



ENERGY STAR[®]

Residential Clothes Washers

Draft 1 Version 7.0 Specification
Stakeholder Webinar
September 12, 2012



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Agenda



Introduction – Welcome/Goals	Amanda Stevens, EPA
Clothes Washer Draft 1, Version 7.0 – Presentation & Discussion	
<ul style="list-style-type: none">- Definitions- Significant digits & rounding- Revisions to ENERGY STAR Criteria- Feedback sought on cleaning and rinse performance	Ryan Fogle, D&R International
<ul style="list-style-type: none">- “Connected” Functionality	Amanda Stevens, EPA Doug Frazee, ICF International
Conclude & Next Steps	Amanda Stevens, EPA

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Webinar Goals



1. Highlight proposed changes in the Draft 1, V7.0 specification.
2. Solicit stakeholder feedback on outstanding issues/questions identified.
3. Address stakeholder questions about process and/or changes.
4. Discuss next steps and timeline.

Maintaining Brand Integrity through Regular Spec Revisions



- 2009 EPA-DOE Memorandum of Understanding (MOU) trigger for specification reviews.

– *“For appliances and other product categories with longer-lived product models, specifications will be reviewed for a possible revision at a **minimum of every three years** or once the market share for ENERGY STAR qualifying products reaches **about 35%**.”*

Source: www.energystar.gov/mou.

- Additional factors that drive specification revisions:
 - Federal Standards
 - Innovation

ENERGY STAR Guiding Principles



- ENERGY STAR criteria are designed to balance a varied set of objectives, including:
 - Significant energy and/or water savings
 - Product performance maintained or enhanced
 - Purchasers can recover investment in increased efficiency within a reasonable time period
 - Efficiency achieved can through one or more technologies; qualifying products offered by more than one manufacturer
 - Energy/water consumption can be measured and verified with testing
 - Label provides meaningful differentiation

Specification Development Cycle



Clothes Washer Specification Background & V7.0 Drivers



- Background:
 - Current ENERGY STAR clothes washer (CW) specification (Version 5.1) went into effect January 1, 2011: Criteria: MEF \geq 2.0; WF \leq 6.0
 - In anticipation of new Federal standard for commercial CWs, ENERGY STAR criteria for commercial CWs were recently revised as part of the V6.0 specification process.
 - Version 6.0 becomes effective February 1, 2013
- Drivers for Version 7.0 revision:
 - EPA estimates ENERGY STAR residential CW market share in 2011 exceeded 60%
 - Availability of products in the market that significantly exceed the minimum criteria

Overview of Draft 1 V7.0



- Proposing revisions to MEF and WF criteria for residential washers.
- Seeking feedback on possibility of incorporating cleaning and/or rinse performance in a future CW specification.
- Planning to consider “Connected” for clothes washers.
 - Proposing 5% allowance for products with connected functionality.
- Other minor revisions:
 - Definitions
 - Significant digits and rounding requirements
- Effective date: 9 months after the Version 7.0 specification is finished; approximately November 2013.

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Definitions & Significant Digits & Rounding



- EPA added clarifying language that ENERGY STAR CW definitions are identical to DOE definitions unless otherwise specified.
 - Minor edits made to the definition of Modified Energy Factor and Water Factor to make them identical to the DOE definitions.
 - A clarifying note has been added under the commercial clothes washer definition to flag that the ENERGY STAR definition, unlike the DOE definition, does not specify a maximum capacity.
- The significant digits and rounding requirements were revised to cite the applicable sections of the Code of Federal Regulations (CFR).

Proposed Criteria



- Proposed ENERGY STAR criteria for residential CWs:

Modified Energy Factor (MEF) _{BASE}	Water Factor (WF)
2.6	≤ 3.7

- Equation 1 calculates the minimum MEF, with a 5% allowance for connected functionality.

