

# Building Benchmarking

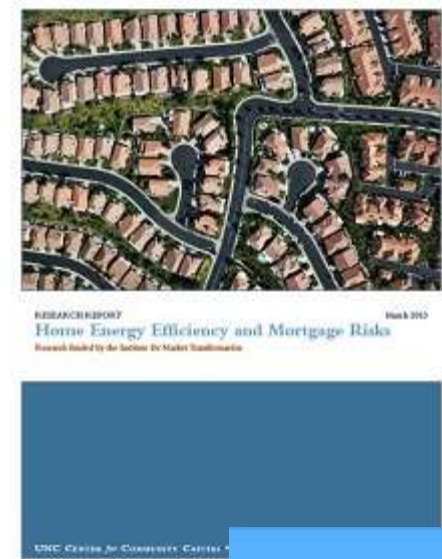
*An Overview of City and Utility Efforts*

International District Energy Association  
June 10, 2014 | Seattle, WA  
Jayson Antonoff

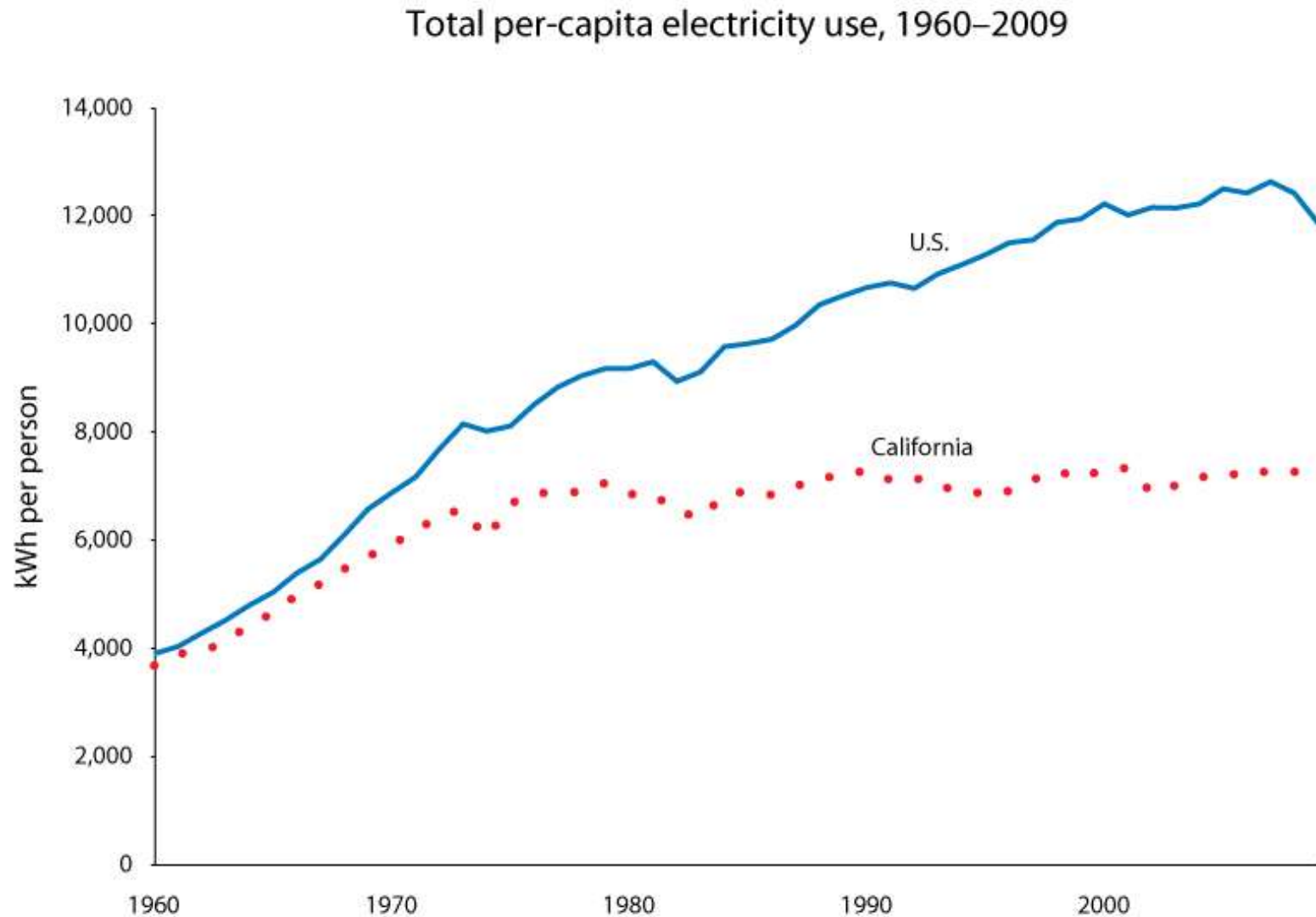


# Institute for Market Transformation

- Design, adoption and implementation of building energy efficiency policies
- Policy advisor to state and local governments, federal agencies, utilities and industry groups
- Serves as the U.S. hub for the Global Buildings Performance Network



Even the most aggressive codes and incentive programs have only managed to flatten per capital energy usage.





