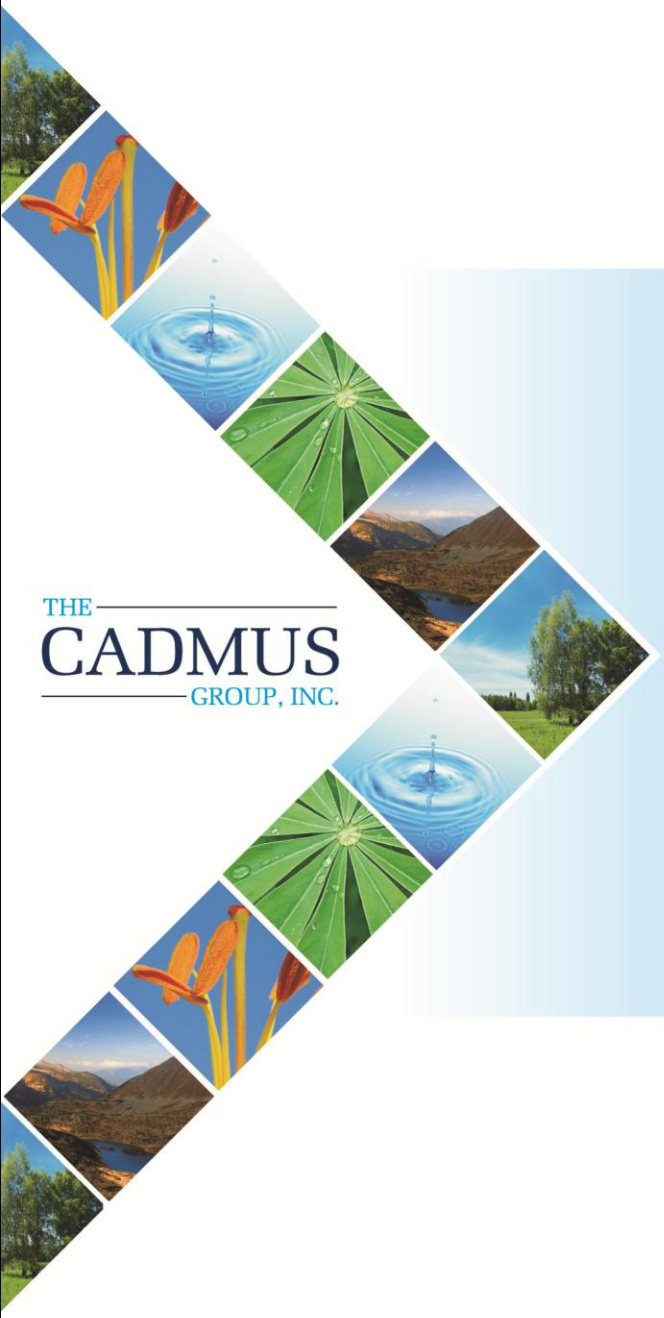
ARKANSAS
Economic Development Commission
ENERGY OFFICE



THE CADMUS GROUP, INC.

Arkansas Utility Kickoff Meeting
Utility Baseline for State Agencies

December 14, 2010

AGENDA

- **Project Overview**
  - Arkansas contract, interest in benchmarking. High-level support and mandate. Act 1494
  - Highlights from some successful agency environmental initiatives
  - Need for benchmarking to evaluate effect of measures
  - Cadmus team and expertise, particularly with other states
  - Benefits / thanks to agencies for participating
- **Group and Individual Introductions**
- **ENERGY STAR and benchmarking overview**
  - Utility involvement with benchmarking
  - Process and timeline
  - Identifying key data contacts
  - Utility Rate Review
  - Automated benchmarking
- **Questions and Answers**

Arkansas Teams with ENERGY STAR

- ENERGY STAR is a government-backed, voluntary program that helps businesses and individuals protect the environment through superior energy performance by providing energy-efficient solutions for homes, businesses, and institutions.
- The national symbol for environmental protection through energy efficiency, recognized by more than 75% of all U.S. households.
- Known for products, homes and C&I facilities

Source: ENERGY STAR, www.energystar.gov

Benchmarking with Portfolio Manager

- Anything with a meter attached can be benchmarked
  - Compare facility energy use against its own baseline
  - Compare facilities of a similar type to each other
  - Compare facilities of a similar type to national metrics
  - Set priorities for use of limited staff time and/or investment capital
  - Prepare reports, assist with ASHRAE audits, more.
  - More detailed reports possible for select buildings using EPA Score

Source: ENERGY STAR, www.energystar.gov

Meeting Act 1494 of 2009

- Arkansas selects PM to benchmark the energy use of all of all Arkansas state facilities
  - Site and source energy use intensity (EUI), GHG emissions.
  - Many buildings, including office buildings can receive energy performance ratings on a 1-100 scale.
- Monitor changes in energy and water use over time in single buildings, groups of buildings, or entire portfolios.
- Report cost savings and CO_2 emissions.
- Get federal recognition with ENERGY STAR.
- More at www.energystar.gov/benchmark

Source: ENERGY STAR, www.energystar.gov

Understanding the Project

- Advance AR EE programs, lead by example
- Protect financial & environmental resources
- Comply with Act 1494 of 2009
  - Reduce water, electricity, and natural gas usage
    - 20% by 2014
    - 30% by 2017

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Role of The Cadmus Group

- Task 1
  - Establish Portfolio Manager accounts,
  - Verify account data in Portfolio Manager
  - Review rate tariffs
- Task 2
  - Keep it Going! Train trainers!
  - Provide technical support

Cadmus acts as facilitator, aiding state agencies harness the power of utility information

Utility Involvement

Agencies need information in database format

- **Utilities are the source of primary information**
  - Electric: Demand (kW or kVa); Energy (kWh)
  - Gas: Capacity Demand “CD” (MMBtu); Peak daily use; Annual volume limits; consumption (MMBtu)
  - Water: Consumption (1000 gallons)
- Rate schedule / tariff
- Costs

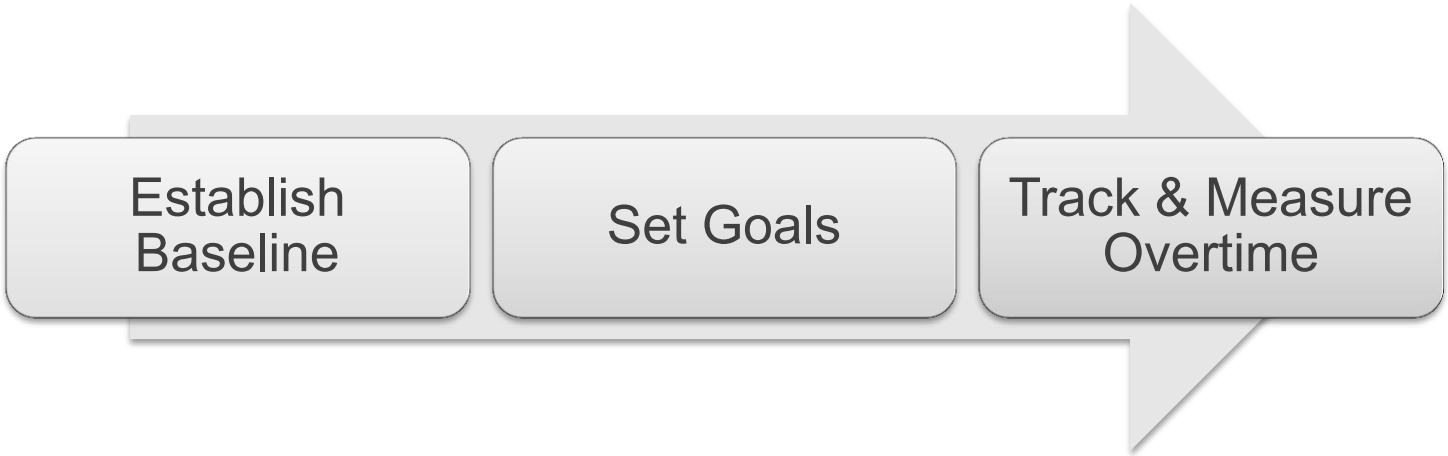
Other Required Information for Benchmarking in Portfolio Manager

- **Building Identifiers**
  - Name, street address, zip code for weather normalization
- **Space Type Data (office example)**
  - Square footage, hours of operation, Number of workers on main shift , # of PC's, Percent of gross floor area that is air conditioned, heated

Arkansas benchmarking project may improve quality of data at the utilities, too!

