



ENERGY STAR® Appliance Specification Updates

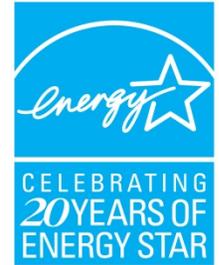
Amanda Stevens, U.S. EPA

October 24, 2012



Learn more at energystar.gov

Agenda



ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

Most Efficient

Connected Functionality

Questions



ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

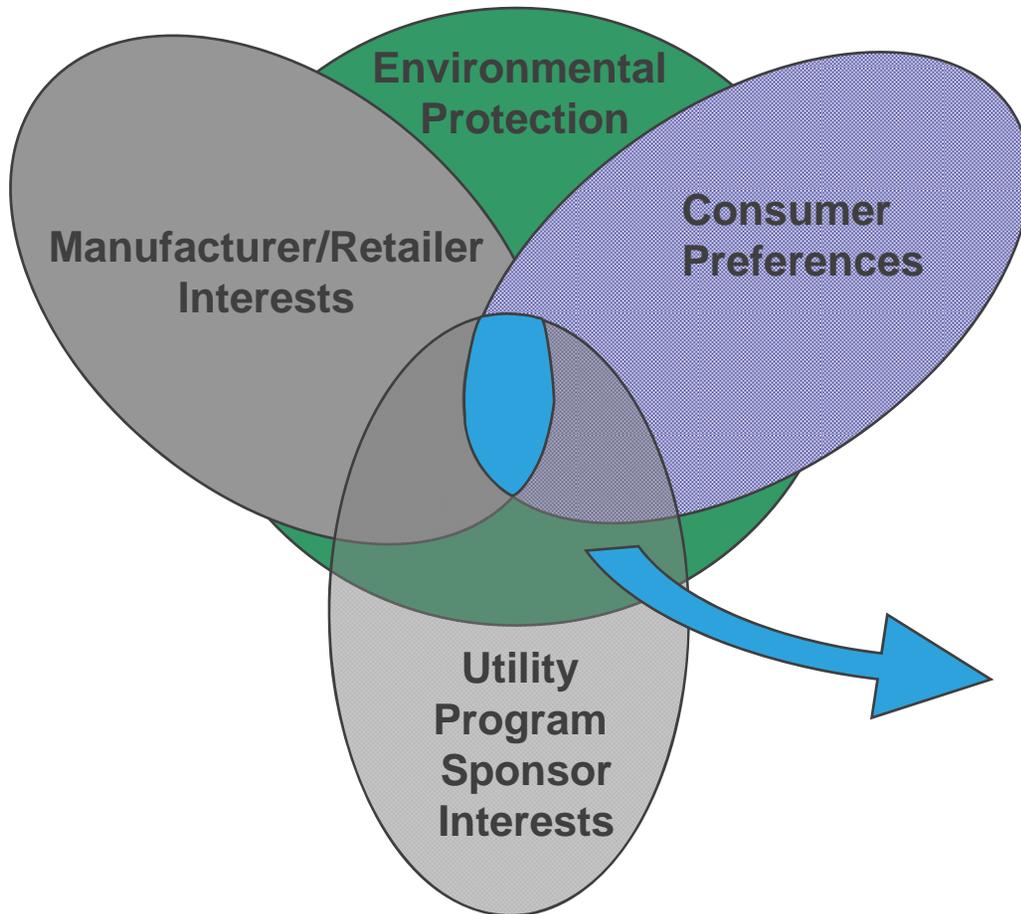
Most Efficient

Connected Functionality

Questions



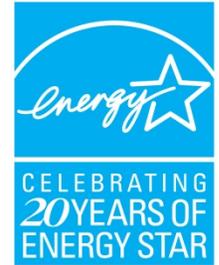
ENERGY STAR's Focus



Cost-effective
No Sacrifice in Performance
Government backed

Consumer is Key

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 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

