010"/>	<input type="text" value="08/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="09/01/2010"/>	<input type="text" value="09/30/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="10/01/2010"/>	<input type="text" value="10/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="11/01/2010"/>	<input type="text" value="11/30/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="12/01/2010"/>	<input type="text" value="12/31/2010"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="01/01/2011"/>	<input type="text" value="01/31/2011"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="02/01/2011"/>	<input type="text" value="02/28/2011"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="03/01/2011"/>	<input type="text" value="03/31/2011"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>
<input type="text" value="04/01/2011"/>	<input type="text" value="04/30/2011"/>	<input type="text" value=""/>	\$ <input type="text" value=""/>

CANCEL SAVE

Source: U.S. EPA ENERGY STAR

Part 1: Energy Efficiency Data Reporting





Energy Efficiency Reporting

What is the measure of success?

- What needs to be reported?
- What metric will be used?
- Where do you get the data?
- What reporting format is required?
- When are reports due?





Energy Efficiency Reporting

What needs to be reported?

- Energy consumption data
 - For 07/01/2007 through 06/30/2011
 - At the individual building level, where possible

- Data will be reported using the Act 1494 and StEP Reporting Template
 - Baseline: 07/01/2007-06/30/2008
 - 2009: 07/01/2008-06/30/2009
 - 2010: 07/01/2009-06/30/2010
 - 2011: 07/02/2010- 06/30/2011

- To be reported each year through 2017 following these date ranges

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Two Key Metrics

1. **Total Annual Energy** (kBtu)
2. **Annual EUI** (kBtu/square foot)

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

One thousand Btu's

FYI:

MMBtu = one million Btu's, or 1,000 kBtu

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

Electricity (kWh)	→	0.293 kWh = 1 kBtu
Natural gas (therm)	→	0.01 therm = 1 kBtu
Fuel oil (gallons)	→	0.00668 gals = 1 kBtu
LPG (gallons)	→	0.01047 gals = 1 kBtu

Portfolio Manager automatically converts energy units to kBtu.

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

Electricity (kWh) \longrightarrow 0.293 kWh = 1 kBtu



A 60-Watt incandescent light bulb turned on for almost 5 hours uses 1 kBtu of energy.

Source: U.S. EPA ENERGY STAR

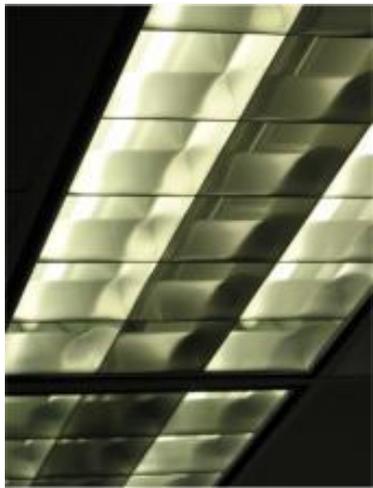


Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

Electricity (kWh) \longrightarrow 0.293 kWh = 1 kBtu



20 fluorescent light fixtures in a typical conference room turned on for 12 minutes uses 1 kBtu of energy.

(based on T-8s and electronic ballasts in a 950 sqft room)

Source: U.S. EPA ENERGY STAR

Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

Electricity (kWh) \longrightarrow 0.293 kWh = 1 kBtu



A desk top computer turned on for about 2 hours uses 1 kBtu of energy.

(based on 150 kW power demand)

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is a kBtu?

The total amount of energy used in a facility for one year is measured in kBtu.

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

What is EUI?

EUI – Energy Use Intensity

1. The total amount of energy used in a facility for one year is measured in kBtu.
2. Divide that by total gross floor area to get the annual **kBtu/sf**.

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #1

An agency had three buildings in the base year (2008). Calculate the energy use intensity (EUI) for each building.

2008

Building	Floor Area	Annual Energy Use (kBtu)	EUI
Office A	50,000 SF	7,500,000	
Office B	75,000 SF	10,800,000	
Office C	100,000 SF	13,300,000	

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #1

An agency had three buildings in the base year (2008). Calculate the energy use intensity (EUI) for each building.

2008

Building	Floor Area	Annual Energy Use (kBtu)	EUI
Office A	50,000 SF	7,500,000	150 kBtu/SF
Office B	75,000 SF	10,800,000	144 kBtu/SF
Office C	100,000 SF	13,300,000	133 kBtu/SF

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #2

In 2009 the agency completed a wing addition to Office Building A. Calculate the energy use intensity (EUI) for each building.

2009

Building	Floor Area	Annual Energy Use (kBtu)	EUI
Office A	70,000 SF	10,100,000	
Office B	75,000 SF	10,800,000	
Office C	100,000 SF	13,300,000	

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #2

In 2009 the agency completed a wing addition to Office Building A. Calculate the energy use intensity (EUI) for each building.

2009

Building	Floor Area	Annual Energy Use (kBtu)	EUI
Office A	70,000 SF	10,100,000	144
Office B	75,000 SF	10,800,000	144
Office C	100,000 SF	13,300,000	133

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #3

Report the % change for the Agency roll up in 2009 from the base year in total energy use and EUI.

Source: U.S. EPA ENERGY STAR

Energy Efficiency Reporting

What metrics will be used?

Exercise #3

Agency Roll Up

Building	Floor Area	Annual Energy Use (kBtu)	EUI (kBtu/SF)
Office A	50,000 SF	7,500,000	150
Office B	75,000 SF	10,800,000	144
Office C	100,000 SF	13,300,000	133
Totals:	225,000 SF	31,600,000	140.4

Building	Floor Area	Annual Energy Use (kBtu)	EUI (kBtu/SF)
Office A	70,000 SF	10,100,000	144
Office B	75,000 SF	10,800,000	144
Office C	100,000 SF	13,300,000	133
Totals:	245,000 SF	34,200,000	139.6

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

What metrics will be used?

Exercise #3

Report the % change in 2009 from the base year in total energy use and EUI.

% Change in annual energy use (kBtu):

$$34,200,000 - 31,600,000 = 2,600,000 \text{ or } +8.2\%$$

% Change in EUI (kBtu/SF):

$$139.6 - 140.4 = -0.8 \text{ or } -0.6\%$$

Source: U.S. EPA ENERGY STAR



Energy Efficiency Data Reporting

Where do you get the data?

Your Portfolio Manager Account

Required Reporting Information:

- Building ID
- Facility Name
- Facility Type
- Rating
- Baseline Energy Period Ending Date
- Period Ending Date
- Total Floor Space (SF)

Source: U.S. EPA ENERGY STAR



Energy Efficiency Reporting

Where do you get the data?

Your Portfolio Manager Account

Required Reporting Information (Continued):

- Annual Energy cost (\$)
- Baseline Site Energy Intensity (kBtu/SF)
- Current Site Energy Intensity (kBtu/SF)
- Baseline Total Site Energy Use (kBtu)
- Current Total Site Energy Use (kBtu)
- Change from Baseline: Energy Use (kBtu)
- Weather Normalized Site EUI (kBtu/SF)

Source: U.S. EPA ENERGY STAR

Download the Act 1494/StEP Reporting Template

Before beginning the process of reporting, you will need a copy of the Act 1494 Reporting Template.

- Please visit www.dropbox.com
- Click **Log In** in the upper right corner
 - Username: arkansas@cadmusgroup.com
 - Password: act1494
- Click on the **Unit 3** folder
- Download these key documents for your reference
 - **Act 1494 Reporting Template**
 - Strategies for Energy Program Reporting and Management PowerPoint slides (this presentation)
 - Training Workbook (which includes the ordering of information you need from your Portfolio Manager account)

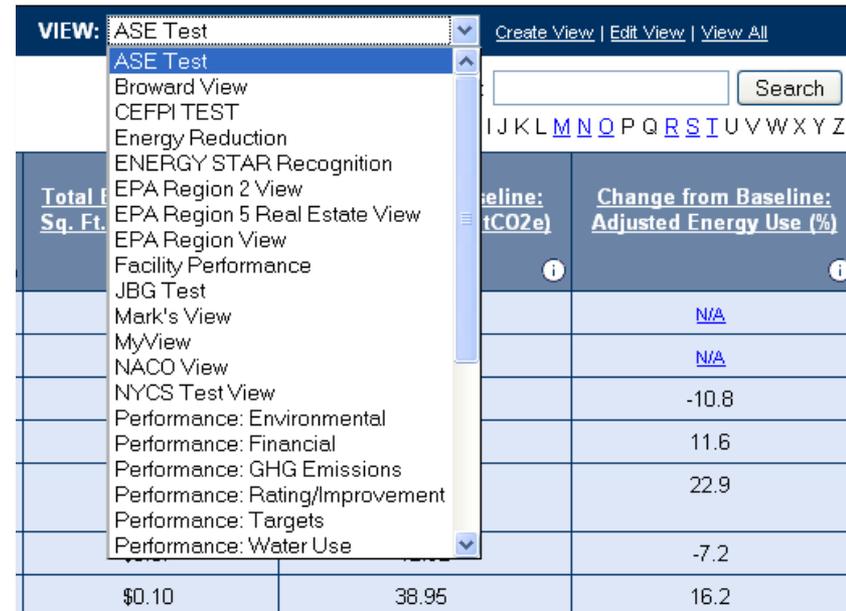
Creating Reports in Portfolio Manager



Process for Creating Views in Portfolio Manager

- Views are highly customizable
- Add up to seven columns per view
- No limit to the number of views created

1. Click “Create View”
2. Select number of facilities to include
3. Choose data columns



The screenshot shows the Portfolio Manager interface. A dropdown menu is open, listing various views such as ASE Test, Broward View, CEFPITEST, Energy Reduction, ENERGY STAR Recognition, EPA Region 2 View, EPA Region 5 Real Estate View, EPA Region View, Facility Performance, JBG Test, Mark's View, MyView, NACO View, NYCS Test View, Performance: Environmental, Performance: Financial, Performance: GHG Emissions, Performance: Rating/Improvement, Performance: Targets, and Performance: Water Use. The table below shows the data columns for the selected view.

