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Ms. Abigail Daken
Product Manager, ENERGY STAR HVAC
William Jefferson Clinton Building
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Mail Code 6202A
Washington, DC 20460
Sent by email: daken.abigail@epa.gov

December 19, 2014

Dear Mrs. Daken;

Systemair, manufacturer of residential ventilation products under the Fantech brand name, would like to take this opportunity to comment on the proposed changes to ENERGY STAR's Ventilation Requirements, V4.0 Final Draft.

As you may be aware, Systemair/Fantech has been supportive of the ENERGY STAR residential ventilating fan program since its inception, providing language and commentary as an individual company, and through HVI. Throughout the world, Systemair works actively to develop and promote energy efficient and healthy, residential and commercial, ventilation standards and products. We agree with most of the changes made in the Final Draft. However, we have identified three issues on which we would like to comment and to which we would suggest changes.

Regarding Para 3) A. Table 2: Efficacy Criteria for In-Line (Single-Port and Multi-Port) Fans

As, most likely, the manufacturer of the largest number of residential in-line fans in North America, Systemair objects to the immediate raising of the efficacy for in-line fans to 3.8 cfm/W. We do support the tiered approach to the increase in efficacy requirements as proposed in the HVI July 31st letter to ENERGY STAR for the following technical and market based reasons:

- A. When the ENERGY STAR Ventilation Requirements were first created in-line fans were already largely equipped with, for the time, highly efficient backward curved impellers powered by PSC motors. In order to include appr. 25% of the residential in-line fans sold in the ENERGY STAR program the 2.8 cfm/W limit was chosen. This criteria was significantly more stringent than that for Bathroom and Utility Room Fans, despite the function of the fans being the same.
- B. The most common in-line residential fan configuration, originally invented by Systemair and utilizing a centrifugal motorized impeller, generally allows for an energy efficient installation by eliminating bends in duct, but does add inherent internal pressure losses.
- C. An in-line fan is rated at twice the static pressure of other ducted products; 0.2 in.w.g. While there are some justifiable reasons for this distinction, fan output power proportional to the static pressure. It is



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therefore significantly more costly to achieve the efficacy requirement for inline fans than for other ducted products such as Bathroom and Utility Room Fans.

- D. HVI estimates that 67% of in-line fans will fail to qualify V4.0. This is a higher fall-out than in any other product type investigated by HVI, and correlates relatively well with Systemair's estimates.
- E. Efficiencies of all PSC motor powered fans can be increased over time by changing to electronically commutated (EC) motors. While EC powered in-line fans are currently available in the market from Systemair and other manufacturers, they account for less than 1% of Systemair in-line residential fan sales at this time.

We have reviewed the justifications for the higher efficacies in the Note (lines 120 – 125), but disagree with the findings and conclusions and request reconsideration per HVI's and our proposal.

Regarding Para 1) Definitions

One type of residential ventilating fans that is neither defined nor excluded in the definitions is the **remote mounted exterior ventilator**. These fans are commonly used for bathroom, utility room, and garage exhaust, and usually mounted on the roof or exterior wall, ducted to the inside of the residence.

Systemair suggests that this category be included in the ENERGY STAR Program for Residential Ventilating Fans V4.0. We have identified the following required changes to the document:

Para 1) Definition to be added. The definition in HVI 920 para 3.21.16 is:

Remote mounted exterior ventilator (REMV) – An exhaust fan intended for mounting in an exterior location, usually connected by ducts to an interior device such as downdraft intake, a range hood shell, or a grille.

Para 2) "remote mounted exterior ventilator" to be added as a product type in 2) A.

Para 3) A. Table 2 An additional row to be added in the table. Rated airflow can be N/A. Minimum efficacy to be set to 3.5 cfm/W initially; a medium from other fans, and achievable at 0.1 in.w.g. Sound Level shall be N/A for the same reason as for in-line fans.

Para 3) A.b. Add this product type.

Para 4) C.a. Add this product type.

Regarding Para 3)C. Warranty

The higher initial cost of ENERGY STAR qualifying products is justified by energy consumption reductions, higher quality, and long term savings for the consumer. The original stated intent ENERGY STAR was to require a longer warranty period to provide the consumer with the confidence to make the larger initial investment. While a lower priority than the topics above, Systemair suggests that this intent is justified and should be considered for the next version of ENERGY STAR.

HRVs and ERVs

Systemair would like to take this opportunity to express our support for the addition of energy recovery ventilators (HRVs and ERVs) to next version the US program. These product types, which ventilate residences in a significantly more efficient manner than exhaust fans, have a very low penetration rate in the US compared to Canada and Western Europe. Inclusion of these highly efficient product types in



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the ENERGY STAR program will result in increased usage, thereby yielding more significant reductions in overall energy usage.

Systemair is grateful for the opportunity to comment on EPA's ENERGY STAR Product Specification for Residential Ventilating Fans V4.0. Feel free to contact us if you have any comments or questions in regards to these suggestions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ola Wettergren", written over a horizontal line.

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cc.
Jackie Donner, HVI
Mark Wald, Product Manager - Fans, Systemair