

BPS 004 – Calculating Energy Use Intensity

BPS Background

The Oregon Building Performance Standard (BPS) is a mandatory program that aims to bring awareness about building energy use to owners of existing commercial buildings, and to reduce energy use and utility costs for less efficient buildings. Buildings that must comply with this program are divided into two tiers, based on Gross Floor Area and property type. The table below shows the two tiers covered by the BPS program and gives compliance dates.

Oregon Building Performance Standard Tiers

Gross Floor Area (excluding parking garages)	Property Type	Tier / Compliance Reporting Date
From 35,000 up to 90,000 square feet	Nonresidential, Hotel, or Motel	Tier 1 / June 1, 2030
From 90,000 up to 200,000 square feet	Nonresidential, Hotel, or Motel	Tier 1 / June 1, 2029
200,000 square feet and greater	Nonresidential, Hotel, or Motel	Tier 1 / June 1, 2028
From 20,000 up to 35,000 square feet	Nonresidential, Hotel, or Motel	Tier 2 / July 1, 2028
35,000 square feet and greater	Multifamily Residential, Hospital, School, Dormitory, University Building	Tier 2 / July 1, 2028

Tier 2 buildings are required to **report Energy Use Intensity and Energy Use Intensity Targets** by their July 1, 2028, compliance date.

Tier 1 buildings are required to **report Energy Use Intensity and Energy Use Intensity Targets** and submit operation & maintenance and energy management plans by their compliance date. They must also **meet EUI** or demonstrate an effort to **reduce energy use**. Tier 1 buildings that expect to exceed their energy target must report at least **180 days before** their compliance date, perform **energy audits** and **life cycle cost assessments**, and develop a plan to implement **cost-effective energy efficiency measures** by their June 1, 2028/2029/2030, compliance dates.

This guidance gives more details about how to find Energy Use Intensity. The table at the end of this guidance lists Energy Use Intensity target values, Operating Factors and other important information about each building activity type.

Additional guidance documents for BPS are available on the BPS website:

<https://tinyurl.com/ODOE-BPS>.

- [BPS 000 – BPS Basics](#)
- [BPS 001 – Tier 1 and Tier 2 Compliance](#)
- [BPS 002 – Exemptions and Historic Buildings](#)
- [BPS 003 – Finding Energy Use Intensity Target](#)
- [BPS 005 – Energy Audits and Life Cycle Cost Assessments](#)
- [BPS 006 – Energy Professionals](#)
- [BPS 007 – Operations and Maintenance Programs](#)
- [BPS 008 – Energy Management Plans](#)
- [BPS 009 – Grouped Buildings or Campuses](#)
- [BPS 010 – Incentives and Penalties](#)

BPS Definitions for Energy Calculations

Before calculating Energy Use Intensity, here are some terms to understand.

Building Activity Type: classification for the function or business that takes place within a building. There are 113 different building activity types in the Oregon Building Performance Standard corresponding to property types in U.S. EPA ENERGY STAR Portfolio Manager.

Net Energy Use: the sum of metered and bulk fuel energy that enters a building minus the sum of metered energy that leaves the building, including all fuels used or generated in the building, most commonly:

- Electricity, natural gas, fuel oil, and propane use.
- Steam, hot water, or chilled water use from district heating and cooling systems.
- Electricity generated from renewable sources.

Gross Floor Area (GROSS FLOOR AREA): the space of a building measured from its exterior enclosing walls, not including parking garage area, and:

- Including all offices, lobbies, restrooms, equipment storage areas, mechanical rooms, break rooms, elevator shafts, and conditioned basements.
- Not including outside bays or docks, exterior spaces, covered walkways, open roofed-over areas, outdoor play courts, porches, exterior terraces or steps, roof overhangs, balconies, decks, patios, pipe trenches, interstitial plenum space between floors, driveways, parking garages, or surface parking areas.
- Including specific areas for each building activity type listed in Table 7-4 of the Oregon Building Performance Standard and the table at the end of this guidance.

Energy Use Intensity (EUI): a measurement of energy use that normalizes building energy use relative to building size, calculated by dividing the total net energy the building consumes in one year by the building gross floor area, reported in units of thousands of British thermal units per square foot per year (kBtu/ft²-yr).

