

# Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## DEPARTMENT OF ENERGY

### 10 CFR Part 430

[Docket Number EERE-2011-BT-TP-0054]

RIN 1904-AC63

### Energy Conservation Program: Test Procedures for Residential Clothes Dryers

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Request for information.

**SUMMARY:** The U.S. Department of Energy (DOE) has initiated a test procedure rulemaking for residential clothes dryers to further investigate the effects of automatic cycle termination on the energy efficiency. DOE specifically is seeking information, data, and comments regarding methods for more accurately measuring the effects of automatic cycle termination in the residential clothes dryer test procedure. DOE will address the issues surrounding testing of automatic cycle termination sensors in this rulemaking prior to the compliance date of amended energy conservation standards recently adopted for residential clothes dryers. To the extent required by the statute, DOE will also address any potential impacts on the amended energy conservation standards resulting from these test procedure amendments during the rulemaking process.

**DATES:** Written comments and information are requested on or before September 12, 2011.

**ADDRESSES:** Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2011-BT-TP-0054 and/or RIN 1904-AC63, by any of the following methods:

- *E-mail:* [RCDAT-2011-TP-0054@ee.doe.gov](mailto:RCDAT-2011-TP-0054@ee.doe.gov). Include docket number EERE-2011-BT-TP-0054 and/

or RIN 1904-AC63 in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format and avoid the use of special characters or any form of encryption.

- *Postal Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. Please submit one signed original paper copy.

- *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC 20024. Please submit one signed original paper copy.

*Docket:* For access to the docket to read background documents, or comments received, go to the Federal eRulemaking Portal at <http://www.regulations.gov>.

#### FOR FURTHER INFORMATION CONTACT:

Requests for additional information may be sent to Mr. Stephen Witkowski, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: 202-586-7463. E-mail: [Stephen.Witkowski@ee.doe.gov](mailto:Stephen.Witkowski@ee.doe.gov).

In the Office of the General Counsel, contact Ms. Elizabeth Kohl, U.S. Department of Energy, 1000 Independence Ave., SW, Room 6A-179, Washington, DC 20585. Telephone: 202-586-7796; E-mail: [Elizabeth.Kohl@hq.doe.gov](mailto:Elizabeth.Kohl@hq.doe.gov).

**SUPPLEMENTARY INFORMATION:** On January 6, 2011, DOE published in the **Federal Register** a final rule for the residential clothes dryer and room air conditioner test procedure rulemaking (76 FR 972) (January TP final rule), in which it (1) adopted the provisions for the measurement of standby mode and off mode power use for those products; and (2) adopted several amendments to the clothes dryer and room air conditioner test procedures concerning the active mode for these products. 76 FR 972 (Jan. 6, 2011). In the January TP final rule, DOE declined to adopt the amendments to more accurately measure automatic cycle termination that were originally proposed in the test procedure supplemental notice of proposed rulemaking (June TP SNOPR) (75 FR 37594, 37612-37620 (June 29,

2010)). As further discussed in the January TP final rule, DOE conducted testing of representative residential clothes dryers using the automatic cycle termination test procedure proposed in the June TP SNOPR. The results of the testing revealed that all of the clothes dryers tested significantly over-dried the DOE test load to near bone dry and, as a result, the measured energy factor (EF) values were significantly lower than EF values obtained using the existing DOE test procedure. The test data also indicated that clothes dryers equipped with automatic termination controls would be considered less efficient than timer dryers. 76 FR 977.

As noted in the January TP final rule, DOE believes the test procedure amendments for automatic cycle termination proposed in the June TP SNOPR do not adequately measure the energy consumption of clothes dryers equipped with such systems using the test load specified in the DOE test procedure. DOE believes that clothes dryers with automatic termination sensing control systems, which infer the remaining moisture content (RMC) of the load from the properties of the exhaust air such as temperature and humidity, may be designed differently than the procedures in the June TP SNOPR considered. Specifically, DOE believes these types of dryers are designed to stop the cycle when the consumer load has a higher RMC than the RMC obtained using the proposed automatic cycle termination test procedure in conjunction with the existing test load. However, in considering whether other test loads would be appropriate to incorporate into the DOE test procedure to produce both representative and repeatable test results, DOE notes that manufacturers have also indicated that test load types and test cloth materials different than those specified in the DOE test procedure do not produce results as repeatable as those obtained using the test load as currently specified. 76 FR 977.

