

ENERGY STAR Ventilating Fans

**Draft 1 Version 4.0
Stakeholder Meeting
July 10, 2014**

Abigail Daken, U.S. EPA



Agenda



- **Welcome & Introductions**
- What is ENERGY STAR?
- Overview of Specification Revision Process
- Drivers for Revision
- Proposed Draft 1 Changes
- Specification Development Timeline



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What is ENERGY STAR?

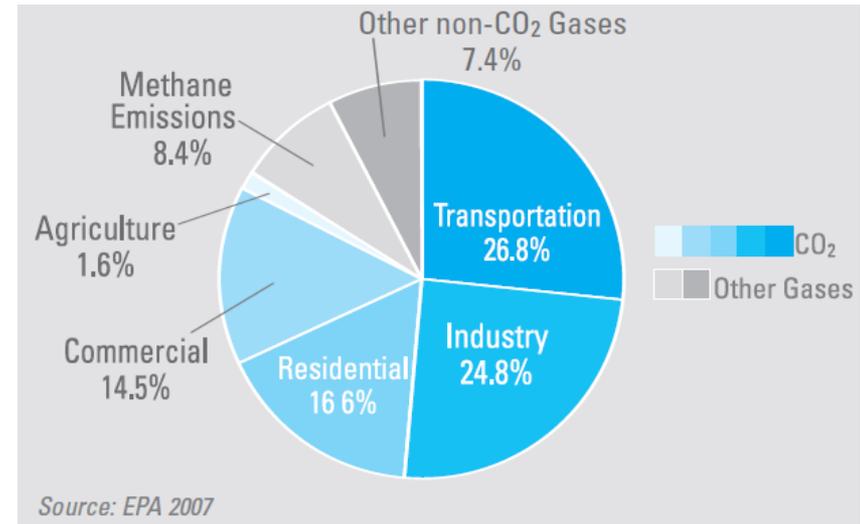


- **ENERGY STAR** is a voluntary government-backed program dedicated to helping individuals protect the environment through superior energy efficiency
- **ENERGY STAR** is the national symbol of energy efficiency, making it easy for consumers and businesses to identify high-quality, energy-efficient products
- **ENERGY STAR** distinguishes what is efficient/better for the environment without sacrificing features or performance
- Products that earn the **ENERGY STAR** meet strict energy performance criteria set by EPA

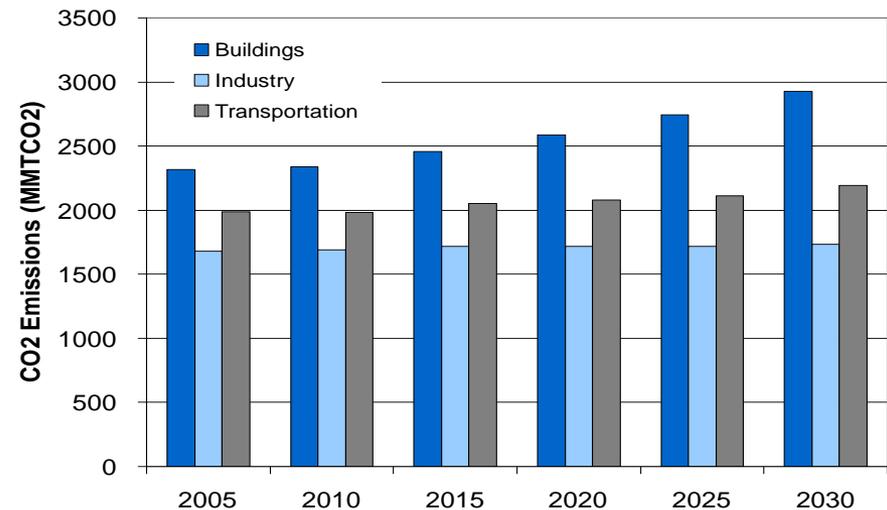
ENERGY STAR



- Started in 1992; voluntary program
- GOAL: Reduce greenhouse gas (GHG) emissions through large win-win-win opportunities with today's energy efficient technologies and practices.
- Provide credible information to buyers
- Work with the marketplace to capitalize on motivations of individuals

