



# ENERGY STAR®

## Most Efficient 2013 Update and 2014 Proposals

August 22, 2013

 [Learn more at energystar.gov](http://energystar.gov)

## Webinar Details



- Audio provided via teleconference:
  - Call in:** +1 (877) 423-6338 (U.S.)
  - Code:** 456-417
- Press \*6 to mute or un-mute your line

 2

## Goals of Webinar



- Review ENERGY STAR Most Efficient goals and target audience
- Provide update on ENERGY STAR Most Efficient in 2013
- Present and seek feedback on 2014 proposed recognition criteria



3

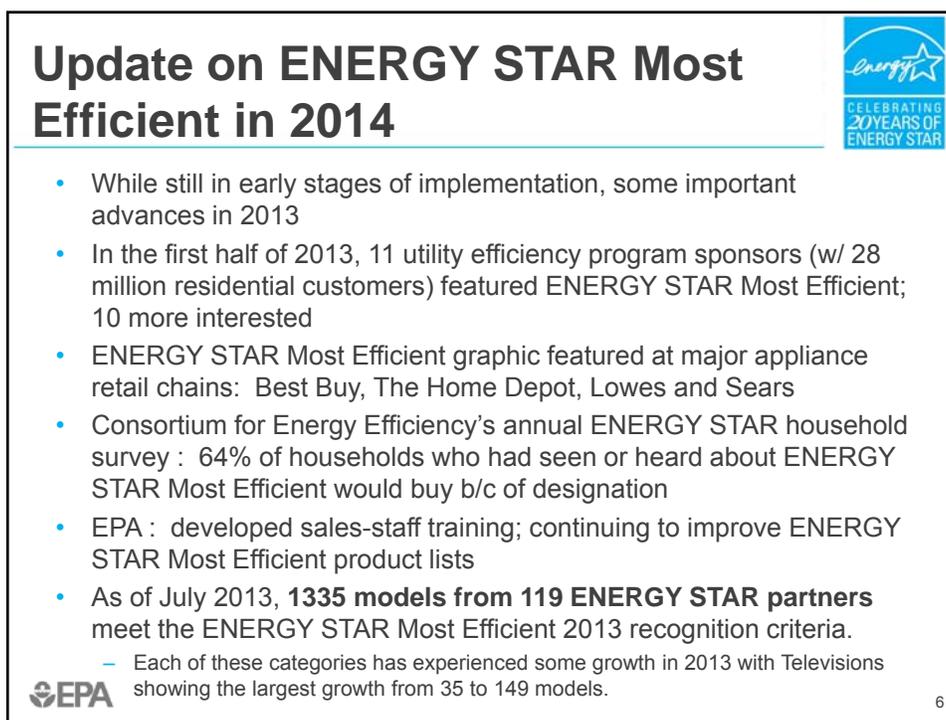
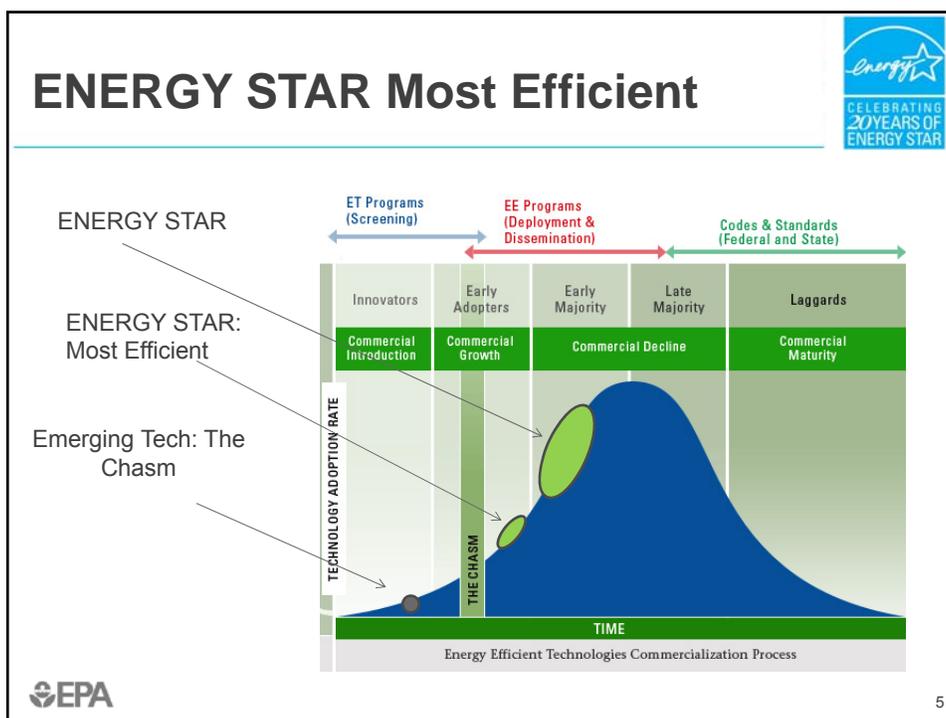
## ENERGY STAR Most Efficient Goal and Audience