In support of its test procedure rulemaking, DOE conducts in-depth technical analyses of publicly available test standards and other relevant information. DOE continually seeks data and public input to improve its testing methodologies to more accurately reflect consumer use. In general, DOE is requesting comment and supporting

data regarding methods for more accurately measuring the effects of automatic cycle termination. Additionally, DOE seeks comment and information on the specific topics below:

**Test Load Characteristics**

DOE notes that the current test procedure specifies that tests be conducted using a cotton momie test cloths that are each 24 inches by 36 inches in dimensions and are a blend of 50-percent cotton and 50-percent polyester. DOE recognizes that this test load may not be representative of real-world laundry loads dried by consumers and that manufacturers may be designing their automatic cycle termination control systems to achieve higher final moisture contents closer to 5-percent RMC when drying real-world laundry loads even though the same drying process conducted with the DOE test cloth would result in a much lower RMC. However, DOE also notes that manufacturers have indicated that test load types and test cloth materials different than those specified in the DOE test procedure do not produce results as repeatable as those obtained using the test load as currently specified. DOE has requested information on the characteristics of real-world laundry loads dried by consumers from a laundry detergent manufacturer that develops a significant amount of consumer usage data, but has not yet received any such data.

DOE notes that the Association of Home Appliance Manufacturers (AHAM) clothes dryer test standard HLD-1-2009, "Household Tumble Type Clothes Dryers," and the International Electrotechnical Commission (IEC) test

standard 61121, "Tumble dryers for household use—Methods for measuring the performance," Edition 3 (2005) both specify a test load consisting of cotton bed sheets, towels, and pillowcases. As noted in the January TP final rule, DOE believes that clothes dryers with automatic termination sensing control systems, which infer the RMC of the load from the properties of the exhaust air such as temperature and humidity, may be designed to stop the cycle when the consumer load has a higher RMC than the RMC obtained using the automatic cycle termination test procedure proposed in the June TP SNOPIR in conjunction with the existing test load. To investigate this, DOE conducted limited additional testing using a test load similar to that specified in AHAM Standard HLD-1-2009. For tests on two clothes dryers using the same automatic cycle termination settings (*i.e.*, normal cycle setting and highest temperature setting), the alternate test load was dried to 1.7 to 2.2 percent final RMC, with an average RMC of 2.0 percent. In comparison, the same clothes dryer under the same cycle settings dried the DOE test load to 0.3 to 1.2 percent RMC, with an average RMC of 0.7 percent.

- DOE requests consumer usage data on the characteristics of laundry loads dried by consumers, including material (*i.e.*, cotton, polyester, etc.), type (*i.e.*, t-shirts, towels, bed sheets, jeans, etc.), and quantity.

- DOE seeks comment on its limited testing comparing the current DOE test load to one similar to the AHAM and IEC test standard loads, described above. DOE also requests information and test data comparing the measured

energy use of different test loads, including the AHAM and IEC test standard loads, to the DOE test load using the same automatic cycle termination settings. Please indicate the cycle settings used when providing data (when possible use the "normal" cycle or the cycle recommended by manufacturers for drying cotton or linen clothes). Please also indicate the type of sensor technology used for the clothes dryers under test (*e.g.*, temperature sensors or moisture sensors) and the starting and final moisture content of the test load (when possible use the starting moisture content of 57.5 percent with an 8.45 pound (lb) test load for standard size dryers and 3.00 lb test load for compact dryers).

- DOE requests test data on the repeatability of alternate test loads using automatic cycle termination, including those specified in the AHAM test standard HLD-1-2009 and other real-world loads.

**Accuracy of Different Automatic Cycle Termination Sensors and Controls**

DOE recognizes that different automatic cycle termination sensor technologies and control strategies may measure the remaining moisture content in a laundry load during the drying cycle to varying accuracy. However, through DOE's testing conducted for the January TP final rule using the DOE test cloth, shown in the table below, DOE was unable to determine whether certain sensor technologies more accurately measure the moisture content of the laundry load during the drying cycle (*i.e.*, DOE was unable to distinguish between sensor technologies).

