ENERGY STAR® Program Requirements for Refrigerated Beverage Vending Machines

Partner Commitments
Version 2.0

Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing and remanufacturing of ENERGY STAR qualified refrigerated beverage vending machines. For rebuilt vending machines, the original equipment manufacturer (OEM), the refurbishment center (RC), or a qualified component supplier (QCS) that qualifies and supplies the energy-efficient rebuilding kit(s) will be required to become an ENERGY STAR Partner by signing an ENERGY STAR Partnership Agreement. Each ENERGY STAR Partner is responsible for testing, qualifying, rebuilding, and labeling their new and/or rebuilt machine model according to the requirements of this specification. 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 refrigerated beverage vending machines and specifying the testing criteria for refrigerated beverage vending machines. 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 logos 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 new or rebuilt refrigerated beverage vending machine model within one year of activating the refrigerated beverage vending machine 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 refrigerated beverage vending machines. The ENERGY STAR mark must be clearly displayed on the front of the machine or on or next to the nameplate of the machine, 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;

  For Rebuilt Machines: Each completed ENERGY STAR qualified rebuilt vending machine will receive a "refurbishment label/sticker" that includes the following information to indicate that the machine has been upgraded to ENERGY STAR performance levels: (1) a new and discrete model number that is representative of that machine and rebuilding kit combination; (2) the date of rebuilding; and (3) the ENERGY STAR certification mark. The ENERGY STAR Partner must provide to EPA the model numbers, along with the tested performance levels, for those machines that can qualify for ENERGY STAR when rebuilt with certain energy saving rebuilding kits, as identified by the ENERGY STAR Partner and specific to each machine model.

- provide to EPA, on an annual basis, an update of ENERGY STAR qualified new and rebuilt refrigerated beverage vending machine models. Once the Partner submits its first list of ENERGY STAR qualified refrigerated beverage vending machine 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 new and rebuilt refrigerated beverage vending machines 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 percentage 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 refrigerated beverage vending machines 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 of 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 qualified 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 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), 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 Refrigerated Beverage Vending Machines

Eligibility Criteria
Version 2.0

Below is the product specification (Version 2.0) for ENERGY STAR qualified refrigerated beverage vending machines. A product must meet all of the identified criteria if it is to be qualified as ENERGY STAR.

1) **Definitions:** Below are the definitions of the relevant terms in this document.

   A. Refrigerated Beverage Vending Machine: A self-contained system designed to accept consumer payments and dispense bottled, canned, and other sealed beverages at appropriate temperatures without on-site labor intervention.

      1. Indoor Vending Machine: A machine intended for placement inside a building and not subjected to the effects of weathering. These machines are marked "For Indoor Use Only" in accordance with UL Standard 541 "*Refrigerated Vending Machines*."

      2. Outdoor Vending Machine: A machine intended for placement outdoors and subjected to the full effects of weathering. These machines are marked "Suitable for Outdoor Use" or "Suitable for Protected Locations" in accordance with UL Standard 541 "*Refrigerated Vending Machines*."

      3. Rebuilt Refrigerated Beverage Vending Machine: A UL Listed or Classified model that has been previously in use and subjected to various degrees of retrofitting, remanufacturing, refurbishing, repairing, or reconditioning for resale or reuse.

   B. Low Power Mode: The reduced power state of a refrigerated beverage vending machine during extended periods of inactivity.

   C. Rebuilding Kit: a combination of components that may be installed in a previously used vending machine at a refurbishment center.

   D. Standard Product: The standard product shall be 12 oz (355 ml) cans for machines that are capable of dispensing 12 oz (355 ml) cans. For all other machines, the standard product shall be the product specified by the manufacturer as the standard product[1].

   E. Vendible Capacity: The maximum quantity of standard product that can be dispensed from one full loading of the vending machine without further reload operations when used as recommended by the manufacturer[2].

   F. OEM: Original Equipment Manufacturer.

   G. Qualified component supplier (QCS): A company that produces components and/or rebuilding kits for vending machines.

   H. Refurbishment Center (RC): A facility equipped to rebuild vending machines.

   I. ASHRAE: American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.

   J. CSA: Canadian Standards Association

[1] ASHRAE Standard 32.1-2004, *Methods of Testing for Rating Vending Machines for Bottled, Canned, and Other Sealed Beverages*.
[2] Ibid.

K. UL Standard 541: UL Safety Standard for Refrigerated Vending Machines.

2) **Qualifying Products:** In order to qualify for the ENERGY STAR, a refrigerated beverage vending machine must meet the definition in Section 1A. All qualifying models must also meet the performance requirements provided in Section 3, below, at the time of manufacturing or rebuilding.

3) **Energy-Efficiency Specifications for Qualifying Products:** Only those products listed in Section 2 that meet both criteria A and B provided below may qualify as ENERGY STAR.

A. Energy Consumption: Qualifying models shall consume equal to or less energy in a 24-hr period than the values obtained from the equations[3], shown below. Effective dates for Tier I and Tier II are provided in Section 6 of this specification.

Tier I

$$Y = 0.55\ [8.66 + (0.009 \times C)]$$

Tier II

$$Y = 0.45\ [8.66 + (0.009 \times C)]$$

Where:
Y = 24 hr energy consumption (kWh/day) after the machine has stabilized
C = vendible capacity

Example: Under Tier I, a 650-can capacity machine may consume no more than 7.9805, or 7.98 kWh/day (rounded). Under Tier II, a 650-can may consume no more than 6.5295 or 6.53 kWh/day (rounded).

