



December 19, 2014

Ms. Abigail Daken  
U.S. Environmental Protection Agency (EPA)  
Product Manager  
ENERGY STAR for HVAC

Re: Goodman Comments on ENERGY STAR Adoption of Revised Federal Furnace Fan Test Method

Dear Ms. Daken:

These comments are submitted by Goodman Global, Inc. ("Goodman") in response to the U.S. Environmental Protection Agency's (EPA) memorandum that was issued to ENERGY STAR HVAC stakeholders on November 17, 2014. The document pertains to the ENERGY STAR adoption of the revised federal furnace fan test method.

Goodman manufactures residential and light commercial heating and cooling equipment. Our products are sold and installed by contractors in every state within the United States. Goodman is a member of Daikin group, the largest HVAC manufacturer in the world. We appreciate the opportunity to comment on the specific issues raised within this EPA memorandum. Our comments are provided below.

We applaud EPA's intent to ensure that furnaces meeting the current  $e \leq 2\%$  criterion remain qualified as ENERGY STAR products. However, we do not believe it is appropriate for EPA to adopt the fan energy metric (FER) over four years in advance of the date on which the federal energy conservation standards will take effect.

It will not be possible for our organization to provide the data which EPA is seeking by December 21, 2014. FER is a new metric and manufacturers will need several years to familiarize themselves with the new test method and develop products that will meet the federal energy conservation standards. We are certain that most manufacturers have not even started to test for all products for FER since the compliance date for the FER energy conservation standards is July 3, 2019. Any ENERGY STAR requirement to develop and verify the FER metric prior to the July 3, 2019 effective date would be very onerous for the industry.

The U.S. Department of Energy (DOE) is statutorily required to give the industry five years from the issuance of a final rule to comply with new federal energy conservation standards and there are measurable adverse impacts on industry despite that five-year time period. Per the DOE furnace fan final rule that was published on July 3, 2014, the new FER standards will lead to manufacturers losing up to 16.9 percent of their industry net present value (INPV), which is

approximately \$59.0 million. Total conversion costs incurred by industry prior to the July 3, 2019 compliance date would reach \$40.6 million. It is important to note that these industry estimates provided by DOE would go up exponentially if EPA decides to incorporate the FER metric into the ENERGY STAR program well in advance of July 3, 2019.

The “e” metric was developed by the industry in 2003 and is used by the AHRI certification program to identify furnaces that meet AHRI’s guideline for electrical efficiency. The guideline applies to a furnace whose total electricity consumption is 2% or less of the furnace’s total energy use. It is a simple method to identify an electrically efficient residential furnace based on a standard industry-accepted criterion, which has been recognized within federal energy efficiency tax credits (25C), ENERGY STAR specifications, Consortium for Energy Efficiency specifications, utility incentive programs, etc. The “e” metric uses  $E_{AE}$ ,  $E_F$  and  $E_{SO}$ ; values that are determined according to the calculations in Appendix N to Subpart B of 10 CFR Part 430. These metrics cover the electrical consumption of the furnace when it is performing its intended function and are independent of the FER determined by DOE’s uniform test method for measuring the energy consumption of furnace fans (specified in a separate Appendix AA to Subpart B of 10 CFR Part 430). The January 3, 2014 final rule did not include any changes to the calculations for the  $E_{AE}$ ,  $E_F$  and  $E_{SO}$  metrics. Consequently, the FER has no effect on the metrics used to determine whether a model qualifies for the “e” designation. Also, the FER is a rate of consumption of the fan. In contrast, “e” is a representation of a furnace’s total annual electricity consumption to its total annual energy consumption. Therefore, the “e” metric is not solely a representation of the energy consumption of the fan.

We believe the existing practice of representing the ratio of a furnace’s total electricity consumption to the total energy use via the “e” metric provides a utility that is not achieved via the FER metric. Additionally, manufacturers are familiar with the “e” metric since it has been in place for several years. We recommend EPA align the FER implementation with the DOE compliance date in 2019 since manufacturers need the five-year lead time to get accustomed to the DOE test method and accurately establish FER values.

EPA should continue to require that manufacturers meet the “e” criterion for ENERGY STAR but EPA does not necessarily need to publish that information online. Such an approach will give EPA the flexibility to continue maintaining the Version 4.0 specification requirements. In the case of interim furnace specifications prior to 2019, EPA could potentially consider the adoption of an either/or specification that allows manufacturers who do not have the resources to switch immediately to FER to continue the use of “e,” while also allowing the option of earlier reporting of FER to manufacturers who are able to overcome the burden of additional FER testing. Even if DOE has an issue with the usage of “e” instead of the FER metric, such an approach will allow EPA to argue that “e” is simply being used as a criterion and not being publicly declared. Also, “e” is not just a furnace fan metric, so it addresses other attributes with respect to electrical efficiency than FER.

Goodman appreciates the opportunity to provide these comments. If you have any questions regarding this submission, please do not hesitate to contact me, Rusty Tharp (at either 713-263-5906 or [rusty.tharp@goodmanmfg.com](mailto:rusty.tharp@goodmanmfg.com)) or Aniruddh Roy (at either 703-657-0398 or [aniruddh.roy@goodmanmfg.com](mailto:aniruddh.roy@goodmanmfg.com)).

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Sincerely,

**Gary  
Clark/a  
xr**

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