

ENERGY STAR®

Residential Ventilating Fans

Draft Version 4.1

Stakeholder Webinar and Discussion

March 8, 2018



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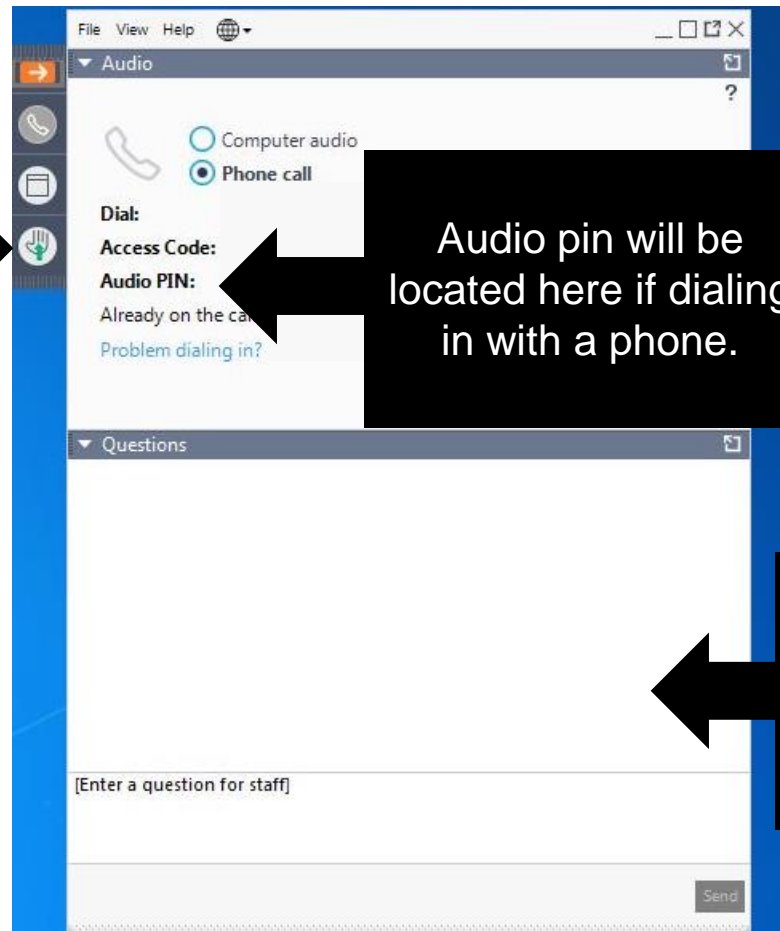
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Agenda

