Standard 100 Review Draft for July 9, 2020

Background on Rules Development for HB 1257

The Department of Commerce is authorized by HB 1257 to develop rules for the adoption of the Washington State Energy Performance Standard for Commercial Buildings. HB 1257 requires Commerce to use ANSI/ASHRAE/IES standard 100-2018, Energy Efficiency in Existing Buildings (standard) as the basis for these rules. Rules will be implemented that adopt the standard by reference, with amendments.

Amendments to the standard will be made to make the standard consistent with the features prescribed in HB 1257. The standard will also be modified to clarify administrative procedures. Additional rules may be required outside of this standard as well.

The following draft rule has been developed by Commerce staff. Then modifications to the various sections of the standard are made to provide consistency between the rule and HB 1257.

Interested parties are encouraged to review standard 100 and modifications made by Commerce staff. Input can be provided on any element that will align the standard with the legislation or existing state laws, clarify application, or improve administrative procedures.

Stakeholders are invited to participate in workshops scheduled to review specific sections of this work. Commerce requests that written post-workshop comments relating to sections covered at each workshop be received within the scheduled time period posted on the Commerce Clean Buildings Web site. All comments will be posted on the buildings web site.

Submit comments via email; [buildings@commerce.wa.gov](mailto:buildings@commerce.wa.gov).

Review comments and schedules on the Commerce Clean Buildings web site: <http://commerce.wa.gov/buildings>

When editing the standard, please use a standard markup format that includes the following:

* Copy the entire sub-section to be edited
* Underline text to be added
* Use cross out text to indicate deletions
* Provide a reason statement for the change

For any new sections, provide suggested location in the document by referencing the previous section.

# Comments Specific to this Draft

The following provides a review draft for ASHRE Standard 100, incorporating all edits to date. This has been developed to respond to comments received throughout the process. It also includes staff. This will be presented with an additional document providing review draft for tables 7-1, 7-2a and 7-3, related to building targets.

Notes on edits:

We have attempted to provide the following mark up for the reader. No guarantees it is exactly right.

Edits in blue, represent edits posted in previous draft.

Edits in red, represent edits that are new this addition.

Additional work on numbering will be required.

The table of contents has not been updated

**ANSI/ASHRAE/IES Standard 100-2018**

(

Supersedes ANSI/ASHRAE/IES Standard

100-2015)

Includes ANSI/ASHRAE/IES addenda listed in Annex N

**Energy Efficiency in**

**Existing Buildings**

See Annex N for approval dates.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Com-

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This edition of Standard 100 is dedicated to the memory of Michele Friedrich for her devotion and commitment of many years to ASHRAE and to this standard, and to Jeff Park for his steadfast contribution to the previous edition of this standard.

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# ~~FOREWORD~~

*~~With the publication of the 2015 edition, Standard 100 was placed on continuous maintenance, which allowed it to be revised periodically via approved addenda. This 2018 edition of the standard includes the following changes:~~*

* *~~The Purpose of the standard more clearly indicates the overall goal, which is to reduce energy use in existing buildings while recognizing the importance of both energy efficiency and actual performance.~~*
* *~~Normative primary energy EUI target tables are provided in Sections 7 and 10 and in Normative Annex A, along with a primary energy EUI calculation option in Annex A, to add an alternative compliance path for the qualified person seeking compliance with the standard.~~*
* *~~Energy audit requirements for buildings without energy targets are clarified by qualifying when a Level 1 audit can be used to comply with the standard.~~*
* *~~New Informative Annex M provides additional guidance on selecting the appropriate building type.~~*

# Forward to Washington State Amendments to Standard 100.

Standard 100 (##WAC) is adopted by the Washington State Department of Commerce pursuant to Chapters 19.27a.200 RCW, 19.27a.210 and RCW and 19.27a.220. This standard has been adopted by reference and modified to implement the requirements covered commercial buildings as directed by the Washington State Legislature. The Legislature delegated the responsibility of adoption and amendment of this standard to the Washington State Department of Commerce.

The Washington State administrative requirements for this standard are included in Normative Annex Z. For building owners that must comply with this standard, reading Normative Annex Z first allows the owner to put the rest of the standard in context. Multiple compliance options are available and should be reviewed prior to beginning implementation of this standard.

### 1. PURPOSE

**1.1** This standard provides criteria that will result in reduced energy consumption through improved energy efficiency and performance in existing *buildings*. In adopting this standard by rule, Washington State Department of Commerce shall seek to maximize reductions of greenhouse gas emissions from the building sector.

**1.2** This standard is directed toward providing procedures and programs essential to energy efficient operation, maintenance, management, and monitoring; increasing the energy efficiency of the energy-using systems and components; and upgrading the thermal performance of the *building* envelope.

### 2. SCOPE

This standard is mandatory for all *covered commercial buildings* located in the state of Washington. This standard is also applied as a voluntary standard for ~~applicable to a~~ multifamily residential buildings seeking early adopter incentives consistent with RCW 19.27A.220.

This standard applies to existing *buildings*, portions of *buildings*, and *building* complexes, including the envelope and all systems in the *building*. This standard excludes industrial and agricultural processes in *buildings* for which the *energy targets* do not include those processes.

### 3. DEFINITIONS

**3.1 General.** Certain terms, abbreviations, and acronyms are defined in this section for the purposes of this standard. These definitions are applicable to all sections of this standard.

Terms that are not defined herein, but that are defined in standards that are referenced herein, shall have the meanings as defined in those standards.

Other terms that are not defined shall have their ordinarily accepted meanings within the context in which they are used. Ordinarily accepted meanings shall be based on American Standard English language use, as documented in an unabridged dictionary accepted by the *authority having jurisdiction*.

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***agricultural structure:*** a structure designed and constructed to house farm implements, hay, grain, poultry, livestock, or other horticultural products, and is not a place used by the public or a place of human habitation or employment where agricultural products are processed, treated, or packaged.

***applicable building codes****:* the Washington State Building Codes as adopted by the Washington State Building Code Council, and as modified by local government amendments.

***analog control:***a control loop in which data is expressed or measured by means of one or more physical properties that can express any value along a continuous scale. All types of control systems may provide *analog control*.

***authority having jurisdiction (AHJ):*** ~~the agency or agent responsible for enforcing this standard.~~ Washington State Department of Commerce.

***baseline:*** the first-year *energy-use intensity* for the *building* at the beginning of the compliance determination process.

***baseline energy use intensity:*** a building's weather normalized energy use intensity measured for 12 consecutive months within two years prior ~~measured in the previous year~~ to making an application for an incentive under RCW 19.27A.220

***binary control:*** a control loop in which there are only two states, such as on-off or open-closed.

***building:*** a structure, including mobile homes, manufactured homes, and other factory-built *buildings*, wholly or partially enclosed within exterior walls, or within exterior and party walls, and a roof, that affords shelter to persons, animals, or property.

***building manager:*** 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*.

***building operator:*** 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. The *building operator* may be an employee of the *building owner*, the *building manager*, or a contractor.

***building owner:*** ~~the holder of the property title for the~~ *~~building~~* ~~and/or the land upon which the~~ *~~building~~* ~~sits~~. an individual or entity possessing title to a building.

***campus:*** a campus is a collection of buildings and served by a campus district heating, cooling, water reuse and/or power system owned by the same building owner.

***campus district heating and/or cooling system:*** is a District Heating and/or Cooling System that serves a campus.

***complex:*** a group of ~~individual or~~ ~~interconnected~~ *buildings* interconnected by conditioned spaces on contiguous property.

***conditional compliance:*** ~~a compliance level between the completion of implementation in Section 9.1 and verification of compliance in Section 9.2.~~ *~~Conditional compliance~~* ~~expires 15 months following the completion of implementation.~~ a temporary compliance method used by building owners that demonstrate the owner has implemented energy use reduction strategies required by the standard, but has not demonstrated full compliance with the energy use intensity target.

***~~conditioned space:~~*** ~~a space that is provided with heating and/ or cooling capable of maintaining the temperature of the space between 50°F (10°C) and 86°F (30°C)~~ ***~~crawl spaces:~~*** ~~a shallow, unfinished space beneath the first floor or under the roof of a~~ *~~building~~*~~.~~

***conditioned space:*** an area, room or space that is enclosed within the building’s thermal envelope and is directly heated or cooled or is indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned spaces, where they are separated from conditioned spaces by uninsulated walls, floors or ceilings, or where they contain uninsulated ducts, piping or other sources of heating or cooling. (also see, semi-heated space).

***covered commercial building:*** *a building where the sum of nonresidential, hotel, motel, and dormitory floor areas exceeds fifty thousand gross square feet, excluding the parking garage area.*

***daylight harvesting:*** the automatic control of electric light levels in response to the amount of daylight in the space.

***daylight hours:*** the period from 30 minutes after sunrise to 30 minutes before sunset.

***dimmer:*** a device that varies the current through an electric light in order to control its level of illumination and energy usage.

***direct digital control (DDC):*** a control system consisting of microprocessor-based controllers that monitor and control *building* systems equipment through input devices (such as sensors), output devices (such as switches and actuators), and programmed control sequences.

***discounted payback:*** the time when the accumulated savings achieved by an investment, discounted by the appropriate discount rate, equals the initial cost of the investment. The appropriate discount rate is determined by the methodology detailed in Normative Annex X. ~~the facility owner to reflect the owner’s investment criteria.~~

*district heating and/or cooling system:*is a system that provides heating or cooling to multiple buildings through a distributed system providing steam, hot water or cool water to buildings.

***capital management plan:*** a financial plan to set aside capital to replace or upgrade *building* systems at the end of their useful life and/or to improve performance and energy efficiency.

***energy accounting system:*** a system for measuring, collecting, and documenting the *building*’s use of energy. ***energy auditor:*** see *qualified energy auditor*.

***energy cost:*** the total cost for energy supplied to a *building* or *building* site, including such charges as base charges, consumption charges, demand charges, customer charges, power factor charges, and miscellaneous charges such as sales taxes.

***energy efficiency measure (EEM):*** an action taken in the operation or equipment in a *building* that reduces the energy use of the *building* without negative impact within the *building*.

***energy manager (EM):*** the individual, identified by the *building owner*, 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). The *EM* may be the *building owner*, a tenant, an employee of the owner or tenant, or a contractor retained by the owner or tenant.

***~~energy-use intensity (EUI):~~*** ~~an expression of~~ *~~building~~* ~~energy use per year in terms of~~ *~~net energy~~* ~~divided by gross floor area.~~

***energy use intensity (EUI):*** a measurement that normalizes a building's site energy use relative to its size. A building's energy use intensity is calculated by dividing the total net energy consumed in one year by the gross floor area of the building, excluding the parking garage. "Energy use intensity" is reported as a value of a thousand British thermal units per square foot per year.

***~~energy target (EUI~~~~t~~~~):~~*** ~~the net~~ *~~EUI~~* ~~(of a~~ *~~building~~*~~) that has been established for compliance with this standard.~~

***energy use intensity target (EUIt):*** the net energy use intensity of a covered commercial building that has been established for the purposes of complying with the standard.

***~~gross floor area for nonresidential buildings:~~*** ~~the sum of the floor areas of all the spaces within the~~ *~~building~~* ~~with no deductions for floor penetrations other than atria. It is measured from the exterior faces of exterior walls or from the centerline of walls separating~~ *~~buildings~~*~~, but it excludes covered walkways, open roofed-over areas, porches and similar spaces, pipe trenches, exterior terraces or steps, roof overhangs, parking garages, surface parking, and similar features.~~

***gross floor area:*** the total number of square feet measured between the exterior surfaces of the enclosing fixed walls of a building, including all supporting functions such as offices, lobbies, restrooms, equipment, storage areas, mechanical rooms, break rooms, crawl spaces and elevator shafts. Gross floor area does not include outside bays or docks.

***~~gross floor area for residential buildings:~~*** ~~the sum of the floor areas of all the conditioned (heated and/or cooled) spaces within the~~ *~~building~~*~~, including conditioned garages, conditioned basements, and conditioned attics. It is measured from the exterior faces of exterior walls or from the centerline of walls separating~~ *~~buildings~~*~~. It excludes~~ *~~crawl spaces~~*~~, covered walkways, open roofed-over areas, porches and similar spaces, exterior terraces or steps, and roof overhangs.~~

***high-efficacy lamps:*** *lamps* with a minimum efficacy of 60 lm/ W for *lamps* over 40 W, 50 lm/W for *lamps* over 15 to 40 W, or 40 lm/W for *lamps* 15 W or less.

***HVAC system:*** the equipment, distribution systems, and terminals that provide the processes of heating, ventilating, or air conditioning to a *building* or portion of a *building*.

***industrial process:*** a systematic series of mechanical or chemical operations that produce or manufacture something. ***interactive effect:*** the change in resultant energy-savings estimates or actual energy savings due to analyzing or implementing multiple *EEMs* that interact with one another.

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***internal rate of return (IRR):*** the discount rate in a capital project that makes the net present value of all cash flows from a particular project equal to zero. The higher a project’s *IRR*, the more desirable it is to undertake the project. *IRR* can be used to rank several prospective projects under consideration. *IRR* is defined by the following equation:

**

|  |  |  |
| --- | --- | --- |
| where |  |  |
| *n* | = | the useful life of the measure in years |
| CF*t* | = | the annual cost savings of the measure in year *t* (cash flow in year *t*) |
| CF0 | = | the initial cost of the measure (cash flow initial) |

***lamp:*** a replaceable component of a *luminaire*, such as an incandescent light bulb, which is designed to produce light from electricity.

***lighting schedule:*** a list that provides a count of all *luminaires* in the *building*, their *lamps*, lighting controls, fixture types, and product information.

***lighting power density:*** the lighting power per unit area of a *building* or a space in a *building*.

***luminaire:*** a complete lighting unit consisting of a *lamp* or *lamps* (and ballasts and/or drivers when applicable) together with the housing designed to distribute the light, position and protect the *lamps*, and connect the *lamps* to the power supply.

***maintain:*** the process of keeping equipment and components operating or functioning in accordance with manufacturers’ recommendations and industry standards over their service lives. It involves but is not limited to carrying out observation, lubrication, adjustment, calibration, testing, cleaning, replacement, and repair at appropriate intervals as applicable to the specific equipment or component.

***more recently built buildings:*** are buildings permitted for construction based on the application permit date of July 1, 2016 or later. For example, buildings permitted to the 2015 edition of the Washington State Building Code, Chapter 51-50 of the Washington Administrative Code

***motion sensor:*** an occupancy sensor used for exterior areas.

***multiscene control:*** a lighting control device or system that allows for two or more predefined lighting settings, in addition to an “all off” setting, for two or more groups of *luminaires* to suit multiple activities in the space, and allows the automatic recall of these settings.

***net energy:*** the sum of the metered energy entering the *building* minus metered energy leaving the *building*. The same applies to portions of *buildings* with submetering. Bulk fuels are included using the equation in Section 5.2.2.1.

***nighttime hours:*** the period from 30 minutes before sunset to 30 minutes after sunrise.

***nonrenewable energy:*** energy other than renewable energy or *recovered energy*.

***nonresidential building:*** as used in this standard, any *building* that does not match one of the types of residential *buildings* listed in the Table 7-1.

***nontarget buildings:*** *buildings* with activities not listed in Table 7-1 in more than 50% of the gross floor area.

***occupancy sensor:*** a device that detects the presence or absence of people within an area and causes lighting, equipment, or appliances to be regulated accordingly.

***optimized bundle:*** a collection of *EEMs* that maximizes the energy savings at a facility within the cost effectiveness criteria of the standard. It excludes any measure with a *simple payback* that exceeds the life of the measure. A bundle of measures is optimized by including the maximum number of *EEMs* within the bundle while still meeting the cost effectiveness criteria. The process for determining the *optimized bundle* may be an iterative one due to *interactive effects* of individual *EEMs*.

***photosensor:*** a device that detects the presence of and/or measures the amount of visible light, infrared (IR) transmission, and/or ultraviolet (UV) energy, and emits a signal based on the presence, absence, and/or amount of these entities.

***primary energy:*** see *source energy*.

***~~qualified commissioning authority:~~*** *certified commissioning professional:* a person who is certified by an ANSI/ISO/IEC 17024:2012 accredited organization to lead, plan, coordinate, and manage commissioning teams and implement the commissioning process and with experience commissioning at least two projects of similar size and of similar equipment to the current project, and at least one in the last three years. This experience includes the writing and execution of verification checks and functional test plans. ~~; any one of the following:.~~

1. ~~A licensed professional engineer in the jurisdiction where the project is located~~
2. ~~A Certified CPMP (ASHRAE), a Certified Commissioning Professional (Building Commissioning Association), Certified Commissioning Authority (AABC Commissioning Group), Accredited Commissioning~~

~~Process Provider (University of Wisconsin at Madison),~~

~~Systems Commissioning Administrator (National Environmental Balancing Bureau), or Certified Building Commissioning Professional (Association of~~

~~Energy Engineers)~~

1. ~~A person qualified by the~~ *~~AHJ~~*

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

1. A licensed professional architect or engineer in the jurisdiction where the project is located
2. An *energy auditor*/assessor/analyst certified by ASHRAE or the Association of Energy Engineers (AEE) for all *building* types. ~~, or certified by~~

~~BPI or RESnet for residential~~ *~~buildings~~*

1. ~~A person qualified by the~~ *~~AHJ~~*

***qualified person:*** a person having training expertise and three years professional experience ~~and expertise~~ in *building* energy-use analysis~~;~~ and any of the following:

1. A licensed professional architect or engineer, ~~or licensed contractor~~ in the jurisdiction where the project is located.
2. A person with Building Operator Certification (BOC) Level II by the Northwest Energy Efficiency Council.
3. A *certified commissioning professional*
4. A ~~certified~~ *qualified* *energy auditor* ~~or manager~~
5. A certified energy manager certified by the Association of Energy Engineers (AEE)
6. ~~A person qualified by the~~ *~~AHJ~~*

***recommissioning:*** an application of the Commission Process requirements to a project that has been delivered using the Commissioning Process.

