Welcome to BENCHMARKING 101
Thanks to Ameren Missouri for supporting the City Energy Project!

AmerenMissouri.com/BizSavers
Today’s agenda

• Welcome & Introductions
• Building Energy Awareness Ordinance
• Benchmarking Basics
• Gathering Data Needed for Benchmarking
• Complying with the Ordinance
• So You’ve Benchmarked – Now What?
• Case Study
• Q&A
Building Energy Use Impacts
U.S. Buildings Have a BIG Impact

- 12% water use
- 39% CO₂ emissions
- 65% waste output
- 71% electricity consumption
Locally, climate impacts are even bigger.
Energy Savings

30% of energy used in buildings is wasted through inefficiency.

Half of all energy savings are possible through low-cost or no-cost operational improvements.

Benchmarking is the first step to saving energy, water & money!
What is Benchmarking?

Tracking your building’s energy use and comparing your performance to the past and to similar buildings is called **BENCHMARKING**.
Building Energy Awareness Ordinance

Requirements:

• Municipal and Private buildings over 50,000 square feet must track and report energy and water use annually – including multi-family
  • Municipal buildings to comply by December 31, 2017
  • Private buildings to comply by April 1, 2018
• Some exemptions (low or no occupancy, manufacturing, financial duress, state & federal buildings)
• Buildings not in compliance with the ordinance would not be eligible for issuance of new residential or commercial occupancy permits
• Training and assistance available!
REPORTING DEADLINE
April 1, 2018

City of St. Louis Building Energy Awareness Ordinance

Effective in 2017, privately owned buildings and municipal buildings in St. Louis that are 50,000 square feet or more are
Join the Green Building Movement!

www.usgbc-mogateway.org/membership
Benchmarking Basics
Energy | Water | Waste
You can’t manage what you don’t measure
Ways to Benchmark Performance - Energy

- **1-100 ENERGY STAR Score**
- National Medians
- Similar Buildings in your Portfolio
- Past Performance
- Target Performance
1-100 ENERGY STAR Score

1 to 100 Energy Performance Scale

National Average

Superior Energy Management!
Nationally representative survey - CBECS gathers data on building characteristics and energy use from thousands of buildings across the US.

EPA analyzes & filters the data - ensuring data robustness and quality.

EPA creates a statistical model that correlates the energy data of the property use details to identify the key drivers of energy use, accounting for weather variations.

Compares the actual energy data for a building to the modeled estimate to determine where the building ranks relative to its peers.
Property types with 1-100 ENERGY STAR scores

- Bank Branch
- Barracks*
- Courthouses
- Data Centers
- Distribution Centers
- Financial Offices
- Hospitals
- Hotels
- K-12 Schools
- Office Buildings
- Medical Offices*
- Multifamily Housing
- Residence Hall/Dormitory*
- Retail Stores
- Senior Care Communities
- Supermarkets
- Warehouses
- Wastewater Treatment Plants*
- Wholesale club/Supercenters
- Worship Facilities

*Not eligible for ENERGY STAR Certification
1-100 ENERGY STAR Score

- Best capital investment opportunities are in lower quartiles - greatest potential for improvement
- RCx & O&M improvements yield savings and label candidates
- High scoring plants provide lessons learned and certification candidates

Energy Performance Score

1 25 50 75 100
Ways to Benchmark Performance - Energy

• 1-100 ENERGY STAR Score
• National Medians
• Similar Buildings in your Portfolio
• Past Performance
• Target Performance
Energy Use Intensity

- Energy used per square foot
- Compare to national median EUI for your property type
Ways to Benchmark Performance - Energy

• 1-100 ENERGY STAR Score
• National Medians
• Similar Buildings in your Portfolio
• Past Performance
• Target Performance
Ways to Benchmark Performance - Water

- NEW 1-100 Water Score *(multifamily only)*
- Water Use Intensity
- Similar Buildings in your Portfolio
- Past Performance
- Target Performance
Follow Steps Outlined in Quick Start Guide

1. Log In
2. Add Property
3. Add Meters
4. Add Energy, Water or Waste Data
5. Review Results

Find online at
www.energystar.gov/buildings/training/training
Log in or Create Account
www.energystar.gov/benchmark

