# National Program Requirements
# ENERGY STAR Certified Homes, Version 3.1 (Rev. 09)

## Eligibility Requirements

The following site-built or modular [1] homes are eligible to earn the ENERGY STAR:

- Detached dwelling units [2] (e.g. single family homes); OR
- Dwelling units [2] in any multifamily building with 4 units or fewer; OR
- Dwelling units [2] in multifamily buildings with 3 stories or fewer above-grade [3,4]; OR
- Dwelling units [2] in multifamily buildings with 4 or 5 stories above-grade [3,4] where dwelling units occupy 80% or more of the occupiable [4] square footage of the building [5,6]. When evaluating mixed–use buildings for eligibility, exclude commercial / retail space when assessing whether the 80% threshold has been met.

Dwelling units [2] in multifamily buildings that are not eligible to earn the ENERGY STAR through the Certified Homes Program may be eligible through the Multifamily High Rise Program. For more information, visit: www.energystar.gov/mfhr/eligibility

Note that compliance with these requirements is not intended to imply compliance with all local code requirements that may be applicable to the home to be built. [7]

## Partnership, Training, and Credentialing Requirements

Builders, Raters, and HVAC contractors must meet the following requirements prior to certifying homes:

- Builders are required to sign an ENERGY STAR Partnership Agreement and complete the online Version 3 Builder Orientation, which can be found at www.energystar.gov/homesPA.
- HVAC installing contractors are required to be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this process can be found at www.energystar.gov/newhomesHVAC.
- Raters and Field Inspectors are required to complete training, which can be found at www.energystar.gov/newhomestraining.

## ENERGY STAR Certification Process [8]

1. The certification process provides flexibility to select a custom combination of measures for each home that is equivalent in performance to the minimum requirements of the ENERGY STAR Reference Design Home, Exhibit 1, as assessed through energy modeling. Use a Home Energy Rating Software program accredited by an EPA-Approved Verification Oversight Organization (VOO) to determine the ENERGY STAR ERI Target, which is the highest ERI value that each rated home may achieve to earn the ENERGY STAR. [9]
2. Using the same software program, configure the preferred set of efficiency measures for the home to be certified and verify that the resulting ERI meets or exceeds the ENERGY STAR ERI Target, as determined in Step 1.

   Note that, regardless of the measures selected, the Mandatory Requirements for All Certified Homes in Exhibit 2 are also required and impose certain constraints on the efficiency measures selected (e.g., insulation levels, insulation installation quality, window performance, duct leakage). Furthermore, on-site power generation may not be used to meet the ENERGY STAR ERI Target.
3. Construct the home using the measures selected in Step 2 and the Mandatory Requirements for All Certified Homes, Exhibit 2.
4. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Homes and with the on-site inspection procedures for minimum rated features of an EPA-Approved VOO.[10] For modular homes, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment. Finally, register the rated home with the same EPA-Approved VOO. The Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists and the National HVAC Design Report.

   The Rater must review all items on the National Rater checklists. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).

   In the event that a Rater finds an item that is inconsistent with the intent of the checklists, the home cannot earn the ENERGY STAR until the item is corrected. If correction of the item is not possible, the home cannot earn the ENERGY STAR. In the event that an item on a National Rater checklist cannot be inspected by the Rater, the home also cannot earn the ENERGY STAR. The only exceptions to this rule are in the Thermal Enclosure System Section of the National Rater Field Checklist, where the builder may assume responsibility for verifying a maximum of eight items. This option shall only be used at the discretion of the Rater. When exercised, the builder's responsibility will be formally acknowledged by the builder signing the checklist for the item(s) that they verified.

   In the event that a Rater is not able to determine whether an item is consistent with the intent (e.g., an alternative method of meeting a checklist requirement has been proposed), then the Rater shall consult their Provider. If the Provider also cannot make this determination, then the Rater or Provider shall report the issue to EPA prior to project completion at: energystarhomes@energystar.gov and will typically receive an initial response within 5 business days. If EPA believes the current program requirements are sufficiently clear to determine whether the intent has been met, then this guidance will be provided to the partner and enforced beginning with the house in question. In contrast, if EPA believes the program requirements require revisions to make the intent clear, then this guidance will be provided to the partner but only enforced for homes permitted after a specified transition period after the release of the revised program requirements, typically 60 days in length.

   This process will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the periodic release of revised program documents to ensure consistent application of the program requirements.

