WASHINGTON STATE UNIVERSITY
Energy Program

Meeting Your Clean Buildings Requirements: EMP and O&M Program Guidance

WSU Energy Program
Resource Conservation Management
March 20, 2024

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- All attendees are muted.
- To ask questions, use the chat or "raise your hand" to speak. Someone will unmute you.
- If you are experiencing any technical issues, please call 360-956-2224 for help. Please note our limited capacity to address issues while the webinar is running.

WSU Energy Program

- Self-supporting department within Washington State University based in Olympia
- This presentation part of the Resource Conservation Management (RCM) Program
- Other programs: community solar, Washington state energy codes (residential) support, green transportation education and outreach, community energy efficiency, workforce development, and more

https://www.energy.wsu.edu

Resource Conservation Management Program

- RCM support and workforce development
- Public agencies in Washington State
- Provides
  - Monthly newsletter
  - Webinars
  - Publications
  - Technical assistance
  - RCM position announcements & promotion

RCM News

WASHINGTON STATE UNIVERSITY
Energy Program

RCM News for February 2024

A Newsletter for Resource Conservation Managers in the Northwest

In this issue:

Announcements
Articles
- Indoor Environmental Quality
- LED Advantages
- MERV 13 Filters
- Sustainable Steps for Buildings

Upcoming Events & Training Opportunities
Resources

To receive the newsletter, send email to rcm@energy.wsu.edu

** Must perform RCM work at public agencies in Washington State **

Mark Your Calendars

Coming next from RCM WSU Energy Program

RCM Summit

~~April 17, 2024. 12:00 to 3:00 PM Pacific Time~~ → Changed to May 7

via Zoom

- Follow-up discussion to EMP and O&M Program guidance
- Presentation on electric vehicle planning for RCMs
- Washington State RCM networking

Webinar – RCMs and Occupant Behavior (formal title TBD)

June 5, 2024, 12:00 to 1:00 PM Pacific Time

via Zoom

WA Dept. of Commerce – Clean Buildings

- Clean Buildings Performance Standard homepage
  https://www.commerce.wa.gov/growing-the-economy/energy/buildings/
- CBPS Document Library
  https://www.commerce.wa.gov/growing-the-economy/energy/buildings-archive-page/clean-buildings-performance-standard-document-library/
- Support and Resources
  https://www.commerce.wa.gov/growing-the-economy/energy/buildings/support-and-resources/

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Meeting Your Clean Buildings Requirements: EMP and O&M Program Guidance

Katherine Morgan
March 20, 2024

Agenda

Introduction

- Who am I and who is here
- Quick overview of CBPS and what are we covering today

Purpose and Approach

- CBPS in general
- Energy Management Plan (EMP) and O&M Program and Documentation
- Getting started

Walkthrough of EMP Template package

- What is included
- Organizing your portfolio and property documents
- Discussion on specific content sections and implementation

Discussion

- Please use the chat and feel free to reply to others during presentation part and we'll facilitate a discussion after that
- Topics we don't get to can be carried forward to the Summit in April

Introduction

Katherine Morgan

- Principal at ArchEcology
- Seattle Building Tune-up Specialist
- Former Resource Conservation Manager (RCM)
- LEED AP O+M, BOC Level 2/CBO
- ‘Qualified Person’
- BOC (Building Operator Certification) Instructor and Course Manager

