

# **STANDARD OPERATING PROCEDURE FOR CERTIFICATION OF PRODUCTS TO ENERGY STAR® SPECIFICATIONS**

## **Version 2.0**

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This document is intended to guide certification bodies (CBs) through the process of reviewing documentation and certifying products for ENERGY STAR. The U.S. Environmental Protection Agency (EPA) reserves the right to change any ENERGY STAR specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. The applicable ENERGY STAR specifications, available at [www.energystar.gov/specifications](http://www.energystar.gov/specifications), should remain the main reference for determining product certification. Additional resources, including access to My ENERGY STAR Account (MESA), are available at [www.energystar.gov/CBresources](http://www.energystar.gov/CBresources).

GENERAL REQUIREMENTS	Applicant/Partner satisfies requirement? (Yes/No)	Comments
Has all of the information required for the EPA data submission been provided with the test data/laboratory report?		
Have all applicable test report(s) been provided? <sup>1</sup>		
Is the manufacturer of the model a status in MESA such that it may submit products for certification? <sup>2</sup>		
Is the ENERGY STAR manufacturing applicant/partner the brand owner for the model being certified? <sup>3</sup>		
Does the applicant/partner have a valid Organization ID (OID) as verified in MESA?		
Was the model tested in an EPA-recognized laboratory with a valid OID as verified in MESA? <sup>4</sup>		
Is the laboratory EPA-recognized for the product category for which it has conducted testing? <sup>5</sup>		
If the tested model(s) is a member of a product family and product family qualification is permitted under the specification, is the appropriate product family documentation provided (e.g., test report for representative model, explanation of variations within family, up-to-date list of models included in the family)?		
If product family qualification is permitted under the specification, has documentation been provided to confirm that all models in the family would meet ENERGY STAR requirements given any acceptable product variations?		

<sup>1</sup> If the applicant/partner can document the product is a privately labeled version of another ENERGY STAR qualified model, only one test report is required.

<sup>2</sup> EPA uses organization roles and statuses to indicate appropriate privileges for ENERGY STAR manufacturing partners or applicants, such as whether a CB may certify the manufacturer's products as ENERGY STAR. A complete list of these roles and statuses is available in MESA.

<sup>3</sup> The CB must ensure that the organization it lists as the manufacturing partner is the model's brand owner. For the brand owner's convenience, EPA will permit a third party to work with the CB to certify a model on the brand owner's behalf.

<sup>4</sup> Laboratories that participate in a CB's witnessed or supervised manufacturer's testing laboratory (W/SMTL) program are provided an OID when the WMTL or SMTL is submitted to EPA.

<sup>5</sup> The online directory of recognized laboratories is available here: [http://www.energystar.gov/index.cfm?fuseaction=recognized\\_bodies\\_list.show\\_RCB\\_search\\_form](http://www.energystar.gov/index.cfm?fuseaction=recognized_bodies_list.show_RCB_search_form).

GENERAL REQUIREMENTS		Applicant/Partner satisfies requirement? (Yes/No)	Comments
Is the product intended for sale or distribution in the United States (U.S.) or a partner country? <sup>6</sup>			

ENERGY STAR ELIGIBILITY		Model satisfies requirement? (Yes/No/NA)	Comments
Is the model an Included Product per the applicable ENERGY STAR specification? <sup>7</sup>			
Is the model absent from the List of Ineligible Products? <sup>8</sup>			
Does the model meet <b>all</b> of the qualification criteria as outlined in the specification?			
Does the model meet the qualification criteria using the appropriate significant digits and rounding?			
Are all calculations for the model performed correctly (e.g. typical energy consumption (TEC) calculations)?			
Was the model tested using the appropriate test method(s) according to the specification?			
Was the model tested at the relevant input voltage/frequency combination for each market in which it will be marketed as ENERGY STAR qualified?			
Were the type of model(s) and number of units tested correctly given the appropriate product sampling requirements? <sup>9</sup>			
If a model has a U.S. Department of Energy (DOE) waiver for special conditions, has the Federal Register notice of a waiver been provided? <sup>10</sup>			

<sup>6</sup> A list of ENERGY STAR's international country partners is available at [http://www.energystar.gov/index.cfm?c=partners.intl\\_implementation](http://www.energystar.gov/index.cfm?c=partners.intl_implementation). In order to be qualified or labeled as ENERGY STAR, a model must be intended for commerce in the U.S. or a partner country. However, a model may be certified as meeting the ENERGY STAR eligibility criteria regardless of its sales destination, as long as the certification does not imply that the model is ENERGY STAR qualified. EPA will only collect data from CBs for products sold in the U.S. or Canada, and Information Technology (IT) equipment sold in the U.S., Canada, or Europe. Manufacturers of products sold in other partner markets are encouraged to partner with the respective government implementers rather than EPA in order to maximize the promotion of qualified products in relevant markets.

<sup>7</sup> A list of Included and Excluded products is detailed in the applicable ENERGY STAR specification (typically Section 2) at [www.energystar.gov/specifications](http://www.energystar.gov/specifications). If the model submitted for certification is not an included product, CBs should report the model to [certification@energystar.gov](mailto:certification@energystar.gov) using the Ineligible Products Form.

