ENERGY STAR® Portfolio Manager and Utility Data Access to Support Commercial Building Benchmarking

December 9, 2020

Agenda

- Benchmarking with ENERGY STAR Portfolio Manager

- The Value of Benchmarking

- Understanding the Options for Getting Data to the Customer

- Exploring the Role of Portfolio Manager Web Services

- Next Steps

Benchmarking with ENERGY STAR Portfolio Manager

Management Tool

ENERGY STAR® PortfolioManager®

- Assess whole building energy and water consumption
- Track green power purchase
- Share/report data with others
- Track changes in energy, water, greenhouse gas emissions, and cost over time
- Create custom reports
- Apply for ENERGY STAR certification

Benchmarking allows you to:

Compare your building to a **national sample** of similar buildings

Compare your buildings of a similar type to **each other**

73 88 21

Identify underperformers in your portfolio and set priorities for the use of limited staff time and/or investment capital
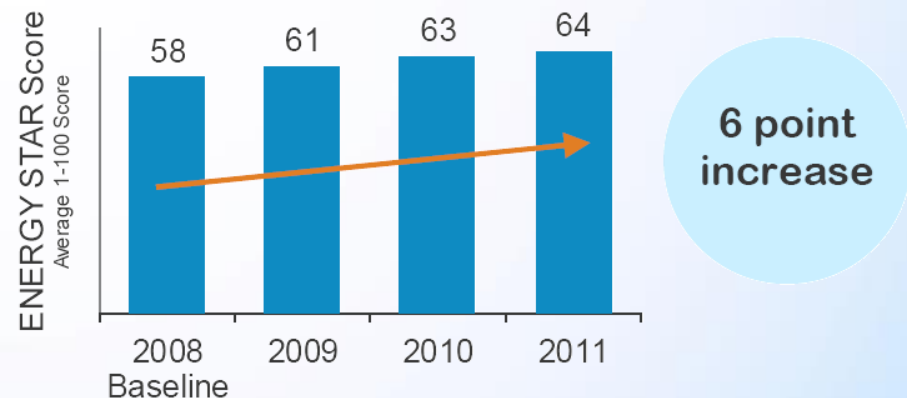
ANY building can be benchmarked.

The Value of Benchmarking

Benchmarking Enables Savings in Commercial Buildings

Consistent benchmarking in buildings promotes energy savings and improved performance

Energy Savings in Portfolio Manager
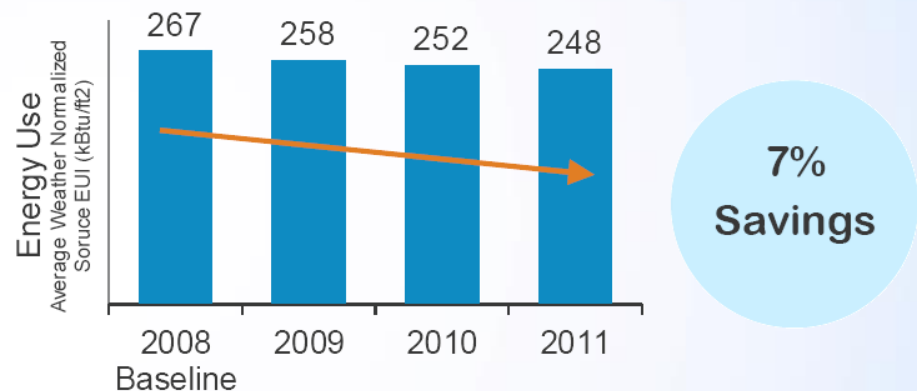
Energy Use — Average Weather Normalized Source EUI (kBtu/ft2)

2008 Baseline	2009	2010	2011
267	258	252	248

7% Savings

ENERGY STAR Score — Average 1-100 Score

2008 Baseline	2009	2010	2011
58	61	63	64

6 point increase

How Does Benchmarking Benefit Building Owners?

- Evaluate portfolio-wide performance

- Understand individual building performance

- Compare energy performance to national median

- Identify and address potential problems by looking at monthly trends

- Track the impact of energy, water, waste management strategies

How Does Benchmarking Benefit Utilities?

- "We see it as the gateway to energy efficiency."
  - Kevin Bricknell, Energy Data Services Program Manager, Commonwealth Edison

- "Customers are encouraged to benchmark their facilities, pinpoint areas in need of efficiency upgrades and take advantage of ComEd's menu of energy efficiency programs."