	Calories	
	meal™	
	300	450
	450	600
	430	580
	510	660
	410	560
	420	570
	560	

### Nutrition Facts

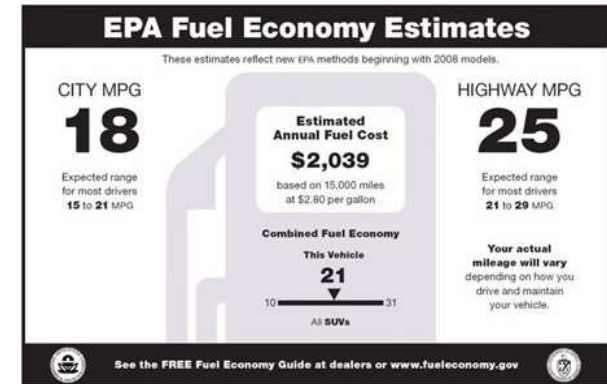
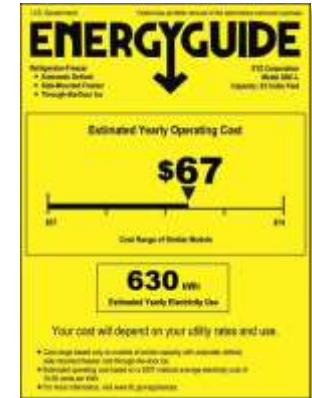
Serving Size 1 cup (228g)  
Servings per Container 2

Amount Per Serving		
Calories 280		Calories from Fat 100
		% Daily Value*
Total Fat 13g		20%
Saturated Fat 5g		25%
Trans Fat 2g		
Cholesterol 2mg		10%
Sodium 660mg		26%
Total Carbohydrate 31g		10%
Dietary Fiber 3g		6%
Sugars 5g		
Protein 5g		
Vitamin A 4%		Vitamin C 2%
Calcium 15%		Iron 4%

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may vary depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat. Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Fiber	25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