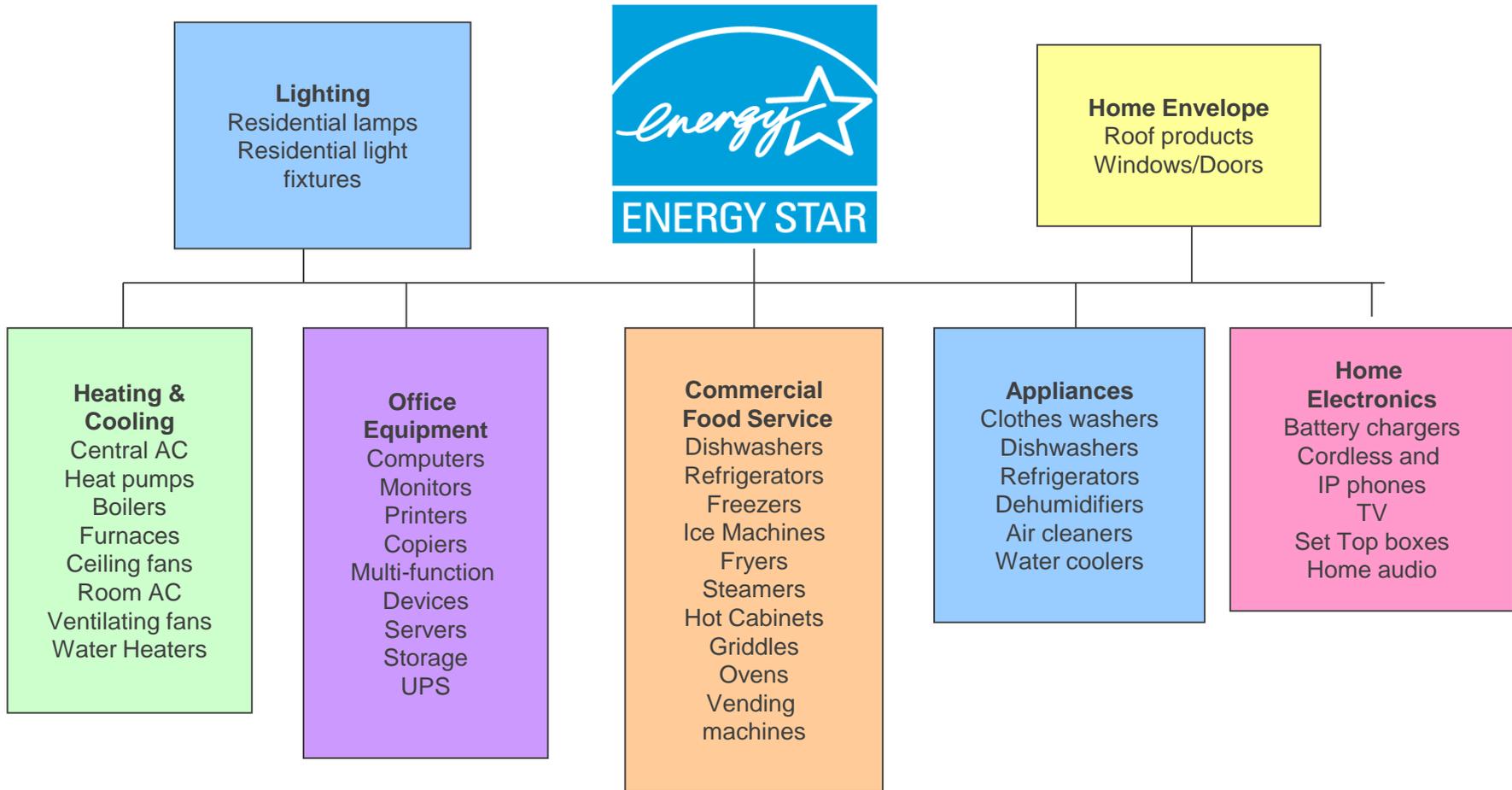


Projected GHG Emissions from Key Sectors through 2030



Source: AEO 2008

70+ Product Categories Are Covered by ENERGY STAR in the US



ENERGY STAR Portfolio

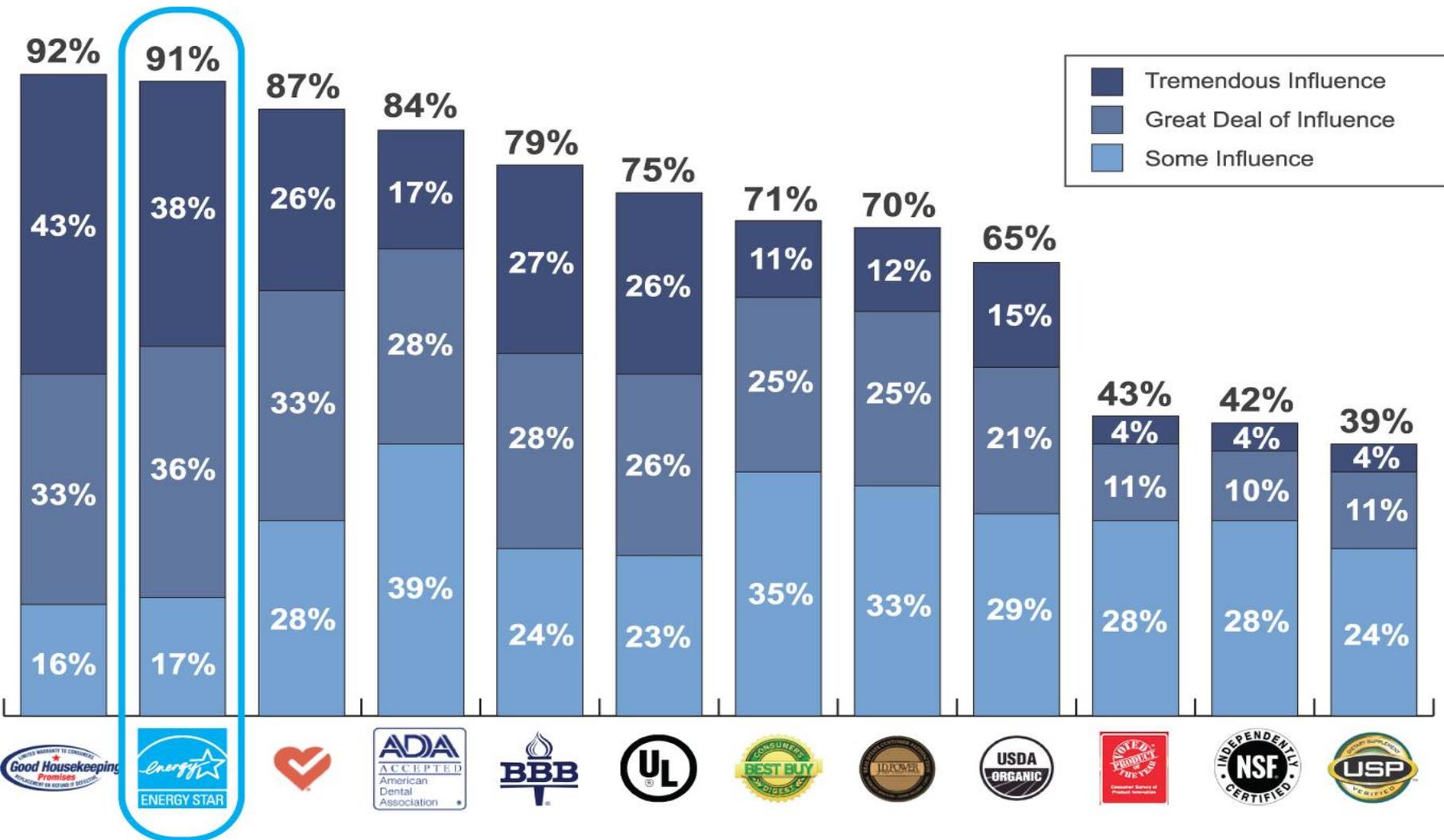


- Define and educate on energy/environmental performance through a single designation: ENERGY STAR
 - Product Efficiency
 - New/Existing Home Efficiency
 - Commercial Building Efficiency





ENERGY STAR is one of the most influential labels in the marketplace



Source: Fairfield Research, July 2009



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Development Process



Specification Development Cycle



Guiding Principles for When to Revise ENERGY STAR Specifications



EPA strives to adhere to the Guiding Principles by selecting efficiency levels reflective of the (approximate) top 25% of models available on the market when a specification goes into effect.

EPA revises a specification when...

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 will recover their investment in increased energy efficiency within a reasonable period of time.

Guiding Principles (cont.)



4. Energy-efficiency can be achieved through one or more technologies such that qualifying products are broadly available and offered by more than one manufacturer.
5. Product energy consumption and performance can be measured and verified with testing.
6. Labeling would effectively differentiate products and be visible for purchasers.