***recovered energy:*** energy reclaimed for useful purposes that would otherwise be wasted.

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***residential building:*** for the purposes of this standard, any *building* matching one of the descriptions for *building* types 49 through 53 in Table 7-1.

***savings-to-investment ratio:*** the ratio of the total present value savings to the total present value costs of a bundle of an energy or water conservation measure estimated over the projected useful life of each measure. The numerator of the ratio is the present value of net savings in energy or water and nonfuel or non-water operation and maintenance costs attributable to the proposed energy or water conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy or water conservation measure.

***semi-heated space:*** an enclosed space within a building, including adjacent connected spaces separated by an uninsulated component (e.g., basements, utility rooms, garages, corridors), which:

1. Is heated but not cooled, and has a maximum installed heating system output capacity of 3.4 Btu/(h-ft2) but not greater than 8 Btu/(h-ft2);

2. Is not a walk-in or warehouse cooler or freezer space.

***service life.*** *See useful life.*

***service log:*** a document in which service and maintenance work performed for a given piece of equipment is recorded, and that contains a date, the service technician’s name, and a description of work performed.

***simple payback (years):*** the estimated initial cost of an *EEM* divided by the estimated annual cost savings of the measure expressed in years. The cost savings may include *energy cost* savings and incremental routine operations and maintenance costs or savings.

***site energy:*** energy consumed by a *building* as measured at the boundaries of the *building* site.

***source energy:*** energy consumed by a *building* as measured at the *building* converted using source (primary) energy conversion factors to account for the energy consumed in the extraction, processing, and transport of primary fuels such as coal, oil, and natural gas; energy losses in thermal combustion in power-generation plants; and energy losses in transmission and distribution to the *building*. See also *primary energy*.

***state equipment standards:*** appliance and equipment standards listed in Washington State Chapter 19.260 RCW: ENERGY EFFICIENCY

***useful life:*** usefull life is the expected remaining service life of building systems or equipment. Used interchangeably with Service Life. ~~and Measure life.~~

weather normalized: a method for modifying the measured building energy use in a specific weather year to energy use under normal weather conditions.

***weather normalized energy utilization index (WNEUI):*** means a measurement that normalizes a building's site energy use relative to its size based on the buildings weather normalized site energy use. A building's energy use intensity is calculated by dividing the total net weather normalized energy consumed in one year by the gross floor area of the building, excluding the parking garage. "weather normalized energy use intensity" is reported as a value of a thousand British thermal units per square foot per year

***zone:*** a space or group of spaces within a *building* for which the heating, cooling, or lighting requirements are sufficiently similar that desired conditions can be maintained throughout by a single controlling device.

##### 3.2 Abbreviations and Acronyms

|  |  |
| --- | --- |
| *AHJ* | *authority having jurisdiction* |
| *AEE* | Association of Energy Engineers |
| *DDC* | *direct digital control* |
| *EEM* | *energy efficiency measure* |
| *EM* | *energy manager* |
| *EUI* | *energy-use intensity* |
| *IRR* | *internal rate of return* |
| O&M | operations and maintenance |
| *WNEUI* | *Weather normalized* energy utilization index |

### 

### 4. COMPLIANCE REQUIREMENTS

##### 4.1 Building Type Requirements

###### 4.1.1 Nonresidential Building

**4.1.1.1** A *building* or *complex* of *buildings* whose majority of gross floor area has activities number 1 through 48 and/ or 53 in Table 7-1 shall comply with the requirements of Sections 4.2 and 4.3.

**4.1.1.2** The *qualified person* determining compliance shall a. determine whether or not the *building* seeking compliance has an *energy target* (*EUIt*)according to Section 7,

1. establish the *energy target* (*EUIt*) according to Section 7,
2. complete Form B,
3. ~~indicate on Form A if this compliance is for the whole~~ *~~building~~* ~~or for individual tenant spaces in a multitenant~~ *~~building~~*~~, and~~
4. submit Forms as specified in Normative Annex Z to the AHJ. ~~A, B, and C to the~~ *~~authority having jurisdiction~~* ~~(~~*~~AHJ~~*~~).~~

**4.1.2 Residential Building**

**~~4.1.2.1~~** ~~A~~ *~~building~~* ~~with activities number 49 through 52 in Table 7-1 shall comply with the requirements of Section 10.~~

**~~4.1.2.2~~** ~~The~~ *~~qualified person~~* ~~determining compliance shall indicate on Form A if this compliance is for the whole~~ *~~building~~* ~~or for individual dwellings in a multidwelling~~ *~~building~~* ~~and submit Forms A, B, and C to the~~ *~~AHJ~~*~~.~~

**~~4.1.3 Buildings with Residential and~~**

##### ~~Nonresidential activities~~

**~~4.1.3.1~~** ~~Individual dwelling units in a multitenant~~ *~~building~~* ~~seeking compliance apart from the~~ *~~building~~* ~~shall comply with Section 10.~~

**~~4.1.3.2~~** ~~The~~ *~~qualified person~~* ~~determining compliance for~~ *~~buildings~~* ~~with both residential and nonresidential activities shall comply with Section 4.1.1.2.~~

**4.2 Energy Management Plan and Operations and**

##### Maintenance Program

**4.2.1 Operations and Maintenance.** The *building manager* shall comply with the operations and maintenance (O&M) requirements of Section 6. The *qualified person* determining compliance shall state in writing on Form A that the operating and maintenance requirements of Section 6 have been met according to the following subsections.

**4.2.1.1** For first-time applicants, for the previous year.

**4.2.1.2** For previously compliant *buildings*, since the previous validation of compliance.

**4.2.2 Energy Management Plan.** The *building manager* shall comply with the energy management requirements of Section 5. The *qualified person* determining compliance shall state in writing on Form A that the energy management program described in Section 5 has been developed and is being maintained as of the date on Form A.

###### 4.3 Building Energy Use

**4.3.1 Measured EUI.** The *qualified person* shall calculate the *building*’s measured *energy-use intensity* (*EUI*) by completing Form C according to Section 5.2.

4.3.2 Buildings with Energy Targets

Buildings with energy targets must meet all the criteria for developing an energy target in section 7.2 Determining Energy Target (EUIt) and provide energy use data as specified by 5.2 Building Energy Monitoring. All other buildings shall comply with Section 4.3.3 Buildings without Energy Targets.

**4.3.2.1 Building Meets the Energy Target (EUI*t*).** If the *building*’s measured *EUI* is less than or equal to its *energy target*, the *building* complies.

**4.3.2.2 Building Does not Meet the Energy Target (EUI*t*).** A *qualified energy auditor* shall complete an energy audit according to Section 8, and *EEMs* that will reduce energy use to meet the *energy target* shall be implemented according to Section 9. Upon completion of the implementation of all required *EEMs*, a *building* shall be granted *conditional compliance*.

**Exceptions**

**1. *more recently built buildings*:** For buildings that exceed the target developed in accordance with section 7.2.1.1, but do not exceed the target developed in accordance with section 7.2.1, the owner may demonstrate compliance by recommissioning the building using the Existing-Building Commissioning process as described in ASHRAE Guideline 0, The Commissioning Process and the following:

A. A qualified commissioning authority shall implement the building commissioning process specified by the most recent edition of the Washington State Energy Code. The energy code commissioning process shall be modified by the qualified commissioning authority for recommissioning purposes.

B. Washington State Energy Code exceptions based on mechanical system or service water heating capacity shall not be applied when developing the scope for commissioning. For example, the 2018 WSEC, Section C408.1 General, exceptions 1 and 2 or the exception to section C408.2.

C. All deficiencies found during the commissioning process shall be resolved including corrections and retesting.

D. Building owners may omit capital expenditures identified by the commissioning process that are not cost effective, as documented using the procedures in Normative Annex X.

**~~Exception to 4.3.2.2:~~**

2. No individual requirement need be met that would compromise the historical integrity of a *building* or part of a *building* designated by a government body for long-term preservation in its existing state, such as historical monuments. Documentation of historic significance must be provide to the AHJ by submitting form F in accordance with Normative Annex Z. ~~Certification of a building of historic significance~~

**4.3.2.3 Verification of Compliance.** Within fifteen months after the completion of Section 4.3.2.2, the weather normalized *EUI* shall be recalculated by the *energy manager* (*EM*) from 12 consecutive months of measured energy use, and Form A shall be resubmitted to the *AHJ*. If the *building*’s post implementation measured *EUI* is less than or equal to the *energy target*, the *building* complies with the standard. If the *building*’s post implementation measured *EUI* is greater than the *energy target*, the *building* does not comply with the standard and the *conditional compliance* is suspended until either

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1. additional *EEMs* have been implemented that reduce the subsequently measured *EUI* to below the *energy target* and a new Form A is submitted to the *AHJ* or
2. the *AHJ* revokes *conditional compliance*.

4.3.3 Buildings without Energy Targets

**4.3.3.1** A *qualified energy auditor* shall conduct an energy audit according to Section 8, and the *optimized bundle* of *EEMs* shall be identified according to Section 9.1.1.2.

**4.3.3.2 Implement EEMs.** The entire *optimized bundle* of *EEMs* identified shall be implemented. Upon completion of the implementation of the *optimized bundle* of *EEMs*, a *building* shall be granted *conditional compliance* in accordance with Section 9.1.1.2.

**Exception to 4.3.3.2:** No individual requirement need be met that would compromise the historical integrity of a *building* or part of a *building* designated by a government body for long-term preservation in its existing state, such as historical monuments. Documentation of historic significance must be provide to the AHJ by submitting form F in accordance with Normative Annex Z. ~~Certification of a building of historic significance~~

**4.3.3.3 Verification of Compliance.** If the *building* complies with Section 4.2, then within 15 months following the completion of implementation of the *optimized bundle* of *EEMs*, *building owners* with *conditional compliance* or the *qualified person* representing the *building owner* shall submit verification that measured post implementation energy savings meet or exceed 75% of the energy savings projected in the energy audit report to the *AHJ*. Energy savings shall be compared at the whole-*building* consumption level in common units for electricity, fossil fuels, and other sources. If the measured post implementation energy savings of the package of *EEMs* do not meet or exceed 75% of the energy savings projected in the energy audit, the *conditional compliance* is suspended until either

1. additional *EEMs* are implemented that reduce the subsequently measured energy savings of the package of *EEMs* so that it meets or exceeds 75% of the energy savings projected in the energy audit or
2. the *AHJ* revokes *conditional compliance*.

###### 4.4 General

**4.4.1 Administrative Requirements.** Building owners shall demonstrate compliance with the standard by following the administrative requirements in Normative Annex Z, including

Normative Annex Z, Washington State Reporting Requirements

Building owner notifications by the AHJ and building owner response.

Z1. Notification to building owners of covered commercial buildings by the AHJ

Z2. Building owner response to notifications

Washington State Reporting Requirements for Building Owners

Z3. General Compliance

Z4. Documentation of Compliance with the Standard

Z5 Violations, assessment of administrative penalties, mitigation and review of penalty decisions

Normative Annex C- Forms, as amended for the Washington state building energy performance standard

Modified Tables 7-1, Table 7-2a, and Table 7-3

**4.**4.1.1

~~Administrative requirements relating to permits, enforcement by the~~ *~~AHJ~~*~~, locally adopted energy standards including energy performance targets, interpretations, claims of exemption, and rights of appeal are specified by the~~ *~~AHJ~~*~~.~~

**4.4.2 Alternative Energy Targets (EUI*t*).** ~~The~~ *~~qualified person~~* ~~determining compliance shall demonstrate to the~~ *~~AHJ~~* ~~that they have met the required~~ *~~energy targets~~* ~~on either a~~ *~~site energy~~* ~~or~~ *~~source energy~~* ~~basis in accordance with Section 7 or Section 10 or have met the requirements in Section 4.3.3 for~~ *~~buildings~~* ~~without~~ *~~energy targets~~*~~. Alternative performance requirements, such as those in Normative Annex A, are permitted to be specified by the~~ *~~AHJ~~*~~.~~

**Section not adopted.**

### 5. ENERGY MANAGEMENT PLAN

##### 5.1 Establish the Energy Management Plan

**5.1.1** The *building owner* shall designate an *energy manager* (*EM*) to develop and *maintain* an energy management plan for the *building*.

**~~Exception to 5.1.1:~~** *~~Buildings~~* ~~smaller than 5000 ft~~~~2~~ ~~(465 m~~~~2~~~~) are not required to have an~~ *~~EM~~* ~~or an energy management plan.~~

**5.1.2** The energy management plan shall incorporate the following.

**5.1.2.1** Energy accountingin accordance with Section 5.2.

**5.1.2.2** In the initial year of compliance, the *building*’s *weather normalized energy use intensity (WNEUI) and* *energy-use intensity* (*EUI*).

**5.1.2.3** Annual updates of the *net energy* use, *WNEUI* and *EUI*.

**5.1.2.4** Annual comparison of the net *WNEUI and* *EUI* to the *energy target*.

**5.1.2.5** Documentation of original, current, and changes in number of occupants, weekly operating hours, or time of day scheduled for occupancy, production rates, and energy using equipment that would have caused change in the measured *WNEUI and* *EUI*.

**5.1.2.6** Energy audit reports and recommended *energy efficiency measures* (*EEMs*). (Refer to Section 8.)

**5.1.2.7** A list of *EEMs* that have been implemented and dates of implementation, including the following:

1. An operations and maintenance (O&M) program as defined in Section 6 for the *EEMs*
2. An implementation plan for *EEMs*, including *EEM* commissioning
3. Staff training plan for *EEMs*
4. Ongoing commissioning plans for the *EEMs*

**5.1.2.8** A method to inform occupants about the benefits of efficient energy use, and to instruct them in the use and adjustment of operable windows, *HVAC system* controls, and lighting system components and controls. This shall include materials (electronic or printed) as appropriate.

**5.1.2.9** A training plan for the O&M personnel to operate the *building* systems to achieve established indoor environmental targets with optimum energy efficiency.

**5.1.2.10** A *capital management plan* identifying equipment for replacement with energy efficient and ENERGY STAR® rated equipment in case of failure.

**5.1.2.11** A contact list of suppliers and manufacturers’ local representatives of energy efficient equipment, *qualified energy auditors*, the *EM*, and the *building owner*.

**5.1.2.12** The current *lighting schedule* and the calculated *lighting power density* along with the potential savings from any potential *EEMs*.

**5.1.2.13** The current lighting satisfaction survey and lighting checklist as described in Appendix D of *Performance Measurement Protocols for Commercial Buildings* 1.

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**5.1.2.14** Operations and Maintenance Plan including:

(a) An operations and maintenance (O&M) program as defined in Section 6

(b) An O&M implementation plan as specified in Normative Annex L.

(c) Implementation documentation as specified in L2.2.5 Documentation.

5.1.2.15 Buildings unable to provide measured *net energy* consumption data as required by section 5.2 shall develop a plan to meet this section by the next compliance period.

**5.1.3** The *EM* shall provide a copy of the energy management plan to the *building* occupants and other stakeholders annually.

**5.1.4** The *building owner* shall review and sign the energy management plan annually.

**5.2 Building Energy Monitoring.** *Building* *net energy* use shall be monitored and recorded in accordance with following sections.

**5.2.1** Provide measured *net energy* consumption data for each *building*, including all forms of imported and exported energy from at least 12 consecutive months of data monitored in a period not to exceed two years prior to the ~~efficiency audit~~ reporting deadline specified in Normative Annex z. The *net energy* concept is illustrated in Figure 5-1 and Table 5-1 and is calculated in accordance with Section 5.2.4 as follows:

*Net energy* use = (1a + 1b + 1c + 1d) – (3a + 3b + 3c + 3d + 3e)

where 1a, 1b, 1c, and 1d are metered energy supplies that are used in the *building* (this includes bulk energy sources), and 3a, 3b, 3c, 3d, and 3e are metered energy excesses that are supplied to another *building,* vehicle or grid as useful energy.

**5.2.2** Energy-use data for each type of energy imported into and exported from the *building* shall be collected from utility or energy delivery bills (that must include the quantity of energy or fuel delivered) or by monitoring local energy meters (either utility or owner-provided meters). If the exported energy cannot be measured, it shall be estimated using a methodology that is acceptable to the *authority having jurisdiction* (*AHJ*).

**5.2.2.1** When an energy type such as oil, solid fuels, or biomass is delivered in bulk to the *building* for storage prior to actual use, the annual energy use for that energy type shall be calculated as follows:

Annual energy use = *A* + *B* – *C* where

1. = measured inventory of the energy type at the beginning of the 12 month period, converted to energy equivalent (Refer to Section 5.2.3.)
2. = the amount of the energy type delivered to the *building* during the 12month period, converted to energy equivalent (Refer to Section 5.2.3.)
3. = measured inventory of the energy type at the end of the 12 month period, converted to energy equivalent (Refer to Section 5.2.3.)

**5.2.2.2** If the annual energy consumption of an inventoried energy type is less than twice its on-site storage capacity, the inventory measurement accuracy and methodology shall be reported as part of the *energy accounting system* documentation.