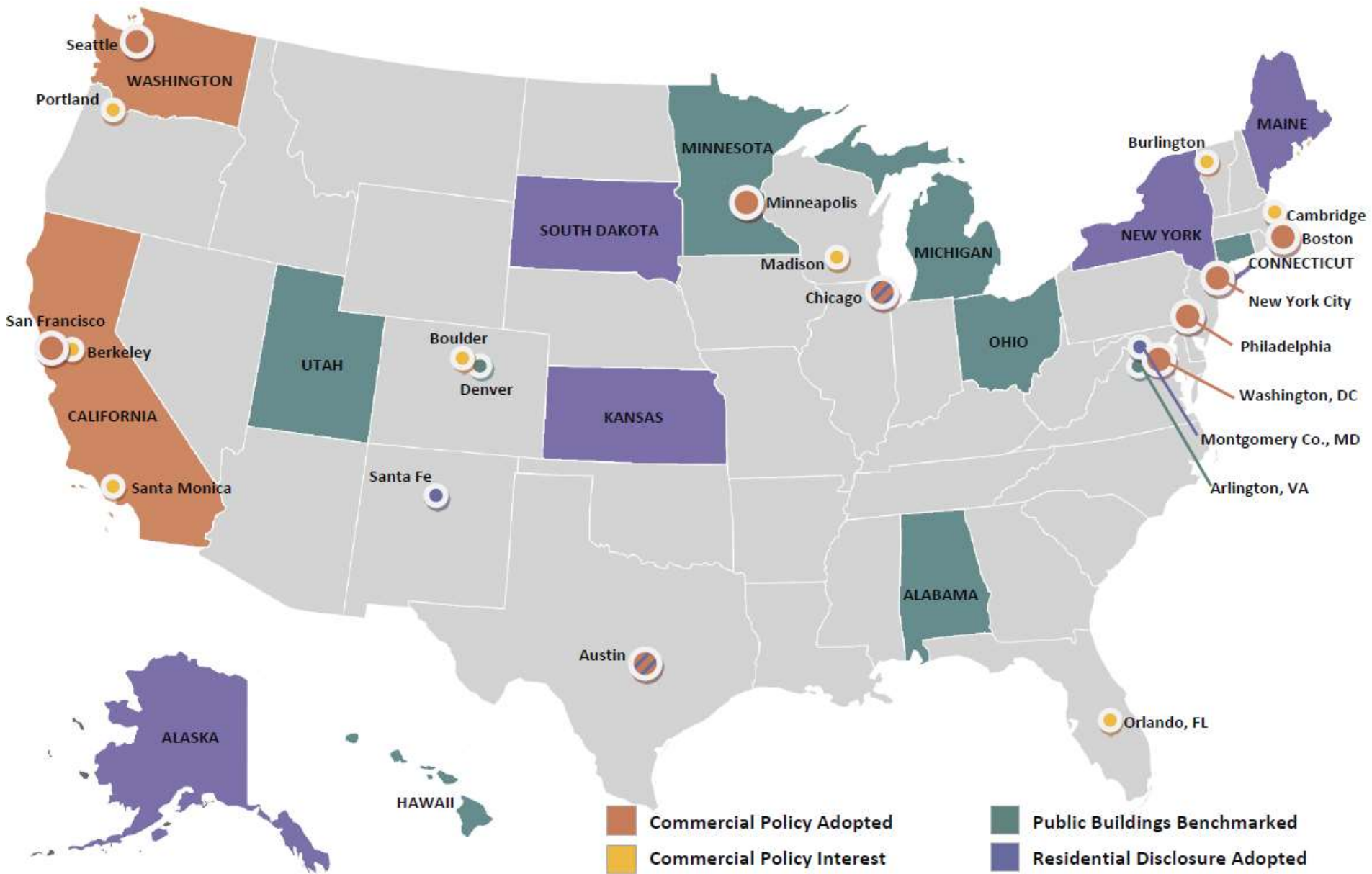


You can't manage what you don't measure

# Building Energy Benchmarking



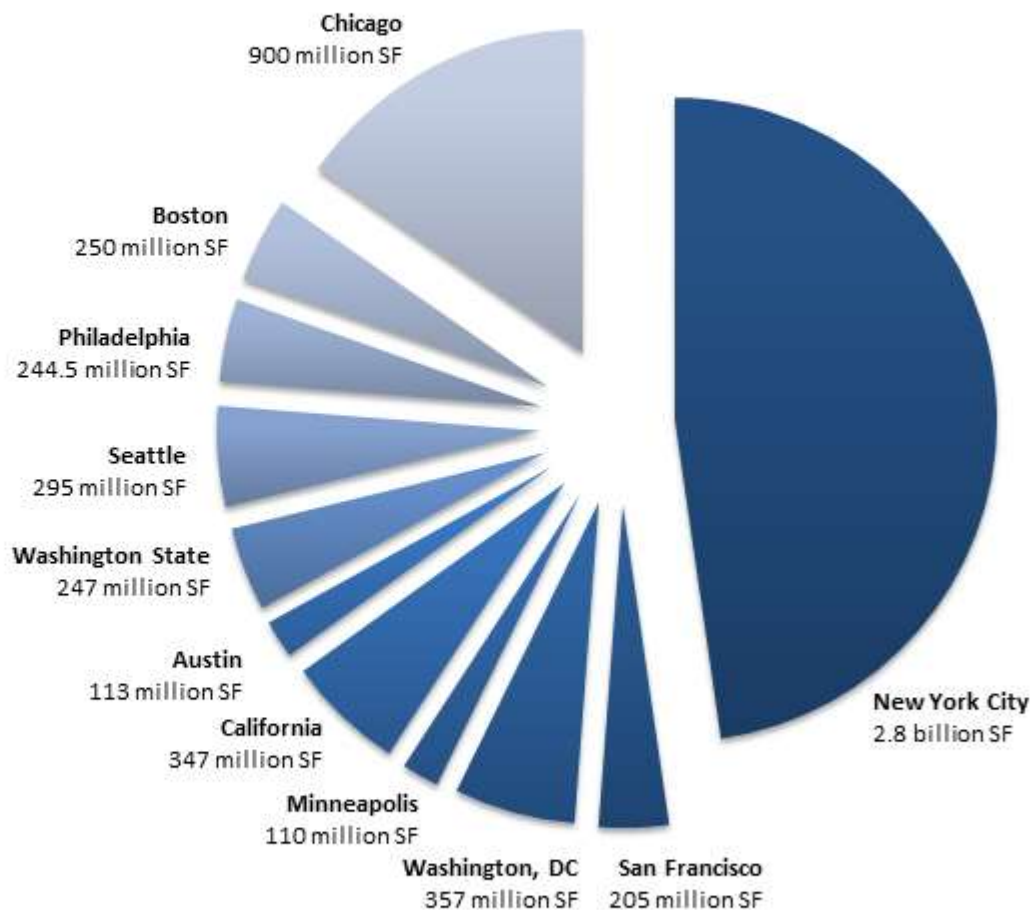
# U.S. Benchmarking Policy Landscape



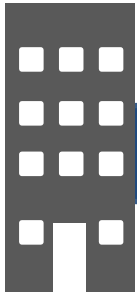


**Totaling  
approximately  
5.8 billion SF  
of floor space in  
major real estate  
markets**

**BUILDING AREA (IN SQUARE FEET) COVERED ANNUALLY**



# Benchmarking Data Needs



## Building Owners

- Building physical characteristics
- Building operating characteristics

A detailed Energy Star report titled "STATEMENT OF ENERGY PERFORMANCE Office Sample Facility". It includes building details, energy usage data, and a professional engineer's seal and signature. The report is dated August 17, 2009.

**STATEMENT OF ENERGY PERFORMANCE**  
Office Sample Facility

Building 66-1010000  
For 12 Month Period Ending May 31, 2009  
Date SEP documents completed December 28, 2009

Facility: Office Sample Facility  
100 Main Street  
Charlotte, NC 28202

Facility Owner:  
1000 Test Avenue  
Charlotte, NC 28207  
800-555-5555

Primary Engineer for this Facility:  
John Smith  
1000 Test Avenue  
Charlotte, NC 28207  
800-555-5555  
johnsmith@engr.com

Year Built: 2000  
Square Foot Area (SF): 10,000

Energy Performance Rating: (1-100) 85

**Energy Use Summary\***

Category - End-Use/Source (kBtu)	2008-2009	2009-2010
Electricity (kBtu)	2,288,710	1,752,898
Gas (kBtu)	1,100,000	1,100,000
Water (kBtu)	100	100
Other (kBtu)	100	100
<b>Total (kBtu)</b>	<b>3,488,810</b>	<b>2,952,998</b>

Electricity (kBtu per sq ft): 228.87  
Gas (kBtu per sq ft): 110.00  
Water (kBtu per sq ft): 10.00  
Other (kBtu per sq ft): 10.00

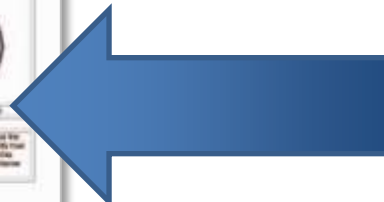
**Electric Distribution Utility:**  
Charlotte Energy Services, LLC

**National Average Comparison:**  
National Average (kBtu per sq ft): 100  
National Average (kBtu per sq ft): 100  
Difference from National Average (kBtu per sq ft): 0%

**Meets Industry Standards for Indoor Environmental Quality:**  
Ventilation for acceptable indoor air quality: Yes  
Radon-resistant New Construction: Yes  
Asbestos Abatement: Yes

**Professional Engineer:**  
John Smith  
1000 Test Avenue  
Charlotte, NC 28207  
800-555-5555

**Signature:**  
I certify that the information reported on this form is true and accurate to the best of my knowledge and belief, and that I am a duly licensed Professional Engineer in the State of North Carolina.



