Asia-Pacific Economic Cooperation

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International Harmonization: United States Department of Energy Test Procedures Rulemaking Process Overview

Submitted by: United States

APEC RUSSIA 2012

Aligning Energy Efficiency Regulations for ICT Products: Developing a Strategic Approach
Seoul, Korea
18 July 2012

International Harmonization: US DOE Test Procedures Rulemaking Process Overview

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

APEC Conference on Aligning Efficiency Standards for ICT Products

July 18, 2012 Seoul, South Korea

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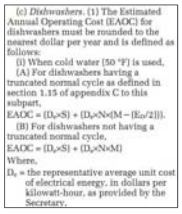
Project Manager
Appliances Standards Group
Building Technologies Program

Appliance Standards Program Activities

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Establishes test procedures for measuring the energy efficiency of covered products.
  - *Energy efficiency is often difficult to define, and requires different metrics for different products.*
  - *Test procedures must be carefully developed, so they can't be gamed.*
- Establishes the mandatory standard levels for the energy efficiency of covered products.
  - *The standard is defined in terms of the test procedures established by the Program.*
  - *Manufacturers (including importers) must test their products using the DOE test procedure, and it must meet the standard level to be sold in the U.S.*
- Enforces the standards.
  - *DOE can order manufacturers to take corrective action if their products do not meet the standard levels.*
  - *This can include ordering them not to sell the products in the United States.*



(c) *Dishwashers.* (1) The Estimated Annual Operating Cost (EAOC) for dishwashers must be rounded to the nearest dollar per year and is defined as follows:

(i) When cold water [50 °F] is used,

(A) For dishwashers having a truncated normal cycle as defined in section 1.15 of appendix C to this subpart,

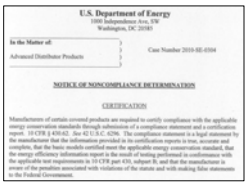
$EAOC = (D_e \times S) + (D_e \times N \times [M - (E_{D}/2)])$.

(B) For dishwashers not having a truncated normal cycle,

$EAOC = (D_e \times S) + (D_e \times N \times M)$

Where,

D_e = the representative average unit cost of electrical energy, in dollars per kilowatt-hour, as provided by the Secretary.



U.S. Department of Energy

1000 Independence Ave, SW

Washington, DC 20585

In the Matter of: Advanced Distributor Products

Case Number 2010-SE-0504

NOTICE OF NONCOMPLIANCE DETERMINATION

CERTIFICATION

DOE Covered Products

U.S. Legislation explicitly specifies 84 DOE "covered products" and provides DOE authority to promulgate test procedures and efficiency standards.

NAECA (1975)	EPACT 1992	EPACT 2005	EISA 2007
1. Refrigerators, Freezers and Refrigerator-Freezers 2. Room Air Conditioners 3. Central Air Conditioners and Central Air Conditioning Heat Pumps 4. Residential Water heaters 5. Pool heaters (Gas Fired) 6. Direct heating equipment 7. Furnaces 8. Residential Boilers 9. Small Furnaces 10. Mobile Home Furnace 11. Dishwashers 12. Residential Clothes washers 13. Clothes dryers 14. Kitchen ranges and ovens 15. Fluorescent lamp ballasts 16. Television Sets	1. General service incandescent lamp 2. General service fluorescent lamp 3. Incandescent reflector lamp 4. Electric Motors and Pumps 5. Large & Small commercial package air conditioning and heating equipment 6. Single package vertical air conditioners & heat pumps 7. Commercial warm air furnaces 8. Packaged boilers 9. Storage Water Heaters 10. Packaged terminal air conditioners & heat pumps 11. Showerheads 12. Faucets 13. Water closets 14. Urinals 15. Distribution Transformers 16. High-intensity discharge lamps 17. Small Electric Motors	1. Ceiling Fans & Light Kits 2. Medium Base Compact Fluorescent Lamps 3. Dehumidifiers 4. Very large commercial package air conditioning and heating equipment (ASHRAE) 5. Unit Heaters 6. Automatic commercial ice makers 7. Commercial refrigerators, freezers, and refrigerator-freezers 8. Refrigerated Beverage Vending Machines 9. Commercial clothes washers 10. Battery Chargers 11. Furnace Fans 12. Illuminated Exit Signs 13. Mercury Vapor Lamp Ballasts 14. Torchieres 15. Traffic Signal Modules and Pedestrian Modules 16. Commercial Prerinse Spray Valves 17. External Power Supplies, Class A	1. 2,601-3,300 Lumen General Service Incandescent Lamps 2. 3-Way Incandescent Lamps 3. Rough Service Lamps 4. Shatter-Resistant Lamps 5. Vibration Service Lamps 6. Candelabra base incandescent lamp 7. Intermediate base incandescent lamp 8. Metal Halide Lamp Ballasts 9. Metal halide Lamp Fixtures 10. Microwave Ovens 11. Walk-in coolers and walk-in freezers 12. External Power Supplies, non-Class A 13. LED Lamps 14. OLED Lamps