Weather Normalized Energy Use Intensity (WN-EUI): a measurement of energy use that normalizes building energy use relative to building size and corrects for deviations in weather from typical weather at the building location, reported in units of a thousand British thermal units per square foot per year (kBtu/ft²-yr).

Energy Use Intensity Determination & Reporting

Calculating Energy Use Intensity is an integral part of the BPS compliance process for Tier 1 and Tier 2 buildings.

EUI values must be determined and reported by energy professionals, either a **Qualified Person for Tier 1 buildings** or a **Qualified Energy Manager for Tier 2 buildings**.

EUI values must also be calculated using the U.S. EPA's [ENERGY STAR Portfolio Manager](#) (ESPM), a free online tool that is widely used to benchmark building energy use. ESPM automatically calculates EUI and WN-EUI based on information about building energy use, gross floor area, and local weather information.

Note that Energy Use Intensity (EUI) must be determined using 12 continuous months of a building's net energy use during the period no more than 24 months before the **Form C: Calculation of Energy Use Intensity (EUI)** submission date. EUI and Weather Normalized-EUI are submitted to the OR BPS program via **Form C: Calculation of Energy Use Intensity (EUI)** as an automatic output from ESPM. **Form C** must be submitted on or before the building's compliance date.

It is recommended that **EUI be found as soon as possible**. This is especially important for Tier 1 buildings, since they may have more requirements to fulfill before the compliance date if they do not meet their energy target. Although Tier 2 buildings have no requirement to meet an energy target, finding EUI sooner is still recommended since it is a first step for identifying and fixing costly energy problems.

If a Tier 1 building will not meet its energy target by the compliance date, meaning that Energy Use Intensity is greater than the Energy Use Intensity target, building owners must take more action:

- File **Form A: Application for OR BPS Compliance** or **Form G: Grouped Buildings Application for OR BPS Compliance** at least **180 days before** the compliance date
- Complete **Energy Audit** and **Life Cycle Cost Assessment (LCCA)** before compliance date
- Choose one of the following options for implementing cost-effective energy efficiency measures from the audit and Life Cycle Cost Assessment:
 - Compliance Option: Cost-effective energy efficiency measures (EEMs) are installed far enough in advance to demonstrate that the building meets its energy target (EUI is lower than EUI_t) by the compliance date.
 - Conditional Compliance Option: Cost-effective measures from the Energy Audit and Life Cycle Cost Assessment are implemented by the compliance date and the building **IS**

expected to reach its energy target, but more time is needed to collect energy data for confirmation.

- Investment Criteria Option: Measures from the Energy Audit and Life Cycle Cost Assessment are implemented by the compliance date, but the building is **NOT** expected to ever reach its energy target, or EUI cannot be determined due to unavailability of energy use data.
- Investment Criteria through Conditional Compliance – Measures from the Energy Audit or Life Cycle Cost Assessment are **NOT** implemented before the compliance date because they are being phased in over time.

In some cases, buildings are not able to calculate EUI at all because energy use data is missing, inaccessible, or unavailable. **Buildings that cannot calculate EUI are treated as though they don't meet their energy target.** That means they must perform Energy Audits and Life Cycle Cost Assessments, then implement cost-effective energy efficiency measures.

There are also special compliance procedures for buildings with **Nontarget** spaces:

- If **less than 10 percent** of building Gross Floor Area is Nontarget and the **Nontarget space is sub-metered**, then the building can be **split into separate Target and Nontarget areas** that report and act on their energy information separately. In this situation, an EUI need not be calculated or submitted on Form C for the Nontarget area. The Target portion of the building's EUI is found without including energy use and GROSS FLOOR AREA of the Nontarget portion.
- If **at least 10 percent but less than 50 percent** of building Gross Floor Area is Nontarget and the **Nontarget space is sub-metered**, the building can be **split into Target and Nontarget areas** that report and act on their energy information separately. The Nontarget part of the building proceeds as though it doesn't meet target, so its EUI is determined and submitted 180 days before the compliance date. In the Target portion of the building, EUI is found without including energy use and Gross Floor Area of the Nontarget portion.
- If **less than 50 percent** of a building Gross Floor Area is Nontarget and that **Nontarget space is NOT sub-metered**, the entire building is expected to meet the EUI of the Target areas. The building EUI and EUI are evaluated including the energy use and Gross Floor Area of the Nontarget portion, then work proceeds from there depending on compliance status.
- If **more than 50 percent** of building Gross Floor Area is Nontarget, then the entire building is considered a **Nontarget Building** even if the Nontarget areas are sub-metered. The building must proceed as though it doesn't meet target and comply