## Utilities

- Building energy consumption



# Current Utility Practices



# Utilities Benefit by Supporting Benchmarking

- Customer service
- A gateway to other energy efficiency programs
- Insight into building loads to improve marketing and targeting for energy efficiency programs and inform infrastructure planning
- Data to analyze energy efficiency programs and validate savings



**Jayson Antonoff**  
**U.S. Director, Global Buildings Performance Network**

Institute for Market Transformation

[Jayson@imt.org](mailto:Jayson@imt.org)





# BENCHMARKING IN SEATTLE:

## Data Access Helps Make it Happen!

IDEA Conference 2014

06.11.14

**Nicole Ballinger**

City of Seattle - Office of Sustainability & Environment



# Seattle Policy Requirements

Commercial and multifamily buildings 20,000 SF+ must annually:

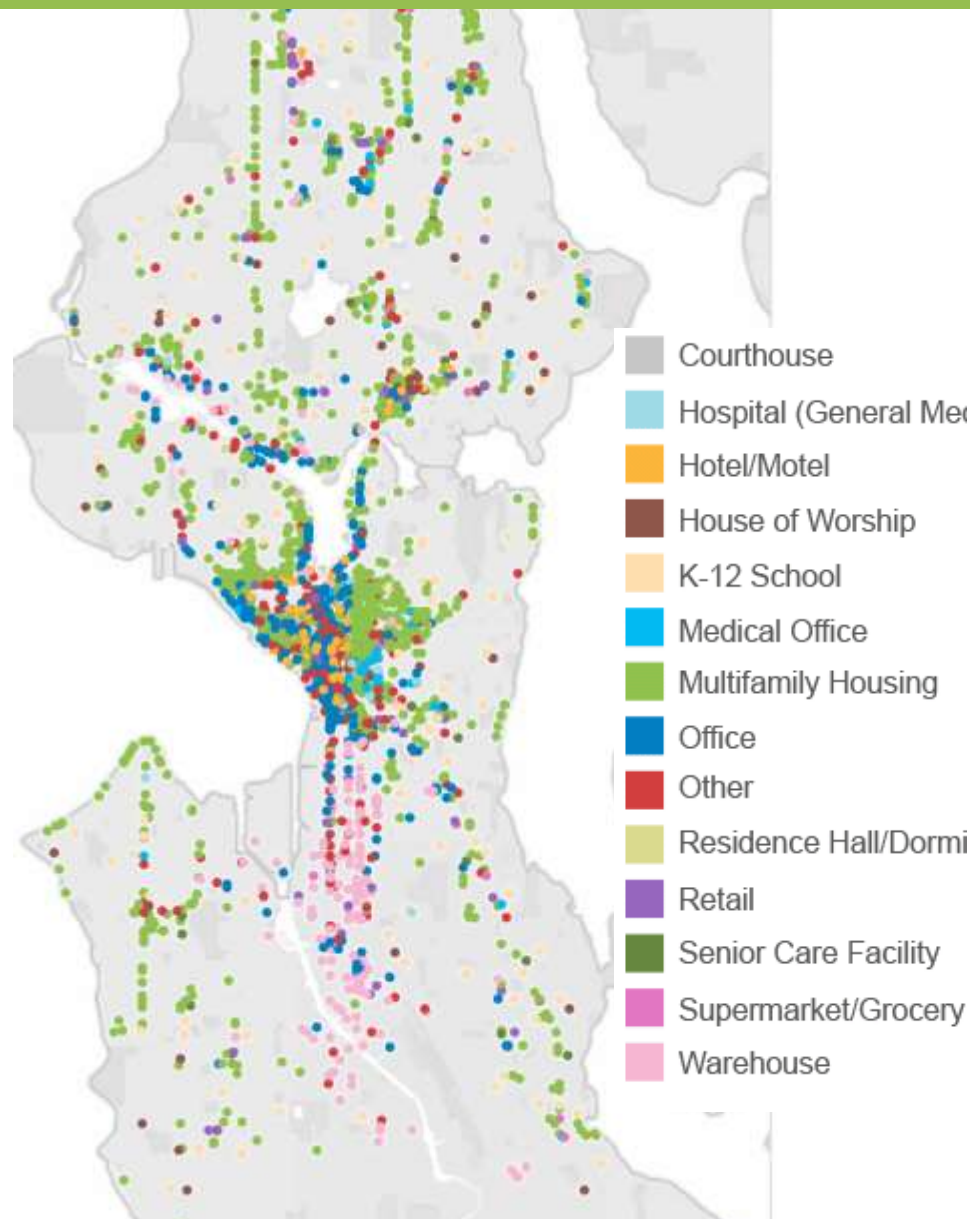
- ☐ **Benchmark** energy use with EPA's Portfolio Manager tool
- ☐ **Annually Report** building energy use by April 1<sup>st</sup> (Energy Use/SF and ENERGY STAR score)
- ☐ **Disclose** upon request to buyers, lenders, current/prospective tenants



ENERGY STAR®  
**PortfolioManager®**

# Seattle's Required Buildings

- ❑ About 3,300 buildings  
20,000 SF +
- ❑ 281 million square feet
- ❑ 50% commercial  
50% multifamily
- ❑ Seattle City Light  
Puget Sound Energy  
Seattle Steam
- ❑ All types of ownership & utility  
billing scenarios





# Obtaining Whole Building Energy Use

**Owner/manager** enters building square footage & use details and signs up for utility “data exchange”

ENERGY STAR®  
**PortfolioManager®**

**Utilities** provide whole building energy data via “data exchange”



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**Tenant/building energy use**

Owner reports whole-building energy use/sf & ENERGY STAR scores to **City of Seattle**.



total annual  
energy use  
(kBtu)



total  
square feet  
(sf)

=

ENERGY  
USE  
INTENSITY

=

Energy Use  
Intensity  
(kBtu/sf/year)



[www.seattle.gov/energybenchmarking](http://www.seattle.gov/energybenchmarking)

# BENCHMARKING & REPORTING



## GET SUPPORT

- How to Enroll**  
Click on [How to Enroll in Seattle GreenSource Benchmarking](#) if you're less than one year away from the deadline.

**Help Desk**  
[enrollment@seattle.gov](#)  
(206) 372-8410, 10-5 Mon-Fri

**Drop-in Help**  
Each Wednesday, 12:00pm-2:00pm  
Seattle Municipal Center  
300 3rd Ave., 10th floor
- COMPLIANCE**



**Smith Tower Building**  
Seattle, WA

## Compliance Checklist - Energy Use Reporting

If benchmarking and reporting a building for the first time, complete all steps to comply with the City of Seattle's Energy Benchmarking and Reporting requirements by April 1st:

- STEP 1: Get Started**

  - 1. Confirm the accuracy of the information provided about the building on the benchmarking and reporting letter sent by the City of Seattle. This includes: building use, address, name, and owner or property manager. Email: [compliance@seattlebenchmarking.seattle.gov](mailto:compliance@seattlebenchmarking.seattle.gov)

2. Gather details about the building's usage.
- STEP 2: Set up Property in Portfolio Manager**

  - 1. Create a new account at [City of Seattle's Portfolio Manager benchmarking tool](#) [www.seattle.gov/benchmarking](http://www.seattle.gov/benchmarking) and add the property.