TABLE 1—DOE CLOTHES DRYER AUTOMATIC CYCLE TERMINATION TESTS (TABLE III.8 IN FINAL RULE NOTICE WITH SENSOR TECHNOLOGY IDENTIFIED)

Test unit	Sensor technology	Current DOE test procedure EF lb/kWh*	Current DOE test procedure w/modified field use factor** EF lb/kWh	June TP SNOPIR automatic cycle termination procedure		
				EF lb/kWh	Percent change	Final RMC (percent)
<b>Vented Electric Standard:</b>						
Unit 3 .....	Moisture + Temp .....	3.20	2.82	2.59	-19.1	1.0
Unit 4 .....	Temperature .....	3.28	2.89	2.59	-21.2	0.6
<b>Vented Gas:</b>						
Unit 8 .....	Temperature .....	2.83	2.50	2.42	-14.5	0.4
Unit 9 .....	Temperature .....	2.85	2.51	2.38	-16.3	0.9
Unit 11 .....	Moisture + Temp .....	2.98	2.63	2.40	-19.5	0.9
<b>Vented Electric Compact 240V:</b>						
Unit 12 .....	Moisture + Temp .....	3.19	2.81	2.64	-17.3	0.5
Unit 13 .....	Temperature .....	2.93	2.59	2.27	-22.7	1.4
<b>Vented Electric Compact 120V:</b>						
Unit 14 .....	Moisture + Temp .....	3.23	2.85	1.98	-38.8	0.7
<b>Ventless Electric Compact 240V:</b>						

TABLE 1—DOE CLOTHES DRYER AUTOMATIC CYCLE TERMINATION TESTS (TABLE III.8 IN FINAL RULE NOTICE WITH SENSOR TECHNOLOGY IDENTIFIED)—Continued

Test unit	Sensor technology	Current DOE test procedure EF lb/kWh*	Current DOE test procedure w/modified field use factor** EF lb/kWh	June TP SNOPT automatic cycle termination procedure		
				EF lb/kWh	Percent change	Final RMC (percent)
Unit 15 .....	Moisture + Temp .....	2.37	2.09	2.07	- 12.4	1.1

\* Tests use the appropriate field use factor of 1.04 for clothes dryers with automatic termination.

\*\* Field use factor changed from the nominal 1.04 for clothes dryers with automatic termination to 1.18, which is normally for timer dryers.

• DOE requests information and data on the accuracy of different sensor technologies and control strategies (e.g., temperature sensors, moisture sensors, or a combination of both) in their ability to measure the remaining moisture content of the laundry load. Please indicate the cycle settings used when providing data (when possible use the “normal” cycle or the cycle recommended by manufacturers for drying cotton or linen clothes). Please also indicate the type of sensor technology used for the clothes dryers under test (e.g., temperature sensors or moisture sensors) and the starting and final moisture content of the test load (when possible use the starting moisture content of 57.5 percent with an 8.45

pound (lb) test load for standard size dryers and 3.00 lb test load for compact dryers).

• DOE requests data on the target RMC used by manufacturers when designing and programming automatic cycle termination controls that maintains consumer satisfaction. DOE also requests information on how the target RMC varies by clothes dryer capacity. As noted in the table above, the final measured RMC from testing of DOE’s sample ranged from 0.4 percent to 1.4 percent, with an average of 0.8 percent.

**Water Conditions**

DOE notes that the IEC is currently revising its test standard for clothes

dryers, that is, IEC Standard 61121. As part of its revised draft, the IEC notes that the characteristics of the water used for wetting the test load prior to the test, particularly the conductivity, can have a large influence on test results when testing automatic cycle termination clothes dryers with moisture sensors. Clothes dryers with moisture sensors use conductivity sensor bars to determine the amount of moisture in the load when the load comes in contact with the sensors. The following table provides the characteristics of either soft or hard water to be used for appliance testing under IEC Standard 61121.

