Appendix G - Electric and Gas Company Reporting Requirements Working Group Session 1 – June 3, 2024 (ENERGY STAR slide deck)

Best Practices for Utility Data Access Solutions

Presentation for Maryland Utilities

June 3, 2024

Agenda

1. Introductions
2. Utility Data Access Solutions and Benchmarking
3. Review of ENERGY STAR Guidance and Best Practices
4. Wrap-up and Q&A (time permitting)

On Today's Call

- Brendan Hall, EPA, ENERGY STAR Buildings Branch
- Katy Hatcher, EPA, ENERGY STAR Buildings Branch
- Tracy Narel, EPA, ENERGY STAR Commercial & Industrial Branch
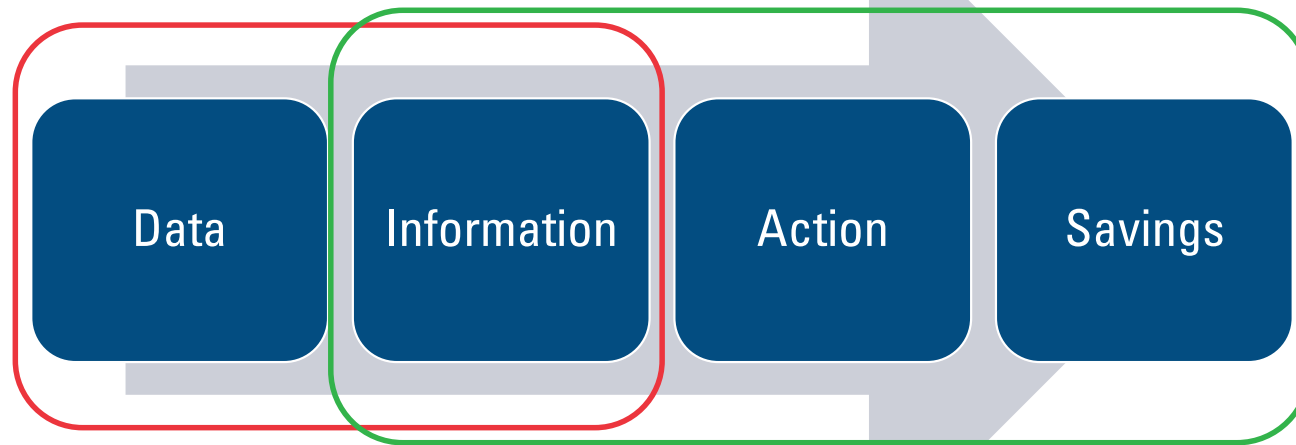- Andrew Schulte, ICF (working in support of ENERGY STAR)

Utility Data Access Solutions and Benchmarking

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Benchmarking is a Foundational Activity

ENERGY STAR® PortfolioManager®

Benchmarking

| Data | Information | Action | Savings |

Program Design and Delivery

What is Portfolio Manager?

Management Tool

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

What is Portfolio Manager? (cont'd.)
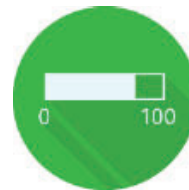
Hundreds of metrics, including:

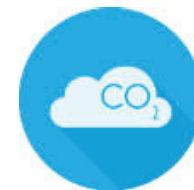**Energy use**
Source, site, weather normalized, demand

Water use
Water use intensity, Water Score (for Multifamily)

Waste & Materials
Waste intensity, diversion rate

1-100 ENERGY STAR score

GHG emissions
Indirect, direct, total, avoided

What Do Building Owners Need to Benchmark?

Property use details

- Specific details differ by property type
- Includes information such as square footage, number of operating hours, number of occupants
- **Typically information that can be gathered by the property owner/manager**

Whole-building energy consumption data

- Minimum of 12 complete, consecutive months of data for each fuel type consumed to operate the property
- Can be entered meter-by-meter, <u>or</u> as an aggregate sum by fuel type
- May be directly accessible by property owner/manager, <u>but not always</u>

Building Owners May Not Have Complete Access to Energy Data

- Most common in **multi-tenant buildings.**
  - Office buildings
  - Multifamily properties
  - Warehouses
  - Certain Retail configurations

- Owner/manager may only receive bills for common areas.