 - By recognizing the top performers, EPA distinguishes these products from others, thereby adding to their intrinsic value.
 - If all product models used approximately equal amounts of energy, then an ENERGY STAR specification would not be pragmatic and would not be established.

Important Process Elements



- Consistency
- Transparency
- Inclusiveness
- Responsiveness
- Clarity



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Drivers for Version 3.2 Revision



- Current V3.2 requirements have not changed (except for lighting) since 2003.
- ~ 60% of bathroom fans meet ENERGY STAR requirements, leading to little differentiation.
- Initial market research confirmed opportunity to improve differentiation, with a broad range of more efficient products available.
- In 2012, the market penetration of ENERGY STAR certified ventilating fans stood at 33%.
 - EPA did find an error in our initial calculation that showed the market penetration to be 70% in 2012.



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- **Proposed Draft 1 Changes**
 - Efficacy and sound criteria
 - Lighting requirements
 - Test Method
 - Other Changes
- Questions/Next Steps

Proposed Draft 1 Efficacy and Sound Criteria (changes in blue)



Product Types	Airflow Range (CFM)	Minimum Efficacy (CFM/w)	Maximum Sound (Sones)
Range Hoods	600 - max speed 200 - working speed	2.8	2.0
Bathroom and Utility Room Fans	50 to 89	2.8	2.0
	90 to 200	3.5	2.0*
	201 to 500	4.0	3.0
In-Line (single-port & multi-port) Fans	N/A	3.8	N/A

* For 140 to 200 CFM fans, Maximum Sound changed from 3.0 sones to 2.0 sones.

