



ENERGY STAR® Program Requirements for Commercial Ice Machines

Partner Commitments

Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR qualified products. The ENERGY STAR Partner must adhere to the following partner commitments:

Qualifying Products

1. Comply with current ENERGY STAR Eligibility Criteria, which define performance requirements and test procedures for commercial ice machines. A list of eligible products and their corresponding Eligibility Criteria can be found at www.energystar.gov/specifications.
2. **Prior to associating the ENERGY STAR name or mark with any product**, obtain written certification of ENERGY STAR qualification from a Certification Body recognized by EPA for commercial ice machines. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform commercial ice machine testing. A list of EPA-recognized laboratories and Certification Bodies can be found at www.energystar.gov/testingandverification.

Using the ENERGY STAR Name and Marks

3. Comply with current ENERGY STAR Identity Guidelines, which define how the ENERGY STAR name and marks may be used. Partner is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance. The ENERGY STAR Identity Guidelines are available at www.energystar.gov/logouse.
4. Use the ENERGY STAR name and marks only in association with qualified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is qualified and offered for sale in the U.S. and/or ENERGY STAR partner countries.
5. Provide clear and consistent labeling of ENERGY STAR qualified commercial ice machines.
 - 5.1. The ENERGY STAR mark must be clearly displayed on the front of the product, 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.
 - 5.2. It is also recommended that the mark appear on the product packaging.

Verifying Ongoing Product Qualification

6. Participate in third-party verification testing through a Certification Body recognized by EPA for commercial ice machines, providing full cooperation and timely responses. EPA/DOE may also, 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 the government's request.

Providing Information to EPA

7. Provide unit shipment data or other market indicators to EPA annually to assist with creation of ENERGY STAR market penetration estimates, as follows:

- 7.1. Partner must submit the total number of ENERGY STAR qualified commercial ice machines shipped in the calendar year or an equivalent measurement as agreed to in advance by EPA and Partner. Partner shall exclude shipments to organizations that rebrand and resell the shipments (unaffiliated private labelers).
- 7.2. Partner must provide unit shipment data segmented by meaningful product characteristics (e.g., type, capacity, presence of additional functions) as prescribed by EPA.
- 7.3. Partner must submit unit shipment data for each calendar year to EPA or an EPA-authorized third party, preferably in electronic format, no later than March 1 of the following year.

Submitted unit shipment 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.

8. Report to EPA any attempts by recognized laboratories or Certification Bodies (CBs) to influence testing or certification results or to engage in discriminatory practices.
9. Notify EPA of a change in the designated responsible party or contacts within 30 days using the My ENERGY STAR Account tool (MESA) available at www.energystar.gov/mesa.

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:

- 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.
- Consider energy efficiency improvements in company facilities and pursue benchmarking buildings through the ENERGY STAR Buildings program.
- 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.
- Feature the ENERGY STAR mark(s) on Partner website and other promotional materials. If information concerning ENERGY STAR is provided on the Partner website as specified by the ENERGY STAR Web Linking Policy (available in the Partner Resources section of the ENERGY STAR website), EPA may provide links where appropriate to the Partner website.
- Ensure the power management feature is enabled on all ENERGY STAR qualified displays and computers 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 products.
- 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, and communicate Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR website, etc. The plan may be as simple as providing a list of planned activities or milestones of which Partner would like EPA to be aware. For example, activities may include: (1) increasing the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrating the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) providing information to users (via the website and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products; and (4) building awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event.

- Join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. The SmartWay Transport Partnership works with freight carriers, shippers, and other stakeholders in the goods movement industry to reduce fuel consumption, greenhouse gases, and air pollution. For more information on SmartWay, visit www.epa.gov/smartway.
- Join EPA's Green Power Partnership. EPA's Green Power Partnership encourages organizations to buy green power as a way to reduce the environmental impacts associated with traditional fossil fuel-based electricity use. The partnership includes a diverse set of organizations including Fortune 500 companies, small and medium businesses, government institutions as well as a growing number of colleges and universities. For more information on Green Power, visit www.epa.gov/greenpower.



ENERGY STAR® Program Requirements Product Specification for Commercial Ice Machines

Eligibility Criteria Version 1.1

Following is the **Version 1.1** product specification for ENERGY STAR qualified commercial ice machines. A product shall meet all of the identified criteria if it is to earn the ENERGY STAR.

