Energy Conservation Program for Consumer Products and Commercial and Industrial Equipment





DOE Certification, Compliance, and Enforcement Overview October 6, 2014 Refrigerators, Refrigerator-Freezers, Freezers, Dehumidifiers, Room Air Conditioners, Clothes Washers, Clothes Dryers, Dishwashers

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Statutory Authority



- Energy Policy and Conservation Act of 1975 ("EPCA")
 - Title III created energy conservation program for consumer products, including refrigerators, refrigerator-freezers, freezers, dishwashers, room air conditioners, clothes washers, and dehumidifiers.
 - Codified at 42 U.S.C. § 6291, et. seq.
- National Appliance Energy Conservation Act of 1987
 - Set standards for refrigerators, refrigerator-freezers, freezers, dishwashers, room air conditioners, and clothes washers.
- Energy Policy Act of 2005 ("EPACT 2005")
 - Set standards for dehumidifiers.

Scope of Coverage



Regulated Products Include

- Refrigerators, Refrigerator-Freezers, and Freezers
- Dishwashers
- Room Air Conditioners
- Clothes Washers
- Dehumidifiers
- Clothes Dryers

Regulated Entities

- Manufacturers
 - Importers are considered manufacturers
- Private labelers
- NOT retailers or distributors UNLESS also manufacturer or private labeler

"Manufacturer" Explanation



A manufacturer	 Is the domestic manufacturer, an importer, or a foreign original equipment manufacturer (OEM).
	• May produce equipment at multiple facilities in various locations with the same model characteristics.
	Must determine certified ratings through testing.
	• Is responsible for ensuring compliance of products.
	• Is responsible for certification of products' compliance to the Department.
	 May elect to use a third-party (e.g., certified laboratory or foreign OEM) for testing and certification submission.

"Importer" Explanation



An importer

- Is considered a manufacturer.
- Is the importer of record on a consumption entry filed with U.S. Customs.
- May also be a retailer, distributor, manufacturer of non-covered equipment, etc.
- Is responsible for ensuring compliance of products.
- Is responsible for certification of compliance to DOE.
- Can use a third-party for product testing and certification submission.
 - Must complete proper authorization forms.

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Recent CBP regulation



- Customs and Border Protection has the authority to refuse admission into the customs territory of the United States to any covered import found to be noncompliant with applicable energy and/or water conservation standards.
- To ensure products imported are compliant, importers of covered products should be aware of and follow DOE regulations regarding testing and certifying these products as compliant.
- Independent of CBP's refusal of admission, DOE has authority to take enforcement actions against importers that import noncompliant products.



Importers are responsible for ensuring compliance of covered products they import!

Scenario



 Manufacturers A, B, C, D, and E are foreign OEMs that make clothes washers abroad, and WeBuyEm imports the clothes washers under a WeBuyEm brand name and model number to the United States. Who is responsible for ensuring these clothes washers meet the energy and water consumption standard?

Scenario



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WeBuyEm is responsible for ensuring the clothes washers comply with the applicable standards and for submitting the required certification reports to DOE.

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Basic Model Explanation



- Basic model is a group of one or more individual models with essentially identical energy and/or water consumption characteristics.
- Must be manufactured by a single manufacturer.
- May be distributed under different brand names.
- May contain multiple individual models/model numbers.
- May be made up of only one individual model.
- Must have a unique set of supporting test data.
 - One set of data cannot demonstrate the compliance of multiple basic models. The certification of a given basic model cannot be based upon the test of a different basic model.

Basic Model Explanation (cont.)



- For refrigerators, refrigerator-freezers, freezers, room air conditioners, and dehumidifiers: if have essentially identical electrical, physical, and functional characteristics that that affect energy consumption, can be considered same basic model.
- For dishwashers and clothes washers: if have essentially identical electrical, physical, functional, and hydraulic characteristics that that affect energy and water consumption, can be considered same basic model.
- Essentially identical
 - Manufacturers have wide latitude in groupings; however, groupings must meet certain requirements
- May not contain individual models from multiple product classes. (For example, compact dishwasher and standard dishwasher can't be same basic model.)
- Must have one rated value for all models within the basic model equal to the least efficient/most consumptive individual model.

Basic Model: Aspects to Consider



	Grouping Maximum Possible Number of Individual Models into Each Basic Model	Testing Each Individual Model and Certifying Each as a Separate Basic Model
Advantages	Minimum testing burden	Reduces compliance risk and potential liability for noncompliance
Disadvantages	Higher risk if found noncompliant: if an individual model fails to meet energy and/or water conservation standard, all individual models within the basic model are deemed noncompliant. Thus the more models grouped in the basic model, the larger the risk associated with a compliance failure.	Higher testing burden

Scenario



 Manufacturer Awesome Products does not want to test two samples of each individual dishwasher models D, E, and F. Can Awesome Products rely upon the test data of one of these models for the others?