Chartwell's Best Practices
Energy Usage Data
June 2014

ComEd's energy efficiency tool for C&I customers supports Chicago's benchmarking ordinance

ComEd's nationally-recognized energy efficiency program for commercial buildings, the Energy Usage Data System (EUDS), has become the gold standard tool for helping increase large building energy and water efficiency in Chicago.

The EUDS, used in conjunction with the U.S. Environmental Protection Agency (EPA) Portfolio Manager, allows building owners and operators to monitor and verify the energy usage of entire buildings. They can verify energy performance and benchmark their usage with comparable buildings. The EUDS tool gives them the information they need to plan for improvements and energy efficiency upgrades.

More than five years after ComEd presented its C&I customers with this unique tool to help them lower costs, the city of Chicago enacted an energy benchmarking ordinance for buildings 50,000 square feet and larger.

The flexible tool also has spread from commercial applications to the multifamily residential market, giving apartment owners and property managers an in-depth understanding of how their buildings are performing.

To relieve building owners and operators of the cumbersome process of accumulating data to benchmark their facilities, in June 2008 ComEd began providing the online tool to measure whole building kWh usage information. Building owners, operators and managers can now compare their buildings' energy performance to that of similar buildings throughout the United States.

The EUDS provides building data from ComEd's billing system and works in combination with the ENERGY STAR online energy management and tracking tool, Portfolio Manager. Portfolio Manager is a free online system for tracking energy and water use and rating the energy performance of buildings.

Benchmark ratings are calculated on a 1-to-100 scale for assessing a building's physical attributes, operating characteristics, location and monthly energy consumption. Buildings that score 75 or higher and maintain a healthy indoor environment are eligible to receive the ENERGY STAR building certification.

EUDS users can view the aggregate energy usage data of commercial, multifamily and industrial buildings and learn:
- Number of tenants that reside in the building
- Whole-building energy usage data per month
- Energy performance ratings through Portfolio Manager

Summary

ComEd initially designed the Energy Usage Data System (EUDS) to help building owners and operators accumulate data to benchmark their facilities. Six years later, property managers are using the flexible tool to see how their multifamily buildings are performing, and EUDS is supporting a Chicago benchmarking ordinance.

Company Profile

Commonwealth Edison (ComEd) is a unit of Chicago-based Exelon Corporation, which serves approximately 6.6 million customers. ComEd provides electric service to approximately 3.8 million customers across Northern Illinois, or 70% of the state's population.

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Customer Needs Become Opportunities for Utilities

- Increased customer satisfaction

- Increased opportunities for customer engagement

- Ability to position the utility as a trusted advisor

How Utilities Are Capturing the Value of Benchmarking Using Portfolio Manager

- Educating and training customers

- Integrating into program design

- Requiring for program participation

- Supporting with data access

- Taking to scale with web services
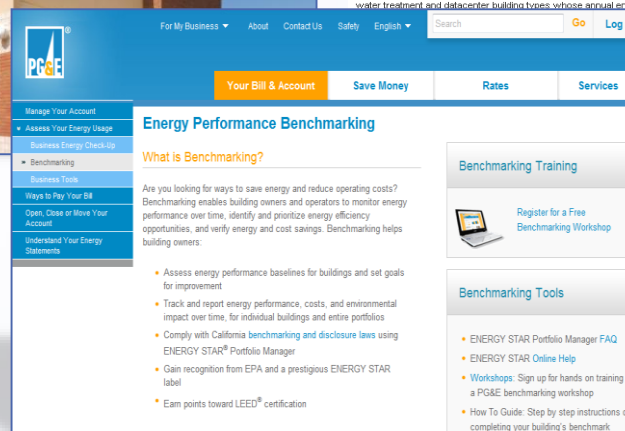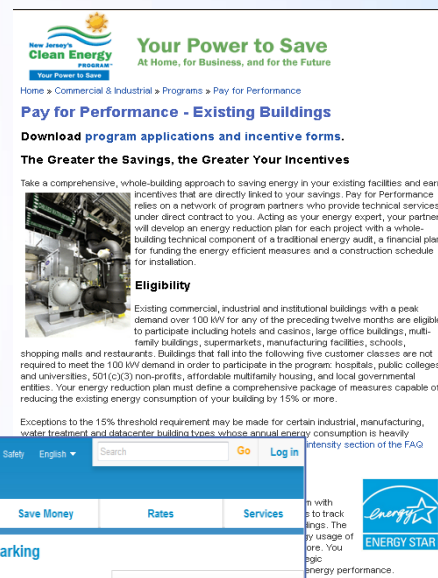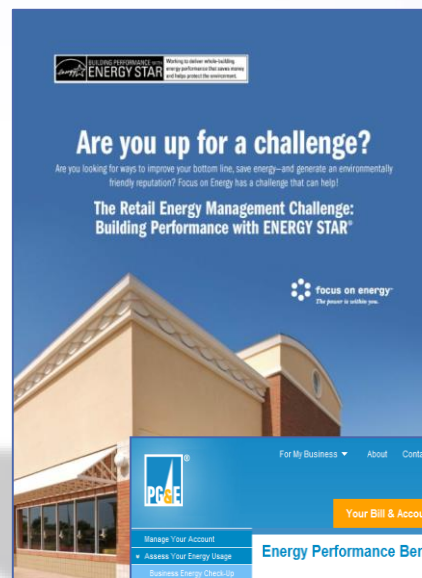
Understanding the Options for Getting Data to the Customer

