

The U.S. Licensed Professional's Guide:

Understanding the Roles and Requirements for Verifying Commercial Building Applications for ENERGY STAR® Certification

Update Log

September 2021

- Clarification that sensors are an acceptable way to verify IAQ measurements
- Explanation of new audits focusing on the “Use Details” portion of the full audit.
- Explanation that the frequency of audits an LP is selected for is based on application quality of previously submitted applications. LPs that have high accuracy rates and few errors on submitted applications will be audited less frequently. LPs that continue to have errors on submitted applications, especially errors in energy data and on data which impacts the ENERGY STAR score will be audited more frequently.
- Clarification that electronic signatures in the PDF application for certification are acceptable for both the LP and the Signatory

October 2020

- Addition of link and description for LP Quiz
- Updates to FAQ link URLs to accommodate new ENERGY STAR helpdesk service platform
- Updates to formatting of IEQ Measurement Form

March 2020

- Updates to reflect the requirement that a property be occupied and operating as normal during the site visit in order to reflect accurate indoor environmental quality measurements
- Minor text corrections

February 2020

- Addition of Update Log
- Clarification of occupancy requirements

December 2019

- A detailed description of the requirements for site visits and the expectations of what should occur during these visits
- Additional, simpler verification methods for outside air ventilation, using Addenda B and Z from the latest edition of ASHRAE 62.1
- Clarification that copies of energy bills for any property applying for certification may be requested to verify accurate energy data reporting
- Updates to Appendix A, the Indoor Environmental Quality Measurement Form to clarify the simpler verification methods for outside air ventilation

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Introduction

Energy use in commercial buildings accounts for nearly 20% of U.S. greenhouse gas emissions at a cost of more than \$100 billion per year. Through ENERGY STAR®, the United States Environmental Protection Agency (EPA) works with owners and managers of our nation's commercial buildings to help them strategically manage their facilities' energy performance, cut energy use, lower utility bills, and reduce greenhouse gas emissions. An important part of this effort is EPA's recognition of top performance.

More than a dozen types of commercial buildings, including office buildings, K-12 schools, and retail stores, can earn EPA's mark of superior energy efficiency – the ENERGY STAR, which is recognized by 90% of American consumers. Commercial buildings that earn the ENERGY STAR must perform in the top 25% of buildings nationwide compared to similar buildings, and their performance must be verified by a licensed professional.

To determine a building's energy performance and how it compares to similar buildings, organizations and individuals can use EPA's free-online benchmarking tool, Portfolio Manager® (www.energystar.gov/benchmark). Once all the necessary data is input into Portfolio Manager, the benchmarked building can receive an ENERGY STAR score if it meets certain eligibility requirements. The 1-to-100 ENERGY STAR score accounts for differences in operating conditions, regional weather, and other important considerations. Buildings that receive an energy performance score of 75 or higher are eligible for ENERGY STAR certification.

Purpose of this Guide

Once a building has achieved an ENERGY STAR score of 75 or higher in Portfolio Manager, a representative of the building (typically the building owner, manager, or building engineer) may apply for the ENERGY STAR. As part of the application process, the applicant must have a Licensed Professional (LP) sign and stamp their ENERGY STAR Application for Certification validating that all the submitted information is correct.

The role of the LP is to verify that all energy use is accounted for accurately, the building characteristics have been properly reported, and indoor environmental quality has not been compromised in pursuit of energy conservation. By verifying the completeness and correctness of the application submitted to the EPA, the LP helps to ensure the integrity of the ENERGY STAR certification.

The purpose of this guide is to provide LPs with step-by-step instructions for U.S. buildings on how to correctly verify the reported data and assess indoor environmental quality. LPs verifying buildings in Canada should reference Natural Resource Canada's LP Guide: <https://www.nrcan.gc.ca/energy-efficiency/energy-star-canada/energy-star-buildings/canadian-licensed-professionals-guide-energy-star-certification/20523>

Symbol Key

Below are symbols used in this guide to draw attention to important points.



The post-it note icon is used for tips within the written text of the document.



This check mark indicates items that the LP should be verifying on the application.



This icon describes information to not include in the application.

Eligibility Criteria for Individuals Verifying Applications for ENERGY STAR

For the purpose of verifying applications for ENERGY STAR certification, EPA requires an LP to meet the following qualifications:

- Possess a current license in any U.S. State, Canadian Province, or territory of the U.S. or Canada as a Professional Engineer (PE) or Registered Architect (RA) and be in good standing;

Note: the LP does not need to hold a PE or RA license in the state in which the building they are verifying is located.

- Have a working knowledge of building systems and the most current version of ASHRAE Standard 55, ASHRAE Standard 62, and the IESNA Lighting Handbook; and
- Understand all applicable state and territorial engineering and architectural licensure laws, professional ethics requirements, and regulations prior to offering or performing services in a jurisdiction.

Only LPs meeting these qualifications are eligible to verify commercial building applications for ENERGY STAR certification. LPs are to provide unbiased services and are bound by law to uphold strict ethical standards. They must verify that the information contained in the application is accurate to the best of their knowledge, based on a site visit of the building, their technical expertise, and a good faith effort to comply with the instructions provided in this guide.

Should an LP be found to have falsified information on a building's application for ENERGY STAR Certification, EPA reserves the right to pursue recourse through the engineering and architectural professional licensing authorities granting that individual's license, and under Federal law. Title 18 USC Section 1001, Crimes and Criminal Procedure, Fraud and False Statements, holds that:

Whoever, in any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States, knowingly and willfully – (1) falsifies, conceals, or covers up by any trick, scheme, or device a material fact; (2) makes any materially false, fictitious, or fraudulent statement or representation; or (3) makes or uses any false writing or document knowing the same to contain any materially false, fictitious, or fraudulent statement or entry; shall be fined under this title, imprisoned not more than 5 years ... or both.¹

¹ Full text of Title 18 USC Sec 1001 is available at: <http://uscode.house.gov>

Site Visit Requirements

Every application for ENERGY STAR Certification requires that a site visit be performed either (a) during the 12-month application period, or (b) during the 120-day window after the application's period ending date. If a single site visit date meets these requirements for two consecutive application periods, the same site visit may be used for both applications. The property must be occupied and operating normally during the site visit to reflect typical operational conditions.

Traditionally this visit has been performed by the LP themselves. However, it is common in engineering and architecture practice for PEs and RAs to use non-licensed individuals to complete certain work related to projects that ultimately bear the PE's or RA's seal and signature. Therefore, EPA wishes to clarify the following:

For purposes of verifying the information contained in the application for the ENERGY STAR label for commercial buildings, the LP may engage a representative to conduct all or part of the site visit while under their direction and control. However, the required application form must still bear the seal and signature of the LP, who remains responsible for all work performed by others under their direction and control.

To verify the application, an LP must possess a current license and be in good standing. Territorial licensure laws and regulations vary from jurisdiction to jurisdiction. Before offering or performing services, it is recommended that LPs understand the professional practice and ethics requirements contained in the state and territorial laws and regulations.

There are many instances in the course of conducting engineering and architecture work where non-licensed individuals perform work on projects for which a PE or RA later seals plans or other documents. These instances have been addressed in the Code of Ethics for Professional Engineers published by the National Society of Professional Engineers (NSPE)², the Code of Ethics and Professional Conduct published by the American Institute of Architects (AIA)³, as well as by many State Licensing Boards.

