



# ENERGY STAR® Most Efficient 2014 Update and 2015 Proposals

September 4, 2014



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# Webinar Logistics

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- Audio provided via teleconference:

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# Webinar Goals

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- Provide update on ENERGY STAR Most Efficient in 2014
- Present and seek feedback on 2015 proposed recognition criteria

# ENERGY STAR Most Efficient 2014



Product Category	Models	ENERGY STAR Partners
Boilers	122	17
Ceiling Fans	47	15
Central Air Conditioners and Air Source Heat Pumps	55	8
Clothes Washers	119	9
Computer Monitors	82	22
Furnaces	94	6
Geothermal Heat Pumps	236	7
Refrigerators-Freezers	116	12
Televisions	135	16
Ventilating Fans	212	11
Windows	380	43
<b>Total</b>	<b>1598</b>	<b>122</b>

# 2014 Updates

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- Interest is growing:
  - In 2014, twelve utility efficiency program sponsors serving 37 million residential customers featured ENERGY STAR Most Efficient 2014 in their residential program offerings
  - Efficiency program sponsor participation has tripled since the beginning of the designation in 2011 and doubled since 2012
- Beginning Late September 2014
  - Regional spot market promotions of ENERGY STAR Most Efficient to high-end green consumers to promote the benefits and increase awareness and demand
    - Target markets: Albany, NY (NYSERDA) and Sacramento, CA (SMUD, PG&E)
    - Markets were selected based on utility partner program engagement and concentration of “Super Green” consumers

# Spot Market Promotion Details

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- National Public Radio underwriting
  - 15 spots run 9/22 through week of 11/3
  - Albany: WAMC FM 90.3, 130 reads
  - Sacramento: KXJZ FM 90.9, 126 reads
  - Draft copy:
    - Support for KXYZ comes from EPA. ENERGY STAR products are a simple way to save money and help prevent climate change. Introducing ENERGY STAR Most Efficient twenty-fourteen, awarding the best of ENERGY STAR for energy efficiency and innovation. More information about products and rebates at [energy star dot gov](http://energy star dot gov).

# Spot Market Promotion Details (cont.)



- Online banner ads
  - 728 x 90 and 300 x 250
  - Ads run 9/22 to week of 11/3
  - Geo-targeted placements using behavioral appliance data to reach affluent, green consumers, movers, homeowners, and remodelers
- Most Efficient Landing Page
  - Promotion of rebates from PG&E and SMUD
  - Listing of retailers selling ENERGY STAR Most Efficient products in NYSERDA and SMUD targeted areas



Sample banner ad

# Spot Market Promotion Details (cont.)



- In-Store Messaging
  - Hang tag signage
  - Select retail partners in targeted areas to promote ENERGY STAR Most Efficient products
  - This highlights the retailer as current and engaged with the high-end green shopper's aspirations



Sample signage



# Website Updates

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- Price and locator functionality to premiere on the ENERGY STAR Most Efficient 2015 website
- Plan for all retail-based ENERGY STAR Most Efficient product categories; beginning with pilot set
- Look for a demo at ENERGY STAR Partner Meeting, October 27-29 in Phoenix, AZ

# ENERGY STAR Most Efficient Categories in 2015

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- Boilers
- Ceiling and Vent Fans
- CAC/ASHP
- Clothes Washers
- Computer Monitors
- Dishwashers **NEW for 2015**
- Furnaces
- Geothermal Heat Pumps
- Refrigerator- Freezers
- Televisions
- Windows

