

Clean Buildings Performance Standard

Tier 1 and Tier 2 Review

Clean Buildings Team

2/15/2024



Washington State
Department of
Commerce

We strengthen communities



HOUSING AND HOMELESSNESS



INFRASTRUCTURE AND BROADBAND



SMALL BUSINESS ASSISTANCE



ENERGY



PLANNING AND TECH ASSISTANCE



COMMUNITY SERVICES



CRIME VICTIMS AND PUBLIC SAFETY



ECONOMIC DEVELOPMENT

Meet the Building Performance Staff

Emily Salzberg

Clean Buildings Managing Director

**Incentive
Program**

Data

**Technical
Assistance**

Program

Vacant

Brittany
Wagner

Paul
Currington

Kyoung-
Jin
Lee

Michael
Stoneway

Luke
Howard

Judy
Darst

Donny
Westfall

Annalyn
Bergin

James
Witherington

Aletha
McGee

Agenda

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Tier 2

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- Exemptions
- Roles and Responsibilities
- Compliance Requirements

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Connected Buildings and Campus-Level Compliance

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Investment Criteria

- Energy Audit
- Life Cycle Cost Analysis
- Conditional Compliance
- Phased Implementation

6

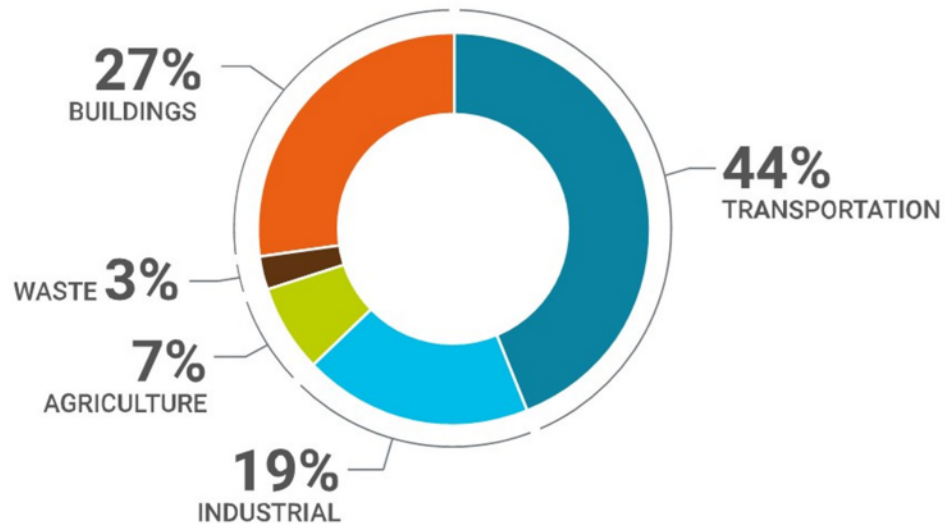
HB 1390 Decarbonization Plan

7

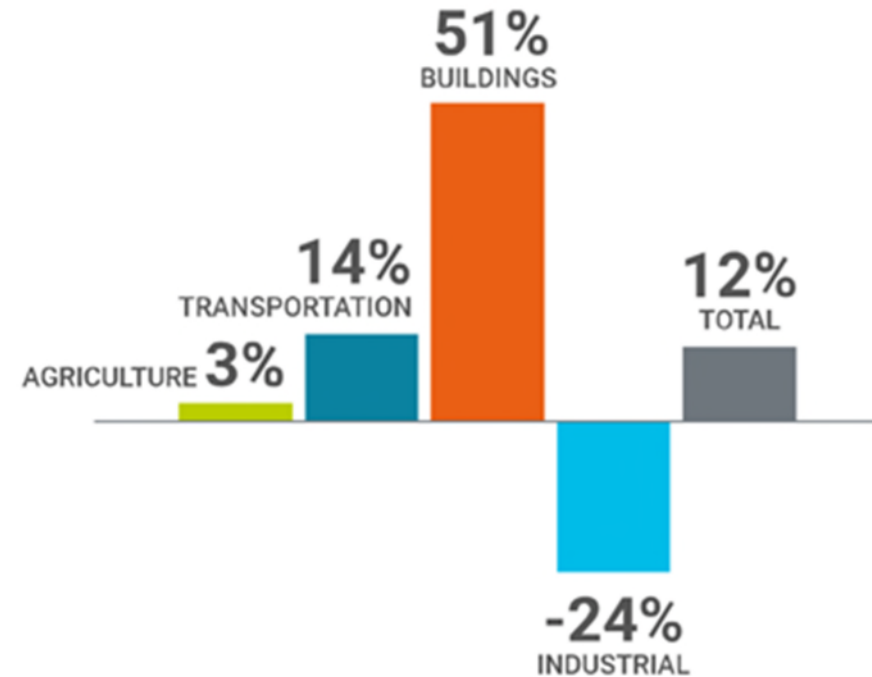
Q&A

Reducing emissions from existing buildings

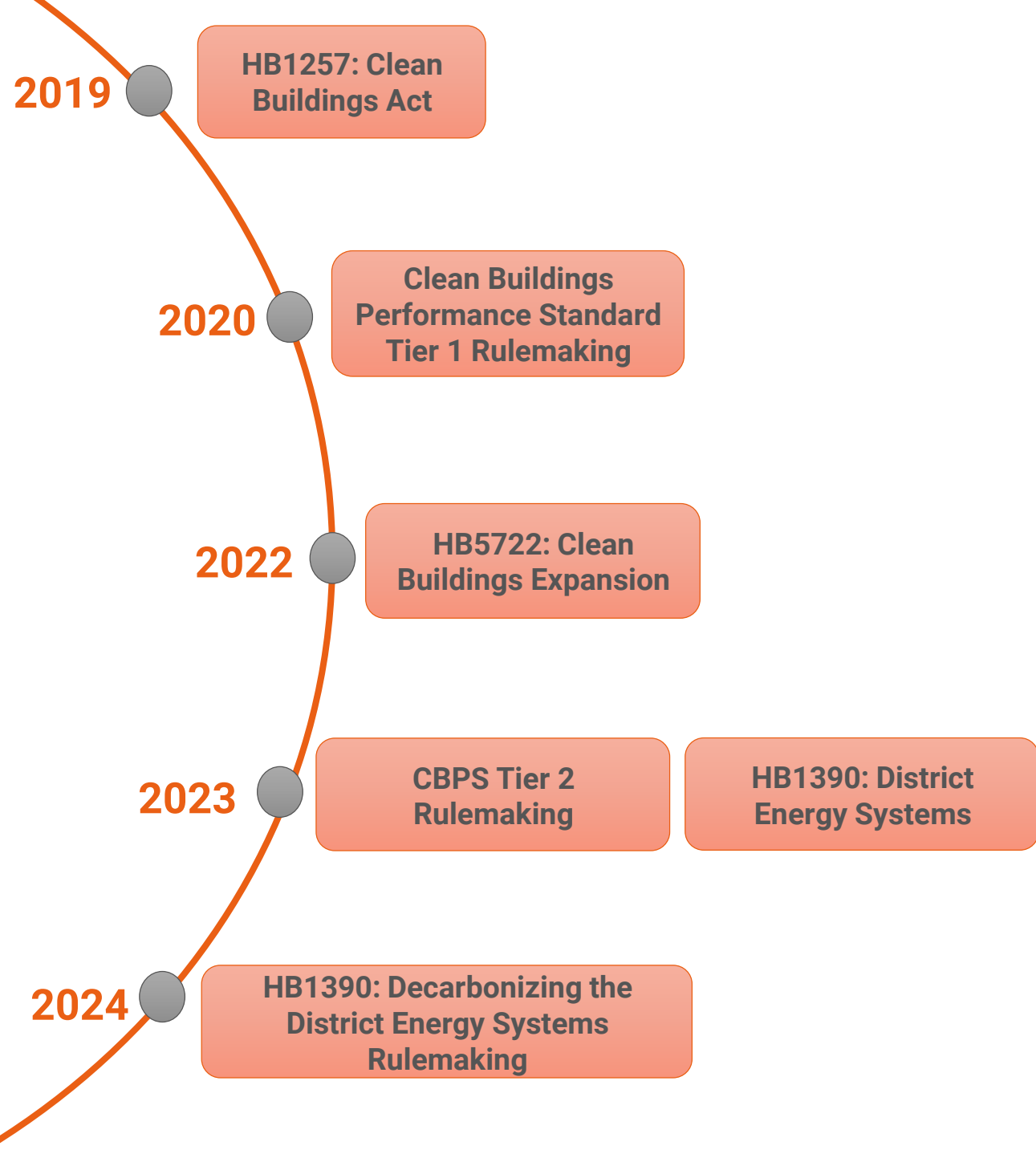
Buildings are the second largest source of greenhouse gas emissions in Washington (2015)



As Washington's population has grown, greenhouse gas emissions from buildings jumped significantly from 1990-2015

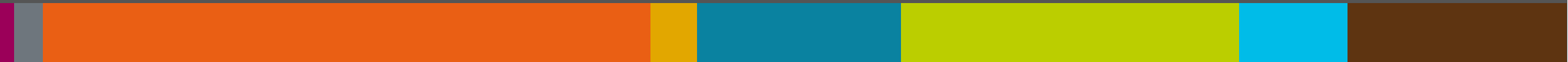


Clean Buildings Rulemaking 2019-2024



Tier 2 Covered Buildings

Compliance, Incentives, and Penalties



What is a Tier 2 building?

A building where the sum of multifamily residential, nonresidential, hotel, motel, and dormitory floor areas exceeds 20,000 gross square feet, but does not exceed 50,000 gross square feet, excluding the parking garage area. Tier 2 covered buildings also include multifamily residential buildings where floor areas are equal to or exceed 50,000 gross square feet, excluding the parking garage area.