Proposed Draft 1 Airflow Categories



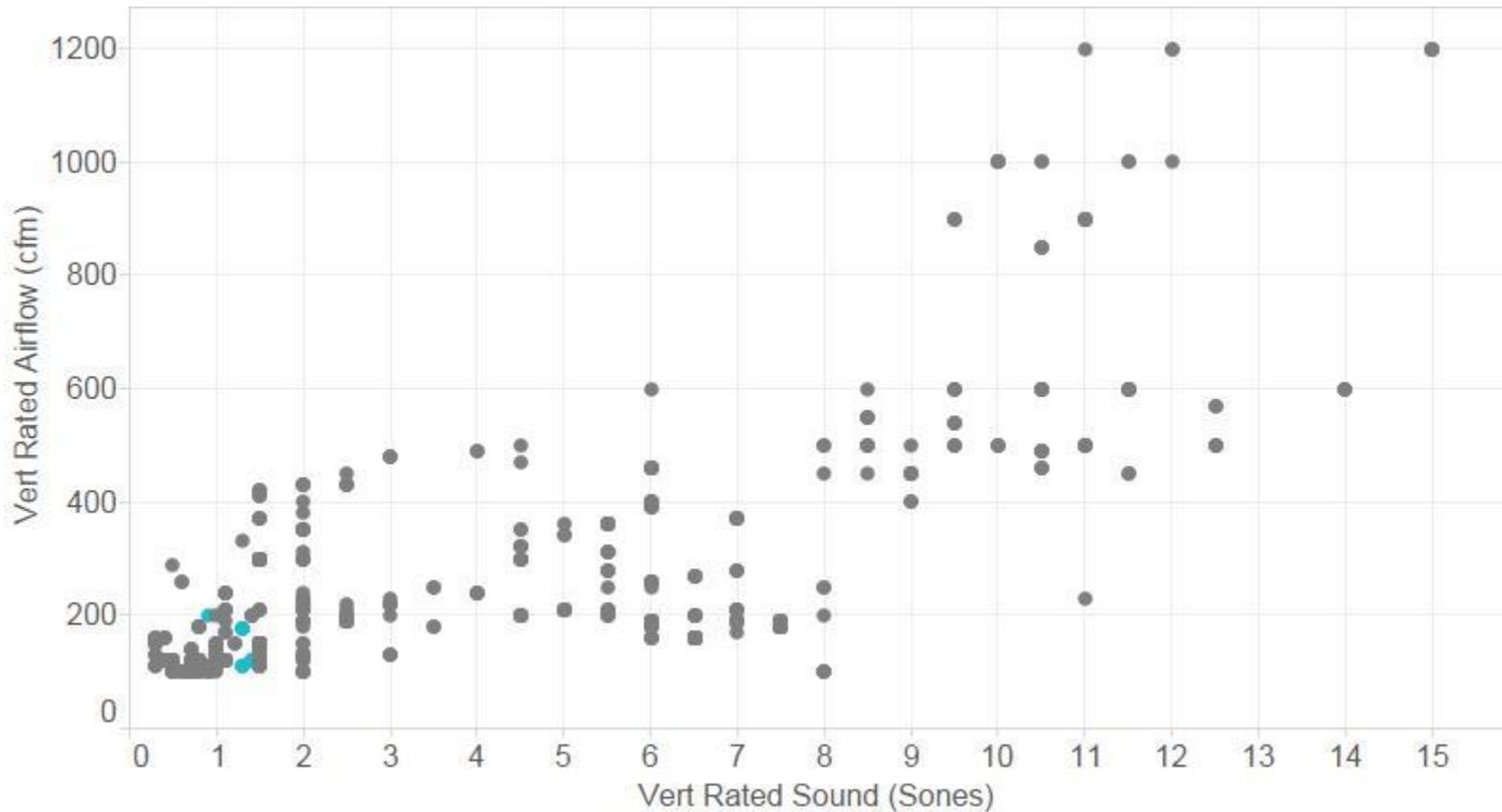
- Bathroom Fans: Product size classifications adjusted to more closely align with current market offerings.
 - The existing categories of 10 to 89 CFM and 90 to 500 CFM have been replaced by categories for 50 to 89 CFM, 90 to 200 CFM and 201 to 500 CFM.
 - Fans below 50 CFM are not prevalent in the marketplace and deliver insufficient airflow for even small bathrooms
- Range Hoods: Airflow limit adjusted to allow higher efficiency technologies into the market
 - Airflow limit of 500 CFM raised to 600 CFM. This limit applies to the maximum speed of the fan.
 - In addition, EPA proposes a new limit of 200 CFM or less for the working speed of range hoods.