Total F Sq. Ft.	Baseline: tCO2e	Change from Baseline: Adjusted Energy Use (%)
		N/A
		N/A
		-10.8
		11.6
		22.9
		-7.2
\$0.10	38.95	16.2



Generate Reports and Graphs

Objective: Set up a report in Portfolio Manager using templates

Process: For a pre-defined report, *three simple steps*

1. Start on the My Portfolio page
2. Click on “Generate Reports and Graphs”, upper right
3. Choose a predefined report template
4. Define search criteria and click Refresh





Portfolio Manager Predefined Reports

- Eight pre-defined report templates
- Pre-defined report “themes” include such topics as environmental, financial, or building rating performance – and more
- Filter by reporting period, facilities and groups, location, and facility type
- Tabular and graphical display outputs
- Export data in a variety of formats
 - MS Excel, XML, CSV, or PDF





Generate a Custom Report in Portfolio Manager

Assessing Percent Energy Reduction to Meet Act 1494 Requirements

Objective: Set up a custom report in Portfolio Manager using the required data headings.

Summary of the Process:

1. Start on the My Portfolio page
2. Click on “**Generate Reports and Graphs**”, upper right
3. Choose the report template, “**Custom Reports Home**” from the drop-down
4. Choose Create a **New Custom Report Template**
5. Define **Metrics for Custom Report**
6. Generate Report



Source: U.S. EPA ENERGY STAR



Generate a Custom Report in Portfolio Manager

Assessing Percent Energy Reduction to Meet Act 1494 Requirements

You are about to create a Custom Report to meet Act 1494 requirements. When you have created and named this Custom Report, this template will always appear in your list of templates available to you through Portfolio Manager. You will only need to create the template once, and you can use it as long as you need to report your annual percent energy reduction to meet Act 1494 requirements.



Source: U.S. EPA ENERGY STAR

Live Demonstration in Portfolio Manager

www.energystar.gov/benchmark



Generate a Custom Report

From the **My Portfolio** page, click on “**Generate Reports and Graphs**” located on the right-hand side of the page



ACCOUNT INFORMATION CONTACTS

[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

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

Automated Benchmarking
[Get Started Now](#)

“Generate a Report” starting page



PORTFOLIO MANAGER

[Home](#) > [My Portfolio](#) > Generate a Report

Report Template [About Report Templates](#)

Select a Report Template

Select a **REPORT TEMPLATE** to get started

Portfolio Manager Reports

Generate reports and graphs using data from your Portfolio Manager account

[QUICK REFERENCE GUIDE](#) 

From the “**Generate a Report**” page, click on the drop-down menu to select a Report Template

energy **PORTFOLIO MANAGER**
ENERGY STAR

[Home](#) > [My Portfolio](#) > Generate a Report

Report Template [About Report Templates](#)

Select a Report Template

- Select a Report Template
- Baseline Comparison
- Benchmark Performance
- Current Facility Status
- Emissions Performance
- Energy Performance
- Utility Cost Report
- Water Performance Report
- Water/Wastewater Energy Performance
- Custom Reports -**
- Custom Reports Home
- DC Disclosure Test
- DC Mandate Test Report
- KW Crackdown Test

Portfolio Manager Rep

Generate reports and graphs using from your Portfolio Manager account

QUICK REFERENCE GUIDES

Source: U.S. EPA ENERGY STAR



From the “**Custom Reports**” page, choose an already-generated Custom Report OR click “**Create a new Custom Report Template**”

 **PORTFOLIO MANAGER**

 ACCOUNT INFORMATION  CONTACTS  FAQ FREQUENTLY ASKED QUESTIONS  CONTACT US

[Home](#) > [My Portfolio](#) > [Generate a Report](#) > Custom Reports Templates

Custom Reports

Work with custom reports you've already built, or build new templates to generate reports through Portfolio Manager.

[Create a new Custom Report Template](#)

Template Name ▲	Last Updated	Created By	Action
DC Disclosure Test	01/25/2010	leslie cook	Select an Action ...
DC Mandate Test Report	01/13/2010	leslie cook	Select an Action ...
KW Crackdown Test	01/11/2010	Robb Bossley	Select an Action ...

[Home](#) > [My Portfolio](#) > [Generate a Report](#) > [Custom Reports Templates](#) > Create a Custom Template

Create a Custom Report Template

Use custom templates to create your own reports in Portfolio Manager. Use the directional buttons below or simply "click and drag" to select the type of data you want to include.

Template Name:

Created By: N/A Last Updated By: N/A

- Select from Available Metrics
 - Building Information
 - Comparisons to Energy and Water Baselines
 - Data Center Metrics
 - ENERGY STAR Application Information
 - Financial Indicators
 - GHG Emissions
 - Period Ending Dates
 - Rating
 - Renewable Energy
 - Site Energy
 - Source Energy
 - Space Attributes (Time Weighted)



- My Custom Template
 - Building ID (Required)
 - Facility Name (Required)
 - Period Ending Date (Required)
 - Rating (Required)

Create a Custom Report Template

Use custom templates to create your own reports in Portfolio Manager. Use the directional buttons below or simply click and drag to select the type or data you want to include.

Template Name:

Created By: N/A Last Updated By: N/A

- Select from Available Metrics
- Building Information
 - Comparisons to Energy and Water Baselines
 - Data Center Metrics
 - ENERGY STAR Application Information
 - Financial Indicators
 - GHG Emissions
 - Period Ending Dates
 - Rating
 - Renewable Energy
 - Site Energy
 - Source Energy
 - Space Attributes (Time Weighted)



- My Custom Template
- Building ID (Required)
 - Facility Name (Required)
 - Period Ending Date (Required)
 - Rating (Required)

(1)

- Select from Available Metrics
 - Building Information
 - Comparisons to Energy and Water Baselines
 - Data Center Metrics
 - ENERGY STAR Application Information
 - Financial Indicators
 - GHG Emissions
 - Period Ending Dates
 - Rating
 - Renewable Energy
 - Site Energy
 - Source Energy
 - Space Attributes (Time Weighted)
 - Water
 - Water Utilities and Wastewater Treatment Facilities

View Full List of Available Metrics

The following is a full list of available metrics that you can include in a custom report template.

Building Information

Facility Name (Required)
 Address 1
 Address 2
 Administrator
 Building ID (Required)
 Facility Owner
 Building Profile Status
 Facility Type
 City
 Country Name
 County
 Last Modified Date
 Service and Product Provider
 Shared By
 State
 Zip Code
 Notes
 Metering Configuration
 Total Floor Space (Sq. Ft.)

Data Center Metrics

Baseline Data Center Source PUE
 Baseline PUE-PDU Input
 Baseline PUE-UPS Output
 Baseline Site PDU Input Energy (kWh)
 Baseline Site UPS Output Energy (kWh)
 Baseline Source IT Energy (kBtu)
 Current Data Center Source PUE
 Current PUE-PDU Input

[View list of available metrics](#)

Create a Custom Report Template

Use custom templates to create your own reports in Portfolio Manager. Use the directional buttons below or simply "click and drag" to select the type of data you want to include in this report and the order you want them displayed.

Template Name:

Act 1494 Report

Created By: N/A Last Updated By: N/A

Select from Available Metrics

- Building Information
- Comparisons to Energy and Water Baselines
- Data Center Metrics
- ENERGY STAR Application Information
- Financial Indicators
- GHG Emissions
- Period Ending Dates
- Rating
- Renewable Energy
- Site Energy
- Source Energy
- Space Attributes (Time Weighted)
- Water
- Water Utilities and Wastewater Treatment Facilities

- Last Modified Date
- Metering Configuration
- Notes
- Power Plant
- Service and Product Provider
- Shared By
- State
- Total Floor Space (Sq. Ft.)
- Unique Building Identifier
- Zip Code

- Comparisons to Energy and Water Baselines
- Data Center Metrics
- ENERGY STAR Application Information
- Financial Indicators
- GHG Emissions
- Period Ending Dates

- Baseline Energy Period Ending Date
- Baseline Water Period Ending Date
- Current Energy Period Ending Date
- Current Water Period Ending Date

- Rating
- Renewable Energy
- Site Energy

Create a Custom Report Template

Use custom templates to include in this report.

Template Name

Custom Template

Created By: M/

Select from

- Building
- Computer
- Data Center
- ENERGY
- Financial
- GHG Intensity
- Period Ending
- Rating
- Renewable
- Site Energy
- Source
- Space
- Water
- Water Utilities and Wastewater Treatment Facilities

My Custom Template

- Building ID (Required)
- Facility Name (Required)
- Facility Type
- Rating (Required)
- Baseline Energy Period Ending Date
- Period Ending Date (Required)
- Total Floor Space (Sq. Ft.)
- Annual Energy Cost (US Dollars (\$))
- Baseline Site Energy Intensity (kBtu/Sq. Ft.)
- Current Site Energy Intensity (kBtu/Sq. Ft.)
- Baseline Total Site Energy Use (kBtu)
- Current Total Site Energy Use (kBtu)
- Change from Baseline: Energy Use (kBtu)
- Weather Normalized Site EUI (kBtu/Sq. Ft.)

drag" to select the type of data you want to

<< Back SAVE

Once your chosen metrics are in the right-hand column, you can drag these to arrange them in the order shown above. The correct order is important, because then it is a simple process to copy and paste the data into the Act 1494 Reporting Template.