- Need complete energy consumption data (tenant-paid <u>and</u> owner-paid) to benchmark.

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Why Is This An Issue?

- Building owner/manager is typically the party that is benchmarking
  - In the case of state/local mandates, the owner is the entity <u>required</u> to comply.

- Without whole-building consumption data, a building owner may:
  - Risk non-compliance with a state or local benchmarking ordinance;
  - Miss the opportunity to understand and improve the energy performance of their property (including participation in utility DSM offerings);
  - Miss the opportunity to participate in voluntary programs that require benchmarking (e.g., energy reduction competitions); and/or
  - Have a harder time compiling the information required to access federal incentives (e.g., home energy rebates for multifamily owners under IRA).

The Most Common Solution: Aggregate Whole-Building Data

- Many utilities (and their regulators) have determined that "aggregate data" (above a certain minimum number of tenants/accounts) is no longer sensitive customer information.

- Therefore, for properties that meet the aggregation threshold, aggregate data can be provided directly to the building owner/manager upon request, without the need for tenant-level authorization.

- Taking this approach introduces a new technical challenge: meter-to-building "mapping."
  - Most utilities do not have a specified database element for "properties," so creative approaches may be needed.

Key Process Steps for Aggregating Data

- Understand the physical location and boundaries of the property for which energy consumption data is being requested.

- Identify all the meter/service points associated with that location.

- Confirm the accuracy and completeness of this meter list with the data requestor.

- Establish an association in the utility data system between the multiple "real-world" meter/service points and the "virtual" record being used to capture aggregate data.

- Maintain accurate meter-to-building mapping over time, to ensure that the aggregate consumption value reflects all the meters that track energy consumption during a given period.

Current Status of Utility Data Access in Maryland

State	Utility Name	Aggregate Whole-Building Data? [1]	Multifamily Included?	Format	Contact Information
MD	Baltimore Gas & Electric	Yes (5)	Yes	Spreadsheet	BGE Project Coordinator, (410) 290-1202 Click here for more information
MD	Delmarva Power	Yes (5)	Yes	Web Services	support@exelonenergyusagedata.com Click here for more information
MD	Pepco	Yes (5)	Yes	Web Services	support@exelonenergyusagedata.com Click here for more information
MD	Washington Gas	Yes (5)	Yes	Web Services	aggregateddata@washgas.com Click here for more information
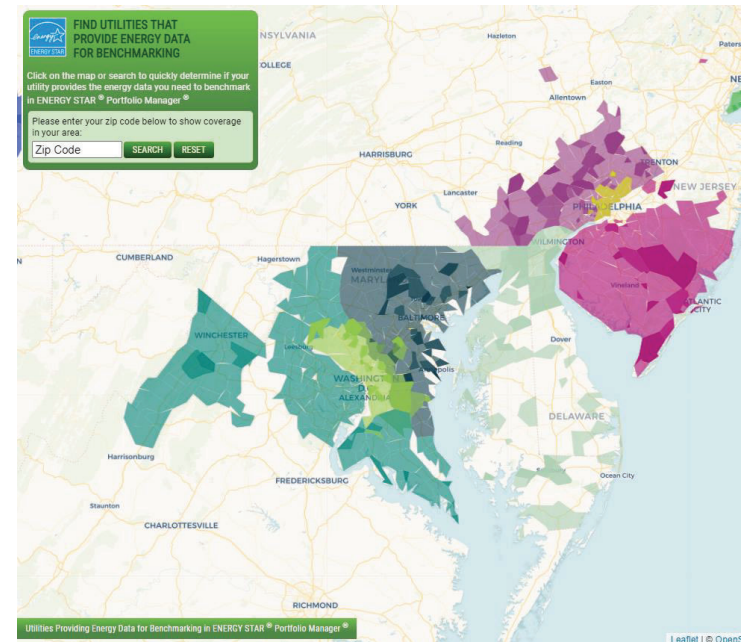
Map and fact sheet available at: energystar.gov/utilitydata

