2017 ENERGY STAR Products Update

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Senior Manager
SWEEP Regional Workshop, Tempe AZ
Revisions and New Product Specifications

With over 70 product categories that can earn the ENERGY STAR, EPA works hard to keep specifications up to date and maintain the value of our investment.

• Revisions:
  – 2 effective in 2017
  – 8 will be completed in 2017
  – Plan to complete 7 in 2018

• New products
  – 5 coming on line in 2017
  – Plan to work on 2 for 2018; others of interest as well

Find all you need to know about specifications at: www.energystar.gov/specifications
ENERGY STAR Commercial Products –

Note: Not all product categories listed are exclusively for commercial use, but all could be used in commercial settings.

- **Lighting & Fans**
  - Commercial Light Fixtures

- **Commercial Appliances**
  - *Commercial Clothes Washers*
  - Vending Machines
  - Water Coolers

- **Office Equipment**
  - *Computers*
  - Data Center Storage
  - Displays
  - *Enterprise Servers*
  - *Imaging Equipment*
  - Small and Large Network Equipment
  - *Uninterruptible Power Supplies*
  - VoIP Phones

- **Heating & Cooling**
  - *Light Commercial HVAC*
  - Commercial Boilers

- **Water Heaters**
  - Commercial

- **Miscellaneous**
  - *Laboratory Grade Refrigerators and Freezers*

- **New Products Under Development**
  - Medical Imaging Equipment

*Italics indicate an upcoming specification change or a new version is available for early certification*
Advancing Adoption of Efficient Technologies

1. ENERGY STAR
2. ENERGY STAR Most Efficient
3. ENERGY STAR Emerging Technology Award
New: Connected Thermostats

- V1.0 finalized and effective Dec 2016
  - EPA’s first specification based on energy savings as demonstrated with field data
  - Currently 8 certified products from 5 brands

- 2017 and 2018 work
  - Improve the metric to recognize wider variety of savings strategies, tie more closely to metered savings (multi-year project)
  - Allow installations with staged and variable capacity equipment to be part of evaluating savings

https://www.energystar.gov/products/connected_thermostats/partners
New: Electric Vehicle Chargers

- **V1.0 Completed** Dec 2016
  - Addresses standby losses
  - Sets criteria for network connectivity
- **Working now on V2.0**
  - Add fast charge

**Optional Criteria**
- V1.0 includes optional connected criteria
  - Open Standards
  - Description of Demand Response capability

[www.energystar.gov/products/other/evse](http://www.energystar.gov/products/other/evse)
ENERGY STAR Most Efficient 2018

- Clothes Washers
- Refrigerators
- Dishwashers
- Clothes Dryers
- Ventilating Fans
- Heat & Cooling
- Ceiling Fans
- Computer Monitors
- Windows
- New! Dehumidifiers

www.energystar.gov/mostefficient
Emerging Technology Award Categories

- **2016-2017 Innovative Refrigerant Systems**
  - Energy efficiency gain of 5% or greater
  - Efficiency gains are isolated to the refrigerant or components needed to support the refrigerant system
  - Refrigerant with Global Warming Potential (GWP) < 15
  - Refrigerant has been approved for use in the U.S. market, listed as acceptable by EPA’s Significant New Alternatives Policy (SNAP) program

- **2017 Solid-State Refrigeration**
  - Solid-state cooling as an alternative to a compressor
  - Lab Refrigeration –15% beyond the new ENERGY STAR V 1.0 criteria

- **NEW: 2018 Room Air conditioners with Efficient Variable Output.**
  
  [Link](https://www.energystar.gov/about/awards/energy-star-emerging-technology-award)
Service and Savings With ENERGY STAR & Connectivity

- ENERGY STAR optional criteria leverage the national platform that utilities can rely on and consumers look for, bringing together interested partners and stakeholders.

- ENERGY STAR criteria provide consistent definitions and approaches, a consistent set of starter functionality, an emphasis on open standards, low standby power, test methods for DR functionality.

- ENERGY STAR is a trusted resource that can help consumers find these connected products and identify the benefits they offer.
What is Next: ENERGY STAR and Smart Home

• Update connected criteria as specifications are revised as appropriate.
  – Participating in industry standardization efforts on Air source heat-pumps, water heating, Central Air Conditioning

• Leverage the unique position of the ENERGY STAR program as a trusted resource for partners and consumers in the context of the smart home.
  – Facilitate sharing of resources on smart home efficiency among our partners (www.energystar.gov/connectedwebinars)
  – Help consumers use smart home products to manage energy use.
Last 4 quarters of reported shipments appear to show trends stabilizing.