# Proposed Changes to Criteria



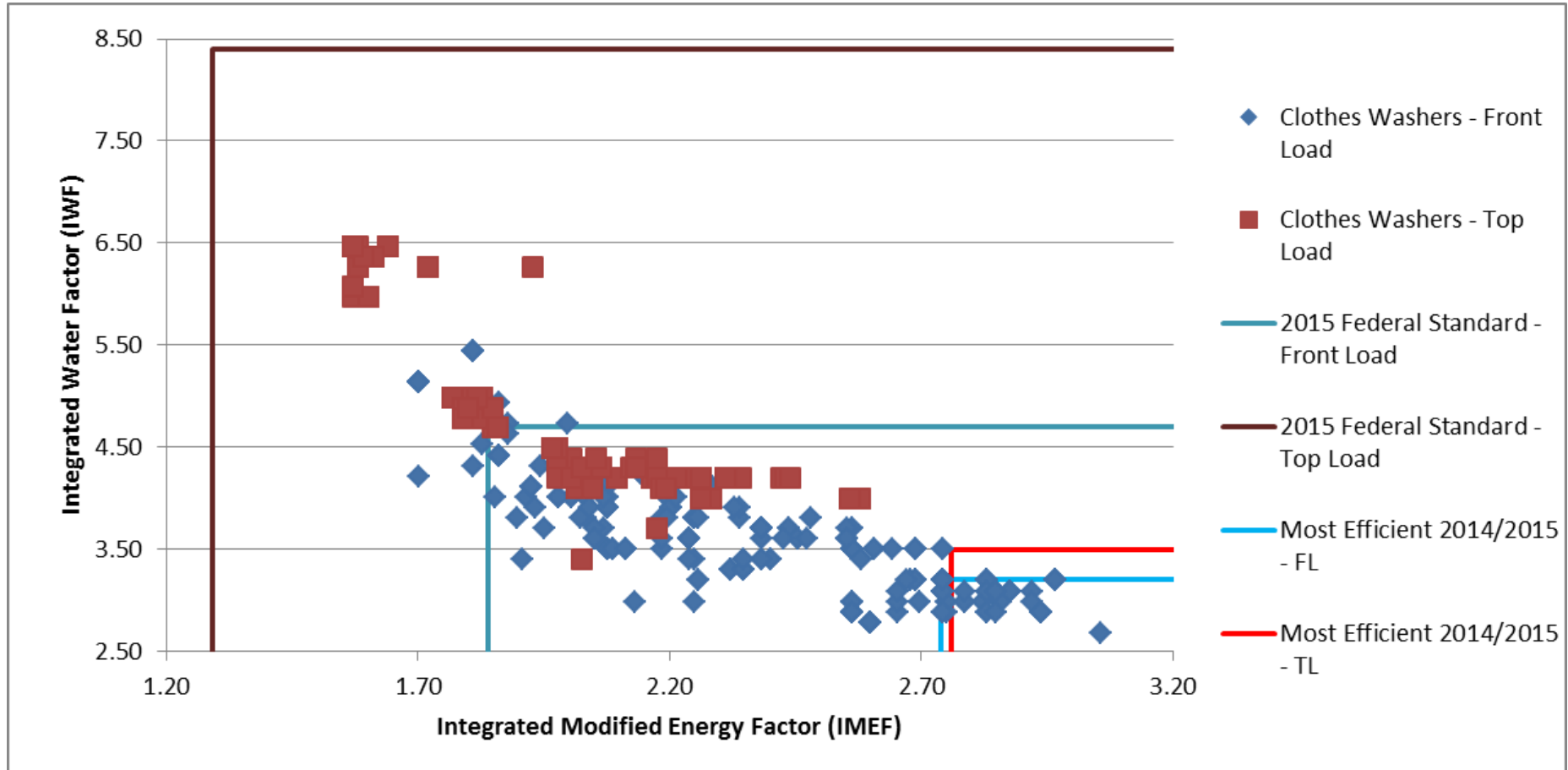
Product Category	Proposed Changes	Manufacturers Represented
Clothes Washers	Maintain criteria for standard washers. Reference added to V 7.0 IMEF/IWF criteria effective March 2015. Suspend small volume washer recognition.	9 brands – similar to 2014
Computer Monitors	Increase stringency for On Mode power levels. 2W/MP allowance instead of 6W/MP.	50 products from 27 brands meet proposed energy efficiency criteria.
Dishwashers	New product category for standard residential dishwashers. Establish energy and water criteria. Set a cleaning performance floor for heavy cycle. Cleaning performance reporting for all tested cycles via CBs.	38 products from 5 brands would meet proposed energy and water criteria.
Heating and Cooling Products (CAC and Air Source HP, Geothermal HP, Furnaces)	System status and messaging criteria updated to be more specific and more closely related to energy savings. Application process changes. Levels maintained.	EPA seeks feedback from manufacturers; anticipates at least one complete system (Carrier) meets proposal.
Televisions	Increase stringency for On Mode power levels.	26 brands from 11 brands meet proposed energy efficiency criteria.