Create a Custom Report Template

Use custom templates to create your own reports in Portfolio Manager. Use the directional buttons below or simply "click and drag" to select the type of data you want to include in this report and the order you want them displayed.

Template Name:

Created By: N/A Last Updated By: N/A

The interface shows a tree view of available metrics on the left and a list of metrics selected for the custom template on the right. The selected metrics include:

- Building ID (Required)
- Facility Name (Required)
- Facility Type
- Rating (Required)
- Baseline Energy Period Ending Date
- Period Ending Date (Required)
- Total Floor Space (Sq. Ft.)
- Annual Energy Cost (US Dollars (\$))
- Baseline Site Energy Intensity (kBtu/Sq. Ft.)
- Current Site Energy Intensity (kBtu/Sq. Ft.)
- Baseline Total Site Energy Use (kBtu)
- Current Total Site Energy Use (kBtu)
- Change from Baseline: Energy Use (kBtu)
- Weather Normalized Site EUI (kBtu/Sq. Ft.)

At the bottom of the interface, a **SAVE** button is circled in red.

[View list of available metrics](#)

Source: U.S. EPA ENERGY STAR



[Home](#) > [My Portfolio](#) > [Generate a Report](#) > Custom Reports Templates

Custom Reports

Work with custom reports you've already built, or build new templates to generate reports through Portfolio Manager.

[Create a new Custom Report Template](#)

Template Name ▲	Last Updated	Created By	Action
Act 1494 Report	03/03/2011	Philip Zapfel	Select an Action ...



[Home](#) > [My Portfolio](#) > [Generate a Report](#) > Custom Reports Templates

Custom Reports

Work with custom reports you've already built, or build new templates to generate reports through Portfolio Manager.

[Create a new Custom Report Template](#)

Template Name ▲	Last Updated	Created By
Act 1494 Report	03/03/2011	Philip Zapfel

Action

- Generate a Report
- Share Report Template
- Request Data From Others
- View Properties**
- Delete
- Edit

Act 1494 Report Properties

Use custom templates to create your own reports through Portfolio Manager.

[Edit Template](#) [Delete](#)

Template Name: Act 1494 Report

Created By: VIRGIL ELLIS Last Updated: 08/29/11

Metrics Included in Report Template

Building ID (Required)
Facility Name (Required)
Period Ending Date (Required)
Rating (Required)
Baseline Energy Period Ending Date
Current Energy Period Ending Date
Total Floor Space (Sq. Ft.)
Annual Energy Cost (US Dollars (\$))
Baseline Site Energy Intensity (kBtu/Sq. Ft.)
Current Site Energy Intensity (kBtu/Sq. Ft.)
Baseline Total Site Energy Use (kBtu)
Current Total Source Energy Use (kBtu)
Change from Baseline: Energy Use (kBtu)
Weather Normalized Site EUI (kBtu/Sq. Ft.)

<< Back



[Home](#) > [My Portfolio](#) > [Generate a Report](#) > Custom Reports Templates

Custom Reports

Work with custom reports you've already built, or build new templates to generate reports through Portfolio Manager.

[Create a new Custom Report Template](#)

Template Name ^	Last Updated	Created By	Action
Act 1494 Report	03/03/2011	Philip Zapfel	<ul style="list-style-type: none">Generate a ReportShare Report TemplateRequest Data From OthersView PropertiesDeleteEdit

Page 1 of 1 | Displaying 1 - 1 of 1

Determine search parameters

View and organize tabular data

Export data

The screenshot shows the Act 1494 Report interface. A red arrow points from the 'Determine search parameters' header to the left-hand filter sidebar. Another red arrow points from the 'View and organize tabular data' header to the table area. A third red arrow points from the 'Export data' header to the 'Export Data Set' options. A large orange rounded rectangle highlights the filter sidebar and the table area. The table is currently empty, showing '0 Matching Facilities' and '0 Rows Returned'. The filter sidebar includes sections for 'Reporting Period', 'Facilities & Groups', and 'Location'. The table headers include 'Building ID', 'Facility Name', 'Period Endin...', 'Rating', 'Baseline En...', 'Current Ener...', 'Total Floor S...', and 'Annual...'. The 'Export Data Set' options are 'Excel', 'XML', 'CSV', and 'PDF'. The page status at the bottom indicates 'Page 1 of 1' and 'No facilities to display'.

Reporting Period

Single Period (one period)

Comparative (two periods)

Range (all periods within date range)

Facilities & Groups

[Select Facilities or Groups](#)

OR, type in the name of a single facility:

Location

U.S. only All Countries

All Locations
Arizona
Arkansas
California
Colorado

OR, [Select specific Cities or Zip Codes](#)

Facility Type

All Facility Types
Bank/Financial Institution
Data Center
Hotel
K-12 School

Select the reporting period

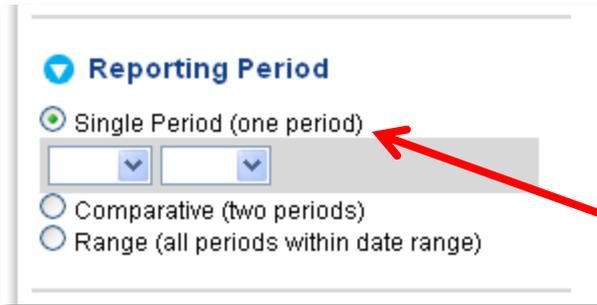
Select facilities and groups

Select the location

Choose a facility type or types

Source: U.S. EPA ENERGY STAR

Generate a Custom Report: Reporting Period



Reporting Period

Single Period (one period)

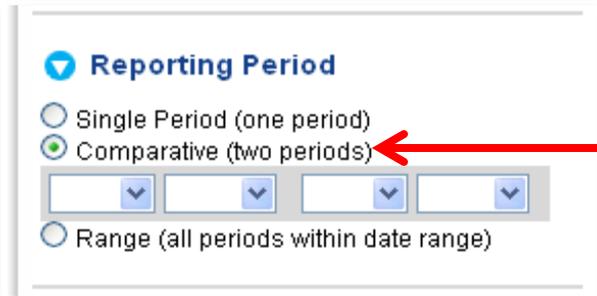
Comparative (two periods)

Range (all periods within date range)

Month: [] Year: []

From the **Filters Menu** on the left side of the page, under the first filter, **Reporting Period**, click on one of the 3 radio buttons to choose the desired report timeframe

Single Period: Use the drop down menus to select a month and year as the 12-month period ending date for your report



Reporting Period

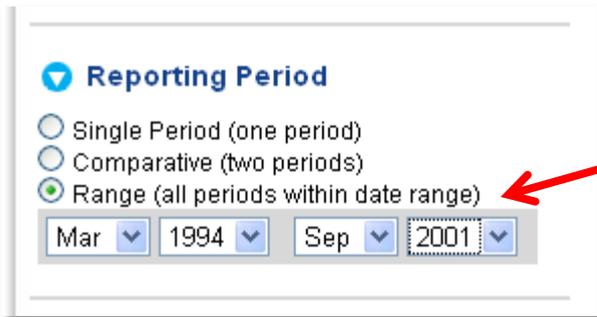
Single Period (one period)

Comparative (two periods)

Range (all periods within date range)

Month: [] Year: [] Month: [] Year: []

Comparative: Use the drop down menus to select two 12-month periods to compare (select a month and year for each period)



Reporting Period

Single Period (one period)

Comparative (two periods)

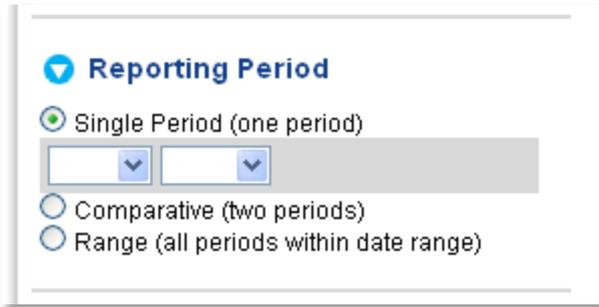
Range (all periods within date range)

Month: Mar Year: 1994 Month: Sep Year: 2001

Range: Use the drop down menus to select a beginning period and an ending period (select a month and year for each period). Your report will show data for all months in between

For Act 1494 reporting, we will be entering each year using the Single Period time frame.

Generate a Custom Report: Reporting Period



Reporting Period

Single Period (one period)

Comparative (two periods)

Range (all periods within date range)

Two empty dropdown menus are visible below the 'Single Period' option.