CBPS Breakdown

Structure:

- Sections 1, 2 and 3 – Purpose, Scope and Definitions
- Section 4 – Compliance Requirements
- Section 5 – Energy Management Plan
- Section 6 – Operations and Maintenance Requirements
- Section 7 – Building Energy Use Intensity Target (EUI_t) setting
- Section 8 – Energy Audit Requirements
- Section 9 – Implementation and Verification
- Normative Annex L – Operations and Maintenance Implementation
- Normative Annex X – Investment Criteria
- Normative Annex Y – Tier 2 Administrative Procedures
- Normative Annex Z – Tier 1 Administrative Procedures

New Section!



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CBPS Breakdown

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New Section!

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Compliance Schedule

A building owner of a covered commercial building must meet the following reporting schedule for complying with the standard and every five years thereafter:



Tier 1 - Buildings more than 220,000 gross sq. ft, June 1, 2026



Tier 1 - Buildings more than 90,000 – less than 220,001 gross sq. ft, June 1, 2027



Tier 2 - Buildings more than 20,000 – less than 50,001 gross sq. ft and MF , July 1, 2027



Tier 1 - Buildings more than 50,000 – less than 90,001 gross sq. ft, June 1, 2028

Tier 2 Responsible Parties



Building Owner

An individual or entity possessing title to a building. In the event of a land lease, the building owner is the entity possessing title to the building on leased land.



Qualified Energy Manager

An individual designated by the *building owner* who:

- (a) Has two years of experience, including educational and/or professional experience, with commercial *building* operations and/or *building* energy management in addition to successful completion of clean buildings tier 2 training program as specified by the *AHJ*; or
- (b) Meets the definition of a *qualified person*.