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## Exhibit 1: ENERGY STAR Reference Design Home [11]

The ENERGY STAR Reference Design Home is the set of efficiency features modeled to determine the ENERGY STAR ERI Target for each home pursuing certification. Therefore, while the features below are not mandatory, if they are not used then other measures will be needed to achieve the ENERGY STAR ERI Target. In addition, note that the Mandatory Requirements for All Certified Homes, Exhibit 2, contain additional requirements such as total duct leakage limits, minimum allowed insulation levels, and minimum allowed fenestration performance. Therefore, EPA recommends that partners review the documents in Exhibit 2 prior to selecting measures.

| **Hot Climates** (2009 IECC Zones 1,2,3) [12] | **Mixed and Cold Climates** (2009 IECC Zones 4,5,6,7,8) [12] |
|---|---|
| **Cooling Equipment (Where Provided)** | |
| • Cooling equipment modeled at the applicable efficiency levels below: | |
| • 15 SEER / 12 EER AC,<br>• Heat pump (See Heating Equipment) | • 13 SEER AC,<br>• Heat pump (See Heating Equipment) |
| **Heating Equipment** | |
| • Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type: | |
| • 80 AFUE gas furnace,<br>• 80 AFUE oil furnace,<br>• 80 AFUE boiler,<br>• 8.2 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup | • 95 AFUE ENERGY STAR gas furnace,<br>• 85 AFUE ENERGY STAR oil furnace,<br>• 90 AFUE ENERGY STAR gas boiler,<br>• 86 AFUE ENERGY STAR oil boiler,<br>• Heat pump, with efficiency as follows:<br>  • *CZ 4:* 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,<br>  • *CZ 5:* 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,<br>  • *CZ 6:* 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,<br>  • CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup |

**Envelope, Windows, & Doors**

- Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.[13]
- Infiltration rates modeled as follows:

| 4 ACH50 in CZs 1,2 | 3 ACH50 in CZs 3,4,5,6,7,8 |
|---|---|

- ENERGY STAR windows and doors modeled, as illustrated below:

| | | | | |
|---|---|---|---|---|
| Window U-Value: | 0.40 in CZs 1,2 | 0.30 in CZ 3 | 0.30 in CZ 4 | 0.27 in CZs 5,6,7,8 |
| Window SHGC: | 0.25 in CZs 1,2 | 0.25 in CZ 3 | 0.40 in CZ 4 | Any in CZs 5,6,7,8 |

| | | | |
|---|---|---|---|
| Door U-Value: | Opaque: 0.17 | ≤½ lite: 0.25 | >½ lite: 0.30 |
| Door SHGC: | Opaque: Any | ≤½ lite: 0.25 | >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8 |

**Water Heater**

- DHW equipment modeled with the following efficiency levels as applicable:

| | | | | | | |
|---|---|---|---|---|---|---|
| Gas: | 30 Gal = 0.63 EF | 40 Gal = 0.61 EF | 50 Gal = 0.59 EF | 60 Gal = 0.57 EF | 70 Gal = 0.55 EF | 80 Gal = 0.53 EF |
| Electric: | 30 Gal = 0.94 EF | 40 Gal = 0.93 EF | 50 Gal = 0.92 EF | 60 Gal = 0.91 EF | 70 Gal = 0.90 EF | 80 Gal = 0.89 EF |
| Oil: | 30 Gal = 0.55 EF | 40 Gal = 0.53 EF | 50 Gal = 0.51 EF | 60 Gal = 0.49 EF | 70 Gal = 0.47 EF | 80 Gal = 0.45 EF |

**Thermostat & Ductwork**

- Programmable thermostat modeled.
- All ducts and air handlers modeled within conditioned space.

**Lighting & Appliances**

- ENERGY STAR refrigerators, dishwashers, and ceiling fans modeled.
- ENERGY STAR light bulbs modeled in 90% of ANSI / RESNET / ICC Standard 301-defined Qualifying Light Fixture Locations. [13]

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## Exhibit 2: Mandatory Requirements for All Certified Homes

| Party Responsible | Mandatory Requirements |
|---|---|
| **Rater** | • Completion of National Rater Design Review Checklist<br>• Completion of National Rater Field Checklist |
| **HVAC System Designer** | • Completion of National HVAC Design Report |
| **HVAC Installing Contractor** | • Completion of National HVAC Commissioning Checklist |
| **Builder** | • Completion of National Water Management System Builder Requirements |

### Effective Date

To determine the program Version and Revision that a home is required to be certified under, look up the location and permit date of the home in Exhibit 3. Note that the National Version 3 program requirements are being implemented in states that have not adopted the 2012, 2015, or 2018 IECC, or an equivalent code. Note, as well, that regional program requirements, and associated implementation timelines, have been developed for homes in CA, FL, GU, HI, the Northern Mariana Islands, OR, PR, and WA. The National Version 3 and regional program requirements can be found at www.energystar.gov/newhomesrequirements.

This Exhibit contains all implementation timelines applicable on or after September 1, 2016. Implementation timelines applicable prior to this date can be obtained by contacting energystarhomes@energystar.gov.