B. Low Power Mode: In addition to meeting the 24-hour energy consumption requirements in Section 3A, qualifying models shall come equipped with hard wired controls and/or software capable of placing the machine into a low power mode during periods of extended inactivity while still connected to its power source to facilitate the saving of additional energy, where appropriate. The machine shall be capable of operating in at least one of the low power mode states described below:

1. Lighting low power state – lights off for an extended period of time.
2. Refrigeration low power state – the average beverage temperature is allowed to rise to 40°F or higher for an extended period of time.
3. Whole machine low power state – the lights are off and the refrigeration operates in its low power state.

While only one of the above low power mode state is required, EPA encourages new machine manufacturers to continue to include all of the low power mode options in equipment designs and partners that are rebuilding machines to seek out new technologies that might help to achieve this goal as well.

In addition, the machine shall be capable of returning itself back to its normal operating conditions at the conclusion of the inactivity period. The low power mode-related controls/software shall be capable of on-site adjustments by the vending operator or machine owner unless the low power controlling device is already pre-programmed when installed into the machine. EPA encourages partners to train vending machine installers to provide information to host sites on the low power mode capabilities of their machines so that these capabilities may be enabled as desired by the host site.

[3] The energy consumption equation is based on CAN/CSA C804-96 *Energy Performance of Vending Machines* (for Machine Type A).

Note: EPA's goal in including these low power mode requirements is to ensure that existing machine software capabilities are available and may be used to their fullest potential based on the individual requirements of the host site. However, machines that are vending temperature sensitive product, such as milk, must not have the refrigeration low power state enabled on site by the vending operator or machine owner due to the risk of product spoilage.

4) **Test Criteria:** ENERGY STAR Partners are required to perform tests, according to the requirements included in this Version 2.0 specification, and then submit qualifying model information to EPA for approval.

A. In performing these tests, Partner agrees to measure a model's daily energy consumption according to ASHRAE Standard 32.1-2004, *Methods of Testing for Rating Vending Machines for Bottled, Canned, and Other Sealed Beverages,* using the test conditions provided in Section 6 of the standard:

1. Machines marked "For Indoor Use Only" must be tested at 75±2 °F (23.9±1 °C); 45±5% relative humidity; and 36±1 °F (2.2±0.5 °C) average beverage temperature throughout the test.

2. Machines marked "Suitable for Outdoor Use" or "Suitable For Protected Locations" must be tested at 90±2 °F (32.2±1 °C); 65±5% relative humidity; and 36±1 °F (2.2±0.5 °C) average beverage temperature throughout the test.

B. Test results must be reported to EPA using the Refrigerated Beverage Vending Machine Qualifying Product Information (QPI) Version 2.0 form.

5) **Additional Qualification and Certification Procedures for Rebuilt Vending Machines:** Each rebuilt vending machine model number should be distinct and representative of a particular model and rebuilding kit combination that has been tested and qualified for ENERGY STAR. For example, the Partner may submit multiple component and/or rebuilding kit options for one vending machine model but each combination must be supported by individual test results and represented by separate model numbers. EPA reserves the right to request additional information on ENERGY STAR qualified rebuilt machines should an issue arise regarding their performance and qualification. When qualifying and reporting rebuilt machines:

- Partner will be responsible for identifying and testing each component and/or rebuilding kit within each machine model to determine which combination(s) will meet the ENERGY STAR energy-efficiency specifications. It is also the responsibility of the Partner to verify UL or equivalent safety requirements and that the components are Listed, Recognized, Classified, etc., as applicable for each component.

- Partner must test a representative machine for *each model and component combination* to ASHRAE Standard 32.1-2004 and report the results to EPA using the Refrigerated Beverage Vending Machines QPI Version 2.0 form for review. Once EPA has approved the rebuilt model, the Partner may begin remanufacturing machines with the energy-saving components and/or "kits" and labeling the resulting rebuilt models as ENERGY STAR.

- When rebuilding machines for ENERGY STAR qualification, the Partner must use only those components that have been tested and approved for use in specific ENERGY STAR configurations, as identified by the Partner; and meet the applicable UL or equivalent safety requirements, including Listed, Recognized, Classified, etc. as applicable. In addition, it is the responsibility of the Partner to ensure that installation is performed according to the appropriate machine guidelines.

6) **Effective Date:** The date that manufacturers may begin to qualify machines as ENERGY STAR will be defined as the *effective date* of the agreement.

   A. Tier I – The first phase, Tier I, shall go into effect on **April 1, 2004** and conclude on **June 30, 2007**.

      Rebuilt Machines: Effective August 31, 2006 rebuilt machines may qualify as ENERGY STAR.

   B. Tier II – The second phase of this specification, Tier II, shall commence on **July 1, 2007**. All products, including models originally qualified under Tier I, with a **date of manufacture or rebuild** on or after **July 1, 2007**, must meet Tier II requirements in order to bear the ENERGY STAR on the product or in product literature.

7) **Future Specification Revisions:** ENERGY STAR reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through industry discussions. **In the event of a specification revision, please note that ENERGY STAR qualification is not automatically granted for the life of a product model.** To carry the ENERGY STAR label, a product model must meet the ENERGY STAR specification in effect on the model's date of manufacture. The date of manufacture is specific to each unit and is the date by which a unit is considered to be completely assembled.