Appliance Standards Awareness Project
Natural Resources Defense Council
Northwest Energy Efficiency Alliance

June 28, 2021

Mr. Jeremy Dommu
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-5B
1000 Independence Avenue SW
Washington, DC 20585

RE: Docket Number EERE–2021–BT–STD–0011/RIN 1904–AE99: Request for Information for Energy Conservation Standards for Ceiling Fans

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), Natural Resources Defense Council (NRDC), and Northwest Energy Efficiency Alliance (NEEA) on the request for information (RFI) for energy conservation standards for ceiling fans. 86 Fed. Reg. 24538 (May 7, 2021). We appreciate the opportunity to provide input to the Department.

DOE should conduct a full analysis to consider amended standards for ceiling fans since higher efficiency products are currently readily available on the market. Airflow efficiency levels (CFM/W) among currently available ceiling fans can vary significantly, and considerable energy savings can be achieved with improved standards; in the January 2017 final rule, DOE found that the max-tech levels could result in cumulative full-fuel-cycle national energy savings of 1.73 quads greater than the standard levels that were adopted.[1]

Figures 1 and 2, which show the airflow efficiencies of ENERGY STAR certified standard and hugger ceiling fans,[2] respectively, demonstrate the wide range of efficiency levels available at a given diameter. For example, for 52" standard ceiling fans, which represent 23% of all ENERGY STAR qualified models, airflow efficiency ranges from about 100-350 CFM/W. Furthermore, many of the ceiling fans shown have efficiencies well above both the current DOE standards and the ENERGY STAR specification. The efficiency levels of these ENERGY STAR certified models demonstrate that there is substantial potential to strengthen the standards for ceiling fans.

[1] 82 Fed. Reg. 6879.
[2] ENERGY STAR certified models as of 5/18/21.

Figure 1. Airflow efficiency vs. fan diameter of ENERGY STAR certified standard ceiling fans