Tier 2 Requirements



Benchmarking

Operations & Maintenance Program

Energy Management Plan

Tier 2 Getting Started

- Determine the qualified energy manager (QEM)
- QEM calculates the building's energy use intensity (EUI)



- Develop and implement the energy management plan
- Develop and implement the operation and maintenance program



Benchmark

Set a target

EMP and O&M

Comply



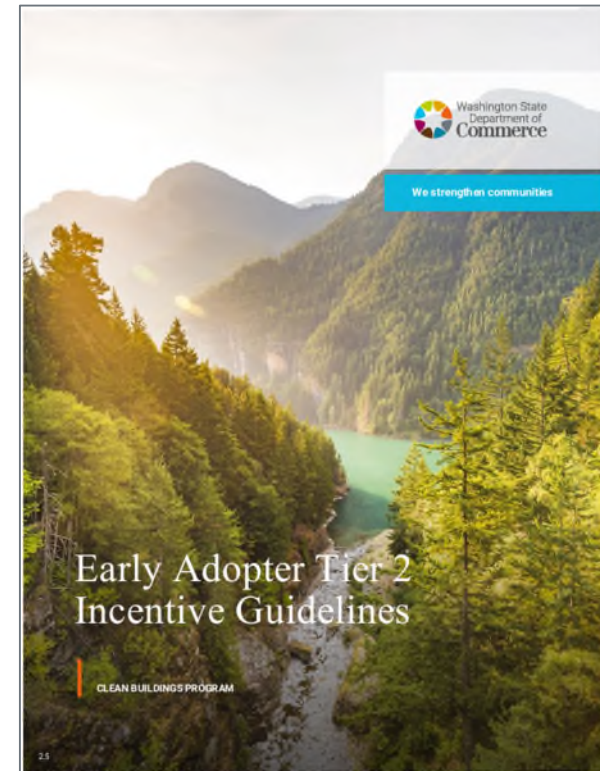
- QEM determines the building's energy use intensity target (EUI_t)



- Attest the EMP and O&M have been established
- Submit compliance documents

Tier 2 Incentive Program

- Incentivizes completion of reporting requirements
- Program launches July 1, 2025 and ends June 1, 2030
- \$150 million available for incentives.
- \$0.30 cents per gross square foot



Tier 2 Penalties

- Administrative penalty not to exceed 0.30/SF

Tier 1 Amendments

- Emergency rule updates
- Corrections - formatting, titles, and grammar
- Terms and definitions
- Tier 2 alignments
- Clarification- improvement to the language and allowances

Emergency Rule Updates - Exemptions

Original

- Applications accepted between 365 and 180 days prior to the scheduled compliance date.



Change

- Application accepted 3 years prior to the compliance date and no later than 180 days prior to the compliance date.

Corrections – Formatting, Titles & Grammar

Examples:

- Adding titles
- Formatting
- Cleaning up inconsistencies:
 - energy use intensity (EUI) & weather normalized energy utilization index (WNEUI)

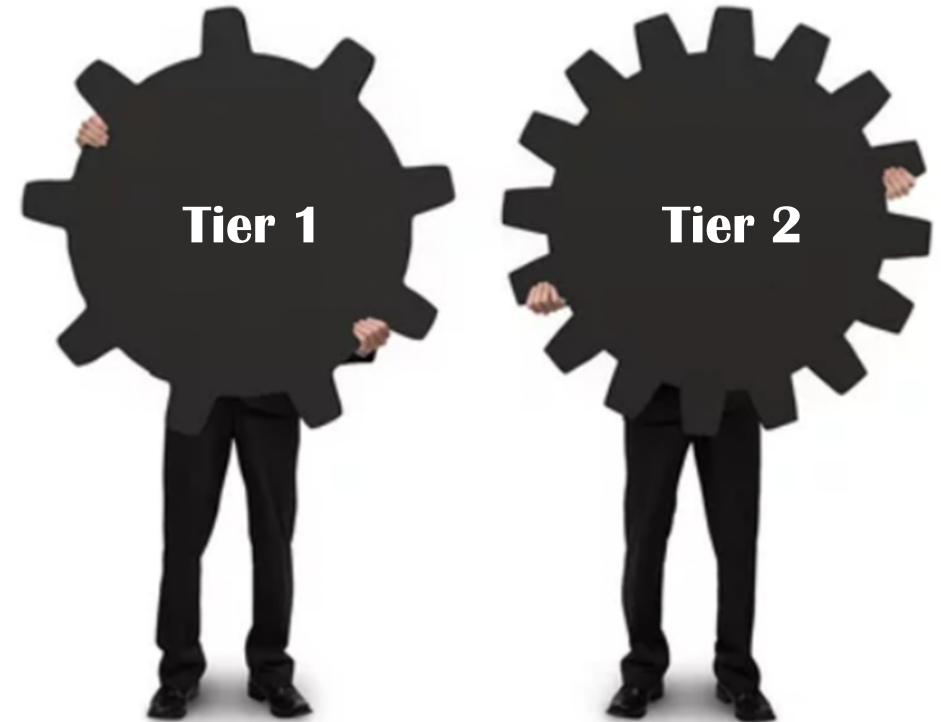
Z4.1 Documentation of Compliance through Exemption. *Building owners* seeking approval of exemption shall submit to the *AHJ* Section Z6.7 Form H, “Application for Exemption Certificate,” documenting the following

1. **Exemption Conditions.** The *building* qualifies for one of the ~~following~~ exemptions listed in Z4.1(2), and:

- Exemption Verification.** Compliance with the exemption must be verified by the owner based on the *building* as it is to be occupied and operating on the compliance date.
- Exemption Application Timeframe.** Applications for exemptions may be submitted no sooner than ~~one year~~ three years prior to the compliance date and submitted to the *AHJ* no later than ~~one hundred eighty~~ 180 days prior to the compliance date.
- Exemption Certificate Validity.** Exemptions certificates are only valid for the current compliance review cycle.
- Exemption Re-certification.** Within 180 days prior to the compliance date, building owners who have received exemption approval must certify that the building still meets the eligibility qualifications for the exemption and that there have been no material changes to qualifying conditions. A template for acceptable declarations will be made available by the AHJ on the agency website.