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Webinar Objectives

REVIEW THE TIMELINE, IMPLEMENTATION AND DOCUMENTATION REQUIREMENTS OF THE STANDARD

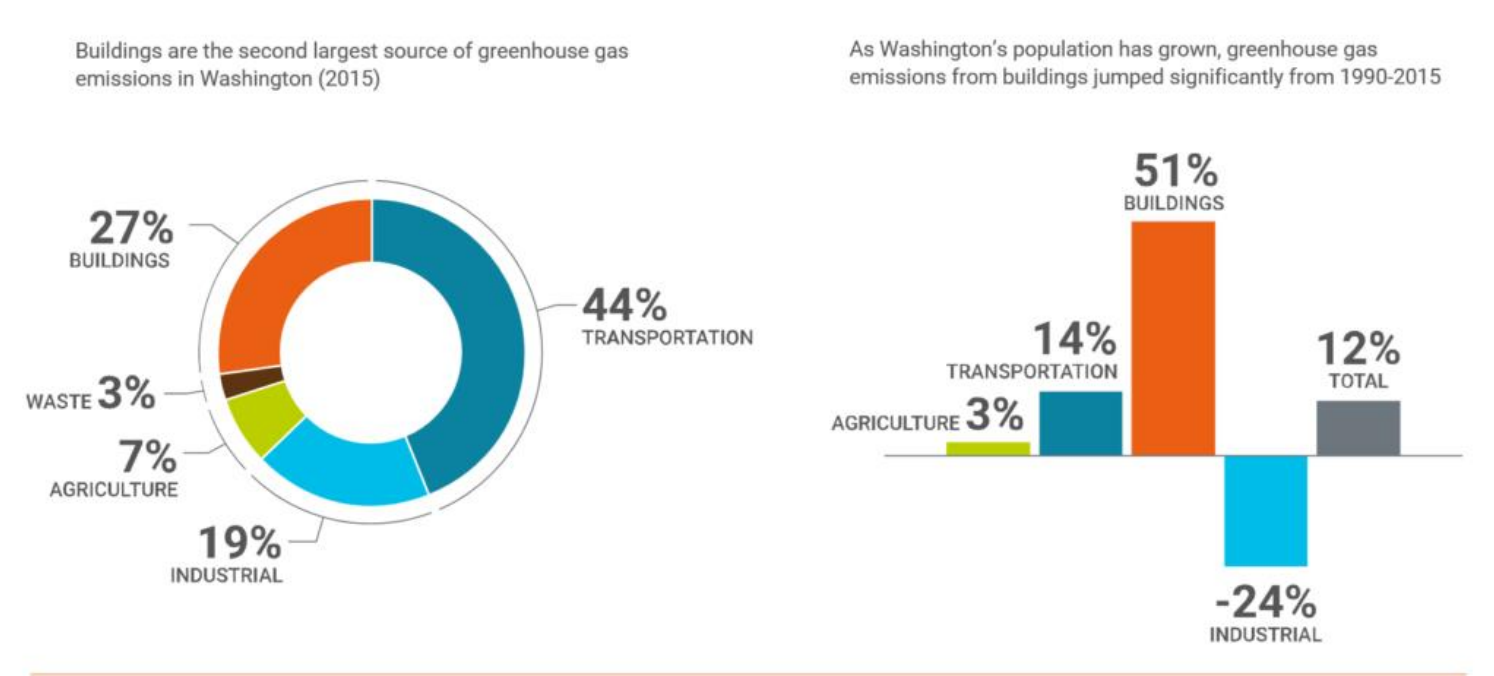
PRESENT A VISUAL EXAMPLE AND TOOLS TO GET STARTED

PROVIDE AN OPPORTUNITY TO DISCUSS APPROACHES AND CHALLENGES

Intent of the legislation

The intent of this law is to reduce energy use and associated greenhouse gas emissions from the buildings sector, which is estimated at 27% of statewide emissions.

It is the second biggest 'source' behind transportation….and it is growing (51% increase from 1990-2015).



https://www.commerce.wa.gov/growing-the-economy/energy/buildings/clean-buildings-standards/

Clean Buildings Performance Standard

The WA CBPS:

Enacted through House Bill 1257

ASHRAE 100-2018, Energy Efficiency in Existing Buildings ‘as amended’ …twice

Published as Washington Administrative Code 194-50

Tier 1 Buildings:

2031: commercial buildings larger than 50,000 SF

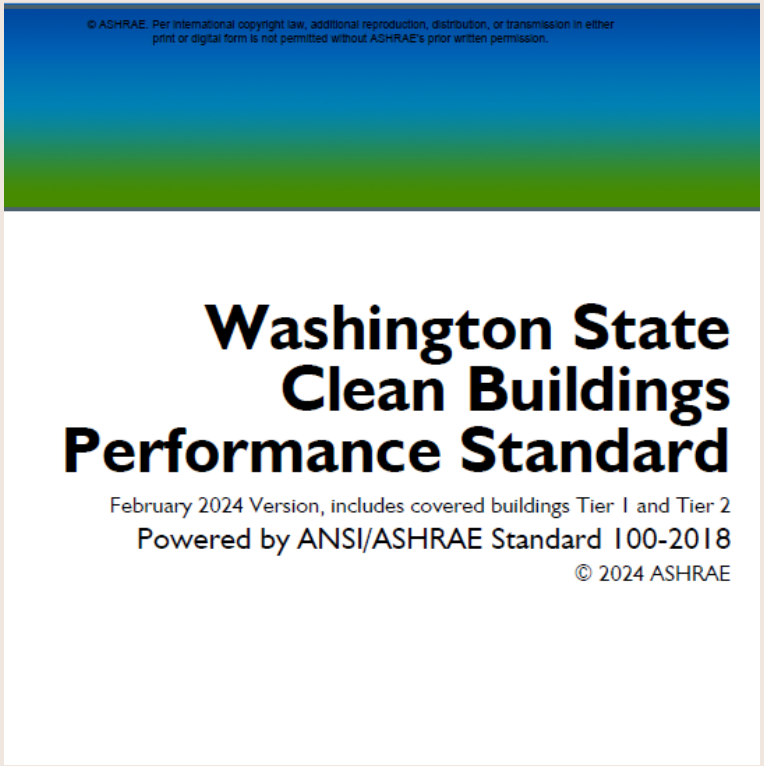
Established EUI Targets

Tier 2 Buildings:

2032: expands down to 20,000 sf and all multifamily

Basic Requirements

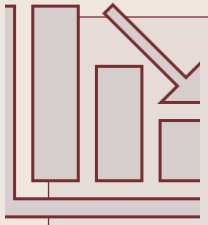
1. Benchmark building energy use and for Tier 1 (>50,000) *meet* target EUI
2. Develop and maintain a *formal program* to support continuous improvement, including documentation - the Energy Management Plan and Operations & Maintenance Program
3. Take actions to maintain and improve building performance over time



Section and Annex references in slides and template instructions refer to this e.g. O&M Objectives (performance, condition) L2.2.1 is Annex L paragraph 2.2.1.

Benefits **of EMP/O&M Program**

Comply with the Standard



Track performance over time and understand what impacted it

Implement best practices and policies to improve energy efficiency*

Document decisions and communicate amongst stakeholders

Leave (organized) breadcrumbs for current and future staff and service providers

*and if ESG (Environment, Social, Governance) or broader sustainability/RCM program, then water and waste, IEQ (indoor environmental quality), site conditions might be included as well

Best practices and policies include:

- Tenant Improvement, renovation review for energy impact
- Asset management for energy efficiency (condition, age, access, replacement plan)
- Preventative Maintenance of assets including building controls
- Training and education
- Include Cx and M&V in major upgrades
- Simply keeping track of what has been done, and what can be done next on an ongoing basis

