



# ENERGY STAR® Program Requirements for Furnaces

## Partner Commitments Version 2.1 – Draft 1

### Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing of ENERGY STAR qualified furnaces. The ENERGY STAR Partner must adhere to the following program requirements:

- comply with current ENERGY STAR Eligibility Criteria, defining the performance criteria that must be met for use of the ENERGY STAR certification mark on furnaces and specifying the testing criteria for furnaces. EPA may, at its discretion, conduct tests on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by Partner at EPA's request;
- comply with current ENERGY STAR Identity Guidelines, describing how the ENERGY STAR marks and name may be used. Partner is responsible for adhering to these guidelines and for ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance;
- qualify at least one ENERGY STAR furnace model within one year of activating the furnaces portion of the agreement. When Partner qualifies the product, it must meet the specification (e.g., Tier 1 or 2) in effect at that time;
- provide clear and consistent labeling of ENERGY STAR qualified furnaces. The ENERGY STAR mark must be clearly displayed in product literature (i.e., user manuals, spec sheets, etc.) and on the manufacturer's Internet site where information about ENERGY STAR qualified models is displayed. It is also recommended that the label appear on the top/front of the product and on the product packaging;
- offer and encourage training to distributors and/or contractors on the following issues: system venting, condensate removal, code compliance, and proper use of the Manual J calculation, or other equivalent calculation, in order to encourage proper sizing of equipment;
- provide to EPA, on an annual basis, an updated list of ENERGY STAR qualifying furnace models. Once the Partner submits its first list of ENERGY STAR qualified furnace models, the Partner will be listed as an ENERGY STAR Partner. Partner must provide annual updates in order to remain on the list of participating product manufacturers;
- provide to EPA, on an annual basis, unit shipment data or other market indicators to assist in determining the market penetration of ENERGY STAR. Specifically, Partner must submit the total number of ENERGY STAR qualified furnaces shipped (in units by model) or an equivalent measurement as agreed to in advance by EPA and Partner. Partner is also encouraged to provide ENERGY STAR qualified unit shipment data segmented by meaningful product characteristics (e.g., capacity, size, speed, or other as relevant), total unit shipments for each model in its product line, and percent of total unit shipments that qualify as ENERGY STAR. The data for each calendar year should be submitted to EPA, preferably in electronic format, no later than the following March and may be provided directly from the Partner or through a third party. The data will be used by EPA only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), EPA will argue that the data is exempt. Any information used will be masked by EPA so as to protect the confidentiality of the Partner;

- notify EPA of a change in the designated responsible party or contacts for furnaces within 30 days.

### **Performance for Special Distinction**

In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures and should keep EPA informed on the progress of these efforts:

- consider energy efficiency improvements in company facilities and pursue the ENERGY STAR mark for buildings;
- purchase ENERGY STAR qualified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR labeled product information to employees for use when purchasing products for their homes;
- ensure the power management feature is enabled on all ENERGY STAR qualified monitors in use in company facilities, particularly upon installation and after service is performed;
- provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified product models;
- feature the ENERGY STAR label(s) on Partner Web site and in other promotional materials. If information concerning ENERGY STAR is provided on the Partner Web site as specified by the ENERGY STAR Web Linking Policy (this document can be found in the Partner Resources section on the ENERGY STAR Web site at [www.energystar.gov](http://www.energystar.gov)), EPA may provide links where appropriate to the Partner Web site;
- provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate, communicate, and/or promote Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR Web pages, etc. The plan may be as simple as providing a list of planned activities or planned milestones that Partner would like EPA to be aware of. For example, activities may include: (1) increase the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrate the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) provide information to users (via the Web site and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products, and (4) build awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event;
- provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.



# ENERGY STAR® Program Requirements for Furnaces

## Eligibility Criteria Version 2.1 – Draft 1

Below is the **DRAFT 1 Version 2.1** product specification for ENERGY STAR qualified furnaces. A product must meet all of the identified criteria to earn the ENERGY STAR. Please note that this specification is intended for furnaces installed and used in residences.

- 1) Definitions: Below are the definitions of the relevant terms in this document.
  - A. Furnace: A heating unit with a heat input rate of less than 225,000 Btu per hour whose function is the combustion of fossil fuel for space heating with forced hot air. Unit must include burner(s), heat exchanger(s), blower(s) and connections to heating ducts. A heating unit that meets this definition and also provides hot water for domestic or other use may be considered a furnace for purposes of this agreement.
  - B. AFUE: The Annual Fuel Utilization Efficiency ("AFUE") measures the amount of fuel converted to space heat in proportion to the amount of fuel entering the furnace. This is commonly expressed as a percentage. For purposes of this agreement, the efficiency of a furnace shall be measured using AFUE. Test procedures have been developed to test AFUE by the Department of Energy (DOE). These procedures are specified in 10 Code of Federal Regulations (CFR) part 430, Appendix N.
  - C. Manufacturer Limited Warranty: For purposes of this agreement, a manufacturer limited warranty is an assurance by the Partner that purchased system equipment and components are warranted by the manufacturer for a period of time. The period of time is typically expressed in numbers of years.<sup>1</sup> The exact terms of the limited warranty shall be determined by the Partner.
- 2) Qualifying Products: Any furnace that meets the definition in Section 1A is eligible for ENERGY STAR qualification.
- 3) Energy-Efficiency Specifications: Only those products listed in Section 2 that meet the following Tier I and Tier II criteria may qualify as ENERGY STAR. Effective dates for Tiers I and II are covered in Section 5 of this specification.