**IMPORTANT:** KEEP A RECORD of the username and password. We recommend using one Portfolio Manager account for all new employees, manager or owner.

2. Add a Property to enter info.
- STEP 3: Obtain Energy Meter**

  - 1. Follow the [Flow to Guide](#) on how to obtain energy utility serving the building for the required time.

    - 1. Seattle City Light
    - 2. Puget Sound Energy
    - 3. Seattle Gas
- STEP 4: Coordinate Energy Use**

  - 1. Create and print a [Standardized Energy Use Inventory \(SEUI\)](#) for
- STEP 5: Add the City of Seattle**

  - 1. Add City of Seattle Account
- STEP 6: Share Building with SEU**

  - 1. Share the Property with the City with read only access. The Energy Use Inventory (SEUI)



The more aware you are of your building's energy usage and the more you can save.

## Solving Seattle's ENERGY PUZZLE



The City of Seattle is helping building owners solve the puzzle of how their property is using energy and maintaining it. Collect and share the data to make the most of your building's energy savings in a new benchmarking tool.

[www.seattle.gov/EnergyUse](http://www.seattle.gov/EnergyUse)

\$55

Million

Annual energy savings

2011/2012  
Seattle Building  
Energy Benchmarking  
Analysis Report

Prepared by  
Center for the Built Environment & Sustainability

January 2, 2014

SEATTLE ENERGY BENCHMARKING & REPORTING

## **Nicole Ballinger**

Office of Sustainability &  
Environment

[nicole.ballinger@seattle.gov](mailto:nicole.ballinger@seattle.gov)

206-233-7184



SEATTLE OFFICE OF  
**Sustainability & Environment**






Sustainably Reliable

# **IMPROVING CUSTOMER DATA ACCESS FOR BENCHMARKING**


# SEATTLE STEAM CUSTOMER DATA SERVICES

Since 2006, Seattle Steam has delivered customer usage and billing information through a secure online customer portal.


- Portal available 24/7 for on-demand customer access.
  - Monthly usage back to 1991, in pre-formatted graphs and reports, with account, building and meter detail.
  - Data easily exported to Microsoft Excel for manual data entry in Energy Star Portfolio Manager.
  - Saves SSC resources in responding to regular customer data requests.
  - Partner with customers to improve operations and efficiency: Usage, Cost, Condensate Temperature Reporting.
- 

# AUTOMATED ENERGY STAR REPORTING

The State of WA benchmarking law (RCW 19.27A.170), essentially says that utilities in WA must make energy use data available to Portfolio Manager in a “usable” format.

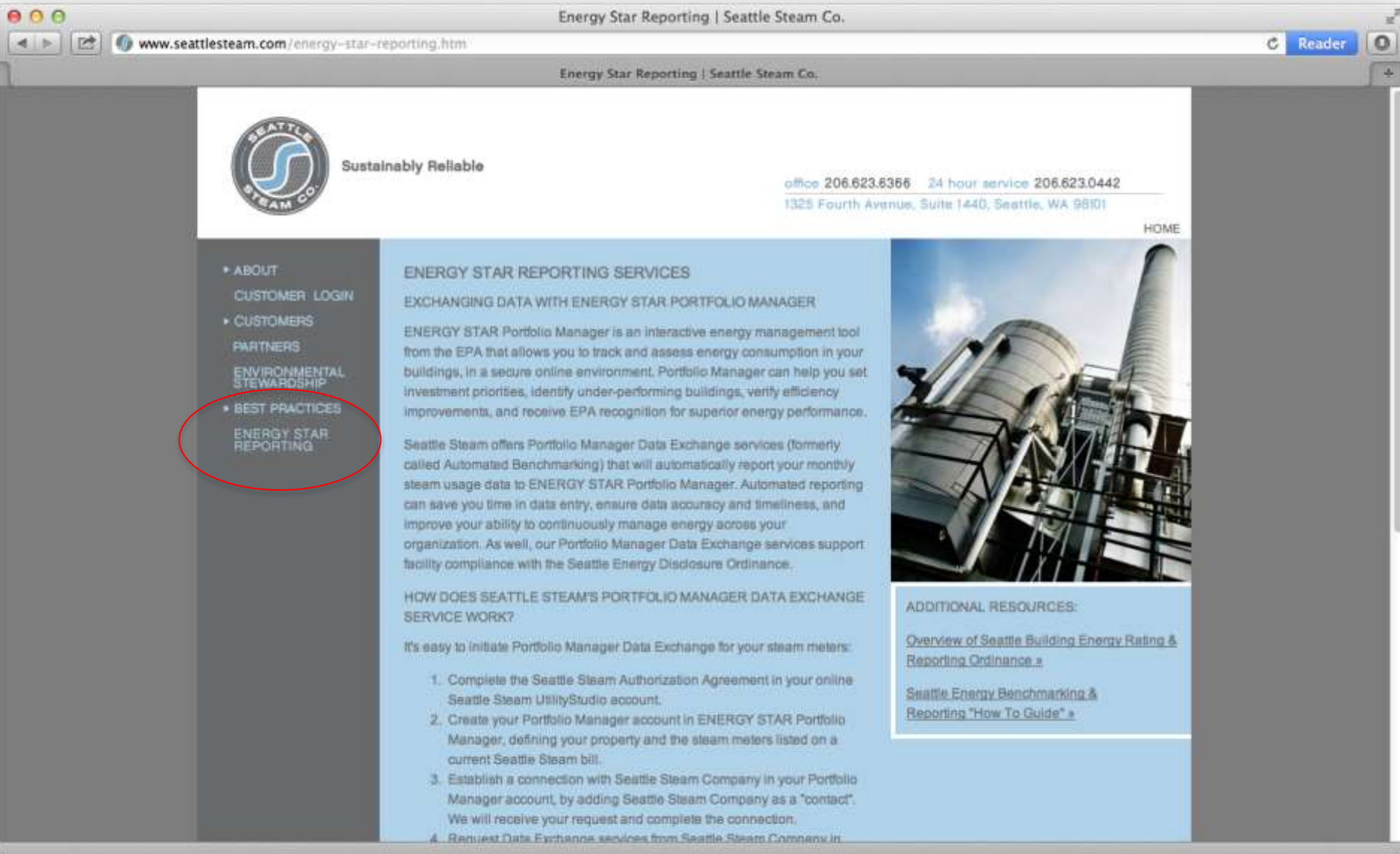
- Existing SSC billing, reporting and CRM processes were integrated with Portfolio Manager Web Services. SSC Energy Star Reporting Services launched in April 2011.
  - Customers enroll in web portal. Online reports confirm monthly reporting to Energy Star.
  - Meter-level usage data is pushed to Energy Star after each monthly billing cycle, ensuring timely and accurate reporting to Portfolio Manager.
  - Nominal service fee is included in monthly customer invoicing.
- 