through the Investment Criteria pathway. This means that EUI is determined and submitted 180 days before the compliance date.

Note that Nontarget buildings and Nontarget spaces that must report EUI must also perform an energy audit and life cycle cost assessment before the compliance date, then create and follow a plan to implement cost-effective energy efficiency measures.

It is important to plan ahead how to categorize buildings and collect the energy data needed to calculate Energy Use Intensity.

Collecting Building Energy Data

Note: EUI and WN-EUI must be calculated from 12 continuous months of a building's net energy use during the period no more than 24 months before the **Form C: Calculation of Energy Use Intensity (EUI)** submission date. Building energy usage data can come from many sources, including monthly utility bills, intermittent fuel delivery invoices, submeters that measure electricity use or electricity generation, or flow meters for district systems.

However, there may be some barriers to obtaining energy data. Here are some scenarios that buildings may face:

- If the **building owner pays all utility bills** for the whole building, they can gather saved electricity and fuel bills for at least 12 to 24 months before the **Form C** submission date and use it to calculate EUI. More data is better for assessing the effects of weather on building energy use, so collect up to 60 months of energy use data unless your utility cannot provide it.
- If a **multifamily** building has at **least five tenants** paying bills to a large utility (PGE, Pacific Power (PacifiCorp), EWEB, Avista, Cascade Natural Gas and/or NW Natural), referred to as a “qualified utility” in the Oregon BPS, then the building owner can request aggregated electricity and fuel bills for the last 60 months from the utility. Utilities may take up to 60 days to fill data aggregation requests, so building owners and energy professionals should plan accordingly. If a building is not in a qualified utility territory, building owners are encouraged to work with tenants and their utilities together to obtain whole-building energy data.
- If a **non-residential** building has **at least three tenants** paying bills to a large utility (PGE, Pacific Power (PacifiCorp), EWEB, Avista, Cascade Natural Gas and/or NW Natural), referred to as a “qualified utility” in the BPS, the building owner can request aggregated electricity and fuel bills for the last 60 months from the utility. Utilities may take up to 60 days to fill data aggregation requests, so building owners and energy professionals should plan accordingly. If a building is not in a qualified utility territory, building owners are encouraged to work with tenants and their utilities together to obtain whole-building energy data.
- If the building has **tenants paying all or some of the utility bills**, and do not meet the data aggregation criteria, the building owner can try to obtain electricity and heating fuel bills from tenants for 12 to 24 months before the **Form C** submission date. This would mean getting copies of utility bills from tenants, or asking tenants to sign a

release form obtained from the utility that allows the utility to share tenant billing information with the building owner.

Again, more data is better, so collect up to 60 months of energy use records. Note: it is best not to rely on tenant records, but to get actual paper or electronic copies of bills to ensure correct values are used.

- If a **building does not have individual metering** but is included on overall meters for a group of buildings, energy reporting can be done at the group level. This is often the case with district heating or cooling systems, but electricity and natural gas are also sometimes delivered to a group of buildings without any submetering of individual buildings. Again, while only 12 to 24 months of the most recent energy use data are needed, going back 60 months is recommended if possible.
- If the building owner has **installed electricity and fuel meters** for the entire building, they can gather electricity and fuel use data for 12 to 24 months before the **Form C** submission date and use it to calculate EUI. If all other methods of obtaining a building's energy data have failed, it may be strategic for building owners to install their own energy meters as soon as possible, especially if they expect the building to meet its energy target and want to avoid the work of audits, Life Cycle Cost Assessments and measure implementation.