Use Portfolio Manager

How Portfolio Manager helps you save
The benchmarking starter kit
Identify your property type
Enter data into Portfolio Manager
The data quality checker
How Portfolio Manager calculates metrics
Interpret your results
Verify and document your savings
Share and request data
Updates to ENERGY STAR scores with CBECs data

Save energy
Find financing
Earn recognition
Communicate your success
Resources for your property type

Use Portfolio Manager

You've heard it before: you can't manage what you don't measure. That's why EPA created ENERGY STAR Portfolio Manager®, an online tool you can use to measure and track energy and water consumption, as well as greenhouse gas emissions. Use it to benchmark the performance of one building or a whole portfolio of buildings, all in a secure online environment.

Not sure if Portfolio Manager is for you? It is.

You can use Portfolio Manager to manage the energy and water use of any building. Seriously. Any building. K-12 school? Check. Office building? Check. Stadium? Check. We could keep going. All you need are your energy bills and some basic information about your building to get started.

Are you designing a new commercial building? You can also use Portfolio Manager to set your energy use target and see how your estimated design energy stacks up against similar existing buildings nationwide.

Discover the new and improved Portfolio Manager today.

SIGN UP

Current Portfolio Manager Users

username
password
Forgot password?

LOG IN
Add a Property
Enter Basic Building Information

Select Property Type

Select number of buildings

Select construction status

Get Started!
Frequent Question: Campus Benchmarking

- If you have multiple buildings that share the same energy and/or water meters, you should set up your property as a **campus** in Portfolio Manager.
- If necessary, buildings not covered by the ordinance may be benchmarked with the buildings that are covered by the ordinance.
- For example, a building covered (such as a building over 50,000 square feet) shares energy-consuming systems with a building not covered by the ordinance (such as a building less than 50,000 square feet).
*Frequent Question:
Campus Benchmarking

- If separate buildings are sub-metered, or if it’s possible to make reasonable calculations / assumptions to allocate energy use to each individual building, the buildings may benchmark and report separately.
Find ENERGY STAR’s campus benchmarking guide online at www.energystar.gov/buildings/training/training
Frequent Question: Campus Benchmarking

• Enter the number of buildings that will be benchmarked together

• Step-by-step guide on campus benchmarking available at www.energystar.gov/buildings/training/training
**Set Up a Property: Basic Property Information**

Tell us a little bit more about your property, including a name that you will use to look up your property and its address.

### About Your Property

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>* (required)</td>
</tr>
<tr>
<td>Country</td>
<td>* (required) <em>Select</em></td>
</tr>
<tr>
<td>Street Address</td>
<td>* (required)</td>
</tr>
<tr>
<td>City/Municipality</td>
<td></td>
</tr>
<tr>
<td>State/Province</td>
<td>* (required) <em>Select</em></td>
</tr>
<tr>
<td>Postal Code</td>
<td>* (required)</td>
</tr>
<tr>
<td>Year Built</td>
<td>* (required)</td>
</tr>
</tbody>
</table>

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### Tip

The name you choose for your property does not have to be unique. But, it may make it easier for you to work with properties in your portfolio if you do not use the same (or similar) names.
Frequent Question: Occupancy
• Occupancy is the percentage of your Gross Floor Area that is occupied & operational
• Required, but doesn’t impact ENERGY STAR Score or metrics
• Enter a good guess and move on!
Check Statements that Apply

Do any of these apply?

- My property's energy consumption includes parking areas
- My property has a Data Center that requires a constant power load of 75 kW or more
- My property has one or more retail stores
- My property has one or more restaurants/cafeterias

Tip
Answering these simple questions will help us guide you in entering your property correctly.

Follow Us  
Contact Us | Privacy Policy | Browser Requirements | ENERGY STAR Buildings & Plants Website
Supermarket/Grocery Store refers to buildings used for the retail sale of primarily food and beverage products, and which may include small amounts of preparation and sale of ready-to-eat food. Buildings where the primary business is the on-site preparation and sale of ready-to-eat food should use one of the Restaurant property types.