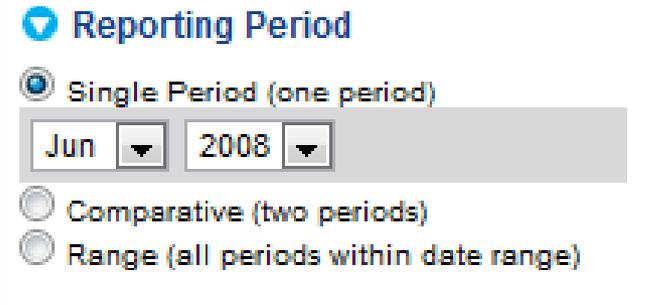
Single Period: Use the drop down menus to select a month and year as the 12-month period **ending** date for your report

Baseline year, July, 2007-June, 2008:
enter June 2008 as the date for the Single Period

2009, July, 2008-June, 2009:
enter June 2009 as the date for the Single Period

2010, July, 2009-June, 2010:
enter June 2010 as the date for the Single Period

2011, July, 2010- June, 2011:
enter June, 2011 as the date for the Single Period



Reporting Period

Single Period (one period)

Jun 2008

Comparative (two periods)

Range (all periods within date range)

Generate a Custom Report: Facilities and Groups

Facilities & Groups

[Select Facilities or Groups](#)

OR, type in the name of a single facility:

- Type in the name of a single facility, or click “**Select Facilities or Groups**” to bring up a new window with a scroll box containing your groups
- Click “**Save**” when finished selecting facilities to include

Select Facilities or Groups

Select the facilities you would like to include in this report

Choose from your entire Portfolio or from your Groups:

My Entire Portfolio
ABC (2)
Arlington Public Schools (5)
ASE Test Group (2)

<input type="checkbox"/>	Facility Name ▲	City	State	Zip Code	Co
<input type="checkbox"/>	2nd Zone Police Station	Laconia	New Hampshire	03246	
<input type="checkbox"/>	9-10 Building	Bronx	New York	10471	
<input type="checkbox"/>	ABC Courthouse	Sample	Illinois	12345	
<input type="checkbox"/>	ABC Residence Hall	Sample	Illinois	12345	
<input type="checkbox"/>	ASE Test Other	Humboldt	California	95521	
<input type="checkbox"/>	Administration Bld	Lisle	Illinois	60532	
<input type="checkbox"/>	Apollo Middle	Hollywood	Florida	33024	
<input type="checkbox"/>	Arthur Ashe Middle	Fort Lauderdale	Florida	33311	
<input type="checkbox"/>	Atlantic Technical Cente	Coconut Creek	Florida	33063	
<input type="checkbox"/>	Atlantic West Elementar	Margate	Florida	33063	

Zip Codes

<< Cancel SAVE

For Act 1494 reporting, you will likely select your entire Agency portfolio – but if you have test buildings or duplicate entries, please exclude these.

Generate a Custom Report: Location

Location

U.S. only All Countries

All Locations
Arizona
California
Colorado
District of Columbia (D.C.)

[OR, Select specific Cities or Zip Codes](#)

Select Cities/Zip Codes

Filter your report by selecting specific cities and/or zip codes.

Choose one or more Locations:

All Locations
Arizona
California
Colorado
District of Columbia (D.C.)

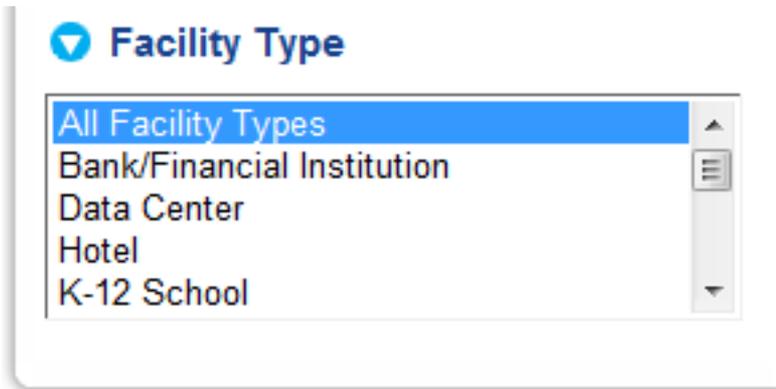
Select Cities **Select Zip Codes**

<input type="checkbox"/>	City	State
<input type="checkbox"/>	Yorktown	
<input type="checkbox"/>	Scottsdale	Arizona
<input type="checkbox"/>	Humboldt	California
<input type="checkbox"/>	Real City Folsom	California
<input type="checkbox"/>	Sunnyvale	California
<input type="checkbox"/>	Denver	Colorado
<input type="checkbox"/>	Test City	District of Columbia (D.C.)
<input type="checkbox"/>	Washington	District of Columbia (D.C.)
<input type="checkbox"/>	Washintgon	District of Columbia (D.C.)
<input type="checkbox"/>	YourCity	District of Columbia (D.C.)

<< Cancel **SAVE**

- Click on the state or states you wish to include in the report, or click **“Select specific Cities or Zip Codes”** to bring up a new window with a scroll box containing locations
- Click **“Save”** when finished selecting facilities to include

Generate a Custom Report: Facility Type



- Choose the facility type or types you want to include in the report
- Use the control button to select more than one
- Most Agencies will include all facility types in Act 1494 reporting
- This function is especially helpful for Agencies that wish to compare building performance by type of facility

Generate a Custom Report: Data Table

- Select between tabular data and graph views

- Organize data by clicking on the arrow next to each header

- Sort data, choose columns, group by fields, or show in groups

Data Current As Of: March 3, 2011 12:30 AM

Act 1494 Report July 2007/June 2008

View Data Table View Graph [Don't see what you're expecting in your report?](#)

 [View Full Screen Display](#) [Printer-friendly](#) Export Data Set: [Excel](#) | [XML](#) | [CSV](#) | [PDF](#)

Building ID	Facility Name	Period Ending ...	Rating	Change from ...	Change from ...	Baseline Ratin...	Current
2400910	Sample Office...	02/28/2010				N/A	63
2400910	Sample Office...	03/31/2010				N/A	63
2400910	Sample Office...	04/30/2009				N/A	63
2400910	Sample Office...	04/30/2010				N/A	63
2400910	Sample Office...	05/31/2009				N/A	63
2400910	Sample Office...	06/30/2009				N/A	63
2400910	Sample Office...	07/31/2009	62	0.0		N/A	63
2400910	Sample Office...	08/31/2009	62	0.0		N/A	63
2400910	Sample Office...	09/30/2009	62	0.0		N/A	63
2400910	Sample Office...	10/31/2009	63	0.0		N/A	63
2400910	Sample Office...	11/30/2009	62	0.0		N/A	63
2400910	Sample Office...	12/31/2009	62	0.0		N/A	63
2435066	Sample Office...	01/31/2010	67	-712,980.0		N/A	61

Page 1 of 1 Displaying 1 - 48 of 48

Generate a Custom Report: Data Table

 Data Current As Of: March 3, 2011 12:30 AM

Act 1494 Report July 2007/June 2008

View Data Table View Graph

[Don't see what you're expecting in your report?](#)

REFRESH DATA

[View Full Screen Display](#)



[Printer-friendly](#)

Export Data Set: [Excel](#) | [XML](#) | [CSV](#) | [PDF](#)

Building ID	Facility Name	Period Ending ...	Rating	Change from ...	Change from ...	Baseline Ratin...	Current
2400910	Sample Office...	02/28/2010	65	-217,660.0	N/A	63	
2400910	Sample Office...	03/31/2010	67	-435,320.0	N/A	63	
2400910	Sample Office...	04/30/2009	N/A	5,476.3	N/A	63	
2400910	Sample Office...	04/30/2010	68	-652,980.0	N/A	63	
2400910	Sample Office...	05/31/2009	63	-12,423.9	N/A	63	
2400910	Sample Office...	06/30/2009	63	0.0	N/A	63	
2400910	Sample Office...	07/31/2009	62	0.0	N/A	63	
2400910	Sample Office...	08/31/2009	62	0.0	N/A	63	
2400910	Sample Office...	09/30/2009	62	0.0	N/A	63	
2400910	Sample Office...	10/31/2009	63	0.0	N/A	63	
2400910	Sample Office...	11/30/2009	62	0.0	N/A	63	
2400910	Sample Office...	12/31/2009	62	0.0	N/A	63	
2435066	Sample Office...	01/31/2010	67	-712,980.0	N/A	61	

Page 1 of 1

Displaying 1 - 48 of 48

REFRESH DATA

Export data by clicking the Excel download format

Live Demonstration of Act 1494 Reporting Template



Act 1494 Compliance Reporting Template For Agencies

- Open the Act 1494 Reporting Template
- Scroll along the tabs along the bottom of the Template
- Complete “Cover” tab in the report template with Agency information

Act 1494 Compliance and StEP Reporting

Agency:

Contact Information

Name:

Phone Number:

Email:

Address:

Alt. Contact Information

Name:

Phone Number:

Email:

Address:

For detailed information regarding Act 1494 reporting requirements please contact:
Ed Ellis?

Navigation tabs: Cover, Rollup Report_Energy, Year_Over_Year_Energy, Rollup Report_EUI, Year_Over_Year_EUI

Energy Efficiency Reporting

What reporting format is required?