For example, Section II.2.b of the NSPE Code of Ethics for Professional Engineers states that "Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control." The NSPE Board of Ethical Review has reviewed numerous cases dealing with the interpretation of the phrase "under their direction and control." In one such case, the Board noted that "the term 'direction' contained in Code II.2.b. is generally defined as 'guidance or supervision of action or conduct; management; a channel or direct course of thought or action.' The word 'control' is generally defined as 'the authority to guide or manage: direction, regulation, and coordination of business activities.'"

Various State Licensing Boards also include language within their rules governing the practice of engineering that allow for PEs and RAs to affix their seal to documents on which non-licensed individuals may have worked. For example, the State of Oklahoma, in describing requirements for the use of the PE seal, states that "the application of the licensee's signature and date of signature to a sealed document shall constitute certification that the work thereon was done by the licensee or under the licensee's direct control and personal supervision and that the licensee accepts full responsibility and liability for the professional work represented thereon."

² <http://www.nspe.org/Ethics/CodeofEthics/index.html>

³ <https://www.aia.org/pages/3296-code-of-ethics-and-professional-conduct>

Section 137.33, Sealing Procedures, of the Texas Engineering Practice Act and Rules uses similar language, but substitutes “direct supervision” for “direct control and personal supervision.” The Act defines “direct supervision” as “the control over and detailed professional knowledge of the work prepared under the engineer’s supervision. The degree of control should be such that the engineer personally makes engineering decisions or personally reviews and approves proposed decisions prior to their implementation. The engineer must have control over the decisions either through physical presence or the use of communications devices.”

Audits

On a regular, ongoing basis, EPA randomly pulls applications in the review process to undergo an audit. EPA uses this audit and quality assurance process to both protect the integrity of the ENERGY STAR brand, and to improve the application process and supporting resources. There are two main objectives of the audit: (1) to confirm that all energy data and building use details within an application have been entered correctly into Portfolio Manager and properly verified during the site visit; and (2) to confirm that indoor environmental conditions have been verified through measurements as described in this document. Examples of information that EPA requires as part of the audit include:

- Copies of all utility bills and invoices for fuel purchases within the period of performance;
- Documentation and/or explanation of how the building use details were verified; and
- Completed Appendix A: Indoor Environmental Quality Measurement Form for ENERGY STAR Building Verification Site Visit

At the time an application is selected for audit, EPA sends audit documents and instructions on how to complete them to the LP who verified the application, and to the primary contact for the application. The LP has two weeks to submit all audit materials to EPA.

On a quarterly basis, EPA reviews the accuracy of applications by LP and sends LPs that have 5 or more applications requiring resubmission an email to provide clarifications on how to correct these errors in the future, as well as links to training resources. LPs that have high accuracy rates and few errors on submitted applications will be audited less frequently. LPs that continue to have errors on submitted applications, especially errors in energy data and on data which impacts the ENERGY STAR score, will be audited more frequently.

Records related to an application for ENERGY STAR certification, including utility bills, measurements recorded on the form in Appendix A, and documents used to support the verification of building use details, must be kept for two years from the date on which the ENERGY STAR was awarded.

Cost-Free Verification

Many properties, in particular K-12 schools and worship facilities, qualify for ENERGY STAR certification but are unable to pursue certification due to lack of budget to pay for the LP verification. To give these buildings the opportunity to earn recognition, EPA has initiated a program in which LPs can volunteer to provide one or more “free of charge” verifications for ENERGY STAR certification. More information on this program can be found at https://www.energystar.gov/buildings/service_providers/verify/pro_bono_verification_energy_star_applications and the [LP Finder](#) lists the LPs who have volunteered to offer cost-free verification:

https://www.energystar.gov/buildings/lp_finder. Licensed professionals interested in being listed in the LP finder as offering cost-free verifications can request this by submitting a help desk form: <https://energystar-mesa.force.com/PortfolioManager/s/contactsupport>.

LP Finder

In response to feedback from building owners and LPs, EPA developed the LP Finder tool to help owners more easily find LPs to assist with verification and to help LPs stand out based on their unique verification experience. The tool is available at www.energystar.gov/buildings/lp_finder. The tool allows building owners to search for LPs with experience verifying buildings in their local area, and buildings of a similar type to their own. Owners can also narrow down the results to list LPs with the most recent experience and/or LPs who offer free verification. The LP Finder contains detailed information on all buildings LPs have verified in the past, along with their contact information associated with the most recent certification. You can learn more about how to check and update your own information on the LP Finder here: <https://energystar-mesa.force.com/PortfolioManager/s/article/How-do-I-keep-my-contact-information-up-to-date-on-the-LP-Finder-tool-1600088527400>

Additional Resources

For additional information on the ENERGY STAR Commercial Buildings Program and benchmarking buildings with Portfolio Manager, visit the ENERGY STAR Buildings page at www.energystar.gov/buildings.

For answers to specific questions, review our extensive FAQ library or submit a question through the ENERGY STAR Buildings Help page at www.energystar.gov/BuildingsHelp.

Finally, test your knowledge of ENERGY STAR certification policies with the [ENERGY STAR Quiz for Licensed Professionals](#). This quiz tests basic knowledge of the rules and policies for verifying ENERGY STAR Certification applications for commercial buildings. All of the rules and policies covered by the quiz are included in this guide and the ENERGY STAR building FAQs. The quiz uses the Google Forms platform and can be accessed at <https://forms.gle/ESXe2pFJvDfCXdkdA>.

The ENERGY STAR Application Process

The application process for ENERGY STAR certification is completed online within Portfolio Manager. Generally, the applicant (typically a representative of the building such as the owner, manager, or building engineer) completes the first seven steps outlined below prior to the site visit to the property. In some cases, the LP may be involved with the application from inception to award, completing all of these steps. Whether assisting through the process or just performing a site visit and verification, it will be useful for the LP to be familiar with all stages of the application process.

1. **Enter Data** – Log in to Portfolio Manager and enter the required whole building operational and energy information, including at least 12 consecutive months of energy data for all active meters that account for all energy use in the building. The [Eligibility Criteria for the 1-100 ENERGY STAR score](https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/understand-metrics/eligibility) contain more information on the data that is needed:
<https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/understand-metrics/eligibility>.
2. **“Apply for ENERGY STAR Certification”** – Click the “Apply for ENERGY STAR Certification” link in the upper right-hand corner of the “Property Summary” page. The link will appear if the property is eligible to apply for the ENERGY STAR, meaning that it earned a score of 75 or higher, at least 11 months’ (in most cases) worth of energy consumption has been entered since the Year Ending Date on the property’s last approved application for ENERGY STAR certification, and all other eligibility requirements have been met.
3. **Enter Property Information** – Provide a property description and the property name to be used for public listing display.
4. **Choose Contacts for Application** – Select a primary contact for the application, a signatory, and an LP in the “Contact Information for Your Application” section.
5. **Enter Award Information** – Select the preferred type of complimentary decal and contact information for delivering the award.
6. **Review Eligibility Details** – Select the appropriate Year Ending Date and review any ENERGY STAR eligibility alerts that have been flagged, either correcting data or providing a response as necessary.
7. **Generate the Application** – Generate the hard-copy application for signatures by clicking on “Generate New Application for Download” link. Ensure that there is a tracking number in the bottom right-hand corner of the Application PDF.