TABLE 2—COMPOSITION OF SOFT AND HARD WATER FOR APPLIANCE TESTING

Property	Unit	Water type	
		Standard soft water	Standard hard water
Total hardness .....	mmol/l (Ca <sup>2+</sup> /Mg <sup>2+</sup> ) .....	0.50 ± 0.20	2.50 ± 0.20
Conductivity (at 20 °C) .....	µS/cm .....	150 ± 50	750 ± 150

DOE is not aware of any data regarding the effects of conductivity of the water used to wet the test load on the measured efficiency.

• DOE requests information and data on the effects of conductivity of the water supply used to wet the test load prior to drying cycle tests on the measured efficiency using automatic cycle termination. In particular, DOE requests data on the effects of using unaltered water supplies versus water supplies adjusted to meet the specifications in the draft version of IEC 61121. Please indicate the cycle settings used when providing data (when possible use the “normal” cycle or the cycle recommended by manufacturers for drying cotton or linen clothes). Please also indicate the type of sensor technology used for the clothes dryers under test (e.g., temperature sensors or moisture sensors) and the starting and final moisture content of the test load

(when possible use the starting moisture content of 57.5 percent with an 8.45 pound (lb) test load for standard size dryers and 3.00 lb test load for compact dryers).

• DOE requests data on any potential burden associated with requirements for and adjustments to the water supply used for wetting the test load.

**Cycle Settings—ECOS Test Results**

DOE notes that ECOS Consulting (ECOS) conducted a testing program for the Natural Resources Defense Council (NRDC) to evaluate clothes dryer automatic cycle termination.<sup>1</sup> (The ECOS report stated that the difference between a standard clothes dryer and one that is effective at turning itself off when clothes are actually dry is about

0.76 kilowatt-hours (kWh) per load (5,000 kWh over typical lifetime). The ECOS report also stated that automatic termination cycles using lower heat settings or lower dryness level reduce energy consumption and increase efficiency because less energy is spent heating air, cloth, and metal. The ECOS report summarized testing results for one clothes dryer that showed that the difference in energy consumption between the highest and lowest heat settings was 13 percent and that the drying time increased (from 35 to 49 minutes), but very similar final RMCs were achieved.

• DOE requests information and data on consumer usage habits regarding cycles selected for drying. In your responses, please be specific by indicating general cycle settings, temperature settings, and dryness level settings used by consumers.

<sup>1</sup> NRDC, No. 30 at pp. 1–40. Public comment submitted in docket number EERE–2007–BT–STD–0010.

- DOE requests additional information and data on the effects of using different automatic cycle termination settings. When providing test results, please also indicate the type of sensor technology used for the clothes dryers under test (*e.g.*, temperature sensors or moisture sensors) and the starting and final moisture content of the test load (when possible use the starting moisture content of 57.5 percent with an 8.45 pound (lb) test load for standard size dryers and 3.00 lb test load for compact dryers).

- DOE requests comments on methodology for accounting for various cycle setting options in the DOE test procedure. In particular, if interested parties believe that DOE should test multiple cycles, please provide consumer usage data on the percentage of drying cycles that consumers use for each automatic cycle termination setting.

- DOE also requests comment on the additional testing burden associated with a requirement to measure multiple cycle settings.

Issued in Washington, DC, on August 9, 2011.

**Roland J. Risser,**

*Program Manager, Building Technologies Program, Energy Efficiency and Renewable Energy.*

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## DEPARTMENT OF ENERGY

### 10 CFR Part 431

[Docket Number EERE-2010-BT-STD-0051]

RIN 1904-AC62

#### Notice of Intent to Negotiate Proposed Rule on Energy Efficiency Standards for Distribution Transformers

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of intent to establish a subcommittee and negotiate a proposed rule.

**SUMMARY:** The U.S. Department of Energy (DOE or the Department) is giving notice that it intends to establish a negotiated rulemaking subcommittee under ERAC in accordance with the Federal Advisory Committee Act (FACA) and the Negotiated Rulemaking Act (NRA) to negotiate proposed Federal standards for the energy efficiency of low-voltage dry-type distribution transformers. The purpose of the

subcommittee will be to discuss and, if possible, reach consensus on a proposed rule for the energy efficiency of distribution transformers, as authorized by the Energy Policy Conservation Act (EPCA) of 1975, as amended. The subcommittee will consist of representatives of parties having a defined stake in the outcome of the proposed standards, and will consult as appropriate with a range of experts on technical issues.