Proposed Draft 1 Efficacy Criteria



- Range hoods:
 - Stakeholder discussion indicated that market penetration of range hoods continues to be low
 - Less than 15% of range hoods in the HVI directory are ENERGY STAR certified
 - No changes proposed to Efficacy level
- Inline Fans:
 - Propose to raise the efficacy from 2.8 to 3.8 CFM/W
 - Significant energy savings and desirable payback available from high efficiency designs
 - About 23% of the products listed in the HVI directory would meet this proposed level

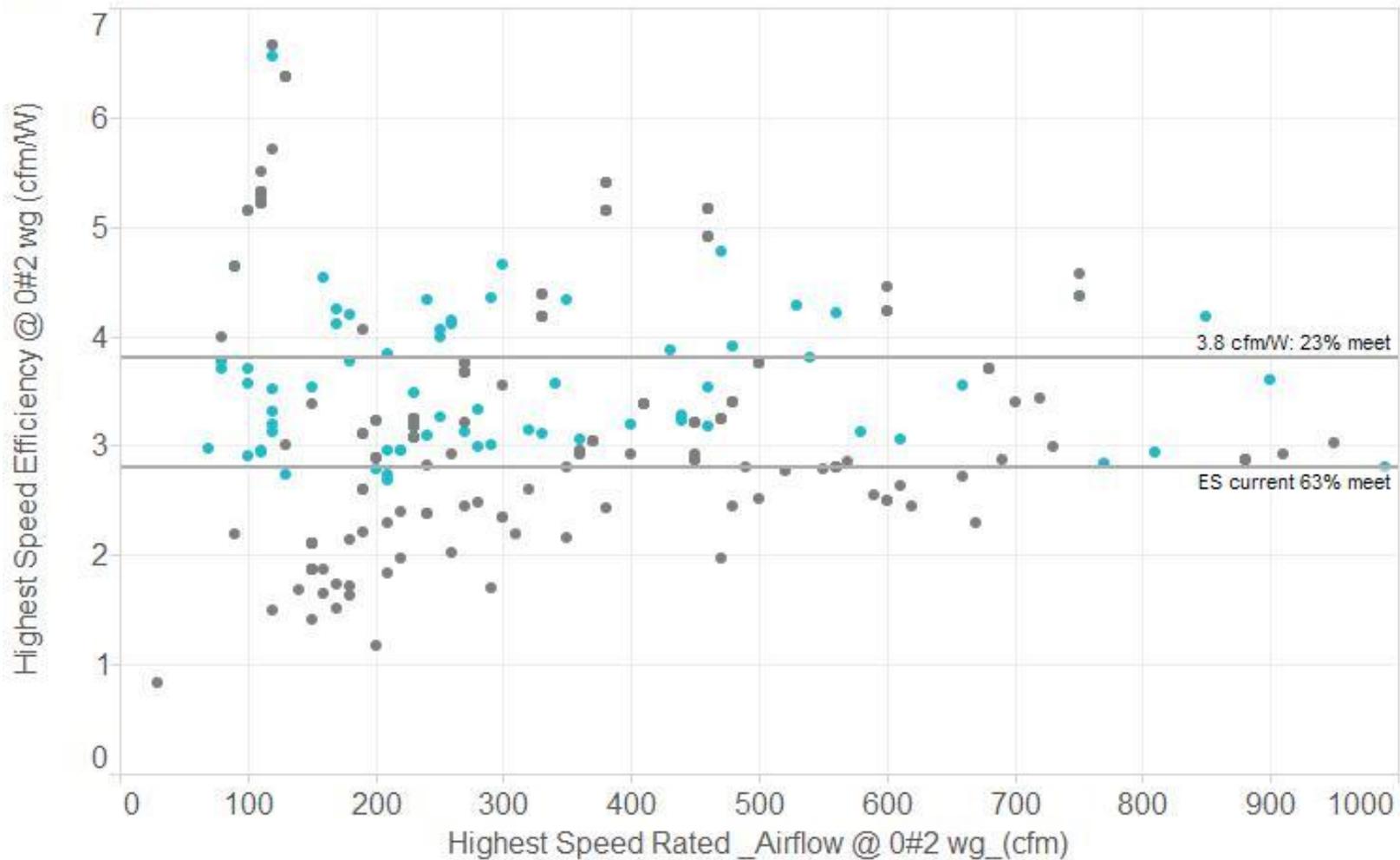
Range hoods at working speed, HVI directory September 2013