New Covered Products

Additionally, legislation (42 USC 6295(i) provides DOE authority to establish efficiency standards for new covered products provided:

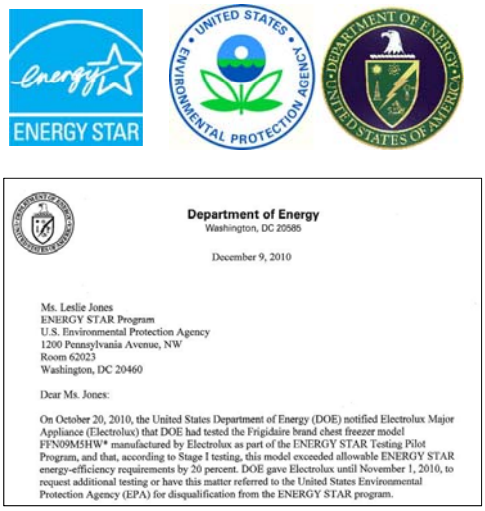
- Average annual per-household energy use exceeds 100 kWh/year to be a covered product
- Can establish efficiency standards for covered products where average annual per-household energy use exceeds 150 kWh/year and aggregate annual energy use exceeds 4.2 million kWh nationally.

NOTE: Computers and other Information Technology Products are not currently covered products.

Collaboration with ENERGY STAR

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Working with EPA, DOE leads test procedure development and some testing/verification for ENERGY STAR.
  - *DOE generally uses the same test procedure for appliance standards and ENERGY STAR.*
  - *DOE conducts some testing and enforcement for ENERGY STAR products that don't meet the required efficiency levels.*
  - *DOE has tested over 260 products through its pilot verification program to ensure that products bearing the ENERGY STAR logo deliver the energy savings consumers expect.*



Department of Energy
Washington, DC 20585

December 9, 2010

Ms. Leslie Jones
ENERGY STAR Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Room 62023
Washington, DC 20460

Dear Ms. Jones:

On October 20, 2010, the United States Department of Energy (DOE) notified Electrolux Major Appliance (Electrolux) that DOE had tested the Frigidaire brand chest freezer model FFN09M5HW* manufactured by Electrolux as part of the ENERGY STAR Testing Pilot Program, and that, according to Stage I testing, this model exceeded allowable ENERGY STAR energy-efficiency requirements by 20 percent. DOE gave Electrolux until November 1, 2010, to request additional testing or have this matter referred to the United States Environmental Protection Agency (EPA) for disqualification from the ENERGY STAR program.

EPA–DOE Memorandum of Understanding (MOU)

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- On September 30, 2009, EPA and DOE signed a memorandum of understanding (MOU) designed to enhance and strengthen the ENERGY STAR program

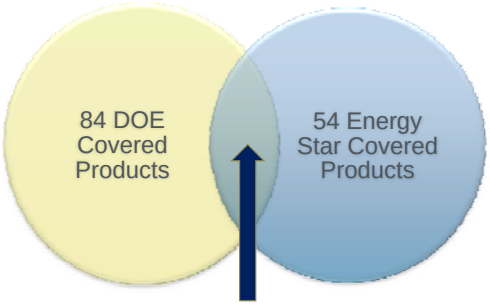
EPA: Brand Manager	DOE: Technical Support
• New Products • Performance Levels • Marketing & Outreach • Product Database • Monitoring & Verification	• Test Methods • Metrics • Monitoring & Verification

ENERGY STAR & DOE PRODUCTS

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

New or revised test methods will be completed for all 54 ENERGY STAR products by 2015.

- Ensures metrics are consistent with future Federal standards.
- Provides head start for future DOE covered products.