Maintaining Brand Integrity through Regular Spec Revisions

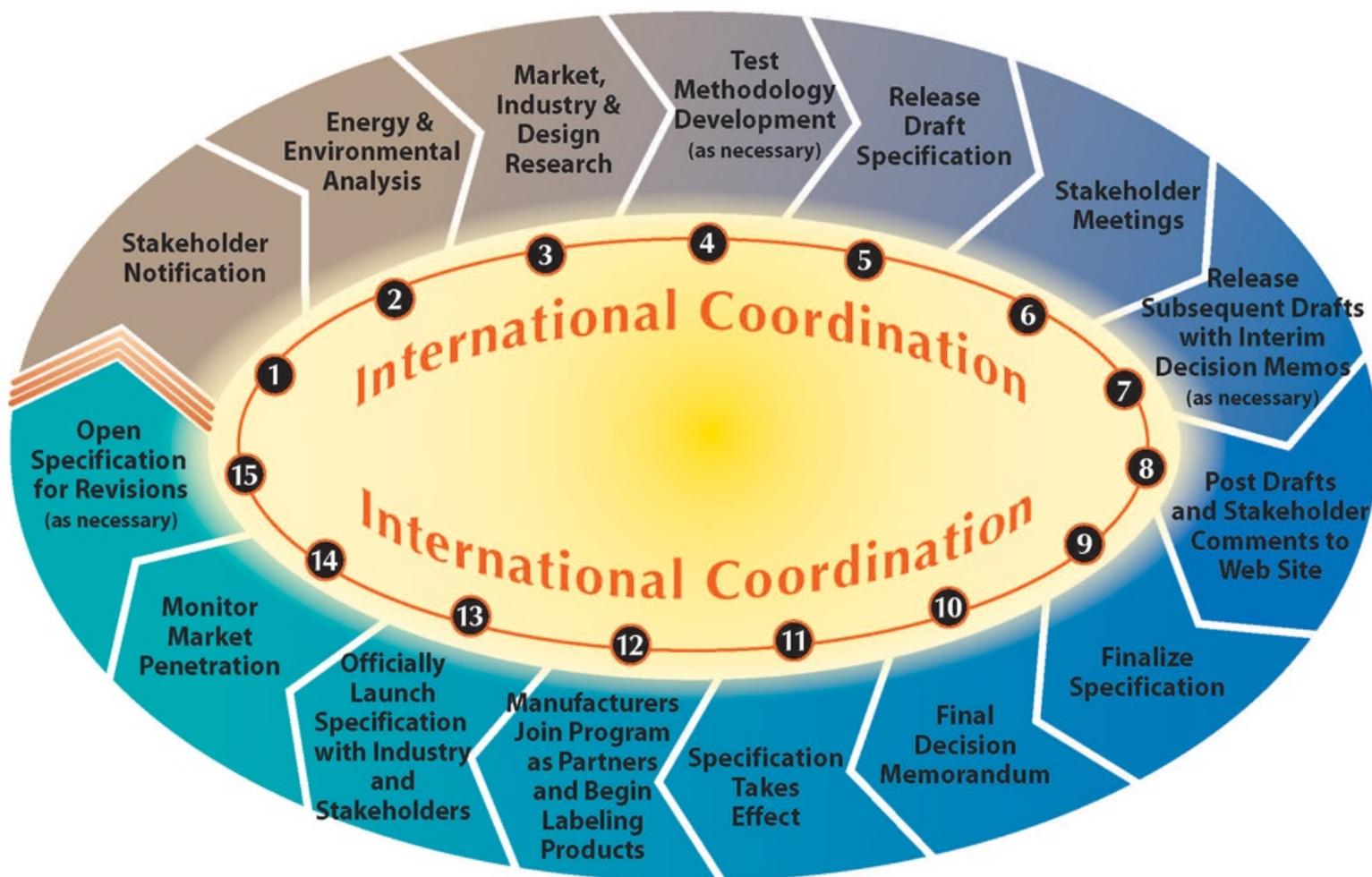


- Appliance specifications are reviewed for possible revision at a minimum of every three years, or once the market share for ENERGY STAR qualifying products reaches about 35%.
- Additional factors driving specification revisions:
 - Federal Standards
 - Innovation

Specification Development Cycle



Specification Development Cycle





Specification Transitions

- EPA shares its partners' desire for a smooth transition from one ENERGY STAR specification to the next
- EPA provides partners with 9 months between the completion of a specification and its implementation date to allow for transition of collateral material
- EPA also intends for this period to allow models that will not meet the new requirements to transition off the shelves
 - Consumers purchase ENERGY STAR labeled products, expecting that they meet the latest requirements



Specification Transitions

- With this in mind, EPA has established the following timeline:
 - Effective immediately after a spec is final, manufacturers can elect to have CB certify eligible products to the new version
 - Approximately 4 months before the new specification becomes effective, CBs are instructed to no longer certify product submittals to older specification. (Reminders will be shared with CBs and manufacturers.)
 - EPA will share with retail partners a list of products that meet new specification in advance of the effective date

ENERGY STAR Appliance Market Share



	2008	2009	2010	2011	Status of Recent/Next Spec
Refrigerators	31%	35%	50%	56%	V5.0 in development
Room ACs	43%	36%	33%	62%	V3.0 effective Oct. 2013
Clothes Washers	24%	48%	64%	60%	V5.1 effective Jan. 2011 V6.0 effective Feb. 2013** V7.0 in development
Dishwashers	67%	68%	100%	96%	V5.0 effective Jan. 2012 V6.0 planned for Jan. 2014
Freezers			25%	21%	V5.0 in development; proposing to sunset freezers in V5.0