Alignment with Tier 2

- Covered Buildings:
 - *T1 covered buildings AND T2 covered buildings*
- Prefacing specific sections: Tier 1 vs. Tier 2
 - Previously the standard only applied to T1, now some section prefaces will clarify if the requirements apply to T1, T2, or both.
- Terms and definitions
 - Apply to both T1 and T2 unless explicitly noted within the standard
- Connected Buildings
 - Compliance allowance for T1
 - Benchmarking requirement for T2



Tier 1 - Clarifications



- Exceptions
 - Meeting the EUIt
 - Lighting schedule/survey
- Energy Audit (*expiration – useful life*)
 - Proposed to amend to 5 years from 3 years

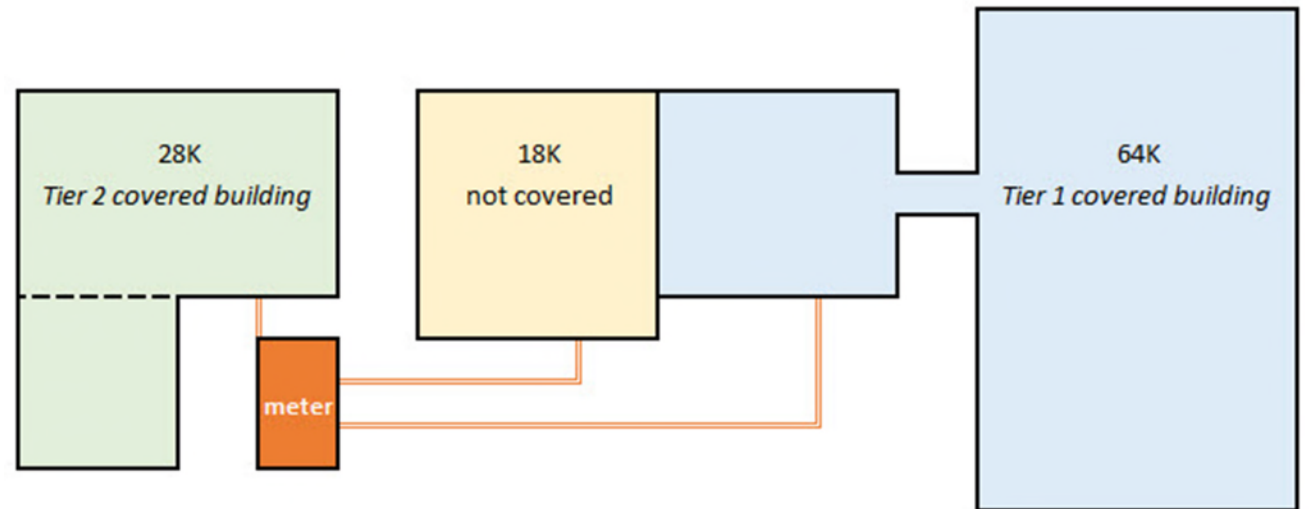
New Terms and Definitions

connected buildings: a collection of *buildings* owned by the same *building owner* that are situated on the same or adjacent parcels and have shared energy meters.

Example:

Rather than submetering the three buildings, allows connected buildings to comply together.

- Determine compliance path cohort using largest building's floor area (blue 64K)
- Develop energy target using Section 7.2 - 7.2.3 for multiple activities
- Develop EUI using aggregated GFA of all connected buildings



Campus-Level Compliance

- *Building Activity Type target developed at the **campus-level**. As an alternative to complying at the building-level, these covered buildings may comply at a campus-level with the EUI_t. “**Campus-level**” is an alternative reporting pathway for a collection of all buildings on adjoining property with a single shared primary function that act as a single property.*

Table 7-2a Building Activity Site Energy Targets (EUI_t) (I-P Units)

No.	Building Activity Type ^{1,2}			Notes	Climate Zone 4C	Climate Zone 5B
	Portfolio Manager Types	Portfolio Manager Subtypes	Subtypes: Detailed		EUI _t	EUI _t
1	Banking/financial services	Bank branch			69	71
2	Banking/financial services	Financial office			69	71
3	Education	Adult education			49	51
4	Education	College/university		8, 9	102	102
5	Education	K-12 school	Elementary/middle school	9	49	50
6	Education	K-12 school	High school	9	48	49
7	Education	Preschool/daycare			59	59
8	Education	Vocational school			49	51
9	Education	Other—education			49	51

- Legislature Home
- House of Representatives
- Senate
- Find Your District
- Laws & Agency Rules
- Bill Information
- Agendas, Schedules, and Calendars
- Legislative Committees
- Coming to the Legislature
- Civic Education
- Legislative Agencies
- Legislative Information Center
- Email Updates (GovDelivery)
- View All Links

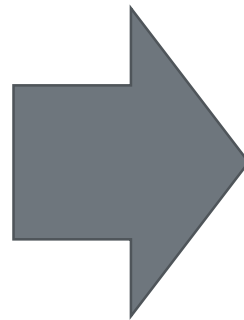
Complete Chapter [HTML](#) [PDF](#)

