



ENERGY STAR® Program Requirements for Commercial Griddles

Draft 2: Partner Commitments

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Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing of ENERGY STAR qualified commercial griddles. 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 commercial griddles and specifying the testing criteria for commercial griddles. 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;

Note: EPA received several questions regarding data quality and compliance. One stakeholder asked how EPA will ensure that units shipped in the field actually meet the specification. EPA has a comprehensive program in place for assuring that products displaying the label meet the relevant performance requirements. The Agency has been conducting verification testing on a range of products for sometime and is exploring how best to address commercial food service products in that context. Other important elements of EPA's quality assurance program includes a formal partnership agreement, by which the manufacturer certifies that products sold as ENERGY STAR qualified meet the relevant ENERGY STAR criteria, formal test procedures, and the review of submitted qualification data. In egregious cases, EPA reserves the right to terminate the partnership.

In addition, one stakeholder asked what the consequence would be if a manufacturer or equipment supply chain partner misuses the ENERGY STAR label. In the case of a logo violation, the manufacturer in question is directed to stop using the logo in association with the non-qualifying product. Depending on the extent of the logo violation, the manufacturer is asked to submit a corrective action plan, which in some instances requires them to remove or cover labels on products already in distribution.

- 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 commercial griddle within one year of activating the commercial griddles' 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 commercial griddles. 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;
- provide to EPA, on an annual basis, an updated list of ENERGY STAR qualifying commercial griddle models. Once the Partner submits its first list of ENERGY STAR qualified commercial griddles, 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 commercial griddles 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;

Note: One stakeholder expressed concerns regarding the proprietary nature of unit shipment data and suggested that reporting be voluntary and collected from end users. Shipment data is collected from ENERGY STAR partners across more than 60 product categories. EPA allows manufacturers to submit data through a third party organization that can then provide an aggregate number representing all partners. All data is submitted to an EPA consultant who provides aggregate data to EPA. This summary is then published on the ENERGY STAR Web site at www.energystar.gov/usd.

For commercial foodservice equipment, EPA does not partner with distributors or end users. Therefore, obtaining information on purchases would be very difficult. While EPA understands the limitations of using unit shipment data the current approach has been quite effective for estimating total market penetration for commercial foodservice equipment.

- notify EPA of a change in the designated responsible party or contacts for commercial griddles 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 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 mark(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), 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 labeled 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.
- join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. SmartWay Transport 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 Climate Leaders Partnership to inventory and reduce greenhouse gas emissions. Through participation companies create a credible record of their accomplishments and receive EPA recognition as corporate environmental leaders. For more information on Climate Leaders, visit www.epa.gov/climateleaders.
- 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, visit <http://www.epa.gov/grnpower>.



ENERGY STAR® Program Requirements for Commercial Griddles

Draft 2: Eligibility Criteria

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Below is the **DRAFT 2** Version 1.0 product specification for ENERGY STAR qualified commercial griddles. A product must meet all of the identified criteria if it is to earn the ENERGY STAR.

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

- A. **Single-Sided Commercial Griddle:** A commercial appliance designed for cooking food in oil or its own juices by direct contact with either a flat, smooth, hot surface (i.e., flat, polished steel plate) or a hot channeled cooking surface (i.e., polished steel ½-inch grooved plate) where plate temperature is thermostatically controlled.
- B. **Double-Sided Commercial Griddle:** A commercial appliance designed for cooking food in oil or its own juices by direct contact with two hot surfaces where temperature is thermostatically controlled. A double-sided griddle has hinged upper griddle plates (platens) that swing down over the food, thereby cooking the food from both sides at once.
- C. **Fry-Top Range:** A multi-purpose appliance used for surface cooking by direct contact with a heated plate, and may also function as a device for roasting, broiling, grilling or any combination of these methods. A fry-top range may have an oven located beneath the cooktop or shelving or may be mounted on top of a refrigerated base.
- D. **Manual Control:** Infinite-control knob to regulate the input of each burner or element. Manual controls are calibrated in terms of the percentage of input, as the heater does not generally sense the temperature of the cooking surface.
- E. **Thermostatic Control:** Simple temperature-feedback control that regulates the heaters based on griddle plate temperature. Thermostatic controls have the potential to sense the presence of cooking loads and offer better response and faster recovery when a load of fresh product is placed on the cooking surface.
- F. **Cooking Energy Efficiency:** The ratio of energy absorbed by the food product to the total energy supplied to the griddle during cooking.
- G. **Idle Energy Rate:** The rate of griddle energy consumption while it is maintaining or holding at a stabilized operating condition or temperature. Also called standby energy rate. For the purposes of this specification the idle rate is normalized based on the area of the (bottom) cooking surface.