**5.2.3 Energy Conversion Factors.** The *site energy* content of different forms of purchased energy shall be converted from the purchased unit to the standard *site energy* unit using the conversation factors incorporated in Energy Star Portfolio Manager. . ~~If~~ *~~site energy~~* ~~conversion factors are not provided by Energy Star Portfolio Manager the utility or fuel supplier, the conversion factors in Table 5-2a shall be used. (See also Informative Annex K.)~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Figure 5-1 Net energy concept. Table 5-1 Energy Flow Definitions**   |  |  |  | | --- | --- | --- | | **Energy Delivered to Building** | **Building Renewable**  **Energy Production** | **Energy Exported from Building for Beneficial Use** | | 1a. Electrical | 2a. Electrical | 3a. Excess solar thermal | | 1b. Gas | 2b. Thermal | 3b. Excess solar or wind electrical | | 1c. Steam/hot-water (HW)/chilled and hot water (CHW) |  | 3c. Recovered thermal energy | | 1d. Bulk fuel (coal/biomass/propane/oil) |  | 3d. Excess co-gen electrical | |  |  | 3e. Excess co-gen thermal | |

**5.2.4** The *energy accounting system* shall be Energy Star Portfolio Manager as specified in Normative Annex Z. ~~perform the following.~~

**~~5.2.4.1~~** ~~Record annual~~ *~~net energy~~* ~~consumption data for each~~ *~~building~~*~~, including all forms of purchased energy from at least 12 consecutive months of data.~~

**~~5.2.4.2~~** ~~Record total~~ *~~net energy~~* ~~use expressed as Btu/year (MJ/year).~~

**~~5.2.4.3~~** ~~Record each~~ *~~nonresidential building~~*~~’s~~ *~~EUI~~* ~~as follows, as applicable:~~

1. ~~Annual~~ *~~net energy~~* ~~use, MJ/~~*~~gross floor area for nonresidential buildings~~*~~, m~~~~2~~
2. ~~Annual~~ *~~net energy~~* ~~use, kBtu/~~*~~gross floor area for nonresidential buildings~~*~~, ft~~~~2~~

**~~5.2.4.4~~** ~~Record each~~ *~~residential building~~*~~’s~~ *~~EUI~~* ~~as follows, as applicable:~~

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1. ~~annual~~ *~~net energy~~* ~~use, MJ/~~*~~gross floor area for residential buildings~~*~~, m~~~~2~~
2. ~~annual~~ *~~net energy~~* ~~use, kBtu/~~*~~gross floor area for residential buildings~~*~~, ft~~~~2~~

**5.3 Energy Manager.** The *EM* shall be responsible for the following.

* + 1. Conducting technical, policy-related planning related to energy efficiency.
    2. Purchasing energy for spaces under his or her control.
    3. Public relations matters related to energy.
    4. Implementing the results of energy audits and *EEMs* outlined in the energy management plan.

**Table 5-2a Site Energy Conversion Factors Table not adopted**

|  |  |  |
| --- | --- | --- |
| **~~Fuel Oils~~** | **~~kJ/L~~** | **~~Btu/U.S. gal~~** |
| ~~#1~~ | ~~37,600~~ | ~~135,000~~ |
| ~~#2~~ | ~~38,700~~ | ~~139,000~~ |
| ~~#4~~ | ~~40,700~~ | ~~146,000~~ |
| ~~#5L~~ | ~~41,300~~ | ~~148,000~~ |
| ~~#5H~~ | ~~41,800~~ | ~~150,000~~ |
| ~~#6~~ | ~~42,900~~ | ~~154,000~~ |
| **~~Gas~~** | **~~kJ/m~~~~3~~** | **~~Btu/ft~~~~3~~** |
| ~~Natural Gas~~ | ~~38,400~~ | ~~1030~~ |
|  | **~~kJ/L~~** | **~~Btu/U.S. gal~~** |
| ~~Propane~~ | ~~25,500~~ | ~~91,600~~ |
| **~~Electricity~~** | **~~kJ/kWh~~** | **~~Btu/kWh~~** |
|  | ~~3600~~ | ~~3412~~ |

***~~Informative Note:~~*** ~~Energy accounting and conversion factors shown in Table 5-2 are based on~~ *~~site energy~~*~~.~~

**Table 5-2b Primary Energy Conversion Factors Not adopted**

**~~Energy Form~~**

**~~Conversion Factor~~**

|  |  |  |
| --- | --- | --- |
| ~~Electricity~~ | | ~~3.15~~ |
| ~~Natural gas~~ | | ~~1.09~~ |
| ~~Fuel oil~~ | | ~~1.19~~ |
| ~~Liquefied petroleum gas (LPG) or propane~~ | | ~~1.15~~ |
| ~~Other~~ | | ~~1.10~~ |
| ~~Purchased district energy~~ | ~~Hot water~~ | ~~1.35~~  ~~1.45~~  ~~1.04~~ |
| ~~Steam~~ |
| ~~Chilled water~~ |

***~~Informative Note:~~*** ~~Energy accounting and conversion factors shown in Table 5-2b are based on~~ *~~site energy~~* ~~using conversion factors in Table 5-2a converted to primary or~~ *~~source energy~~*~~. Section 4.4.2 of the standard allows alternative~~ *~~energy targets~~* ~~established by the adopting~~ *~~AHJ~~*~~. The~~ *~~AHJ~~* ~~may choose to use~~ *~~site energy~~* ~~to~~ *~~source energy~~* ~~conversion factors shown in Table 5-2b or may use other conversion factors following the processes and procedures incorporated within ANSI/ASHRAE Standard 105,~~ *~~Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions~~*~~. The~~ *~~AHJ~~* ~~may also choose to use locally appropriate factors for source (primary) energy.~~

**5.3.5** Evaluating energy efficiency of proposed new construction, facility expansion, remodeling, or new equipment purchases.

**5.3.6** Reviewing *building* O&M procedures for optimal energy management.

**5.3.7** Adhering to energy codes and standards.

**5.3.8** Reporting regularly to management and other stakeholders .

**5.3.9** Developing and implementing an energy efficiency plan according to Section 9.1.

### 6. OPERATIONS AND MAINTENANCE REQUIREMENTS

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**6.1 Scope.** Section 6 applies to the *building* envelope, *building* systems, and *building* equipment that directly or indirectly consume energy.

**6.2 Operations and Maintenance Program.** A formal operations and maintenance (O&M) program shall be established and implemented in order that the *building* energy-using systems achieve their intended energy efficiency throughout their service life.

It documents the O&M objectives, establishes the criteria for evaluation, and commits the *building operator* and maintenance personnel to basic goals of performance (such as minimizing equipment failures, ensuring ongoing efficient operation, and performing identified maintenance requirements).

**6.3 Operation and Maintenance Implementation.** The O&M program shall be implemented in accordance with Normative Annex L.

**Exception:** O&M programs developed and implemented by the building’s serving utility or local government and approved as equivalent by the *AHJ* may be used as an alternate to this requirement. Where local government programs are more stringent, local government programs shall be selected over utility programs.

##### 6.4 Operations and Maintenance Tasks

**6.4.1** Maintenance for all equipment, components, and systems shall be in accordance with applicable manufacturers’ requirements and shall also include tasks that minimize failures and *maintain* energy consumption efficiency, such as those found in Informative Annex D for the following *building* systems:

* *Building* envelope
* Domestic hot water
* Heating, ventilation, and air conditioning
* Refrigeration
* Lighting
* Controls
* Electric power distribution and on-site power generation

**6.4.2** Safe and reasonable access shall be provided to all equipment covered by the O&M program for inspection, maintenance, and repairs.

**6.4.3** The O&M requirements shall be reevaluated when *building* use changes or renovations/alterations are made that affect the facility’s operations.

**6.5 Tenant Improvements.** The *energy manager* (*EM*) shall put in place a formal process to ensure that any tenant improvements involving a change in space use or the relocation of partitions (including partial height partitions) do not change the annual *net energy* use except to the extent that the annual *net energy* use change (increase or decrease) is consistent with any change in the *building*’s *energy target*.

##### 6.6 Equipment and Component Replacement

**6.6.1** When HVAC, domestic hot-water heating, or refrigeration equipment or appliances are replaced, the replacement equipment shall meet the most stringent energy efficiency requirements in the federal equipment standards, *state equipment standards*, and ~~in~~ the *applicable building code.* ~~in ASHRAE/IES Standard 90.1~~~~2~~~~, or in ASHRAE Standard 90.2~~ ~~3~~~~.~~

**~~Exception to 6.6.1:~~** ~~Equipment intended for standby or emergency use only.~~

###### 6.6.2 Lighting Replacement

**6.6.2.1** When lighting equipment is replaced, the replacement equipment shall meet the most stringent energy efficiency requirements in ~~both~~ the federal equipment standards, *state equipment standards* and in the applicable *building* code.

**6.6.2.2** The replacement of any lighting equipment shall not increase the existing installed lighting power demand.

**Exception to 6.6.2.2:** The existing installed lighting power may proportionally increase when the current light levels are below those recommended in the IES *Lighting Handbook* 4.

### 7. ENERGY-USE ANALYSIS AND TARGET REQUIREMENTS

##### 7.1 Building Type and Energy Targets

**7.1.1 Building Type.** *Buildings* are divided into 53 types with activities as shown in Table 7-1. *Buildings* with one or more activities listed in Table 7-1 have *energy targets* as shown in Table 7-2a. ~~or 7-2b.~~

**~~7.1.2 Energy Targets.~~** ~~Site-based~~ *~~energy targets~~* ~~are shown in Tables 7-2a in both I-P and SI units, while source-based~~ *~~energy targets~~* ~~are shown in Tables 7-2b in both I-P and SI units.~~ *~~Site energy~~* ~~electricity use and fossil fuel use targets listed in Tables 7-2c and 7-2d are for use in target calculations by~~ *~~authorities having jurisdiction~~*~~.~~

~~All~~ *~~energy targets~~* ~~were derived from Commercial Building Energy Consumption Survey (CBECS) 2003 and Residential Energy Consumption Survey (RECS) 2005 data by Oak Ridge National Laboratory (ORNL) and the U.S. Department of Energy (USDOE) and represent the 25th bottom (low energy) percentile of energy use by each~~ *~~building~~* ~~category.~~

~~The median numbers for each~~ *~~building~~* ~~category from CBECS and RECS data representing all~~ *~~buildings~~* ~~in the~~ *~~building~~* ~~type/activity across all climatic conditions were extrapolated to 17 USDOE climate zones using multipliers generated through simulation of a representative~~ *~~building~~* ~~for each group of~~ *~~building~~* ~~categories. Informative Annex J gives a detailed explanation of target table derivation.~~

***~~Informative Note:~~*** ~~Tables 7-2c and 7-2d should not be applied separately for individual energy sources. The tables are used in accordance with Normative Annex A, Equation A-1, to determine the appropriate~~ *~~source energy target~~*~~.~~

##### 7.2 Determining Energy Target (EUI*t*)

**7.2.1** *~~energy manager~~* ~~(~~*~~EM~~*~~) or~~ ~~or~~ The *qualified person* shall determine the *energy target* (*EUIt*) according to Section 7.2.2 for single-type/activity *buildings* and Section 7.2.3 for mixed use *buildings*, and shall complete Form B.

**Exception**: EUIt programs developed and implemented by the building’s local government and approved as equivalent by the AHJ may be used as an alternate to this requirement.

**7.2.1.1 Additional target for *more recently built buildings:*** In addition to the requirments of section 7.2.1, *more recently built buildings* shall create a second *EUIt* that is 15% less than the target developed for compliance with section 7.2.1. This shall be the building *EUIt* and shall be included on Form B.

**7.2.2** *Energy targets* for *buildings* with a single activity shall be calculated as follows:

(*EUIt*)= *S* × (*EUIt*1)

where (*EUIt*1) is the *building* activity *energy target* value in Table 7-2a ~~or 7-2b~~ for the appropriate *building* activities/types and climate, and *S* is the *building* operating shifts normalization factor in Table 7-3.

**7.2.3** *Energy targets* for *buildings* with multiple activities shall be determined using weighted averages of *building* activity *energy target* for each area with a single activity, per the following equation, and reported on Normative Annex C, Form B:

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*EUIt* = (*A* × *S* × *EUIt*1)1 + (*A* × *S* × *EUIt*1)2 + …

+ (*A* × *S* × *EUIt*1)*i* + … + (*A* × *S* × *EUIt*1)*n* where

(*A*)*i* = percentage of the gross floor area with

single *building* activity *i*

(*EUIt*1)*i* = *building* activity target from Table 7-2a or 7-2b for space *i*

(*S*)*i* = operating shifts normalization factor

from Table 7-3 for space *i*

(*A* × *S* × *EUIt*1)*i* = the weighted space *EUI* target for space *i*

**Exceptions to 7.2.3:** The *energy target* (EUIt) of a building may be modified using the following exceptions. None of these exceptions may be used to change the total gross floor area as it applies to Normative Annex Z, Reporting Schedule.

1. Spaces where more than 75% of the gross floor area has a ~~unique~~ single *building* activity listed in Table 7-1 shall be reported as a single-use *building* or as a multiuse *building* in accordance with either Section 7.2.2 or Section 7.2.3.
2. Spaces less than 10% of the gross floor area with ~~unique~~ *building* activity listed in Table 7-1 can combine their floor area with the floor area within the *building* that has a similar *building* activity ~~as with a~~ and similar *EUIt* as determined by the *~~EM~~* ~~or other~~ *qualified person*.
3. Spaces in *buildings* with multiple activities that are not listed in Table 7-1 and have a total combined area ∑*Anontarget* comprising less than 10% of the *building* gross floor area *Agross* can be excluded from *building* *energy target* calculations if the energy use of such space is metered separately and the nontarget spaces comply with Sections 4.1 and 4.2. The *energy target* for the remaining part of the *building* shall be calculated after deducting the unlisted *building* type floor area from the *building* gross floor area (*Agross* –

∑*Anontarget*). Nontarget spaces shall be limited to the floor area occupied by the nontarget activity and shall not include supporting spaces such as corridors ~~halls~~, common areas or other space types listed in Table 7-1.

1. Spaces in *buildings* with multiple activities that are not listed in Table 7-1 and have a total combined area ∑*Anontarget* comprising less than 50% of the *building* gross floor area *Agross* can be excluded from *building* *energy target* calculations if the energy use of such space is metered separately and the nontarget spaces comply with Sections 4.1, 4.2, 4.3.1, and 4.3.3. The *energy target* for the remaining part of the *building* shall be calculated after deducting the unlisted *building* type floor area from the *building* gross floor area (*Agross* – ∑*Anontarget*). Nontarget spaces shall be limited to the floor area occupied by the notarget activity and shall not include supporting spaces such as corridors ~~halls~~, common areas or other activity types listed in Table 7-1.

~~Spaces in multiple-activities~~ *~~buildings~~*~~, with activities not listed in Table 7-1, comprising more than 10% but not more than 50% of the gross floor area shall comply with either Section 7.2.3, Exception 3, or Sections 4.1, 4.2, 4.3.1, and 4.3.3.~~

**7.2.4 Energy Targets for Vacant and**

##### Partially Vacant Buildings

**7.2.4.1 Exemption for vacant buildings.** If the building did not have an average physical occupancy for at least fifty percent of the *conditioned floor area* throughout the calendar year prior to the building compliance date, the building owner may apply for an exemption as specified in Normative Annex Z.

**7.2.4.2** The *energy target* for ~~a 100%~~ vacant *spaces* shall be based on its pre-vacancy activity if the intended use of the *building* will be unchanged.

**7.2.4.3** If the total floor area of a non-heated, non-cooled, and no illuminated vacant part of a *building* is smaller than 30% of the gross floor area, then it shall be excluded from the gross floor area, and the *energy target* shall be determined based on the remainder of the *building* as described in Section 7.2.3. This allowance may not be used to change the total gross floor area as it applies to Normative Annex Z ~~section 4.4.1.\*~~ Reporting Schedule.

**7.2.4.4** If the vacant part of a *building* is heated and/or cooled and the *building* energy-use data for a ~~recent~~ 12 consecutive month period when the *building* was occupied within two years prior to the compliance date is not available, compliance of this part of the *building* will be determined after it becomes occupied and energy-use data become available for 12 consecutivemonths.

**Table 7-1 Commercial and Residential Building Types/Activities**

Table 7-1 adopted as modified and published in Normative Annex Z, section 7

**Table 7-2a Building Activity Site Energy Targets (EUI*t*1) (I-P Units)**

Table 7-2a adopted as modified and published in Normative Annex Z, section 7

**~~Table 7-2a Building Activity Site Energy Targets (EUI~~*~~t~~*~~1) (SI Units)~~**

**~~Table 7-2b Building Activity Source Energy Targets (EUI~~*~~t~~*~~1) (I-P Units)~~**

**~~Table 7-2b Building Activity Source Energy Targets (EUI~~*~~t~~*~~1) (SI Units)~~**

**~~Table 7-2c Building Activity Electricity Site Energy Use Targets (ELUI~~*~~t~~*~~1) (I-P Units)~~**

**~~Table 7-2c Building Activity Electricity Site Energy Use Targets (ELUI~~*~~t~~*~~1) (SI Units)~~**

**~~Table 7-2d Building Activity Fossil Fuel Site Energy Use Targets (FEUI~~*~~t~~*~~1) (I-P Units)~~**

**~~Table 7-2d Building Activity Fossil Fuel Site Energy Use Targets (FEUI~~*~~t~~*~~1) (SI Units)~~**

**Table 7-3 Building Operating Shifts Normalization Factor**

Table 7-3 adopted as modified and published in Normative Annex Z, section 7

### 8. ENERGY AUDIT REQUIREMENTS

**8.1** The *qualified energy auditor* shall complete Forms D and/or E and submit to the *authority having jurisdiction* (*AHJ*). If an energy audit is required within this section, a copy of the audit summary results shall be included in the compliance documentation in a format specified in Normative Annex Z. ~~by the AHJ.~~ Compliance with this standard shall be achieved by adopting *energy efficiency measures* (*EEMs*) that collectively will reduce annual *building* energy use. ~~Fuel switching shall not be permitted for this purpose unless the fuel switching reduces on site carbon emissions saves annual~~ *~~energy costs~~*~~.~~

##### 8.2 Energy Audit Requirements for Buildings without Energy Targets

**8.2.1 Overall Process.** An energy audit shall be conducted for all *buildings* not having an *energy target*.The energy audit and the associated energy audit report shall be completed by a *qualified energy auditor* practicing within their field of competency. The energy audit shall be a Level 2 audit as defined in Section 8.4.2. . ~~For a~~ *~~building~~* ~~having a gross floor area 10,000 ft~~~~2~~ ~~(1000 m~~~~2~~~~) or less, either a Level 1 audit (as defined in Section 8.4.1) or a Level 2 audit (as defined in Section 8.4.2) shall be conducted~~.