Yes, if D, E, and F have essentially identical energy and water consumption and are in the same product class. Awesome Products would test at least two units of the most consumptive design (if there is any variability between individual models) and submit a certification report stating that D, E, and F are the same basic model and have the same energy and water consumption value.

• If testing later shows that F does not meet the standard, which models will DOE determine are noncompliant?

Models D, E, and F will be found to be noncompliant because they are part of the same basic model.

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How to Rate Products: Overview



- 1. For each basic model, test a sufficient number of sample units to ensure that the represented value of energy and/or water consumption adequately represents performance of all of the units within the basic model.
 - Must test a minimum of two units.
 - No limit on the maximum number of sample units.
 - Must use DOE test procedure.
- 2. Once testing is complete, calculate energy and/or water consumption rating based upon DOE statistical sampling provisions in 10 C.F.R. Part 429, Subpart B.



...a sample of sufficient size...

Must test <u>at least</u> two individual units of each basic model.

Test Procedures



DOE test procedures have incorporated relevant industry standards

Product(s)	Procedures
Refrigerators Refrigerator-Freezers	Sections 3.30, 4.2, 4.3, and 5.3.2 through 5.5.5.5 of AHAM HRF-1-2008; Appendix M, Sections M3(a)-(c) and M4(a) of AS/NZS 4474.1:2007 (as explained in Part 430, Subpart B, Appendix A)
Freezers	Sections 3.30, 4.2, 4.3, and 5.3.2 through 5.5.5.5 of AHAM HRF-1-2008 (as explained in Part 430, Subpart B, Appendix B)
Dishwashers	Section 4.1 and 5.3 through 5.7 of ANSI/AHAM DW-1-1992; Paragraphs 4.2, 4.3.2, 4.4, 5.1 (note 1), and 5.2 of IEC 62301 (as explained in Part 430, Subpart B, Appendix C and C1)

Test Procedures



DOE test procedures have incorporated relevant industry standards

Product(s)	Procedures
Room Air Conditioners	Sections 4, 5, 6.1, and 6.5 of ANSI/AHAM RAC-1-2008; ANSI/ASHRAE Standard 16-1983 (RA 2009); Paragraphs 4.2, 4.3, 4.5, and 5.2 of IEC 62301 (as explained in Part 430, Subpart B, Appendix F)
Clothes Washers	AATCC Test Methods 79-2000, 79-2010, 118-1997, 118-2007, 135-2010; Paragraphs 5.1 (note 1), and 5.2 of IEC 62301 (as explained in Part 430, Subpart B, Appendix J1 and J2)
Dehumidifiers	Sections 3, 5, and 7 of ANSI/AHAM DH-1-2008; Paragraphs 4.2, 4.3.2, 4.4, 5.1 (note 1), and 5.2 of IEC 62301 (as explained in Part 430, Subpart B, Appendix X)

Who tests the product?



- Manufacturers can either:
 - perform testing themselves, or
 - ask a third-party to complete testing for them.
- Importers often ask the foreign OEM to complete testing.
- DOE does not require that test laboratories have a particular accreditation to test these products, but they must use the prescribed DOE test procedure.

Scenario



 BuyThem imports dehumidifiers from DehumSupplier and sells them in the United States. Can BuyThem use DehumSupplier's test data to rate its dehumidifiers?

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Yes, BuyThem may use DehumSupplier's data as a basis for its rating as long as the tests were conducted in accordance with DOE test procedures. BuyThem is responsible for the compliance of the products, however. BuyThem may want to inquire about how units are selected for testing, what controls are in place to ensure that the units are representative of production units, the qualifications of the test lab, etc. to ensure that it is comfortable relying a test data provided by the OEM.

Calculating Rating: Overview



- 1. Consult the appropriate product-specific section in Part 429 (e.g., 10 C.F.R. § 429.36 for dehumidifiers).
- 2. Calculate the mean energy factor from test samples.
- 3. Calculate the lower confidence limit (LCL) and divide it by the product-specific divisor.
- 4. Compare and determine certifiable value range.