8. **Conduct a Site Visit – Verify Data and Assess Indoor Environmental Quality** –A site visit of the building is required. The site visit may take place anytime within the 12-month application period, or within 120 days following the year ending date. The LP is responsible for verifying that the information on an application is an accurate representation **for the entire 12-month period**, not just on the date of the site visit. The site visit must be done while the building is occupied and operational (i.e., not over the weekend, not during school vacations for K-12 Schools, etc.) in order to get accurate indoor environmental standards readings (ventilation/air quality, thermal conditions, and illumination).

A site visit can be used to verify two consecutive application years, as long as the date of the site visit meets the requirements for both certification years (meaning the site visit occurs within the 120 days after the first certification year, and within the 12-month application period for the second certification).

The LP may engage a representative to conduct all or part of the site visit while under their direction and control. This representative can work for the company applying for certification. However, the application must still bear the stamp and signature of the LP, who remains responsible for all work performed by others under their direction and control.

During the site visit, the LP or one of their designated representatives should have a copy of the application for checking and verifying the reported information.

The application provides a summary of a property's physical and operating characteristics, as well as its total energy consumption. It also includes the attestations of the building meeting certain indoor environmental conditions. The LP or the LP's representative must assess the indoor environmental conditions and take required measurements, as outlined in the *Verifying the Indoor Environmental Quality* section of this LP Guide, and determine whether the building has acceptable outdoor air ventilation, thermal environmental conditions, and illumination. Measurements listed in the form provided in Appendix A to this LP Guide must be taken. Submission of this measurement form will be required as supporting documentation if the application is selected for an audit, and as a best practice should be kept on file for two years.

For an average building, it should typically take an LP about one full day to conduct the site visit and complete the verification of the information on the application.

9. **Sign and Stamp Documents** – Sign, stamp, and date the application after addressing any insufficiencies and correcting errors identified during the site visit. If errors are identified, it may be necessary to repeat some of the above steps and generate a new PDF application before signing.
10. **Submit Application** – In Portfolio Manager, enter the tracking number from the signed application in the "Application Tracking Number" box at the top of the screen and check the boxes to confirm that the application has been completed, signed, and stamped by the LP and signatory. Upload a scanned PDF copy of the signed application, making sure the LP stamp, along with any signatures, is clearly visible on the scanned PDF. If the LP does not have a stamp, EPA will check the website of the State licensing body to verify that the LP's license is current. Validate your credentials by entering your Portfolio Manager username and password, e-sign the application, and submit to EPA.

11. **Respond to EPA Questions** – Respond in a timely manner to any issues or questions sent by the EPA reviewers concerning the application, providing additional information and clarification as needed. The LP is cc'ed on all emails regarding applications.
12. **Receive Award** – Within 4-6 weeks of EPA approval, the Award Recipient will receive the ENERGY STAR award decal, congratulatory letter, and certificate. If EPA denies the application, the Primary Contact for the Application and the LP will be notified and provided with recommendations for further action.

The year of the ENERGY STAR Certification is the calendar year in which it was awarded.

A building that has earned ENERGY STAR certification usually becomes eligible to re-apply 11 months after the Period Ending Date of this application.

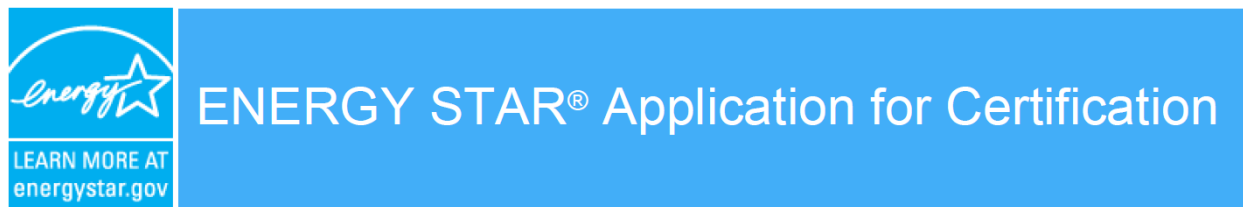
Verifying the Application for ENERGY STAR Certification

This section describes the process by which the LP should verify the accuracy of each element on the application. The application also includes detailed questions to assist the LP in conducting these checks.

It is the responsibility of the LP to verify all of the following data elements and ensure that the whole building is represented in the application.

- When reviewing the application, the LP **must check each box and/or write-in a note confirming the correctness of each line item.** EPA will send questions about any unexplained values that are atypical, so if you've confirmed during your site visit that such values are correct, an explanatory note will be helpful in expediting your review process.

Summary Information



99

ENERGY STAR®
Score¹

Example Property

Registry Name: Example Property - Registry Name
Property Type: Office
Gross Floor Area (ft²): 130,000
Built: 2000

For Year Ending: Feb 28, 2018²
Date Application Becomes Ineligible: Jun 28, 2018



Registry Name, Property Type, and Gross Floor Area

Check that these are correct. They will be verified in more detail in the Basic Property Information section below.



Built

The year built is the year in which construction of the building was completed. In some cases, this may be the year in which a major renovation was completed. The year built is not factored into the ENERGY STAR score; however, EPA uses this information for data analysis on the age of buildings earning ENERGY STAR certification. A property must be fully operational for at least 12

months to be eligible for certification, however, so properties built within the last year may not be eligible.



For Year Ending

This date is the last day of the 12-month period for the application. This date is selected by the applicant. The application must be submitted within 120 days of the For Year Ending Date.



Date Application Becomes Ineligible

This date is 121 days after the Year Ending Date. Note: LPs should work with the applicant in advance to ensure that there is enough time before the application becomes ineligible to complete the application, conduct the site visit, and verify and submit the application.

Property and Contact Information

Property & Contact Information		
Property Address Example Property - Registry Name 100 Healthy Highway Chicago, Illinois 60827 Property ID: 4488884	Property Owner DMW Office Co. 1234 Center Way Silver Spring, MD 20910 301-555-4321	Primary Contact Joe Owner 1234 Center Way Silver Spring, MD 20910 301-555-4321 owner.j@example.com



Property Address

The street address, city, state, and zip code of the property is complete and correct.



Property Owner

The name and contact information is complete and correct. This should be information for the **owner** of the property, not a property manager, consultant, or other party.



Primary Contact

The name and contact information is complete and correct. This can be any individual associated with the building – EPA will contact this individual with any questions about the application, so please make sure all contact information is up to date.



Property ID

The property ID is correct and matches that in Portfolio Manager.

Basic Property Information

Basic Property Information	
1) Property Name for Registry: Example Property - Registry Name Is this the official name to be displayed in the Registry of ENERGY STAR Certified Buildings and Plants ? If "No", please specify: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
2) Property Type: Office Is this an accurate description of the primary use of this property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3) Location: 100 Healthy Highway Chicago, Illinois 60827 Is this correct and complete?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4) Gross Floor Area: 130,000 ft ² Is value an accurate account of the gross floor area for the property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5) Average Occupancy (%): 80 Is this occupancy percentage accurate for the entire 12 month period being assessed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6) Number of Buildings: 1 Does this number accurately represent all structures?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7) Whole Property Verification: Does this application represent the entire property? If any space or energy use has been excluded from this property, please describe it in the notes section below.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Notes:	



Property Name for Registry

The name listed is the official, complete name to be displayed in the Registry of ENERGY STAR Certified Buildings and Plants, and may be different from the property name used in the applicant's Portfolio Manager account.



Property Type

The primary property function falls into one of the following categories of operation, according to EPA's definitions of each property type. If the primary function of the property does not fall into one of these categories as defined by EPA, then the property is not eligible for ENERGY STAR certification.