**Exception to 8.2.1:**

*Buildings* that have completed an energy audit within the previous three years may use the results of the previous audit, provided that the scope of the energy audit meets the requirements of this section and that there have been minimal changes to the systems within the audit scope. The energy audit must be evaluated consistent with the investment criteria ~~economic evaluation criteria~~ in Normative Annex X.

**8.2.2** The scope of the energy audit shall include the following required end uses as applicable to the *building*:

* Envelope
* Lighting
* Cooling
* Heating
* Ventilation and exhaust systems
* Air distribution systems
* Heating, chilled, condenser, and domestic water systems
* Refrigeration except for food processing refrigeration
* Power generation equipment
* Uninterruptible power supplies and power distribution units
* People-moving systems

**8.1.1.1** The scope of the energy audit may include *campus district heating and/or cooling systems* when the *campus district heating and/or cooling system* serves the building being audited.

**8.2.3** The following end uses are not included in this standard:

* *Industrial processes*
* Agricultural processes
* Irrigation

**8.2.4** Following the completion of the energy audit, the *building owner* will select and implement *EEMs* per the requirements of Section 9.

**8.3 Energy Audit Requirements for Buildings with Energy Targets**

**8.3.1 Buildings that Meet Their Energy Targets.** *Buildings* that meet their *Energy targets* under Section 7 are not required to perform an energy audit.

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**8.3.2 Buildings that Do not Meet Their Energy Targets Overall Process.** An energy audit shall be conducted, and an associated energy audit report shall be provided, for all *buildings* that do not meet their *energy target*. The energy audit shall be completed by a *qualified energy auditor* practicing within their field of competency. The energy audit shall be at an audit level specified by the *qualified energy auditor* to be sufficient to identify and evaluate the *EEMs* that, if implemented, would result in the *building* meeting its *energy target*. The *qualified energy auditor* may refer to the list of potential *EEMs* in Informative Annex E.

After the completion of the audit and the selection of *EEMs* to be implemented, the applicant must calculate an adjusted *energy-use intensity* (*EUI*) for the *building* based on the estimated energy savings from the selected *EEMs* and the historical energy use of the *building*. This adjusted *EUI* is then compared to the *energy target* for the *building*. If the adjusted *EUI* is less than the *energy target*, the applicant shall proceed with implementation as specified in section 9. ~~(see Section 9)~~. If the adjusted *EUI* is greater than the *energy target*, a more rigorous energy audit investigation is required to identify additional *EEMs*. This process is repeated until the *building*’s adjusted *EUI* is less than its *energy target*.

Calculation of the adjusted *EUI* is shown in the following equation:

*EUIadj* = (Energy*hist* – Energy*saved*)/GFA

|  |  |  |
| --- | --- | --- |
| where |  |  |
| Energy*hist* | = | historical annual energy use, kBtu ~~(MJ)~~ |
| Energy*saved* | = | estimated annual energy savings, kBtu ~~(MJ)~~ |
| GFA | = | gross floor area, ft2 ~~(m~~~~2~~~~)~~ |

Following the completion of an energy audit that has identified *EEMs* sufficient to meet the *building*’s *energy target*, the applicant shall implement those *EEMs* per the requirements of Section 9.

**Exception to 8.3.2:** *Buildings* that have completed an energy audit within the previous three years may use the previous energy audit to identify *EEMs* for implementation, provided that the scope of the energy audit meets the requirements of this section and there have been minimal changes to the systems within the audit scope. In this case, the same comparison of adjusted *EUI* to *energy target* shall be made by the applicant. If the *EEMs* identified in the audit are still applicable, have not been implemented, and if implemented would result in the *building* meeting its *energy target*, these measures shall be implemented by the facility, and the project shall follow the procedures in Section 9. If the identified *EEMs* do not result in an adjusted *EUI* less than the *energy target*, a new energy audit shall be conducted as described Section 8.3.2.

**8.4 Energy Audit Levels.** This section outlines the requirements for Level 1, and Level 2 energy audits for *buildings*.

**8.4.1 Level 1 Audit.** *Buildings* shall perform a Level 1 audit (walk-through analysis) as defined in *ANSI/ASHRAE/ACCA Standard 211-2018 Standard for Commercial Building Energy Audits*, Section 5.312. ~~ASHRAE’s~~ *~~Procedures for Commercial Building Energy Audits~~*~~,~~~~2nd Edition~~ ~~5~~.

**8.4.2 Level 2 Audit.** *Buildings* shall perform a Level 2 Audit (energy survey and engineering analysis) as defined in *ANSI/ASHRAE/ACCA Standard 211-2018 Standard for Commercial Building Energy Audits*, Section 5.412. ~~ASHRAE’s~~ *~~Procedures for Commercial Building Energy~~**~~Audits,~~* ~~2nd Edition~~ ~~5~~~~.~~

**8.5 Energy Audit Report.** This section prescribes the overall approaches and methods to be used in the energy audit report for audits completed under Sections 8.4.1 or 8.4.2.

**8.5.1 Audit Results.** The energy audit report shall define the actions necessary for the *building owner* to achieve the energy and cost savings that are recommended in the report.

Energy audit results shall be presented in a summary table that includes, at a minimum, an estimate of each of the following:

* A list of recommended *EEMs* that, if implemented, will either meet the *energy target* for the *building* if it has a target or, if it does not have an *energy target*, will meet the economic criteria set by the standard in Section 9. The estimated energy savings and peak demand savings associated with each recommended *EEM*, expressed in the cost units used on the *building owner*’s energy bills, and the units used for comparison with the *energy target*.
* The estimated (modeled) *energy cost* savings associated with each recommended *EEM*.
* The estimated cost of implementation for each recommended *EEM*. The costs of implementation shall include the required monitoring of energy savings per the requirements of Section 9.
* The *simple payback* and savings to investment ratio ~~return on investment (ROI)~~ for each recommended *EEM.* ~~or bundle of~~ *~~EEMs~~*~~.~~
* ~~The~~ *~~simple payback~~* ~~of the~~ *~~optimized bundle~~* ~~of~~ *~~EEMs~~* ~~that will achieve the~~ *~~energy target~~* ~~for~~ *~~buildings~~* ~~with~~ *~~energy targets~~* ~~or meet the financial criteria set out in the standard for~~ *~~buildings~~* ~~that do not have~~ *~~energy targets~~*~~.~~
* The *savings to investment ratio* for each EEM and the optimized bundle of energy efficiency measures for buildings complying under the investment criteria as required by Normative Annex X.

**8.5.2 Interactive Effects.** Energy savings analysis shall include *interactive effects* of all selected *EEMs*. When considering multiple *EEMs* with *interactive effects*, the order of analysis shall start with load reduction measures and proceed through distribution systems and associated equipment efficiencies and then plant and heat-rejection systems. Any *interactive effects* on equipment sizing and partload performance of equipment shall be accounted for due to reduced loads on subsequent systems.

**8.5.3 Optimized Bundling.** The *EEMs* recommended in the energy audit report shall consist of an *optimized bundle* of *EEMs*.

**8.5.4 Financial Analysis.** Financial analysis shall be made using current utility rate charges for the site. For customers who are charged based on time-of-use or peak demand (kW), cost analysis of those *EEMs* shall include appropriate treatment of the costs savings associated with the measures and reflect peak demand or time-of-use cost savings.

**8.5.4.1 Nonfederal Facilities.** The minimum financial criteria required for reporting is specified in Normative Annex X. ~~include the following:~~

1. *~~EEM~~* ~~implementation cost~~
2. *~~Energy cost~~* ~~savings based on current utility rates~~
3. ~~Maintenance and operation cost savings (or penalties)~~
4. *~~EEM~~**~~simple payback~~*

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1. *~~EEM~~* ~~measure life~~

**~~8.5.4.2 U.S. Federal Facilities.~~** ~~Federal facilities shall follow the National Institute of Standards and Technology (NIST) Building Life-Cycle Cost (BLCC) Program.~~

**8.5.5 End-Use Analysis.** The energy audit shall include an end-use analysis that compares the estimated energy use of the facility after implementation of all selected *EEMs* to historical utility consumption. The intent of this requirement is to ensure that estimates of the base-case end-use energy estimates and potential energy-savings estimates in the energy audit report are reasonable.

**8.5.5.1 Requirements for Level 1 Audits.** The analysis shall demonstrate that the sum of base-case end-use energy estimates total no more than the historical energy consumption for the end use at the site. This shall be done by completing the following:

1. The historic energy use shall be apportioned into each ofthe end uses, such as HVAC, lighting, domestic hot-water, and plug loads.
2. The *qualified energy auditor* shall verify that each *EEM* savings estimate is reasonable in comparison to the energy consumption of that end use based on energy consumption survey data or experience with similar sites.

End-use analysis shall be conducted for all fuel types at the site, such as electricity, natural gas, or fuel oil, for which *EEMs* are identified.

***Informative Note:*** For example, if the audit identifies lighting retrofit opportunities, the *energy auditor* shall compare the identified energy savings for those opportunities with the base-case energy use of the facility and demonstrate that they make up a reasonable fraction of the historical electricity consumption at the site. (See Form D in Normative Annex C.)

**8.5.5.2 Requirements for Level 2 Audits.** The *energy auditor* is required to estimate the energy use of all end uses that individually comprise more than 5% of total historical *building* energy use. The energy estimates for these end uses shall be summed and compared to historical energy consumption for the facility. The sum of the base-case end-use energy estimates must be between 90% and 100% of the historical energy use at the site.

This comparison shall be conducted separately for each fuel type, such as electricity, natural gas, or fuel oil, for which *EEMs* are identified. On-site energy sources such as solar, photovoltaic, geothermal, and wind shall be included.

Correction for historical weather for the base year versus average weather used in *baseline* estimates may be used.

The same energy-use estimates that comprise the end-use analysis shall also be used as the basis for energy savings calculations. The *qualified energy auditor* shall verify that each *EEM* savings estimate is reasonable in comparison to the historical energy consumption of that end use based on energy consumption survey data or experience with similar sites.

The *qualified energy auditor* shall verify that the combined savings from multiple *EEMs* shall take into account *interactive effects* among measures.

Miscellaneous plug loads may be estimated on average equipment power density and *building* area. (See Form E in Normative Annex C.)

**8.5.6 Baseline.** The *baseline* for energy- and cost-savings estimates shall be taken to be the condition of the existing *building* at the time of the initial comparison with the *building*’s *energy target* or at the time of the initial required audit. The energy-savings estimates shall be calculated as the difference between the energy use of proposed systems and the *baseline* energy-use estimates of those systems.

### 9. IMPLEMENTATION AND VERIFICATION REQUIREMENTS

**9.1 Developing and Implementing and Energy Management Plan**

**9.1.1 Requirements.** *Buildings* that have an *energy target* shall comply with the requirements of Section 9.1.1.1. *Buildings* that do not have an *energy target* shall comply with the requirements of Section 9.1.1.2. All *buildings* ~~larger than~~ ~~5000 ft~~~~2~~ ~~(465 m~~~~2~~~~)~~ shall implement an energy management plan as described in Section 5. The energy management plan shall be integrated into the *building*’s *capital management plan* as described in Section 5. The energy management plan shall include the elements listed in Section 5.

**9.1.1.1 Buildings with Energy Targets.** For *buildings* having *energy targets*, *energy efficiency measures* (*EEMs*) identified from the energy audit shall be implemented in order to meet the *building*’s *energy target*. Develop a written plan for maintaining the *building*’s *energy-use intensity* (*EUI*) at or below the *energy target*.

**Exceptions:**

1. Buildings may demonstrate compliance by implementing all of the EEM’s that achieve the ~~financial~~ investment criteria in Normative Annex X.

2. Implementation of *EEMs* to *campus district heating and/or cooling system(s)* in lieu of EEM’s implemented directly to campus *buildings* is acceptable provided the energy audit demonstrates the energy savings from the *campus district heating and/or cooling system* *EEMs* will be greater than the *EEM*s identified for the buildings. Energy savings shall be measured as a reduction in Btu per year.

**9.1.1.2 Buildings without Energy Targets**  *Buildings* that do not have an *energy target* ~~shall implement the EEMs identified from the energy audit.~~ shall implement all of the EEM’s that achieve the ~~financial~~ investment criteria in Normative Annex X.~~within four years from the application of compliance.~~

Exception: Implementation of *EEM*s to *campus district heating and/or cooling system(s)* in lieu of *EEM*’s implemented directly to campus buildings is acceptable provided the energy audit demonstrates the energy savings from the *campus district heating and/or cooling system* *EEM*s will be greater than the *EEM*s identified for the buildings. Energy savings shall be measured as a reduction in Btu per year.

**~~9.1.1.2.1~~** ~~For nonfederal~~ *~~buildings~~*~~, the~~ *~~optimized bundle~~* ~~of~~ *~~EEMs~~* ~~shall use all~~ *~~EEMs~~* ~~with a combined~~ *~~simple payback~~* ~~less than or equal to five years.~~

**~~Exceptions to 9.1.1.2.1:~~**

1. ~~A life-cycle approach may be used with the~~ *~~optimized bundle~~* ~~consisting of~~ *~~EEMs~~* ~~with an~~ *~~internal rate of return~~* ~~(~~*~~IRR~~*~~) greater than or equal to 20% using BLCC5 with the current BLCC5 defaults. BLCC5 is a free market tool and can be found online.~~
2. *~~EEMs~~* ~~that have~~ *~~simple payback~~* ~~greater than the effective useful life of the equipment shall be excluded from the~~ *~~optimized bundle~~*~~.~~

**~~9.1.1.2.2~~** ~~Federal~~ *~~buildings~~* ~~shall follow the National Institute of Standards and Technology (NIST) Building LifeCycle Cost (BLCC) Program, and the~~ *~~optimized bundle~~* ~~of~~ *~~EEMs~~* ~~shall use all~~ *~~EEMs~~* ~~with a savings to investment ratio (SIR) to meet federal requirements.~~

**9.1.2 Implementing the Energy Management Plan.** The sequence in which measures are implemented shall be evaluated so that *EEMs* take into account the impact of previously implemented *EEMs*.

**9.1.2.1 Training of Building Staff**. An ongoing written training plan shall be implemented. *Building* occupants and staff shall be trained, at a minimum, as established by the operations and maintenance (O&M) program defined in Section 6. **~~Exception:~~** *~~Buildings~~* ~~5000 ft~~~~2~~ ~~(465 m~~~~2~~~~) and less.~~

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**9.1.2.2 Multiple Buildings.** For campuses having multiple *buildings* connected through one billing meter, a multiple *building* plan shall be implemented to coordinate *EEM* implementation among the *buildings* and measurement of the *EUI* of the campus.

**9.1.2.3 Implementation and Commissioning of EEMs.** *EEMs* shall be implemented and commissioned in accordance with the Washington State Energy Code. The *qualified energy auditor* or *qualified person* shall review the commissioning report and certify that the *EEMs* are functioning as intended.

***Informative Note:*** For guidance on commissioning protocols, refer to ASHRAE Guideline 0, *The Commissioning Process*, and ASHRAE Guideline 1.1, *HVAC&R Technical Requirements for the Commissioning Process*.

**9.1.2.4 Energy Efficiency Priorities.** Implementation of *EEMs* shall be prioritized to take advantage of the life cycle of *building* systems and to minimize the disruption of *building* occupants. Delayed implementation shall be evaluated using the methodology included in Normative Appendix X and reported in the energy management plan.

###### 9.2 Verification of Implemented EEMs

**9.2.1 Verification of Implemented EEMs for Buildings with Energy Targets.** Upon implementation of *EEMs*, the *building*’s *EUI* shall be monitored until one full year’s data demonstrate that *energy targets* have been met.

**9.2.2 Verification of Implemented EEMs for Buildings without Energy Targets.** Upon implementation of *EEMs*, the affected end-use systems shall be monitored for one year to verify *EEM* energy savings. The *qualified energy auditor* or *qualified person* shall review the results of the *EEM* energy monitoring and certify that the energy savings of the package of *EEMs* meets or exceeds 75% of the energy savings projected in the energy audit as required. For *buildings* unable to meet the requirements of section 5.2 Building Energy Monitoring, the *qualified energy auditor* or *qualified person* shall provide verification using the methods of the *International Performance Measurement & Verification Protocol11* options A-D.