2) **Qualifying Products:** A commercial griddle must meet definitions provided in Section 1A and 1B above to be eligible for ENERGY STAR qualification under this specification. Griddles that are manually controlled and fry-top ranges, as defined in Section 1 above, are not eligible for ENERGY STAR under this Version 1.0 specification.

3) **Efficiency Requirements for Qualifying Products:** Commercial griddles must meet all the requirements provided below to qualify as ENERGY STAR.

Table 1: Energy Efficiency Requirements for Single and Double Sided Commercial Gas Griddles	
Cooking Energy Efficiency*	≥ 38%
Normalized Idle Energy Rate	≤ 2,650 Btu/h per ft ²

Table 2: Energy Efficiency Requirements for Single and Double Sided Commercial Electric Griddles	
Cooking Energy Efficiency*	≥ 70%
Normalized Idle Energy Rate	≤ 320 watts/ft ²

*Note: Measured at heavy-load conditions per ASTM F1275 and F1605. Performance results must be reported using rounding to the nearest whole number.

The formulae for normalizing the idle energy rates for gas and electric griddles are as follows:

$$q_{g-idle,n} = \frac{q_{gas} (Btu / h)}{A(ft^2)}, \quad q_{e-idle,n} = \frac{1000 \times q_{elec} (kW)}{A(ft^2)}$$

Where

$q_{g-idle,n}$ = normalized gas griddle idle energy rate, Btu/h/ft²,

q_{gas} = gas energy rate during idle, Btu/h,

$q_{e-idle,n}$ = normalized electric griddle idle energy rate, W/ft²,

q_{elec} = electric energy rate during idle, kW,

A = area of the bottom cooking surface (ft²) measured splashguard to splashguard and splashguard to grease trough

Double-sided griddles that include an electric top plate and gas bottom plate must meet the cooking energy efficiency and idle energy rate for gas griddles in Table 1, above. Manufacturers should use the formula provided below to determine normalized idle energy rate in Btu/h per ft².

$$q_{ds-idle,n} = \frac{q_{gas} (Btu / h) + 3413 \times q_{elec} (kW)}{A(ft^2)}$$

Where

$q_{ds-idle,n}$ = normalized gas griddle idle energy rate, Btu/h/ft²,

q_{gas} = gas energy rate during idle, Btu/h,

q_{elec} = electric energy rate during idle, kW,

A = area of the bottom cooking surface (ft²) measured splashguard to splashguard and splashguard to grease trough

Note: Based on discussions during the February stakeholder meeting, EPA has slightly modified the idle energy rate for gas griddles (i.e., from 2,600 to 2,650 Btu/h per ft²) to better represent the natural break between high and standard efficiency demonstrated by the EPA data set and to ensure a wider selection of qualifying single-sided griddles.

In addition, EPA has clarified that the griddle bottom cooking surface (Area, ft²) should be measured splashguard to splashguard and splashguard to grease trough.

Production Capacity: Some stakeholders believe that production capacity should be considered when developing ENERGY STAR requirements for idle energy rate. As explained during the February meeting, production capacity is calculated from cooking energy efficiency using the ASTM test method. Furthermore, idle energy rate should represent the energy used while the griddle is *not* cooking (i.e., absence of a cook load). However, in response to these concerns EPA revisited the current data set and plotted production capacity against idle energy rate to determine if there is an observable trend between production rate and idle energy rate. Based on the EPA data there does not appear to be any direct relationship between high production rate and high idle energy rate. In fact, EPA identified several high production units that also meet the proposed idle energy rates.