Equation 1. Calculation of Minimum MEF

$$MEF_{MIN} = MEF_{BASE} - MEF_{Adder_Connected}$$

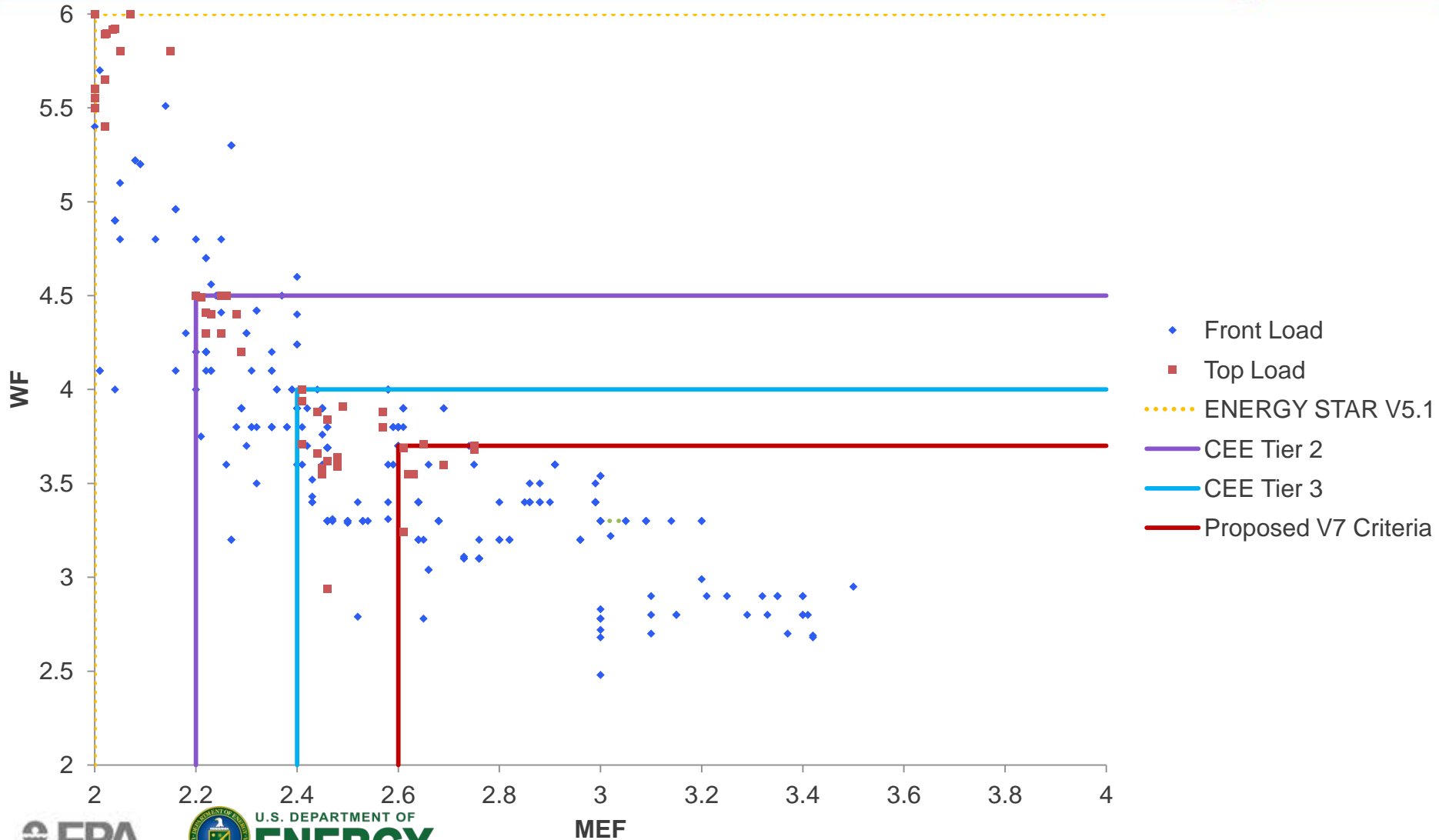
Connected Allowance	
Product Type	MEF _{Adder_Connected}
Residential Clothes Washers	0.05 x MEF _{BASE}

Note: Product must be qualified using the final and validated ENERGY STAR Test Method (TBD) to use the allowance.



Residential CW Scatter Plot

ENERGY STAR qualified models



Product Availability



Configuration	Number of Models Meeting Proposed V7.0	% of Total Models Meeting Proposed V7.0
Front Load	116	
Top Load	12	
Total	128	23%

- EPA's CW dataset combines ENERGY STAR qualified product list with the U.S. Federal Trade Commission list of models sold in US in 2011.
- EPA found that approximately 23 percent of CWs on the market meet the proposed criteria.
 - Includes products from six manufacturers and eleven brand names.

Product Availability



Manufacturers	Brands
Asko (4) Electrolux (27) GE (4) LG (38) Samsung (28) Whirlpool (27)	Asko (4) Crosley (2) Electrolux (5) Frigidaire (16) GE (4) Kenmore (27) LG (22) Maytag (10) Samsung (28) Whirlpool (8) White-Westinghouse (2)

Energy & Water Savings Proposed V6.0 Criteria



Weighted Per-Unit Electricity Savings (kWh)		Weighted Per-Unit Gas Savings (Therms)		Per-Unit Water Savings (gallons)	
Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
281	3,093	5.8	64	5,989	65,874

Assumptions: Current Federal standards (MEF of 1.26 and WF of 9.5) were used as the baseline.

Weighted per-unit electricity and gas savings incorporate water heating (WH) and clothes dryer (D) scenarios taken from RECS 2005. Specific weights are: 36.26% for electric WH/electric D; 1.16% for electric WH/gas D; 1.76% for electric WH/None; 36.68% for gas WH/electric D; 20.92% for gas WH/gas D; and 3.22% for gas WH/None.