# Clothes Washers

- 2015 Proposal:
  - Maintain criteria for standard size washers
  - For products certified to V 7.0, include equivalent IMEF/IWF criteria using DOE top- and front-loading crosswalk calculations
  - Suspend small volume (1.6-2.5 cu-ft) washers
- Rationale:
  - Recognizes about 80 large washer models in a range of sizes (3.7-5.6 cu-ft)
  - Significant energy and water savings 28% less energy and 30% less water than a product meeting the 2015 federal standard (based on a front load model)
    - Steady growth since late 2012; ~ 50 models added
  - No small volume products on market exceed V 7.0, which is more stringent than ENERGY STAR Most Efficient 2014
- Products that meet proposed requirements are available from 4 Product Brand Owner partners and offered under 9 brands (Amana, Crosley, Electrolux, Frigidaire, Kenmore, LG, Maytag, Samsung, Whirlpool)



# Clothes Washers (cont.)



# Dishwashers



- 2015 Proposal:
  - Products use 22% less energy and 36% less water than the federal standard
    - Annual Energy Savings: 67 kWh/yr
    - Annual Water Savings: 387 gal/yr
  - Includes a minimum heavy cycle Cleaning Index of 70 as assessed under ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance (Rev. Feb-2014)
  - Includes reporting of per cycle Cleaning Index for heavy, medium, and light via an EPA-recognized certification body
  - Excludes compacts
- Products that meet proposed energy and water criteria are available from 5 brands (Blomberg, Bosch, Gaggenau, Viking, and Viking Range)

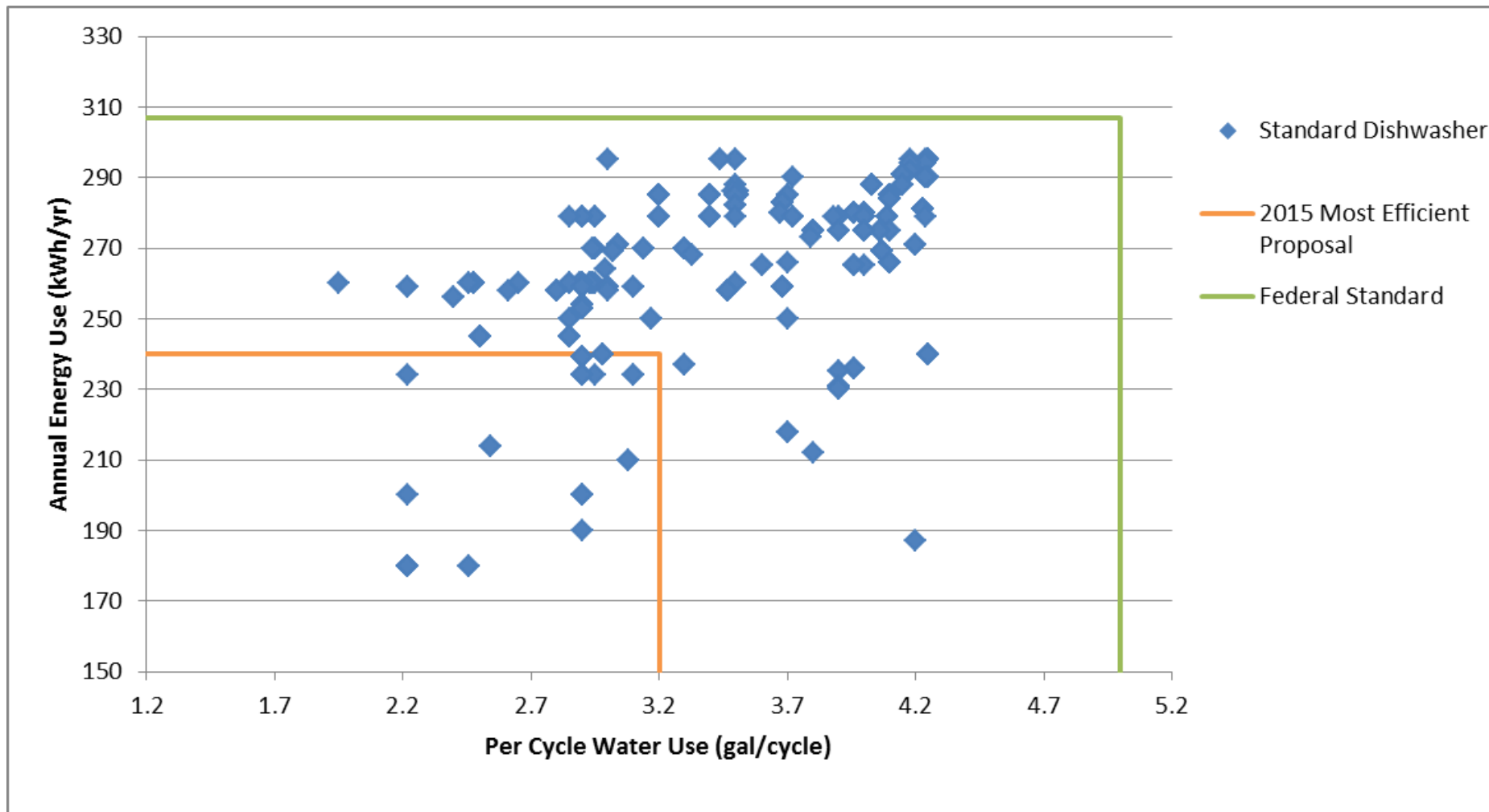
# Dishwashers (cont.)