- 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 GHGs
- Audience: Early adopters, environmental interest



4



## Products Covered in 2013



Product Category	Models	ENERGY STAR Partners
Boilers	42	10
Ceiling Fans	38	12
Central Air Conditioners and Air Source Heat Pumps	91	8
Clothes Washers	50	8
Computer Monitors	35	15
Furnaces	93	6
Geothermal Heat Pumps	235	6
Refrigerators	91	10
Televisions	151	16
Ventilating Fans	165	6
Windows	344	40



7

## Maintaining ENERGY STAR Most Efficient Categories in 2014



- Boilers
- Ceiling and Vent Fans
- CAC/ASHP
- Clothes Washers
- Computer Monitors
- Furnaces
- Geothermal Heat Pumps
- Refrigerators
- Televisions
- Windows



8



## Propose 2014 Changes to Criteria for 5 Categories

Product Category	Proposed Increase in Stringency	Manufacturers Represented
TVs	Sample On Mode Power Allowances: 32 inch: 24.7 W 42inch: 37.3 W 60inch: 58.1 W	Samsung, LG, Panasonic, Funai, Westinghouse
CAC and Air Source HP (ducted only), Geothermal HP, Furnaces	Qualitative Criteria Updated: •Fault History in plain text •Static Pressure estimate (if unit contains blower) •Messages to residents •Communicate specific product information for setup	Varies by product category; complete CAC and Furnace system from Carrier at least



9



## Televisions

- Models that meet these proposed criteria are, on average, approximately 50% more efficient than conventional models
- 30 out of 658 Version 6.0 ENERGY STAR certified products would be recognized, across all major sizes (*June 2013 ENERGY STAR qualified products list*)
  - Under 35 inches: 9
  - 35 to 50 inches: 15
  - 50+ inches: 6
- 9 partners: Samsung, LG, Insignia, Philips, Funai, TTE, Westinghouse, Panasonic, Nexa



10

## Televisions

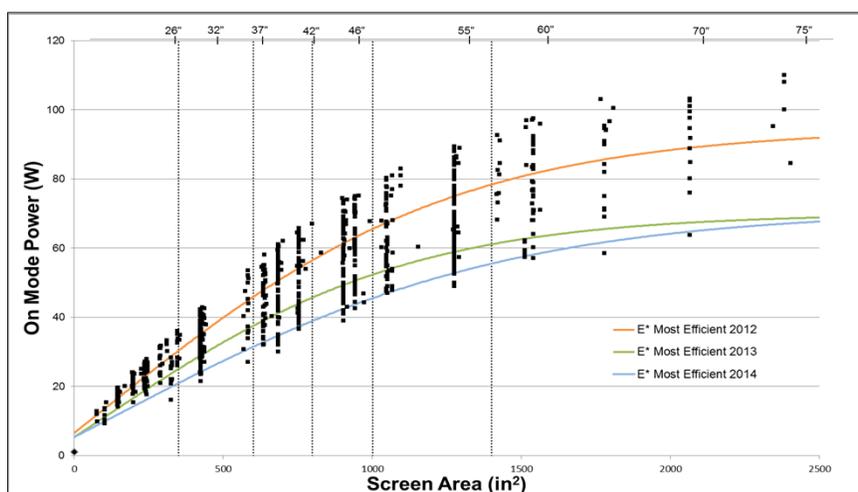


- Selection of top performing products continued to increase in 2013, following rapid uptake of ENERGY STAR Most Efficient models in 2012:
  - Approximately 60 models initially met ENERGY STAR Most Efficient 2012 criteria when they were finalized. In 2013, 381 models can meet ENERGY STAR Most Efficient 2012
  - Last year, approximately 35 models initially met ENERGY STAR Most Efficient 2013 criteria when they were finalized. As of June 2013, 149 models meet Most Efficient 2013 criteria
- Still opportunity to differentiate top performing models in 2014