Calculating Rating: Example



1. Consult the appropriate product-specific section in Part 429

Example: 10 C.F.R. § 429.36 states that, for dehumidifiers, any represented value of the energy factor of a basic model ... shall be no greater than the lower of:

(i) The mean of the sample, where:

$$\overline{x} = \frac{1}{n} \sum_{i=1}^{n} x_i$$

and, \bar{x} is the sample mean; n is the number of samples; and x_i is the ith sample;

Or, (ii) The lower 95 percent confidence limit (LCL) of the true mean divided by 0.9, where:

$$LCL = \bar{x} - t_{.95} \left(\frac{s}{\sqrt{n}} \right)$$

And \overline{x} is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.95}$ is the t statistic for a 95% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

Calculating Rating: Example (cont.)



2. Calculate the mean using your test data

Example: tested 3 dehumidifiers, obtained results of 1.64, 1.69 and 1.74 liters/kWh.

Mean =
$$1.64 + 1.69 + 1.74 = 1.69$$
 liters/kWh.

Calculating Rating: Example (cont.)



 Calculate the lower confidence limit (LCL) divided by the product-specific divisor.

Example: tested 3 dehumidifiers, obtained results of 1.64, 1.69 and 1.74 liters/kWh.

$$LCL = \bar{x} - t_{.95} \left(\frac{s}{\sqrt{n}} \right)$$

And \overline{x} is the sample mean; s is the sample standard deviation; n is the number of

samples; and to 95 is the t statistic for a 95% one-tailed confidence interval with n-

1 degrees of freedom (from Appendix A).

The t-statistic for a 95% one-tailed confidence interval with (n-1) (here, 3-1=2) degrees of freedom is 2.920.

- pulled from chart in Appendix A to Subpart B of 10 C.F.R. Part 429

The square root of n is 1.732.

The standard deviation (s) is 0.05.

So: the LCL = 1.694914

And LCL/0.9 = 1.78412

Calculating Rating: Example (cont.)



4. Compare and determine certifiable value range.

Example: tested 3 dehumidifiers, obtained results of 1.64, 1.69 and 1.74 liters/kWh.

Mean = 1.69 liters/kWh

LCL/0.90 = 1.78412 liters/kWh

The maximum rating is the **lower** of LCL/0.90 and the mean.

In this case, **1.69 < 1.78412**, so the mean is the basis for the rating.

Conclusions:

- Although the LCL/0.90 was 1.78 liters/kWh (after rounding to two decimal places), 1.69 liters/kWh is the highest value at which you can certify based on these test results.
- If the dehumidifier had a capacity of between 45.01 and 54.00 pints/day, you could certify a value as low as **1.60 liters/kWh** (the energy factor standard for a dehumidifier with a capacity of between 45.01 and 54.00 pints/day).

Conservative Ratings



- The sampling plans are designed to create conservative ratings, which helps ensure that most consumers get the consumption indicated by the certified rating.
- DOE allows manufacturers to use conservative ratings beyond those provided by the sampling plans. For example, 1.60 liters/kWh is more consumptive than the mean of 1.69 liters/kWh.
- Manufacturers may rate models conservatively. For example, for a energy factor of 1.69 liters/kWh supported by test data, you may use a rated value of as low as 1.60 liters/kWh (the energy factor standard for a dehumidifier with a capacity of between 45.01 and 54.00 pints/day).
- A conservative rating is not a misrepresentation.

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Certification Requirements: Basics



- Energy conservation standards regulatory program based on self-certification before distribution (including importation)
 - Submit annually
 - Also submit before distributing any new basic model in commerce
 - Update to reflect discontinuance
- Manufacturers must submit a certification report
 - Report states that covered product has been tested in accordance with the DOE test procedure and that the product complies with the federal energy and water conservation standards
- Remember: Importers are considered manufacturers!
- Private labelers need not certify unless they are importers, but each brand must be certified. The manufacturer must certify the private labeled brands.

Certification Requirements: Basics (cont.)



- Reporting to the ENERGY STAR® program or the California Energy Commission does NOT satisfy the DOE certification requirement.
- Reporting using the DOE templates and CCMS fulfills the certification requirements for DOE and FTC.
- Energy and/or water consumption rating reported to DOE must be the same energy and/or water consumption that is reported to other agencies and placed on product packaging and marketing literature. Each product should have ONE rating using the DOE metric.
- No additional certification testing required for annual submission.
- During the year, retest and recertify if an existing model increases energy and/or water consumption resulting in re-rating.

Certification Requirements: Basics (cont.)