Chapter 194-50 WAC

WASHINGTON STATE DEPARTMENT OF COMMERCE ADOPTION AND AMENDMENT OF ASHRAE STANDARD 100, 2018

WAC Sections

- [HTML](#) [PDF](#) **194-50-001** Foreword.
- [HTML](#) [PDF](#) **194-50-010** ASHRAE Standard 100, 2018—Section 1—Purpose.
- [HTML](#) [PDF](#) **194-50-020** ASHRAE Standard 100, 2018—Section 2—Scope.
- [HTML](#) [PDF](#) **194-50-030** ASHRAE Standard 100, 2018—Section 3—Definitions.
- [HTML](#) [PDF](#) **194-50-040** ASHRAE Standard 100, 2018—Section 4—Compliance.
- [HTML](#) [PDF](#) **194-50-050** ASHRAE Standard 100, 2018—Section 5—Energy management plan.
- [HTML](#) [PDF](#) **194-50-060** ASHRAE Standard 100, 2018—Section 6—Maintenance and operation.
- [HTML](#) [PDF](#) **194-50-070** ASHRAE Standard 100, 2018—Section 7—Energy-use analysis and target requirements.
- [HTML](#) [PDF](#) **194-50-080** ASHRAE Standard 100, 2018—Section 8—Audits.
- [HTML](#) [PDF](#) **194-50-090** ASHRAE Standard 100, 2018—Section 9—Requirements.
- [HTML](#) [PDF](#) **194-50-110** ASHRAE Standard 100, 2018—Section 11—References.
- [HTML](#) [PDF](#) **194-50-120** Normative Annex C Forms.
- [HTML](#) [PDF](#) **194-50-130** Normative Annex L—Operations and maintenance implementation.
- [HTML](#) [PDF](#) **194-50-140** Normative Annex X—Investment criteria.
- [HTML](#) [PDF](#) **194-50-150** Normative Annex Z—Washington state reporting requirements.



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Tier 1 vs Tier 2

Tier 1

- Buildings greater than 50,000 square feet
- Does not include multifamily residential buildings
- Benchmarking, EMP and O&M, Performance Metric
- Mandatory compliance begins in 2026 for buildings over 220,000 square feet

VS

Tier 2

Size

- Buildings 20,000 to 50,000 square feet

Multifamily

- Includes multifamily residential buildings greater than 20,000 square feet

Requirements

- Benchmarking, EMP and O&M program

Compliance Date

- Mandatory reporting July 1, 2027

Tier 1 Compliance Schedule

A building owner of a covered commercial building must meet the following reporting schedule for complying with the standard and every five years thereafter:



Tier 1 - Buildings more than 220,000 gross sq. ft, June 1, 2026



Tier 1 - Buildings more than 90,000 – less than 220,001 gross sq. ft, June 1, 2027



Tier 1 - Buildings more than 50,000 – less than 90,001 gross sq. ft, June 1, 2028

Building Manager	Building Operator	Energy Manager
<p>The person responsible for maintaining the building, its envelope, and its energy-using systems. The building manager may also be the person responsible for expending funds on capital improvements to the building.</p> <p><u>Other responsibilities:</u></p> <ul style="list-style-type: none"> Compliance with the requirements of the operations & maintenance (O&M) program and the energy management plan (EMP) <p><u>Qualifications</u> No specific qualifications needed for compliance</p>	<p>The person or persons who have responsibility to inspect, operate, and maintain the building systems and components that fall within the scope of this standard.</p> <p><u>Other responsibilities:</u></p> <ul style="list-style-type: none"> Fulfill the objectives and goals of performance (such as minimizing equipment failures, ensuring ongoing efficient operation, and performing identified maintenance requirements) as defined in the O&M program. <p><u>Qualifications</u> No specific qualifications needed for compliance</p>	<p>The individual who has responsibility for ensuring that energy use in the building is minimized without compromising the indoor environmental quality (building indoor air quality, thermal comfort, visual acuity and comfort, sound quality).</p> <p><u>Other responsibilities:</u></p> <ul style="list-style-type: none"> Develop and maintain the energy management plan (EMP) Verification compliance with the target EUI Ensure tenant improvements do not increase net energy use inconsistent with space type Create, maintain and report Energy Star Portfolio Manager records Conduct technical, policy-related planning related to energy efficiency Purchase energy for spaces under their control Public relation matters related to energy Implement results of energy audits and EEMs Evaluate energy efficiency of proposed new construction, facility expansion, remodeling, or new equipment purchases Review building O&M procedures for optimal energy management Adhere to energy codes and standards Report regularly to management and other stakeholders Develop and implement an energy efficiency plan according to Section 9.1 Signature on Form A

Qualified Energy Auditor*

A person acting as the auditor of record, having training, expertise and three years professional experience in building energy auditing and any one of the following:

- (a) A licensed professional architect or engineer.
- (b) A Building Energy Assessment Professional (BEAP) certified by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE);
- (c) A Certified Energy Auditor (CEA) certified by the Association of Energy Engineers (AEE).

Responsibilities:

- Complete an energy audit in accordance with Section 8 of the standard
- Complete and submit an audit summary in accordance with Normative Annex Z
- Verify energy savings calculations of each EEM
- Verify that the combined savings of multiple EEMs accounts for interactive effects
- Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Person)
- Certify that the energy savings of the package of EEMs meets or exceeds projected energy savings in accordance with Section 9