# IMPLEMENTING ENERGY STAR REPORTING

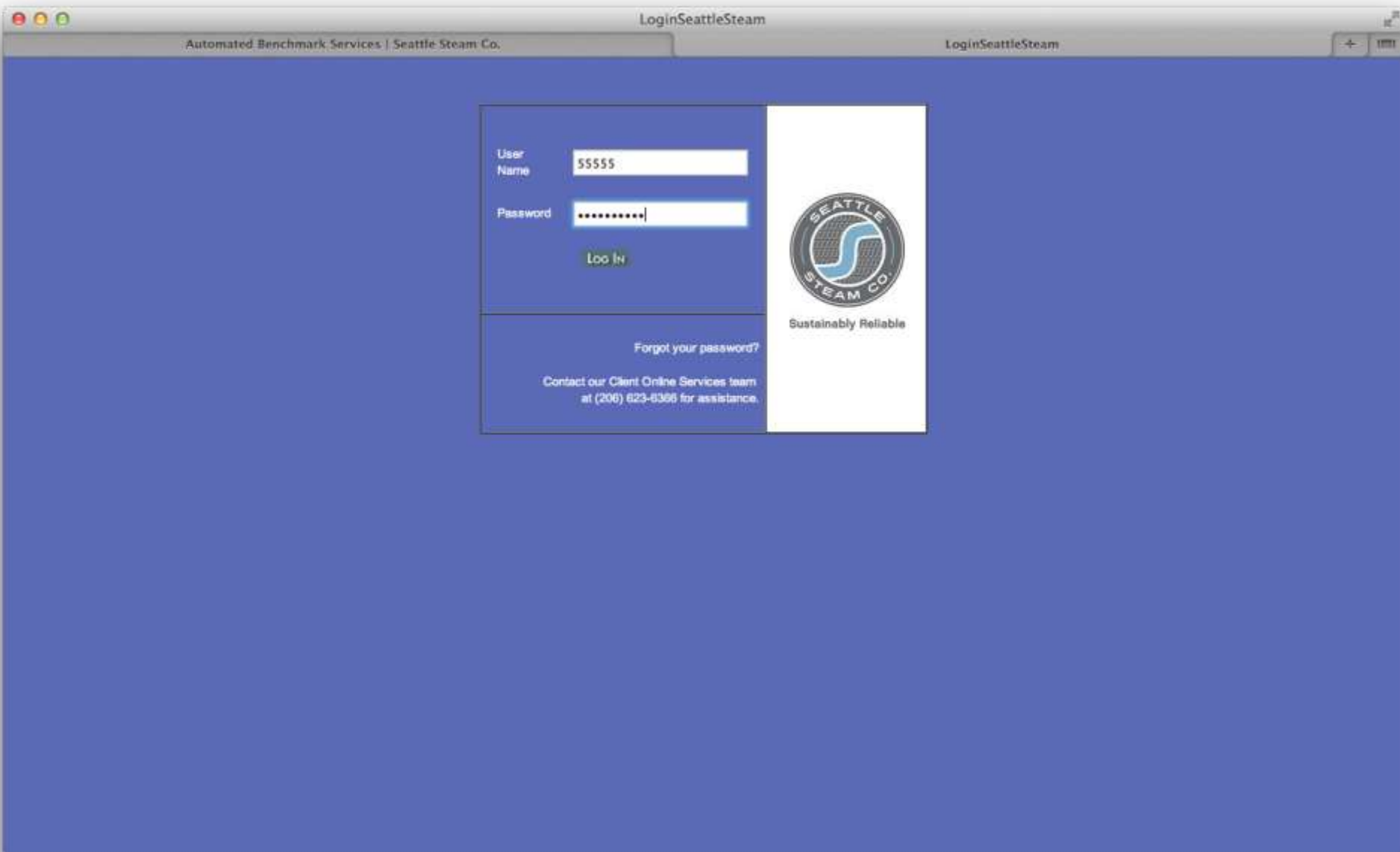
- Worked with City to develop, execute and support disclosure processes.
  - Completed Portfolio Manager Web Services Provider registration.
  - Integrated utility customer and data management systems with Portfolio Manager Web Services.
  - Developed service offering and announced service to customers.
  - Support customers in manual and automated Energy Star reporting processes.
  - Monitor program activity: enrollment, activation, monitoring, reporting and billing.
- 



# Marketing Energy Star Reporting on SSC Home Site



# Customer Portal Login from SSC Home Site



The screenshot shows a web browser window with the title "LoginSeattleSteam". The address bar displays "Automated Benchmark Services | Seattle Steam Co." and the page URL is "LoginSeattleSteam". The main content area has a blue background. A white login form is centered, containing a "User Name" field with the text "55555", a "Password" field with masked characters "\*\*\*\*\*", and a green "Log In" button. To the right of the form is the Seattle Steam Co. logo, a circular emblem with a stylized 'S' and the text "SEATTLE STEAM CO." around it, with the tagline "Sustainably Reliable" below it. Below the login fields, there is a link "Forgot your password?" and a note: "Contact our Client Online Services team at (206) 623-6366 for assistance."