- Bank Branch
- Courthouse
- Data Center

- Financial Office
- Hospital (General Medical and Surgical)
- Hotel
- K-12 School
- Office
- Multifamily Housing
- Retail Store
- Senior Care Community
- Supermarket
- Warehouse (refrigerated or non-refrigerated)
- Worship Facility

For a definition of each property function, refer to this list of property types eligible to receive a 1-100 ENERGY STAR score: <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/identify-your-property-type-0>.



Location

The full address, including the 5-digit zip code, is complete and accurate.

- Only commercial buildings located in the U.S. and its territories, or those owned by the U.S. government located in foreign countries, are eligible to earn the ENERGY STAR. Commercial buildings located in Canada are also eligible. Visit NRCAN's website for more information: <http://www.nrcan.gc.ca/energy/efficiency/buildings/energy-benchmarking/13603>.



Gross Floor Area

The Gross Floor Area is the total floor area measured between the outside surface of the exterior walls of the building(s). It is the total of all the building's property uses reported on the application, and it should represent the whole building. In the case of buildings where space is leased, this value is **NOT** the leasable floor area, but rather should include leasable areas, common areas, and support/mechanical/electrical areas.

Additionally, the LP must ensure that the reported area of each of the property use types total the whole building's gross floor area.



Leasable or rentable space should not be used because it is not the same as a building's gross floor area.

- For atriums that span multiple stories, only the base floor area should be counted. Interstitial (plenum) space between floors should not be included in the total gross floor area.



Average Occupancy *[applicable to Offices, Hotels and Multifamily Housing]*

Over the course of the 12-month period being assessed, a building designated as an Office, Hotel, or Multifamily Housing must have had an average occupancy rate of at least 55%, 60%, and 80%, respectively, and a K-12 School must be in use for at least 8 months of the year.

- Offices, Bank Branches, Financial Offices, and Courthouses with 10% or greater vacant space (i.e., occupancy less than 90%) should enter the vacant square footage as a separate “Office” (Bank Branch, Financial Office, etc.) property use entry, with zero weekly operating hours, zero workers, and zero computers.

If the occupancy level in the building fluctuates, calculate the average occupancy over the 12-month period covered in the application. For example, if the building was at 70% occupancy for the first half of the year, then at 80% occupancy for the second half of the year, you would calculate the occupancy level to be 75% for the year.



Number of Buildings

The total number of individual buildings on the property should be entered. EPA’s 1 – 100 ENERGY STAR scores for most building types are based on statistical analyses of individual, single structures. There are only a few exceptions, which are described below. For an accurate ENERGY STAR score, it is important that the function and structure of the building meet EPA’s definitions.

Campus of buildings: The following property types MUST apply as a campus of multiple buildings if they are comprised of more than one building:

- Hotel
- K-12 School
- Hospital
- Senior Care Community
- Multifamily Housing

All buildings that support their primary function should be combined and entered as a single property. For example, a garden style multifamily property with 6 residential buildings and a community center building must apply as a single property – it is not allowed to certify individual buildings in these cases. The inclusion of all the campus’s buildings must be verified by the LP on the application.

Single Building: The following property types MUST apply as single buildings. The LP must verify that the property is a **single, whole structure**. If a building has multiple towers connected by common concourse levels or common areas that cannot truly be separated between the towers, then EPA will allow this to be considered a single structure. A series of buildings situated closely together as a plaza or campus, even if sharing a common heating or cooling source, energy meters, or ownership are **not** considered a single structure for the purposes of ENERGY STAR certification.

- Bank Branch
- Courthouse
- Data Center
- Financial Office
- Worship Facility
- Office
- Retail Store
- Supermarket
- Warehouse

Is this a single structure?

Examples:

- A building with two towers that share four stories of common space that includes an atrium, cafeteria, and seamless connections between two towers **IS** considered a single structure because there is a complete and indivisible connection.
- Two office towers built on top of an underground parking garage may be considered an entire, single structure **OR** each of the towers may be benchmarked individually, provided they have complete, measured energy data.
- An office complex that consists of two buildings connected by an outdoor covered walkway is **NOT** considered a single structure because the buildings can be easily separated. Each of these buildings must be separately metered and certified individually.
- Two office towers that have no physical connection, but share a central plant and energy meters, are **NOT** considered a single structure because there is no physical, structural connection. Each of these buildings must be separately metered and certified individually.
- Side-by-side buildings that share only a common wall, are considered separate buildings.
- “Stacked” configurations – for example, a high-rise with offices on floors 1-8 and multifamily housing/condos on floors 9-14 – will always be considered a single structure, even if the office and condo portions are separately owned, operated, metered, have separate entrances, etc.

Note that the answer to this question is not always straightforward and it may need to be considered by EPA on a case-by-case basis. [Send us a question](#) if you are unsure about your property, because your certification eligibility could be affected: <https://energystar-mesa.force.com/PortfolioManager/s/contactsupport>.



Whole Property Verification

The application must account for the entire property, with no space excluded. If space has been excluded, it must be documented in the Notes field that the excluded space meets **all four** of the following requirements:

- The excluded space must be less than 10% of the building’s Gross Floor Area (GFA).
- The excluded space must not be a property type eligible to receive an ENERGY STAR score.
- The excluded space must be sub-metered so that both the excluded space’s floor area and energy consumption can be excluded.
- The excluded space’s energy use patterns must be significantly different than those of the rest of the building (e.g., a cell phone tower on a building), or a large restaurant on the ground floor of an Office building).

Verifying the Indoor Environmental Quality

Indoor Environmental Quality	
1) Outdoor Air Ventilation	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does this property meet the minimum ventilation rates according to ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality?	
2) Thermal Environmental Conditions	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does this property meet the acceptable thermal environmental conditions according ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy?	
3) Illumination	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does this property meet the minimum illumination levels as recommended by the Illuminating Engineering Society of North America (IESNA) Lighting Handbook?	
Notes:	

As part of the review of the application for ENERGY STAR certification, the LP is required to take measurements and/or perform calculations to confirm that certain measures of indoor environmental quality have not been compromised in pursuit of energy conservation practices. If measurements are not taken and/or calculations performed as required, the application will be denied.

This assessment is performed via an onsite evaluation (taking place while the building is occupied and operating as normal) and requires that the LP has a working knowledge of building HVAC and lighting systems, as well as the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards 55⁴, 62⁵ and the Illuminating Engineering Society of North America's (IESNA) Lighting Handbook⁶.

The assessment requires measurement of the outside air ventilation, air temperature, humidity, and lighting illumination levels in a representative sample of spaces throughout the building. Representative spaces may be determined by space types (e.g., private offices, common areas), usages (e.g. tenants), or system types (in multiple system buildings). IAQ measurements may be verified from indoor sensors, if present. Note that although simple observation of building design, system condition, operation, and control, and review of previous testing and balancing reports, maintenance logs, and occupant complaint records may be useful, **they are not sufficient to make this assessment.**

This assessment is also not intended to be an evaluation of compliance with these industry standards in whole, local building codes, or a comprehensive assessment of the building indoor environmental quality.