Qualified Person*

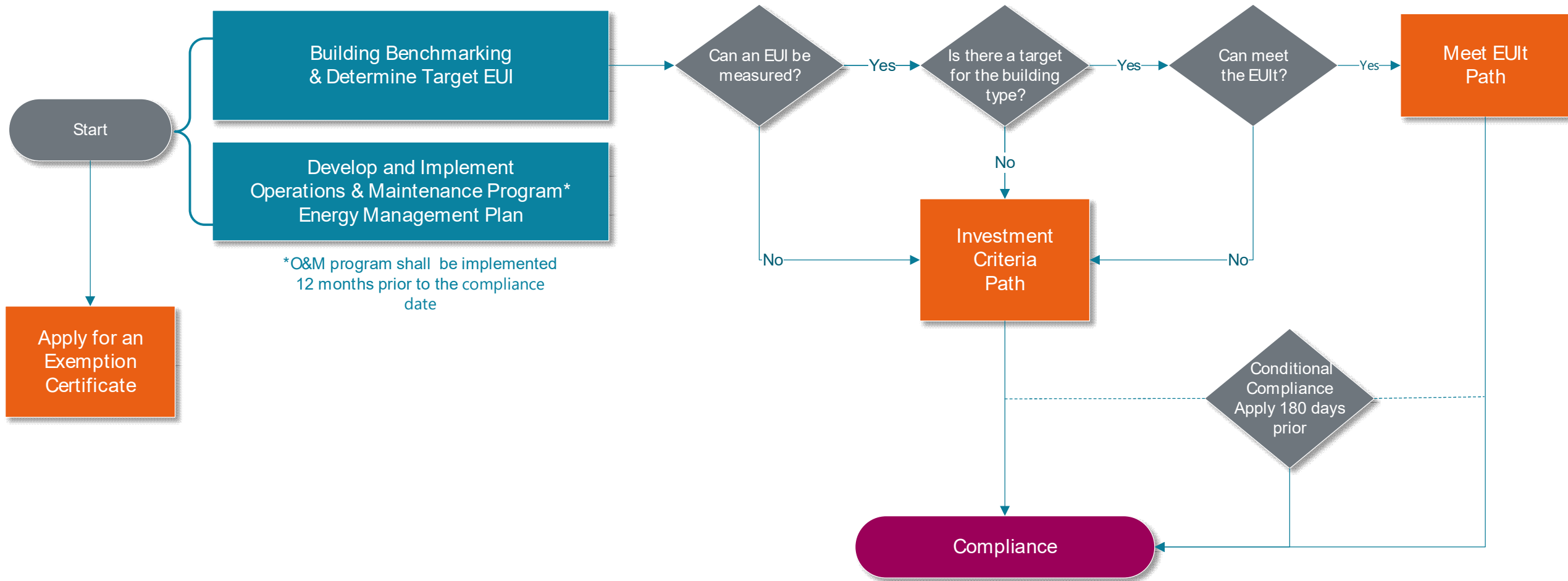
A person having training, expertise and three years professional experience in building energy use analysis, and any of the following:

- (a) A licensed professional architect or engineer in the state of Washington;
- (b) A person with Building Operator Certification (BOC) Level II by the Northwest Energy Efficiency Council (NEEC);
- (c) A building commissioning professional certified by an ANSI/ISO/IEC 17024:2012 accredited organization;
- (d) A qualified energy auditor;
- (e) A certified energy manager (CEM) in current standing, certified by the Association of Energy Engineers (AEE)
- (f) An energy management professional (EMP) certified by the Energy Management Association (EMA).
- (g) A person with South Seattle College Sustainable Building Science Technology Bachelor of Applied Science degree, or as approved as equivalent by the AHJ.

Responsibilities:

- Determine whether or not the building seeking compliance has an energy use intensity target (EUI_t)
- Establish the energy use intensity target (EUI_t)
- Submit forms as specified in Normative Annex Z documenting compliance
- State in writing on Form A that the Energy Management plan (EMP) and Operations and Maintenance (O&M) program requirements have been developed, implemented and maintained
- Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Energy Auditor)
- Signature on Form A

Tier 1 Compliance path



Energy Management Plan

A living document that describes a building's energy performance. It typically consists of the following:

- Building energy metering and reporting
- Energy-Use Intensity (EUI) reporting
- Energy Efficiency Measure (EEM) Implementation
- Operations and maintenance considerations for energy managers
- Communication responsibilities