11

## Televisions



12

## Central AC and Air Source Heat Pumps



- 2014 proposal: maintain current quantitative criteria
  - 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 qualitative criteria
  - For ductless, no change: filter check and need for service indicators
  - For ducted, more specific automatic setup, monitoring, and service messaging requirements



13

## Central AC and Air Source Heat Pumps: Rationale



- Maintain quantitative criteria:
  - 91 recognized from all major manufacturers, yet less than 1% of models on the market
  - Recognized products save at least 20% (packaged) or 25% (split) over standard systems
- Update qualitative 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



14

## Automatic Setup, Monitoring, and Service Messaging Capabilities



- Applies to ENERGY STAR Most Efficient Central AC, ducted air source and geothermal heat pumps, and furnaces
- Fault history in plain text (on unit, on thermostat, 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
- Transfer specific setup information: capacity, stages of heating and cooling, default air flow requirements; to thermostat or on board system controller



15

## Geothermal Heat Pumps



- 2014 proposal: maintain current quantitative criteria; update qualitative criteria
  - Meet ENERGY STAR requirements for EER and COP
  - Automatic setup, monitoring, and service messaging
- Rationale:
  - Gathered data through program on system capabilities
  - 239 recognized products, very small percent of total models on market
  - Typically uses half the energy of conventional air conditioning
  - Wide variety of manufacturers participating



16

## Furnaces



- 2013 proposal: maintain current quantitative criteria, update qualitative criteria
  - 97 AFUE (gas only)
  - Automatic setup, monitoring, and service messaging
- Rationale:
  - Gathered data through program on system capabilities; market for smart systems has matured
  - 93 products recognized from all major manufacturers, very small percent of models on market
  - At least 20% savings compared to standard units



17

## Propose Maintaining Criteria for All Other Categories in 2014



- **Clothes Washers**
  - Steady growth in recognized models in small and large sizes; current criteria continue to recognize best of ENERGY STAR certified models
- **Refrigerator-Freezers**
  - Offers choice in a range of sizes and configurations, yet small overall number of recognized models
  - Current criteria continue to recognize best of ENERGY STAR certified models
  - Refinements proposed in light of the 2014 DOE test procedure change
- **Residential Heating Boilers**
  - 42 gas products recognized from 10 manufacturers; current criteria continue to recognize best of ENERGY STAR certified models
- **Computer Monitors**
  - Some growth in number of recognized models but still very small percentage of available models; current criteria continue to recognize best of ENERGY STAR certified models
- **Ceiling Fans**
  - Current criteria continue to recognize best of ENERGY STAR certified models
- **Ventilating Fans**
  - Current criteria continue to recognize best of ENERGY STAR certified models
- **Residential Windows**
  - Current criteria continue to recognize best of ENERGY STAR certified models



18

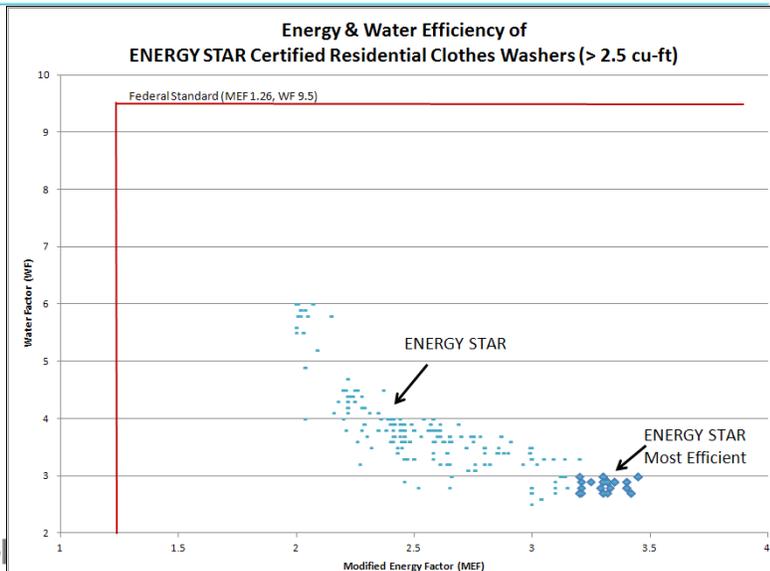
# Clothes Washers



- 2014 Proposal: maintain current criteria
- Rationale:
  - Recognizes 50 models in a range of sizes including a selection of:
    - larger washers, 3.7 to 5.2 cubic feet; and
    - smaller washers (i.e., apartment/condo size), 2 to 2.3 cu-ft
  - Significant energy and water savings
    - approximately 50% energy savings and 60% water savings relative to the DOE standard (for large washers)
  - Steady growth since late 2012; ~ 25 models added
- Products that meet proposed requirements are available from 7 manufacturing partners and offered under 9 brands (Asko, Electrolux, Frigidaire, Kenmore, LG, Maytag, Miele, Samsung, Whirlpool)