Source: ENERGY STAR, www.energystar.gov

Assess Performance for Smart Energy Management



- Verify gains from upgrade efforts
- Require specific rating gains from service providers in select building types such as office or warehouse
- Utility involvement helps agencies connects back to Act 1494

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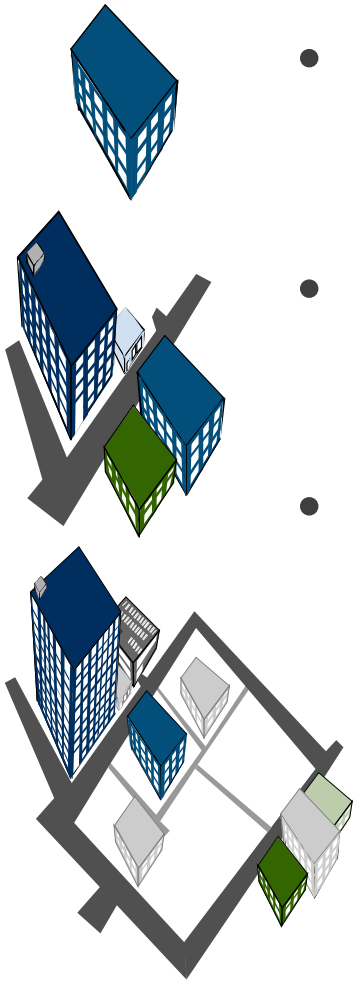
Source: ENERGY STAR, www.energystar.gov

Transferring Data to Portfolio Manager



- Single Building Manual Entry
  - Enter building and energy consumption information into Portfolio Manager.
- Bulk Data Upload
  - Upload large sets of building data in Portfolio Manager using an Excel template.
- Automated Benchmarking Services
  - Use Service and Product Provider to have the rating automatically integrated into your energy information and bill handling system

Utility-based Automated Benchmarking

- Option 1: Provide utility data
- Option 2: Provide automated benchmarking services

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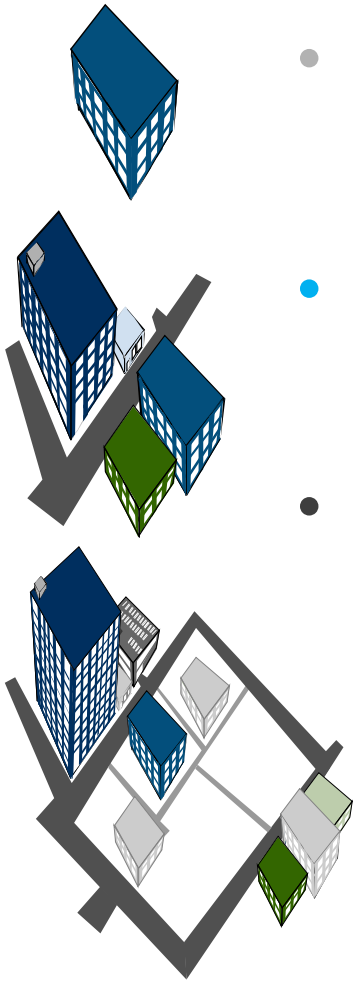
Source: ENERGY STAR, www.energystar.gov

Transferring Data to Portfolio Manager



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Utility-based Automated Benchmarking

- **Option 1: Provide utility data**
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Source: ENERGY STAR, www.energystar.gov

Benefits According to EPA

- Provide objective, standardized assessments of building performance.
- Tap into the ENERGY STAR program to motivate customers to adopt continuous energy management programs, reduce their carbon footprint, save energy and validate savings.
- Help achieve energy reduction goals in individual buildings or across their portfolio of buildings.
- Reduce the burden of ENERGY STAR partners interested in continuous energy management, but unable to manually input monthly energy data into Portfolio Manager.

Other Benefits to Utilities

- Agencies will request data to meet Act 1494.
- A planned process will ease burden on utility staff.
- Take credit for supporting superior energy performance and reducing energy waste
- Increase throughput, increase quality and reduce data production cost

Process and Time Line

- Agencies / AEO request data
- Cadmus facilitates process
  - Enters historic data on behalf of agencies
  - Performs quality assurance checks on utility and non-utility data
  - Trains state officials to keep system into future
  - Creates Act 1494 compliance reports
- Lead agencies start now through Feb 2011
- Other agencies follow through June 2011

Key Data Contacts

- IOUs (Investor Owned Utilities)
- Coops and Munis
- Water utilities
- Trade associations
- User groups
- Others? Please list

Contacts & Support

Toll-free support line: 1-855-266-9773
(9 am – 6 pm weekdays)

Arkansas@cadmusgroup.com
(24 hour turn around time)

Ed Ellis, CEM,
Arkansas Energy Office
(501) 682-7694
eellis@arkansasedc.com

Julio Rovi
The Cadmus Group, Inc.
703-247-6128
Julio.Rovi@cadmusgroup.com

Kudret Utebay
The Cadmus Group, Inc.
703-247-6138
Kudret.Utebay@cadmusgroup.com

Shubhada Kambli
The Cadmus Group, Inc.
Shubhada.Kambli@cadmusgroup.com

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We are looking forward to start working with you!

Thank you!

Select Cadmus Tech Support Team

Name, Role, Phone, email@cadmusgroup.com

Kudret Utebay, Project Manager, 703-247-6138, kudret.utebay
Shubhada Kambli, Deputy PM, (203) 770-3714, shubhada.kambli

Colin Dunn, (703) 247-6121, Data QA Lead, colin.dunn
Jake Demann, Data entry, 503-575-4575, jake.demann
John Burningham, Utilities Lead, (801) 641-3915, john.burningham
Matthew Tenney, (703) 247-6164, Rate Analysis, matthew.tenney
Rik Banerjee, Upload template specialist, 703-247-6142, rik.banerjee
Brian Hedman, Utility Rate Advisor, (503) 467-7125, brian.hedman

Julio Rovi, Practice Leader, 703-247-6128, julio.rovi

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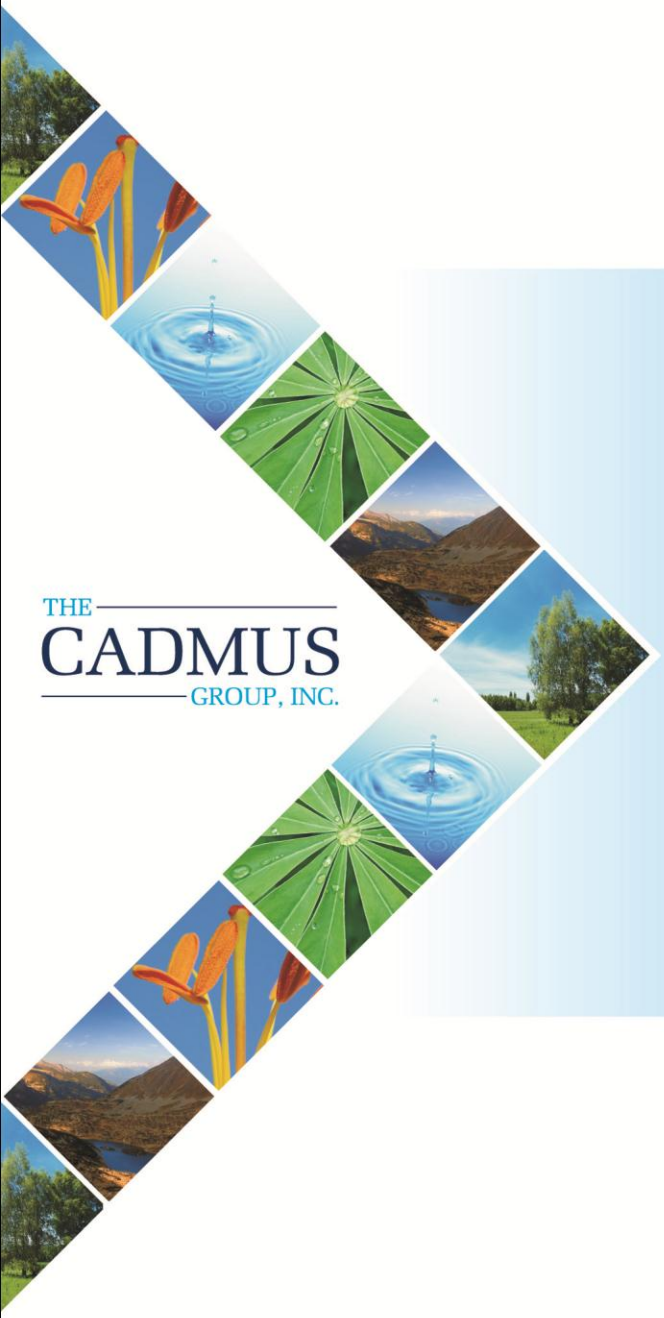