Automated Benchmark Services | Seattle Steam Co.

LoginSeattleSteam

User Name 55555

Password \*\*\*\*\*

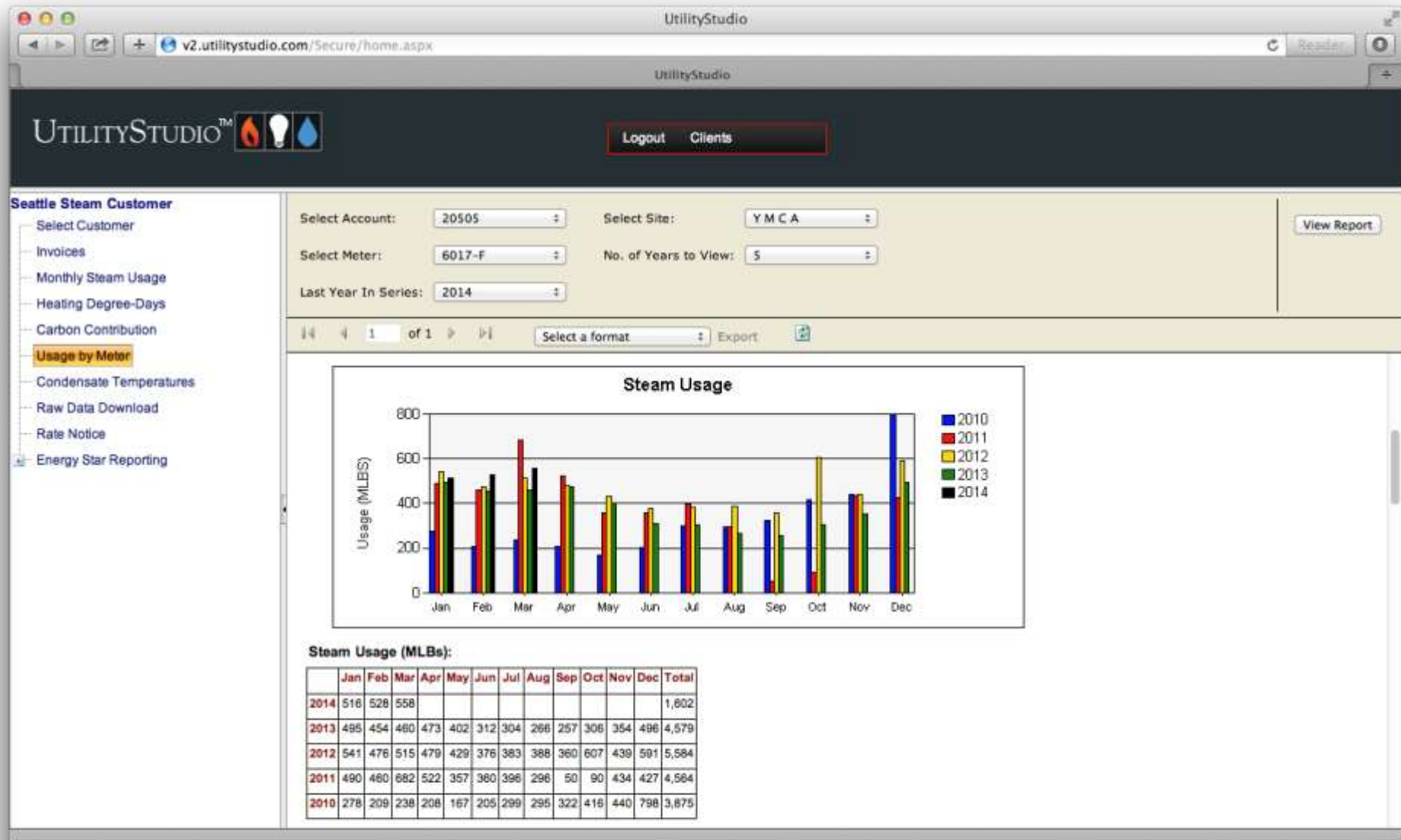
Log In

Forgot your password?

Contact our Client Online Services team at (206) 623-6366 for assistance.

SEATTLE STEAM CO.  
Sustainably Reliable

# Customer Portal: Provide Data for Manual Reporting



# Customer Portal: Offer Automated Reporting

The screenshot displays the UtilityStudio customer portal interface. The browser address bar shows the URL: `v2.utilitystudio.com/Secure/Theme.aspx?ASPXAUTH=4380061072028434403772062338FD1113307585086D618C8F1C7C9B0D18D420C862773AD0C21AE180BAF3E71`. The page title is "UtilityStudio".

**Seattle Steam Customer**

- Invoices
- Monthly Steam Usage
- Heating Degree-Days
- Carbon Contribution
- Usage by Meter
- Condensate Temperatures
- Raw Data Download
- Rate Notice
- Energy Star Reporting
  - Authorization Agreement**
  - How Exchanging Data with F
  - Energy Star Reporting Status
  - Portfolio Manager Reporting

**Authorization for Seattle Steam to Provide Steam Data to Energy Star Portfolio Manager**

Account Number: 12345  
Seattle Steam Customer

As directed by the City of Seattle Building Energy Disclosure Ordinance, Seattle Steam Company can automatically report steam energy consumption data to our customers' Energy Star Portfolio Manager (PM) accounts. This service, formerly known as Automatic Benchmarking Services (ABS), is now called Portfolio Manager Data.