Gross Floor Area should include all space within the building(s), including the sales floor, offices, storage areas, kitchens, staff break rooms, and stairwells.

### Characteristic

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
<th>Current As Of</th>
<th>Temporary Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Floor Area</td>
<td>12000</td>
<td>01/01/1992</td>
<td></td>
</tr>
<tr>
<td>Weekly Operating Hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Workers on Main Shift</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Cash Registers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent That Can Be Heated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent That Can Be Cooled</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Add Another Type of Use

Add Property | Cancel
*Frequent Question: Adding Use Types

Year Built: 1900
Property consists of: 1 building

Add Another Type of Use

Building Use
Edit Name

Office refers to buildings used for the conduct of commercial or governmental business activities. This includes administrative and professional offices.

Gross Floor Area (GFA) should include all space within the building(s) including offices, conference rooms and auditoriums, break rooms, kitchens, lobbies, fitness areas, basements, storage areas, stairways, and elevator shafts.

If you have restaurants, retail, or services (dry cleaners) within the Office, you should most likely include this square footage and energy in the Office Property Use. There are 4 exceptions to this rule when you should create a separate Property Use:

- If it is a Property Use Type that can get an ENERGY STAR Score (note: Retail can only get a score if it is greater than 5,000 square feet)
- If it accounts for more than 25% of the property’s GFA
- If it is a vacant/uncollected Office
- If the Hours of Operation differ by more than 10 hours from the main Property Use

More on this rule.

<table>
<thead>
<tr>
<th>Property Use Detail</th>
<th>Value</th>
<th>Current As Of</th>
<th>Temporary Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Gross Floor Area</em></td>
<td>1,000</td>
<td>1/1/1900</td>
<td></td>
</tr>
<tr>
<td><em>Weekly Operating Hours</em></td>
<td></td>
<td>1/1/1900</td>
<td></td>
</tr>
<tr>
<td><em>Number of Workers on Main Shift</em></td>
<td></td>
<td>1/1/1900</td>
<td></td>
</tr>
<tr>
<td><em>Number of Computers</em></td>
<td></td>
<td>1/1/1900</td>
<td></td>
</tr>
<tr>
<td><em>Percent That Can Be Heated</em></td>
<td></td>
<td>1/1/1900</td>
<td></td>
</tr>
<tr>
<td><em>Percent That Can Be Cooled</em></td>
<td></td>
<td>1/1/1900</td>
<td></td>
</tr>
</tbody>
</table>
Less is more! Enter as few space types as possible.

Only break out spaces if:

- If it is a Property Use Type that can get an ENERGY STAR score (retail can only get a score if it is greater than 5,000 square feet)
- The space takes up more than 25% of the Gross Floor Area
- The space is a vacant or unoccupied Office
- Operating hours are more than 10 hours different than the main property use
Your Property Set-Up is Complete!
Add Utility Meters

Energy Tab > Add A Meter
Enter Basic Information about Your Building’s Energy Sources

Get Started Setting Up Meters for Test
There are four ways to enter meter data. First, you can enter manually, starting below. Second, you can set up your meters below, then upload a specially formatted spreadsheet with just your bill data. Third, for advanced users, you can use our upload tool that allows you to set up all of your meters and enter bill data. And finally, you can hire an organization that exchanges data to update your energy data automatically.

Sources of Your Property’s Energy
What kind of energy do you want to track? Please select all that apply.

- Electric
- Natural Gas
- Propane
- Fuel Oil (No. 2)
- Diesel
- District Steam
- District Hot Water
- District Chilled Water

Don’t see your energy sources?
+ See more energy sources?
*Frequent Question: Onsite Green Power

• Do you generate solar or wind power onsite?
• Review available guidance:
  – How to Enter Onsite Green Power in ENERGY STAR
  – ENERGY STAR green power FAQ series
Enter Basic Information about Your Meters

**About Your Meters for Test**
Enter the information below about your new meters. The meter’s *Units* and *Date Meter became Active* are required. You can also change the meter’s name.