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Automated Benchmarking

- Automated benchmarking allows service providers to transfer data into Portfolio Manager automatically
  - Facilitates easy initial upload of all building and energy data into Portfolio Manager
  - Can map to existing buildings already in Portfolio Manager
  - Updates energy performance scores with new utility energy data on an ongoing automated basis
  - Provides energy performance scores in provider's proprietary energy information products and Portfolio Manager

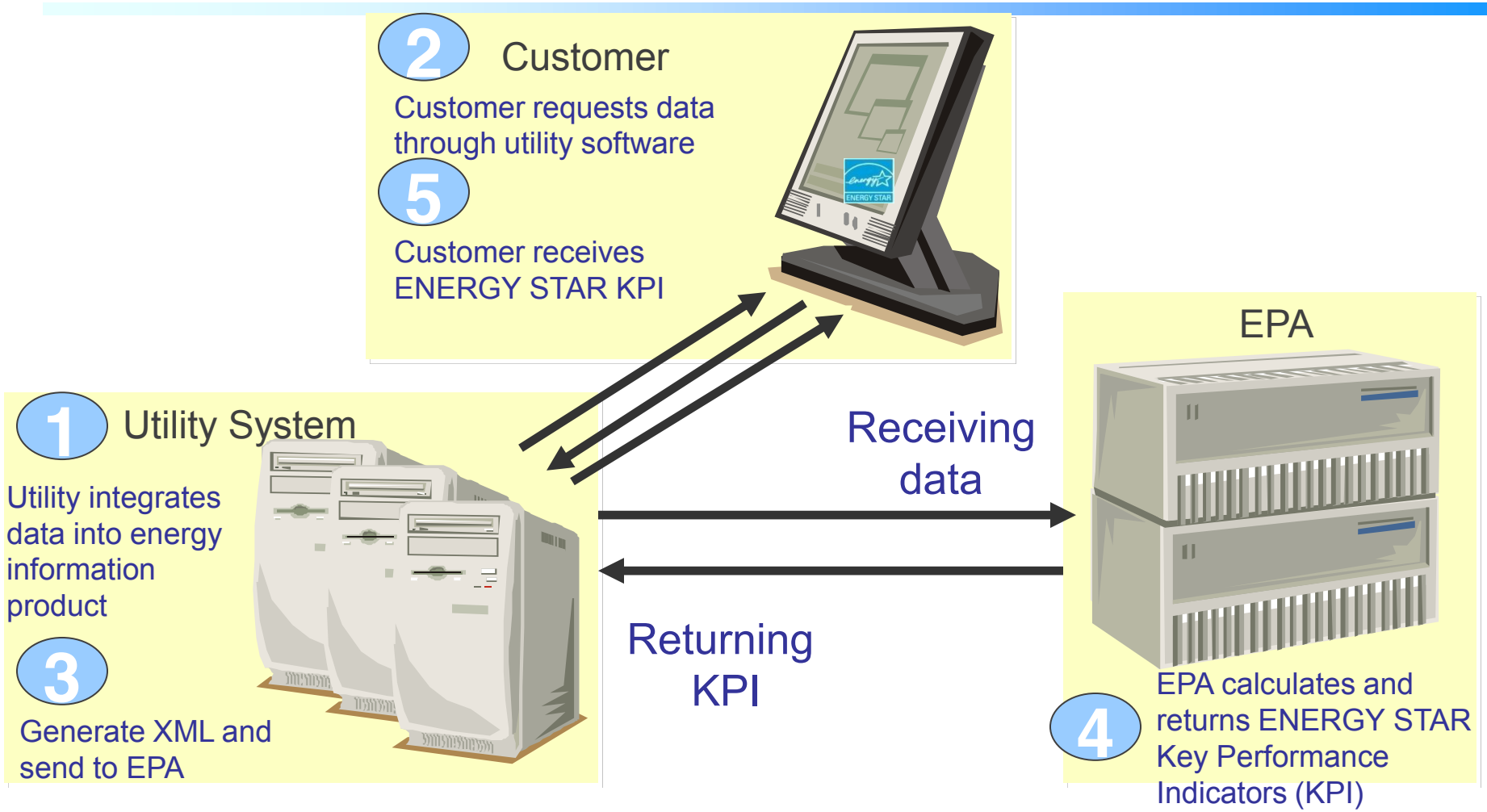
Source: ENERGY STAR, www.energystar.gov

Service Providers Offering Automated Benchmarking

- Advantage IQ
- Angus Systems
- Avista Utilities
- **ComEd**
- EduCon
- ei3
- Energard Technologies
- Energy Print
- Energy Watchdog
- EnergyCAP, Inc.
- EnergySolve
- IBS, Inc.
- Johnson Controls
- LPB Energy Management
- New Energy Technology
- NISC
- NorthWrite
- **Pacific Gas & Electric**
- Performance Systems Development
- Planet Footprint
- Rapid Improvement
- **San Diego Gas & Electric**
- Siemens
- **Southern California Edison**
- **Southern California Gas Company**
- Summit Energy
- Sustainable Real Estate Manager
- The E Group
- UtilityAccounts.com

Source: ENERGY STAR, www.energystar.gov

How Does a Utility Automate Benchmarking?



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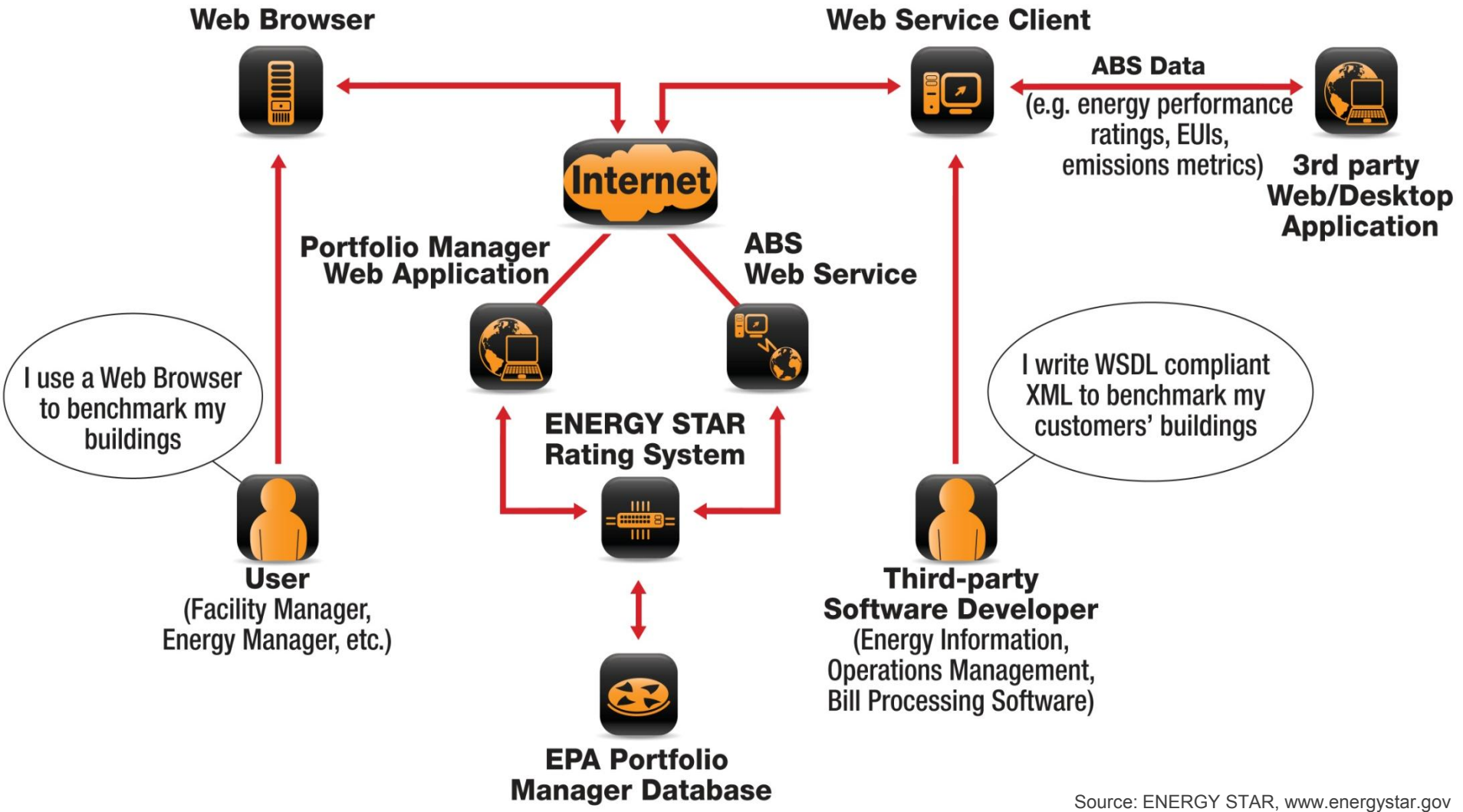
Source: ENERGY STAR, www.energystar.gov