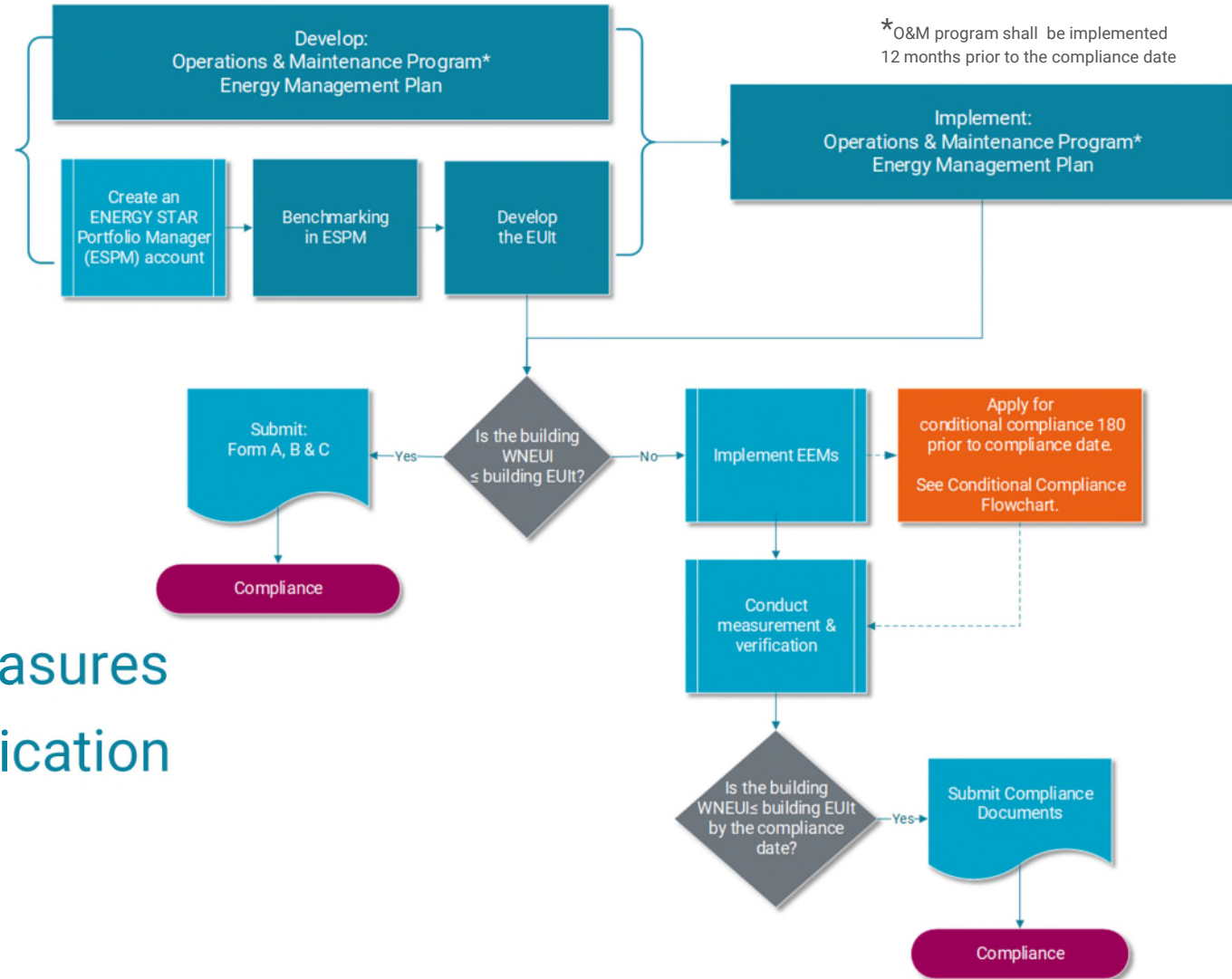
Operations and Maintenance Program

A living document used to ensure energy-efficient operation and minimize failure of building systems and components throughout their service lives.

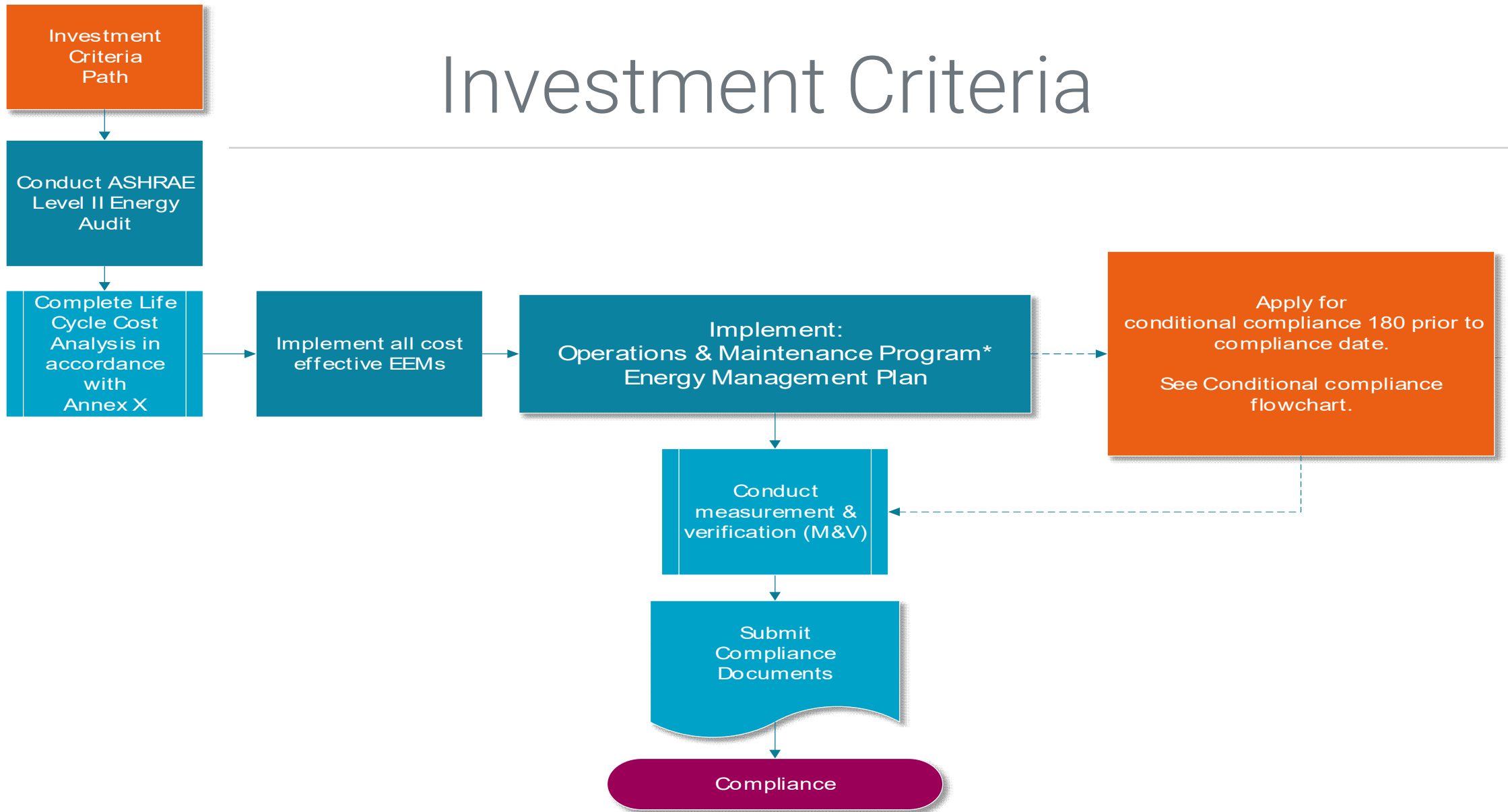
- Documented in Section 6 and Normative Annex L of the CBPS.
- Is a component of the Energy Management Plan.
- Lists inspection and maintenance requirements for specific systems and equipment.
- Establishes responsibilities for individuals operating and maintaining the equipment, components and its systems.

Meeting the EUI

- Create an ESPM account
- Benchmark
- Determine your EUI target
- Compare EUI with EUI_t
- Implement energy efficiency measures
- Conduct measurement and verification
- Submit compliance documents



Investment Criteria



Investment Criteria

- Shall be the compliance performance metric when any of the following conditions exist:

EUI not measureable in accordance with Section 5.2

EUI cannot be calculated in accordance with Section 7.2

EUI cannot be met through cost effective EEMs

Process – Energy Audit

- Energy Audit (Section 8)
 - ASHRAE Level 2
 - Performed by a qualified energy auditor



qualified energy auditor: {a person acting as the auditor of record, having training, expertise, and three years professional experience in *building* energy auditing, and any one of the following:

1. A licensed professional architect or engineer
2. A Building Energy Assessment Professional (BEAP) certified by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
3. A Certified Energy Auditor (CEA) certified by the Association of Energy Engineers (AEE)

Process – Economic Analysis

- All energy efficiency measures (EEMs) identified in the energy audit shall be evaluated for cost effectiveness in accordance with Normative Annex X.
- The analysis shall be performed using the life cycle cost analysis (LCCA) tool (Form F) provided by Commerce.
 - LCCA based on NIST 135
- All energy efficiency measures identified as cost effective shall be implemented in accordance with Section 9 of the standard.