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- Rationale:
  - With this new ENERGY STAR Most Efficient product category, there is an opportunity to recognize dishwashers pushing the envelope for greater efficiency
  - Recognizing that greater efficiency brings higher risk for trade-offs between savings and performance, the proposed heavy cycle cleaning threshold intends to help prevent recognizing poor performers
  - Data suggests heavy cycle testing is most likely to indicate cleaning issues
  - EPA will review medium and light cycle data to confirm appropriateness of using a heavy cycle threshold

# Dishwashers (cont.)





# Central AC and Air Source Heat Pumps

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- 2015 Proposal:
  - Maintain current levels
  - Split Systems: 18 SEER, 12.5 EER, 9.6 HSPF
  - Packaged Systems: 16 SEER, 12 EER, 8 HSPF
  - Ductless: 20 SEER, 12.5 EER, 9.6 HSPF
- Update system status and messaging criteria
  - Eliminate vague “2-way comms” criteria
  - Add ESP monitoring for ducted units with blowers
  - Add Fault History (for installers) and Resident Alerts for all systems

# Central AC and Air Source Heat Pumps (cont.)

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- Rationale:
  - Maintain levels:
    - No increase in models recognized; still less than 1% of models on the market
    - Recognized products save at least 8% (packaged) or 22% (split) over standard systems compared to 2015 standard
  - Update system status and messaging criteria:
    - Gathered data through program on system capabilities; market for smart systems has matured
    - Opportunity to provide better defined requirements for manufacturers; speeds approval process
    - Specifies requirements most closely tied to comfort, energy savings, and cost savings

# System Status and Messaging Capabilities

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- Applies to ENERGY STAR Most Efficient Central AC, Air Source and Geothermal Heat Pumps, and Furnaces
- Fault history on alphanumeric display (on unit, or on thermostat, or on diagnostic tool, etc.)
- Static pressure estimate across blower fan
- Messages to residents in plain text, at least filter check and need for technician service; on thermostat or equivalent
- Maintain current automatic setup requirement

# Change to Application Process

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- Eliminate submission of manuals as part of application process
  - Difficult for partners
  - Slows application processing
- Instead, require description systems' system status and messaging capabilities
  - EPA to provide a guide to help partners submit descriptions including all information needed for recognition
  - Draft was distributed with proposals
  - Descriptions to be considered confidential

# Geothermal Heat Pumps

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- 2015 Proposal:
  - Maintain current levels; update other criteria
  - Meet ENERGY STAR requirements for EER and COP
  - System status and messaging requirements
- Rationale:
  - 236 recognized products, very small percent of total models on market
  - Typically uses half the energy of conventional air conditioning
  - Wide variety of manufacturers participating
  - Opportunity to improve system status and messaging capabilities

# Furnaces

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- 2015 Proposal:
  - Maintain current levels, update other criteria
  - 97 AFUE (gas only)
  - System status and messaging requirements
- Rationale:
  - Gathered data through program on system capabilities; market for smart systems has matured
  - 94 products recognized from all major manufacturers, very small percent of models on market
  - At least 20% savings compared to standard units
  - Opportunity to improve system status and messaging capabilities

# Computer Monitors

- 2015 Proposal:
  - Revise criteria
  - 50 of 868 products recognized, multiple models available in in top selling segments
  - Models that meet these proposed criteria are, on average, approximately 44% more efficient than conventional models
- Only products meeting the definition of a computer monitor eligible to be ENERGY STAR Most Efficient 2015. Excludes digital picture frames and signage displays.
  - Small (less than 16"): 9
  - Medium (16"through under 26"): 32
  - Large (26" or greater): 8
- Includes 2.0 watts per megapixel allowance. ENERGY STAR data shows monitors can deliver higher resolution with lower power budget than they previously required.