Best Practices for Utility Data Access Solutions

ENERGY STAR Guidance
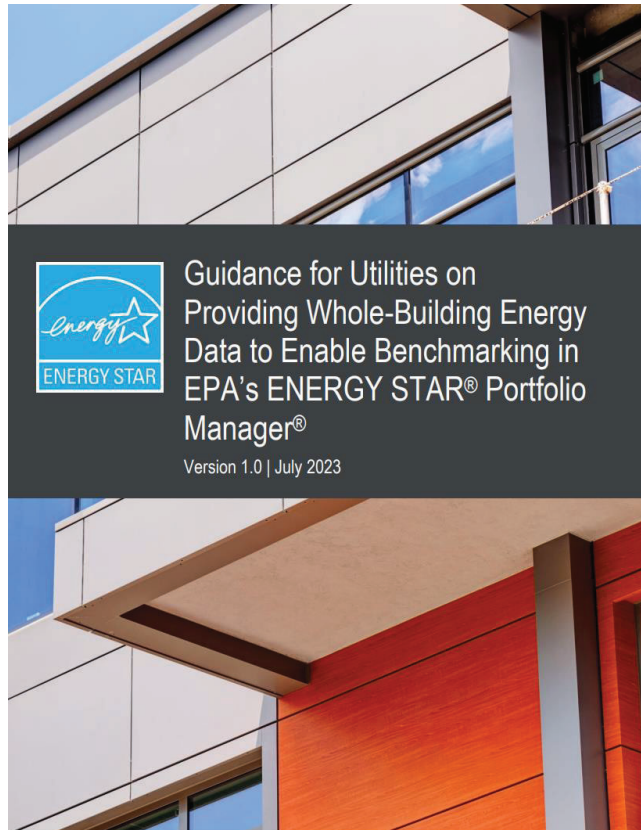
Guidance for Utilities on Providing Whole-Building Energy Data to Enable Benchmarking in EPA's ENERGY STAR® Portfolio Manager®
Version 1.0 | July 2023

[Guidance for Utilities on Providing Whole-Building Energy Data to Enable Benchmarking in ENERGY STAR Portfolio Manager®](#)

Overview of Recommendations

Implement a data aggregation threshold and corresponding data aggregation methodology

1. Establish an aggregation threshold.

2. Ensure that the data access solution can support requests at varying levels of granularity.

3. Implement a utility-led process to identify all meters/accounts at the property that will be included in aggregate consumption.

Overview of Recommendations (cont'd.)

Provide complete, accurate, and timely aggregate whole-building data to requestors

4. Provide aggregate whole-building data to requestors monthly.
5. Provide an "itemized receipt" for meter-to-building mapping and ensure it can be updated over time.
6. Proactively communicate any corrections or updates to aggregate consumption data.
7. Ensure that aggregate consumption captures total (gross) grid electricity consumption.

Overview of Recommendations (cont'd.)

Use the Portfolio Manager application programming interface (API) to deliver the data

8. Larger utilities should use the Portfolio Manager web services API to deliver data to requestors.

1.) Establish an Aggregation Threshold

- Already specified!
  - Per MD BEPS, the aggregation threshold is "five or more tenants."
  - Includes language pertaining to tenant authorization when the aggregation is <u>not</u> met (4 tenants or fewer).
- Additional best practices
  - Consider a streamlined request process for properties at which the building owner/manager is the <u>only</u> customer/tenant.
  - Consider supporting additional options for building owners to request and receive individual tenant-level consumption data when tenant-level authorization is already in place (e.g., via lease language).

2.) Support Requests at Varying Levels of Granularity

- Some property types are generally benchmarked at the single-building level (e.g., offices).