Process – Implementation of EEMs

- Implement all cost-effective EEMs in accordance with Section 9
- Commission all EEMs in accordance with Section 9.1.2.3

Commissioning report shall be reviewed and certified by ***qualified energy auditor*** or ***qualified person*** as defined by the standard



Process – Verification of Savings

Compliance is verified when the qualified energy auditor or qualified person verifies that:

- 12 consecutive months data demonstrates 75% of projected savings of the audit have been realized

Or

- For buildings that cannot measure EUI: the methods of the International Performance Measurement & Verification Protocol, Concepts and Options for Determining Energy and Water Savings Volume I11 options A through D have been implemented

HB1390 Recap



HB1390 applies to:

State Campus District Energy Systems

- Mandatory
- Five or more buildings
- Over 100,000 combined square feet of floor area
- Owned By:
 - State of Washington owns district system and connected buildings
 - Public-Private partnership: Including one public buildings owner and one private entity

Campus District Energy Systems

- Optional – approach to compliance
- Three or more buildings
- Over 100,000 combined square feet of floor area
- Owned By:
 - A Single Entity;
 - A public-private partnership: private owner of district system; public owner of buildings
 - Two private entities: private owner of district system; private owner of buildings

Section 2(2)(a): Decarbonization Plan Requirements

The decarbonization plan **must** include all of the following:

- **Mechanisms to replace fossil fuels in the heating plants**, including a schedule for replacement;
- An **evaluation** of possible options to partner with nearby sources and uses of waste heat and cooling;
- An **examination of opportunities** to add buildings or other facilities to the system once it is decarbonized, a strategy to incentivize growth of a decarbonized system, and requirements for facilities joining the system; and
- An evaluation, prioritization, and **scheduled plan** of reducing energy use through conservation efforts both at the central plant and in the buildings connected to district energy systems **that results in meeting the campus energy use intensity target (EUI_t)**.

Section 2(2)(b): Decarbonization Plan Recommendations

- The following **recommended considerations are encouraged**, but not required in the *decarbonization plan*:
 - Distribution network upgrades;
 - On-site energy storage facilities;
 - Space cooling for residential facilities
 - Labor and workforce, including state-registered apprenticeship utilization
 - Options for public-private partnerships;
 - Incorporation of industrial symbiosis projects or networks as described in chapter 308, Laws of 2021.
 - Waste heat recovery from domestic sewage

CBPS and the Decarb Plan



Decarb Plan

- Mechanisms to replace fossil fuels in the heating plants
- Evaluation of options to partner with nearby sources and uses of waste heat and cooling
- Examination of opportunities to expand the footprint served by the decarbonized district system
- A plan that includes meeting the energy use intensity of the campus served by the district system



EMP and O&M

- The EMP and O&M Program shall be implemented in accordance with the standard on all buildings connected to the district heating system.
- One per campus



Meet the EUI

- The energy use intensity target is met at the time the decarbonization plan is fully implemented

Commerce Request

All public buildings connected to a district system, provide the list of buildings including:

- square footage for each building
- addresses
- property name
- parcel number
- Commerce building ID – where applicable



HB1390 Public Comment Form

On May 4, 2023, Gov. Jay Inslee signed HB1390, amending the Clean Buildings Law to add a new section on buildings connected to district energy systems. The bill instructs owners of a publicly owned district energy system to develop a decarbonization plan for up to 15 years. The plans must contain strategies to decarbonize the central plant and reduce energy use through conservation efforts at the central plant and the connected buildings. Privately owned district energy systems are not required to participate, but they can choose to opt in.

The comment period is open for two weeks after each workshop. Comments will be considered in draft rules before the subsequent workshop, and all comments will be summarized after the final workshop in March 2023. Please use this form to write in your comments or submit as an attachment.

If you have questions, please contact buildings@commerce.wa.gov

First Name

Last Name

Email

Topic for Comment *

Name of Organization *

Organization Type *

Open Comment Form *

File Upload
Drag and drop files here or [browse files](#)

Submit comments

- Use the comment form
- buildings@commerce.wa.gov
 - Subject: HB1390 Comments
- Public hearing
 - Testimony

Next Workshop

Workshop 3

- Mar 7, 2024, 10 am to 12 pm
- Draft rules for HB 1390
 - Administrative requirements

Outreach, Education, and Support

Outreach

- Building Owner Notifications
- CB Bulletins
- Presentations
- Conferences and events
- Workgroups and meetings
- Targeted outreach
- Partnerships with local government

Education

- Clean Buildings website
- Guidance Document Library
- Live Q&A sessions
- Targeted trainings and webinars
- Recorded video trainings
- Future training program for qualified energy managers

Customer Support

- CB Portal and Technical Assistance
- Customer management
- Meeting requests
- Support and resources webpage
- Industry partnerships for technical assistance
- Directory of qualified energy auditors and qualified persons

No-Cost Support

Clean Buildings Team

Utility Provider

- Accelerator Programs

Energy Star Portfolio Manager

- Customer Support and trainings

Smart Building Center/Building Potential

- Help Desk

Contact

Emily Salzberg

Buildings Unit Managing Director

Email: Buildings@Commerce.wa.gov

Phone: 360-725-3105

- **Submit questions & request support**
[Clean Buildings Customer Support Form](#)
- **Download**
[Clean Buildings Performance Standard – Integrated Document](#)

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To sign up for updates or access your subscriber preferences, please enter your contact information below.

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Questions & Answers

buildings@commerce.wa.gov



Thank you!

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