# Computer Monitors (cont.)

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- Rationale:
  - Current ENERGY STAR Most Efficient 2014 criteria capture a higher percentage (~9%, up from ~5% when these criteria were finalized last year) presenting new opportunity to differentiate very best performing products.
  - 15 manufacturers: Including Acer, Asus, Dell, HP, Lenovo, LG, NEC, Samsung, ViewSonic



# Televisions

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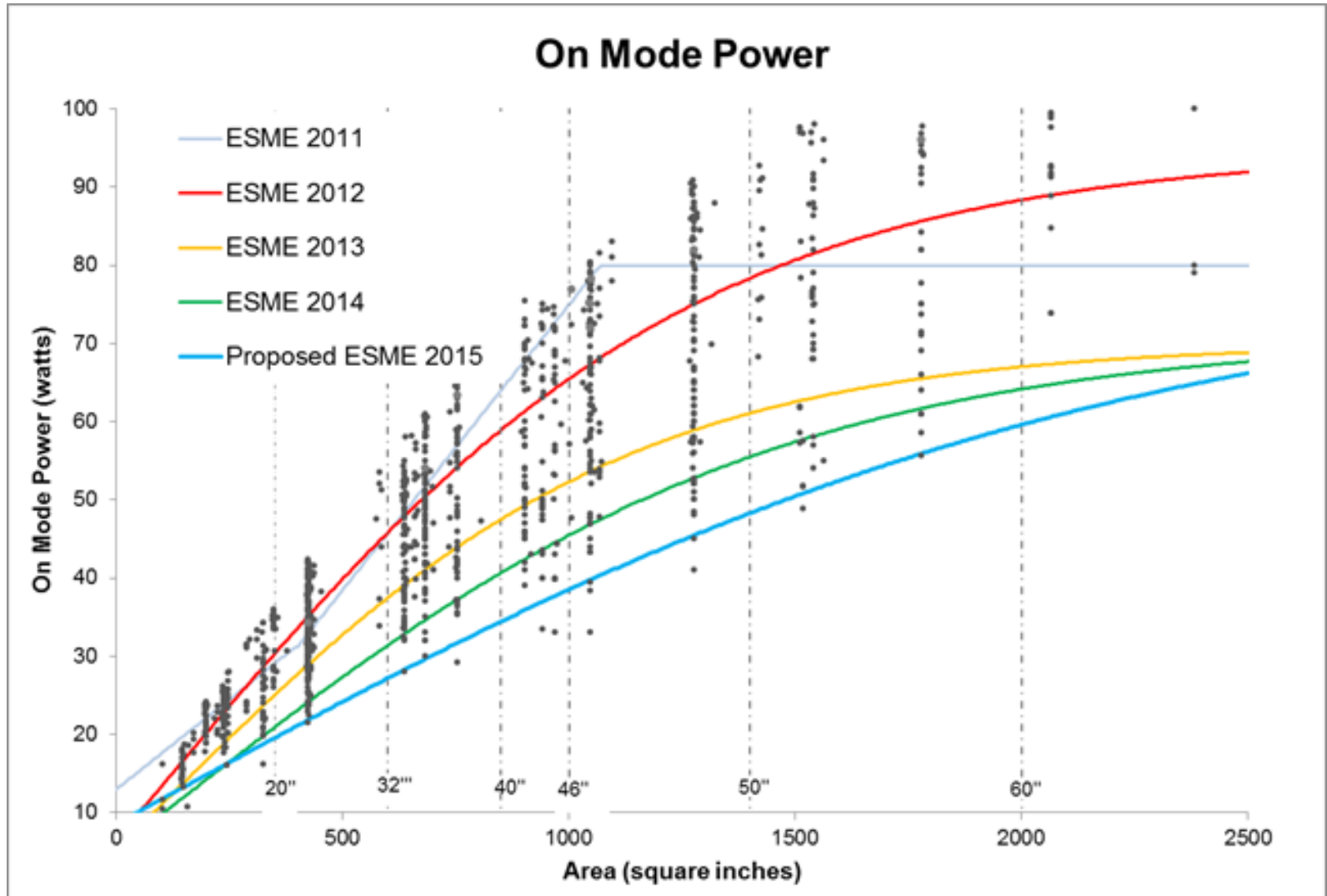
- 2015 Proposal:
  - Revise criteria
  - Models that meet these proposed criteria are, on average, approximately 58% more efficient than conventional models
  - 26 out of 1011 Version 6.0 ENERGY STAR certified products would be recognized, across all major sizes (*June 2014 ENERGY STAR qualified products list*)
    - Under 35 inches: 11
    - 35 to 50 inches: 12
    - 50+ inches: 3
  - 11 partners including Samsung, LG, Sony Panasonic, Westinghouse, Naxa, Vizio