- Other property types can be benchmarked at the property level, even when they consist of multiple "child" buildings (e.g., multifamily, K-12 schools, hospitals, hotels, senior care facilities).

- Additional best practice
  - Have a process for responding to requests for whole-building data in two aggregate "bins" – one for owner-paid consumption, and one for tenant-paid consumption.
  - Likely to be more common as building owners seek to account for "Scope 3" emissions.

Data Request for a Single-Building Property

Data Request for a Multi-Building Property
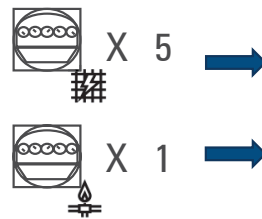

"Broad Street Gardens"
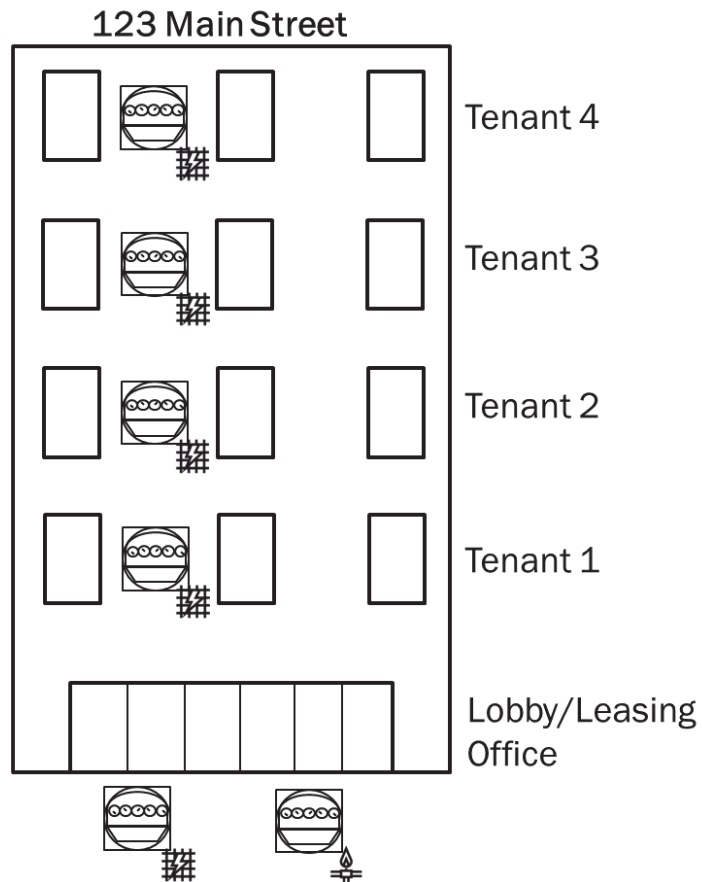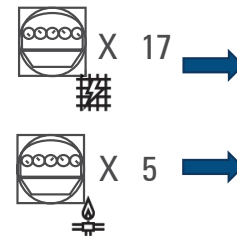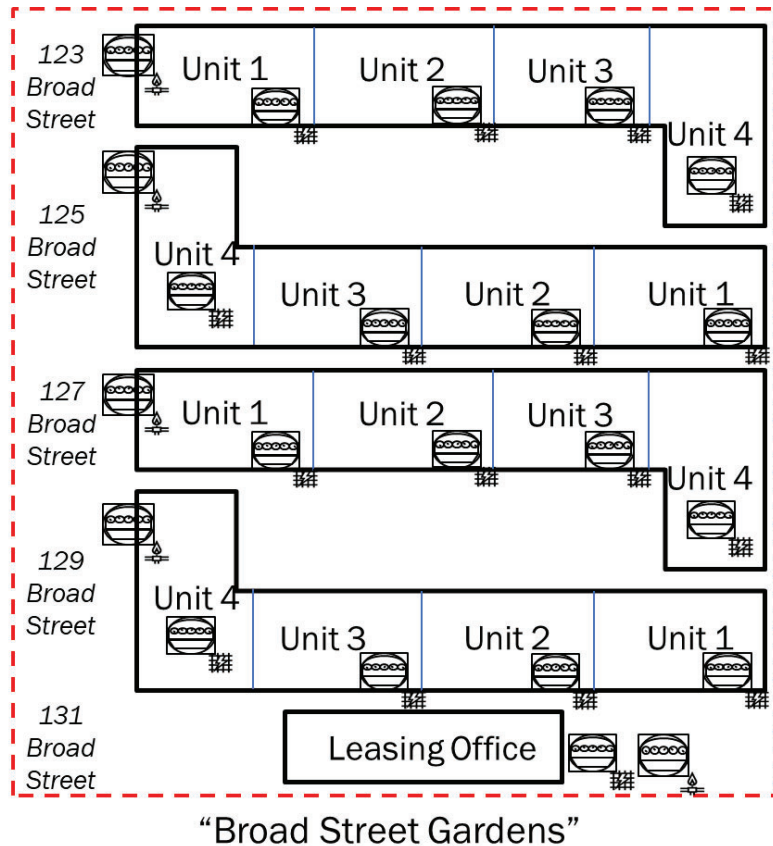
Meters - Used to Compute Metrics (2)   **Add A Meter**