**V6.0 contains revised levels for commercial washers, only.

Note: 2011 Unit Shipment Data available: www.energystar.gov/usd





ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

Most Efficient

Connected Functionality

Questions



Clothes Washers



- Current Version 5.1 specification was effective Jan. 1, 2011
- Version 6.0 finalized in May 2012; effective Feb. 1, 2013
 - Strengthened water and energy criteria for commercial clothes washers (residential levels unchanged from V5.1)
 - Modified Energy Factor (MEF) ≥ 2.2 ; Water Factor (WF) ≤ 4.5
 - Addressed/defined combination (all-in-one) washer-dryers
- Version 7.0 specification is in development; anticipated to be effective in late 2013
 - Proposed residential clothes washer criteria
 - Modified Energy Factor (MEF) ≥ 2.6 ; Water Factor (WF) ≤ 3.7
 - Connected criteria under consideration
 - Seeking feedback on possibility of addressing cleaning and/or rinse performance in a future CW specification

Clothes Dryers



- Version 1.0 specification under development; would be effective when specification is finalized (anticipated – Spring 2013)
- Proposed criteria
 - Combined Energy Factor (CEF) requirements for 5 residential clothes dryer product types:
 - 13% energy savings for electric dryers
 - 10% energy savings for gas dryers
 - Maximum drying time requirement; automatic termination criteria; minimum warranty requirements
- Connected criteria planned to be included in Draft 2 proposal
- Test method development
 - Test method to validate DR functionality & test guidance for measuring drying time



Room Air Conditioners

- Version 2.1 is currently in effect
- Version 3.0 finalized; effective October 1, 2013
 - Strengthened efficiency criteria
 - EER levels strengthened from 10% → 15% above federal standard
 - New requirements encouraging “intelligent” energy-saving features:
 - Energy Saver Mode and Clean Air Filter Reminder
 - Criteria for connected functionality under development (would be included in a V3.1 specification)
- Due to new Federal standards, EPA plans to assess the opportunity for V4.0 revision in 2013



Refrigerators and Freezers

- Version 4.1 has been in place since 2008.
- Version 5.0 currently under development. Proposed effective date of March 1, 2014 allows for one ENERGY STAR specification through Federal standards and test procedure transition.
 - Draft 3 proposed requirements are expressed as a % above the federal standard:
 - 10% above 2014 Federal standards for full-size and compact refrigerators and refrigerator-freezers
 - 13% above 2014 Federal standards for built-in
 - Proposed sunset of freezers in Version 5.0
 - Stringent 2014 Federal standards for freezers suggest little room for cost-effective savings. EPA is seeking feedback.
 - Criteria for connected functionality and test method to verify DR functionality, are also under development.





Residential Dishwashers

- Version 5.0 became effective January 20, 2012.
- Version 6.0 specification revision to begin late 2012/early 2013; anticipated Jan. 2014 effective date
 - Include cleaning performance test (currently under development) and minimum cleaning performance requirement
 - Revisit water & energy criteria
 - Consider connected opportunity



ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

Most Efficient

Connected Functionality

Questions



ENERGY STAR Most Efficient



- Goal: Drive more energy efficient products into the market more quickly
 - Identify the top, few, most energy efficient products
 - Avoid confusing consumers or harming the ENERGY STAR brand
 - Align with ENERGY STAR program goal of reducing greenhouse gases
- Audience: Early adopters, prioritize environment
- Launched pilot in 2011; continued through 2012. Announced permanent program Fall 2013.
 - TVs, clothes washers, refrigerators, CAC, heat pumps, boilers, furnaces, geothermal heat pumps
 - **Refrigerators:** As of Sept. 2012, 80 models from 8 manufacturers met technical requirements



Clothes Washers: As of Sept. 2012, 66 models from 8 manufacturers met technical requirements

2013 Proposed Eligibility Requirements: Appliances



- Refrigerators: proposed maintaining current requirements
 - 30% + more efficient than federal standard
 - Current criteria offers choice in a range of sizes and configurations, yet small overall number of recognized models
 - Modest number of new models recognized since beginning of 2012
- Clothes Washers: proposed increasing stringency
 - Large Washers (> 2.5 cu-ft): MEF increase from 3.0 to 3.2, and WF increase from 3.3 to 3.0
 - Small Washers (\leq 2.5 cu-ft): MEF increase from 2.3 to 2.4, and WF maintained at 4.5
 - Estimated 45% energy savings and 56% water savings, relative to Federal standard
 - Captures 28 models from 6 different manufacturers; an estimated 4% of models on the market



ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

Most Efficient

Connected Functionality

Questions

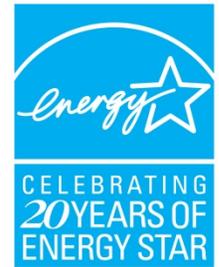


Promote Connected for both Immediate & Long Term Value



- Consumer value is longstanding brand promise.
 - EPA has long encouraged “intelligence” in products
- Connectivity allows products to interface with the external apps/devices/systems, enabling new opportunities:
 - consumer convenience, control and energy savings, i.e.,
 - Enhanced energy awareness – personalized and actionable info
 - Diagnostics and alerts to minimize periods of reduced efficiency (and added convenience – e.g., 1 repair trip instead of 2)
 - Enable consumers to take advantage of future appliance demand response (DR) programs and rate designs that help them to tailor their energy use to periods when its cheaper or cleaner.

Key Elements for Home Appliances



- Defining a core set of features/functions that a “connected” appliance would have
- ENERGY STAR program is well positioned to help interested parties identify products that offer those features
 - List “Connected” as a product feature on ENERGY STAR Qualified Product List (QPL)
- To help “jump start” the market for appliances with DR capabilities, EPA is pursuing a small credit towards ENERGY STAR energy efficiency criteria
 - Recognize “chicken and egg” dilemma
 - Only offering credit in conjunction with strengthened criteria
 - To use credit, products must be qualified using new demand response test method

Approach for Refrigerators



- Criteria specify open-standards and promote open-access to encourage innovation, flexibility and consumer choice.
- Criteria require that connected refrigerators:
 - Provide consumers with near-term value-added functionality (e.g., alerts, remote control, feedback on energy use)
 - Grid benefits: shift defrost function to reduce energy use during peak times, and new demand response capabilities
- Requires manufacturers provide consumers with instructions on what additional devices/services they need to utilize the connected features.

Status of “Connected” in ENERGY STAR Specs



Product	Anticipated Timeline	
	Recent/Anticipated Milestone	Spec Completion/ Effective Date
Refrigerators-Freezers	Draft 3 in Sept 2012	Fall-Winter 2012/ Proposed Effective March 2014
Clothes Dryers	Draft 1 in August 2012	Spring 2013/ Effective Immediately
Clothes Washers	Draft 1 in August 2012	Feb 2013/ Nov 2013 (estimated)
Pool Pumps	Draft 1 in August 2012	Feb 2013/ Effective Immediately
Climate Controls	Draft 3 in April 2012	TBD/ Effective Immediately
Room Air Conditioners	V3.0 finalized; supplemental Connected Proposal in Nov/Dec 2012	Fall-Winter 2012/ Effective Oct 2013
Residential Dishwashers	<i>“Connected” will be considered during next spec revision (2012/2013)</i>	
Others - TBD		



ENERGY STAR Appliance Overview

Product Specific Updates

- Clothes Washers
- Clothes Dryers
- Room Air Conditioners
- Residential Refrigerators-Freezers
- Residential Dishwashers

Most Efficient

Connected Functionality

Questions





Questions?



Contacts



Specification Development:

- Amanda Stevens, US EPA
Stevens.Amanda@epamail.epa.gov
- Doug Frazee, ICF International
douglas.frazee@icfi.com
- Sean Southard, ICF International
sean.southard@icfi.com
- Ryan Fogle, D&R International
rfogle@drintl.com
- appliances@energystar.gov

Test Procedure Development:

- Ashley Armstrong, US DOE
Ashley.Armstrong@ee.doe.gov



Backup

Appliance Spec Development “At-a-Glance”



Product	Current Spec	Spec Revisions	New Spec Effective Date
Clothes Washers (Residential)	V5.1	- V7.0 under development: revise energy & water criteria, connected	Nov. 2013 <i>(anticipated)</i>
Clothes Washers (Commercial)	V5.1	-V6.0 revision complete: revised energy & water criteria , added definition for combo W/Ds	Feb. 2013
Clothes Dryers	N/A	- V1.0 under development: energy criteria, drying time, automatic termination, connected, warranty	Spring 2013 <i>(anticipated)</i>
Room A/C	V2.1	-V3.0 finalized in June 2012: revised EER criteria, new energy saver mode and filter reminder -V3.1 is planned to also address connected	Oct. 2013
Refrigerators & Freezers	V4.1	-V5.0 under development: strengthened energy criteria for refrigerators referencing DOE’s 2014 test method; proposed sunset freezers: connected (DR test method in development)	March 2014 <i>(proposed)</i>
Residential Dishwashers	V5.0	-Cleanability test method in development - V6.0 revision in 2012/13: cleanability requirement, revisit energy & water criteria, connected	Jan. 2014 <i>(Tier 2 placeholder)</i>