Balancing Data Access and Data Privacy

- Utilities typically <u>cannot</u> provide tenant energy consumption to building owners without explicit tenant authorization

- Without complete, whole-building consumption data, benchmarking will not provide accurate results

- Many utilities and building owners see aggregation as a "win-win" solution for all parties

Streamlining the Delivery of Consumption Data to Customers

- Two primary options
    - Spreadsheet-based delivery
    - Portfolio Manager web services
- Key considerations when selecting delivery option
    - Facilitating the transfer of aggregate whole-building data
    - Allowing for regular data updates
    - Limiting manual data entry
    - Obtaining valuable information about the performance of customer properties

Spreadsheet-Based Delivery

- Upon request, utility prepares data and sends to customer in spreadsheet format

- Customer responsible for getting data into Portfolio Manager

- Typically used for one-time provision of 12+ months of data

- Utility does not have visibility into customer benchmarking results

Portfolio Manager Web Services

- Upon customer request, utility uses EPA's web services to send consumption data directly to customer's Portfolio Manager account

- Can be used for initial provision of data, and then for ongoing monthly data updates

- Once link is established between utility data system and customer PM account, no further request is needed from customer to trigger monthly update

- Establishes a "two-way" connection, by which the utility can see customer benchmarking results

Web Services May Provide the Most Benefits for the Utility and the Customer

- Goes beyond basic access to data
- Streamlines process for both utility and customer
- Facilitates regular, monthly updates
- Allows two-way exchange of data

Exploring the Role of Portfolio Manager Web Services

What Are Portfolio Manager Web Services?

- Suite of web services that allow utilities to exchange data directly with Portfolio Manager

- Perform data entry and/or metrics retrieval that would otherwise be performed manually in the Portfolio Manager user interface

- Facilitates automation and bulk data transfer on the part of the data provider

What Are Portfolio Manager Web Services? (cont'd.)

- REST protocol

- Basic HTML methods (GET, PUT, POST, DELETE)

- Data transferred in XML format

- Covers most functions that can be performed via the Portfolio Manager graphical user interface (GUI)

- Providers responsible for developing their own software solution and integration code

Online Resources Available, Including Full Technical Documentation

ENERGY STAR®
PortfolioManager®

Language: English | Français

Exchanging Data: Resources to Help you Get Started

EPA offers a suite of RESTful web services that allow you to exchange data with Portfolio Manager. You can use these services to benchmark your own buildings, enter data on behalf of your customers, and receive ENERGY STAR metrics to incorporate in your own energy information software and services.

Getting Started

- Introduction to Exchanging Data
- Testing Web Services
- Connection and Sharing

Other Resources

- Offering data exchange services to your customers
- ENERGY STAR Training
- Subscribe to the Web Services Mailing List
- RESTClient for Mozilla Firefox EXIT
- Advanced REST client Application for Google Chrome EXIT
- Full List of Reporting Metrics
- Full List of Portfolio Manager Alerts

The Application Programming Interface (API)

- Comprehensive Resource Documentation
  - Live Environment -- Running Version 15.0
  - Test Environment -- Running Version 16.0
- Error Codes
- Known Issues
- Release Notes
- Frequently Asked Questions