Change Meter Selections
View as a Diagram

Name Meter ID	Energy Type	Most Recent Bill Date	In Use? (Inactive Date)
Grid Electric - Whole Building 103881631	Electric - Grid	10/31/2022	Yes
Natural Gas - Whole Building 103881630	Natural Gas	10/31/2022	Yes

3.) Implement a Utility-Led Solution for "Meter-to-Building Mapping"

- Utility should initiate the identification of all relevant meters/accounts using a limited number of required inputs from the requestor, such as:
  - Primary building address
  - Any secondary addresses associated with the property
  - Account ID for any building owner/manager-paid account
- Utility should present requestor with a list of the identified meters/accounts (or a list of the associated tenant names) that will be rolled up into aggregate whole-building data.
  - With this list, the data requestor can review the meters/accounts identified by the utility and can provide feedback regarding any missing or extraneous elements.

Example Implementation of Utility-Led Mapping

123 Main Street

Tenant 4 – Suite 501

Tenant 3 – Suite 401

Tenant 2 – Suite 301

Tenant 1 – Suite 201

Lobby/Leasing Office
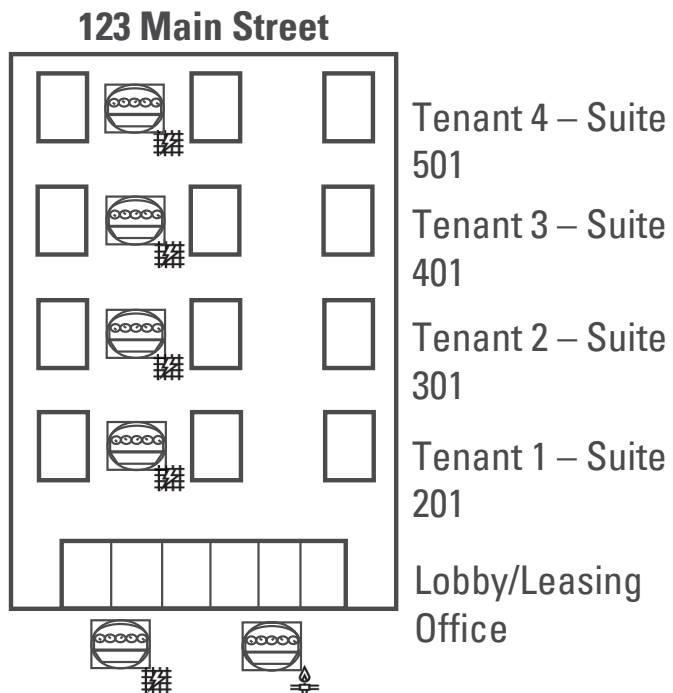
Based on the addresses you provided, we've found the following meters/accounts at your property.