Calculations assume 295 cycles per year, 3.5 cu-ft capacity, and an average lifetime of 11 years.

Cost Savings & Payback



Weighted Per-Unit Electricity Savings (\$)		Weighted Per-Unit Gas Savings (\$)		Per-Unit Water Savings (\$)		Per Unit Total Savings (\$)	
Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
32	356	6.3	69	50	553	89	978

Assumptions: Prices of \$0.115 per kWh; \$1.079 per therm; \$0.0084 per gallon were used to estimate per-unit cost savings, annually and over an average 11-year CW lifetime.

- EPA collected price data from retail stores indicating there are models available meeting the proposed V7.0 criteria that offer consumers a reasonable payback:
 - Clothes washer models meeting proposed requirements are available starting at about \$800, indicating price premium of about \$450 above a baseline model that meets the Federal standard → payback of about 5 years.
 - *Note: Models meeting V7.0 requirements also tended to have additional features such as additional cycle options, electronic controls, and stainless steel wash baskets that contributed to the price premium.*

Combination Washer-Dryers



- EPA remains interested in additional performance data on combination all-in-one washer dryers.
- The Agency is currently working with manufacturers to assemble a larger database for these products, that can further inform the specification development process.

Cleaning/Rinse Performance



- Some stakeholders have encouraged EPA to consider addressing cleaning and/or rinse performance in the CW specification.
- Currently, an ENERGY STAR test procedure is not available.
 - DOE has begun reviewing available test procedures.
- EPA is not planning to incorporate cleaning/rinse performance into the V7 specification.
 - EPA did consider cleaning performance when developing the proposed criteria and found that many models meeting the proposed criteria have received high scores in Consumer Reports' ratings that factor in wash performance.

Cleaning/Rinse Performance



- EPA and DOE encourage stakeholder feedback on whether the program should incorporate cleaning and/or rinse performance and the timing for doing so.

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Approaching Connected



- EPA, through the ENERGY STAR program, has long encouraged development of “intelligence” in products, while enabling emissions reductions that persist over the long-term.
 - Deep sleep in set-top boxes
 - Power management for monitors
- EPA sees opportunity to apply the ENERGY STAR program’s longstanding commitment to the consumer as various aspects of “smart grid” are extended to end-use products.
 - Consumer value is longstanding brand promise
 - Connected functionality can also deliver near term convenience and energy savings features:
 - Enhanced energy awareness – product level energy consumption
 - Messages/alerts relevant to the product’s energy consumption
 - Remote management capability

“Connected” in Draft 1



- In Draft 1, EPA has included a temporary placeholder for “connected” criteria.
 - EPA plans to propose connected criteria that enable both near-term consumer benefits plus longer-term grid benefits associated with smart grid interconnection, building from:
 - Refrigerator/Freezer connected criteria (currently being vetted in a stakeholder process).
 - Clothes washer demand response functionality specified in 2010 *Joint Petition on Smart Appliances*.
- Connected functionality is optional – not required for ENERGY STAR qualification.
- EPA is proposing a 5% incentive, for products with connected functionality, towards the minimum base MEF to help jump-start market.

Feedback on Connected Opportunities for CWs



- To support development of connected criteria for clothes washers, EPA is interested in stakeholder feedback on:
 - Since usage time may be flexible, is price awareness of particular importance?
 - Should the product encourage usage during favorable price periods?
 - If so, how can these be best expressed in the specification?

Verification of Connected Functionality



- Compliance with connected functionality specified in Section 4 (currently TBD), would be through examination of product and/or product documentation.
- Additionally, DR functionality would be certified using TBD ENERGY STAR test method
 - DOE plans to develop test method
 - Dependent upon product availability for validation testing
 - Products must be certified using test method in order to be eligible for allowance

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Anticipated Timeline for Version 7.0 Spec Revision



August 28, 2012	Draft 1, Version 6.0 Specification Released
September 12, 2012	Stakeholder Webinar (Today)
October 5, 2012 <i>(note – extended by 1 week)</i>	Comment Period Closes on Draft 1 Specification
November/December 2012	2 nd Draft Specification Distributed, Stakeholder Webinar or Meeting, and Comment Period
January 2013	Final Draft Specification Distributed and Comment Period
February 2013	Final V7.0 Specification Released

- EPA welcomes all partner and stakeholder comments **by October 5, 2012**
- Comments should be submitted in writing to appliances@energystar.gov

Transition to IMEF and IWF



- EPA is aware manufacturers will need to use the amended DOE test procedure beginning in March 2015.
- EPA is planning to transition the ENERGY STAR CW specification to this new test procedure at that time.
- EPA plans to, with assistance from DOE, crosswalk the final V7.0 levels for residential clothes washers to their equivalent Integrated MEF (IMEF) and Integrated WF (IWF) metrics.

Questions?

Contacts



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