Implementation Timeline

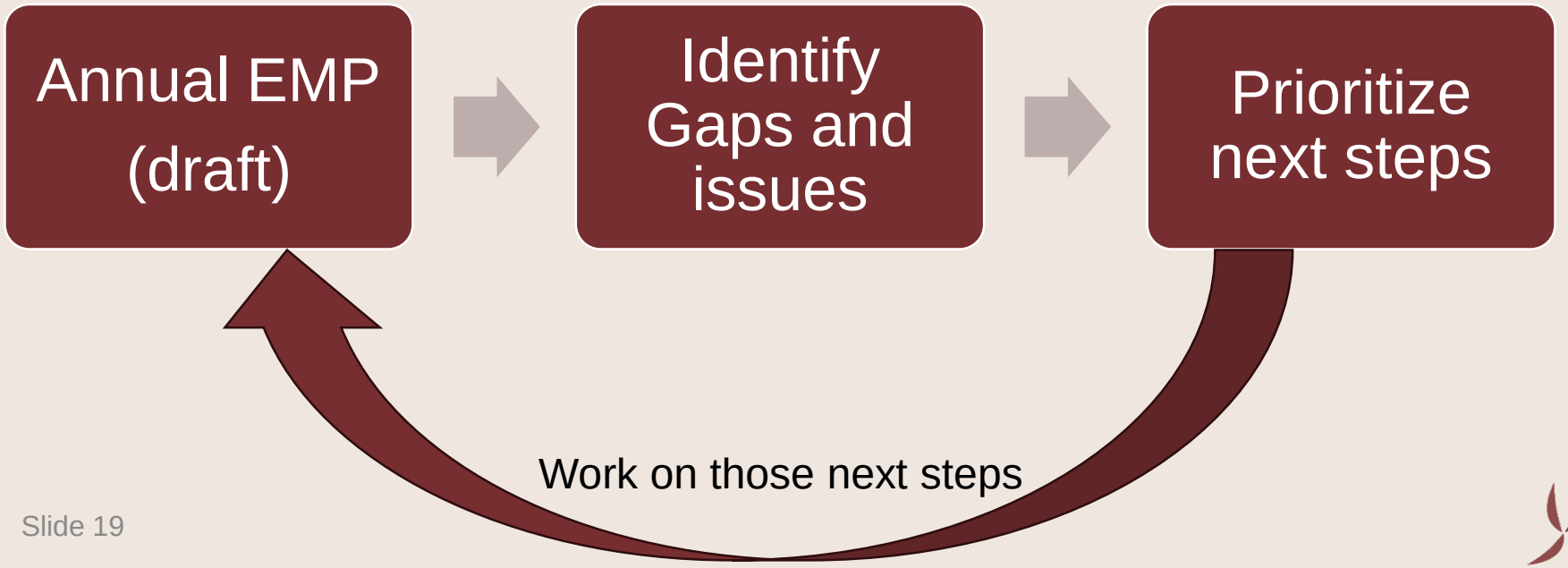
Building Size	Benchmark Building	Have a complete Energy Management Plan and O&M Program in place	Submit Compliance Report
Tier 1			
220,001+ gsf	Now	1/1/2025	6/1/2026
90,001 - 220,000 gsf	Now	1/1/2026	6/1/2027
50,001 - 90,000 gsf	Now	1/1/2027	6/1/2028
Tier 2			
20,000 – 50,000 gsf and residential, and larger buildings with 20,000+ sf of conditioned space that are exempt from Tier 1	Now	1/1/2026	7/1/2027

Readiness Check:

- Do we have and maintain a *validated* profile at ENERGY STAR Portfolio Manager? Do we know our Target EUI?
- Do we have an inventory of all assets (including the envelope) and equipment that use energy (and optionally water) including age, service life, efficiency, and condition, and replacement plan?
- Do we have a written Operation and Maintenance task list for these assets? Do we log those tasks as they are completed?
- Do we have a training program for operators and maintenance techs, as well as guidance for occupants on energy efficient operations?
- Do we have a protocol to review renovation plans for energy impact?

EMP Iterative Development

- Start now and complete sections as you have them
- Build on what you already do
- Make a PDF for each year and update the Word file once or twice a year



Keep your eye on the big picture

Are you meeting your target?

Are you documenting and sharing goals, new practices, and progress with stakeholders?