[NEMA A Lamp Indices]

Market Penetration (in %)

[Graph showing market penetration of different types of lamps over time]

http://NEMA.org/Intelligence/Pages/Lamp-Indices.aspx
New report, “The Light Bulb Revolution”
www.energystar.gov/bulbrevolution

2015-2016 LED Bulb Sales (as a Percentage of other bulb technologies sold)

Remaining Opportunities for Residential Energy Efficiency Programs: Lighting
Dryers—particularly Most Efficient Dryers offer big savings

- 28% savings over Federal Standard
- 200 – 500 kWh Per year
- Market Share – 1%

www.energystar.gov/most-efficient/me-certified-clothes-dryers/
Water Heating—particularly HP water heaters offer significant savings

Heat Pump Water Heaters
Annual savings = 2020 kWh

Barriers:
• First Cost
• Purchasing Process
• Installation
• Market Share - 1%

www.energystar.gov/products/water_heaters/heat_pump_water_heaters
Program delivery models

- ENERGY STAR is helping to educate (and in some cases facilitate) mid-stream and other program models
  - Distributors of HVAC, Water Heaters
  - ENERGY STAR Retail Products Platform
  - Best practice examples for Commercial Food Service equipment
  - Tools to support traditional and e-commerce platforms
Why Does ENERGY STAR Care About Midstream Distributor Focused Incentive Programs?

Table 1: Participation Improvement for Distributor-Focused Residential Midstream Programs Compared to Downstream Programs

<table>
<thead>
<tr>
<th>Efficiency Program</th>
<th>Measure</th>
<th>Incentive Amount</th>
<th>Increase in Program Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>efficiency MAINE</td>
<td>ENERGY STAR Certified Heat Pump Water Heater (HPWH)³</td>
<td>$750</td>
<td>423%⁴ (PY1)⁵</td>
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<tr>
<td>Efficiency Vermont</td>
<td>ENERGY STAR Certified HPWH⁶</td>
<td>$400</td>
<td>750%⁷ (PY1)</td>
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<tr>
<td>energize CONNECTICUT CT™</td>
<td>ENERGY STAR Certified HPWH⁸ and Natural Gas Water Heaters⁹</td>
<td>$300 for gas; $600 for HPWH</td>
<td>1000%¹⁰ (PY2)</td>
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<tr>
<td></td>
<td>ENERGY STAR Certified Natural Gas Boiler and Furnaces¹¹</td>
<td>$450 to $800</td>
<td>234% (PY2)</td>
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<tr>
<td>EnergyTrust of Oregon</td>
<td>ENERGY STAR Certified HPWH¹² and Natural Gas Water Heaters¹³</td>
<td>$100 for gas; $300 for HPWH¹⁴</td>
<td>Just began program in 2017</td>
</tr>
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</table>

Order of magnitude increase in program participation!

Website Resource: https://www.energystar.gov/products/retailers/midstream_programs
ENERGY STAR Retail Products Platform (ESRPP)

Contact: 
esrpp@energystar.gov

www.energystar.gov/esrpp

Resources available upon request:
- Evaluation
- Data
- Products
- Marketing/field services
- Legal agreements
www.energystar.gov/marketing_materials
Thank You

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Appendix
# ENERGY STAR Products with Connected Functionality

<table>
<thead>
<tr>
<th>Feature</th>
<th>Smart Thermostats</th>
<th>Refrigerators &amp; Freezers</th>
<th>Clothes Washers</th>
<th>Clothes Dryers</th>
<th>Room A/C</th>
<th>Dishwashers</th>
<th>EVSE</th>
<th>Lighting</th>
<th>Pool Pumps</th>
<th>Ice Makers</th>
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<td>Energy Consumption Reporting</td>
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*Products that meet the Smart Grid Interoperability Panel (SGIP) standards are understood to have incorporated energy consumption reporting, operational status reporting and remote management into the foundation of their connectivity.

- 2013-2014: Dryers as ENERGY STAR Emerging Tech
- 2015: New ENERGY STAR specification for Dryers took effect
- 2017: New ENERGY STAR Most Efficient criteria added for Dryers
- 2018: ENERGY STAR Most Efficient criteria expanded to include separate criteria for compact models

- 2015: ~ 100 ENERGY STAR certified dryers from 11 brands
- Today: 200 ENERGY STAR certified dryers from 14 brands
  - Gas and Electric Models
  - Compact and Standard Size
  - Vented and Ventless
  - NEW: field to indicate Heat Pump Technology

- 9 dryers on the U.S. market meet ENERGY STAR Most Efficient 2017 criteria
  - 5 Brands – LG, Beko, Blomberg, Whirlpool & Asko
  - All tested to meet ENERGY STAR minimum efficiency criteria in a Max Dry setting
  - Hybrid and Full Heat Pumps
  - Compact and Standard Size
  - Vented and Ventless  
YOUR BRAND HERE + ENERGY STAR =

• Draws Attention
• Makes it Simple
• Provides Guidance
• Delivers Credibility
• Elicits Trust
• Connects Emotionally
• Incents the Sale

Reach your account manager here: eeaccountmanager@icf.com