### 2 Energy Meters for Test (click table to edit)

<table>
<thead>
<tr>
<th></th>
<th>Meter Name</th>
<th>Type</th>
<th>Units</th>
<th>Date Meter became Active</th>
<th>In Use</th>
<th>Date Meter became Inactive</th>
<th>Enter as Delivery?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Natural Gas</td>
<td>Natural Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Electric Grid Meter</td>
<td>Electric - Grid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1 Water Meter for Test (click table to edit)**

<table>
<thead>
<tr>
<th></th>
<th>Meter Name</th>
<th>Other Type</th>
<th>Units</th>
<th>Date Meter became Active</th>
<th>In Use</th>
<th>Date Meter became Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roof Water Meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*Frequent Issue

*Date Meter became Active should be the same as the start date of your first bill*

---

**About Your Meters for Test**

Enter the information below about your new meters. The meter's **Units** and **Date Meter became Active** are required. You can also change the meter's name.

### 2 Energy Meters for Test (click table to edit)

<table>
<thead>
<tr>
<th>Meter Name</th>
<th>Type</th>
<th>Other Type</th>
<th>Units</th>
<th>Date Meter became Active</th>
<th>In Use?</th>
<th>Date Meter became Inactive</th>
<th>Enter as Delivery?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>Natural Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric Grid Meter</td>
<td>Electric - Grid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### 1 Water Meter for Test (click table to edit)

<table>
<thead>
<tr>
<th>Meter Name</th>
<th>Type</th>
<th>Other Type</th>
<th>Units</th>
<th>Date Meter became Active</th>
<th>In Use?</th>
<th>Date Meter became Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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*Delete Selected Entries
Add Another Entry*
Add Energy Data

Expand meter by clicking arrow
Add Energy Data

Click the “+” to add entries

Upload a spreadsheet, using template
Select the Meters to include in Metrics
Energy Set-up is complete!

Notification

Add or update bills

Supermarket A-1
1214 Main Street, Arlington, VA 22201
Portfolio Manager Property ID: 9939575
Year Built: 1992

Meters - Used to Compute Metrics (3)

<table>
<thead>
<tr>
<th>Name</th>
<th>Meter ID</th>
<th>Energy Type</th>
<th>Most Recent Bill Date</th>
<th>In Use? (Inactive Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Grid Meter</td>
<td>30521003</td>
<td>Electric - Grid</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Fuel Oil (No. 2)</td>
<td>30521002</td>
<td>Fuel Oil (No. 2)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>30521001</td>
<td>Natural Gas</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Four Ways to Enter Bill Data

1. Manually
2. Automatically
3. Import from file

Add A Meter
Repeat for Water

Supermarket A-1
1214 Main Street, Arlington, VA 22201
Portfolio Manager Property ID: 58939675
Year Built: 1992

Water Use Intensity (All Water Sources) (gal/ft²)

- Current WUI: N/A
- Baseline WUI: N/A

Water Meters - Used to Compute Metrics (0)

- View as a Diagram

In order to receive water metrics for your property, you must provide water meters. You have not entered any meters yet. After entering the meter, you will need to associate it to receive metrics.

Add A Meter

Current Water Date
Not Available

Enter Your Bills
Adding Utility Data to Existing Meter

Energy tab > Select Meter or “Enter Your Bills”

- **Meter Summary**
  - 2 Energy Meters Total
  - 2 - Used to Compute Metrics

- **Add A Meter**
  - Current Energy Date Not Available

  - **Enter Your Bills**

- **Meters - Used to Compute Metrics (2)**

  - **Electric Grid Meter**
    - Name: Electric Grid Meter
    - Meter ID: 18951389
    - Energy Type: Electric - Grid
    - Most Recent Bill Date
    - In Use? (Inactive Date): Yes

  - **Natural Gas**
    - Name: Natural Gas
    - Meter ID: 18951388
    - Energy Type: Natural Gas
    - Most Recent Bill Date
    - In Use? (Inactive Date): Yes

- **Four Ways to Enter Bill Data**
  1. Manually
  2. Use our simple spreadsheet (one meter) to upload or Copy/Paste
  3. Use our complex spreadsheet (multiple meters + multiple properties)
Check for Errors

Sample Engineering Laboratory (US)