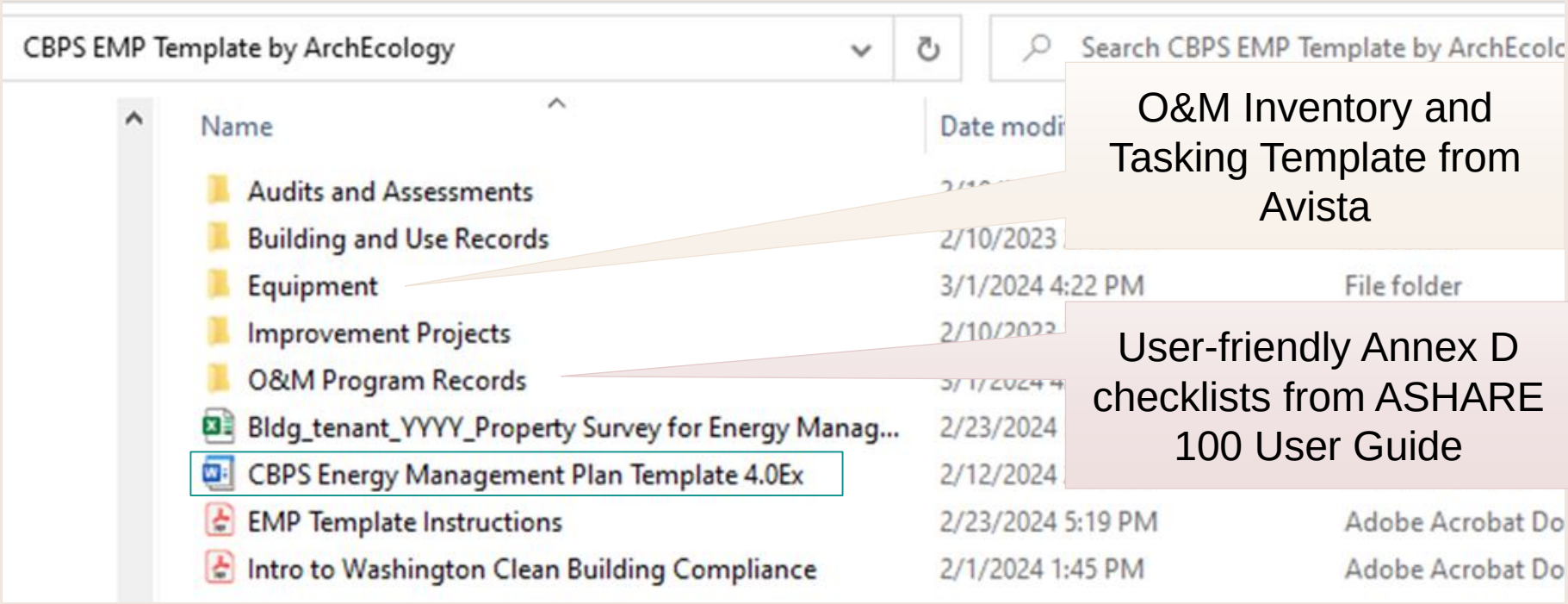
Do you have a way to manage assets and equipment for optimal performance and informed decision making?

Questions?

Introduction to ArchEcology's EMP template

Overview of Template package and how to use it

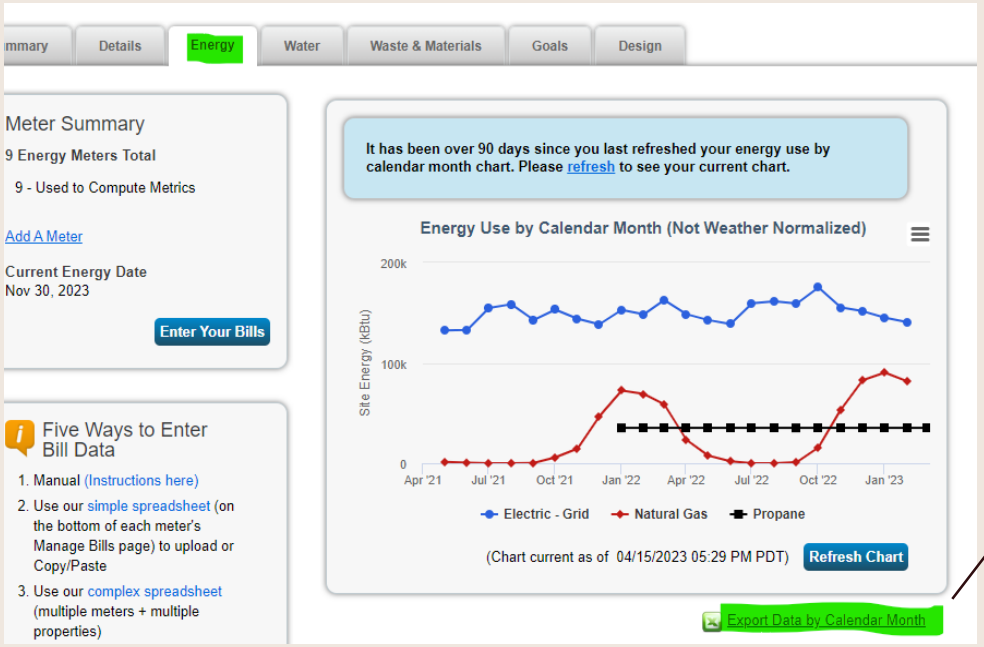
Discussion on specific content sections and implementation