Please use the form in Appendix A to determine which measurements for Outdoor Air Ventilation, Thermal Environmental Conditions, and Illumination must be taken and acceptable methods. The LP can

⁴ ANSI/ASHRAE Standard 55-2017 -- *Thermal Environmental Conditions for Human Occupancy*

⁵ ANSI/ASHRAE [Standard 62.1-2016](#) -- *Ventilation for Acceptable Indoor Air Quality*

⁶ Illuminating Engineering Society [Lighting Handbook](#), 10th edition

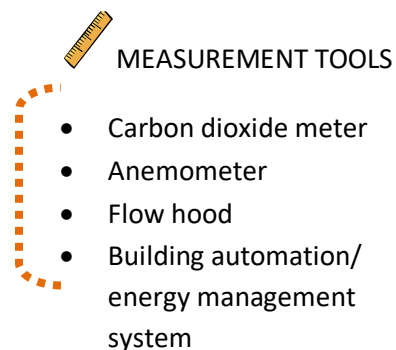
record the measurements on this form or in the method of their choosing. If your property's application is audited, you will be required to provide the completed Appendix A form.

✔ Outdoor Air Ventilation

The LP shall verify that minimum outside air ventilation rates are provided according to the most recent and applicable version of *ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality*.

For mechanically ventilated buildings, minimum outside ventilation rates can be determined by any of the following methods:

- Simplified direct airflow measurements per *ANSI/ASHRAE Standard 62.1, Addendum b* and *Addendum z* where applicable⁷; *Section 6.2, the Ventilation Rate Procedure* where the addenda are not applicable, or
- CO₂ concentration measurements per *ASHRAE 62.1 Appendix C*, and *ASTM D6245 Standard Guide for Using Indoor CO₂ Concentrations to Evaluate Indoor Air Quality and Ventilation*, or
- Detailed airflow calculations derived from as-built equipment specifications, and physical inspection of system operation and control.



For naturally ventilated buildings, follow *ASHRAE 62.1, Section 6.4, Natural Ventilation Procedure* to confirm the minimum outdoor air opening and space configuration requirements.

Dwelling units in multifamily housing shall use *ASHRAE 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings*. Hospitals and Senior Care Communities may use *ASHRAE Standard 62.1*, or *ANSI/ASHRAE/ASHE Standard 170: Ventilation of Health Care Facilities - 2013*.

For building occupancy types not covered by these standards (e.g., data centers), buildings with physical constraints that make it infeasible to provide these minimum outside air rates, as well as spaces that are inaccessible (e.g., individual apartments) the professional judgement of the LP will be required to confirm that outside air ventilation has not been compromised in pursuit of energy conservation. The LP should document their evaluation of these situations in the application.

⁷ For Minimum Outdoor and Primary Airflow Rates for K-12 Schools and Offices, see Addendum b. For Combined Outdoor Air Rate check values for K-12 Schools, Hotels, Residence Halls/Dormitories, Offices/Financial Offices, Bank Branches, Warehouses and Distribution Centers, Worship Facilities, Courthouses, Multifamily Housing, Senior Care Communities (except for strictly-medical spaces), Retail Stores, and Supermarkets, see Addendum z. These addenda do not apply to Hospitals or Medical Offices (for which LPs should refer to *ASHRAE Standard 170, Ventilation of Health Care Facilities*), nor to Data Centers.

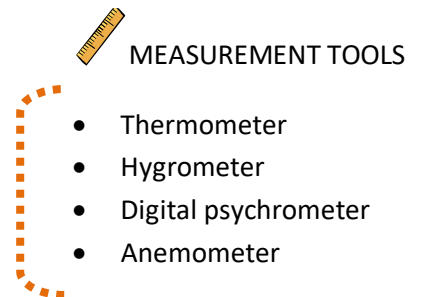
✔ Thermal Environmental Conditions

The LP shall verify that acceptable thermal environmental conditions are provided according to the most recent version of *ANSI/ASHRAE Standard 55 Thermal Environmental Conditions for Human Occupancy*.

ASHRAE Standard 55 specifies combinations of temperature, humidity, and air movement conditions to produce acceptable thermal comfort conditions for a majority of occupants, given occupant activity and clothing insulation.

The following measurements are required: the dry bulb temperature, relative humidity, temperature, and (optionally) air speed. Temperature measurements are not required for Data Centers. These measurements must be taken in a representative sample of the occupied interior spaces of the building during occupied hours, to confirm an acceptable thermal environment for observed or anticipated occupant activity and clothing per *Section 7, Evaluation of Comfort in Existing Buildings*.

For building occupancy types not covered by this standard, as well as spaces that are inaccessible (e.g., individual apartments in multifamily housing), the LP should document their evaluation of these situations in the application.



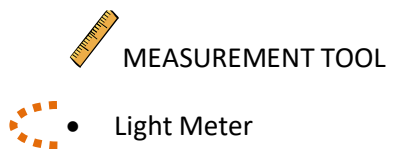
- While conducting the site visit, the LP or their representative should observe indicators of possible occupant thermal discomfort (personal fans, space heaters, or altered thermostats) as areas meriting additional evaluation.

✔ Illumination

The LP shall verify that minimum recommended illumination levels are provided according to the most recent version of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.

The IESNA Lighting Handbook recommends horizontal and/or vertical task illuminances for a wide variety of spaces and tasks.

The illumination levels must be measured in a representative sample of the occupied interior spaces of the building, as well as any associated parking facilities.



For building occupancy types not covered by these recommendations, as well as spaces that are inaccessible (e.g., individual apartments), the LP should document their evaluation of these situations in the application.

Property Use Details


Office: Office Use	
1) Gross Floor Area: 100,000 ft² Is this the total size, as measured between the outside surface of the exterior walls of the building(s)? This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation. Gross Floor Area is not the same as rentable, but rather includes all area inside the building(s). Leasable space would be a sub-set of Gross Floor Area. In the case where there is an atrium, you should count the Gross Floor Area at the base level only. Do not increase the size to accommodate open atrium space at higher levels. The Gross Floor Area should not include any exterior spaces such as balconies or exterior loading docks and driveways.	<input type="checkbox"/> Yes <input type="checkbox"/> No
2) Weekly Operating Hours: 150 Is this the total number of hours per week that the property is occupied by the majority of the employees? It does not include hours when the HVAC system is starting up or shutting down, or when property is occupied only by maintenance, security, cleaning staff, or other support personnel. For properties with a schedule that varies during the year, use the schedule most often followed.	<input type="checkbox"/> Yes <input type="checkbox"/> No
3) Number of Workers on Main Shift: 60 Is this the total number of workers present during the primary shift? This is not a total count of workers, but rather a count of workers who are present at the same time. For example, if there are two daily eight hour shifts of 100 workers each, the Number of Workers on Main Shift value is 100. Number of Workers on Main Shift may include employees of the property, sub-contractors who are onsite regularly, and volunteers who perform regular onsite tasks. Number of Workers should not include visitors to the buildings such as clients, customers, or patients.	<input type="checkbox"/> Yes <input type="checkbox"/> No
4) Number of Computers: 200 Is this the total number of computers, laptops, and data servers at the property? This number should not include tablet computers, such as iPads, or any other types of office equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> No
5) Percent That Can Be Heated: 100 Is this the total percentage of the property that can be heated by mechanical equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6) Percent That Can Be Cooled: 100 Is this the total percentage of the property that can be cooled by mechanical equipment? This includes all types of cooling from central air to individual window units.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Notes:	

The LP must assess whether the Property Use Type(s) and Use Details have been correctly characterized and entered. They must also ensure that the Gross Floor Area (GFA) for all individual property uses add up to the GFA for the entire property.



Property Type

The property use types entered represent the actual use of the building, and matches with one of the property functions listed on page 9.