In line fans, HVI directory September 2013



high speed

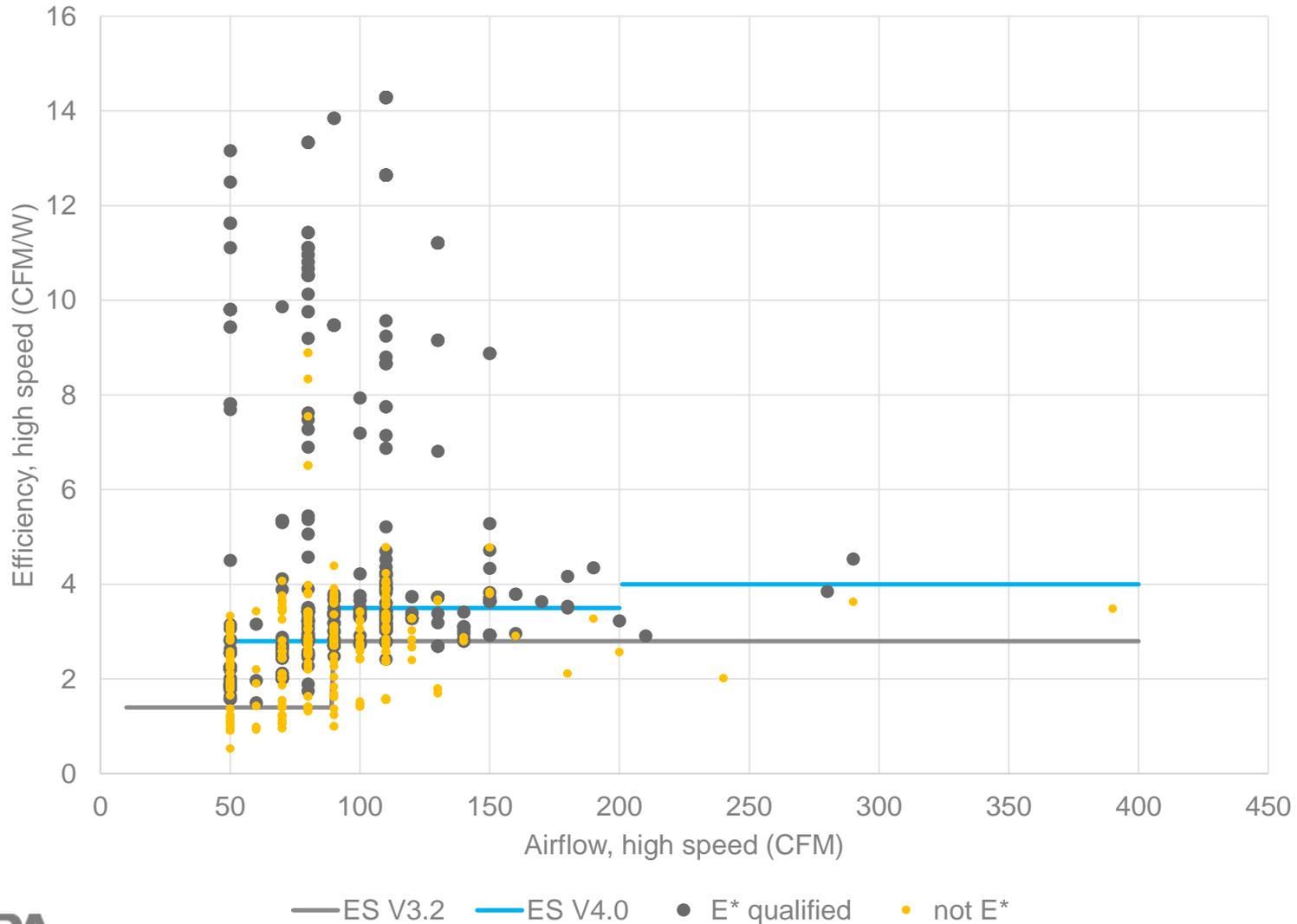


Proposed Draft 1 Efficacy Criteria

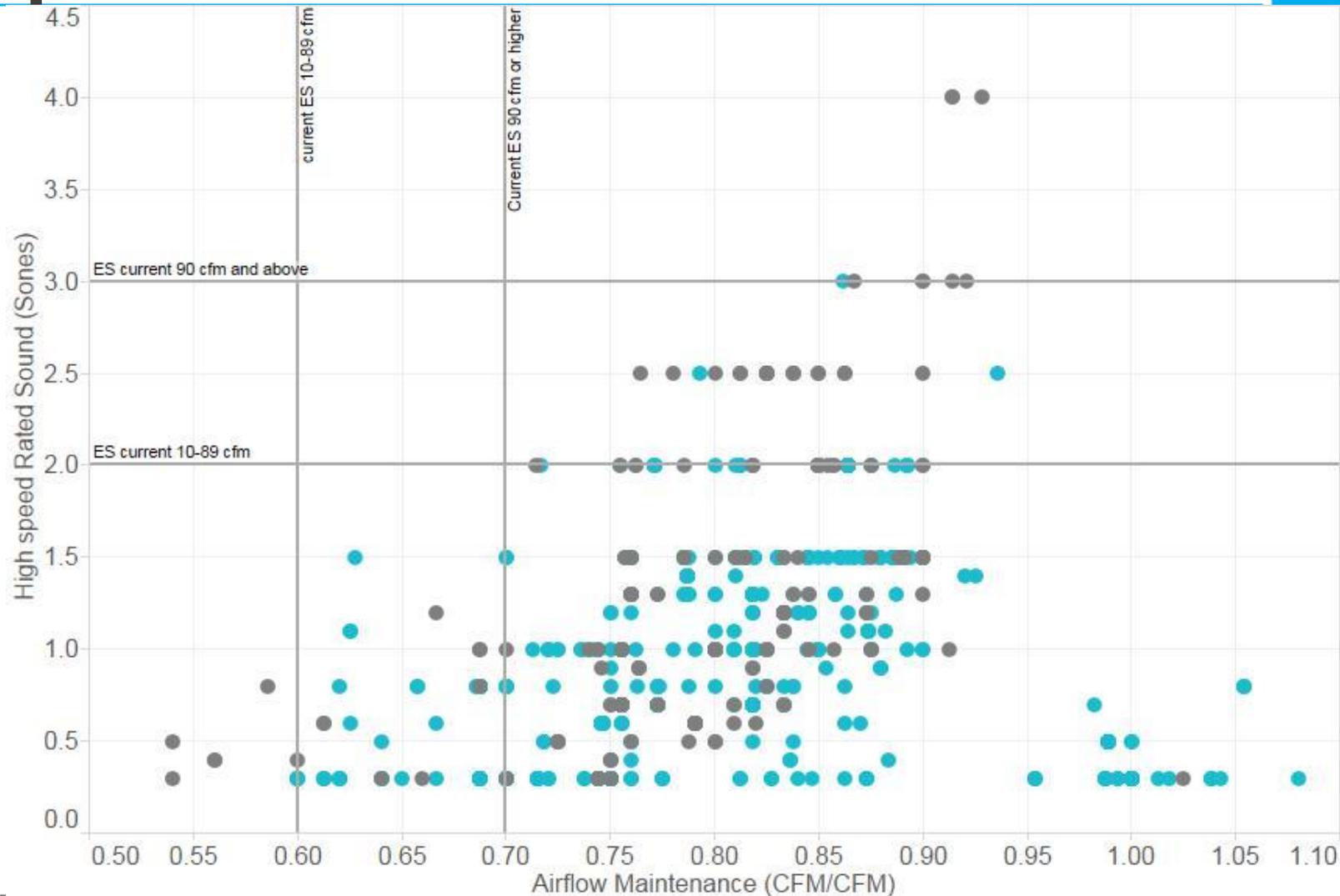


- Bathroom fans:
 - About 60% of bath fan models in the HVI directory meet the current V3.2 requirements
 - Propose to raise the levels across all size bins:
 - 50 to 89 CFM - to 2.8 CFM/W from 1.4 CFM/W;
 - 90 to 200 CFM - to 3.5 CFM/W from 2.8 CFM/W; and
 - 201 to 500 CFM - to 4.0 CFM/W from 2.8 CFM/W.
 - For the lower CFM fans, higher initial cost for more efficient fans is matched by longer fan lifetimes.
 - For most fans, higher efficiency appeared to have little correlation to higher initial cost.

HVI Directory bath fans, September 2013



HVI directory bath fans, September 2013



Proposed Draft 1 Sound Criteria



- In general, sound requirements have not been changed
- CFM break points have been aligned between efficacy and noise level requirements
 - This results in tightening of the sound requirements for bathroom fans 140 to 200 CFM , that is, the requirement changed from 3.0 sones to 2.0 sones.
 - Analysis of HVI directory indicate that this should not impact the products currently qualified.

Q 1: Are sound requirements at 0.25 in w.g a better indicator of noise level experienced by consumers than at 0.1 in w.g.?

Q 2: Do sound levels generally increase or decrease with higher static pressure? By how much?

Proposed Draft 1 Installed Fan Performance



Categories & Airflow (cfm)	Minimum rated airflow requirement at 0.25 in. w.g. static pressure
Bathroom and Utility Room Fans - 50 to 500 CFM	70% of tested airflow delivered at 0.1 in. w.g. static pressure

- This proposal tightens the requirement for fans 89 CFM max airflow and below
- Products that meet the proposed efficacy criteria should be able to meet this requirement

Proposed Draft 1 Criteria – Bathroom and Utility Fans Model Availability as per HVI Directory Sept. 2013



V 4.0 Airflow Range (CFM)	% that meet V 4.0 criteria	V 3.0 Airflow Range(CFM)	% that meet V 3.0 criteria
90 to 200	34%	90 to 500	62%
201 to 500	14%		

Proposed Lighting Requirements



- EPA proposes to include products qualified to the ENERGY STAR Lamps specification
- This proposal does not replace the Luminaires requirement but simply expands the scope of acceptable light sources.
- Scope of the Lamps specification includes threaded-base lamp types which replace incandescent lamps.
 - Luminaires specification only includes pin-based bulbs.
- Provides greater flexibility for manufacturers.