Download at: https://archecology.com/emp

Energy/Water Graphs

- You could grab screen shots from Portfolio Manager
- Degree Day data from degreedays.net
- We have been using the download link shown here for graphing data



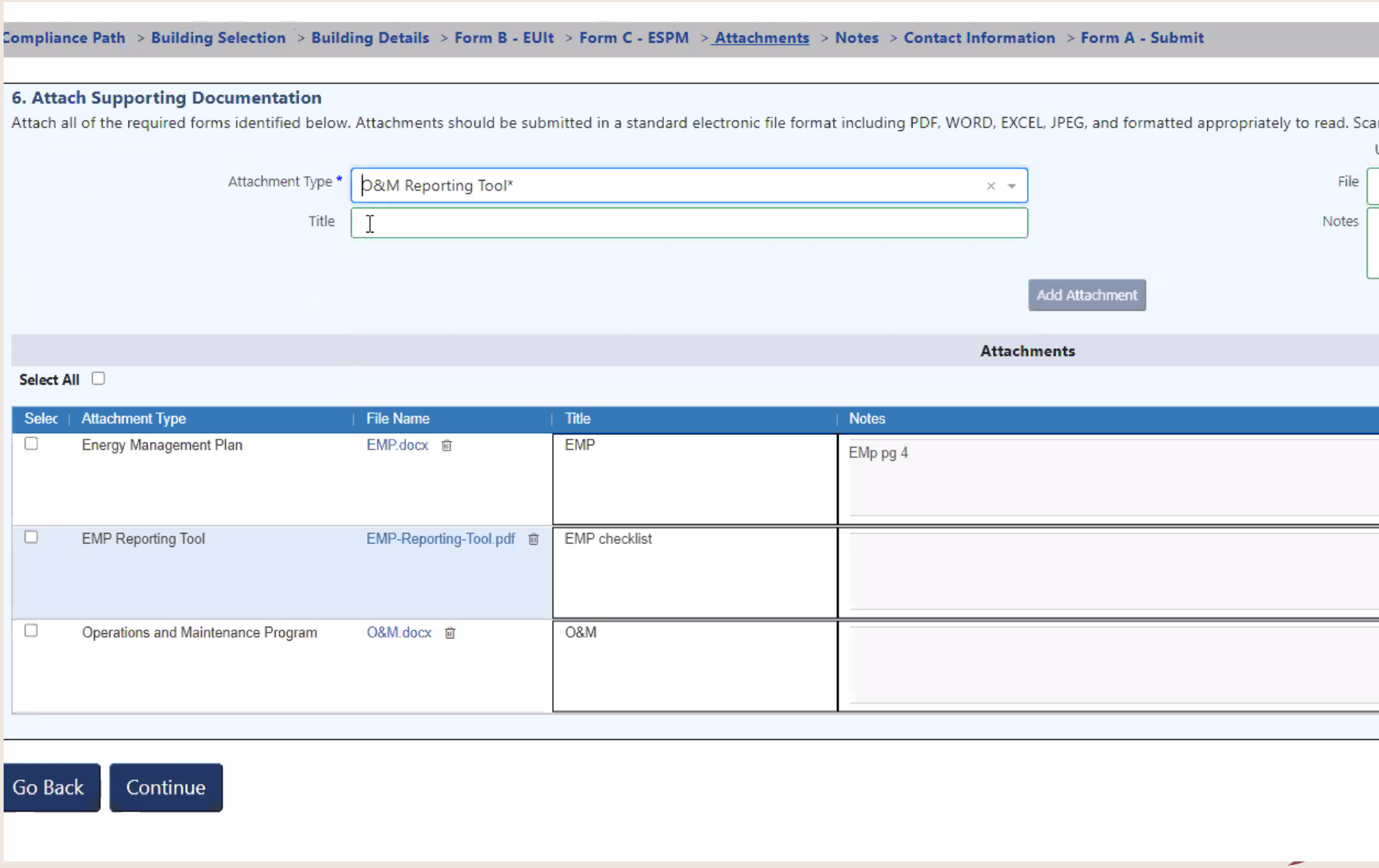
Tip: This link gives monthly by fuel in kBtu