-  The property type should have as few uses as possible. When in doubt, do not split a property use out. See the FAQ at <https://energystar-mesa.force.com/PortfolioManager/s/article/When-should-I-create-separate-Property-Uses-1600088548691> for more information.



Gross Floor Area


This value is the total floor area for the property use, measured between the outside surface of the exterior walls of the building. The sum of the Gross Floor Area for each individual property use should equal the property Gross Floor Area listed on the first page of the application. Note that if the GFA of any individual property use changes during the course of the 12-month application period (for example, if a suite becomes vacant and the Vacant Space increases by 5,000 square feet), that change must be accounted for by a corresponding change in another property use's GFA as of the same date (for example, the Occupied Office Space decreases by 5,000 square feet).





Specific Property Use Details

The LP must verify that each of the Property Use Details is correct. Depending on the designated Property Use Type, different Property Use Details will be included. The Property Use Details may include Weekly Operating Hours, Number of Workers on Main Shift, Number of Computers, or other pertinent characteristics specific to each Property Use Type.

The LP is not obligated to count each Use Detail, such as computers; however, they must verify the correctness of the value reported. The LP may verify this information by asking credible parties who have a detailed knowledge of the building and/or cross-checking information with available reports from departments within the organization. For example, the LP may use a report from human resources to verify the reported Number of Workers on Main Shift, or consult the IT department to verify the Number of Computers owned or issued by the organization. If an application is audited, the applicant and LP will be asked to provide an account of the method used to verify each Use Detail.

-  **“EPA reserves the right to request additional details and documentation on how use details were verified during the site visit for any property applying for certification, for any reason.** Use detail verification is a standard part of the Audit process described earlier in this guide, but may also be requested for applications not undergoing a formal audit. If sufficient detail cannot be provided to confirm that the use details shown on the application are accurate, EPA reserves the right to deny the application.”

-  “Weekly Operating Hours” is defined the following ways, depending on the building type.
 - Office, Financial Office, Warehouse and Distribution Center:** The total number of hours per week where the majority of workers are present. For example, if more than 50% of the Workers on the Main Shift (see below) are in the building from 8:00 am - 6:00 pm M-F, then Weekly Operating Hours should be 50 (10 hours * 5 days per week).
 -  If the building has two or more tenants with hours that differ by more than 10%, then each should be shown on the application as a separate Property Use.

- If the building has two or more tenants with hours that differ by less than 10%, then the largest tenant's (based on Gross Floor Area) hours should be reported on the application as the Weekly Operating Hours for the whole building.
- If the hours vary seasonally (ex: half-day Fridays in the summer), then the schedule that is followed most often should be used.
- If the building has two shifts of workers, add together the number of hours of both shifts.
- These hours should not be included:
 - When the property is occupied only by maintenance, security, the cleaning crew, or other support personnel.
 - HVAC startup or shutdown time
- **Properties that serve or sell to customers (retail stores, medical office, bank branch, courthouse, library, health club, etc):** The Weekly Operating Hours should be the hours that the facility is open to the public.
- **Worship Facility.** The Weekly Operating Hours should reflect hours when the facility is typically open for operation, which may include worship services, choir practice, administrative use, committee meetings, classes, or other activities.

■ Multifamily Housing properties have multiple Property Use Details that refer to “Number of Residential Living Units.” The “Total Number of Residential Living Units” is defined as the total number of apartments within the apartment building, or apartment complex if you are working with a campus of apartment buildings. This includes both occupied and unoccupied units. The “Number Residential Living Units in a Low-Rise Setting” is the count of apartments that are located in areas of the property that have less than four floors. There is also a use detail for Mid-Rise and High-Rise settings. The LP should verify that the count of apartments in each setting is accurate. This is particularly important for multi-building apartment complexes (campuses), as well as properties that have multiple sections or wings with varying heights.

- “Number of Bedrooms” is the total count of bedrooms in all apartment units at the property. Studio apartments count as one bedroom.



Anything other than what is requested per the Use Detail definition should not be included in the count for the Use Detail. For example:

“Number of Computers” **only** includes desktop computers, laptops, Chromebooks/netbooks (if they are stored and charged on-site at all times), and servers. It does **not** include thin clients and towers, monitors, tablets/iPads, smartboards, UPSs, fax machines, building controller devices, cash registers, or ATMs.

“Number of Workers on the Main Shift” should reflect the total number of workers present during the primary, or largest, shift of the day. This is **not a total count** of workers, but rather a count of workers who are present at the same time. It does **not** include visitors, clients, contractors, teleworkers, or customers/patients/students/spectators.

“Number of MRI Machines” **only** includes Magnetic Resonance Imaging machines in the facility. It does **not** include X-ray, CT scan, other imaging or diagnostic equipment.

Parking

Include or Exclude?

The ENERGY STAR 1 – 100 score assesses a building’s energy performance. For the most accurate assessment of the building’s performance, where possible, do not include Parking. Parking can be excluded if it is separately metered.

If the energy consumed by the lighting and ventilation associated with the Parking is on a shared meter with the building, then include Parking by entering a “Parking” property use.

If a structure is composed of 75% or more parking garage (partially enclosed or completely enclosed), then it is not eligible for ENERGY STAR certification.

Definitions

Parking refers to any space used for parking vehicles. This includes open parking lots, partially enclosed parking structures, and completely enclosed (or underground) parking structures. Parking structures may be free standing or may be physically connected to a building. Private garages in Multifamily Housing are not considered Parking because they are not lit or ventilated all day.

The Gross Floor Area for Parking is entered in three categories:

- **Open:** Parking area that is lit and not covered by a roof, typically an open lot or the top level of an above ground parking structure.
- **Partially Enclosed:** A parking structure that is lit 24 hours/day that has a roof with partial walls or open sides.
- **Completely Enclosed:** A parking structure that is fully enclosed, with four solid walls and a roof. Completely enclosed parking structures are lit and ventilated 24 hours/day.

Supplemental Heating is used in northern climates to maintain a minimum temperature during winter months.

How to Measure

The LP must verify the total square footage of all types of parking reported on the application. This can be verified by obtaining information from building blueprints, resurfacing project reports, using a measuring wheel, or by counting parking spaces and accounting for driving lanes. Estimating square footage based on aerial photographs, such as from Google Earth, is not acceptable as it is not an actual measurement.

Gross Floor Area should include all areas associated with the parking structure/area including individual parking spaces, driveways and aisles, security booths, stairwells, elevator shafts, and equipment or storage areas.

Data Center

Data Center is a unique space because one of the Property Use Details is the type of energy meter capturing the IT Energy Consumption. The LP must verify that the metering configuration and measured annual IT energy value is correct. It can be helpful for the LP to collaborate with both the IT manager and building manager to ensure that this information is accurate.

Definitions

Data Center

The Data Center Property Use Type is intended for sophisticated computing and server functions which typically include:

- high density computing equipment (such as server racks used for data storage and processing)
- dedicated power and cooling systems
- a constant power load of 75 kW or more
- uninterruptible power supplies (UPS)
- raised floors

IT Energy

IT Energy is defined as the total amount of energy required by the server racks, storage silos, and other IT equipment in the data center space. This data is entered in kWh. It should **not** include supplemental loads like HVAC equipment, lighting, or security equipment, nor should it include energy used by the UPS itself – IT energy should be captured downstream of the UPS (i.e., at the UPS output) – see below for more information.

Power Distribution Unit (PDU)

A PDU is a device that delivers conditioned power from the uninterruptible power supplies (UPS) to servers, networking equipment, and other electronic equipment.