# Televisions (cont.)



- Rationale:
  - Selection of top performing products continued to increase in 2014, following trend of significant growth in availability of ENERGY STAR Most Efficient models.
  - Last year, approximately 30 models initially met ENERGY STAR Most Efficient 2014 criteria when they were finalized, representing ~3% of the market. As of July 2014, 85 models meet ENERGY STAR Most Efficient 2014 criteria, representing ~8% of the market.
  - Opportunity exists to differentiate top performing models in 2015. Current proposed criteria again represents ~3% of the market, which is expected to rise in 2015.

# Televisions (cont.)



# Propose Maintaining Criteria for All Other Categories in 2015

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- **Boilers**
  - Current criteria continue to recognize best of ENERGY STAR certified models
- **Ceiling Fans**
  - Current criteria continue to recognize best of ENERGY STAR certified models
- **Refrigerator-Freezers**
  - Current criteria continue to recognize best of ENERGY STAR certified models
  - Refinements proposed in light of the 2014 DOE test procedure change
- **Ventilating Fans**
  - Current criteria continue to recognize best of ENERGY STAR certified models
- **Windows**
  - Current criteria continue to recognize best of ENERGY STAR certified models

# Boilers

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- 2015 Proposal:
  - Maintain current criteria of 95 AFUE gas, 90 AFUE oil
- Rationale:
  - 96 gas products recognized from more than 10 manufacturers, still a small percentage of the market
  - Gas product offerings have entirely recovered after updated calculation of product efficiency
  - Added 27 oil products from 7 manufacturers

# Ceiling Fans

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- 2015 Proposal:
  - Maintain current criteria
  - Efficiency (cfm/W) 170 high speed, 270 medium speed, 400 low speed
- Rationale:
  - Uses about 1/3 the energy of standard fan
  - Approximately doubled eligible models: 46 models, from 12 manufacturers recognized

# Refrigerators



- 2015 Proposal:
  - Maintain current criteria
  - Given new federal standard effective September 15, 2014, the 2015 recognition criteria remove references to V 4.1
  - Products must be certified to V5. ENERGY STAR Most Efficient products use approximately 15% less energy than new (2014) Federal standard;  $\leq 637$  kWh/yr
  - The cap on total energy use means the largest products in certain product categories face a slightly more aggressive challenge – e.g., 28 cu-ft French door model with ice would need to use about 20% less energy
  - Built-in models are held to the same energy use criteria as standalone products

# Refrigerators (cont.)



- Rationale:
  - Energy savings of ~15%+ relative to a new standard model (meeting 2014 standard)
  - Not increasing the ENERGY STAR Most Efficient stringency; waiting to see products entering the market with upcoming Sept 15, 2014 transition
- Products that meet the criteria so far:
  - Come in a range of sizes (13-28 cu-ft)
  - Are being promoted by 3 manufacturing partners – Samsung, Fischer & Paykel, and Bosch





# Ventilating Fans

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- 2015 Proposal:
  - Maintain current criteria
  - Bathroom/utility fans only
  - 7.5 cfm/W high speed for 10-89 cfm fans
  - 6.8 cfm/W high speed for 90 cfm or higher fans
- Rationale:
  - Uses less than half the energy of standard fan. Among the quietest models (key to consumers)
  - About 18% growth in recognized models over the year: 220 models from 6 manufacturers