Note continued:

Therefore, EPA is continuing to approach idle energy rate using the normalized approach that does take into consideration griddle size. Based on data and testing, EPA has been able to identify a link between griddle surface area and idle energy rate. The production capacity vs. idle energy rate plot is available on the ENERGY STAR Web site at www.energystar.gov/productdevelopment (Click on New Specifications in Development).

Electric Idle Energy Rate: As discussed during the February stakeholder meeting, the EPA data set for electric griddles is quite limited and manufacturers claim that it is representative of *only* top performers. Stakeholders were concerned that the proposed Draft 1 levels would actually represent significantly less than EPA's desired 25% target because standard efficiency units are not well represented. In order to set a specification that represents the top 25% of performers in the marketplace more data is needed on standard efficiency equipment. As part of the comment process, stakeholders are encouraged to provide performance data on **standard efficiency electric griddles** for purposes of determining an appropriate idle energy rate that supports this guiding principle.

The possibility of two phases of requirements for electric griddles was also discussed during the stakeholder meeting. In this scenario, the first phase would become effective on May 1, requiring less stringent levels initially, and the second phase would go into effect 1-2 years in the future increasing ENERGY STAR levels to EPA's initial proposal of 70% and 320 Watts/ft². EPA may consider this approach if additional information can be provided that supports an initial lower idle energy rate.

EPA also received a stakeholder proposal for calculating electric idle energy rate based on the proposed gas idle energy rate. Provided below is the proposed approach using a 3' griddle as an example:

3,412 Btu = 1kWh

Proposed gas idle energy rate = 15,600 Btu = 4.57 kWh

Proposed gas cooking energy efficiency = 38%

Proposed electric cooking energy efficiency = 70%

Cooking energy efficiency as griddle system efficiency = $4.57/70\% \times 38\% = 2.48 \text{ kWh} = 408 \text{ Watts/ft}^2$

While this approach produces a mathematically equivalent idle energy rate threshold for both gas and electric griddles, it fails to adequately account for the differences in idle performance data between the two types of griddles. The data suggests that electric griddles can operate at a lower relative idle energy rate than their gas-fired counterparts. Therefore, additional data on standard-efficiency electric griddles will be required to justify relaxing the idle energy rate requirement for electric griddles.

Stakeholders should send data and other supporting information regarding **standard efficiency electric griddles** to Rebecca Duff at rduff@icfi.com by **April 3**. Based on stakeholder feedback, EPA will propose a revised electric idle energy rate in the Final Draft specification, scheduled for early April.

Double-sided griddles may qualify for ENERGY STAR under the following conditions:

- (1) Integrated, double-sided units with full top platen ($\geq 90\%$ coverage from side to side) must test and qualify as a double-sided griddle.
- (2) Integrated, double-sided unit with partial platen(s) ($< 90\%$ coverage from side to side) must test and qualify as a single sided griddle (with top up and turned off).
- (3) Double-sided units with add-on top platens (full or partial) must test and qualify as a single sided griddle (with top up and turned off).

Note: Integrated refers to double-sided griddles designed to operate only while using a top platen. Add-on top platens are sold to end users as options to a single sided griddle and can be added on to a base model at the factory level or installed in the field.

Note: The existing ASTM F1605 test method does not provide guidance on how to conduct a cooking energy efficiency test on double-sided griddles with partial top platens. These configurations are growing in popularity and offer the end user flexibility in operation. Instead of excluding these griddles from the specification, EPA developed a proposal that defines full and partial double-sided griddles based on total coverage of the top platen(s). Under this proposal, the partial platen configuration would be required to be tested as a single sided griddle (top up and turned off). This proposal was presented at the February stakeholder discussion and EPA received several comments from stakeholders during and after the meeting. An additional concern was raised regarding manufacturers that sell top griddle options (full and partial), which might be used to qualify the unit as ENERGY STAR. In this case the griddle could also be sold as a single-sided griddle, even though it does not meet the ENERGY STAR requirements without a top platen giving the manufacturer an unfair competitive advantage.