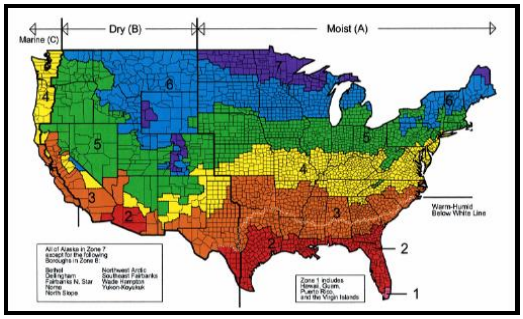
## .Exhibit 3: ENERGY STAR Certified Homes Implementation Timeline

| State / Territory | Homes Permitted [14] On or After This Date Must Meet the Adjacent Version & Revision | Version | Revision [15] |
|---|---|---|---|
| AL, AK, AZ, AR, CO, GA, IN, ID, KS, KY, LA, ME, MS, MO, NE, NH, NM, NC, ND, OH, OK, PA, SC, SD, TN, UT, VA, WV, WI, WY | 07-01-2016 | National v3 | Rev. 08 |
| | 01-01-2019 | National v3 | Rev. 09 |
| DC, DE, IA, IL, MA, MD, MN, MT, RI, VT | 07-01-2016 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| NV | 07-01-2016 | National v3 | Rev. 08 |
| | 10-01-2016 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| MI, NJ | 07-01-2016 | National v3 | Rev. 08 |
| | 04-01-2017 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| CT, NY | 07-01-2016 | National v3 | Rev. 08 |
| | 10-01-2017 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| TX | 07-01-2016 | National v3 | Rev. 08 |
| | 07-01-2018 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| WA | 07-01-2016 | National v3.1 | Rev. 08 |
| | 07-01-2018 | Oregon and Washington v3.2 | Rev. 08 |
| | 01-01-2019 | Oregon and Washington v3.2 | Rev. 09 |
| OR | 07-01-2016 | National v3.1 | Rev. 08 |
| | 01-01-2019 | National v3.1 | Rev. 09 |
| | 04-01-2019 | Oregon and Washington v3.2 | Rev. 09 |

**Footnotes:**

1. A modular home is a prefabricated home that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant. These pre–built sections are transported to the building site and constructed by a builder to meet all applicable building codes for site–built homes.
2. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.
3. Any above-grade story with 20% or more occupiable space, including commercial space, shall be counted towards the total number of stories for the purpose of determining eligibility to participate in the program. The definition of an 'above-grade story' is one for which more than half of the gross surface area of the exterior walls is above-grade. All below-grade stories, regardless of type, shall not be included when evaluating eligibility.
4. Per ASHRAE 62.2-2010, occupiable space is any enclosed space inside the pressure boundary and intended for human activities or continual human occupancy, including, but not limited to, areas used for living, sleeping, dining, and cooking, toilets, closets, halls, storage and utility areas, and laundry areas.
5. These units may earn the ENERGY STAR through either the Certified Homes Program or the Multifamily High Rise (MFHR) Program. If participating in the Certified Homes program and the dwelling unit is served by a central heating, cooling, or hot water system, use of the RESNET Guidelines for Multifamily Ratings for modeling the specified central system(s) is recommended.
6. If permitted prior to July 1, 2012, units in multifamily buildings with 4 or 5 stories above-grade may earn the ENERGY STAR through either the Certified Homes Program or the Multifamily High Rise (MFHR) Program, without assessing whether the 80% threshold has been met.
7. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:
   a. Where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
   b. Where overlapping requirements conflict with a requirement of the ENERGY STAR program (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these program requirements shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement (e.g., switching from exterior to interior slab edge insulation). Note that a home must still meet its ENERGY STAR ERI Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.
8. Prior to Rev. 06, homes were permitted to be certified using either a Prescriptive Path or a Performance Path. Homes with a permit date on or after 09/01/2015 shall only use the Performance Path, which has been renamed the ENERGY STAR Certification Process. To minimize disruption to projects that are in process, homes with a permit date before 09/01/2015 are permitted to use a modified version of the Prescriptive Path in lieu of the Performance Path. For more information about this compliance option, visit: www.energystar.gov/v31prescriptivepath.
9. The software program shall automatically determine (i.e., without relying on a user-configured ENERGY STAR Reference Design) this target for each rated home by following the National ERI Target Procedure, Version 3.1 (Rev. 09), available on EPA's website.
10. The term 'Rater' refers to the person completing the third-party inspections required for certification. This person shall: a) be a certified Home Energy Rater, Rating Field Inspector, or an equivalent designation as determined by a VOO, such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.

    Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home and to verify any Checklist Item designated "Rater Verified" using the VOO-approved sampling protocol for homes outside California, and the CEC-approved sampling protocol for homes in CA. No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified home. For example, no items on the National HVAC Commissioning Checklist are permitted to be verified using a sampling protocol.
11. Note that the efficiency levels of ENERGY STAR certified products aligned with these product specifications when this Version was first released. These efficiency features form the basis of the ENERGY STAR ERI target, regardless of any subsequent revisions to ENERGY STAR certified product specifications. EPA recommends, but does not require, that current ENERGY STAR products be included in ENERGY STAR homes. For current ENERGY STAR products, visit www.energystar.gov/products.
12. The following map illustrates the Climate Zone boundaries as defined by the 2012 IECC Figure R301.1.




13. The version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings is used to model this parameter.

14. The Rater may define the 'permit date' as either the date that the permit was issued or the date of the contract on the home. In cases where permit or contract dates are not available, Providers have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented.
15. Homes certified under Rev. 09 of the program requirements are permitted to use either Rev. 08 or 09 National HVAC Design Report.