1	Introduction
2	Definitions and Scope
3	ENERGY STAR Criteria
4	Next Steps
5	Discussion

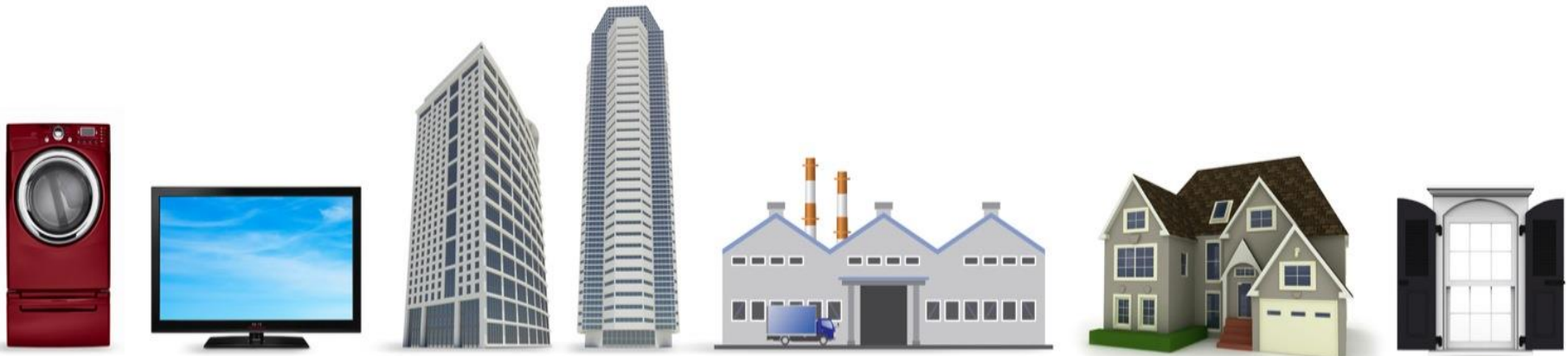


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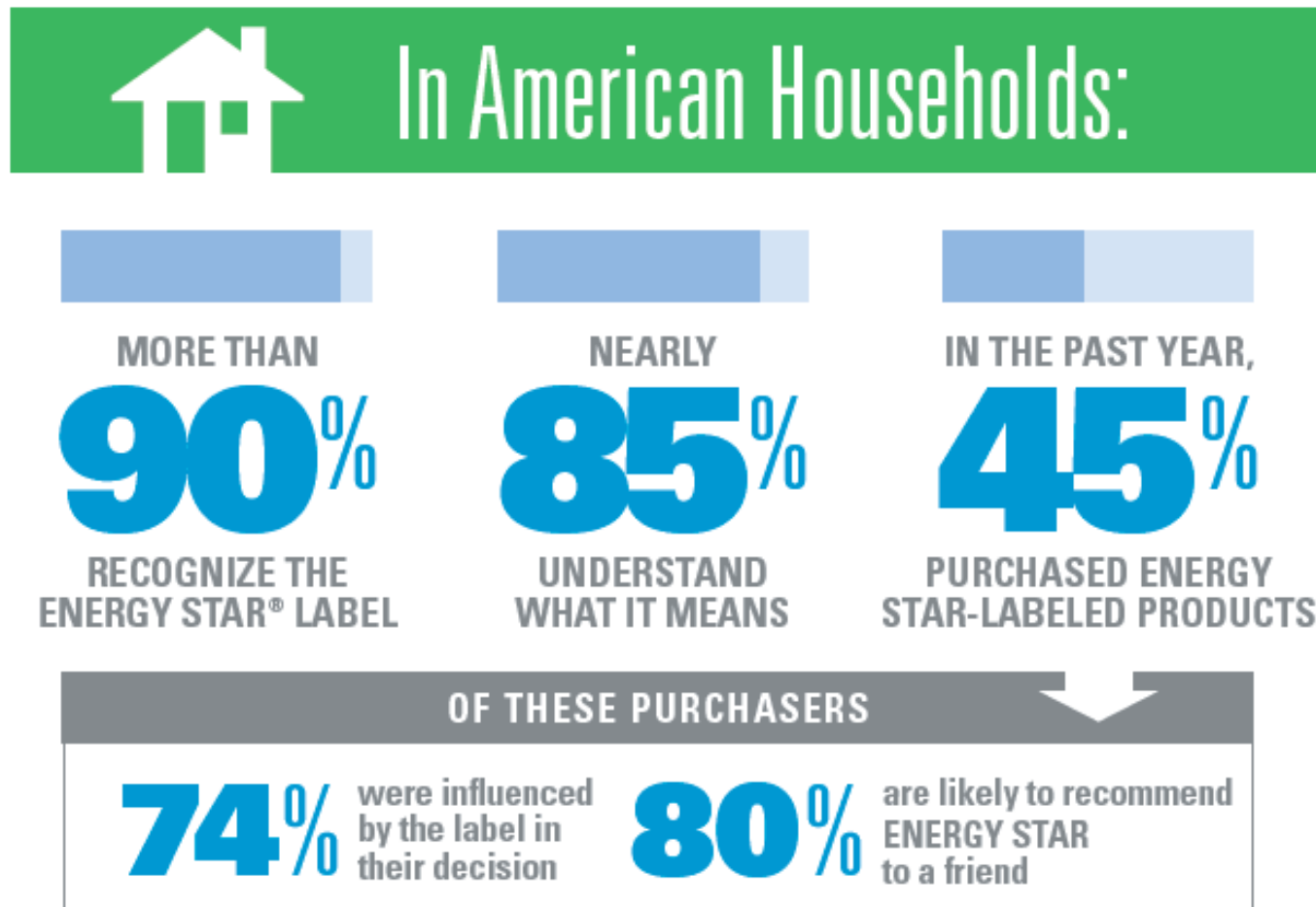
EPA ENERGY STAR

EPA's ENERGY STAR identifies the most energy-efficient **products**, **buildings**, **plants**, and **new homes** – all based on the latest government-backed standards.