<sup>8</sup> The List of Ineligible Products is available in MESA and outlines models reported by CBs that do not meet the requirements of ENERGY STAR. CBs should not necessarily reject products on the list, but should proceed with an understanding of why a given product was rejected from a previous attempt at certification. In certain cases, products may be certified after consultation with EPA.

<sup>9</sup> For details, see [Directive 2011-04](#), "ENERGY STAR Verification Testing for Certification Bodies -Test Sample Sizes and Determining Testing Failures (Non-Lighting Products)."

<sup>10</sup> Models that have a DOE waiver for special test conditions are published in the Federal Register. CBs must track this Federal Register notice of the waiver in their certification records for these models.

EPA-RECOGNIZED LABORATORY TEST REPORT REQUIREMENTS <sup>11</sup>	Test report satisfies requirement? (Yes/No/NA)	Comments
Does the test report list the appropriate test method(s) per the specification?		
Does the test report include test data for all ENERGY STAR product markets where the product is intended for commerce?		
Does the test report list the date(s) of testing?		
Does the test report list the serial number(s) of the unit(s) tested?		
Does the test report include a description of the sample (e.g., number of units tested)?		
Has the appropriate sampling plan been documented so the model will be tested appropriately during verification testing?		
Does the test report indicate the past and next scheduled calibration dates of all required equipment? <sup>12</sup>		
Does the test report list the environmental conditions observed during testing (e.g., temperature and humidity)?		
Have any relevant special test conditions been documented so the model will be tested appropriately during verification testing?		
Does the test report include the names and signatures of the test engineer(s) and witness(es) (as applicable)?		
Are test results organized by applicable test method, with a clear indication of which results are relevant to ENERGY STAR?		
If the test report included any calculations, have the values reported in the test report been used to confirm these calculations?		
If test reports are provided from multiple laboratories, does each test report meet the above requirements?		

<sup>11</sup> The test report requirements listed here do not apply to IES LM-80 laboratory test reports. Specific requirements for IES LM-80 test reports are included in the [ENERGY STAR Program Guidance Regarding LED Package, LED Array and LED Module Lumen Maintenance Performance Data Supporting Qualification of Lighting Products](#) (otherwise known as "Lumen Maintenance Guidance").

<sup>12</sup> If the test report only provides a next equipment calibration date but not a last equipment calibration date, it can be accepted as long as the next equipment calibration date is after the test date, provided that the equipment has been calibrated previously and is calibrated on a regular basis.

REPORTING DATA TO EPA <sup>13</sup>	CB confirms requirement? (Yes/No/NA)	Comments
Has the CB confirmed that the applicant/partner name and brand names are reported consistently?		
Has the CB conducted a quality control review of the data submission to EPA (e.g. correct units, decimal places, and confirmation of any calculations)?		
If test reports from multiple laboratories are provided for qualification, has the CB confirmed all laboratory OID(s) are included in the information provided to EPA?		
Has CB reported the model(s) using the appropriate product reporting method for that specification version? <sup>14</sup>		
If the reported value differs from the measured value, has the CB confirmed both values meet the applicable ENERGY STAR specification? <sup>15</sup>		

<sup>13</sup> EPA is developing an XML-based qualified product exchange (QPX) system for CBs to submit information on products certified as ENERGY STAR via web services. Additional details can be found at [www.energystar.gov/gpx](http://www.energystar.gov/gpx).

<sup>14</sup> When transitioning from one specification version to the next, two specifications may be in effect at the same time.

<sup>15</sup> For details, see [Directive 2011-05](#), "Measured versus Reported Values for ENERGY STAR Certification."

## **APPENDIX A: SUPPLEMENTAL PRODUCT-SPECIFIC GUIDANCE FOR CERTIFICATION**

### **U.S. Department of Energy (DOE)-covered Products**

- Products should be tested using the ENERGY STAR referenced test method and in accordance with any applicable DOE-issued guidance, available on DOE's Public Test Procedure Guidance website, <http://www1.eere.energy.gov/guidance/default.aspx?pid=2&spid=1>.
- For most products, all models within a basic model group must have the same certified energy efficiency rating as per DOE [10 CFR 429](#), "Certification, Compliance, and Enforcement for Consumer Products and Commercial and Industrial Equipment."
- The certified energy efficiency rating on the manufacturer literature, the qualified product list, and the certification of compliance to DOE must be the ratings that are derived from the applicable sampling requirement per DOE's regulations in 10 CFR 429 (requirement to test no fewer than two units). This requirement must be met even if a single unit is used to qualify for ENERGY STAR.