# Clothes Washers (cont)



## Refrigerators



- 2014 Proposal: Maintain current criteria but with proposed refinement in light of the amended DOE test procedure that manufacturers will be required to use starting in Sept. 2014.
- Given this, 2014 recognition criteria are expressed in two ways:
  - Products certified to V4.1: 30% less energy use than Federal standard;  $\leq 481$  kWh/yr.
  - **New:** Products certified to V5: Approximately 15% less energy use than new (2014) Federal standard;  $\leq 637$  kWh/yr.
    - 15% less energy use than is measured in DOE test. 12-15% less energy use than total energy (including the test's 84 kWh placeholder value for ice making).
    - The cap on total energy use means the largest products face a slightly more aggressive challenge – e.g., 28 cu-ft French door model with ice would need to use about 18% less energy.
    - New cap of 637 was developed by adjusting 481 kWh/yr by the 15% average change in tested energy use and adding 84 kWh/yr to incorporate ice making energy.
    - Built-in models are held to the same energy use criteria as standalone products.
- Products certified under either the V4.1 or V5.0 (effective Sept. 15, 2014) will be recognized in 2014.



21

## Refrigerators (cont)



- Rationale:
  - Energy savings of 30%+ relative to a current standard model and ~15%+ relative to a new standard model (meeting 2014 standard)
  - Offers consumers choice in a range of sizes (9-28 cu-ft) and configurations while still only recognizing a relatively elite number of products
    - 91 models
  - Relative modest number of new models (~10) have been recognized since 2012 criteria were finalized
- Products that meet the criteria are available from 10 manufacturing partners - Electrolux, Blomberg, GE, Kenmore, LG, Liebherr, Perlick, Samsung, Viking, and Whirlpool.



22

## Residential Heating Boilers



- 2014 proposal: maintain current criteria of 95 AFUE gas, 90 AFUE oil
- Rationale:
  - 42 gas products recognized from 10 manufacturers, still a small percentage of the market
  - Gas product ratings will resettle after updated calculation of product efficiency
  - No oil products recognized



23

## Computer Monitors



- 2014 Proposal: maintain current criteria
- Rationale:
  - 35 of 1611 products recognized, wide selection in top selling segments
- Only products meeting the definition of a computer monitor eligible to be Most Efficient 2014. Excludes digital picture frames and signage displays.
  - Small (less than 17"): 1
  - Medium (17"through under 25"): 26
  - Large (25" or greater): 8
- 15 manufacturers: Including Acer, Asus, Dell, HP, Lenovo, NEC, Phillips, Samsung, ViewSonic



24

## Ceiling Fans



- 2014 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 in first year of participation: 38 models, from 12 manufacturers recognized



25

## Ventilating Fans



- 2014 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 50% growth in recognized model over the year: 165 models from 6 manufacturers



26

## Residential Windows



- 2014 proposal: maintain current criteria
- Rationale:
  - 300+ product lines recognized (thousands of products)
  - 40 manufacturers
  - Wood, vinyl, fiberglass, and composite frame materials
- 2014 Criteria:
  - U-factor  $\leq 0.20$
  - SHGC to follow IECC 2012
    - Northern Zone uses minimum SHGC  $\geq 0.20$
  - NAFS certification required to help ensure structural quality/longevity (Performance Grade  $\geq 15$ )

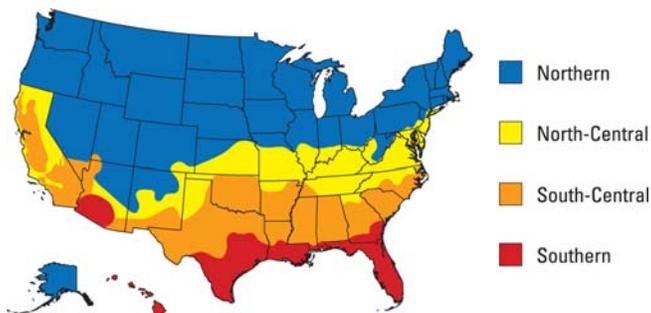


27

## Residential Windows



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	$\leq 0.20$	$\leq 0.25$



28

# Residential Windows



- Residential windows **only**
  - No commercial products, doors, skylights, TDDs
- Products lines are listed on website by operator type (but not prices)
- Partners to submit “recognized product information form” (will be similar to Qualified Products Information Form)



# Residential Windows



## ENERGY STAR Most Efficient 2013 — Vertical Slider Windows

The ENERGY STAR Most Efficient 2013 designation recognizes the most efficient products among those that qualify for the ENERGY STAR. These vertical slider windows represent the leading edge in energy efficient products this year. [See examples of each window type](#) (701KB) [EXIT](#) +.