Uninterruptible Power Supply (UPS)

A UPS is a piece of equipment that maintains power to electrical loads in the event of a utility power supply disruption. The UPS conditions the power reaching the load under normal operation to prevent undesired features of the power source (outages, sags, surges, bad harmonics, etc.) from adversely affecting the performance of servers and other equipment. UPS typically use batteries as an emergency power source and provide power to servers until emergency generators come online.

Data Center

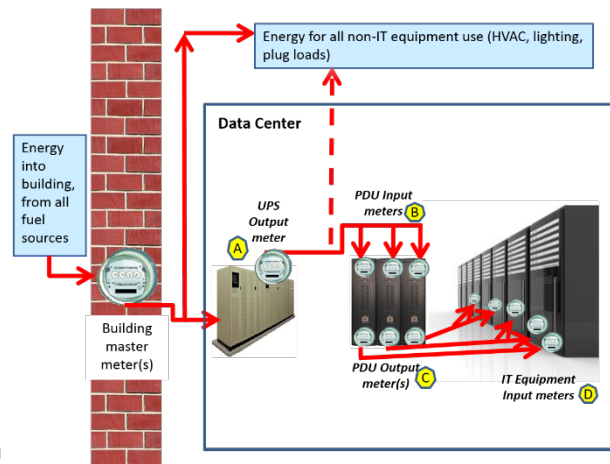
How to Measure

In order to be eligible for ENERGY STAR certification, data center IT Energy readings should be taken at the **output of the Uninterruptible Power Supply (UPS)**.

There are three exceptions to this rule:

- 1) If there is no UPS in the data center**, then you can meter at the input to the Power Distribution Unit (PDU) (See "B" in the diagram above).
- 2) If the UPS supports non-IT loads that are more than 10% of its load** (e.g., the HVAC is also on this meter) and cannot be sub-metered, then you can meter at the PDU input. If the non-IT load can be sub-metered, then you should subtract it and enter the remainder as the UPS Output.
- 3) If your meter does not have an energy reading (kWh), but is able to record power (kW) every 15 minutes**, then you can use a software solution that connects to the UPS to record power readings in kW every 15 minutes (or more frequently). Then calculate your monthly energy in kWh units.

Note: If the applicant has calculated IT Energy using this third option, the LP must review how the readings were collected, verify that the readings were collected in increments of no greater than every 15 minutes, and use their professional judgment to assess how accurately the interval readings were used to calculate the monthly IT energy values.



Data Center Energy Estimates available as of August 26, 2018

Since July 2013, EPA has required that all IT energy be metered in order to benchmark a Data Center. With the launch of the ENERGY STAR score updates in August 2018, Data Center Energy Estimates are once again available for Data Centers located within larger buildings (such as Office buildings) if metered IT energy is not available.

See more at <https://energystar-mesa.force.com/PortfolioManager/s/article/Data-Center-Energy-Estimates-How-are-they-implemented-1600088554104>

Review of Energy Consumption

Data Overview			
Site Energy Use Summary		National Median Comparison	
Natural Gas (kBtu)	210,100 (5%)	National Median Site EUI (kBtu/ft²)	85.7
Electric - Grid (kBtu)	3,900,636 (95%)	National Median Source EUI (kBtu/ft²)	259.8
Total Energy (kBtu)	4,110,736	% Diff from National Median Source EUI	-63.1%
Energy Intensity		Emissions (based on site energy use)	
Site (kBtu/ft²)	31.6	Greenhouse Gas Emissions (Metric Tons CO2e)	732.4
Source (kBtu/ft²)	95.9	Power Generation Plant or Distribution Utility: Commonwealth Edison Co	
Note: All values are annualized to a 12-month period. Source Energy includes energy used in generation and transmission to enable an equitable assessment.			



Site Energy Use Summary

The site energy use summary presents the total of all entered energy inputs. The LP should look at this summary and determine if the energy profile is what would be expected for the building type in that climate. If the energy use profile is different than expected, the LP should re-examine the energy inputs to ensure that no energy source or meter was excluded.



Energy Intensity

The LP should review the Source Energy Use Intensity because it can signal that the energy consumption data may have been entered with incorrect units. Typical Source Energy Use Intensity falls within the range of 30 kBtu/ft² to 500 kBtu/ft², depending on the property type (Non-Refrigerated Warehouses, for example, may be lower, while Data Centers and Supermarkets may be higher).



Power Generation Plant

If a power plant is specified on the application, the LP should verify that there is a specific power purchasing agreement.





Summary of all Associated Energy Meters

Summary of All Associated Energy Meters				
The following meters are associated with the property, meaning that they are added together to get the total energy use for the property. Please see additional tables in this checklist for the exact meter consumption values. Note: please review all meter entries, making note of any unusual entries, and, if they are correct, provide a manual note to explain.				
Meter Name	Fuel Type	Start Date	End Date	Associated With:
Electric Grid Meter	Electric - Grid	01/01/2000	In Use	Example Property
Natural Gas	Natural Gas	01/01/2000	In Use	Example Property
Electric Grid Meter	Electric - Grid	01/01/2017	In Use	Example Property
Total Energy Use			<input type="checkbox"/> Yes <input type="checkbox"/> No	
Do the meters shown above account for the total energy use of this property during the reporting period of this application?				
Additional Fuels			<input type="checkbox"/> Yes <input type="checkbox"/> No	
Do the meters above include all fuel types at the property? That is, no additional fuels such as district steam, generator fuel oil have been excluded.				
On-Site Solar and Wind Energy			<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are all on-site solar and wind installations reported in this list (if present)? All on-site systems must be reported.				
Notes:				

The LP must verify that all actual, as-billed energy consumption for all fuels for the building is correctly entered and captured on the application. The energy meters must account for the total energy consumption from all property uses within the building envelope. For each energy source used in the building, the LP is expected to review energy consumption documentation, such as monthly utility bills for electric, natural gas, and district energy, and invoices for bulk fuel purchases.

- Check that all forms of energy that are required for the building's operation have been reported.
- Check that the units for each of the fuels have been entered correctly.
- Check that no estimated, simulated, or model values have been used.

 **EPA reserves the right to request copies of energy bills for any property applying for certification, for any reason, to verify accurate energy data reporting.** Energy bills are a standard part of the Audit process described earlier in this guide, but may also be requested for applications not undergoing a formal audit. If bills cannot be provided to confirm that energy data shown on the application is accurate, EPA reserves the right to deny the application.

 If an energy meter was broken for some portion of the application period, submit a ticket at www.energystar.gov/BuildingsHelp with a detailed description of the situation, including the time period for which the meter was broken, and an ENERGY STAR team member will provide guidance on how to proceed.

Reportable fuel sources include electricity (grid purchases, on-site solar, and on-site wind), natural gas, fuel oil, diesel fuel, district steam or hot water, district chilled water, propane, coal, coke, kerosene and wood.

- If wood, coal, fuel oil, or propane is combusted on-site, such as in a boiler, then the purchased quantities of these fuels must be reported. Unlike electricity and natural gas, wood, coal, fuel oil, and propane may not be delivered or measured on a month-to-month billing period. Consequently, they can be entered as they are billed or the delivery amount may be divided over the total months covered by the purchase.
- On-site Combined Heat and Power systems consume a single input fuel (e.g., natural gas) to produce both heat and electricity. The LP should verify that this input fuel is included in the total reported energy. This information may be found on monthly values for a fuel such as natural gas, or from other irregular billing periods for diesel oil or coal. The applicant is not required to report the amount of heat and electricity generated from the combined heat and power system.
- On-site renewable electricity, generated through wind or solar photovoltaic power generation systems installed on or at the building site is treated as a fuel and entered using an electricity meter, similar to grid purchased electricity. Applicants are required to report:
 - (1) kWh used on-site (from the wind or solar system), by the building;
 - (2) kWh sold or exported to the grid; and
 - (3) kWh purchased from the grid.