### **Appliances**

- There can be a difference, sometimes sizable, between measured and reported values. The measured and reported values must both meet the applicable ENERGY STAR specification, but as long as the reported value is equal to or less efficient than the measured value, the CB may provide to EPA the reported value. The measured value must be maintained on file and made available to EPA upon request. Additionally, EPA's XML-based reporting system will collect both measured and reported values. See Directive 2011-04 for details.
- Additional guidance on clothes washers and refrigerators-freezers is available at the following websites:
  - Clothes washers: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/pdfs/cw\\_guidance\\_faq.pdf](http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/cw_guidance_faq.pdf)
  - Clothes washers with warm rinse cycles: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/pdfs/warm\\_rinse\\_guidance\\_9-21-2010\\_final.pdf](http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/warm_rinse_guidance_9-21-2010_final.pdf)
  - Refrigerators-freezers with automatic ice makers: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/pdfs/rf\\_test\\_procedure\\_addl\\_guidance.pdf](http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/rf_test_procedure_addl_guidance.pdf)

### **Electronics and Office Equipment**

- The CB should report the "worst case scenario" test results for efficiency measurements to EPA.
- If the specification includes a power supply requirement, the CB should review the following documentation to determine acceptability of the power supply:
  - If the product uses an internal power supply, the manufacturer must submit a certificate of compliance for the power supply from an EPA-recognized laboratory recognized for that product category. The CB must accept this certificate in lieu of a laboratory report.
  - If the product uses an external power supply covered by the International Efficiency Marking Protocol, the laboratory must confirm to the CB that the power supply bears the required Roman numeral V. The CB must not require a full laboratory report or certificate of compliance from the manufacturer.

- If the product uses an external power supply with integral fan cooling, or a multi-output external power supply (not covered by the International Efficiency Marking Protocol), the CB may accept either a certificate of compliance for the external power supply or test reports that include testing of the external power supply from an EPA-recognized laboratory recognized for that product category.

### **Commercial Food Service**

- For all electric Commercial Food Service Cooking Equipment testing, the CB should confirm that the tested voltage is within 2.5% of the operating voltage listed on the nameplate or as specified by the manufacturer. If the product has the capability to operate under more than one voltage, the CB should confirm with the laboratory at which voltage the model was tested.

### **Lighting and Fans**

- A detailed set of FAQs related to lighting certification are available online in the Lighting Certification folder of the [Frequently Asked Questions](#) on the ENERGY STAR website.
- For ceiling fans and ventilation fans with lighting, the CB must ensure that the laboratory that conducted the testing is EPA-recognized for the applicable product categories. Note, the online laboratory listing of “ceiling fan” or “ventilating fan” as a product category does not include EPA-recognition for lighting categories. If multiple laboratories are used, CBs should list the additional laboratory OID(s) in the information reported to EPA.

### *Compact Fluorescent Lamps (CFLs)*

- Stated/Reported wattage may not fall outside of the following ranges, which are from Underwriters Laboratory (UL)’s standards:  $(\text{measured wattage}) \times 0.9 - 0.5 < \text{stated wattage} < (\text{measured wattage}) \times 1.1 + 0.5$ .
- Product Failures during Long-term Lumen Maintenance Testing:
  - Samples that have failed cannot be substituted for additional samples to continue testing, and cannot have components repaired to continue testing.
  - If the product fails to meet requirements for full qualification for long-term maintenance testing, the model will be disqualified per the specification. The CB must submit these failures within two business days to EPA via the product failure form to [enforcement@energystar.gov](mailto:enforcement@energystar.gov).

### *Integral LED Lamps (ILLs)*

- Product Failures during Long-term Lumen Maintenance Testing:
  - Samples that have failed cannot be substituted for additional samples to continue testing, and cannot have components repaired to continue testing.
  - 10 samples will be averaged together to determine the lumen maintenance value. If a sample fails, it will be averaged in (essentially with a lumen maintenance of zero), and will most likely bring the total average below the passing requirement.
  - If a sample failure occurs due to error on the part of the laboratory, the sample must be replaced as soon as possible and testing started for the new sample. Interim qualification may be determined based on the average of nine samples, pending the tenth sample’s completion and passing criteria of all ten samples when the last sample is added.

- If the product fails to meet requirements for full qualification for long-term maintenance testing, the model will be disqualified per the specification. The CB must submit these failures within two business days to EPA via the product failure form to [enforcement@energystar.gov](mailto:enforcement@energystar.gov).

### *Luminaires*

- For information on the Certified Lighting Subcomponent (CSD), please visit [www.energystar.gov/lightingsubcomponents](http://www.energystar.gov/lightingsubcomponents).
- Subcomponents in this database **are not ENERGY STAR qualified** as a result of being listed. Subcomponents only tested and certified for purposes of the CSD:
  - May not carry any of the ENERGY STAR program's certification or promotional marks on the products, on product packaging, or in associated literature either printed or electronic.
  - May not be referred to as ENERGY STAR qualified, certified, rated, or approved.
- **Lifetime Testing:** The luminaires specification allows for initial (conditional) qualification of luminaires based on completion of minimum lamp lifetime testing requirements. This provision requires that full lamp lifetime testing be completed, and requirements met, for full qualification. Subsequent to an initial CSD listing of a lamp or an initial luminaire qualification, if a CB receives lifetime testing results indicating that the product fails to meet rated lifetime, the CB is required within two business days to report via the product failure form as a subcomponent (lamp) or luminaire testing failure to [enforcement@energystar.gov](mailto:enforcement@energystar.gov).