In response to this concern, EPA has revised its initial proposal to require that *all* double sided units with add-on top platens (full or partial) are required to be tested and qualify as single-sided griddles. Double-sided griddles with integrated platens measuring less than 90% side to side would also need to be tested as a single-sided griddle. Testing conducted by PG&E's Food Service Technology Center (FSTC) supports this approach, indicating that if a griddle can meet the ENERGY STAR idle energy rate in a single-sided configuration then it will meet it as a partial and double-sided unit. EPA also clarified that the percentage coverage applies to the griddle width (side to side) as opposed to total surface area to better represent the cooking surface area. Manufacturers are encouraged to provide feedback on this proposal.

The original proposal for griddles with partial top platens can be reviewed in EPA's presentation posted to the ENERGY STAR Web site at www.energystar.gov/productdevelopment (Click on New Specifications in Development). The single, partial, and double-sided idle energy rate comparison chart is also available on the ENERGY STAR Web site.

4) Test Criteria: Partner is required to perform tests and self-certify those product models that meet the ENERGY STAR guidelines. The test results must be reported to EPA using the Commercial Griddles Qualifying Product Information (QPI) Form. When testing commercial griddles, the partner must use the following test procedures to determine ENERGY STAR compliance:

- ASTM F1275: *Standard Test Method for the Performance of Griddles*
- ASTM F1605: *Standard Test Method for the Performance of Double-Sided Griddles*

Manufacturers may submit qualifying product information representing an entire family of griddles using one QPI Form according to the following procedures:

- 1) Test and submit a completed QPI Form for the representative 3' griddle within the product family.
- 2) Attach to the completed QPI Form, equipment specification sheets for each griddle to be qualified within that family. These sheets must provide proof that the design and insulation specifications for these additional models are identical to that of the 3' unit.
- 3) If product family includes units smaller than 3', manufacturer must test and qualify that unit separately from its product family.

Note: ASTM standards define cooking energy efficiencies for heavy-load (roughly four hamburger patties per square foot) and light-load (four hamburger patties per load) conditions. For purposes of ENERGY STAR, cooking energy efficiency is measured at heavy-load conditions.

Note: One stakeholder suggested that EPA use the water-boil efficiency test, which would eliminate the need for laborious cooking energy efficiency testing. This comment was discussed in detail during the February stakeholder meeting. A water-boil test was once included in the ASTM test procedure but was dropped because it was not necessarily representative of cooking-energy efficiency and did not provide a production capacity. Also, cooking energy efficiency is dependent on controls whereas water boil does not take efficient controls or control strategies into consideration as it effectively bypasses any controls on the griddle and only provides a rough indication of heat transfer efficacy. Stakeholders agreed that the current ASTM test method is the best indicator of product performance, providing the end user with consistent results that emulate real world operation.

Note continued:

Qualifying Product Families: To relieve some of the testing burden that comes with griddle testing, EPA is allowing manufacturers to test and submit results for a representative 3' griddle to qualify a product family for ENERGY STAR. Based on testing conducted by FSTC, griddles sharing the same engineering design within a product family exhibit similar cooking energy efficiency and normalized idle energy rate as the smaller 3' model. Initial testing suggests that a 2' griddle within the same product family experiences an idle energy rate that is not in-line with larger griddle sizes. This is why EPA did not choose the smallest unit to be representative of the product family. Therefore, manufacturers will need to test and submit results on their 2' griddles separately for ENERGY STAR qualification.

Testing Tolerances: One stakeholder asked what the allowable margin of error for cooking energy efficiencies would be under the ENERGY STAR program. For ENERGY STAR qualification, the unit must meet the cooking energy efficiency requirements proposed in Tables 1 and 2, above, rounding to the nearest whole number. Margin of error is addressed in the current ASTM test methods (i.e., three tests, uncertainty < 10%) and therefore, it does not need to be addressed in the ENERGY STAR specification.