# Windows



- **2015 Proposal:**

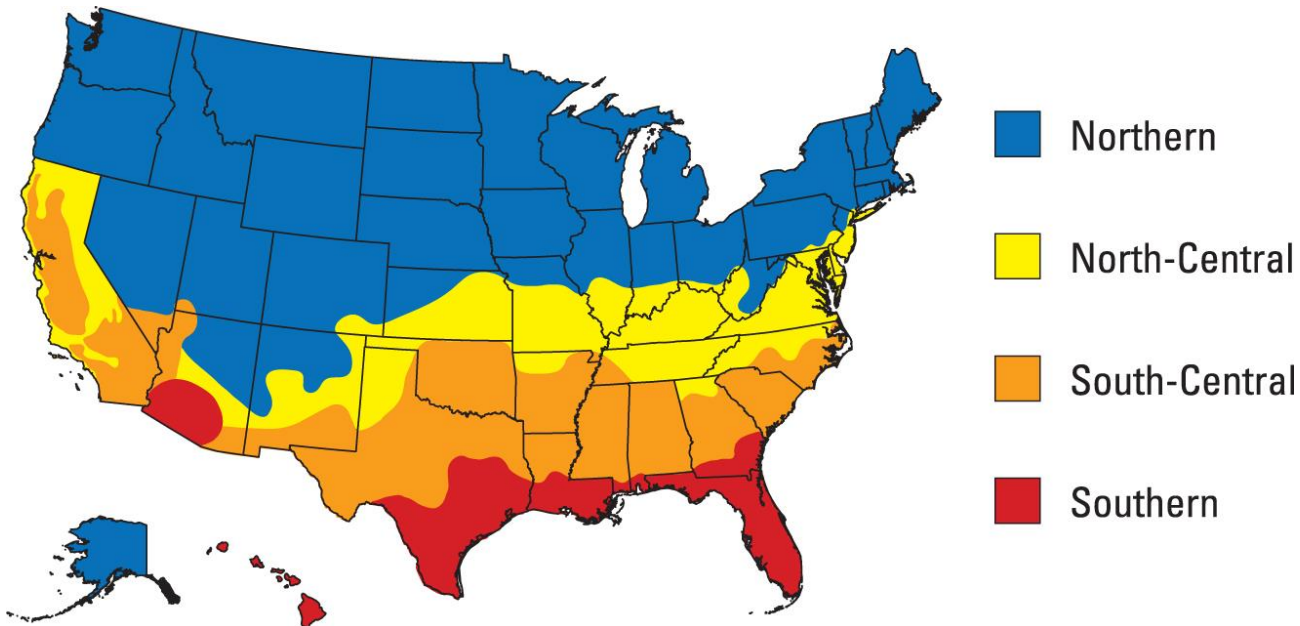
- Maintain current criteria
- U-factor  $\leq 0.20$
- SHGC to follow ENERGY STAR Version 6.0
  - Northern Zone uses minimum SHGC  $\geq 0.20$
- NAFS certification required to help ensure structural quality/longevity (Performance Grade  $\geq 15$ )

- **Rationale:**

- Products with performance significantly higher than ENERGY STAR minimum criteria are widely available; but still small slice of total market
  - 380 product lines recognized (thousands of product options)
  - 43 manufacturers submitted products
  - Variety of operator types and frame materials
    - Wood, vinyl, fiberglass, and composites

# Windows (cont.)

Climate Zone	U-factor	SHGC
Northern	$\leq 0.20$	$\geq 0.20$
North-Central	$\leq 0.20$	$\leq 0.40$
South-Central	$\leq 0.20$	$\leq 0.25$
Southern	$\leq 0.20$	$\leq 0.25$



# Windows

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- Residential windows **only**
  - No commercial products, doors, skylights, TDDs
- Products lines listed on website by operator type
  - Go to: [www.energystar.gov/mostefficient](http://www.energystar.gov/mostefficient)
- To join, partners must submit a “recognized product information form”
- EPA to calculate savings for several locations in each climate zone (savings vary by location/climate)
- EPA and DOE to discuss developing a specification for advanced dynamic window products for ENERGY STAR Most Efficient 2016

# Proposed Schedule for 2015

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- *August 4 distributed draft criteria for comment*
- **Thursday, September 11** stakeholder comments due to [mostefficient@energystar.gov](mailto:mostefficient@energystar.gov)
- Late September finalize 2015 criteria and begin distributing ENERGY STAR Most Efficient 2015 mark
- Update list of recognized products January 1, 2015

# Contacts

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**Thank you for your participation today.**