Important Dates

- Web Services 16.0 Beta Released on December 7th, 2020 (Update Info)
- Web Services 16.0 Live Scheduled for February 22nd, 2021 (Update Info)
- Standard Weekly Maintenance
  - Sunday from 8PM EDT to midnight EDT
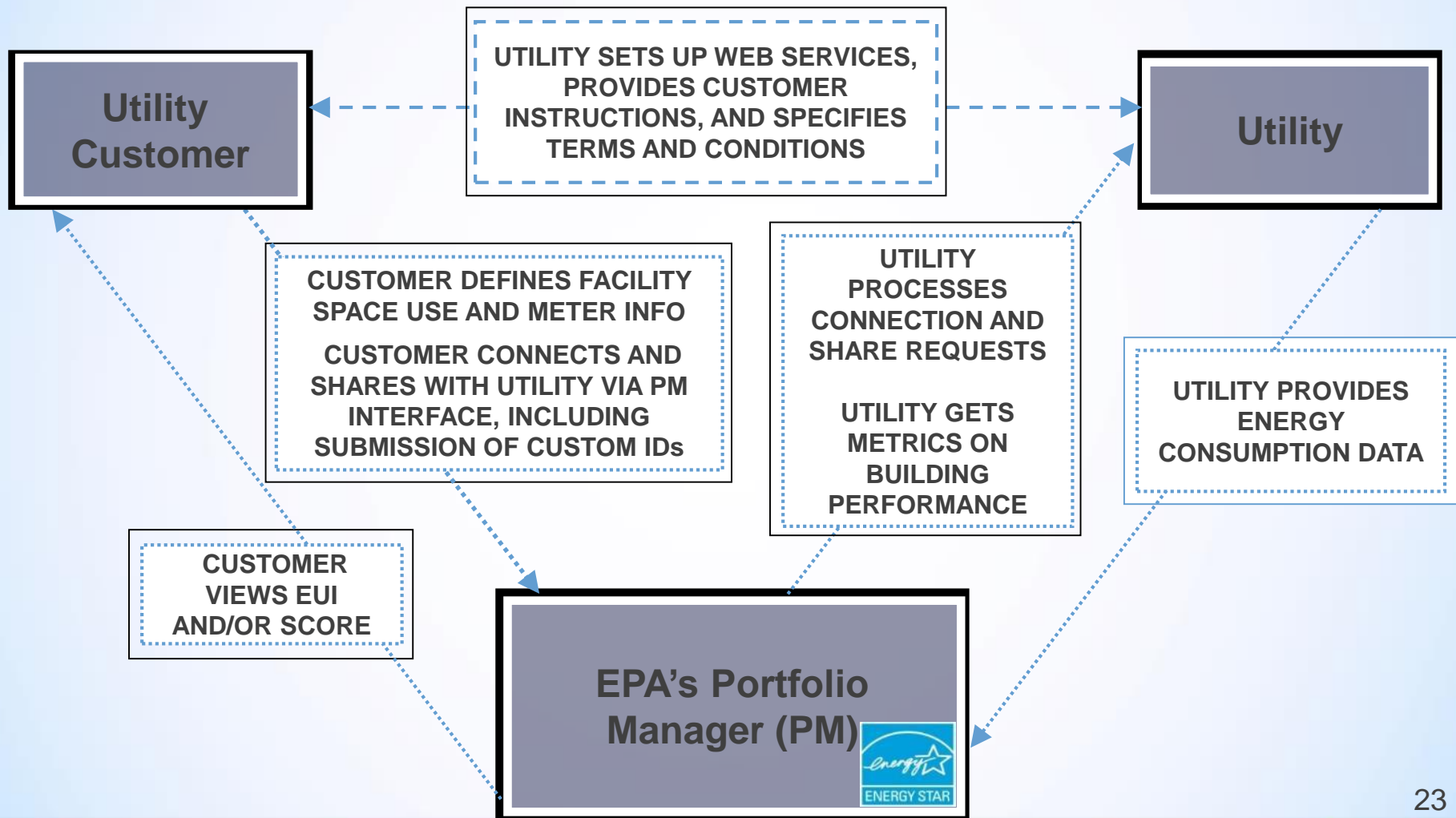 - Monday through Thursday from 10PM EDT to 11PM EDT

    Regular procedures must be performed on EPA's ENERGY STAR systems to ensure they are properly maintained. Many of these maintenance procedures require interruption of services for the duration of the procedure. During the scheduled maintenance window you may experience anything from slow response, limited access, or no connectivity, or you may experience no interruption. *Scheduled use of the system should be avoided during these windows.*

- APIs for Live and Test environments

- XML schemas

- Example requests and responses for each web service

- Release notes

- Guidance documents

- Maintenance and update schedules

http://portfoliomanager.energystar.gov/webservices

EPA | ENERGY STAR. The simple choice for energy efficiency.