Please confirm which accounts should be associated with your property for purposes of providing whole-building aggregated data. If an account has been returned in error, please deselect. If you do not see an account associated with a tenant at your property, click "I don't see a tenant."

☐	**Name and Address Associated with Account**
☒	Realty Partners, d.b.a. 123 Main Street, LLC 123 Main Street, Suite 101
☒	ABC Consulting, Inc. 123 Main Street, Suite 201
☒	Jones Accounting, LLC 123 Main Street, Suite 301
☒	Gutierrez Advisors 123 Main Street, Suite 401
☒	Smith Associates 123 Main Street, Suite 501
☐	ABC Associates 124 Broad Street, Suite 801

I don't see a tenant	Confirm associations

4.) Provide Data to Requestors Monthly

- Offer ongoing, monthly delivery of new data following fulfillment of initial request for aggregate historical data.
  - Preferable to a single "push" of 12 aggregate consumption records 1x per year.
  - Easiest when the Portfolio Manager API is being used (see recommendation 8).
  - Utilities providing data via spreadsheet should also consider how this can be achieved.
- Additional best practices
  - Use time-weighted calendarization when the individual consumption records to be aggregated do not have the same start/end dates.

5.) Provide an "Itemized Receipt" for Meter-to-Building Mapping

- Meter-to-building mapping should be transparent – not a "black box."
- Critical for any scenario in which future review and validation of benchmarking data may be needed.
- Should be available to the building owner/data requestor "on demand."
- Mapping details should be updated as necessary to ensure that the "aggregate" consumption quantity reflects all meters/accounts measuring use during any given period.
- There is already an "aggregate meter" functionality where these details can be captured/stored in Portfolio Manager.

Example of an "Itemized Receipt" Using Portfolio Manager Functionality

Individual Meters Included in Electric Grid Meter

Use the table below to keep track of individual meters that are included in the usage of this aggregate meter.

Total Active Individual Meters = 3

		*Individual Meter Custom ID Name	*Individual Meter Custom ID	*Service Address for Meter	Meter is Active	*Date Meter Became Inactive
1	☐	Service Point	123456	123 Main St., Suite 201	☑	
2	☐	Service Point	345678	123 Main St., Suite 101	☑	
3	☐	Service Point	012345	123 Main St., Suite 302	☐	04/30/2021
4	☐	Service Point	234567	123 Main St., Suite 301	☑	

First Previous Page 1 of 1 Next Last 10 ▾

+Add Another Entry
✖Delete Selected Entries
✖Delete ****ALL**** Meter data for this meter

Download to Excel

6.) Proactively Communicate Any Corrections or Updates to Aggregate Consumption Data

- Already specified in MD BEPS.

- If there are revisions to historical consumption data for any of the meters/accounts that "roll up" to the aggregate total, the utility should:
  - Identify that a revision has taken place and alert building owner.
  - Use revised data to recalculate aggregate consumption for all impacted billing periods.
  - Proactively communicate the revised consumption values to the data requestor (could entail a direct edit to Portfolio Manager data via API, or the provision of updated aggregate consumption data via spreadsheet).
  - Pay special attention to edits that alter consumption values by more than a certain percentage, compared to the original value.

7.) Ensure that Aggregate Data Captures <u>Gross</u> Grid Electricity Consumption

- Already specified in MD BEPS

- Applicable in cases where properties generate and consume onsite renewable electricity and sell excess generation back to the grid.

- Using only "net-metered" consumption prevents Portfolio Manager from differentiating between the amount of grid electricity vs. onsite renewable electricity that was used in the operation of the property.

- If the utility's billing system only reports net-metered consumption, then the amount of electricity sold back to the grid should be added back in when calculating aggregate consumption data (or should be provided to the data requestor separately so that they can make the necessary updates manually in Portfolio Manager).

- If installed metering technology cannot support the calculation of "gross" electricity consumption, the utility should make the data requestor aware.