Prior to activating automated reporting services, See Agreement below, confirm your acceptance by check.

For questions about the Energy Disclosure Ordinance instructions, please reference the procedure "How E

**You now have a choice of services**

Each customer must have their own Energy Star Portfolio Manager account and enrolling in Energy Star Reporting service option of completing your Portfolio Manager and En

**Basic Service Level:** By authorizing Basic Service L The Customer will be responsible for accurately settl correcting any errors in the setup process. For Basic Steam utility bill plus an ongoing charge of \$5/month

**Full (or "Concierge") Service Level:** By authorizing to Energy Star and will also be responsible for setting up process. Customers will be contacted by our s report back to you with your PM User Name and Pas to successfully complete the process for you. For the Steam utility bill, plus an ongoing charge of \$5/meter

**Please select from your current options below:**

- ☒ Basic Service
- ☐ Full ("Concierge") Service

**CITY OF SEATTLE: BUILDING ENERGY DISCLOSURE ORDINANCE**

Customer hereby instructs and authorizes Seattle Steam LP, dba Seattle Steam Company (SSC), to provide monthly building steam energy usage data (Data) directly to customer's Energy Star Portfolio Manager Account.

Customer understands and agrees that the data will be reported to Energy Star Portfolio Manager monthly, until such time as Customer instructs SSC to cease providing Data, or until such time as SSC ceases to provide data as a consequence of non-payment by customer. Customer understands that a set-up fee of \$140.00 per account and a monthly reporting charge of \$5.00 per meter will be applied to the customer account.


Please enter your contact information:

Account Number: 12345  
Contact Name: John Smith  
Phone Number: 866-555-1212  
Email: jsmith@customer.com  
Portfolio Manager Username (if known):

☒ I agree to the Seattle Steam Energy Disclosure Program terms.  
(Please check and click the SUBMIT button).  
SUBMIT




# Customer Portal: Enrollment & Customer Support

UTILITYSTUDIO™

Logout

Seattle Steam Customer

- Invoices
- Monthly Steam Usage
- Heating Degree-Days
- Carbon Contribution
- Usage by Meter
- Condensate Temperatures
- Raw Data Download
- Rate Notice
- Energy Star Reporting
  - Authorization Agreement
  - How Exchanging Data with Energy Star
  - Energy Star Reporting Status
  - Portfolio Manager Reporting



Sustainably Reliable

## Seattle Steam Company Energy Star Reporting for the Seattle Energy Disclosure Ordinance

### Instructions for Using ENERGY STAR Portfolio Manager and Seattle Steam Company's Energy Star Reporting Services

This document explains the steps necessary to authorize Seattle Steam Company to automatically report your facility steam usage data to Energy Star Portfolio Manager. This service, formerly called Automated Benchmarking, is now called Portfolio Manager Data Exchange.

You can find additional help on Seattle Steam's website at [www.seattlesteam.com](http://www.seattlesteam.com), and the City of Seattle website at [www.seattle.gov/environment/benchmarking.htm](http://www.seattle.gov/environment/benchmarking.htm).

### How It Works

You will need to complete a few simple steps to begin automated Energy Star Portfolio Manager reporting with Seattle Steam. Detailed instructions and screen shots are covered in this document.

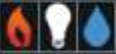
The process requires these steps:

# Customer Portal: View Service Status

UtilityStudio

v2.utilitystudio.com/Secure/home.aspx

UtilityStudio

UTILITYSTUDIO™ 

Logout

**Seattle Steam Customer**

- Invoices
- Monthly Steam Usage
- Heating Degree-Days
- Carbon Contribution
- Usage by Meter
- Condensate Temperatures
- Raw Data Download
- Rate Notice
- Energy Star Reporting
  - Authorization Agreement
  - How Exchanging Data with Portfolio Manager
  - Energy Star Reporting Status**
  - Portfolio Manager Reporting Log


Account Number: 55555

View Report

1 of 1

Select a format

Export

 Sustainably Reliable

## Status of Seattle Steam Energy Star Reporting Service

### General Account Info:

Seattle Steam Account No:	55555
Account Name:	City of Seattle
Approved By:	John Smith
Phone:	888-555-1212
Email:	<a href="mailto:j.smith@customer.com">j.smith@customer.com</a>
Accepted?	<input checked="" type="checkbox"/>
Date Accepted:	1/5/2013 11:16:00 AM
Service Level:	Basic Service
PM UserName (Customer ID):	SEATTLETRAINING
PM Customer Org. Name:	City of Seattle
Current Status:	Active
Comments:	This is only a test account for DPD Energy Star training sessions.

### Building and Meter Mapping to Portfolio Manager (PM)

PM Bldg Name	Seattle Steam Bldg Name	PM Meter Name	Seattle Steam Meter Name	Bldg Mapping Completion Date	Meter Mapping Completion Date	Initial Data Load Completion Date
Westbridge Bldg Test Sample #3	Westbridge Bldg Test Sample #3	12345	12345	09/16/2011	09/16/2011	09/16/2011

# Customer Portal: Track History of Reporting

The screenshot shows a web browser window with the URL `v2.utilitystudio.com/Secure/Home.aspx`. The page header includes the UtilityStudio logo and navigation links for "Logout" and "Clients". A sidebar on the left lists various customer services, with "Portfolio Manager Reporting Log" highlighted under the "Energy Star Reporting" section.

The main content area displays the "Account Number 30851" and the "Portfolio Manager Reporting Log". The log includes a table with the following data:

Seattle Steam Bldg Name	Seattle Steam Meter Name	Readings Start Date	Readings End Date	Usage (kLBS)	Pending	PM Reporting Date
	113-F	10/22/2013	11/19/2013	330	a	12/06/2013
	113-F	09/19/2013	10/22/2013	217	a	11/07/2013
	127-F	10/22/2013	11/19/2013	0	a	12/06/2013
	127-F	09/19/2013	10/22/2013	0	a	11/07/2013

# Energy Star Reporting Services: Process Flow