Typical Utility Web Services Process

Utility Customer

UTILITY SETS UP WEB SERVICES, PROVIDES CUSTOMER INSTRUCTIONS, AND SPECIFIES TERMS AND CONDITIONS

Utility

CUSTOMER DEFINES FACILITY SPACE USE AND METER INFO

CUSTOMER CONNECTS AND SHARES WITH UTILITY VIA PM INTERFACE, INCLUDING SUBMISSION OF CUSTOM IDs

UTILITY PROCESSES CONNECTION AND SHARE REQUESTS

UTILITY GETS METRICS ON BUILDING PERFORMANCE

UTILITY PROVIDES ENERGY CONSUMPTION DATA

CUSTOMER VIEWS EUI AND/OR SCORE

**EPA's Portfolio Manager (PM)**

Additional Details

- Property owner must initiate the process via "connection" and "share" requests

- Provider can require the acceptance of specific terms and conditions by building owner before any data gets transferred

- Providers can set up Custom IDs for building owners to fill out when submitting connection and/or sharing requests

- Either party can choose to "break" the connection and/or shares at any time

- Notification functionality allows provider to be aware of any transfer in property ownership

Key System Design Considerations

- Support **multiple use cases** (e.g., new PM users vs. customers with existing accounts/property records)
- Perform **meter-to-building mapping** to supply aggregated whole-building data. This includes:
  - Mechanism for matching meters/accounts to physical property address
  - Opportunity for property owner/manager to review and confirm
  - Documentation of mapping for ongoing maintenance and verification
- **Calendarization** of aggregated data prior to entry in PM
- Correct accounting of **total/gross vs. net-metered** consumption, for buildings with onsite renewable energy
- **Ongoing, monthly upload** of energy data
- Use of PM data in EE **program targeting/delivery**

Current Utility Data Access Offerings Across the U.S.

- 49 utilities provide data
  - **34 use Portfolio Manager web services**
  - 15 offer data via spreadsheet
- Reached 58,000 buildings via web services as in Q3 2020
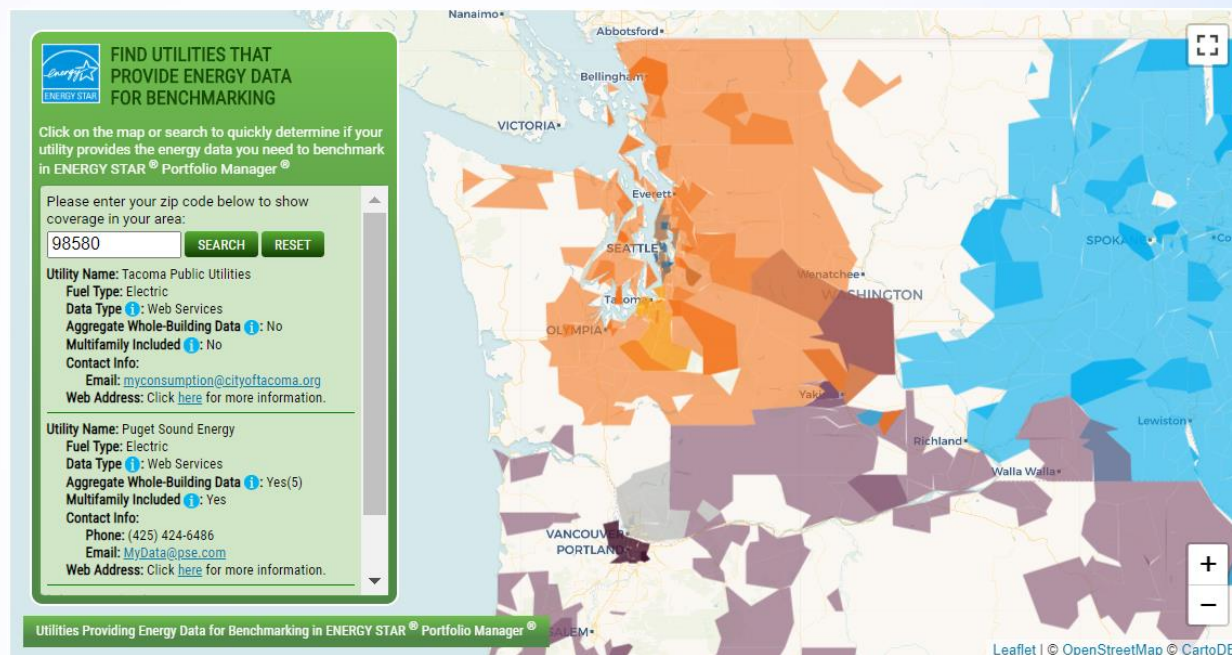
www.energystar.gov/utilitydata

Next Steps

Reach Out to the ENERGY STAR Team!

- Available to help utilities explore key considerations and best practices for the development of data access solutions

- Experience advising utility IT teams, as well as with 3rd party vendors deploying solutions on behalf of utilities

- Able to facilitate networking with other utilities that have developed solutions

Contact Information

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