- Product specific information within report
 - DOE provides template
 - Must report rated value as previously described
 - Must report specific product characteristics
 - Must certify in legally binding statement that products have been tested and meet standard
- Must register for access to Compliance Certification Management System (CCMS) using form available online
 - Follow instructions on form to obtain username and password.
- Only electronic submissions accepted.
- Once registered, submit completed templates through CCMS.
- Models added to DOE public certification database within two weeks: http://www.regulations.doe.gov/certification-data

Certification Requirements: Annual



Annual certification requirement

- Refrigerators, Refrigerator-Freezers, and Freezers: August 1
- Dishwashers: June 1
- Room Air Conditioners: July 1
- Clothes Washers: October 1
- Clothes Dryers: October 1
- Dehumidifiers: September 1

The annual reporting requirement covers:

- All discontinued basic models previously certified that have not previously been reported as discontinued (mark "D");
- All previously certified basic models that are still in distribution in commerce that are unchanged (mark "E");
- All previously certified basic models that are still in distribution in commerce but for which the manufacturer needs to report new or changed information (mark "C") (e.g., new individual model numbers, modified rating); and
- Any new models a manufacturer anticipates offering for distribution in commerce (mark "N").

Brand names



- Manufacturers are required to certify each individual model with each brand name under which it is sold.
- DOE does not publish manufacturer/brand name relationship.
- Public database lists models by brand name, not manufacturer.

Scenario



 Ton-o-Brands makes room air conditioners abroad under various brand names and imports them into the United States. Some individual room air conditioner models have multiple brand names. How should Ton-o-Brands certify these models?

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Ton-o-Brands must list each brand name for each individual model.

Manufacturer	Brand	Basic Model	Indiv. Model	Sample Size	Combined Energy Efficiency Ratio
Ton-o-Brands	ABrand	GP	XA	2	11.0
Ton-o-Brands	BBrand	GP	XB	2	11.0
Ton-o-Brands	CBrand	GP	XC	2	11.0

Discontinued Models



A basic model should be reported as discontinued only

- when production has ceased and
- it is no longer being sold or offered for sale by the manufacturer or private labeler

Manufacturers *must* report this discontinued status to DOE no later than the next annual certification report following such cessation.

Manufacturers *may* report this discontinued status to DOE before the next annual certification report following such cessation.

Third-Party Submitters



A manufacturer may authorize a third-party to submit certification reports on the manufacturer's behalf. The manufacturer remains responsible for the accuracy of the reports and compliance with the energy and/or water conservation standards.

Common examples of third-party submitters include test labs or companies that assemble products abroad but do not import them.

To complete a third-party certification report properly,

- A manufacturer must complete a third-party authorization form and provide it to the third-party to submit to DOE.
- The third-party representative must have a CCMS account.
- The third-party's certification on behalf of the manufacturer must indicate the third-party is a third-party representative and must identify the party(ies) on whose behalf the report is being submitted. It must also indicate whether that party is a domestic manufacturer, importer or private labeler.

Records Maintenance



- Requirements located in 10 C.F.R. § 429.71
- Manufacturers must retain the records which underlie each certification of a basic model.
 - This includes test reports!
- Records must be organized and indexed in a fashion that makes them readily accessible for review by DOE upon request.
- Records must be retained for two years from the date that the manufacturer or third party submitter has notified DOE that the model has been discontinued.

Avoid common errors



- Remember to complete both the "Input" and the "Certification" tabs on the spreadsheet
 - If the template status is "ERROR" you have missed a required field or entered data incorrectly. DO NOT submit if the status is ERROR.
- Include model number for both basic model and individual model
 - Do not use "all finishes"
 - Do not use "N/A"
- Can use wildcards:
 - E.g.: ABC1, ABC2, and ABC3 can be on a single line as "ABC*" as long as the last value represents a characteristic that has no effect on energy and/or water consumption (e.g., color or finish)
 - Note that CCMS treats the wildcard as a unique value, so it will not see "ABC1" and "ABC*" as the same model. If you certify both ways, both will appear in the database.
- Be sure to list all individual models within basic model
- Refer to "Product Description" tab to ensure correct product class

 Freeze-A-Lot sells freezer A345 with three finishes. The individual model numbers are A345-S, A345-B, and A345-BN. How should it certify all of these finishes?

Basic Model	Indiv. Model	Total Adjusted Volume	Annual Energy Use
A345	A345-**	31.45	562
Basic Model	Indiv. Model	Total Adjusted Volume	Annual Energy Use
A345	N/A	31.45	562
Basic Model	Indiv. Model	Total Adjusted Volume	Annual Energy Use
Basic Model A345	Indiv. Model		
	Indiv. Model Indiv. Model	Volume	Energy Use

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Basic Model	Indiv. Model	Total Adjusted Volume	Annual Energy Use
A345	A345-**	31.45	562

Basic Model	Indiv. Model	Total Adjusted Volume	Annual Energy Use
A345	N/A	31.45	562
A345		31.45	562
A345	All Finishes	31.45	562

Avoid common errors (cont.)