Act 1494 Compliance Report Template For Agencies

- Generate and download an Act 1494 report in Portfolio Manager **for each year**
- Copy the Excel report and paste into the tab for the corresponding year
- Verify that all data is correct

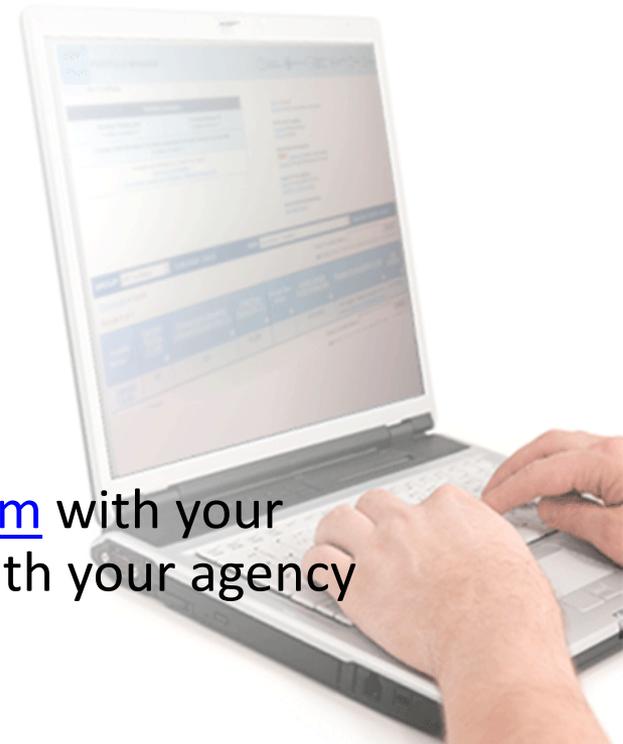
Baseline Year											
Totals		-					-	\$	-	-	-
From Portfolio Manager Report											
Building ID	Facility Name	Facility Type	Rating	Baseline Energy Period Ending Date (Must Be The Same As Period Ending Date in	Period Ending Date (Must Be The Same As Baseline Ending Date in Baseline Year)	Total Floor Space (Sq. Ft.)	Annual Energy Cost (US Dollars (\$))	Baseline Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Energy Intensity (kBtu/Sq. Ft.)	Baseline Total Site Energy Use (kBtu)	
Paste PM Report Here (Cell)											



Quality Assurance

Verifying your data

- **Confirm all buildings are accounted for in each year**
- **Verify energy consumption information**
- **Potential Issues:**
 - Errors in the data: NA, #VALUE, 0, missing buildings
- **Potential Causes:**
 - Gaps or overlaps in energy data
 - Incomplete energy data
 - Incorrect baseline periods
 - Campus not set up with meter house
- **Still encountering account issues?**
 - Please contact arkansas@cadmusgroup.com with your questions. Subject “Account Assistance” with your agency name.





Account Managers

Verifying your data

- Please contact your Account Manager for assistance with benchmarking and correcting errors found in energy consumption information
- Who is my Account Manager?
 - Please refer to the spreadsheet on following slides
 - Contact NAME@cadmusgroup.com
 - Or, if not listed, contact arkansas@cadmusgroup.com with the subject line “Account Assistance ‘Agency Name’”



Account Managers

Verifying your data

Christopher.Faulkner	AR0516_AETN						
Christopher.Faulkner	AR0590_CAREER_EDUCATION_DEPT_OF						
Christopher.Faulkner	AR0900_PARKS_AND_TOURISM_DEPT_OF						
Christopher.Faulkner	AR0975_MIL_DEPT_AR_NAT_GUARD						
Christopher.Faulkner	Real Estate Commission, Arkansas						
Christopher.Faulkner	University of Arkansas at Pine Bluff						
Christopher.Faulkner	UofA Monticello						
Christopher.Faulkner	AR0687_Ozarka						
Christopher.Faulkner	GEOLOGICALSURVEY						
Christopher.Faulkner	Pulaski Technical College						
Christopher.Faulkner	School for the Blind, Arkansas						
Christopher.Faulkner	School for the Deaf, Arkansas						
Christopher.Faulkner	Southern Arkansas University						
Daniel.Paschall	AR Department of Aeronautics						
Daniel.Paschall	AR0236_Engineers_and_Professional_Surveyors						
Daniel.Paschall	AR0995_EMERGENCY_MGMT_DEPT_OF						
Daniel.Paschall	Arkansas Northeastern College						
Daniel.Paschall	Game and Fish Commission						
Daniel.Paschall	Henderson State University						
Daniel.Paschall	Ouachita Technical College						
Daniel.Paschall	Southeast Arkansas College						



Account Managers

Verifying your data

Christopher.McKinley	AR0485_COMM_CORRECTION_DEPT_OF				
Christopher.McKinley	AR0500_EDUCATION_DEPARTMENT_OF				
Christopher.McKinley	AR0645_HEALTH_DEPARTMENT_OF				
Christopher.McKinley	AR0710_HUMAN_SERVICES_DEPT_OF				
Christopher.McKinley	AR0810_WORKFORCE_SERV_DEPT_OF				
Christopher.McKinley	AR0930_ENV_QUALITY_DEPARTMENT_OF				
Christopher.Faulkner	AR0165_University of Central Arkansas				
Christopher.Faulkner	AR0198_NWACC				
Christopher.Faulkner	AR0390_WORKERS_COMP_COMM				
Christopher.Faulkner	AR0630_FINANCE_AND_ADMIN_DEPT_OF				
Christopher.Faulkner	AR0865_HERITAGE_DEPT				
Christopher.Faulkner	AR0885_Heritage_AR_Museum				
Christopher.Faulkner	AR0950_LAW_ENFORCEMENT_STC				
Christopher.Faulkner	Mid-South Community College				
Christopher.Faulkner	National Park Community College				
Christopher.Faulkner	North Arkansas College				
Christopher.Faulkner	AR0960_STATE_POLICE				



Energy Efficiency Reporting

What reporting format is required?

Act 1494 Compliance Report Template For Agencies

Reporting Year: <----Select date here to generate report

Act 1494 Compliance Report

Energy Usage for Fiscal Year 2009

Met 2014 goal (-20%), after 2014 (-30%)
 Made some energy reductions compared to baseline
 Increased energy usage compared to baseline

Agency	Number of Buildings	Total Floor Space (Sq. Ft.)	Baseline Total Site Energy Use (kBtu)	Current Total Site Energy Use (kBtu)	Percent Change from Baseline, %	Weather Normalized Baseline Total Site Energy Use (kBtu)	Weather Normalized Current Total Site Energy Use (kBtu)	Weather Normalized Percent Change from Baseline, %	Annual Energy Cost (US Dollars (\$))
-	-	-	-	-	-	-	-	-	-

Notes by Agency:

- Once all data has been entered and checked, review progress with the following reporting tabs, **populated based on the data you entered for each year's performance** (you should NOT enter data here):

- Rollup Report Energy
- Year Over Year Energy
- Rollup Report EUI
- Year Over Year EUI

DO provide Agency comments or explanatory notes in the Rollup Reports notes box



Portfolio Manager

When are reports due?

Act 1494 Data Call reporting deadline is October 31 of each year.

For October 31, 2011, the reporting template must be completed for:

- Baseline
- 2009
- 2010
- 2011



Source: U.S. EPA ENERGY STAR

Optional: Using Portfolio Manager to Create Views at the Building Level





Creating Views at the Single Building Level

- A view is a set of columns that display various data in a table
- Portfolio Manager allows users to customize views by selecting up to seven columns
- Users can also select the number of facilities that can display on the My Portfolio page
- There are over 70 different data columns that can be selected

Source: U.S. EPA ENERGY STAR



Why Create Views at the Single Building Level?

- To know which of your buildings are high-performing
- To illustrate how your actions at the building level are leading to energy-efficient performance
- For your own purposes, to track and understand as a prelude to retrofits
- As prelude to the building audit or commissioning process
- If your building is sub-metered, to understand the performance of separately metered spaces

Source: U.S. EPA ENERGY STAR

Part 2: Strategic Energy Plan Strategies



Key Concepts – Part 2

Strategic Energy Plan Strategies

	Topics	Learning Objectives
Part 2	<ul style="list-style-type: none">• The Energy Team• Categories of action• Strategy examples to incorporate into the Strategic Energy Plan• Identifying Strategic Energy Plan updates	<ul style="list-style-type: none">• Understand roles, capabilities, and potential contributions• List the four categories of ongoing actions• Identify areas of improvement for Strategic Energy Plans• Understand how to report updates to the Strategic Energy Plan in the reporting template



Strategic Energy Plan Strategies

The Energy Team

The Energy Team should be tailored to the needs of the agency.

- Is the agency located in one building or throughout several buildings?
- What level of building ownership does the agency have (owner/occupier or tenant)?
- What is the nature of the building system controls (manual occupant control or central system)?





Strategic Energy Plan Strategies

Key Questions and Objectives for the Energy Team

Question: Who's got control of the switches?

Objective: Control switches so that systems run only when they have to.

Question: How can systems use less energy when they do have to run?

Objective: Reduce power requirements as much as possible for systems that are running.



Strategic Energy Plan Strategies

An Interdisciplinary Energy Team

Team Member	Roles and Responsibilities
The building's senior agency operations supervisor (e.g. deputy director, assistant chief, assistant department head, etc.)	<ol style="list-style-type: none">1. Policy guidance – comfort and IAQ parameters identified and conveyed to technical building operators2. Supervision and monitoring – agency or department staff (occupant) responsibilities3. Capital projects programming
Building operator/maintainer	<ol style="list-style-type: none">1. Technical expertise – knowledge of major building systems (HVAC, lighting, etc.)2. Systems controller – equipment runtime3. Maintenance scheduler – PM and repairs

Strategic Energy Plan Strategies

The Energy Team

Team Member	Roles and Responsibilities
Financial manager	<ol style="list-style-type: none">1. Energy cost management – access to utility bills, maintenance and repair costs2. Programming and budgeting for energy costs – utilities, maintenance, minor repairs, capital improvements
Energy manager	<ol style="list-style-type: none">1. Strategic Energy Plan – development and updates2. Project management – oversee and monitor assessment, planning, and execution of energy efficiency strategies

Strategic Energy Plan Strategies

The Energy Team

Team Member	Roles and Responsibilities
Administrative assistant	<ol style="list-style-type: none">1. Portfolio Manager – manage monthly input/updates2. Provide reports to Energy Team members as needed
Occupant representative	Staff level input – feedback on practicality of occupant control measures, desired settings, and effectiveness of participatory programs

Strategic Energy Plan Strategies

The Energy Team

Team Member	Roles and Responsibilities
Special operations representatives (food service operations, security, risk management, safety and health, environmental health, etc.)	<ol style="list-style-type: none">1. Focused input – feedback on practicality of occupant control measures, desired settings, and effectiveness of participatory programs related to the area of specialty2. Compliance review – assessment and recommendations from compliance-oriented offices that may affect energy efficiency strategies.
Building Services representative	<ol style="list-style-type: none">1. Awareness of after-hours operations2. Occupant control after business hours

Strategic Energy Plan Strategies

The Energy Team

Team Member	Roles and Responsibilities
Information Technology representative	1. Expertise on use and operation of data centers, computers, and patch management.
Public Affairs Office representative	1. Awareness of public interest and trends 2. Expertise on agency communications methods, public interface, and media resources.