**9.3 Compliance.** The *qualified person* shall complete the compliance documentation as required in Normative Annex Z.

## 10. RESIDENTIAL BUILDINGS AND DWELLING UNITS

Section 10 , not adopted

## 11. REFERENCES

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ASHRAE.

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International Performance Measurement & Verification Protocol Concepts and Options for Determining Energy and Water Savings Volume I Revised March 2002 DOE/GO-102002-1554. International Performance Measurement & Verification Protocol Committee. [www.ipmvp.org](http://www.ipmvp.org)

*ANSI/ASHRAE/ACCA Standard 211-2018 Standard for Commercial Building Energy Audits*, Section 5.3

**(This is a Normative Annex and is part of this standard.)**

## 

## NORMATIVE ANNEX A ALTERNATIVE ENERGY INTENSITY TARGETS

Normative Annex A, Not adopted

**(This annex is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)**

## INFORMATIVE ANNEX B TIMELINE

Not adopted.

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## NORMATIVE ANNEX C FORMS

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For Washington State Compliance Normative Annex C forms adopted as modified and published in Normative Annex Z.

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## INFORMATIVE ANNEX D OPERATIONS AND MAINTENANCE REQUIREMENTS FOR BUILDING

Informative Annex D adopted without modifications

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## INFORMATIVE ANNEX E ENERGY EFFICIENCY MEASURES

Informative Annex E, Adopted without modifications

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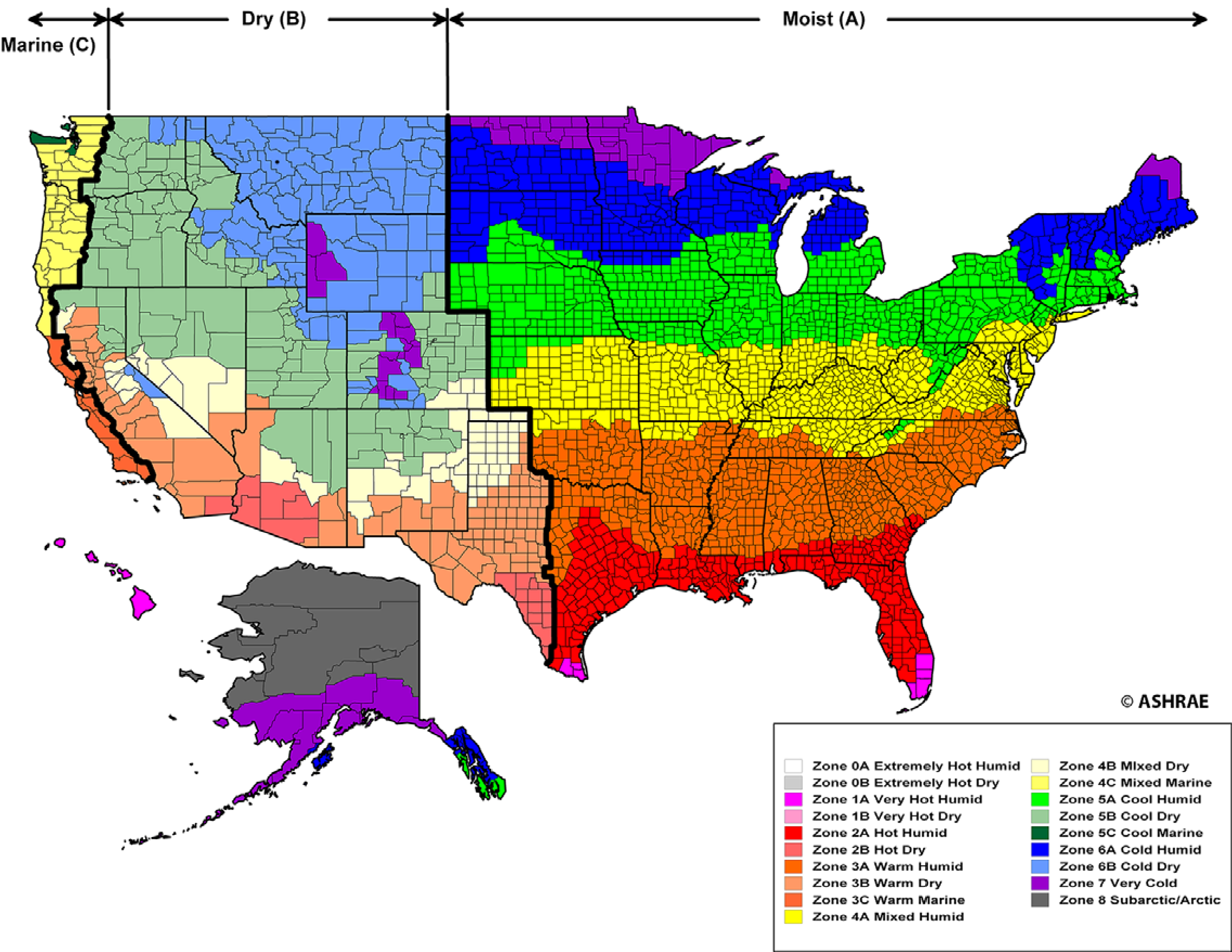
## INFORMATIVE ANNEX F STANDARD 100 COMPLIANCE FLOW CHART

Not adopted

**(This annex is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)**INFORMATIVE ANNEX G CLIMATE ZONES

ANSI/ASHRAE/IES Standard 100-2018

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**Figure G-1 U.S. climate zone map.**

## 

## INFORMATIVE ANNEX H SIMPLE PAYBACK AND LIFE-CYCLE COST ANALYSIS

Retained for reference only. See Normative Annex X for Investment Criteria

#### H1. SIMPLE PAYBACK AND LIFE-CYCLE COST ANALYSIS

**H1.1 General.** For small *buildings* and efficiency improvement measures with a payback period of fewer than five years, *simple payback* is probably adequate to make decisions. For federal *buildings* and for larger *buildings* or *buildings* with longer payback periods, more sophisticated financial analyses are advisable.

Life-cycle costing (LCC) is used to evaluate the total cost of ownership of *energy efficiency measures* (*EEMs*). LCC accounts for factors such as the time value of money, escalation of *energy costs* over time, annual maintenance costs, component replacement costs, and the useful life of the equipment. Other factors that may also be considered include temporary disruption of *building* operations.

**H1.2 Simple Payback.** *Simple payback* can best be described by the following equation:

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*Simple payback* =

Total project cost/Annual changes in cash flow

Annual changes in cash flow typically reflect the energy savings resulting from the *EEMs* under consideration.

**H1.3 Life-Cycle Cost Analysis.** The evaluation tool that yields the most comprehensive analysis is called *life-cycle cost analysis*, which takes all capital, energy, and operating costs into account over the useful life of a facility or *EEM*. Life-cycle cost analysis provides a means to establish the worth of a particular project and is generally required to appropriately allocate limited funding. In line with typical capital investment considerations, the present value of future benefit of investment should be greater than the initial cost.

Life-cycle cost analysis should follow the National Institute of Standards and Technology (NIST) *Life-Cycle Costing Manual* or the Building Life-Cycle Cost (BLCC) computer program. Both can be accessed from the Federal Energy Management Program (FEMP) website.

## INFORMATIVE ANNEX I BUILDING ENERGY MODELING

Adopted without modification.

**(This is a Normative Annex and is part of this standard.)**

## NORMATIVE ANNEX L OPERATIONS AND MAINTENANCE IMPLEMENTATION

***Informative Note:*** This annex is based on Section 4 of ANSI/ASHRAE/ACCA Standard 180-2012, *Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems*, with application to the operations and maintenance (O&M) of all *building* systems.

#### L1. RESPONSIBLE PARTY

The *building owner* shall be responsible for meeting the requirements of this standard. The owner may designate other parties that shall be authorized and contractually obligated to fulfill the owner’s responsibility.

#### L2. OPERATIONS AND MAINTENANCE PROGRAM

Each *building* system shall have an O&M program that, at a minimum, preserves the condition of the system and its elements in a manner that enables the system to provide the intended thermal and visual comfort, energy efficiency, and helps to achieve the intended indoor environmental quality required for the *building*.

At a minimum, the O&M program shall contain an inventory of equipment, ~~and~~ systems and controls to be inspected and maintained and a maintenance plan describing the goals, objectives, and execution of the systems maintenance program.

**L2.1 Inventory of Items to be Inspected and Maintained.** Components of *building* systems that impact the *building*’s performance shall be inventoried. This detailed list shall be used to establish unacceptable system condition indicators, inspection frequencies, and maintenance tasks.

**L2.2 Maintenance Plan Development.** For any given facility, the maintenance plan shall be written and developed specifically to meet the size, design, scope, and complexity of the systems serving that facility. The plan shall describe required tasks, identify the party responsible for performing these tasks, specify the authorizing party, document completion of required tasks, and subsequently monitor the results. The plan shall include all of the following information.

**L2.2.1 Performance Objectives.** Performance objectives shall incorporate thermal and visual comfort, energy efficiency, and indoor environmental quality metrics. Performance objectives shall be based on design intent and operational criteria specific to a particular system. The source of the performance objectives shall be documented.

**L2.2.2 Condition Indicators.** Indicators of unacceptable system and equipment conditions shall be established. These indicators are measurements or observations of conditions that could lead to failure or performance degradation.

**L2.2.3 Inspection and Maintenance Tasks.** Inspection and maintenance tasks for inventoried equipment, ~~and~~ systems and controls shall be established. Inspection shall include the physical assessment of system components and may include measurement of operating parameters and data provided by sensors or a *building* management system (BMS). Maintenance tasks shall include adjustment, service, or replacement of inventoried equipment and systems. Control systems settings, including but not limited to, set points, schedules and sequence of operations shall be inspected and maintained.

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**L2.2.4 Inspection and Maintenance Task Frequencies.** Frequency of inspection and maintenance tasks for inventoried equipment, ~~and~~ systems and controls shall be established. If unacceptable condition indicators or unacceptable performance is found during two successive inspections, the owner or owner’s designated representative shall investigate and analyze possible causes. At a minimum, the following possible causes shall be investigated:

* *Poor field practices.* Review inspection documentation and/or technician execution to ensure maintenance tasks are performed correctly.
* *Insufficient time budgeted for tasks.* Review time budgeted to the technician to ensure that reasonable time has been given to perform the tasks.
* *Component repairs noted/pending/not made*. Inspect documentation to determine that repair or component replacement has been undertaken.
* *Design issues.* Determine whether underlying design issues are causing successive failures
* *Obsolete equipment or components*. Determine whether the equipment or component has been in service beyond its useful life.
* *Conditions outside of the building system causing failure.* Investigate whether water leaks, vandalism, a problem in the *building* envelope, a problem with the power supplied to the *building*, or some other external factor is causing the problem.

Based on the analysis, the inspection frequency or the maintenance task shall be modified to resolve the deficiency.

If acceptable condition indicators or acceptable performance is found during three successive inspections, the inspection frequency for that task may be reduced from the existing frequency. The reduced frequency shall be based on the specific findings and shall be documented.

Frequency may be adjusted for climate related or operational reasons. Each adjusted frequency shall be documented, including the reason for the adjustment.

***Informative Note:*** Examples include the following:

* **Cooling tower shutdown during the winter.** Inspection and maintenance may be suspended during the shutdown period.
* **A new chiller is installed and the old chiller is retained as a backup.** Inspection and maintenance of the backup unit may be adjusted to reflect fewer operating hours.
* **A new lighting fixture and lamp is installed with a much longer life expectancy.** Inspection and *lamp* replacement frequency may be extended to reflect the new device.

**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 oftracking (automated or manual).
3. Remaining useful life of building system components.
4. Sufficient record detail and verification (written or elec-tronic) to demonstrate implementation of the maintenance plan.

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.

**L2.3 Maintenance Plan Authorization and Execution.** Inspection and maintenance tasks shall be performed on an established frequency or upon a documented observance of unacceptable condition. Whether authorized by written or verbal instructions, execution of the task shall be documented and archived for future reference.

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**L2.4 Revision of the Maintenance Program.** The O&M program shall be reviewed, and revision considered, in any of the following situations:

1. Modifications to the *building* that impact *building* system performance objectives have occurred.
2. The *building* function or its use has changed in a way that impacts *building* system performance objectives.
3. *Building* system component changes have occurred.
4. One or more systems are found to be incapable of achieving their performance objectives.
5. Upon documented recommendation from the maintenance provider.

**(This annex is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)**

## INFORMATIVE ANNEX M GUIDANCE ON BUILDING TYPE DEFINITIONS

Informative annex M, not adopted. See building definition footnotes to table 7-1 in Normative Annex Z.

**(This annex is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)**

## 

## INFORMATIVE ANNEX N ADDENDA DESCRIPTION INFORMATION

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Informative Annex N, Not adopted.

**NORMATIVE ANNEX X - INVESTMENT CRITERIA**

**X1. Demonstrating compliance with the investment criteria.** Buildings seeking compliance using the exception to Section 9.1.1.1 or Section 9.1.1.2 shall demonstrate compliance with the financial investment criteria of this Annex. The investment criteria shall be documented using level 2 energy audit and by performing the Life Cycle Cost Analysis (LCCA) as per X2.2.

**X1.1 General guidance on cost and benefits for the base case and alternative case**.

The life cycle cost analysis is a process which compares the base case of the existing building to the alternative case that implements EEMs proposed by the energy audit. Total life cycle cost of each case are produced by the analysis, but the resulting cost and benefits of interest are the incremental life cycle cost difference between each case. Measures and bundles of measures demonstrating positive life cycle cost compared to the base case are to be implemented in accordance with chapter 9.

The base case will include all cost for energy, operations and maintenance and other related cost scheduled in the analysis period. This may include replacement of existing equipment upon failure with code compliant equipment. All these cost are captured in the base case.

The alternate case captures all cost and benefits associated with implementing additional efficiency features. All cost and all benefits of implementing EEMs required by section 9 should be captured by the analysis. All documented cost may be considered.

Extended implementation periods are allowed by this standard. This allows more EEM to be considered at time of failure resulting in much of the cost of implementation being attributed to the base case. This requires including the implementation timing of the measure in the extended compliance period. Ultimately this reduces cost of the alternative case and will likely make EEM that are not cost effective as an early replacement cost effective as a replacement upgrade.

**X2. ENERGY AUDITS AND INVESTMENT CRITERIA PATHWAY**

**X2.1** Buildings qualifying under the investment criteria must complete a LCCA and implement an optimized bundle of energy efficiency measures that provide maximum energy savings without resulting in a savings-to-investment ratio of less than one.

Exception: Building owners may demonstrate compliance with this section by completing the level 2 energy audit and implementing all EEMs determined to have a simple payback that is less than the EEMs expected useful life.

**X2.2** The procedures for developing the investment criteria shall be based on ANSI/ASHRAE/ACCA Standard 211 Section 5.5.2 and Section 5.5.3 Life-Cycle Cost Analysis (LCCA) as modified by section X2. The LCCA shall also follow, and consider the findings of, the Level 2 Audit as defined by ANSI/ASHRAE/ACCA Standard 211 section 5.4.

**X2.3 Investment Criteria Chronological Process**

**X2.3.1 Level 2 Audit.** Evaluate a comprehensive list of individual EEMs using simple payback as a screening criteria. Individual EEMs determined to have a simple payback that is less than the EEMs useful life may be excluded from further consideration.

**X2.3.2 Life Cycle Cost Assessment.** Identify an optimized bundle of EEMs that provides maximum energy savings without resulting in a savings-to-investment ratio of less than one. The optimized bundle of measures shall be implemented based on the schedule established within the Energy Management Plan.

**X2.3.2.1 Phased Implementation.** The LCCA and Energy Management Plan may include phased implementation such that the building owner is not required to replace a system or equipment before the end of the system or equipment's useful life.

**X3. INCLUDED LCCA COSTS AND SAVINGS**

**X3.1** The costs and savings to be included within the life cycle cost analysis shall be based on ANSI/ASHRAE/ACCA Standard 211 Sections 5.4.8.1, 5.5.2 and 5.5.3 as modified by the following;

**3.1.1. Cost for implementation of EEM, as required by section 9.**

**Estimate EEM Costs (based on** Standard 211 Sections 5.4.8)

**5.4.8.1** Estimate the total expected cost of implementation for each practical measure. Cost estimates shall include the following factors, as applicable:

a. Material costs

b. Labor costs, contracted or executed by employees

c. Design fees

d. Construction management, contracted or executed by employees

e. Site-specific installation factors

f. Permits

g. Temporary services

h. Testing, adjusting, and balancing

i. Utility service upgrades

j. Commissioning

k. Taxes

l. Profit

m. Any additional adjustments that significantly impact the cost estimate of the EEM.

***Informative Note:*** Multiple measures affecting the same building systems or end uses may be combined and their costs estimated as a group. Combining costs may improve the cost effectiveness of combined measures.

**Hazardous Material Abatement (based on standard 211, 5.4.8.2).** Estimation of hazardous material abatement costs is not required. If the possible presence of hazardous materials is apparent at the site, either through observation or as reported by others, the possible presence of the hazardous material shall be included in the report (see Section 6.2.5) as potentially affecting health and safety and installation costs.

**Cost and Cost Savings of Recommended EEMs (based on standard 211 section 5.5.2).**

Estimate the initial and recurring costs, energy cost savings, and nonenergy cost savings of each measure and each integrated group of measures. Cost estimates shall either be

a. obtained from a vendor at the quoted price, or

b. based on quotations of similar projects within the last year ~~or~~

c. based on labor cost estimates for employee labor.