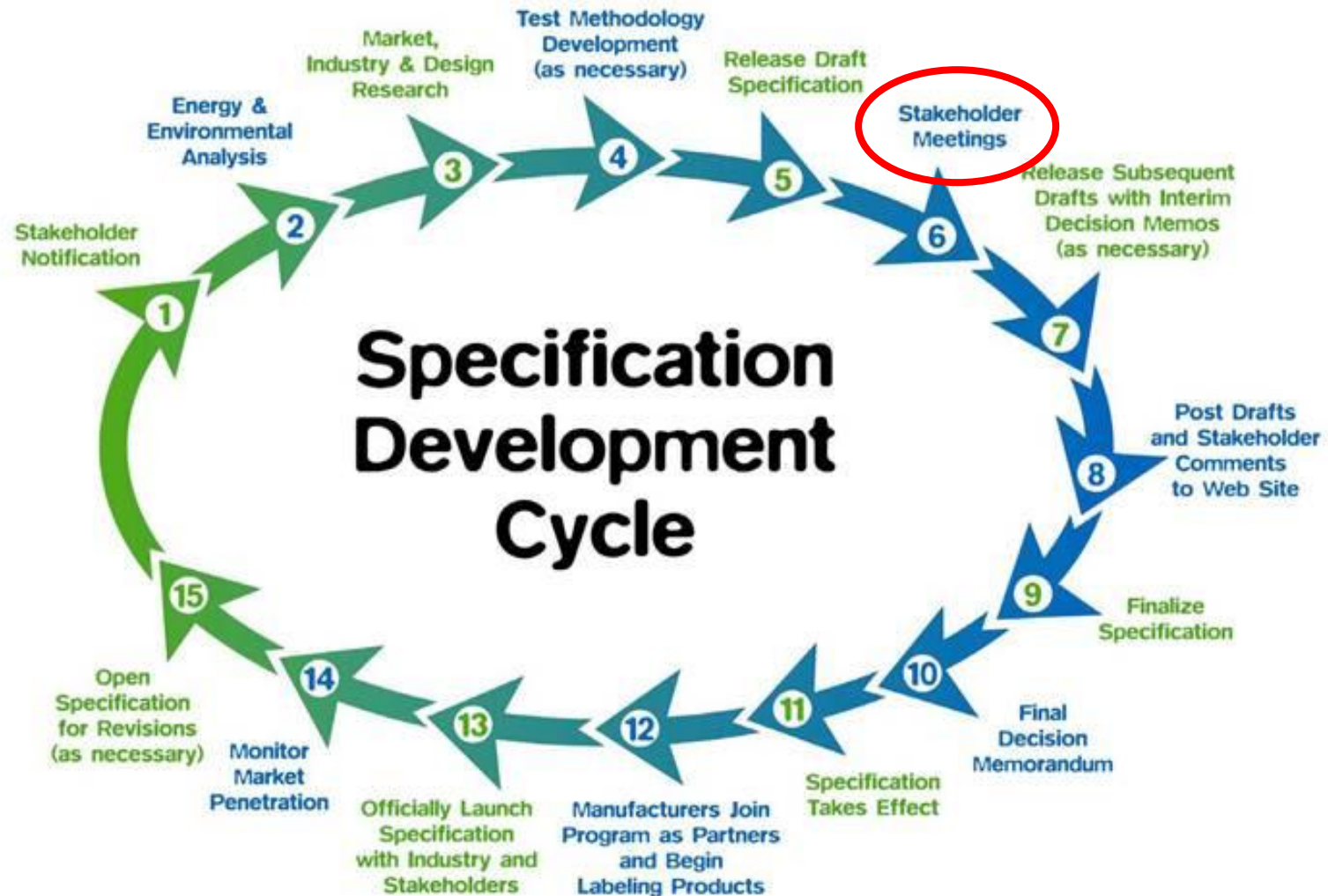
Today, every ENERGY STAR label is verified by a rigorous third-party certification process.



Brand Preference and Loyalty



U.S. EPA 2017





Guiding Principles for Specification Development

1. Significant energy savings can be realized on a national basis
2. Product performance can be maintained or enhanced with increased energy efficiency
3. Purchasers recover their investment in increased energy efficiency within a reasonable period of time
4. Energy-efficiency can be achieved through several technologies
5. Product energy consumption and performance can be measured and verified with testing
6. Labeling would effectively differentiate products and be visible for purchasers



ENERGY STAR Ventilating Fans Specification

- Last major revision of the ENERGY STAR specification was in 2015
- Version 4.0 – currently effective
 - Includes: Range hoods, in-line fans, bathroom/utility room fans (all are exhaust fans)
 - Excludes: H/ERVs, supply fans (among others)
 - No separate requirements for OTR microwave hoods
- Version 4.1
 - Expanding scope to include supply fans



Summary of Draft Version 4.1 Proposals

- Include supply fans in scope based on current in-line fan efficacy requirements
- Maintain current requirements for range hoods, bathroom/utility room fans, and in-line fans
- Simplify the Lighting Requirements section
- Add Reporting Requirements for efficacy and sound
- Update test method references to most recent versions
- Add future specification considerations
 - Higher static pressure measurements
 - Capture efficiency for range hoods