Strategic Energy Plan Strategies

Categories of Action

The types of strategies that can be incorporated into strategic energy plans typically fall into four categories.

1. Assessment & monitoring
2. Communications, awareness, & training
3. Operations & maintenance
4. Retrofit projects





Strategic Energy Plan Strategies

Assessment & Monitoring

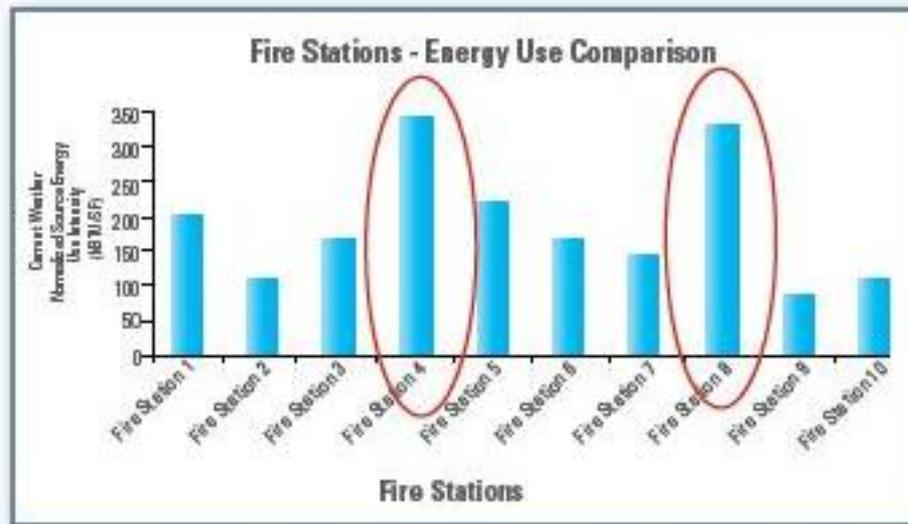
- Benchmarking
- Load profiling
- Data logging
- Evaluating major end use through monitoring at the systems level (using data loggers, submeters, or building automation systems)



Strategic Energy Plan Strategies

Assessment & Monitoring - Benchmarking

- Compare buildings of similar space types (kBtu/SF)
- Assess ENERGY STAR Score (if eligible)

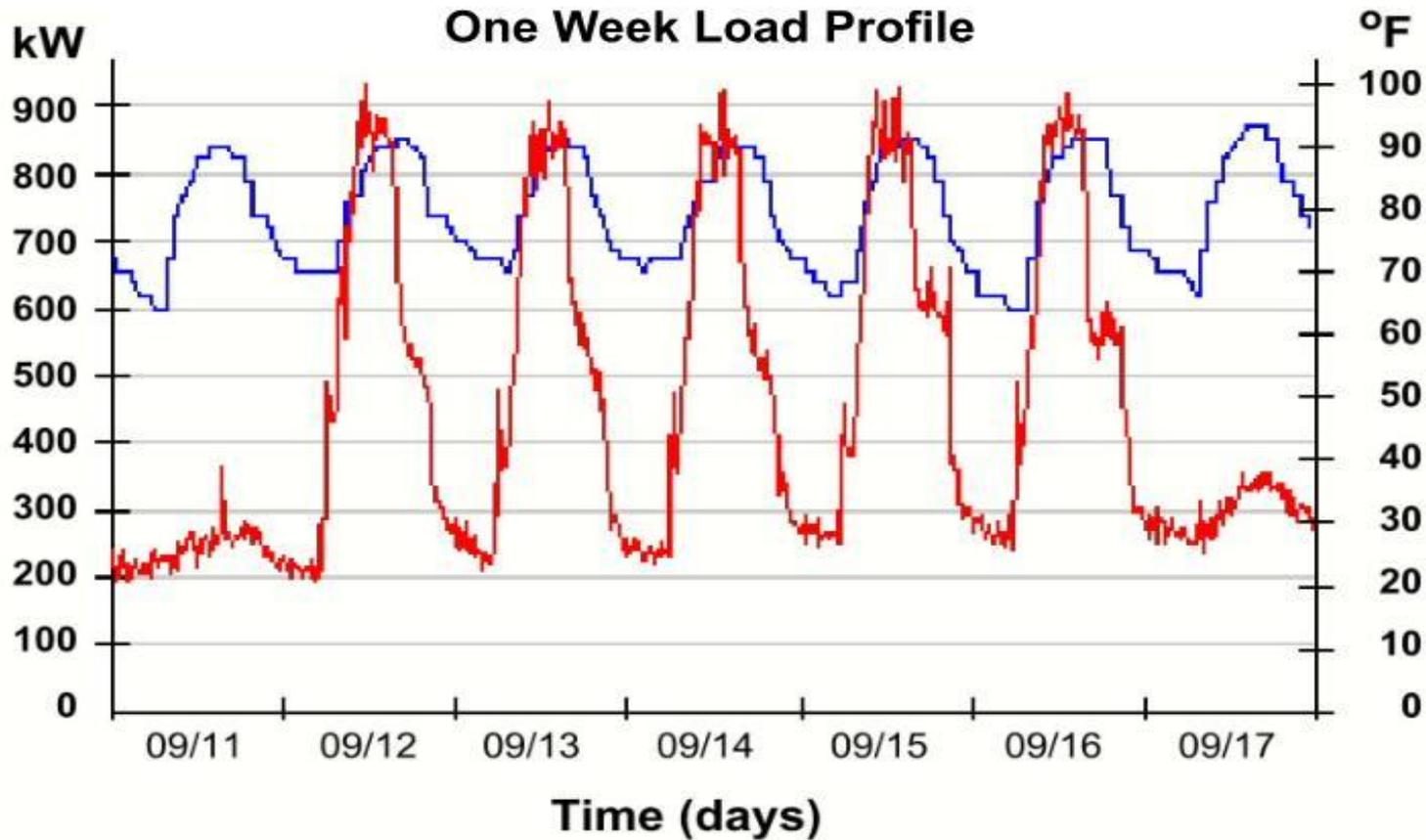


Prioritize efforts by identifying under-performing buildings.



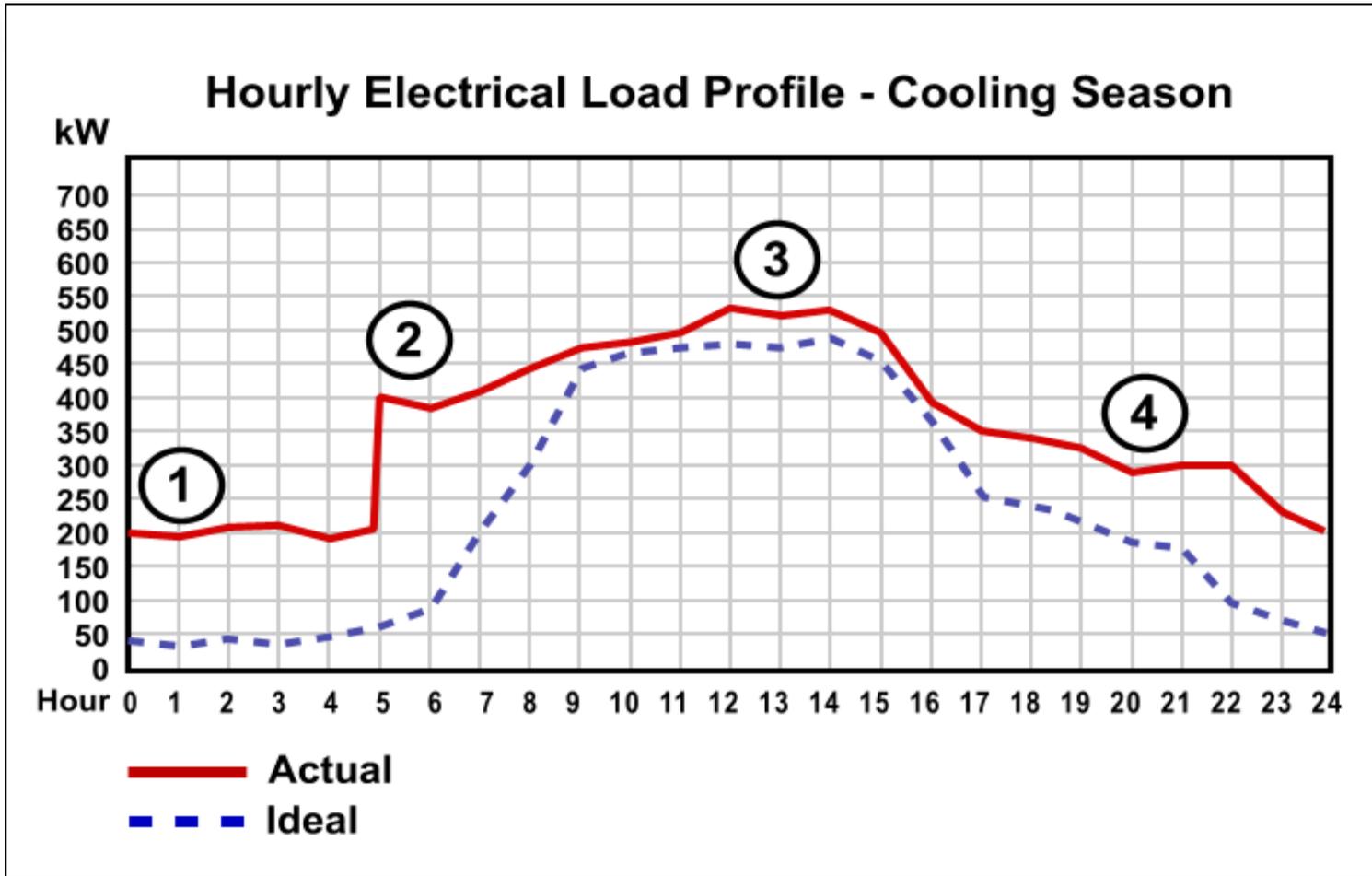
Strategic Energy Plan Strategies

Assessment & Monitoring – Load Profiling 7-Day



Strategic Energy Plan Strategies

Assessment & Monitoring – Load Profiling 24-Hour





Strategic Energy Plan Strategies

Assessment & Monitoring – Load Profiling Questions

1. Why is so much power needed at night?
2. Why is equipment starting so early in the morning?
3. Are there any loads that can be shifted off-peak?
4. Can anything be turned off sooner at the end of the day?