~~c. any other cost method as approved by the owner’s representative.~~

**Life-Cycle Cost Analysis (LCCA) (based on standard 211 section 5.5.2)..** LCCA 7,8,9,10 of each recommended EEM shall be conducted for a timeframe that spans, at a minimum, the life of the measure with the longest ~~service~~ useful life and shall include the following:

a. Initial costs (per Section 5.4.8.1).

b. Financing costs.

c. Annual energy costs.

d. Escalation rates as published by the AHJ. ~~citing the source within the energy audit report.~~

e. Discount rates as published by the AHJ. ~~citing the source within the energy audit~~

~~report.~~

f. Tax credits and deductions.

g. Cash incentives, grants, and rebates.

h. Expected periodic replacements.

i. Estimated recurring nonenergy costs (maintenance, etc.), of each measure or set of measures. Such costs include annual maintenance and service labor costs, routine replacement of worn parts, or annual warranty fees from manufacturers.

J. Contingency funds not to exceed 5% of estimated EEM implementation cost.

k.Water & Sewer Savings from EEM. EEMs that provide water and/or wastewater savings shall include the operations and maintenance savings resulting from implementation of the EEM.

**X4. LIFE CYCLE COST ANALYSIS METHODOLOGY, Form AND KEY VARIABLES**

**X4.1** Life-cycle cost analysis completed for buildings qualifying under the investment Criteria shall follow the National Institute of Standards and Technology (NIST) Life-Cycle Costing Manual Handbook 135 except as specified in this standard in Table X4.

**Table X4 Life Cycle Cost Analysis variables independent of NIST Handbook – 135 methodology.**

|  |  |
| --- | --- |
| Public Owner Discount Rate | A fixed annual rate based on the cost of borrowing through the Washington State Treasurer, Certificate of participation programs, the local program and the **State Lease-Purchase Program.** |
| Private Owner Discount Rate | Shall be the published Wall Street Journal Prime Rate for based on the average of the previous 12 months. |
| Financing | Applicants with documented costs of borrowing assuming one hundred percent of the EEM implementation costs are financed at an actual cost of borrowing and stated terms when the property being improved is listed as loan collateral. |
| Rate of Inflation | A fixed annual rate, as published annually by the WA State Office of Financial Management. |
| Fuel Escalation Rate | Based on the most recent edition of *NIST Handbook – 135 Annual Supplement - Fuel Escalation Rates.* |
| Study Period | Equal to the useful life of the longest-lived EEM within an optimized bundle. (STD 211, 5.5.3) |

**X4.2 Publication of Analysis Variables.** The AHJ shall update the contents of Table X4 on an annual basis and incorporate the results in updates to the Normative Annex X – Investment Criteria ~~Level 3 economic Evaluation~~ form specified in Normative Annex Z.

**Table of Contents - Normative Annex Z, Washington State Reporting Requirements**

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**Washington State Reporting Requirements for Building Owners**

Z3. General Compliance

Z4. Documentation of Compliance with the Standard

Z5. Violations, assessment of administrative penalties, mitigation and review of penalty decisions

**Normative Annex C- Forms, as amended for the Washington state building energy performance standard**

**Table 7-1, Table 7-2a, and Table 7-3**

**~~Appendix~~ Normative Annex Z, Washington State Reporting Requirements**

**Building owner notifications by the AHJ and building owner response.**

**Z1. Notification to building owners of covered commercial buildings by the AHJ**

**Z1.1** Based on records obtained from each county assessor and other available information sources, the *AHJ* must create a database of *covered commercial buildings* and *building owners* required to comply with the standard established in accordance with this section. The database will include buildings and *building complexes* presumed to meet the definition of *covered commercial building* and *multifamily buildings* greater than 50,000 square feet in floor area.

**Z1.1.1.** The database will contain information about buildings that may be subject to compliance, their owners, and information about multifamily residential buildings eligible for incentives. The database will also contain information ~~necessary and sufficient for~~ to assist tracking and reporting on building owner compliance, and incentive application and distribution. Commerce will create a method for tracking building owner notification responses. Each building or building complex will be assigned a unique building identifier.

**Z1.2** By July 1, 2021, the ~~department~~ AHJ must provide the owners of covered buildings with notification of compliance requirements. Notifications will be mailed to the mailing addresses county assessors have on file.

**Z1.3** Failure by the *AHJ* to notify the *building owner* does not release the *building owner* of the legal obligation to comply with this law.

**Z1.4** By July 1, 2021, the ~~department~~ AHJ must provide notifications to the building owners of multifamily residential building where the floor area exceeds fifty thousand gross square feet, excluding the parking garage area.

**Z2. *Building owner* response to notifications.**

**Z2.1 Correction of errors.** *Building owners* are responsible for reviewing the property and building information provided by the AHJ through notification, including ~~This may include~~ but ~~is~~ not limited to *building* or *building complex* ownership details, *gross ~~conditioned~~ floor area*, ~~occupancy type or~~ and other information as identified by the *building owner*.

**Z2.1.2** Building owners who are notified in error may submit a correction form to the AHJ. The correction form will be used to document gross floor area (conditioned and unconditioned) and/or building occupancy type. Building owners that submit the correction form must also submit two types of documentation to support their application.

~~For the purpose of correction errors in notifications, building owners may choose to respond to the AHJ by completing the form Documentation of Compliance through Exemption, primarily to document building gross floor area or building occupancy type exemptions. This does not substitute for completing this the form Documentation of Compliance through exemptions required for compliance.~~

**Washington State Reporting Requirements for Building Owners**

**Z3. General Compliance.** The building owner of a *covered commercial building* must report ~~the building owner's~~ compliance with the standard to the ~~department~~AHJ in accordance with the schedule established under **section Z3.1** and every five years thereafter. For each reporting date, the building owner must submit documentation to demonstrate that:

(a) The weather normalized energy use intensity of the *covered commercial building* measured in the previous calendar year is less than or equal to the energy use intensity target (Buildings that Meet Their Energy Targets); or

(b) The *covered commercial building* has received conditional compliance from the department based on energy efficiency actions prescribed by the standard; or

(c) The *covered commercial building* is exempt from the standard by demonstrating that the building meets one of the criteria for an exemption.

**Z3.1 Initial Compliance Schedule.** A building owner of a *covered commercial building* must meet the following initial reporting schedule for complying with the standard established under this section:

(a) For a building with more than two hundred twenty thousand gross square feet, June 1, 2026;

(b) For a building with more than ninety thousand gross square feet but less than two hundred twenty thousand and one gross square feet, June 1, 2027; and

(c) For a building with more than fifty thousand gross square feet but less than ninety thousand and one square feet, June 1, 2028.

**Z3.1.2 Application for conditional compliance.** Applications for conditional compliance must be submitted to the AHJ 180 days prior to the compliance date to receive conditional compliance approval prior to the compliance date.

**Z3.1.3 Application for exemption~~s~~.** Applications for exemption must be submitted to the AHJ 180 days prior to the compliance date to receive exemption approval prior to the compliance date.

**Z4. Documentation of Compliance with the Standard**

Documentation of compliance shall be submitted to the AHJ demonstrating the building owner has complied with the Standard through submission of documentation in accordance with section Z4.1, Z4.2, Z4.3, Z4.4 or Z4.5. Additional requirements for continued reporting may be required as specified in Z4.6.

**Z4.1 Documentation of Compliance through Exemption.** *Building owners* seeking approval of ~~an application for~~ exemption shall submit to the AHJ ~~the~~form G ~~Documentation of Compliance through Exemption~~Application for Exemption Certificate documenting the following:

1.The*~~building owners~~* ~~shall demonstrate they meet the condition for exemption by submitting evidence to the AHJ that their~~ building qualifies for one of the exemptions listed in Z4.1(2), and ~~this Section 4~~.

(a) Compliance with the exemption must be verified by the owner based on the building as it is anticipated to be occupied and operating on the compliance date.

(b) Applications for exemptions may be submitted no sooner than 1 years prior to the compliance date and submitted to the AHJ no later than 180 days prior to the compliance date.

(c) Exemptions certificates are only valid for the current review cycle.

2. Covered commercial buildings eligible for exemption from the standards meet one of the following criteria:

(a) The building did not have a certificate of occupancy or temporary certificate of occupancy for ~~all~~ a consecutive twelve (12) month~~s~~ period within two years of ~~the calendar year prior to the building owner~~ compliance date. ~~schedule established under Z Washington State Reporting Requirements for Building Owners Z1.2 Compliance Schedule~~.

(b) The building did not have an average physical occupancy for at least fifty percent of the *conditioned floor area* throughout a consecutive twelve (12) month period within two years prior to ~~calendar year prior to the building~~ ~~owner~~ the compliance date. ~~schedule established under Normative Annex Z Washington State Reporting Requirements for~~ *~~building owners~~* ~~Z1.2 Compliance Schedule.~~

(c) The sum of the *building’*s *gross floor area* minus *unconditioned* and *semi-conditioned spaces*, as defined in the Washington State Energy Code, is less than fifty thousand square feet;

(d) More than 50% of the *gross floor area* of the building is manufacturing or other industrial purposes, as defined under the following use designations of the Washington State edition of the International Building Code:

(i) Factory group F; or

(ii) High hazard group H;

(e) The building is an *agricultural structure*;

(f) The building is vacant due to renovation or pending demolition; or

(g) The building meets at least one of the following conditions of financial hardship:

(i) The building had arrears of property taxes or water or wastewater charges that resulted in the building's inclusion, within the prior two years, on a city's or county's annual tax lien sale list;

(ii) The building has a court appointed receiver in control of the asset due to financial distress;

(iii) The building is owned by a financial institution through default by a borrower;

(iv) The building has been acquired by a deed in lieu of foreclosure within the previous twenty-four months;

(v) The building has a senior mortgage subject to a notice of default;

(vi) The building owner has an immediate and heavy financial need which cannot be satisfied from other reasonable available resources and which are caused by events that are beyond their control

(h). *more recently built buildings* that obtained an original occupancy permit no less than three years prior to the compliance date specified in Z3.1.

3. After documents have been submitted and reviewed, the AHJ will send notification of approval or denial.

(a) If the exemption is approved the AHJ shall notify the applicant stating the application has been approved and update the AHJ records for the building.

(b) If the exemption is denied the AHJ shall notify the applicant stating the application has been denied and update the AHJ records for the building.

4. When an application for exemption is denied the *building owner* must proceed with the process to demonstrate compliance with one of the compliance options in Washington State Reporting Requirements for Building Owners Z4.3-Z4.5.

**Z4.2 Buildings that meet the EUIt.** *Building owners* must provide the following documentation to verify that the building *weather normalized* EUI is less than the building EUIt and that the energy management plan is complete and being implemented.

* Form A
* Form B
* Form C

**Z4.3 Buildings that will meet the building investment criteria prior to the compliance date.** Building owners must provide the following documentation to verify that the building has implemented all EEMs that meet the cost effectiveness criteria resulting from the energy audit and economic evaluation criteria from Normative Annex X. The energy management plan must be completed and implemented and all EEMs must be installed and commissioned prior to the compliance date.

* Form A
* Form B
* Form C, except buildings ~~without comprehensive energy metering.~~ unable to meet section 5.2 Building Energy Monitoring.
* Energy Audit Report
  + Level 2 Energy Audit
  + Normative Annex X – Investment Criteria Form.
  + ~~Level 3, Economic Evaluation of EEMs~~

**Z4.4 Buildings that will meet the EUIt through conditional compliance.** *Building owners* must provide the following documentation to verify that the building *weather normalized* EUI is projected to be less than the building EUIt at the end of the measurement and verification period and that the energy management plan is complete and being implemented. EEMs required to meet the EUIt must be installed and commissioned prior to the compliance date. Should the building fail to meet the EUI after the measurement and verification requirements required in section 4.3.3.3 Verification of Compliance have been completed, the building shall implement additional EEMs to and demonstrate the building EUI is less than the EUIt.

* Form A
* Form B
* Form C
* Energy Audit Report
  + Level 2 Energy Audit
  + Normative Annex X – Investment Criteria Form
  + ~~Level 3, Economic Evaluation of EEMs~~
* Continued Reporting Until Completion as specified in **Section Z4.6**

**Z4.5 Buildings that will meet the building investment criteria through conditional compliance.** Building owners must provide the following documentation to verify that the building has implemented all EEMs that meet the cost effectiveness criteria resulting from the energy audit and economic evaluation criteria from Normative Annex X. The energy management plan must be completed and implemented and all EEMs must be installed and commissioned prior to the compliance date. Should the building fail to meet the EUI after the measurement and verification requirements required in 4.3.3.3 Verification of Compliance have been completed, the building shall implement additional EEMs to meet the projected target.

* Form A
* Form B
* Form C, except buildings unable to meet section 5.2 Building Energy Monitoring.~~without comprehensive energy metering~~
* Energy Audit Report
  + Level 2 Energy Audit
  + Normative Annex X – Investment Criteria Form
  + ~~Level 3, Economic Evaluation of EEMs~~
* Continued Reporting Until Completion as specified in **Section Z4.6**

**Z 4.5.1 Phased Implementation:** The implementation plan may include phased implementation such that the *building owner* is not required to replace a system or equipment before the end of the system or equipment's useful life. System or equipment fitting this description shall be included in the energy audit and Normative Annex X – Investment Criteria ~~investment criteria~~ submission with a schedule for replacement.

**Z4.6 Continued Reporting Until Completion.** Continued reporting is required as specified in sections Z4.6.1 and Z4.6.2 until completion when; a) measurement and verification extends one year or more beyond the compliance date, or b) implementation is extended phased implementation.

**Z4.6.1 Annual Reporting:** The following up to date reports shall be submitted to the AHJ annually, (date specific).

* Form A
* Form B
* Form C, except buildings unable to meet section 5.2 Building Energy Monitoring.~~without comprehensive energy metering~~

**Z4.6.2 Completion Reporting:** The following up to date reports shall be submitted to the AHJ when all conditions of compliance have been verified and documented.

* Form A
* Form B
* Form C, except buildings unable to meet section 5.2 Building Energy Monitoring.

~~without comprehensive energy metering.~~

# Reporting Requirements Summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Z 4.2 Meet EUIt | Z 4.3 Meet Investment Criteria | Z 4.4 Meet EUIt Conditional Compliance | Z 4.5 Meet Investment Criteria, Conditional Compliance |
|  | By Compliance Date | By compliance Date | 180 Days Prior to Compliance Date | 180 Days Prior to Compliance Date |
| Form A. | x | x | x | x |
| Form B. | x | x | x | x |
| Form C. | x | x | x | x |
| Energy Audit Report |  | x | x | x |
| Level 2 Energy Audit |  | x | x | x |
| Normative Annex X – Investment Criteria Form  ~~Level 3, Economic Evaluation of EEMs~~ |  | x | x | x |
|  |  |  |  |  |
| Annual Update |  |  |  |  |
| Form A. |  |  | x | x |
| Form B. |  |  | x | x |
| Form C. |  |  | x | x |
|  |  |  |  |  |
| Completion Report |  |  |  |  |
| Form A. |  |  | x | x |
| Form B. |  |  | x | x |
| Form C. |  |  | x | x |

**Z5 ~~Notice of~~ Violations, assessment of administrative penalties, mitigation and review of penalty decisions. ~~of Non-Compliance, Fines, Mitigation, and Appeals.~~**

**Z5.1 Authorization.** The AHJ is authorized to impose administrative penalties upon building owners for failing to submit documentation demonstrating compliance with the requirements of RCW 19.27A.210.

Failure to submit documentation demonstrating compliance by the scheduled reporting date will result in progressive penalties by legal notice.

~~Failure to submit documentation demonstrating compliance with the standard by the scheduled reporting date will result in progressive penalties by legal notice. The AHJ is authorized to impose an administrative penalty upon a building owner for failing to submit documentation demonstrating compliance with the requirements of this section. The penalty may not exceed an amount equal to five thousand dollars plus an amount based on the duration of any continuing violation. The additional amount for a continuing violation may not exceed a daily amount equal to one dollar per year per gross square foot of floor area. The department may by rule increase the maximum penalty rates to adjust for the effects of inflation. To respond to a notice a building owner may submit an appeal requesting mitigation of the penalty.~~

**Z5.2 Notice of ~~Non-Compliance~~ Violation and Opportunity to Correct (First Notice).**

The department may issue a Notice of Violation and Opportunity to Correct (“NOVC”) when a building owner has failed to submit documentation that demonstrates compliance with RCW 19.27A.210 by the scheduled reporting date.

A NOVC may be issued for any of the following reasons:

(i) Failure to submit a compliance report in the form and manner prescribed by the AHJ;

(ii) Failure to meet an energy use intensity target or failure to receive conditional compliance approval;

(iii) Failure to provide accurate reporting consistent with the requirements of the standard; and

(iv) Failure to provide a valid exemption certificate.

The AHJ will identify in the NOVC which section(s) of law, code, or the standard for which the *building owner* has failed to demonstrate compliance.

The NOVC will specify the time by which the building owner must cure the violation by submitting documentation that demonstrates compliance with the identified section(s) of law, code, or the standard. The AHJ will give the building owner at least seven (7) calendar days to submit such documentation.

If sufficient documentation is not submitted by the date specified in the NOVC, the AHJ will issue a Notice of Violation and Intent to Assess Administrative Penalties (“NOVI”) and the *building owner* will be subject to administrative penalties.