Considered & not Included for Draft Version 4.1

- Remote exterior mounted ventilators
 - Limited product data in HVI directory
 - Only one brand owner with data in the HVI directory, listed as two brand names
- OTR microwave hoods
 - Data does not show opportunity to distinguish best performers in this class alone
 - Technically, OTR hoods with high efficiency motors could meet ENERGY STAR to certify
 - Certification presents critical labeling issues
- H/ERVs – not pursuing in the Vent Fan specification



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Definitions

- Residential Ventilating Fan
 - Update to accommodate supply ventilation
- In-line Ventilating Fan (same intent)
 - “Intake” and “exhaust” replaced with “inlet” and “outlet”
 - Multi-port – multiple inlet or outlet ports
- Product Family
 - Clarified for consistency with other ENERGY STAR specifications
 - Removed Base Model and Base-Derived Model



Scope

- Supply fans removed from the list of Excluded Products



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Efficacy Requirements for In-Line Fans

Product Type	Rated Airflow Range (CFM)	Minimum Efficacy Level (CFM/W)	Maximum Allowable Sound Level (Sones)
In-Line (Single-Port and Multi-Port) Exhaust and Supply Fans	N/A	3.8	N/A
In-Line (Single-Port and Multi-Port) Fans tested with a filter in place	N/A	3.7	N/A



Supply Fans – 3.7 cfm/W for filter in place

- HomeEnergy.com study tested filters ranging from MERV 2 to MERV 13
 - Linear interpolation between MERV 2 and MERV 6 performance graph gave a 3% drop in airflow
- “The Effects of Filtration on Pressure Drop and Energy Consumption in Residential HVAC Systems”
 - ASHRAE, 2010
 - Range of 3% to 8% airflow reduction expected from mid/high MERV filter compared to low MERV filter
- Potential range of new criteria
 - 3.5 cfm/W to 3.7 cfm/W



Supply Fans Discussion

- 3.7 cfm/W efficacy requirement
- Filter types
 - MERV
 - Depth/geometry
 - Material
- Proportion of in-line fans that are dedicated use
 - Exhaust, supply, or can be both?



Lighting Requirements

- All newly-certified ventilating fans that include lighting shall meet the *ENERGY STAR Program Requirements, Product Specification for Luminaires – Eligibility Criteria* in effect at the time of certification of the ventilating fan
 - Luminaires includes option to certify the lighting as shipped with an ENERGY STAR certified bulb
 - Night light – draws less than 4 Watts or provides 20 lumens or less (based on a 4 W incandescent bulb)
- Products selected for verification testing – performance will be verified against the specification version to which they were originally certified



Reporting Requirements

- Efficacy and Fan Sound
 - Understand how products perform in poor installations
 - Currently-certified products do not need to report, but EPA encourages it

Product Type	Reporting Requirement	Static Pressure Reference Measurements
Range Hoods	Efficacy Level	0.1 in w.g.
	Sound Level (Sones)	
Bathroom and Utility Room Exhaust Fans	Sound Level (Sones)	0.25 in w.g.



Test Requirements

- Test Method references updated to most recent versions for each.
 - EPA believes this should have no impact on product ratings
- Static Pressure Reference Measurements
 - Organized in a table rather than a list for ease of reading in the specification
 - No change to the values themselves



Installation Instructions

- Statement about ducting updated to accommodate supply fans
 - “Ducting has a strong effect on...”
rather than
 - “The ducting from this fan to the outside of the building has a strong effect on...”
- Partners with currently-certified products can continue to use the previous version, but the new version applies to all supply fans.



Future Specification Revisions

- Rated efficacy requirements at higher external static pressure
 - ASHRAE 62.2 Standard
- Sound performance requirements at higher external static pressure
- Capture efficiency for range hoods



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Next Steps / Timeline

- Written comments are due **March 21, 2018** to VentilatingFans@energystar.gov
- EPA hopes to finalize Version 4.1 by April 2018
- Once finalized, Version 4.1 will be immediately effective
- No effect on currently-certified products
- These slides and all other related materials will be posted online
 - Find all related materials on EPA's Ventilating Fans Version 4 [product development webpage](#)



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Discussion

- Open to comments and questions
- Please raise your hand in the webinar control panel or write in a question



Written Comments

- In addition to making verbal comments during today's meeting, stakeholders are strongly encouraged to submit written comments and data
 - *Written comments will be displayed for public viewing unless otherwise specified by the commenter*
- Please send all comments to:
VentilatingFans@energystar.gov

Comment Deadline

March 21, 2018



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