- Test Procedure Waivers
 - Only enter "yes" if actually have a waiver; this is uncommon.
 - List the exact same model number in the certification report (including wildcards, spacing, & hyphens) as in the waiver
- OHA Exception Relief
 - Only enter "yes" if actually have received relief; this is rare.
- Read the column headings carefully
 - You may have to consult DOE's definitions or test procedures to understand what to enter
- Make sure you report in the correct units (e.g., cubic feet vs. liters)
- Correctly indicate number of units tested in sample size column

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Enforcement Overview



DOE Office of the General Counsel, Office of Enforcement	Enforces the energy conservation, water conservation, and design standards
Certification	 Civil penalties for failure to certify and improper certification Certification must be based on testing in accordance with the applicable test procedure and sampling plan.
Standards	 Civil penalties for distribution of products that do not meet Federal standards Testing products to verify compliance with Federal standards

Enforcement Tools



Warning	 Not punitive. Communicates potential issue(s) to manufacturers and, if necessary, allows the company time to resolve the issue(s). Rarely results in a civil penalty. May result in a civil penalty if the manufacturer fails to take the appropriate actions to resolve the issue(s) raised.
Request for Data	To obtain test data or information regarding distribution of
Subpoena	regulated products.

Enforcement Tools



Civil Penalty	 Failure to meet applicable conservation standards and certification violations. Penalties for violations of standards calculated per unit offered for distribution in commerce. Penalties for certification violations calculated per day for each basic model improperly certified or not certified. DOE has issued guidance on the imposition of civil penalties.
Noncompliance Determination	DOE may make a determination of noncompliance based on certification information, on test data provided by a manufacturer, or on test data obtained through DOE testing.

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Pertinent Regulations



- General certification of compliance requirements
 - 10 C.F.R. § 429.12
- Specific certification requirements
 - 10 C.F.R. § 429.14 (refrigerators, refrigerator-freezers and freezers)
 - 10 C.F.R. § 429.15 (room air conditioners)
 - 10 C.F.R. § 429.19 (dishwashers)
 - 10 C.F.R. § 429.20 (clothes washers)
 - 10 C.F.R. § 429.36 (dehumidifiers)
- Enforcement provisions
 - 10 C.F.R. Part 429, Subpart C

Pertinent Regulations (cont.)



- 10 C.F.R. Part 430, Subpart B Test Procedures
 - Appendix A: Refrigerators and refrigerator-freezers
 - Appendix B: Freezers
 - Appendix C1: Dishwashers
 - Appendix D1 or D2: Clothes dryers (beginning January 1, 2015)
 - Appendix F: Room air conditioners
 - Appendix J1 and J2: Clothes washers (beginning March 7, 2015, must use Appendix J2)
 - Appendix X: Dehumidifiers

Pertinent Regulations (cont.)



• 10 C.F.R. § 430.32 - Standards

- § 430.32(a): Refrigerators, refrigerator-freezers, freezers
- § 430.32(b): Room air conditioners
- § 430.32(g): Clothes washers
- § 430.32(f): Dishwashers
- § 430.32(v): Dehumidifiers

19 C.F.R. § 12.50

 CBP rules re: importation of DOE covered products and equipment

Internet Resources



Submit a Question and Find DOE Guidance:	DOE Guidance Website: http://www1.eere.energy.gov/guidance/default.aspx?pid=2&spid=1
Request a Test Procedure Waiver:	 DOE's regulations allow manufacturers to apply for a waiver when a manufacturer determines that a given basic model contains one or more design features that prevent testing in accordance with DOE's test procedure. Email: AS_Waiver_Requests@ee.doe.gov
File a Complaint:	Email energyefficiencyenforcement@hq.doe.gov. The Office of Enforcement will protect the identity of complainants to the maximum extent permitted by law.
Find Certified Models:	http://www.regulations.doe.gov/certification-data/
DOE's Online Certification System:	https://www.regulations.doe.gov/ccms/
Regulations:	http://www.ecfr.gov/
Enforcement Information:	http://energy.gov/gc/enforcement Email: laura.barhydt@hq.doe.gov
Sign up for Updates:	https://public.govdelivery.com/accounts/USEERE/subscriber/new