31 Energy Star Products Covered by DOE

DOE Regulatory Test Procedure Development Process

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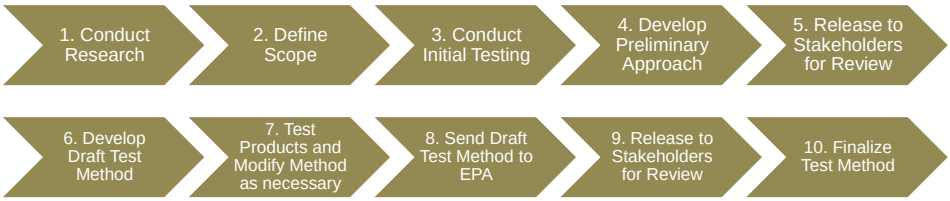
The approach to test-procedure development encourages continuous improvement of test procedures.

Rule Initiation	Define Objectives	Address Key Issues	Publish NOPR	Collect Comments	Publish Final Rule
Rulemaking Triggers: • Supporting a Standards Rulemaking • Periodic Review • Mandated Link to Industry Test Procedure • Petition • DOE Recognition of Need • Deferral • Stakeholder Comments • Waivers	**A good Test Procedure should:** • Be repeatable • Be reproducible • Be representative • Not be overly burdensome • Anticipate technology changes • Discourage circumvention • Harmonize with related TP • Consistent with Legal Authority	• Reference industry and other test procedures? • Accurately measure current and future products? • Compare well with field data? • Address outstanding waivers? • Address stakeholder questions?	• Scope of coverage, definitions • Test set up, test conditions, and output metrics • Proposed method of testing • Solicit comments on any significant changes proposed • Round Robin Testing	• Prepare and present at Public Meeting • Review and summarize comments	• Promulgates final test procedure • Address NOPR comments • Explain basis for test procedure

ENERGY STAR Test Procedure Development Process

As it is a voluntary program, the Energy Star test procedure development process differs from a covered product rulemaking



Keys to Harmonization

- DOE strives to achieve harmonization with International Standards
  - First step in any DOE or ENERGY STAR test procedure is reviewing existing standards
    - Development of ENERGYSTAR 6.0 began with comparison to EMCA-383 and ENERGYSTAR 5.0
    - Ensure existing standards continue to met DOE objectives
- Continue to follow established process for developing test procedures
- Test Procedures require regular update; are not static
  - Rapidly evolving technology
  - introduction of new test procedures may uncover flaws

Super-efficient Equipment and Appliance Deployment (SEAD)

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Collaborations are government-to-government technical-level exchanges designed to support development, revision and implementation of equipment and appliance minimum energy performance standards, labeling specifications and test protocols.

Participating economies
- US
- UK
- European Commission
- Canada
- Korea
- Japan
- India
- Australia
- China
- Germany
- Mexico
- South Africa
- Sweden
- UAE

Collaborations
- Computers
- Network Standby
- Televisions
- Refrigeration
- Transformers
- Motors

SEAD COMPUTER WORKING GROUP COLLABORATION

The collaboration is currently undertaking a data collection exercise to inform the development of standardized product definitions
Collaboration project – Computer Testing Toolkit
- Objectives:
  - Reduce the effort required for a economy to implement an IEC test standard proposal
  - Reduce testing expenses and time to market for globally traded products
- Scope of Work:
  - Draft a toolkit that provides an overview of the IEC standard, product scope, approaches to addressing product configurations, etc.
  - Coordinate an expert review of the toolkit
  - Hold a workshop to introduce the toolkit to policymakers
- Schedule:
  - Work to begin in September 2012
  - Aim for completion in March 2013

Engagement in DOE Process

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- DOE test method development driven by stakeholder comments
- Active participate in DOE rulemaking process
- Engage all stakeholders (manufacturers, ee advocates, etc.) to build consensus
- Incorporation by reference
- Option for Negotiated Consensus Rulemaking
  - Negotiated Rulemaking Act
  - Collaboration with all stakeholders in advisory committee with mediator
  - Stakeholders have used DOE-developed analysis to focus on key issues and come to agreement on beneficial energy efficiency standards levels
  - The Department must review any such joint proposal recommendations for satisfaction of legislative requirements

Strategies for Harmonization

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Participate in an industry working group aimed at developing a standardized rulemaking, perform review drafts, or provide technical guidance
  - Potential duplication of efforts
  - Limitations exist during an active rulemaking
  - DOE Rulemaking process required by statue
  - Currently “observing member” of industry group developing test methods for consumer electronics (TVs and STBs)
- Consider DOE objectives are met
  - Repeatability
  - Reproducibility
  - Representative
- Ensure consistency with legislative requirements
  - Must include testing for all power modes (on, standby, off)
  - Provide sampling and testing condition requirements

Contact Information

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

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