Griddle Plate Options: During the February stakeholder meeting, several stakeholders brought up the issue of qualifying griddles with different griddle plates. Typically, the model number will not change based on griddle plate, which could impact the energy profile of the griddle. It is important that the end user purchasing ENERGY STAR be assured that the griddle will meet the requirements of the specification regardless of griddle plate option. Therefore, EPA is proposing that all griddle plate options be required to meet the specification requirements for a model to qualify as ENERGY STAR. This will avoid any confusion as to which griddle plate options actually meet ENERGY STAR requirements especially in situations where all of these options are provided on the same specification sheet. Another option would be for manufacturers to assign a unique model number to the different griddle plate options so it is clear what combination(s) meets ENERGY STAR requirements. Manufacturers are encouraged to provide feedback on this proposal.

Certification of Test Results: Several stakeholders have expressed concern regarding the quality of self-testing and reporting of product performance. One stakeholder suggested that the reporting of qualified ENERGY STAR models be provided by organizations certified to test to ASTM F1275 and F1605. As discussed during the February stakeholder meeting, ASTM does not certify test laboratories and requiring third-party testing would be a challenge due to the limited number of facilities available to test griddles. Instead, EPA will require that a test report be submitted along with the ENERGY STAR Qualified Product Information form, which will require the signature of a test laboratory or company representative confirming the results.

5) Effective Date: The date that manufacturers may begin to label and promote qualifying products as ENERGY STAR will be defined as the *effective date* of the agreement. The ENERGY STAR Commercial Griddle Specification shall go into effect on **May 1, 2009**

Note: The Draft 1 specification proposed a February 1, 2009 effective date in conjunction with the North American Association of Food Equipment Manufacturers (NAFEM) Show. However, on November 19, 2008, EPA announced that additional time was needed to collect data, conduct research, and hold additional discussions with manufacturers with the goal of determining how to: (1) appropriately address double-sided griddles with top platens that provide only partial coverage and (2) further build EPA's reference data set, particularly for electric models. Instead, EPA held an industry stakeholder meeting on February 4, 2009 to discuss a new proposal based on this additional research. This Draft 2 specification represents that initial proposal and subsequent discussions with stakeholders.

During this meeting, EPA also shared a new timeline with stakeholders, including a proposed effective date of May 1, 2009 and launch during the National Restaurant Association (NRA) Show, May 16 – 19, 2009. Based on comments and data received in response to this Draft 2 proposal, EPA intends to release a Final Draft version of the specification in early April, allowing stakeholders another two weeks to submit final comments prior to finalization on May 1.

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421 **6) Future Specification Revisions:** EPA reserves the right to change the specification should
422 technological and/or market changes affect its usefulness to consumers, industry, or the environment.
423 In keeping with current policy, revisions to the specification are arrived at through industry
424 discussions. In the event of a specification revision, please note that ENERGY STAR qualification is
425 not automatically granted for the life of a product model. To carry the ENERGY STAR mark, a product
426 model must meet the ENERGY STAR specification in effect on the model's date of manufacture.

427
428 **Partial Platen Performance:** At the time of developing this Version 1.0 specification, the ASTM
429 F1605 test method for measuring double-sided griddle performance could not be applied to units with
430 partial platens. However, there is industry interest to revise the test method to more appropriately
431 measure cooking energy efficiency and idle energy rate of double-sided griddles with partial platens.
432 If new ASTM testing guidelines are developed for partial platen configurations, manufacturers will be
433 required to test and qualify these units for ENERGY STAR using the new test method.
434

435 **Note:** A statement has been added that if a test method is developed through ASTM F1605 to measure
436 cooking energy efficiency and idle energy rate for double-sided griddles with partial top platens, then
437 manufacturers should use that new test method to test and qualify units as ENERGY STAR.