8.) Deliver Data Using the Portfolio Manager API

- Utility size threshold and corresponding data delivery requirements are already established in the MD BEPS.

- Utilities with the option to use the API <u>or</u> spreadsheets for data delivery should consider benefits of the API pathway:
  - Automate the ongoing delivery of monthly data.
  - Ensure that any consumption/billing revisions are reflected directly in Portfolio Manager.
  - Enable the programmatic use of benchmarking data to design, promote, and assess utility efficiency programs.

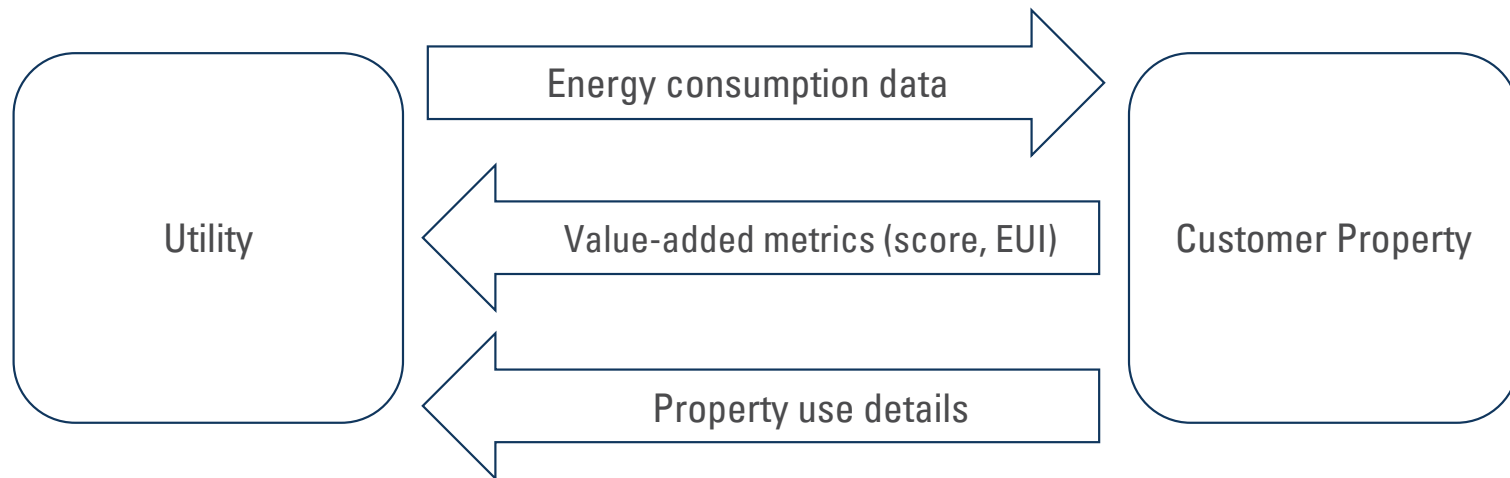# 8.) Deliver Data Using the Portfolio Manager API (cont'd.)

- Data format for spreadsheet-based solutions can be straightforward (start date, end date, consumption quantity).

- However, these solutions still need to consider/address ongoing delivery of monthly data, documentation of meter-to-building mapping, and management of billing corrections/revisions.

    - The ENERGY STAR team has prepared a sample annotated spreadsheet, which may help utilities to better understand the information required.