- [View Horizontal Slider Windows](#)
- [View Casement Style \(Awning, Projected, Hopper, Tilt-and-Turn, etc.\) Windows](#)
- [View Fixed or Picture Windows](#)

### Notes on Abbreviations:

**CPD** National Fenestration Rating Council  
[Certified Products Directory](#) [EXIT](#) +  
**SHGC** Solar Heat Gain Coefficient  
**PG** Performance Grade

### ENERGY STAR Climate Zones (612KB)

**N** Northern Zone  
**NC** North-Central Zone  
**SC** South-Central Zone  
**S** Southern Zone

### Alside, Inc.

Product Line	CPD Number	U-Factor	SHGC	Frame Type	PG	Climate Zones
A501	ALS-A-29	0.19–0.20	0.24–0.27	Vinyl	20	N, NC, SC, S

### American Exteriors LLC

Product Line	CPD Number	U-Factor	SHGC	Frame Type	PG	Climate Zones
Diplomat Triple	PON-M-6	0.19–0.20	0.17–0.27	Vinyl	35	N, NC, SC, S



# Residential Windows



## ENERGY STAR Most Efficient 2013 — Vertical Slider Windows

The ENERGY STAR Most Efficient 2013 designation recognizes the most efficient products among those that qualify for the ENERGY STAR. These vertical slider windows represent the leading edge in energy efficient products this year. See [examples of each window type](#) (701KB) **EXIT** +.



- [View Horizontal Slider Windows](#)
- [View Casement Style \(Awning, Projected, Hopper, Tilt-and-Turn, etc.\) Windows](#)
- [View Fixed or Picture Windows](#)

### Notes on Abbreviations:

<b>CPD</b>	National Fenestration Rating Council Certified Products Directory <b>EXIT</b> +
<b>SHGC</b>	Solar Heat Gain Coefficient
<b>PG</b>	Performance Grade

### ENERGY STAR Climate Zones (612KB)

<b>N</b>	Northern Zone
<b>NC</b>	North-Central Zone
<b>SC</b>	South-Central Zone
<b>S</b>	Southern Zone

Look up all products in the CPD

### Alside, Inc.

Product Line	CPD Number	U-Factor	SHGC	Frame Type	PG	Climate Zones
A501	ALS-A-29	0.19-0.20	0.24-0.27	Vinyl	20	N, NC, SC, S

### American Exteriors LLC

Product Line	CPD Number	U-Factor	SHGC	Frame Type	PG	Climate Zones
Diplomat Triple	PON-M-6	0.19-0.20	0.17-0.27	Vinyl	35	N, NC, SC, S



31

# Proposed Schedule for 2014



- *Late July distributed draft criteria for comment*
- **Friday, September 6** stakeholder comments due to [mostefficient@energystar.gov](mailto:mostefficient@energystar.gov)
- Late September finalize 2014 criteria and begin distributing ENERGY STAR Most Efficient 2014 mark
- Update list of recognized products January 1, 2014



32

## Contacts

---



Abigail Daken, EPA-HVAC, [daken.abigail@epa.gov](mailto:daken.abigail@epa.gov)

Amanda Stevens, EPA-Appliances, [stevens.amanda@epa.gov](mailto:stevens.amanda@epa.gov)

Doug Anderson, EPA-Windows, [anderson.doug@epa.gov](mailto:anderson.doug@epa.gov)

Verena Radulovic, EPA-TVs, Monitors, [radulovic.verena@epa.gov](mailto:radulovic.verena@epa.gov)

Katharine Kaplan, EPA-Team Lead, [kaplan.katharine@epa.gov](mailto:kaplan.katharine@epa.gov)

Ashley Armstrong, DOE-Test Methods, [ashley.armstrong@ee.doe.gov](mailto:ashley.armstrong@ee.doe.gov)

General Inquiries: [mostefficient@energystar.gov](mailto:mostefficient@energystar.gov)

**Thank you for your participation today.**