~~Building owners of non-complying covered buildings shall respond to a Notice of Non-Compliance within thirty (30) calendar days from the date of notice. Administrative Penalties as described in Section Z4.5 will be assessed. Failure to respond will result in Section Z4.3 Notice of Violation.~~

~~To respond to a Notice of Non-Compliance, a building owner shall submit an application for exemption in accordance with Section Z2.1 if applicable, a Preliminary Mitigation Plan in accordance with Z4.6.2.1, or an intent to pay the maximum administrative penalty.~~

**Z5.3 Notice of Violation and Intent to Assess Administrative Penalties (Second Notice).**

If a *building owner* fails to respond to a NOVC by submitting documentation demonstrating compliance by the date specified in the NOVC, the AHJ will issue a Notice of Violation and Intent to Assess Administrative Penalties (“NOVI”).

The AHJ will identify in the NOVI which section(s) of law, code, or the standard for which the building owner has failed to demonstrate compliance. The NOVI will also include a calculation of penalties that the AHJ intends to assess.

Building owners must respond to a NOVI within thirty (30) days by either:

(a) submitting an application for exemption in accordance with Section Z4.1 if applicable;

(b) submitting a Mitigation Plan in accordance with Z5.7.2.1;

(c) submitting its intent to pay the penalties by using the form provided by the AHJ; or

(d) submitting a request for an administrative proceeding to challenge or mitigate the penalty.

If the *building owner* does not timely request a hearing or submit an application for exemption, the *building owner* waives its right to a hearing and the Director or their designee may issue a final order assessing the penalties described in the NOVI. If the *building owner* has submitted a mitigation plan, the final order will only assess penalties from the scheduled compliance date until the date of an Approval of Compliance or Conditional Compliance.

Building owners who submit an application for exemption that is denied may request a hearing by submitting a request for a hearing within thirty (30) days of issuance of the decision denying its application for exemption. If the building owner does not request a hearing within thirty (30) days, the building owner waives its right to a hearing and the Director or their designee may issue a final order assessing the penalties described in the NOVI.

~~Building owners of non-complying covered buildings shall respond to a Notice of Violation within sixty (60) calendar days from the date of Z4.2 Notice of Non-Compliance. Administrative Penalties as described in Section Z4.5 will be assessed. Failure to respond will result in Section Z4.4 Notice of Penalty Enforcement.~~

~~To respond to a Notice of Violation a building owner shall submit application for exemption in accordance with Section Z2.1 if applicable, a Preliminary Mitigation Plan in accordance with Z4.6.2.1, or an intent to pay the maximum administrative penalty.~~

**~~Z4.4 Notice of Penalty Enforcement (Final Notice).~~**

~~Building owners of non-complying covered buildings shall respond to a Notice of Penalty within one hundred twenty (120) calendar days from the date of Z4.2 Notice of Non-Compliance. Failure to respond will result in a fine assessed in accordance with Section Z4.5 Administrative Penalties. To respond to a Notice of Penalty Enforcement, a building owner shall pay the penalty, or submit a request for administrative appeal. To request an administrative appeal see Section Z4.7 Administrative Appeals.~~

**Z5.4 Assessment of Administrative Penalties.**

Failure to submit documentation demonstrating compliance with the standard by the ~~scheduled reporting~~ date specified in a NOVC will result in ~~Penalty Enforcement with~~ ~~assessed~~ the issuance of a NOVI and the assessment of administrative penalties. Penalties will be assessed ~~after the~~ based on the buildings’ scheduled compliance deadline and based on the following:

1. For *building owners* subject to a NOVI who respond by timely submitting a mitigation plan, daily ~~fines are~~ penalties will be assessed from the scheduled compliance date to the date of Approval of Compliance or Conditional Compliance ~~and are~~. The penalty will be assessed at an amount not to exceed 30% of five thousand dollars plus a daily amount equal to $0.20 per gross square foot of floor area per year.
2. For *building owners* subject to a NOVI who have not timely responded, penalties will be assessed at an amount not to exceed five thousand dollars plus one dollar per gross square foot of floor area per year. ~~Failure to respond to Notice of Penalty Enforcement within sixty (60) calendar days will result in maximum penalty enforcement equal to five thousand dollars plus one dollar per gross square foot of floor area per year. When paid within one hundred and eighty days (180) the maximum penalty shall not exceed fines assessed over one year.~~

The AHJ may by rule increase the penalty rates to adjust for the effects of inflation.

When paid within one hundred and eighty (180) days of the date of a final order assessing penalties, the maximum penalty shall not exceed fines assessed over one year.

Interest will accrue on civil penalties pursuant to RCW 43.17.240 if and when the debt becomes past due.

~~Failure to submit documentation demonstrating compliance with the standard by the scheduled reporting date will result in Penalty Enforcement with assessed penalties. The department may by rule increase the penalty rates to adjust for the effects of inflation. Penalties will be assessed after the buildings scheduled compliance deadline based on the following;~~

~~(a)For building owners who respond by submitting a mitigation plan daily fines are assessed from the scheduled compliance date to the date of approval of Compliance or Conditional Compliance and are assessed at an amount not to exceed 30% of five thousand dollars plus a daily amount equal to $0.20 per gross square foot of floor area per year.~~

~~(b) Failure to respond to Notice of Penalty Enforcement within sixty (60) calendar days will result in maximum penalty enforcement equal to five thousand dollars plus one dollar per gross square foot of floor area per year. When paid within one hundred and eighty days (180) the maximum penalty shall not exceed fines assessed over one year.~~

~~A check or money order payable in U.S. funds to the Washington State Department of Commerce can be mailed to:~~

~~Washington State Department of Commerce~~

~~Re: Clean Buildings Initiative, Energy Division~~

~~P.O. Box 42525~~

~~Olympia, WA 98504-2525~~

**Z5.5 Due date and collection of penalties.**

Penalties shall become due and payable on the later of:

(a) Thirty days after receipt of the final order imposing the penalty; or

(b) The date specified in the final order imposing the penalty.

If a penalty has not been paid by the due date, the AHJ may assign the debt to a collection agency as authorized by RCW 19.16.500 or take other action to pursue collection as authorized by law. If referred to a collection agency, the AHJ may add a reasonable fee, payable by the debtor, to the outstanding debt for the collection agency fee.

**Z5.6 Payment of Administrative Penalties.**

A check or money order payable in U.S. funds to the Washington State Department of Commerce can be mailed to:

Washington State Department of Commerce

Re: Clean Buildings Initiative, Energy Division

P.O. Box 42525

Olympia, WA 98504-2525

**Z5.7 Non-Compliance Mitigation Plan.** Owners of covered commercial buildings that are out of compliance by the scheduled compliance date and have not corrected the violation in a timely manner may reduce possible penalties by demonstrating that they are taking action to gain compliance.

**Z5.7.1. ~~Request of~~ Intent to Mitigate.** To begin the process of mitigating non compliance, a *b~~B~~uilding owner* must ~~shall~~ submit to the AHJ ~~a request of~~ an intent to mitigate non-compliance ~~using the format~~ on the form provided by the AHJ. ~~after receipt of Z4.2 Notice of Non-Compliance or Z4.3 Notice of Violation to avoid continued notification or immediate enforcement of the maximum Administrative Penalty in accordance with Z4.5.~~*Building owners* must submit the Intent to Mitigate Non-Compliance form by selecting one of the following actions within thirty (30) days of the date of a NOVI to avoid immediate issuance of maximum penalty.

(a) intent to submit an application for exemption in accordance with Section Z4.1 if applicable;

(b) intent to meet compliance by meeting EUIt or conditional compliance requirements;

(c) intent to pay the penalties by using the form provided by the department; or

(d) intent to request for an administrative proceeding to challenge the penalty.

**~~Z4.6.2 Mitigation Plan.~~** ~~The mitigation plan shall be submitted to the AHJ in the format provided by the AHJ and is subject to administrative penalties in accordance with Z4.5.~~

**Z5.7.2.1 ~~Preliminary~~ Mitigation Plan.** The building owner shall submit one of the following as applicable to the building;

(a) When demonstrating compliance with Section Z4.2, forms ~~A, B, and C.~~

(b) When demonstrating compliance with Sections Z4.4 or Z4.5~~, forms A, B, and C and a plan for audits, economic evaluation, and completion as documented using Energy Audit Report, Level 2 Energy Audit, Level 3, Economic Evaluation of EEMs and Continued Reporting Until Completion as specified in Section 2.6.~~

**Z5.7.2.2 Mitigation Completion.** To demonstrate completion, the *building owner* shall complete all of the requirements of this standard and submit documentation as required by section Z4.4 or Z4.5. Upon completion, the AHJ shall issue ~~the~~a final ~~penalty~~order assessing the reduced penalty ~~ed~~ as specified by Z5.4(a).

**Z5.8 Administrative ~~Appeals~~Hearings.**

**Z5.8.1 Requesting a hearing.**

A *building owner* may request an administrative hearing after receiving an NOVI or after the denial of its application for an exemption by submitting a request within thirty (30) days of the date of a NOVI or the denial of a timely application for exemption. All requests must be made in writing and filed at the address specified on the NOVI. For convenience, the AHJ will attach a form titled Request for Hearing to the NOVI that may be used to request an administrative hearing.

~~Notice of Penalty Enforcement may be appealed. All appeals will be reviewed by the AHJ.~~

~~Administrative review appeals shall be submitted in a form specified by AHJ within sixty (60) calendar days from the date Z4.2. Notice of Non-Compliance (First Notice).~~

Requests for hearing must be accompanied by the following:

~~The following should be included when appealing a Notice of Penalty Enforcement:~~

(a) Washington State Building ID

(b) Submit Annex Z Forms A, B, and C

**Z5.8.2 Hearing process.**

The AHJ may refer matters to the Office of Administrative Hearings (“OAH”). Administrative hearings will be conducted in accordance with the Administrative Procedures Act, Ch. 34.05 WAC, the Model Rules of Procedure, Ch. 10-08 WAC, and the procedural rules adopted in this chapter. In the case of a conflict between the model rules of procedure and the procedural rules adopted in this section, the procedural rules adopted in this section take precedence.

**Z5.8.3 Initial orders to become final orders**. Initial orders issued by the presiding officer will become final without further agency action unless, within twenty (20) days (a) the Director determines that the initial order should be reviewed, or (b) a party to the proceeding files a petition for administrative review of the initial order. Upon occurrence of either event, notice shall be given to all parties to the proceeding.

**Z5.8.4. Judicial review.**

A final order entered pursuant to this section is subject to judicial review pursuant to RCW 34.05.510 through 34.05.598.

**Z5.8.5 Collected Penalties.** The AHJ will deposit all penalties collected and received by the department under this section into the low-income weatherization and structural rehabilitation assistance account created in RCW 70.164.030.

~~Following the AHJ Administrative Review, all denied appeals have the right to appeal to the Administrative Law Judge (ALJ) according to WAC 388-02-0010. Appellants must request in a hearing to the Office of Administrative hearings (OAH), which is a state agency.~~

~~A hearing means a proceeding before an ALJ or review judge that gives a party an opportunity to be heard in disputes about department programs. \*Chapter 34.05 RCW, the Administrative Procedure Act, Title 388 of the Washington Administrative Code (WAC), chapter 10-08 WAC.~~

**Normative Annex C- Forms, as amended for the Washington state building energy performance standard**

The following section replaces NORMATIVE ANNEX C FORMS in Standard 100. *Building owners* are required to submit the forms A-C and the required supporting information to demonstrate compliance with the standard. The *AHJ* will make these forms available in an electronic format for submission to the *AHJ*.

**Form A—Compliance with Standard 100**

1. Building Identification
   1. WA State Building ID
   2. County
   3. County parcel number (s)
2. Portfolio Manager Property ID number
3. Property Name
4. Parent Property Name
5. Address 1 (Street)
6. Address 2
7. City
8. State
9. Postal Code
10. Contact Information:
11. *Building Owner* Name(s)
12. Contact Name
13. Address 1 (Street)
14. Address 2
15. City
16. State
17. Postal Code
18. Telephone Number
19. Email Address

*3. Qualified person*

* 1. *Qualified person* nameAddress 1 (Street)
  2. Address 2
  3. City
  4. State
  5. Postal Code
  6. Telephone Number
  7. Email Address
     1. Licensed, certified *(select all that apply)*
     2. Licensure or Certifying Authority

*4. energy manager* (if different than the qualified person)

* 1. Energy Manager Name
  2. Address 1 (Street)
  3. Address 2
  4. City
  5. State/Province
  6. Postal Code
  7. Country
  8. Telephone Number
  9. Email Address

2). This compliance report is for:

* 1. Building that meets the EUIt.
  2. Building that meets the building investment criteria prior to the compliance date.
  3. Building that will meet the EUIt through conditional compliance.
  4. Building that will meet the building investment criteria through conditional compliance.
  5. Annual Reporting
  6. Completion Reporting

1. Summary data
   1. *Energy utilization index target* (EUIt) (KBtu/ft2‧yr) based on completed Form B.
   2. Measured Site EUI (kBtu/ft²) for the compliance year for this building based on Form C
   3. Measured *Weather Normalized Site EUI* (kBtu/ft²) for the compliance year based on Form C.
   4. List the months/year of the collected data (mm/yyyy – mm/yyyy) for the compliance year for this building from Form C.
   5. Buildings unable to comply with section 5.2 Building Energy Monitoring and complete Form C shall provide a reason statement.
2. Have the energy management requirements of Section 5 been met? [ ] Yes [ ] No
   1. Upload energy management plan as specified by the AHJ.
3. Have the operation and maintenance requirements of Section 6 been met? [ ] Yes [ ] No
   1. Upload operation and maintenance implementation documentation as specified by the AHJ.
4. Date the ~~Level I or II~~ audit and economic evaluation was completed (N/A if none required).
   1. Upload audit reports as specified by Form D.
5. Have all EEMs required by Section 8 been implemented? [ ] Yes [ ] No
6. Have the requirements of Section 9 been completed? [ ] Yes [ ] No
7. We state that this building complies with ANSI/ASHRAE/IES Standard 100 as amended by the AHJ to conform with RCW 19.27A.210:
   1. Signature of *building owner*:
      1. Date:
   2. Signature of *qualified person*:
      1. Date:
   3. Signature of *energy manager*:
      1. Date:
   4. Signature of *authority having jurisdiction*:
      1. Conditional or Final Compliance
      2. Date:

**Form B—Building Activity and Energy Target (EUIt)**

**Complete Form B with the Following Information on the form provided by the AHJ**

~~a. A building identifier (optional) and a building address, including city, state, country, and zip code.~~

General Building Information:

WA State Building ID

County

County parcel number (s)

Portfolio Manager Property ID number

Property Name

Parent Property Name

Address 1 (Street)

Address 2

City

State

Postal Code

b. List the building location climate zone, 4C or 5B. Determine the climate zone using ASHRAE climate zone as found on the map in Informative Annex G. Buildings located in Climate Zone 6 shall use climate zone 5B.

~~The ASHRAE climate zone as found on the map in Infor-mative Annex G.~~

c. The gross floor area in square feet ~~(square metres)~~ shall be reported as defined in Section 3.

d. If entire building is single activity/type not listed in Table 7-1, it should be listed as “building without target” on Form A. List “Energy target” as “N/A” on Form B and Form B is considered complete.

e. Fill in fraction of gross floor area (A)i for each activity. For single-activity buildings this is 1.0.

f. Fill in the operating shifts normalization factor (S)i from Table 7-3 for each activity that has an area entered from Step 6.

g. Fill in the activity energy target (EUIt1)i from Table 7-2 (or table from AHJ) for each activity that has an area entered from Step 6.

h. Calculate weighted space EUI target (A × S × EUIt1)i for each activity that has an area entered from Step 6.

i. Add up fraction of floor area and enter sum in “Total fraction of floor area with target,” and add up all weighted space EUI targets and enter sum as the “Energy target” on Forms B and A.

j. If more than 50% of gross floor area has no target, it should be listed as “building without target” on Form A. List “Energy target” as “N/A” on Form B.

For single-activity *buildings* this is 1.0.

**Form C—Energy-Use intensity Calculations**

Energy Use Intensity Calculations shall be reported via the U.S. EPA’s ENERGY STAR Portfolio Manager ([www.energystar.gov/benchmark](http://www.energystar.gov/benchmark)). The *energy manager* is responsible for creating Energy Star Portfolio manager record for each building.

**Exception:** buildings unable to comply with section 5.2 Building Energy Monitoring shall demonstrate compliance through ~~without comprehensive energy metering demonstrating compliance with~~ sections Z4.3 or Z4.5.

The ENERGY STAR Portfolio Manager building record shall be identical to the building activity/type, fraction floor area, operating shifts (hours of operation) and gross floor area of the building as reported on Form B. All inputs shall be up to date prior to reporting as required in section Z4 and annually as required in section 5.1.2.3 Annual updates of the *net energy* use and *EUI*.

Prior to submitting reports run the Energy Star Portfolio Manager Data Quality Checker and make all corrections required to complete the report.

The *energy manager* shall use the EPA’s ENERGY STAR Portfolio Manager Share Properties feature and share the property data with the AHJ by enabling the Read Only Access and Exchange Data feature.

For each report submitted under section **Z4,** the *energy manager* shall create and submit a report documenting the required data fields listed (below) for the reporting period. This shall be submitted using the Washington State Report specified in energy star portfolio manager.