ENERGY STAR Benchmarking System Web Service Overview



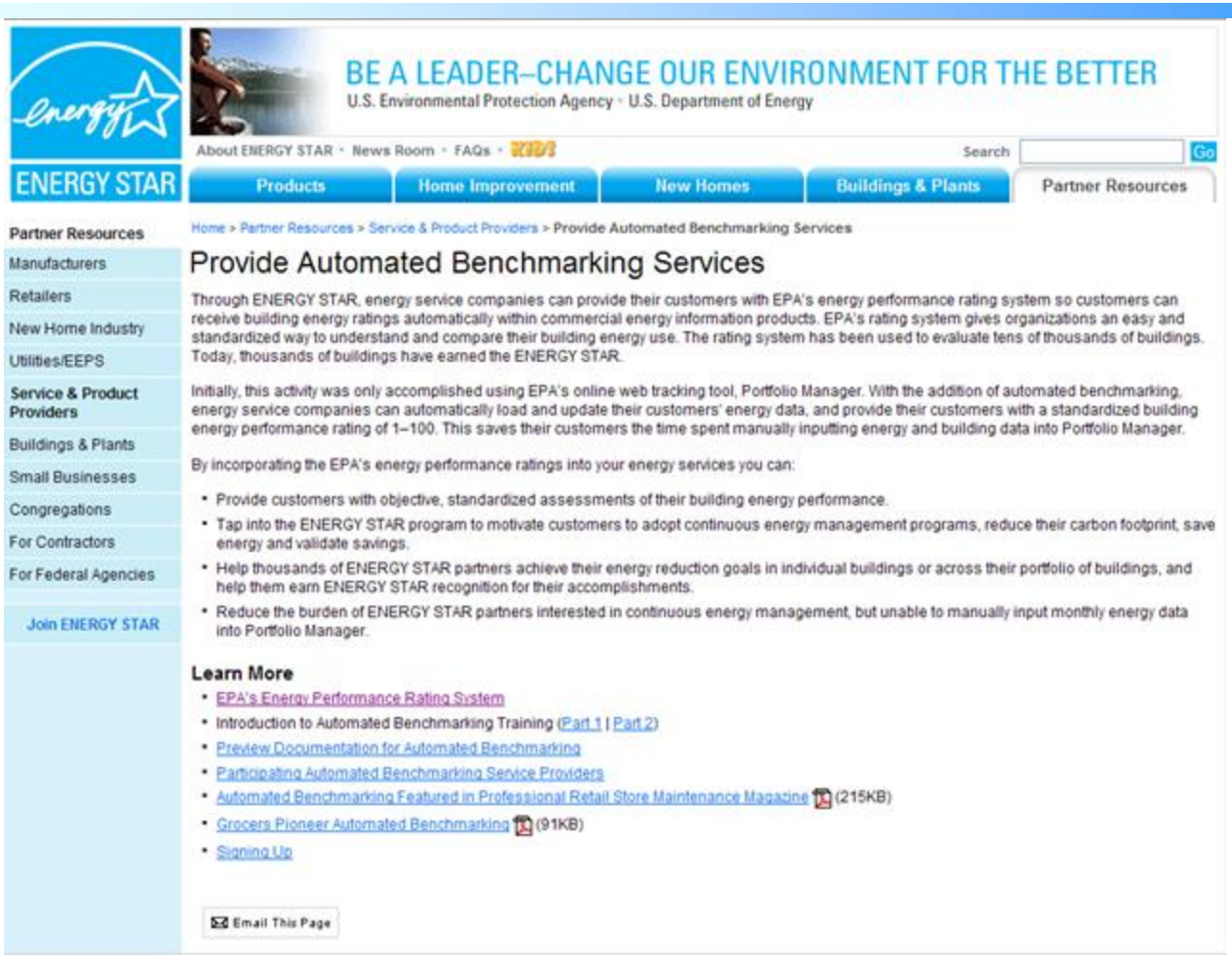
Source: ENERGY STAR, www.energystar.gov

ABS Resources

- Overview on ENERGY STAR web site
- Register for ABS account
- Download ABS Overview and Users Guide from ABS account Web site
- Email technical question to buildings@energystar.gov
- Request conference calls with EPA program and technical support teams

Source: ENERGY STAR, www.energystar.gov

Automated Benchmarking Services



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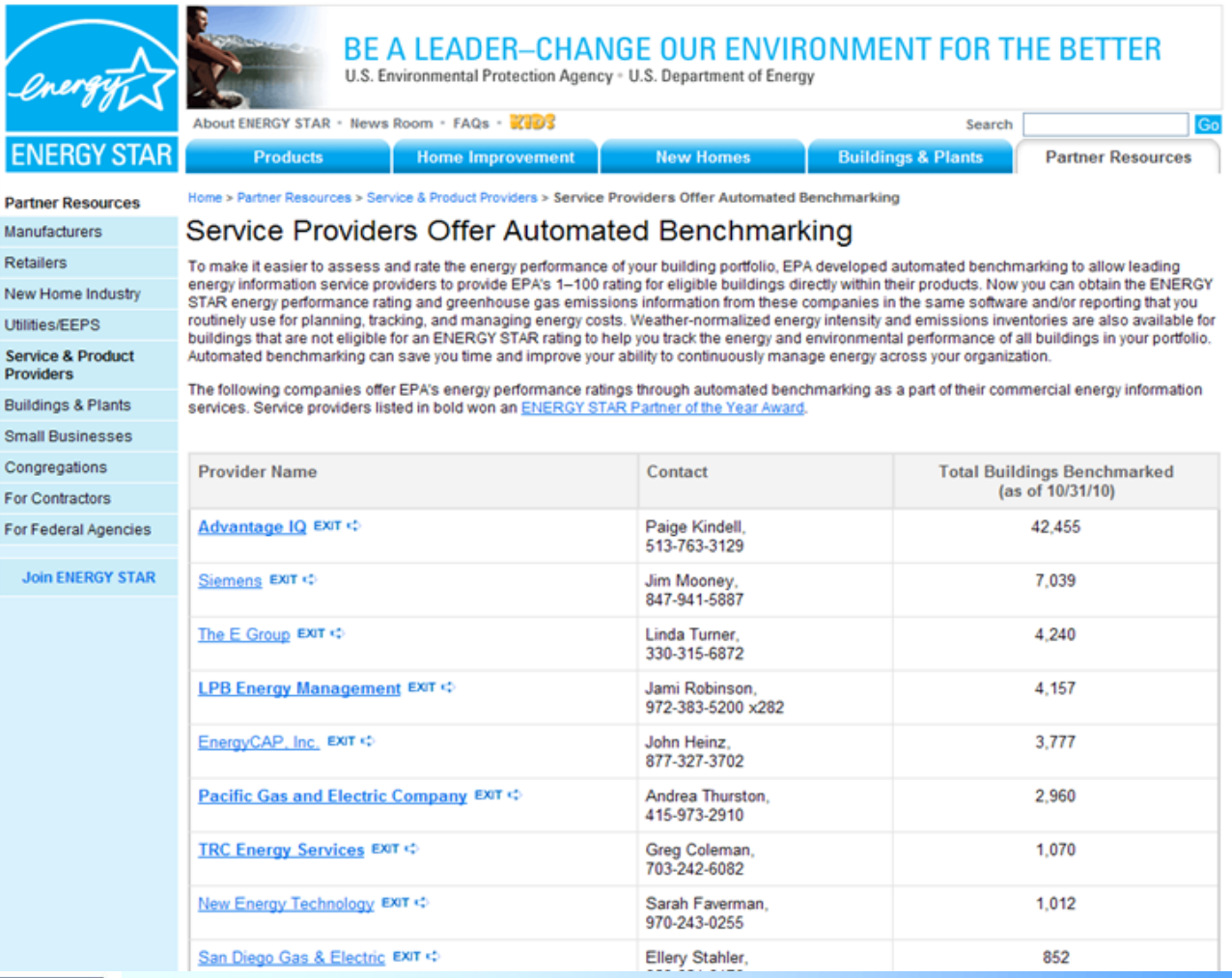
Source: ENERGY STAR, www.energystar.gov