Q 3: Is lack of high temperature and humidity testing of lighting performance under the ENERGY STAR Lamps specification a concern ?

Proposed Lighting Requirements - Certification



- For certification, manufacturers may choose any lamp on the ENERGY STAR QPL.
 - The lamp must be listed in the certified list as of the manufacturing date of the Ventilating Fan
- Post certification, manufacturers have the option to replace the lamp used in the certified ventilating fan with any lamp on the current ENERGY STAR QPL
- Manufacturers are responsible to make sure that the lamps used in their product are not disqualified and are certified to the latest version of the Lamps specification in effect.

Q 4: Is the detailed lighting performance data on Vent Fan QPL useful to consumers and stakeholders or can it be simplified to minimum information?

Test Methods



- **Lighting:** No changes in test method as products shipped with an ENERGY STAR certified lamp shall be verified by examination of the product and its listing in the ENERGY STAR Certified Product List for Lamps.
- **Airflow/Sound:** HVI 916 and 915 test procedures have been updated to refer to the latest 2013 versions of the documents.
 - No major changes in the 2013 version of the HVI 915 and 916 test procedures that would impact currently ENERGY STAR certified products.

Other Changes



- **Definitions** - Working Speed definition revised per the definition in the latest 2013 version of the HVI 916 *Airflow Test Procedure*.
- **Excluded Products** - The following lamp holders are removed from the excluded products list – E11, E26 and GX5.3.



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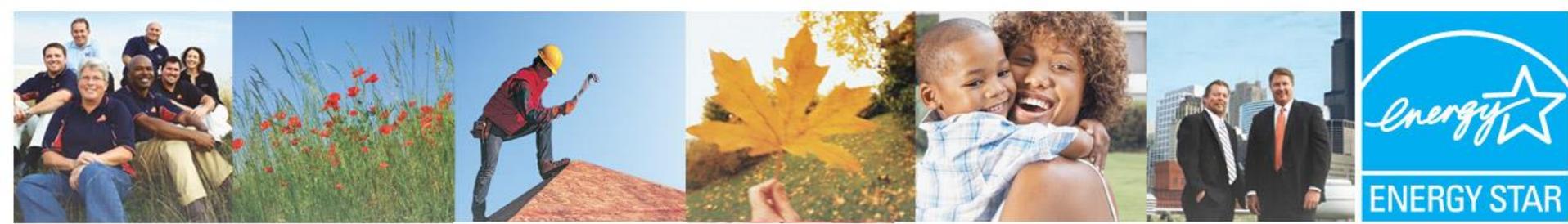
- Jun. 11, 2014 Draft 1 released
 - Jul. 10, 2014 Stakeholder Webinar
 - Jul. 31, 2014 Draft 1 comment period closes
 - Sep. 2014 Draft Final published
 - Oct. 2014 Final published
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- Next Step: Submit comments and question responses to ventilatingfans@energystar.gov by July 31, 2014.

Contact Information

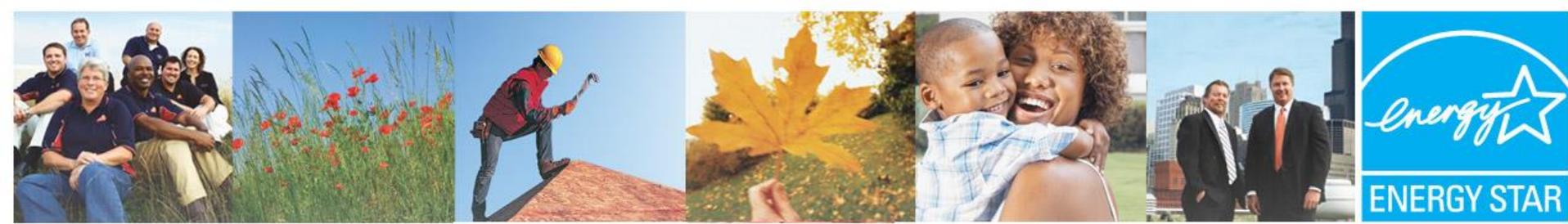


Abigail Daken
EPA ENERGY STAR Program
202-343-9375
daken.abigail@epa.gov

Sarah Medepalli
ICF International
202-677-5201
Sarah.Medepalli@icfi.com



Questions?



Thank You



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