### Tier I

- A. Gas furnace models:  $\geq$  90% AFUE rating
- B. Oil furnace models:  $\geq$  83% AFUE rating

In addition Partner will:

- Include a manufacturer limited warranty with its qualified furnace models.
- Consider using high efficiency electric blower motors with its qualified furnace models.

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<sup>1</sup> At the time of writing, a manufacturer limited warranty is typically 20 years for the heat exchanger(s).

## Tier II

- A. Gas furnace models:  $\geq$  92% AFUE rating
- B. Oil furnace models:  $\geq$  85% AFUE rating

In addition Partner will:

- Include a manufacturer limited warranty with its qualified furnace models.

**Note:** The existing Version 2.0 specification includes a placeholder for determining furnace fan efficiency requirements for both gas and oil furnaces. Many utility programs currently provide rebates for efficient furnace fans and some stakeholders encouraged ENERGY STAR to harmonize with these efforts. EPA's goal was to develop and finalize these requirements by the end of 2007.

Over the last few months, EPA has met with industry and utility program representatives to discuss the feasibility of developing a furnace fan requirement prior to the Tier II effective date. Many stakeholders shared a concern that while some regions of the U.S. may benefit from furnace fan efficiency (cooling-dominated), others may not (heating-dominated). Other stakeholders added that furnace fan efficiency would be better addressed under separate "cooling" and/or "continuous ventilation" specifications. In addition to concerns regarding regional differences, many questions have been raised regarding the accuracy of the current test procedure. Specifically, several field observations have indicated that fan efficiency as measured under current testing conditions is inconsistent with what is being experienced in the field. This could result in much lower energy savings in the field than expected when comparing high efficiency and standard fans. Efforts are underway in California and Canada to resolve these testing issues. Moving forward, EPA will monitor these initiatives and may revisit the inclusion of a furnace fan efficiency requirement in future versions of this specification.

In the meantime, EPA is proposing a new Tier II 92% AFUE requirement for gas furnaces. According to the Gas Appliance Manufacturers Association (GAMA) Product Certification Directory, approximately 19% of gas models listed, representing 46 manufacturers and/or brands, would meet a minimum 92% AFUE requirement, thereby providing consumers with adequate choice of ENERGY STAR qualified models.

- 4) Test Criteria: Manufacturers are required to perform tests and self-certify those product models that meet the ENERGY STAR guidelines. Partner agrees to measure a furnace model's energy-efficiency using the test conditions as specified in 10 CFR Part 430, Appendix N.
- 5) Effective Date: The date that manufacturers may begin to qualify products as ENERGY STAR, under this Version 2.0 specification, will be defined as the *effective date* of the agreement. Any previously executed agreement on the subject of ENERGY STAR qualified furnaces shall be terminated effective October 26, 2006.
  - A. Qualifying Products Under Tier I of the Version 2.0 Specification: The first phase of this specification is proposed to commence on **October 27, 2006**. All products, including models originally qualified under Version 1.3, with a **date of manufacture** on or after **October 27, 2006**, must meet the new (Version 2.0) requirements in order to qualify for ENERGY STAR. The **date of manufacture** is specific to each unit and is the date (e.g., month and year) of which a unit is considered to be completely assembled.
  - B. Qualifying Products Under Tier II of the Version 2.0 Specification: The second phase of this specification, Tier II, is proposed to commence on **October 1, 2008**. All products, including

models originally qualified under Tier I, with a **date of manufacture** on or after **October 1, 2008**, must meet the Tier II requirements in order to qualify for ENERGY STAR.

- C. EPA will not allow grandfathering under this Version 2.0 ENERGY STAR specification. **ENERGY STAR qualification under previous Versions is not automatically granted for the life of the product model.** Therefore, any product sold, marketed, or identified by the manufacturing partner as ENERGY STAR must meet the current specification in effect at the time of manufacture of the product.
- 6) Future Specification Revisions: EPA reserves the right to revise the specification should technological and/or market changes affect its usefulness to consumers or industry or its impact on the environment. In keeping with current policy, revisions to the specification will be discussed with stakeholders.