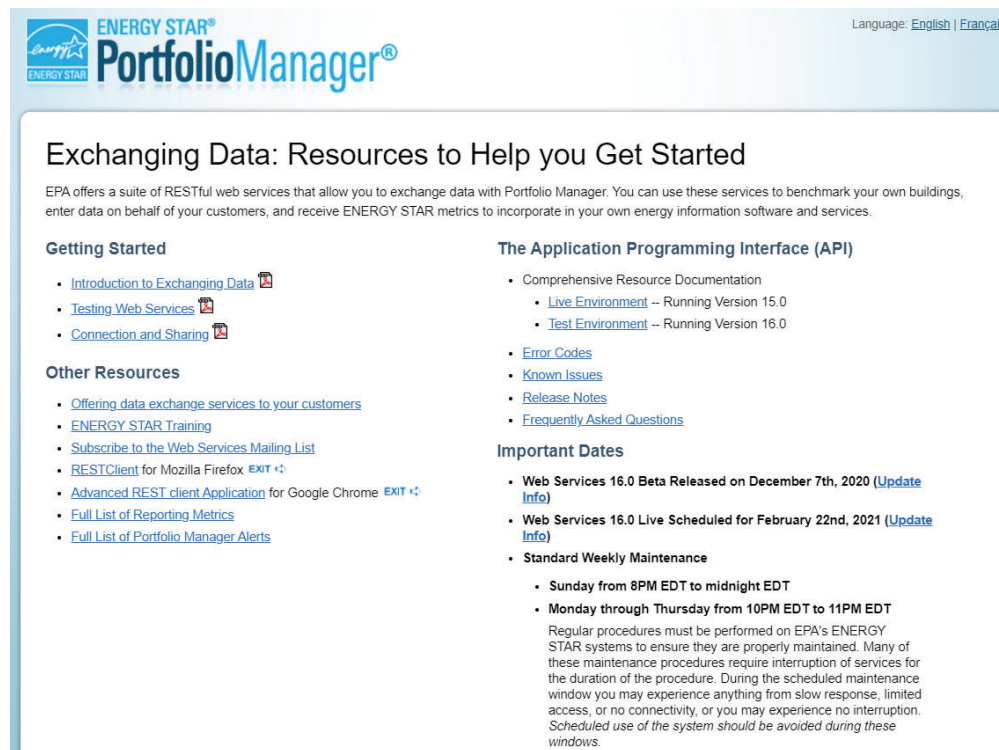|	A	B	C	D	E	F	G
1	Start Date (Required)	End Date (Required)	Usage (Required)	Cost (Optional)	Estimation (Optional)	Demand (Optional)	Demand Cost (Optional)
2							
3							
4							
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11							
12							
13							

The API May Provide the Most Benefits for Both Utility and Customer

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

Utility → Energy consumption data → Customer Property

Customer Property → Value-added metrics (score, EUI) → Utility

Customer Property → Property use details → Utility

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Online Resources Available, Including Full Technical Documentation

- 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

Wrap-up and Q&A

For Consideration/Discussion

- For utilities that have not yet considered/developed their data access solutions.

  - What questions do you have?
  - Do you have concerns about the feasibility of implementing any of these best practices?

- For utilities that have already developed data access solutions.

  - Do you have a sense of where your existing solution meets (or, where applicable, does not meet) these guidelines?
  - Do you have any questions/concerns about what it would take to close any gaps between your current solution and these guidelines?

Reach Out to the ENERGY STAR Team!

- Today's goal: emphasize and promote "best practice" as utilities are interpreting the formal requirements set forth in the MD BEPS law.

- Please review the [Guidance for Utilities on Providing Whole-Building Energy Data to Enable Benchmarking in ENERGY STAR Portfolio Manager®](#).

- Reach out for additional 1-on-1 discussions with the ENERGY STAR team (contact information on next slide). We are available to:
  - Help utilities explore key considerations and best practices for the development of data access solutions.
  - Situate data access within the broader customer use of Portfolio Manager.
  - Advise utility IT teams, as well as with 3rd party vendors deploying solutions on behalf of utilities
  - Facilitate networking with other utilities that have developed solutions.

Thank you!

- **Brendan Hall: Hall.Brendan@epa.gov**
- **Katy Hatcher: Hatcher.Caterina@epa.gov**
- **Tracy Narel: Narel.Tracy@epa.gov**
- **Andrew Schulte: Andrew.Schulte@icf.com**

Search FAQs and submit questions to the ENERGY STAR Helpdesk:

https://energystar.my.site.com/PortfolioManager/s/

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