Automated Benchmarking Services



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Service Providers Offer Automated Benchmarking

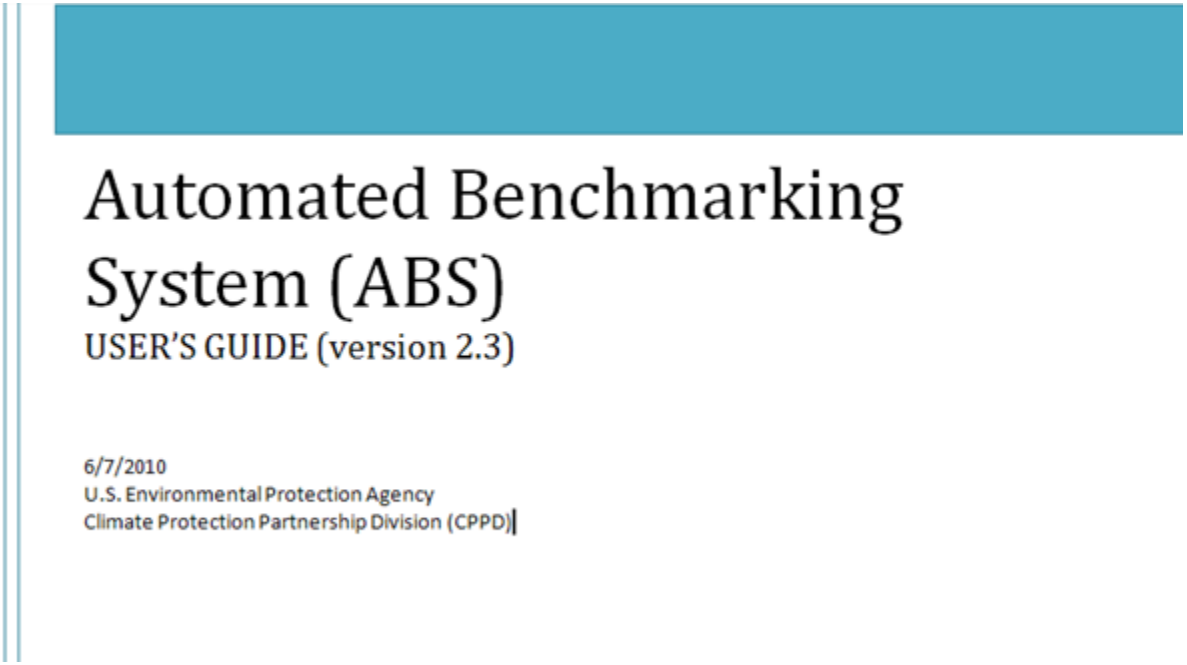
To make it easier to assess and rate the energy performance of your building portfolio, EPA developed automated benchmarking to allow leading energy information service providers to provide EPA's 1–100 rating for eligible buildings directly within their products. Now you can obtain the ENERGY STAR energy performance rating and greenhouse gas emissions information from these companies in the same software and/or reporting that you routinely use for planning, tracking, and managing energy costs. Weather-normalized energy intensity and emissions inventories are also available for buildings that are not eligible for an ENERGY STAR rating to help you track the energy and environmental performance of all buildings in your portfolio. Automated benchmarking can save you time and improve your ability to continuously manage energy across your organization.

The following companies offer EPA's energy performance ratings through automated benchmarking as a part of their commercial energy information services. Service providers listed in bold won an ENERGY STAR Partner of the Year Award.

Provider Name	Contact	Total Buildings Benchmarked (as of 10/31/10)
Advantage IQ EXIT	Paige Kindell, 513-763-3129	42,455
Siemens EXIT	Jim Mooney, 847-941-5887	7,039
The E Group EXIT	Linda Turner, 330-315-6872	4,240
LPB Energy Management EXIT	Jami Robinson, 972-383-5200 x282	4,157
EnergyCAP, Inc. EXIT	John Heinz, 877-327-3702	3,777
Pacific Gas and Electric Company EXIT	Andrea Thurston, 415-973-2910	2,960
TRC Energy Services EXIT	Greg Coleman, 703-242-6082	1,070
New Energy Technology EXIT	Sarah Faverman, 970-243-0255	1,012
San Diego Gas & Electric EXIT	Ellery Stahler,	852

Source: ENERGY STAR, www.energystar.gov

Automated Benchmarking Services



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Source: ENERGY STAR, www.energystar.gov

Successful Large Portfolio Benchmarking Efforts

- Ohio
  - Benchmarked 5,800 state buildings
  - Helped K-12 sector benchmark 500 buildings
  - Ohio Board of Regents helped benchmark 65 campuses
- Utah
  - Benchmarked approximately 1,000 state buildings
- New York City
  - Benchmarked over 4,000 buildings so far
  - Expected 30,000 more

Source: ENERGY STAR, www.energystar.gov

Benchmarking in California

- Governor's Executive Order S-20-04
  - Reduce energy use 20% by 2015 vs. 2003 in State Buildings
  - Energy Commission chose U.S. EPA's Portfolio Manager to track and measure progress
- AB 1103 Law
  - 2009 – Utilities provide data upload for ratings upon request
  - 2010 – Sellers/lessors required to disclose ratings for financial transactions
- CPUC sets budgets and benchmarking expectations for 2010-2012 (Sept. 24, 2009)

Source: ENERGY STAR, www.energystar.gov

Case study: Utilities as data providers

Benchmarking in California

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  - 2009 – Utilities provide data upload for ratings upon request
  - 2010 – Sellers/lessors required to disclose ratings for financial transactions
- **CPUC sets budgets and benchmarking expectations for 2010-2012 (Sept. 24, 2009)**
  - California utilities to benchmark 120,000 buildings in three years

Source: ENERGY STAR, www.energystar.gov

What's in it for the CA Utilities?

- **Valuable customer data**
  - Facility square footage
  - Occupancy
  - Space use
  - Total facility energy use (all fuels)
- **Product and service leads**
- **Savings goals**
- **Increase in customer satisfaction**

Source: ENERGY STAR, www.energystar.gov

PG&E and Automated Benchmarking

Developed marketing plan:

- **ABS Factsheet**
- **How-to-Benchmark Guide**
- **Trouble-shooting Guide**
- **Benchmarking Training**

<u>Results: Benchmarked +2000 buildings</u>

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Source: PG&E, www.pge.com/benchmarking

ComEd & Automated Benchmarking

Energy Usage Data Tool

Prior to June 2008, whole building energy usage data would be retrieved manually and customers would be charged for the service.

In June 2008, ComEd launched its Energy Usage Data system. The online system allowed customers to access whole building energy usage data themselves at no charge.

