

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Addressing Networked Standby through DOE Appliance Standards

Networked Standby Workshop
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Department of Energy Efficiency Standards

- DOE Appliance standards program covers over 60 products
- DOE performs a robust analysis to establish minimum efficiency standards that achieve the maximum improvement in energy efficiency which is technological feasible and economical justified.
- Once established, DOE enforces the standards. Manufacturers are not permitted to sell products in the US that do not meet the required efficiency standard.

Department of Energy Test Procedures

Measures the energy efficiency of covered products

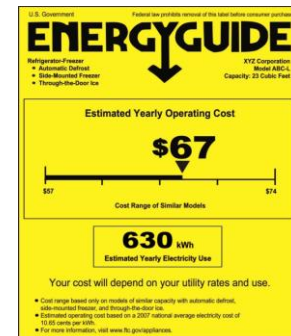
- *Energy Efficiency is often difficult to define and requires different metric for different products. DOE develops product-specific test procedures to be used to measure the energy consumption of products.*
- *DOE Regulatory Test Procedure is codified in the Federal Register*
- *Used for certification and enforcement of appliance standards of DOE covered products*
- *Must be used when making representations about the energy consumption of an appliance.*
- *State Efficiency Standards and Voluntary Programs (ENERGYSTAR) use the DOE Regulatory Test Procedure*

(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.



Working with EPA, leads test procedure development for ENERGY STAR non-covered products.

Working with FTC, DOE creates a methodology to calculate energy-usage values for Energy Guide labels on appliances.



Statutory Authority as related to Network Standby

- Establish test procedure and standard for any covered product.
 - Congressional Acts have established a list of covered product and have given DOE authority to classify a class of consumer products as a new covered products if the average per household energy consumption exceeds 100 KWh/year.
 - A Class of covered products is a group of consumer products with similar functions or intended use
 - Consumer product are products that consume energy which are distributed in commerce for personal use or consumption by individuals
- Test procedure for all covered products shall include energy consumption in on, standby, and off mode.
- Any final rule establishing or revising a standard shall incorporate on, standby, and off mode energy use into a single amended standard, if feasible.

Conclusion: DOE has authority to regulate networked standby on a product by product basis as part of a single efficiency standard that incorporates energy use in on, standby, and off mode

Current Status Networked Standby

- DOE is in process of establishing test procedures that measure networked standby for set-top boxes and televisions.
 - Set-Top Box Proposed Test Procedure: Published 1/23/13
 - Television Proposed Test Procedure: Published 1/19/12
 - Television Supplemental Test Procedure: Pre-publication 2/28/13
- DOE has proposed tests to measure networked standby modes.
 - Set-top Box Sleep Mode: A means a range of reduced power states where the STB is connected to a mains power source and is not providing any principal STB function. The STB may transition to on or off mode due to user action, internal signal, or external signal. The power consumed in this mode may vary based on specific use or configuration. If any principal STB function is activated while operating in this mode, the STB is assumed to transition to on mode. Monitoring for user or network requests is not considered a principal STB function. The STB shall be able to transition from this mode to on mode within 30 seconds to be considered in sleep mode.
 - Television Standby-active, low mode: A power mode in which the TV is connected to a power source, produces neither sound nor picture but can be switched into another mode with the remote control unit or an internal signal and can additionally be switched into another mode with an external signal..

Current Status – Networked Standby: Continued

- To date, DOE has not promulgated (or even proposed) any standards for products with network capabilities.
- While DOE has authority to begin rulemaking activities for other networked products, we currently have not indicated any plans to do so.
- DOE objective is to work with other standard setting bodies to incorporate harmonized terminology, definitions, and tests for networked standby, where appropriate, in current and future rulemakings.

Relevant URLs

- DOE Appliance Standards:
 - http://www1.eere.energy.gov/buildings/appliance_standards/index.html
- STB Product Website:
 - http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/38
- TV Product Website:
 - http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/34

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Questions?