EPA does not accept net metered values. The LP is required to confirm that all on-site renewable electricity is reported in full and must ensure that the applicant is not subtracting the on-site solar or wind energy generated from the total energy consumption of the building. For more information on EPA's policies regarding green power, please refer to the Portfolio Manager Technical Reference: Green Power, available for download at www.energystar.gov/GreenPower.

- Energy bills don't match meter entries? Many energy information services "calendarize" energy bills to align with calendar months. For example, if the actual billing period is from the 15th of one month to the 15th of the next month, they will create a month of data running from the 1st to the 31st of the month; Portfolio Manager does the same to produce annualized metrics. As long as the bills are calendarized in the same way that Portfolio Manager does (i.e. determining the average daily use during each month, and then summing the daily average over the number of days in the month.), it is okay for you to verify the application.

Summary of Additional Meters

This section lists meters that have not been included in the energy metrics, most likely because they are submeters. The LP must confirm that these meters are appropriately assigned as "not associated" because they would be double counting energy use if they were included.

Verify Information

- ✔ **Information on person conducting the site visit**
The name of the person conducting the site visit, either the LP or the LP's representative, should be entered, along with the date the site visit was performed.
- ✔ **Licensed Professional**
The name and contact information for the Licensed Professional are correct and the LP's license number is accurate. The LP's stamp should be visible. Sometimes the LP's stamp is not visible when the application is scanned, so it is worth double checking this.
- ✔ **Tracking Number**
The application has a tracking number printed at the bottom right-hand corner of the paper. Documents generated for uses other than applying for the ENERGY STAR, such as Statements of Energy Performance or Data Verification Checklists (generated through the Reporting tab in Portfolio Manager) do not have a tracking number and will not be accepted. If there is not a tracking number on the application, then the applicant needs to download an application within the "Apply for ENERGY STAR Certification" process.

Stamp & Sign

After all the information has been reviewed and deemed to be correct, the LP must apply their professional seal or stamp and sign and date the application, thus attesting that the information contained within the application is accurate and in accordance with the instructions in this Guide. The LP must ensure that their name, license number, and contact information is complete and correct, matching the information on their professional stamp.

- If the LP does not own a stamp, EPA will check the website of the state licensing body to verify that the LP's license is current.
- Note that the application must be submitted before the date specified as the "Date application becomes ineligible" on page 1 of the application. Therefore, work with the applicant to ensure that there is enough time within the 120-day eligibility window to conduct the site visit, complete the application, and submit the application.

The person who signs the signatory agreement must be a representative of the property applying for ENERGY STAR certification (typically a direct employee of the owner or manager – not an SPP or contractor). In cases where the LP is a direct employee of the building owner or manager organization, they may sign the application twice – in the LP verification section, as well as the signatory agreement. However, if the LP does not work for the building owner or manager organization that is certifying, they may not sign the signatory agreement.

- The person submitting the application should check to make sure the LP stamp and all signatures are visible on the scanned copy of the application before submitting it to EPA. If the LP does not own a stamp, EPA will check the website of the state licensing body to verify that the LP's license is current. If the signatures are not visible or if the LP's license is not current, EPA will require resubmission of the application.
- Electronic signatures in the PDF application for certification are acceptable for both the LP and the Signatory.



Appendix A: Indoor Environmental Quality Measurement form for ENERGY STAR Building Verification Site Visit

Instructions: The LP (or their representative) must use this form to record measurements taken during the ENERGY STAR building verification site visit. Forms should be kept on file for two years. Should an ENERGY STAR application be selected for an audit, you will be required to submit this form as supporting documentation. Please attach additional notes pages if necessary.

Property Name: _____

Property Address: _____

LP Name: _____ Site visit date: _____

Information on person conducting the site visit:

Name: _____ Title: _____ Organization: _____

Outdoor Air Ventilation

The LP must verify that the property meets the minimum ventilation rates according to *ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality*.

Select the method used (check all that apply)

- ☐ For mechanically ventilated buildings, the LP must confirm minimum outdoor ventilation rates by any of the following;
 - ☐ Simplified direct airflow measurements per *ANSI/ASHRAE Standard 62.1, Addendum b and Addendum z where applicable¹; Section 6.2, the Ventilation Rate Procedure* where the addenda are not applicable, or
 - ☐ CO₂ concentration measurements per *ASHRAE 62.1 Appendix C*, and *ASTM D6245 Standard Guide for Using Indoor CO₂ Concentrations to Evaluate Indoor Air Quality and Ventilation*, or
 - ☐ Detailed airflow calculations derived from as-built equipment specifications, and physical inspection of system operation and control
- ☐ For naturally ventilated buildings, the LP must follow *ASHRAE 62.1, Section 6.4, Natural Ventilation Procedure* to confirm the minimum outdoor air opening and space configuration requirements.
- ☐ Dwelling units in multifamily housing shall use *ASHRAE 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings*. Hospitals and Senior Care Communities may use *ASHRAE Standard 62.1*, or *ANSI/ASHRAE/ASHE Standard 170: Ventilation of Health Care Facilities - 2013*.
- ☐ For building occupancy types not covered by these standards, buildings with physical constraints that make it infeasible to provide these minimum outdoor air rates, as well as spaces that are inaccessible to the LP (e.g. individual apartments) the LP must use their professional judgement to confirm that outdoor air ventilation has not been compromised in pursuit of energy conservation.

Description of verification method and documentation of measurement results:

¹ For Minimum Outdoor and Primary Airflow Rates for K-12 Schools and Offices, see Addendum b. For Combined Outdoor Air Rate check values for K-12 Schools, Hotels, Residence Halls/Dormitories, Offices/Financial Offices, Bank Branches, Warehouses and Distribution Centers, Worship Facilities, Courthouses, Multifamily Housing, Senior Care Communities (except for strictly-medical spaces), Retail Stores, and Supermarkets, see Addendum z. These addenda do not apply to Hospitals or Medical Offices (for which LPs should refer to *ASHRAE Standard 170, Ventilation of Health Care Facilities*), nor to Data Centers.

Property Name: _____

Thermal Environmental Conditions

The LP must verify that the property meets the acceptable thermal environmental conditions according to *ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy*.

Location	Space Function	Date and Time	Specific location	Dry bulb Temp. (°F)	Relative Humidity (%)	Air Speed (ft/min) (optional)	Notes and Observations

Property Name: _____

Indoor Lighting Conditions

The LP must verify that the property meets the acceptable minimum illumination levels as recommended by the *Illuminating Engineering Society of North America (IESNA) Lighting Handbook*. Horizontal and/or vertical illumination measurements must be taken. Both measurements are not required.

Location	Space Function	Date and Time	Specific Location	Horizontal Illumination (fc)	Vertical Illumination (fc)	Notes and Observations

I verify that the measurements on this form are accurate and taken in accordance with the requirements described in the ENERGY STAR Licensed Professional's Guide.

LP Signature: _____

Date: _____

Property Name: _____

Notes Section (optional)

Please use this section to document your notes about the site visit.