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

- A. **Commercial Ice Machine:** A factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It is an assembly that makes up to 4,000 lbs of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of AHRI Standard 810-2006, and may also include means for storing or dispensing ice, or both.

Ice Machine Categories

- B. **Ice Making Head (IMH):** A model with the ice-making mechanism and the condensing unit in a single package, but with a separate ice storage bin.
- C. **Remote Condensing Unit (RCU) or Split System Unit:** A model in which the ice-making mechanism and condenser or condensing unit are in separate sections.
- D. **Self-Contained (SCU):** A model in which the ice-making mechanism and storage compartment are in an integral cabinet.
- E. **Air-Cooled:** An ice machine wherein motor driven fans or centrifugal blowers move air through the condenser to remove heat from the refrigerant.
- F. **Cubed:** Cubed ice machines have an alternate freezing and harvesting period. Water is circulated over an evaporator where it freezes until cubes are fully formed. The cubed ice is then harvested and moved to storage. The ice may be in cube shape, or in a variation of a solid shape.
- G. **Flake:** Flake ice machines produce ice continuously, usually in a barrel-shaped evaporator. An auger inside the evaporator scrapes ice off the sides into a storage bin.
- H. **Nugget:** Nugget ice machines use the same process as flake machines but compress the ice flakes into nuggets.

2) **Scope:**

- A. **Included Products:** Products that meet the definition of a Commercial Ice Machine as specified herein are eligible for ENERGY STAR qualification, with the exception of products listed in Section 2.B.
- B. **Excluded Products:** Ice machines that use water-cooled technology as well as flake and nugget ice machines are not eligible for ENERGY STAR.

¹ Definitions for ice machine, IMH, RCU, and SCU adopted from AHRI Standard 810-2006, *Performance Rating of Automatic Commercial Ice Makers*.

3) **Qualification Criteria:**

A. Energy and Water Efficiency Requirements:

Table 1: ENERGY STAR Requirements for Air-Cooled Commercial Cubed Ice Machines			
Equipment Type	Harvest Rate, H (lbs ice/day)	Energy Consumption (kWh/100 lbs ice)	Potable Water Use Limit (gal/100 lbs ice)
IMH	< 450	$\leq 9.23 - 0.0077H$	≤ 25.0
	≥ 450	$\leq 6.20 - 0.0010H$	≤ 25.0
RCU (without remote compressor)	< 1000	$\leq 8.05 - 0.0035H$	≤ 25.0
	≥ 1000	≤ 4.64	≤ 25.0
RCU (with remote compressor)	< 934	$\leq 8.05 - 0.0035H$	≤ 25.0
	≥ 934	≤ 4.82	≤ 25.0
SCU	< 175	$\leq 16.7 - 0.0436H$	≤ 35.0
	≥ 175	≤ 9.11	≤ 35.0

B. Significant Digits and Rounding:

- a. All calculations shall be carried out with actual measured or observed values. Only the final result of a calculation shall be rounded. Calculated results shall be rounded to three significant digits.
- b. Unless otherwise specified, compliance with specification limit shall be evaluated using exact values without any benefit from rounding.

4) **Test Requirements:**

- A. Representative Models shall be selected for testing. The representative model shall be equivalent to that which is intended to be marketed and labeled as ENERGY STAR. Qualification based on product family is not acceptable under this specification. Each individual model shall be tested and meet the requirements of this specification to be qualified as ENERGY STAR.
- B. When testing commercial ice machines, the following test methods shall be used to determine ENERGY STAR qualification:

Table 2: Test Methods for ENERGY STAR Qualification	
ENERGY STAR Requirement	Test Method Reference
Energy Consumption (kWh/100 lbs ice)	AHRI Standard 810-2006, <i>Performance Rating of Automatic Commercial Ice-Makers</i>
Portable Water Use (gal/100 lbs ice)	

- 5) **Effective Date:** The ENERGY STAR Commercial Ice Machine specification shall take effect on **January 1, 2008**. To qualify for ENERGY STAR, a product model shall 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 (e.g., month and year) on which a unit is considered to be completely assembled.

- 6) **Future Specification Revisions:** EPA 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 the ENERGY STAR qualification is not automatically granted for the life of a product model.

Flake and Nugget Ice Machines: EPA plans to revisit this specification once the revision processes for AHRI 810-2006 and ASHRAE 29 are complete. At that time, performance requirements for flake and nugget ice machines will be considered and shared with industry stakeholders for review and comment.