**DATES:** Written comments and requests to be appointed as members of the subcommittee are welcome and should be submitted by August 29, 2011.

**ADDRESSES:** Interested persons may submit comments, identified by docket number EERE-2011-BT-STD-0051, by any of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov> Follow the instructions for submitting comments.

- *E-mail:* [LVDT-2011-STD-0051@ee.doe.gov](mailto:LVDT-2011-STD-0051@ee.doe.gov). Include EERE-2011-BT-STD-0051 and/or RIN 1904-AC62 in the subject line of the message.

- *Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, EERE-2011-BT-STD-0051 and/or RIN 1904-AC62, 1000 Independence Avenue, SW., Washington, DC 20585-0121. *Phone:* (202) 586-2945. Please submit one signed paper original.

- *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024. *Phone:* (202) 586-2945. Please submit one signed paper original.

*Instructions:* All submissions received must include the agency name and docket number or RIN for this rulemaking.

*Docket:* For access to the docket to read background documents, a copy of the transcript of the public meeting, or comments received, go to the U.S. Department of Energy, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Please call Ms. Brenda Edwards at (202) 586-2945 for additional information regarding visiting the Resource Room.

**FOR FURTHER INFORMATION CONTACT:** John Cymbalsky, U.S. Department of Energy, Office of Building Technologies (EE-2J), 1000 Independence Avenue, SW., Washington, DC 20585-0121. *Telephone:* (202) 287-1692. *E-mail:* [John.Cymbalsky@ee.doe.gov](mailto:John.Cymbalsky@ee.doe.gov). Ms. Jennifer Tiedeman, U.S. Department of Energy, Office of the General Counsel (GC-71), 1000 Independence Ave., SW.,

Washington, DC 20585-0121. *Telephone:* (202) 287-6111. *E-mail:* [Jennifer.Tiedeman@hq.doe.gov](mailto:Jennifer.Tiedeman@hq.doe.gov).

#### SUPPLEMENTARY INFORMATION:

##### Preamble

- I. Statutory Authority
- II. Background
- III. Proposed Negotiating Procedures
- IV. Comments Requested

##### I. Statutory Authority

This notice announcing DOE's intent to negotiate a proposed regulation setting energy efficiency standards for distribution transformers was developed under the authority of sections 563 and 564 of the NRA (5 U.S.C. 561-570, Pub. L. 104-320). The regulation setting energy efficiency standards for distribution transformers that DOE is proposing to develop under a negotiated rulemaking will be developed under the authority of EPCA, as amended, 42 U.S.C. 6313(a)(6)(C) and 6317(a).

##### II. Background

As required by the NRA, DOE is giving notice that it is establishing a subcommittee under ERAC to develop proposed energy efficiency standards for distribution transformers.

EPCA, as amended, directs DOE to adopt energy conservation standards for those distribution transformers for which standards would be technologically feasible and economically justified, and would result in significant energy savings. (42 U.S.C. 6317(a)(2)). DOE published a final rule in October 2007 that established energy conservation standards for liquid-immersed and medium-voltage dry-type (MVDT) distribution transformers. 72 FR 58190 (October 12, 2007); see 10 CFR 431.196(b)-(c). During the course of that rulemaking, the Energy Policy Act of 2005 (EPACT 2005), Public Law 109-58, amended EPCA to set standards for low-voltage dry-type (LVDT) distribution transformers. (EPACT 2005, Section 135(c); codified at 42 U.S.C. 6295(y)) Consequently, DOE removed these transformers from the scope of that rulemaking. 72 FR at 58191 (October 12, 2007).

On July 29, 2011, DOE published a notice of its intent to establish a subcommittee under the ERAC to negotiate a proposed rule for liquid-immersed and MVDT distribution transformers (76 FR 45472). The negotiated rulemaking contemplated in today's notice is complimentary of that process.

##### A. Negotiated Rulemaking

DOE has decided to use the negotiated rulemaking process to develop proposed