It is important to point out again that **if a complete set of at least 12 continuous months of energy use data is not available for calculating EUI, then the building is treated as though it does not meet its energy target**. This means an Energy Audit and Life Cycle Cost Assessment of the building must be done and cost-effective energy efficiency measures must be installed.

Using Energy Star Portfolio Manager

BPS requires owners of Tier 1 and Tier 2 covered buildings to benchmark their building's net energy use using the U.S. EPA's free tool [ENERGY STAR® Portfolio Manager®](#) (ESPM). ESPM is the industry standard for benchmarking buildings and tracking their energy data and is offered at no cost to consumers. This section provides an overview of the how to use ESPM to calculate Energy Use Intensity for BPS.

Note: both Tier 1 and Tier 2 buildings are required to calculate EUI. However, some buildings are unable to calculate EUI due to lack of access to their energy use information. Owners and energy professionals for these buildings can skip filling out **Form C: Calculation of Energy Use Intensity**, but must provide reasoning for not being able to calculate EUI on **Form A** or **Form G**, and will be responsible for other forms.

Before working within ESPM, gather all the information about the building. Most of this information is already included on **Form A: Application for OR BPS Compliance** or **Form G: Grouped Building Application for OR BPS Compliance** and on **Form B: Building Activity and Energy Use Intensity Target (EUI_t)** and its supporting calculator. The Building Activity Types used to find EUI_t correspond to Property Types in ESPM. Also have the building's energy use information on hand, collected as described earlier in this guidance.

1. Create an ESPM account for the building, if it doesn't already have one. ODOE recommends creating a general account for the building or its ownership or energy management organization and documenting log-in information so that it is not specific to one user and account information is easily transferrable in the event of staff turnover or new building ownership. There are many free online trainings, resources, and instructional materials offered by the U.S. EPA to familiarize users with the ESPM program.
2. Enter building information. Start with information about the building location, property type, and floor area. If a set of Grouped Buildings is being analyzed, in ESPM's **Your Property's Buildings** section select **More than one** and specify the number of grouped buildings on the property. The building or buildings can be set up to align with the building activity types and areas used in the EUI_t calculation, although this is not required since the benchmarking feature of ESPM is not used for OR BPS. *Note: there are various inputs to ESPM that are used for ESPM benchmarking and Energy Score functions that aren't needed to comply with OR BPS but may be desired by your organization.*

3. Enter energy data. This can be entered in various ways: either manually, or via electronic files that are correctly formatted, or via automatic data transfer from utility providers.
4. Direct ESPM to calculate EUI and WN-EUI. ESPM's ability to easily calculate EUI, and especially WN-EUI, are the important features needed by OR BPS. ESPM pulls in local weather data and analyzes how a building responds to varying weather conditions to normalize its energy use and determine WN-EUI. If more historical data is entered (up to 60 months if available), then the WN-EUI adjustment becomes more reliable. BPS requires that EUI and WN-EUI be calculated from 12 months of continuous energy use data, gathered from the 24 months before the **Form C** submittal date. The WN-EUI value from ESPM is then compared to the building's EUI_{It}. The energy professional doing the analysis can choose which 12-month period gives the best WN-EUI value.
5. Compare WN-EUI to the building's EUI_{It}. If WN-EUI is less than EUI_{It}, the building has met its energy target. This is informational and must be reported for Tier 2 buildings. For Tier 1 buildings meeting the energy target is an important goal. If Tier 1 buildings meet target, they are not required to perform energy audits or life cycle cost assessments or implement cost-effective energy efficiency measures.
6. Share output from ESPM with the BPS Portal as the required **Form C: Calculation of Energy Use Intensity**. This is done by making a new contact with the BPS Portal, setting up a read-only connection for this building with the Portal, then exchanging data for the months and years underlying the EUI and WN-EUI values to be documented. Specific information about sharing **Form C** with the OR BPS Portal will be produced once the Portal is live (*mid-2026*).

This document is not a guide for using ESPM. Visit the [ENERGY STAR Training page](#) or watch [Portfolio Manager 101](#) for more detailed instructions