Property Profile (Future enhancements)
This section will be deleted in 2010, except for the property photos which will remain. More Information + Create Profile

Source EUI Trend (kBtu/ft²)

Total GHG Emissions Trend (Metric Tons CO2e)

Metrics Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR Score (1-100)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>N/A</td>
</tr>
<tr>
<td>Source EUI (kBtu/ft²)</td>
<td>192.7</td>
<td>192.1</td>
<td>-0.60  (-0.60%)</td>
</tr>
<tr>
<td>Site EUI (kBtu/ft²)</td>
<td>76.7</td>
<td>09.1</td>
<td>-67.6  (-89.9%)</td>
</tr>
<tr>
<td>Energy Cost ($)</td>
<td>136,028.47</td>
<td>126,325.34</td>
<td>-9753.1 (-7.16%)</td>
</tr>
<tr>
<td>Total GHG Emissions Intensity (kgCO2e/ft²)</td>
<td>5.5</td>
<td>4.3</td>
<td>-1.20  (-22.2%)</td>
</tr>
<tr>
<td>Water Use (All Water Sources) (gal)</td>
<td>1,072.0</td>
<td>1,540.8</td>
<td>468.8  (44.0%)</td>
</tr>
<tr>
<td>Total Waste (Processed and Diverted) (Ton)</td>
<td>211.24</td>
<td>322.02</td>
<td>310.78 (147.50%)</td>
</tr>
</tbody>
</table>

Change Metrics
Change Time Periods

Check for Possible Data Errors
Run a check for any 12-month time period to see if there are any possible errors found with your data.

Check for Possible Errors
Information needed for Benchmarking
All Properties

- Property Name
- Property Address
- Total Gross Floor Area
- Year Built
- Occupancy (%)
- Number of Buildings

*For Compliance* – St Louis Benchmarking Building ID, find on [www.stlbenchmarking.com](http://www.stlbenchmarking.com)
Gross Floor Area (GFA)

- GFA= Total property square footage between exterior walls of the building.
- Includes ALL finished areas, including support areas (elevator shafts, stairwells, mechanical spaces, basements, etc)
- NOT the same as rentable or leasable space.
- Don’t include Parking square footage in your total property GFA.

Reference this ENERGY STAR FAQ for more Gross Floor Area details
Determining Gross Floor Area

Don’t know your Gross Floor Area? Refer to:
• Life Safety Drawings
• Architectural Plans
• Physical space measurements

Your GFA impacts your energy metrics. **Try to get it right the first time!**
You can enter a temporary value during initial set-up, but should confirm before submitting data to the City.

Reference this ENERGY STAR FAQ for more Gross Floor Area details
Property Use Details

• Additional details vary by Property Type.
• Use ENERGY STAR’s Online Data Collection Worksheet
Gather Utility Data

• Ordinance requires annual data: at least January 1, 2017 – December 31, 2017
• Billing periods likely won’t line up with calendar year - you’ll likely need to gather 13+ months of bills
• Water and all fuel types used in building
  – Water (billed quarterly)
  – Electricity – purchased or generated onsite
  – Natural Gas
  – District Steam
  – Energy purchased in bulk: Fuel Oil, propane, diesel, etc.
Data Needed

- Start Date of billing cycle *
- End Date of billing cycle *
- Usage *
- Cost
- Estimation (Yes/No) *
- Purchased Electricity Only Demand
- Purchased Electricity Only Demand Cost

* REQUIRED
Frequent Question: Data Needed

Bulk Delivery – Fuel Oil, etc

- Delivery Date *
- Quantity *
- Total Cost
- Estimation (Y/N) *

* REQUIRED
Gathering Ameren Missouri Data

Options:

1. Gather physical bills that cover full calendar year

   or

1. Access your data online:

   www.amerenmissouri.com
Ameren Missouri Website – Usage Tab
Ameren Missouri Website – Billing Tab
Frequent Question

On-site Electricity Generation

• Do you generate solar or wind power onsite?
• Review available guidance:
  – How to Enter Onsite Green Power in ENERGY STAR
  – ENERGY STAR green power FAQ series
Gathering Spire Data