Strategic Energy Plan Strategies

Assessment & Monitoring – Data Loggers

Data Logger
with Software





Strategic Energy Plan Strategies

Assessment & Monitoring – Data Loggers

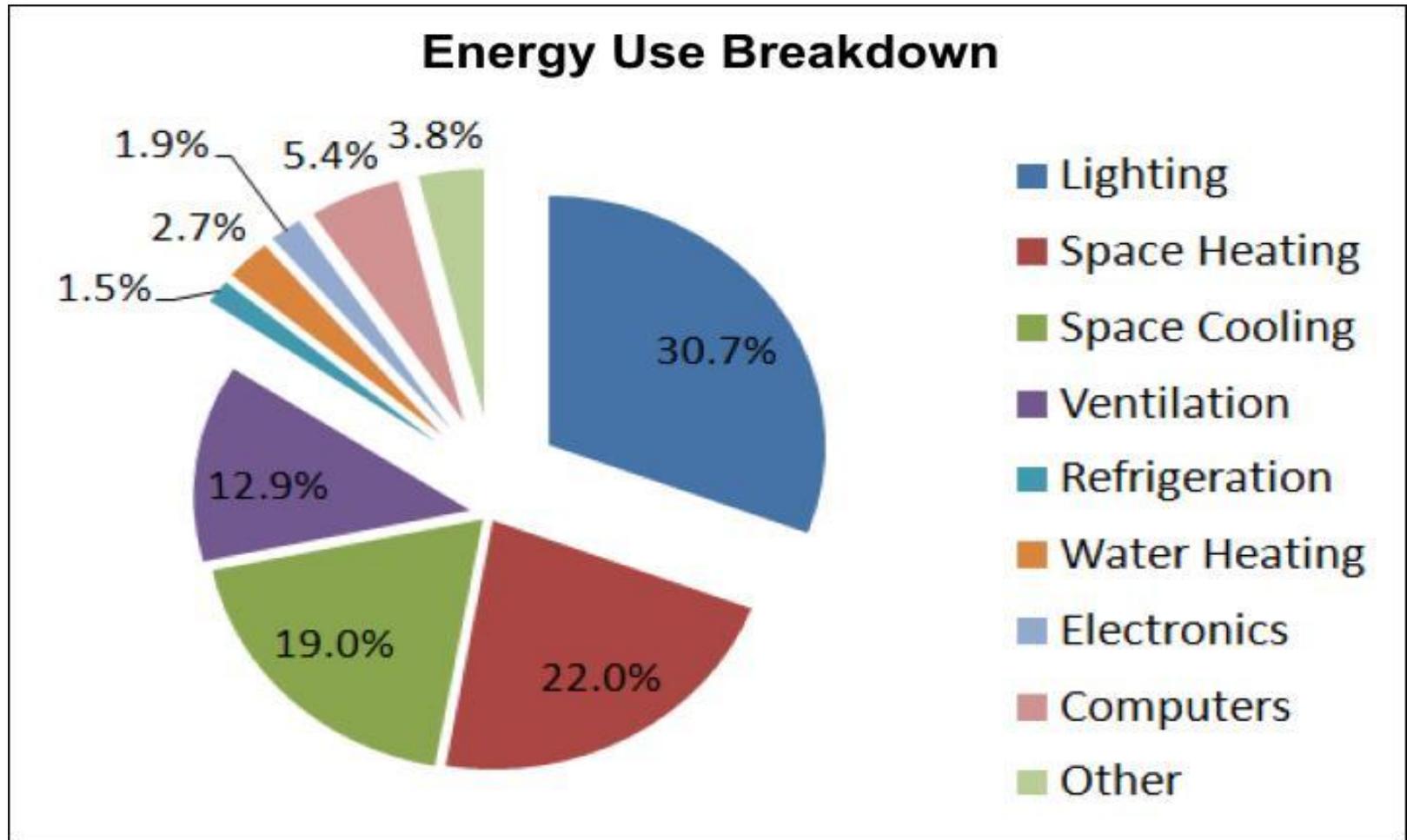
What can be measured?

- Lighting – on/off, and intensity level
- Temperature – inside and outside
- Relative Humidity
- Current in an electric circuit
- Motor – on/off

Data loggers are easy to use and can be programmed from your computer. Data collected can be downloaded from the data logger to a program on your computer for analysis.

Strategic Energy Plan Strategies

Assessment & Monitoring – Major End Use



Strategic Energy Plan Strategies

Assessment & Monitoring – Major End Use (Example)

End Use	Estimated Annual Energy Use*	Estimated Annual Energy Cost*	Target Savings (20% Reduction)
Lighting (35.5%)	4,086,606 kBtu	\$62,000	\$12,400
Heating (21.7%)	2,496,567 kBtu	\$38,000	\$7,600
Cooling (16.8%)	1,935,000 kBtu	\$30,000	\$6,000
Ventilation (13%)	1,496,504 kBtu	\$23,000	\$4,600
Other (13%)	1,496,504 kBtu	\$23,000	\$4,600



Strategic Energy Plan Strategies

Communication, Awareness, and Training

- Communication plan
- Awareness campaigns
- Technical training





Strategic Energy Plan Strategies

Communications Plan

Get the word out!

- Does your agency have a goal or objective to achieve?
- What degree of involvement is needed by staff?
- Have you identified specific strategies for occupants?
- Do you have a way of notifying supervisors and staff of progress and accomplishments?
- Are there any special campaigns that the agency will be participating in?
- Are there people or organizations you want to recognize (awards, commendations, appreciation, etc.)?



Strategic Energy Plan Strategies

Awareness Campaigns

Reasons why energy is wasted

1. People aren't aware of the need.
2. People just don't know – what to do, how to do it, or when to do it.
3. Some required actions are inconvenient to do.
4. People sometimes forget to do them.
5. People are not aware of the significance of their actions.

An effective awareness campaign addresses these “community-based social marketing” issues.



Strategic Energy Plan Strategies

Awareness Campaigns

- Effective when much of the energy load is controlled by occupants (light switches, manual thermostats, doors and windows, blinds, equipment use, computers, etc.)
- Helps to remind people to take needed action at the time it needs to be taken.
- Educates people on what to do and how to do it.
- Helps to encourage them to take action by educating them on the significance of their actions – why it makes a difference.
- Incorporates processes that make it more convenient to do the less convenient actions.



Strategic Energy Plan Strategies

Technical Training

- Use of ENERGY STAR Portfolio Manager
- ENERGY STAR tools and resources
- Building performance benchmarking
- Energy auditing procedures, concepts, and techniques
- Energy monitoring and measurement techniques
- Building energy use systems – how they work
- Utility bill analysis
- Life Cycle Cost Analysis
- Energy Performance Contracting concepts
- Specialized staff training (based on building characteristics)



Strategic Energy Plan Strategies

Operations & Maintenance

These strategies affect the efficient operations of the following major systems:

- Lighting
- Heating
- Cooling
- Ventilation
- Other





Strategic Energy Plan Strategies

Operations & Maintenance - Lighting

- Provide lighting schedule checklist and assign responsibility for control.
- Evaluate potential for daylight harvesting.
- Evaluate potential for task lighting in lieu of overhead.
- Conduct a lighting survey to determine how lights are used.
- Install programmable time clocks for outside lighting.
- Evaluate potential for occupancy-sensor controlled lighting.
- Estimate the financial benefits of a lighting retrofit project.



Strategic Energy Plan Strategies

Operations & Maintenance - Heating

- Keep outside doors and windows closed.
- Keep window blinds closed during unoccupied periods (when daylighting is not needed).
- Set back temperature settings when unoccupied.
- Turn system off when unoccupied (when frost season is ended).
- Evaluate system settings (start/stop, temperature, etc.)
- Conduct steam trap survey and repair as needed.



Strategic Energy Plan Strategies

Operations & Maintenance - Cooling

- Keep outside doors and windows closed.
- Keep window blinds closed during unoccupied periods when daylighting is not needed.
- Set back temperature setting when unoccupied.
- Turn system off when unoccupied when risk of high humidity level is not a concern.
- Evaluate system settings (start and stop times, temperature settings, etc.)
- Assess conditions for simultaneous heating and cooling (is system designed for terminal reheat?).
- Conduct physical condition survey of all HVAC equipment.