Report fields shall include:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Metric Group** | **User Interface Metric Name** | **Unit of Measure** | **Link to Glossary Description** | Draft Proposal |
| Property ID Numbers | Portfolio Manager Property ID | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyId) | X |
| Property ID Numbers | Portfolio Manager Parent Property ID | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyId) | X |
| Property Information | Property Name | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyId) | X |
| Property Information | Parent Property Name | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyId) | X |
| Property Information | Address 1 | n/a |  | X |
| Property Information | Address 2 | n/a |  | X |
| Property Information | City | n/a |  | X |
| Property Information | County | n/a |  | X |
| Property Information | State/Province | n/a |  | X |
| Property Information | Postal Code | n/a |  | X |
| Property Information | Primary Property Type - Self Selected | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyType) | X |
| Property Information | Primary Property Type - EPA Calculated | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyType) | X |
| Property Information | List of All Property Use Types at Property | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | National Median Reference Property Type | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Property Information | Property GFA - Self-Reported (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyGFASelfReported) | X |
| Property Information | Property GFA - EPA Calculated (Buildings and Parking) (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GrossFloorArea) | X |
| Property Information | Property GFA - EPA Calculated (Buildings) (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GrossFloorArea) | X |
| Property Information | Property GFA - EPA Calculated (Parking) (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GrossFloorArea) | X |
| Property Information | Largest Property Use Type | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | Largest Property Use Type - Gross Floor Area (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | 2nd Largest Property Use Type | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | 2nd Largest Property Use - Gross Floor Area (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | 3rd Largest Property Use Type | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | 3rd Largest Property Use Type - Gross Floor Area (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyTypesAtYourProperty) | X |
| Property Information | Year Built | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#YearBuilt) | X |
| Property Information | Number of Buildings | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NumberOfBuildings) |  |
| Property Information | Occupancy | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#Occupancy) | X |
| Property Information | Property Notes | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#Notes) | X |
| Property Information | Property Data Administrator | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyDataAdministrator) | X |
| Property Information | Property Data Administrator - Email | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#PropertyDataAdministrator) | X |
| Property Information | Service and Product Provider | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SPP) |  |
| Property Information | Last Modified Date - Property | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#LastModifiedDateProperty) | X |
| Property Information | Last Modified Date - Electric Meters | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#LastModifiedDateElectricMeters) | X |
| Property Information | Last Modified Date - Gas Meters | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#LastModifiedDateGasMeters) | X |
| Property Information | Last Modified Date - Non-Electric Non-Gas Energy Meters | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#LastModifiedDateNonElectricNonGasEnergyMeters) | X |
| Property Information | Metered Areas (Energy) | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#MeteredAreas) |  |
| Property Information | Metered Areas (Water) | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#MeteredAreas) |  |
| Property Information | Irrigated Area (ft²) | ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#IrrigatedArea) |  |
| Property Information | Last Modified Date - Water Meters | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#LastModifiedDateWaterMeters) |  |
| Property ID Numbers | Local Standard ID(s) WA State Building Standard | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#StandardId) | X |
| Property Use Details | Data Center - Energy Estimates Applied | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#DataCenterApplyEnergyEstimates) | x |
| Energy Use by Fuel Source | Electricity Use - Monthly (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#ElectricityUseMonthly) |  |
| Energy Use by Fuel Source | Natural Gas Use - Monthly (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NaturalGasUseMonthly) |  |
| Energy Use by Fuel Source | Electricity Use - Grid Purchase and Generated from Onsite Renewable Systems (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Electricity Use - Grid Purchase (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Electricity Use – Generated from Onsite Renewable Systems and Used Onsite (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Natural Gas Use (therms) | therms | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Fuel Oil #1 Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Fuel Oil #2 Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Fuel Oil #4 Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Fuel Oil #5 & 6 Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Diesel #2 Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Kerosene Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Propane Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | District Steam Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | District Hot Water Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | District Chilled Water Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Coal - Anthracite Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Coal - Bituminous Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Coke Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Wood Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Other Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Data Accuracy | Default Values | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#DefaultDataFlag) | x |
| Data Accuracy | Temporary Values | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#TemporaryDataFlag) | x |
| Data Accuracy | Estimated Data Flag - Electricity (Grid Purchase) | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EstimatedDataFlag) | x |
| Data Accuracy | Estimated Data Flag - Natural Gas | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EstimatedDataFlag) | x |
| Data Accuracy | Alert - Data Center does not have an IT Meter | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Gross Floor Area is 0 ft2 | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Property has no uses | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Data Quality Checker - Date Run | n/a |  | x |
| Data Accuracy | Data Quality Checker Run? | n/a |  | x |
| Data Accuracy | Alert - Energy Meter has less than 12 full calendar months of data | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Energy Meter has gaps | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Energy Meter has overlaps | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Energy - No meters selected for metrics | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Alert - Energy Meter has single entry more than 65 days | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) | x |
| Data Accuracy | Estimated Values - Energy | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EstimatedDataFlag) | x |
| Data Accuracy | Estimated Values - Water | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EstimatedDataFlag) |  |
| Data Accuracy | Alert - Water Meter has less than 12 full calendar months of data | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) |  |
| Data Accuracy | Alert - Water Meter has gaps | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) |  |
| Data Accuracy | Alert - Water Meter has overlaps | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) |  |
| Data Accuracy | Alert - Water - No meters selected for metrics | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AlertMetrics) |  |
| Energy Performance Metrics | ENERGY STAR Score | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyStarScore) | x |
| Energy Performance Metrics | National Median Site Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | National Median Source Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | National Median Site EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | National Median Source EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | % Difference from National Median Site EUI | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | % Difference from National Median Source EUI | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#NationalMedian) |  |
| Energy Performance Metrics | Site Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Source Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SourceEnergy) |  |
| Energy Performance Metrics | Site EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Source EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SourceEnergy) |  |
| Energy Performance Metrics | Weather Normalized Site Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Weather Normalized Source Energy Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SourceEnergy) |  |
| Energy Performance Metrics | Weather Normalized Site EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Weather Normalized Source EUI (kBtu/ft²) | kBtu/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SourceEnergy) |  |
| Energy Performance Metrics | Weather Normalized Site Electricity (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Weather Normalized Site Electricity Intensity (kWh/ft²) | kWh/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SourceEnergy) | x |
| Energy Performance Metrics | Weather Normalized Site Natural Gas Use (therms) | therms | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Weather Normalized Site Natural Gas Intensity (therms/ft²) | therms/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#SiteEnergy) | x |
| Energy Performance Metrics | Energy Current Date | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#MetricDate) | x |
| Water Performance Metrics | Water Current Date | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#MetricDate) |  |
| Water Performance Metrics | Water Use (All Water Sources) (kgal) | kgal | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WaterUse) |  |
| Water Performance Metrics | Water Use Intensity (All Water Sources) (gal/ft²) | gal/ft² | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WaterUse) |  |
| Water Performance Metrics | Indoor Water Use (All Water Sources) (kgal) | kgal | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WaterUse) |  |
| Water Performance Metrics | Outdoor Water Use (All Water Sources) (kgal) | kgal | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WaterUse) |  |
| Water Performance Metrics | Water Score (Multifamily Only) | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WaterScore) |  |
| Greenhouse Gas Emissions | Total GHG Emissions (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GHGemissions) |  |
| Greenhouse Gas Emissions | Direct GHG Emissions (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GHGemissions) |  |
| Greenhouse Gas Emissions | Indirect GHG Emissions (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GHGemissions) |  |
| Renewable Energy & Green Power | Electricity Use – Generated from Onsite Renewable Systems (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) | x |
| Renewable Energy & Green Power | Electricity Use – Generated from Onsite Renewable Systems and Exported (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) | x |
| Renewable Energy & Green Power | Green Power - Onsite (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) |  |
| Renewable Energy & Green Power | Green Power - Offsite (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) |  |
| Renewable Energy & Green Power | Avoided Emissions - Onsite Green Power (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AvoidedAndNetEmissions) |  |
| Renewable Energy & Green Power | Avoided Emissions - Offsite Green Power (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AvoidedAndNetEmissions) |  |
| ENERGY STAR Certification | ENERGY STAR Certification - Year(s) Certified | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyStarCertificationYearsCertified) |  |
| ENERGY STAR Certification | ENERGY STAR Certification - Eligibility | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyStarCertificationEligibility) |  |
| Energy Use by Fuel Source | Electricity Use - Grid Purchase and Generated from Onsite Renewable Systems (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Electricity Use - Grid Purchase (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Electricity Use – Generated from Onsite Renewable Systems and Used Onsite (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Energy Use by Fuel Source | Natural Gas Use (kBtu) | kBtu | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#EnergyUseByType) | x |
| Renewable Energy & Green Power | Percent of Total Electricity Generated from Onsite Renewable Systems | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) | x |
| Renewable Energy & Green Power | Percent of RECs Retained | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) |  |
| Renewable Energy & Green Power | Green Power - Onsite and Offsite (kWh) | kWh | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) |  |
| Renewable Energy & Green Power | Percent of Electricity that is Green Power | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#GreenPower) |  |
| Renewable Energy & Green Power | Avoided Emissions - Onsite and Offsite Green Power (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AvoidedAndNetEmissions) |  |
| Renewable Energy & Green Power | Net Emissions (Metric Tons CO2e) | Metric Tons CO2e | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#AvoidedAndNetEmissions) |  |
| Property Information | Cooling Degree Days (CDD) (°F) | °F | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#DegreeDays) | x |
| Property Information | Heating Degree Days (HDD) (°F) | °F | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#DegreeDays) | x |
| Property Information | Weather Station Name | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WeatherStation) | x |
| Property Information | Weather Station ID | n/a | [Glossary Definition](https://portfoliomanager.energystar.gov/pm/glossary#WeatherStation) |  |

**Forms D and E.**

From D and E shall be deleted and replaced with the following form or an equivalent form as required by the AHJ.

**Audit Level 2 Form (adopted from ASHRAE Standard 211 NORMATIVE ANNEX C REPORTING FORMS)**

The forms located at <http://www.ashrae.org/211-2018> are mandatory reporting requirements for Level 1 and Level 2 energy audits. The qualified energy auditor shall provide these as part of any compliant energy audit. The forms report basic building characteristics, energy use, and recommended energy efficiency measures in a standardized format. To comply with the standard, reports must use the data and the format shown on these forms. Alternatively, the qualified energy auditor may report information on these forms via direct electronic data submission through a standard electronic format approved by the AHJ, provided that the electronic format includes all of the data in these forms at the same level of accuracy and completeness. The template is provided in Excel for convenience but can be in any file format. The Level 2 forms, along with the additional information specified in worksheet “Asset Score Inputs,” provide the minimum data required to determine a Building Energy Asset Score using the DOE’s online Energy Asset Score tool. <https://buildingenergyscore.energy.gov/> However, inclusion of the asset score value itself is not required for compliance with the standard. Fields that are required to obtain an asset score evaluation are marked with an asterisk (\*).

**~~Audit Level 3~~ Annex X Economic Evaluation Tool**

Building owners shall complete and submit the following documentation when demonstrating compliance with sections Washington State Reporting Requirements for Building Owners sections Z4.3, Z4.4, Z4.5.

An economic evaluation tool capable of providing life cycle cost assessment compliant the NIST Standard 135 shall be developed and implemented by the AHJ.

Example tool to be modified:

[Life cycle cost tool](https://ofm.wa.gov/sites/default/files/public/budget/forms/LifeCycleCostTool.xlsb) - Aug. 2019 (Excel)

* [Life cycle cost tool instructions](https://ofm.wa.gov/sites/default/files/public/budget/instructions/capital/LCCT_Instructions.pdf)
* [Introduction to the life cycle cost tool webinars](https://vimeo.com/album/3598715)
* [Life cycle cost tool training webinars](https://vimeo.com/album/3462314)

**Form F. Documentation of a building of historic significance.**

**Energy efficiency measure exemptions for historic buildings.** No individual energy efficiency measure identified by energy efficiency audits need to be implemented if it would compromise the historical integrity of a building or part of a building. Building owners seeking this exception shall provide the following documentation. Certified historic buildings are not exempt from the other requirements of this standard.

**Plan for Compliance.** The owner of a qualifying historic building shall have the plan for compliance with RCW 19.27A.210 evaluated by a qualified historic preservationist, as defined in the Code of Federal Regulations, 36 CFR Part 61, identifying any energy efficiency requirement that may compromise the historic integrity of the building or part of the building. Any element of the plan identified to compromise the historic integrity of the building or part of the building shall be omitted from the compliance plan. Evidence of this evaluation must be submitted to the AHJ for approval.

**Documentation of a historic building.** Building owners must provide documentation to the AHJ that proves its historic identification or eligibility. Valid documentation from any existing programs listed below is acceptable.

Examples of existing programs that verify historic property include:

(A) The National Register of Historic Places;

(B) The Washington Heritage Register;

(C) Properties that are identified by the department of archaeology and historic preservation (DAHP) to be eligible for listing in either one of these registers; and

(D) Properties which are listed in a local register of historic places.

(E) Or other documentation approved by the AHJ.

**Form G. Application for Exemption Certificate**

~~1.~~~~The~~ *~~building owners~~* ~~shall that their building qualifies for one of the exemptions listed in this section using.~~

~~(a) Compliance with the exemption must be verified by the owner based on the building as it is anticipated to be occupied and operating on the compliance date.~~

~~(b) Applications for exemptions may be submitted no sooner than 1 years prior to the compliance date and submitted to the AHJ no later than 180 days prior to the compliance date.~~

~~(c) Exemptions certificates are only valid for the current review cycle.~~

~~2. Covered commercial buildings eligible for exemption from the standards meet the following criteria:~~

~~(a) The building did not have a certificate of occupancy or temporary certificate of occupancy for all twelve months of the calendar year prior to the building owner compliance schedule established under Z Washington State Reporting Requirements for Building Owners Z1.2 Initial Compliance Schedule.~~

~~(b) The building did not have an average physical occupancy for at least fifty percent of the~~ *~~conditioned floor area~~* ~~throughout a 12 consecutive month period within two years prior to the building owner compliance schedule established under Normative Annex Z Washington State Reporting Requirements for~~ *~~building owners~~* ~~Z1.2 Initial Compliance Schedule.~~

~~(c) The sum of the~~ *~~building~~*~~s~~ *~~gross floor area~~* ~~minus~~ *~~unconditioned~~* ~~and~~ *~~semi-conditioned spaces~~*~~, as defined in the Washington State Energy Code, is less than fifty thousand square feet;~~

~~(d) More than 50% of the~~ *~~gross floor area~~* ~~of the building is manufacturing or other industrial purposes, as defined under the following use designations of the Washington State edition of the International Building Code:~~

~~(A) Factory group F; or~~

~~(B) High hazard group H;~~

~~(e) The building is an~~ *~~agricultural structure~~*~~;~~

~~(f) The building is vacant due to renovation or pending demolition; or~~

~~(g) The building meets at least one of the following conditions of financial hardship:~~

~~(i) The building had arrears of property taxes or water or wastewater charges that resulted in the building's inclusion, within the prior two years, on a city's or county's annual tax lien sale list;~~

~~(ii) The building has a court appointed receiver in control of the asset due to financial distress;~~

~~(iii) The building is owned by a financial institution through default by a borrower;~~

~~(iv) The building has been acquired by a deed in lieu of foreclosure within the previous twenty-four months;~~

~~(v) The building has a senior mortgage subject to a notice of default;~~

~~(vi) The building owner has an immediate and heavy financial need which cannot be satisfied from other reasonable available resources and which are caused by events that are beyond their control~~

**~~(h).~~ *~~more recently built buildings~~* ~~that obtained an original occupancy permit no less than three years prior to the compliance date specified in Z.~~**

~~(3)~~ ~~To aA~~pply for an exemption certificate by submitting the following documentation to the *building owner* in the form specified by the AHJ. The application must include:

Building Identification

* 1. WA State Building ID
  2. County
  3. County parcel number (s)

1. Portfolio Manager Property ID number
2. Property Name
3. Parent Property Name
4. Address 1 (Street)
5. Address 2
6. City
7. State
8. Postal Code

Contact Information:

1. *Building Owner* Name(s)
2. Contact Name
3. Address 1 (Street)
4. Address 2
5. City
6. State
7. Postal Code
8. Telephone Number
9. Email Address

Building information:

a. Primary building activity from table 7-1, or a description of the non-listed building type.

b. Building gross floor area

c. Building gross conditioned floor area

Reason for exemption, based on exemptions listed in section Z4.1(2).

A list all of documents enclosed and any facts in support of this application. Provide at least two of the acceptable documents listed below.

(a) municipal or county records

(b) documents from a qualified person

(c) construction permit

(d) certificate of Occupancy or application for certificate of occupancy.

(e) demolition permit

(f) financial statements such as statement of assets; liabilities, capital, and surplus, statement of revenue and expenses; or statement of case flow.

(g) a letter from the building owner stating facts and explaining financial hardships

(h). more recently built buildings that obtained an original occupancy permit no less than three years prior to the compliance date specified in Z.

(i) or approved documents by the AHJ

Signature and statement of *building owner* stating that the authorized representative of the building, affirm and attest to the accuracy, truthfulness and completeness of the statements of material fact provided in this form.

~~(4) After documents have been submitted and reviewed, the AHJ will send notification of approval or denial.~~

~~(a) If the exemption is approved the AHJ shall notify the applicant stating the application has been approved and update the AHJ records for the building.~~

~~(b) If the exemption is denied the AHJ shall notify the applicant stating the application has been denied and update the AHJ records for the building.~~

~~(5) When an application for exemption is denied the~~ *~~building owner~~* ~~must proceed with the process to demonstrate compliance with one of the compliance options in Washington State Reporting Requirements for Building Owners Z2.3-Z2.5.~~

**Z7 Section 7 tables as modified by Washington State**

**Table 7-1 Commercial and Residential Building Types/Activities**

**Table 7-2a Building Activity Site Energy Targets (EUI*t*1) (I-P Units)**

**Table 7-3 Building Operating Shifts Normalization Factor**