Options:
1. Gather physical bills that cover full calendar year
   or
1. Access your data online: www.spireenergy.com
Spire Website
Option 1: Download Usage In Excel
Spire Website
Option 2: Download Billing & Payment History as pdf

Billing & payment history

Transactions
Agency assistance

Transactions
Transactions by month

View transactions for a range of dates
Statement includes charges, debits, credits, dates and an ending balance

Select address: 

Starting date: 01/01/2017
Ending date: 10/13/2017

Agency assistance
You do not have any agency assistance.
Spire Website
Option 2: Download Billing & Payment History as pdf

### Billing & payment history

<table>
<thead>
<tr>
<th>Posting date</th>
<th>Description</th>
<th>Billing start date</th>
<th>Billing end date</th>
<th>Billing days</th>
<th>Usage (Ccf)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/04/2017</td>
<td>October Bill</td>
<td>06/22</td>
<td>09/21</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/18/2017</td>
<td>Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/01/2017</td>
<td>September Bill</td>
<td>07/23</td>
<td>06/22</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08/21/2017</td>
<td>Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/04/2017</td>
<td>August Bill</td>
<td>06/22</td>
<td>07/23</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07/21/2017</td>
<td>Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07/11/2017</td>
<td>July Bill</td>
<td>05/22</td>
<td>06/22</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/13/2017</td>
<td>Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/02/2017</td>
<td>June Bill</td>
<td>04/20</td>
<td>05/22</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05/23/2017</td>
<td>Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05/14/2017</td>
<td>May Bill</td>
<td>03/20</td>
<td>04/20</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Gathering Water Data

Options:

1. Gather physical bills that cover full calendar year or

2. Access your data online: www.stlwater.com
   Data not available for download, can copy/paste

This pdf contains instructions on how to look up quarterly water utilization.

If you are having difficulty, contact the Water Division’s Customer Service Section at 314-771-2255 (M-F, 8 am – 5 pm)
Options:

1. Gather physical bills that cover full calendar year
   1. January – July invoices will be from Trigen – St. Louis
   2. August – December invoices from Ashley Energy LLC or

2. Request monthly steam consumption values for 2017 – visit www.stlbenchmarking.com to download request form.
Entering Utility Data

Manually Enter Data or Copy/paste

Manage Bills (Meter Entries) for Sample Library (US)

Meter Selection: Potable, Mixed Indoor/Outdoor Meter

Basic Meter Information

Monthly Entries

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Usage Gallons</th>
<th>Total Cost ($)</th>
<th>Estimation</th>
<th>Last Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2017</td>
<td>2/15/2017</td>
<td>120,000</td>
<td>21,000.00</td>
<td></td>
<td>7/26/2017 <a href="mailto:emily.andrews@mobot.org">emily.andrews@mobot.org</a></td>
</tr>
<tr>
<td>2/15/2017</td>
<td>3/15/2017</td>
<td>95,000</td>
<td>14,500.00</td>
<td></td>
<td>7/26/2017 <a href="mailto:emily.andrews@mobot.org">emily.andrews@mobot.org</a></td>
</tr>
<tr>
<td>3/16/2017</td>
<td>4/16/2017</td>
<td>92,000</td>
<td>14,100.00</td>
<td></td>
<td>7/26/2017 <a href="mailto:emily.andrews@mobot.org">emily.andrews@mobot.org</a></td>
</tr>
<tr>
<td>04/15/2017</td>
<td>05/16/2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Download to Excel

Upload data in bulk for this meter:
Entering Utility Data

Upload data in bulk for each meter

*Electricity and Natural Gas upload templates are different.

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Usage Gallons</th>
<th>Total Cost ($)</th>
<th>Estimation</th>
<th>Last Updated</th>
</tr>
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<tbody>
<tr>
<td>1/1/2017</td>
<td>2/15/2017</td>
<td>120,000</td>
<td>21,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/15/2017</td>
<td>3/18/2017</td>
<td>95,000</td>
<td>14,500.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/10/2017</td>
<td>4/16/2017</td>
<td>92,000</td>
<td>14,100.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/16/2017</td>
<td>05/15/2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You can copy/paste into the table shown above (note in this FAQ) or upload an Excel spreadsheet using our simple spreadsheet template.
Entering Utility Data

Create upload template to update multiple meters and multiple properties at once.