Strategic Energy Plan Strategies

Operations & Maintenance - Ventilation

- Ensure return air registers are not blocked.
- Keep outside doors and windows closed.
- Check for exhaust fans that are left running when not needed.
- Repair weather stripping on doors and windows.
- Conduct a duct leak survey.
- Check condition of all outside air dampers for proper functionality.
- Evaluate building automation system controls to assess optimal settings.



Strategic Energy Plan Strategies

Operations & Maintenance – Other

- Turn off office appliances when not needed.
- Place computers on ENERGY STAR mode.
- Use power strips for all electronic equipment to avoid phantom loads.
- Procure ENERGY STAR qualified equipment.
- Reduce need for high energy consuming portable appliances (space heaters, mini-refrigerators, coffee-makers, etc.).
- Use patch-management software for after hours software and security updates.
- Assess vending machines for turning off overnight.



Strategic Energy Plan Strategies

Operations & Maintenance – Other (continued)

- Eliminate unnecessary lighting in vending machines.
- Conduct a water heater control survey to determine when water heaters are needed and how then can be better controlled.
- Establish a Building Operating Plan that documents optimum temperature settings, run times, setbacks for unoccupied periods (work days and non-work days).



Strategic Energy Plan Strategies

Retrofit Projects

- Popular projects
- Project bundling
- Energy Performance Contracting





Strategic Energy Plan Strategies

Retrofit Projects – Popular Projects

- Programmable time clocks for outside lighting
- Occupancy sensor-based control for lighting in common areas.
- Lighting retrofits for more efficient lighting – bulbs and ballasts
- Water-side economizer for boiler water (if applicable)
- Steam trap survey and replacements as needed
- Boiler retrofit for modular condensing boiler system
- Survey potential for heat pump system to replace aging cooling and heating systems



Strategic Energy Plan Strategies

Retrofit Projects – Popular Projects (Continued)

- Motor survey to determine opportunities for high efficiency motor retrofits
- Programmable thermostats (where applicable)
- Air-side economizer (where applicable)
- Variable frequency drives (where appropriate)
- Direct Digital Control (DDC) system installation
- Demand Control Ventilation (DCV) system (where appropriate)
- Higher efficiency upgrades for aging equipment with improved control technology



Strategic Energy Plan Strategies

Retrofit Projects – Project Bundling

- Many projects are evaluated based on their simple pay back
 - 5 or less years: excellent
 - 5 to 10 years: good
 - 10 to 20: may be still be approved depending on statutes
- Some measures payback quicker than others.
- Bundling a long payback item (such as a boiler replacement – 12 year pay back) in the same project with a short payback item (lighting replacement – 6 year pay back) can result in a more comprehensive building improvement with an overall pay back under 10 years.



Strategic Energy Plan Strategies

Retrofit Projects – Energy Performance Contracting

- Offers a comprehensive turn-key option for building renewal
- Includes investment-grade audit, project management, design, procure, install, commissioning (if specified), and servicing (if specified)
- Includes measurement and verification plan – proof of savings agreed to prior to project start
- Allows involvement of financial institution for project funding based on amount of utility cost savings



Strategic Energy Plan Strategies

Annual Updates to Plan

Instructions

For each building, where **physical/tangible** changes have been made:

- List the new measures undertaken during the calendar year
- Include start dates and projected end dates of the project and a summary of the results.
- Following are some categories of changes to reference: building control systems, lighting retrofits, HVAC retrofit projects, materials choice, and so on.
- If no physical/tangible changes have been made to the building in question, simply leave the entry blank.

Live Demonstration of StEP Update





Strategic Energy Plan Strategies

Annual Updates to Plan

Agency Example

2009 StEP Report by Building

Instructions: For each building, where changes have been made, list the new measures undertaken during the calendar year. Include the start date and projected end date of the project and a summary of the results. Please list tangible building changes, upgrades, and retrofits.

Building Review

Building ID	Building Name	Comments
1405841	AR099_999-04- Park One Office Center	LED Exit signs installed
1367953	AR099_999-05- AR ABC Office	
1222925	AR099_999-06-AR Admin	
1223034	AR099_999-07- AR Agency Building 3	Installation of occupancy sensors
1326308	Test Facility	
1225030	AR099_999-04-AR Hospital 4	Operational settings adjustments



Strategic Energy Plan Strategies

Annual Updates to Plan

Agency Example

2010 StEP Report by Building

Instructions: For each building, where changes have been made, list the new measures undertaken during the calendar year. Include the start date and projected end date of the project and a summary of the results. Please list tangible building changes, upgrades, and retrofits

Building Review		
Building ID	Building Name	Comments
1405841	AR099_999-04- Park One Office Center	
1367953	AR099_999-05- AR ABC Office	T8 lamps replaced T12 lamps
1222925	AR099_999-06-AR Admin	Motors retrofitted with variable frequency drives
1223034	AR099_999-07- AR Agency Building 3	
1326308	Test Facility	Installation of occupancy sensors
1225030	AR099_999-04-AR Hospital 4	



Green.Arkansas.gov

Resources and More Information

- Login with your agency username and password
- Locate your agency folder
 - If you do not have a folder,
 - Contact Cathy Heath, cathy@ark.org to get a StEP uploaded.
- Locate the Cadmus Group folder
 - Available to all agencies
 - Reference and training documents are posted here for you to download
 - The Act 1494 reporting template
 - The training workbook
 - Slide sets
 - Additional Portfolio Manager and energy managers training information to come

Green.Arkansas.gov

Resources and More Information



Arkansas.gov Agencies | Online Services | State Directory A+ | A- | Text | Print

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Welcome to the Arkansas Green Portal

The world as we once knew it has changed, and the world we're living in is going to require new behavior from all of us. I believe that all Arkansians can take steps that will help protect our precious natural environment and move us toward a greener economy. ~ Gov. Mike Beebe

Green Events
Upcoming Events
More Information

Green Partners

- Office of the Governor
- Arkansas Building Authority
- Arkansas Energy Office
- Office of State Procurement | DFA
- Arkansas Department of Environmental

Energy Environment Planning

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Energy Plan Forms

Home > Strategic Energy Plans

Strategic Energy Plans (StEP)

Executive Order EO 09-07 dated May 28th, 2009 orders agencies to develop individual agency strategic energy plans (StEPs). Each StEP must contain detailed provisions for the collection and periodic monitoring of data on the agency's annual energy use, which shall include the collection and monitoring of data that will permit the agency to evaluate with specificity where and how energy is used.

Agencies may utilize the StEP forms provided. The forms included on the left are not intended to include a comprehensive list but are available for agency reference and use.

Each affected agency shall transmit a copy of its StEP to the Office of the Governor, along with a proposed time line for implementation of each aspect of its plan, on or before October 31, 2009.

When you have gathered the required information and drafted your agency StEP, click on the link below to upload your documents.

[Upload STEP Documents](#)

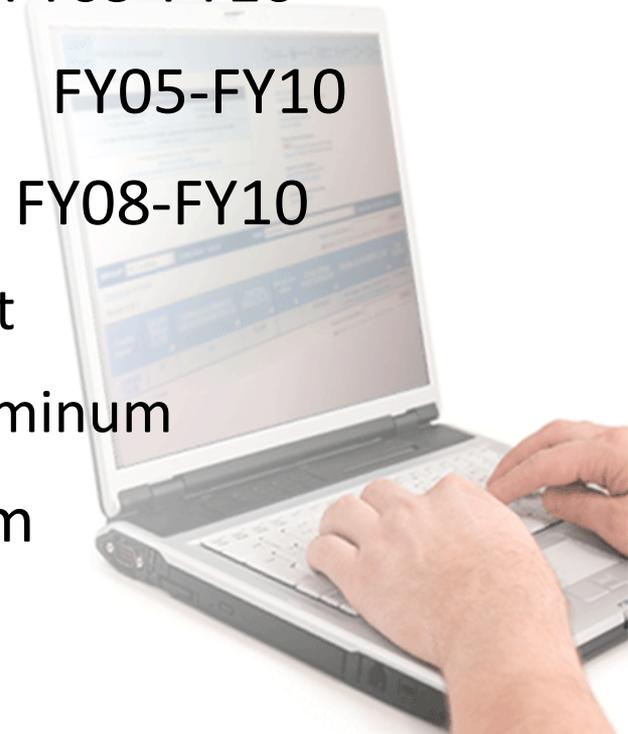
STEP Sample
STEP Facility Datasheet (.xls)
Upload Documents



One Example:

ADEQ's StEP Achievements to Date

- 33.7% decrease overall energy FY09-FY10
 - (ADEQ Headquarters)
- 15.5% reduction in fleet fuel FY09-FY10
- 44% reduction in office paper FY05-FY10
- 57% reduction in solid waste (HQ).... FY08-FY10
 - Recycling program responsible for most
 - All field offices recycling paper and aluminum
- Employee StEP/EMS training program





Submitting 1494/ StEP Reporting Template

- Complete Cover tab and provide notes in Rollup Reports
- Ensure that all data reported for Act 1494 compliance and StEP reporting is accurate
- Save template as
“Agency Name_Act 1494_StEP Reporting Template”
- Submit template with all Baseline (2008) – 2011 tabs completed by October 31, 2011
- Include a cover letter from Agency Director verifying that all submitted data is accurate
- Put template and cover letter in your Agency folder at green.Arkansas.gov
- Email EEllis@ArkansasEDC.com to let him know

TECHNICAL SUPPORT

Arkansas@cadmusgroup.com

**Toll-free support line:
1-855-266-9773
(8 am – 5 pm weekdays)**

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