EMP – O&M Plan/Program Interface

- Use the annual EMP to capture:

O&M Objectives (performance, condition) L2.2.1	Status of inventory/condition assessment L2.1, L2.2.2	Description of standard operating procedures
Status of implementing the full scope of the O&M Program	Key findings, issues each year and plan to resolve	Describe any changes and that corresponding updates/training etc were made

Reporting Documentation



Questions?

O&M

- Start with inventory, including
  - Envelope components
  - DHW
  - HVAC
  - Refrigeration
  - Lighting
  - Controls
  - Electric distribution and onsite generation
- Reference the task lists in Annex D (see user friendly version in Appendix from User Guide)
- Field assessment of condition…integrate into PM tasks

From latest update:

L2.2.5 Documentation. {A ***minimum inspection and maintenance documentation package shall consist of the following items***:

1. Listings of *building* systems and system components with associated performance criteria pertinent to the facility.
2. Inspection and maintenance tasks and the method of tracking (automated or manual).
3. Identify *building* systems or components operating beyond their *useful life*.
4. Sufficient record detail and verification (written or electronic) to demonstrate implementation of the maintenance plan.
5. The inspection and maintenance document directory shall provide easy access and be well organized and clearly identified. Emergency information shall be immediately available and shall include emergency staff and/or agency notification procedures.}

Requirements specific to CBPS/ASHRAE 100

- Lighting Satisfaction Survey & Lighting Schedule and Calculated LPD
  - now only needed for Tier 1 who don't meet EUIt and haven't done an upgrade in last 5 years
- 6.4.2 Safe and reasonable access:
  - Assess in field as part of developing Inventory with conditions – note that this has been verified or note issues and track like you would an EEM
- 6.4.3 Update O&M when building use changes or alterations made
- 6.5 Formal process to ensure tenant improvements do not change net energy use except unless consistent with change in target

Accelerator & Incentive Programs *

- Accelerator Programs
  - Avista Clean Buildings Accelerator
    https://www.myavista.com/energy-savings/energy-saving-programs-services-for-your-business/washingtons-new-clean-building-standards/clean-buildings-accelerator
  - Pacific Power Washington Clean Buildings
    https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/savings-energy-choices/wattsmart-business/washington/WA_wattsmartBusiness_Clean_Buildings_Accelerator.pdf
  - Puget Sound Energy Accelerator Program
    https://www.pse.com/en/business-incentives/energy-management-programs/clean-buildings
  - Seattle Clean Buildings Accelerator Program
    https://www.seattlebuildingsaccelerator.com/
  - Snohomish PUD
    https://www.snopud.com/save-energy/business/clean-buildings/
- Incentive Programs
  - Bellevue Clean Buildings Incentive Program
    https://bellevuewa.gov/city-government/departments/community-development/environmental-stewardship/buildings-energy/clean-buildings-incentive-program
  - Issaquah Clean Buildings Incentive Program
    https://www.issaquahwa.gov/3367/Clean-Buildings-Incentive-Program

** May not be complete*

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