Training video about this process available on www.energystar.gov/buildings/training/training
Frequent Question: Multi-tenant buildings

• Aggregated whole-building data is available upon request from Ameren & Spire
• Download the Utility Release Form from www.stlbenchmarking.com and submit to:
  – AMEREN MISSOURI CONTACT:
    • Mybusinessamerenmissouri@ameren.com
    • Expect 3 – 5 business days from time of request to when data is sent.
  – SPIRE CONTACT:
    • energyefficiency@spireenergy.com
    • Expect 1 week from time of request to when data is sent
*Frequent Question: Third-Party Access to Data?

• You can hire a service provider to benchmark on your behalf, but have to give them permission to get your data from utility using Utility Release form on www.stlbenchmarking.com
Compliance
Enter St. Louis Benchmarking
Building ID

Look for Unique Identifiers section of Details Tab
Enter St. Louis Benchmarking Building ID

Choose St. Louis Building ID from standard ID dropdown
Data Request Link
www.stlbenchmarking.com

REPORTING DEADLINE
April 1, 2018
Responding to Data Request: St. Louis 2017 Benchmarking Report Data Request

from Rajiv Ravulapati (Department of Public Safety - Building Division)

About this Data Request

Data Requested By: Rajiv Ravulapati

Instructions:

St. Louis's energy benchmarking ordinance, "Building Energy Awareness," (ordinance #70474) is a requirement for municipal, institutional, commercial, and multifamily residential buildings whose square footage is equal to or greater than 50,000. This law's purpose is to track and report buildings' energy and water usage annually to the City of St. Louis's Building Division. Prior to submitting this report, all meters for your property must be updated in Portfolio Manager from January 1st to December 31st, 2017.

The deadline to submit your report is April 1st, 2018. Buildings not in compliance with the ordinance would NOT be eligible for issuance of new residential or commercial occupancy permits.

If you have questions about submitting the report or general energy benchmarking, please visit www.stlbenchmarking.com.

For additional help, contact the Building Division at benchmarking@stlouis-mo.gov or 314-622-3318. Ask for Rajiv Ravulapati (Technical Advisor) or Deborah Williams (Program Manager).
Responding to Data Request

About Your Response

Who is this data being submitted on behalf of?

- myself
- someone else

Your Response

Select Information to Include:

Timeframe: *Single Year ▼ Dec 31 ▼ 2017 ▼

If the data requestor has specified a timeframe for the request, you will not be able to change it.

Properties: *One Property ▼ City Hall ▼

The data requestor may have asked for one or more standard IDs to be included with the property information. Make sure you have entered the requested standard IDs for each property before sending your response.

Generate Response Preview
Responding to Data Request

You must select **Send Response from** this dropdown after your response preview is generated.
What Happens to Reported Data?

• City’s Technical Advisor will issue an Annual Report by end of December each year
• Address + Energy Star score / EUI available online
So You Benchmarked, Now What?
Now what?

- Understand Performance
- Set Goals
- Create & Implement Action Plan
- Evaluate Progress
Understanding & Using Portfolio Manager Metrics

**Test Office**
4651 Shaw, St. Louis, MO 63110  |  Map It
Portfolio Manager Property ID: 4832392
Year Built: 1975

**ENERGY STAR Score (1-100)**

- Current Score: 58
- Baseline Score: 59

**Metrics Summary**

- Energy STAR score (1-100): Dec 2014 (Energy Baseline) 59, Jan 2015 (Energy Current) 58, Change -1 (-1.7%)
Understand Performance

Dashboard (Metrics current as of 09/27/2017 10:48 AM EDT)