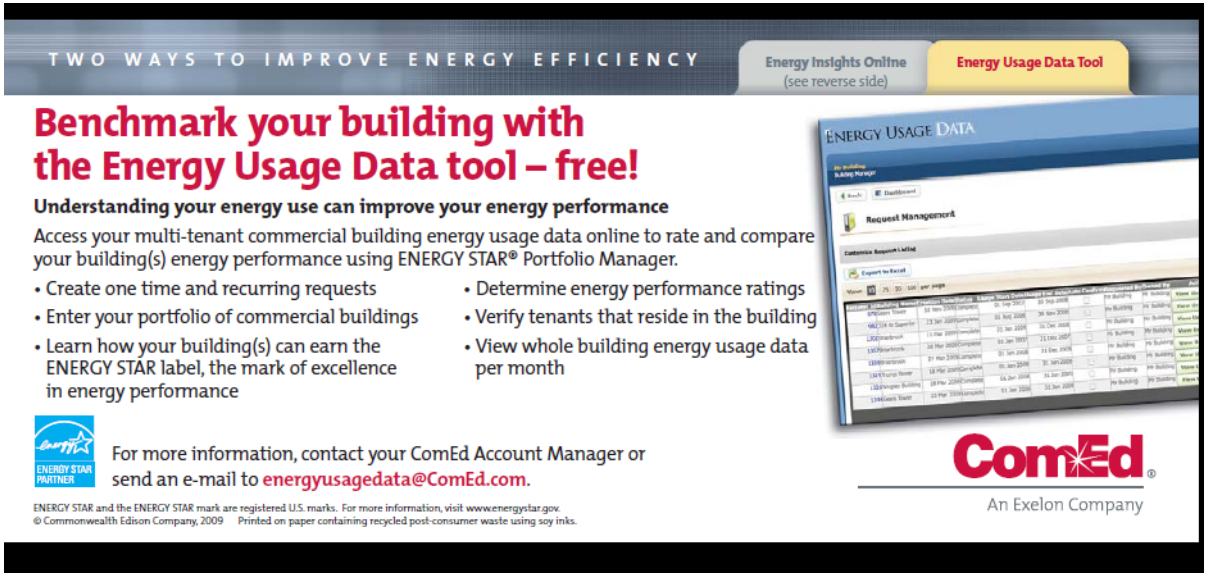
In August 2009, ComEd added ABS to the data system.

Innovation: ComEd helped building owners and managers obtain whole building energy data for buildings where tenants are directly billed.

http://www.comed.com/sites/BusinessSavings/Pages/wholebuilding.aspx

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

ComEd & Automated Benchmarking



- **250 building managers using the Energy Usage Data System for 650 buildings**
- **2,500 individual data requests since the launch of the system. Prior to that time, ComED processed 70 requests for data.**
- **ABS for 40 buildings**

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Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Option 2: Utilities as full-service automated benchmarking providers

- Utility programs integration between existing or new utility software (in-house or outsourced) and EPA's automated benchmarking system
- Customers uses their account to opt into automated benchmarking and authorize utility to send data to EPA.
- Customer inputs facility attribute data and requests rating through utility software interface.
- Customer views rating and emissions data returned from EPA via ABS in utility software

Example: NYSERDA CRE Focus

Options: Apogee Interactive and Aclara Software

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Energy Usage Data System

- ✓ Enter your Portfolio of Commercial Buildings
- ✓ Automated End to End Data Retrieval and Reporting
- ✓ Export Usage Data for input into Portfolio Manager
- ✓ Secure System and Data Transmission

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Functionality Overview

- ✓ One Time and Recurring Data Requests
- ✓ Tenant Verification
- ✓ Whole Building Data Usage Totals per Month (kWh)
- ✓ *New!!* Automatically submit energy usage data to Portfolio Manager

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Before
(Manual Process)

- Cost to Customer
- Cycle Time 10-12 Days
- Labor Intensive
- Limited Number of Requests
- Data Provided Quarterly and/or Annually
- Customer contacts ComEd to obtain data

After
(Automated Process)

- No Cost to Customer
- Cycle Time 1-2 Days
- Completely Automated
- Unlimited Number of Requests
- Monthly Data
- Customer empowered to obtain data whenever needed

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

ComEd EUDS* Promotions/Training

- ✓ Building Owners & Managers Association (BOMA)
- ✓ Illinois Retail Merchants Association (IRMA)
- ✓ EPA ENERGY STAR® Portfolio Manager Training Workshops
- ✓ ComEd Bill Inserts - 350,000 inserts sent during three separate business billing cycles
- ✓ Monthly Newsletters
- ✓ Green Ribbon Workshops (1,400 business customers)
- ✓ Event Marketing
- ✓ Training Webinars - Next Webinar January 2010
- ✓ LCS Account Managers (Customer meetings)

(*) Energy Usage Data System from Commonwealth Edison

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Bill Insert (Buckslip) Circ~350,000

TWO WAYS TO IMPROVE ENERGY EFFICIENCY

Energy Insights Online
(see reverse side)

Energy Usage Data Tool

Benchmark your building with the Energy Usage Data tool – free!

Understanding your energy use can improve your energy performance

Access your multi-tenant commercial building energy usage data online to rate and compare your buildings energy performance using the Energy Star Portfolio Manager.

- Create one time and recurring requests
- Enter your portfolio of commercial buildings
- Learn how you can earn the ENERGY STAR® label, the mark of exellence in energy performance
- Determine energy performance ratings
- Verify tenants that reside in the building
- View whole building energy usage data per month

ENERGY STAR PARTNER

For more information, contact your ComEd Account Manager or send an e-mail to energyusagedata@ComEd.com.

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Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Monthly Newsletter Circ~350,000

Ways to improve energy efficiency

Benchmark your building's energy usage – free!

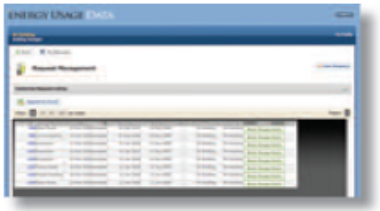
smart ideas for your business

Owning and operating a business is more challenging than ever. ComEd's *Smart Ideas for Your Business*℠ offers tools, tips and incentives that can show you not only how to contain energy costs but cut them.

Consider the **Energy Usage Data** tool, a free Web-based application that enables building managers to retrieve whole building energy usage data on multi-tenant commercial buildings.

With it you can:

- ❑ Create one-time and recurring usage data requests
- ❑ Determine energy performance ratings
- ❑ Compare your building's usage data to similar buildings using the ENERGY STAR® Portfolio Manager!



Knowing how your facility compares to top-performing buildings can help you control energy costs, and better assess upgrade investment opportunities.

ENERGY STAR PARTNER

You may also use this tool to earn an ENERGY STAR label, the mark of excellence in energy performance. Contact your ComEd account manager, or send an e-mail to **EnergyUsageData@ComEd.com** for more information. For additional information about ComEd's *Smart Ideas for Your Business*℠ visit **www.ComEd.com** or call **1-888-806-2273**.

Learn how your company uses energy

ComEd's **Energy Insights Online** is a free, online energy analysis service that monitors your company's electricity consumption through your recording meter. It then converts this data into simple, easy-to-understand usage graphs and reports accessible anywhere via the Internet.

By knowing how and when your business consumes energy, you can lower monthly demand charges, validate efficiency upgrades and examine your company's energy usage trends. It is the first step in developing an effective energy efficiency strategy and it's FREE!

To learn more about this Web-based tool, or to subscribe, contact your ComEd account manager, or send an e-mail to **EnergyInsightsOnline@ComEd.com**.

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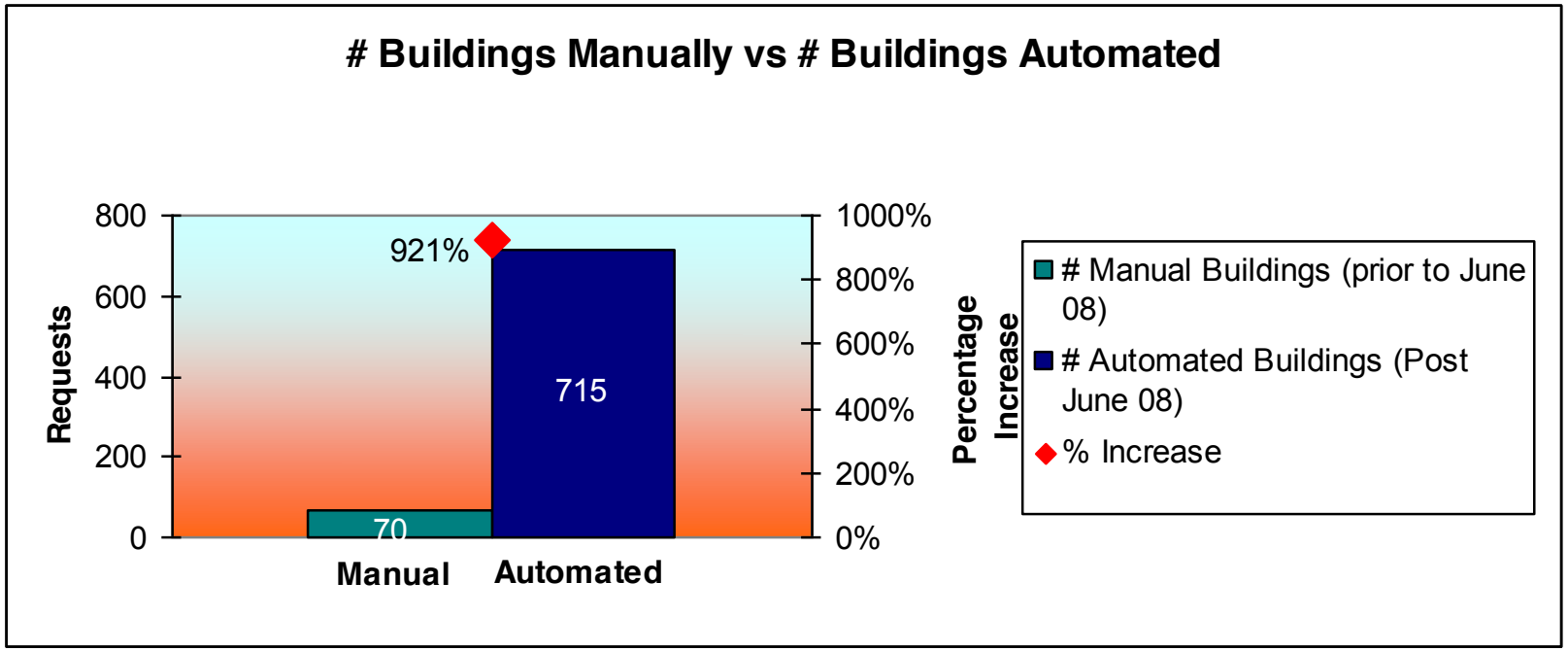
Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Results:



Manual Buildings (<June 2008) vs Automated Buildings (>June 2008)

Over 8,800 months of data requests since June 2008

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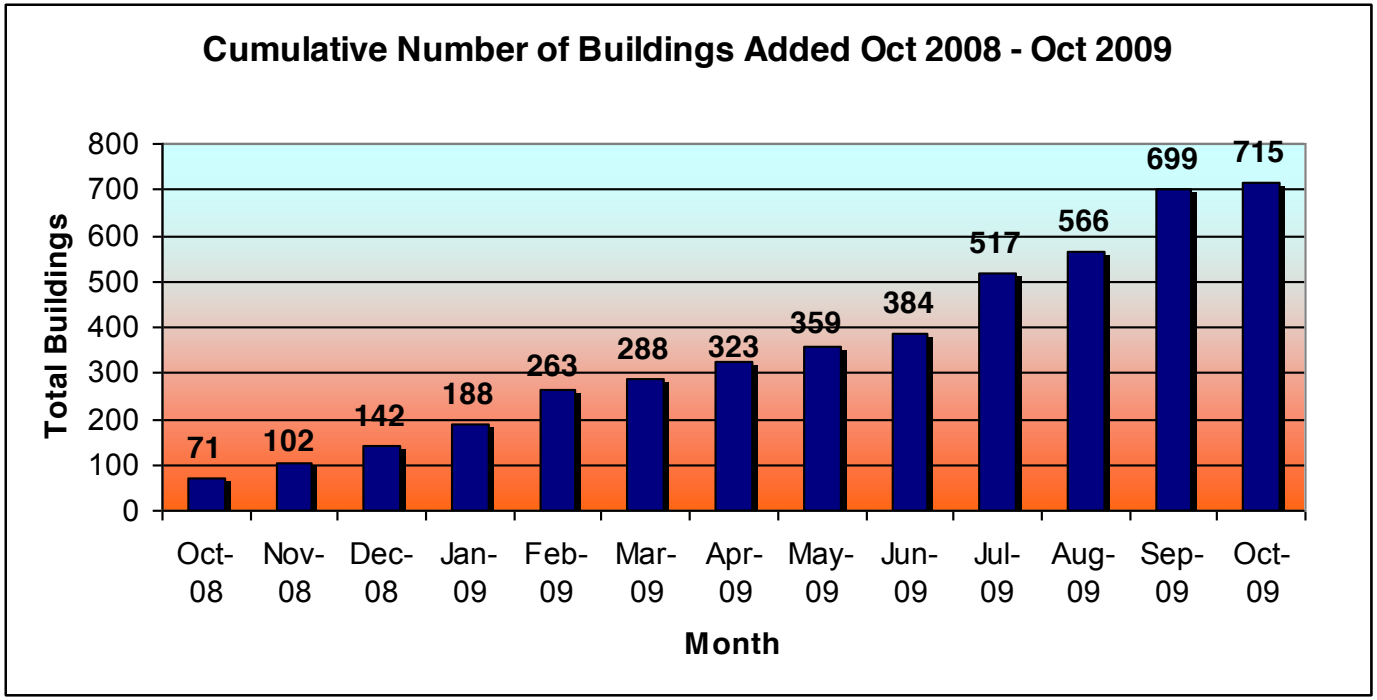
Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Results:



Buildings Added Oct 2008 - Oct 2009

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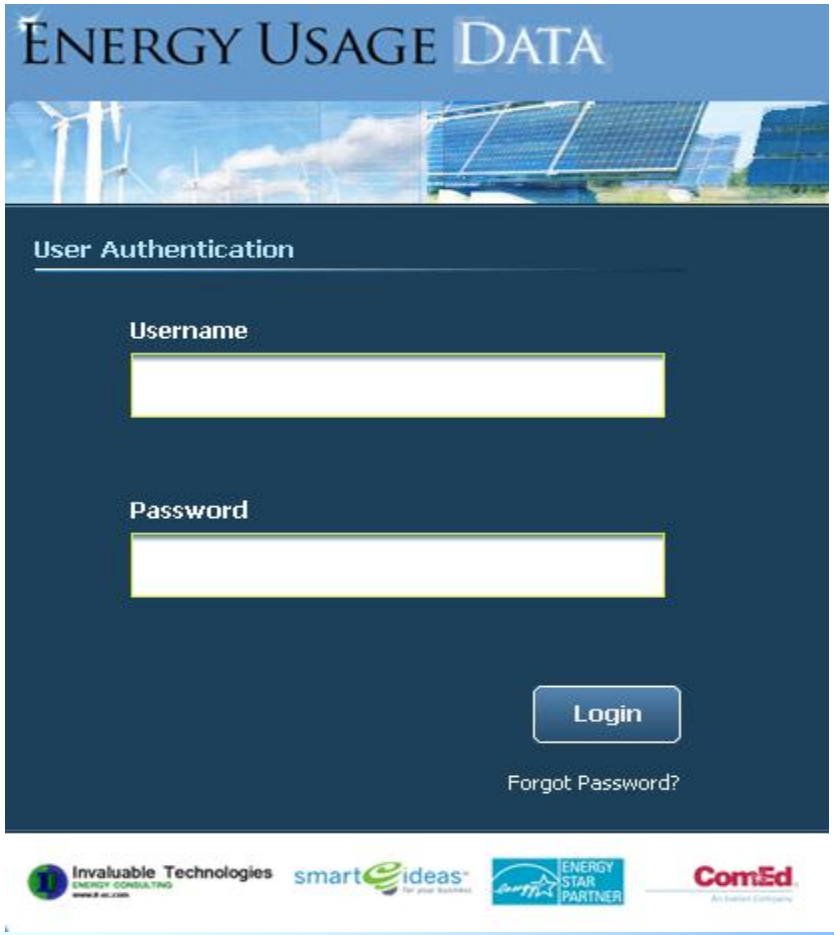
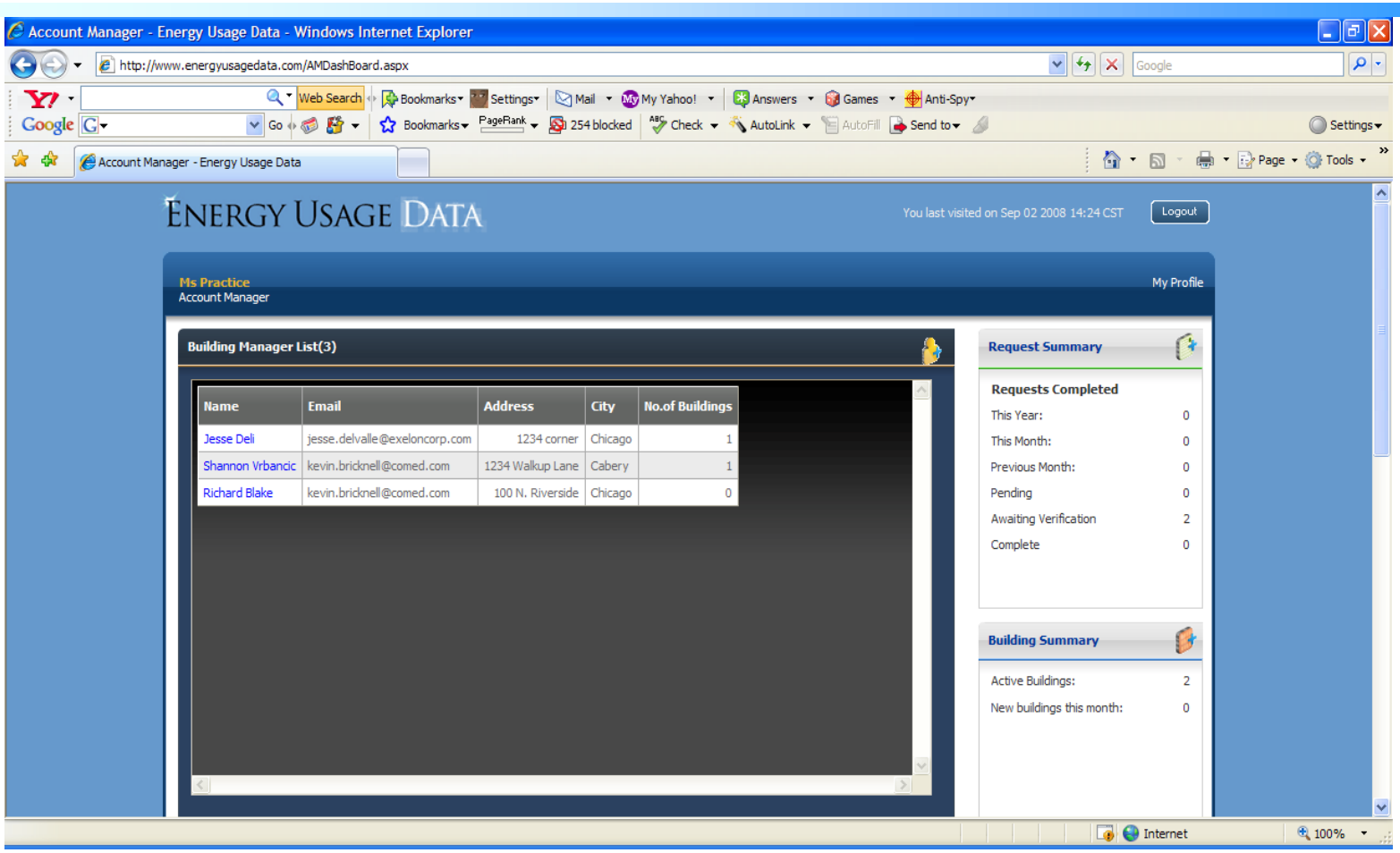
Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Demonstration:



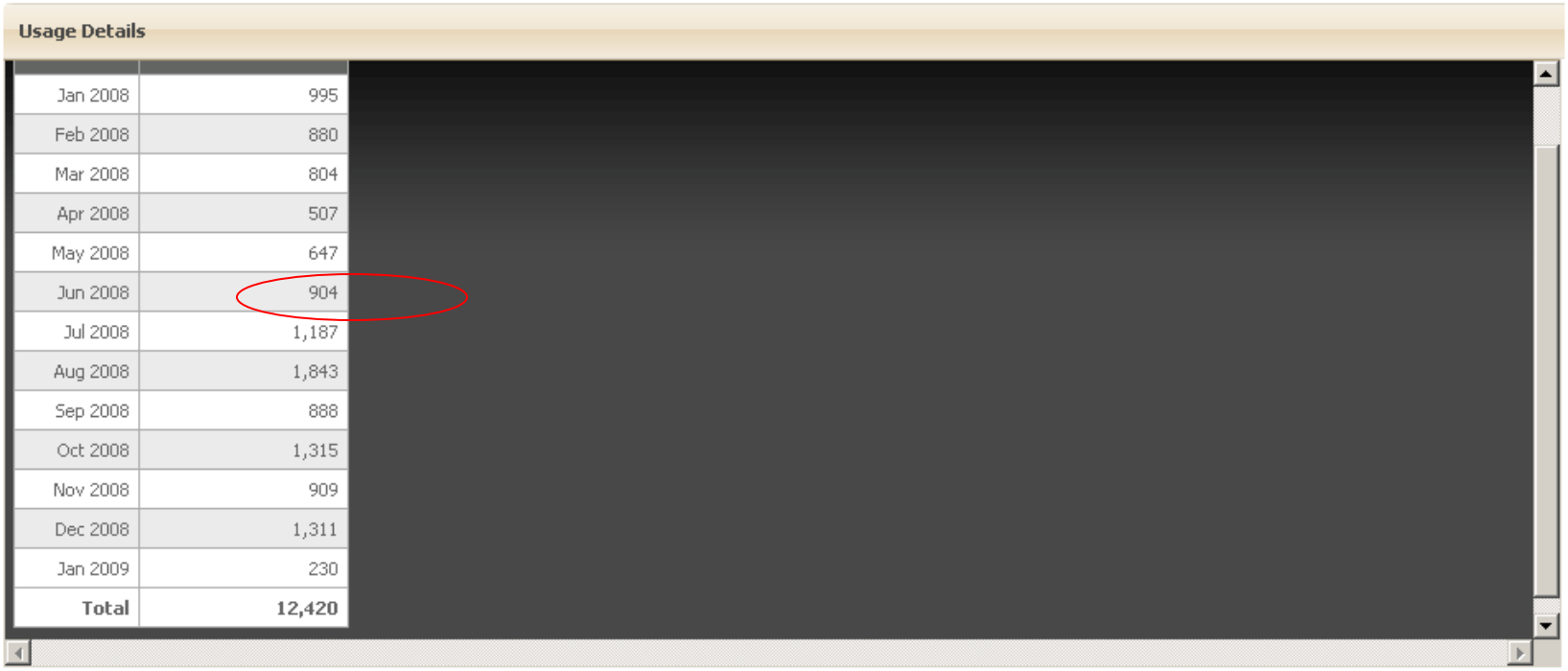
Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Energy Usage Data System 2.0



THE CADMUS GROUP, INC.

EUDS 2.0 Enhancements, July 2009:



New Feature - Submit Usage Data Directly to ENERGY STAR Portfolio Manager!

THE CADMUS GROUP, INC.

Source: ComEd, https://www.comed.com/sites/businesssavings/pages/wholebuilding.aspx

Portfolio Manager- Automatic Feed!

Add Meter Entries

Remove Entry	Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)	Last Updated
☐	01/01/2009	01/31/2009	230.00	$0.00	08/28/2009 by COMEDABS
☐	12/01/2008	12/31/2008	1311.00	$0.00	08/28/2009 by COMEDABS
☐	11/01/2008	11/30/2008	909.00	$0.00	08/28/2009 by COMEDABS
☐	10/01/2008	10/31/2008	1315.00	$0.00	08/28/2009 by COMEDABS
☐	09/01/2008	09/30/2008	888.00	$0.00	08/28/2009 by COMEDABS
☐	08/01/2008	08/31/2008	1843.00	$0.00	08/28/2009 by COMEDABS
☐	07/01/2008	07/31/2008	1187.00	$0.00	08/28/2009 by COMEDABS
☐	06/01/2008	06/30/2008	904.00	$0.00	08/28/2009 by COMEDABS
☐	05/01/2008	05/31/2008	647.00	$0.00	08/28/2009 by COMEDABS
☐	04/01/2008	04/30/2008	507.00	$0.00	08/28/2009 by COMEDABS
☐	03/01/2008	03/31/2008	804.00	$0.00	08/28/2009 by COMEDABS
☐	02/01/2008	02/29/2008	880.00	$0.00	08/28/2009 by COMEDABS
☐	01/01/2008	01/31/2008	995.00	$0.00	08/28/2009 by COMEDABS

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Additional Information

For more information on Energy Star Benchmarking:
https://www.energystar.gov/istar/pmpam/

To access the energy usage data system:
www.energyusagedata.com

Energy Usage Data System:
energyusagedata@comed.com or go to:
www.comed.com/energyusagedata for training materials

Chicago Green Office Challenge
www.chicagogreenofficechallenge.org

Additional Webinars:
January 2010 - email energyusagedata@comed.com

For More Information

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