<table>
<thead>
<tr>
<th>Name</th>
<th>Energy Current Date</th>
<th>ENERGY STAR Score</th>
<th>Site EUI (kBtu/ft²)</th>
<th>Source EUI (kBtu/ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Engineering Laboratory (US) 6047684</td>
<td>03/31/2017</td>
<td>NA</td>
<td>69.1</td>
<td>182.1</td>
</tr>
<tr>
<td>Sample K-12 School (US) 6047702</td>
<td>08/31/2017</td>
<td>76</td>
<td>55.0</td>
<td>113.5</td>
</tr>
<tr>
<td>Sample Library (US) 6047705</td>
<td>08/31/2017</td>
<td>NA</td>
<td>97.3</td>
<td>228.3</td>
</tr>
<tr>
<td>Sample Office (US) 6047681</td>
<td>08/31/2017</td>
<td>NA</td>
<td>100.3</td>
<td>275.2</td>
</tr>
<tr>
<td>Sample University (including child building) (US) 6047703</td>
<td>03/31/2017</td>
<td>NA</td>
<td>70.5</td>
<td>170.6</td>
</tr>
<tr>
<td>Sample Engineering Laboratory (US) 6047704</td>
<td>03/31/2017</td>
<td>NA</td>
<td>69.1</td>
<td>182.1</td>
</tr>
</tbody>
</table>

Energy Use by Calendar Month

- Natural Gas
- Electric - Solar
- Electric - Grid

Water Use by Calendar Month

- Potable: Mixed Indoor/Outdoor
Create & Implement Plan to Reduce your Energy Use!

No Cost Energy Efficiency

- Enable energy saving settings on computers
- Battle vampire power!
- Adjust your thermostat settings
- Use Sunlight wisely
- Turn out lights or remove unneeded lights
- Prioritize preventative maintenance!
- Pay attention to water use - especially hot water
Reduce your Energy Use!

Low Cost or Quick Payback

- Tune up your Building Systems
- Lighting Retrofits
- Air sealing

Places to Invest

- Plan to upgrade to high efficiency heating and cooling equipment when replacing
- An energy audit will give you a list of improvement measures and estimated savings
Concierge service

- benchmarking@stlouis-mo.gov
- Dedicated phone line: 314-622-5689
- Providing technical assistance on ENERGY STAR, educational opportunities, and EE incentives after you benchmark
Energy Efficiency Incentives

AmerenMissouri.com/BizSavers
Energy Efficiency Rebates

www.SpireEnergy.com/commercial-rebates
Financial Tools

- **Property Assessed Clean Energy (PACE) Financing**
- **Missouri Division of Energy Loan Program**
- **Better Buildings Financing Navigator (US DOE)**

More listed on [www.stlbenchmarking.com](http://www.stlbenchmarking.com)
Additional Training

Benchmarking 101

**Thursday, March 1, 3:30 – 5:00 pm**
Missouri History Museum, 5700 Lindell Blvd, 63112
Additional Training

Benchmarking Jam

Wednesday, March 14, 8:00 – 10:00 am
Metropolitan Square, 9th floor conference room, 211 N Broadway, Suite 990, 63102
Resources

• ENERGY STAR training
  www.energystar.gov/buildings/training/training

• Concierge Service

• www.stlbenchmarking.com
Case Study

Energy Efficiency with Building Automation
The Building

20,000 SF Office Building in St. Louis

- AHU’s, RTU’s, VAV Terminals
- Air Cooled Chiller
- Hot Water Boiler
- Existing Building Automation System
  - Programming Permitted Simultaneous Heating and Cooling
- ENERGY STAR® Score of 1
- $71,300 in Annual Utility Costs
The Project

Replaced the Current BAS with an Automated Logic BAS

- ACES was the Prime Contractor for the project
- Building was occupied and conditioned during retrofit
- Installation of new controllers in existing enclosures
- Provided updated network wiring
- Reused existing control hardware where possible
The Numbers

- Project Cost: $90,500
- Ameren Incentives: $21,150 (23% project cost)
- Final Project Cost: $69,350
- Average Electrical Usage Savings: 64%
- Annual Projected Utility Savings: $36,200
- Payback after Incentives: 1.9 years
- Projected ENERGY STAR® Score of 65 after 1 Year
The Results

Electric Usage

64% Annual Electric Savings
Questions?
Questions?

What other needs do you have related to benchmarking and building performance? *Fill out our survey to let us know!*
Contact Us

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ravulapatir@stlouis-mo.gov

Emily Andrews
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Johanna Schweiss
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