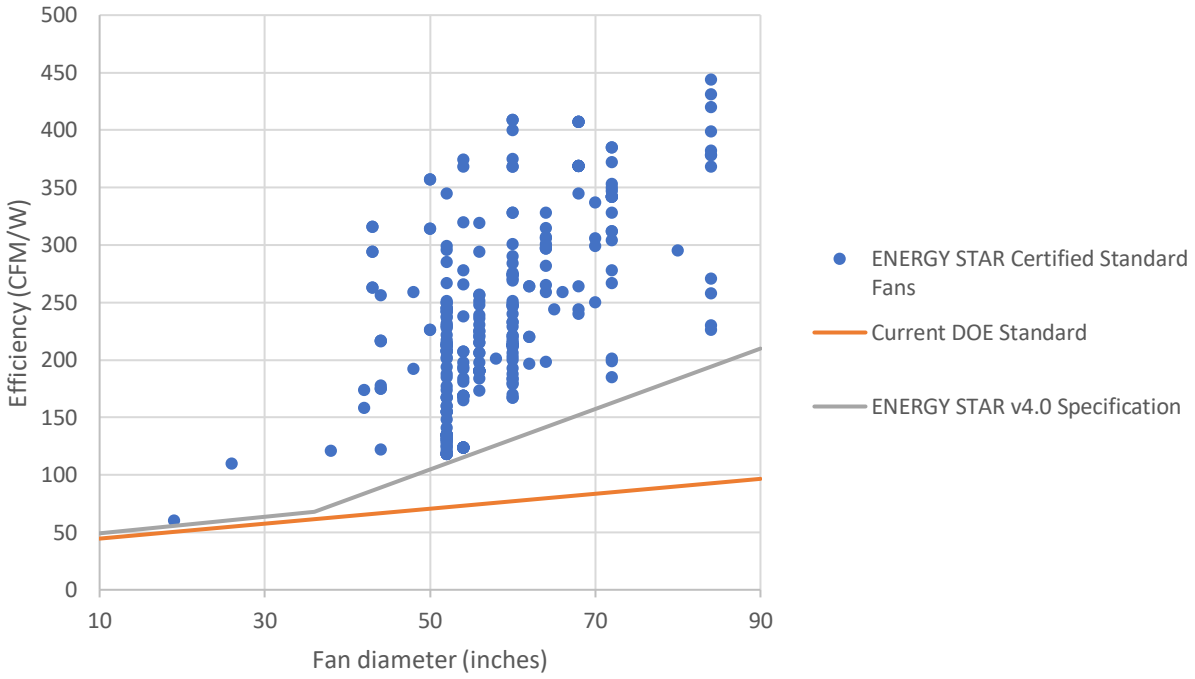
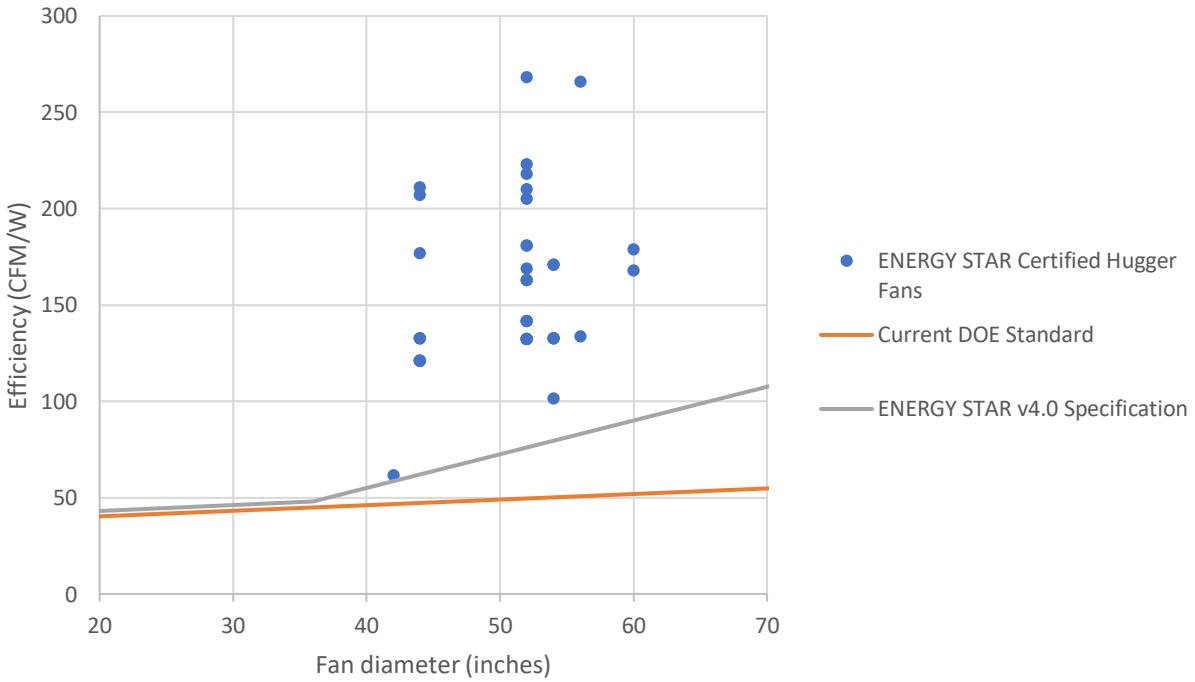


Figure 2. Airflow efficiency vs. fan diameter of ENERGY STAR certified hugger ceiling fans



DOE should establish a standby mode metric for large diameter ceiling fans (LDCFs). As DOE explains in the RFI, the January 2017 final rule established a CFM/W metric for all ceiling fans which included standby mode energy consumption; however, with the new ceiling fan efficiency index (CFEI) metric for

LDCFs, standby energy consumption is no longer captured.[3] In order to accurately capture total energy consumption for LDCFs, DOE should develop a separate standby mode metric for LDCFs.

DOE should consider whether a metric similar to CFEI would be appropriate for all ceiling fans. The current efficiency standards in place for smaller diameter fans are a function of diameter only and do not account for the fact that ceiling fans of the same diameter may provide very different amounts of airflow. Due to the cubic relationship between power and speed, efficiency decreases with higher speeds. Therefore, for the same diameter fan, it is harder to meet the current standards with a fan that delivers a higher airflow; at the same time, many fans with low airflows may be able to meet the minimum efficiency requirements even with relatively inefficient designs. The current metric and standards could result in manufacturers improving the efficiency of a ceiling fan by reducing airflow, which may not be in consumers' best interest.

We encourage DOE to require certification reports to include all relevant product-specific information that is required to certify products based on the standards established in the 2017 final rule. Currently, for a certification report, manufacturers are only required to include the "number of speeds within the ceiling fan controls and a declaration that the manufacturer has incorporated the applicable design requirements."[4] In the 2019 notice of proposed rulemaking for test procedures for ceiling fans, DOE proposed that additional product-specific information be added to the certification report.[5] We support this proposal and encourage DOE to finalize the certification requirements so that product information like blade span, ceiling fan efficiency, and product class are visible to the public. These metrics give the public and stakeholders adequate information to understand the relative energy efficiency of these consumer appliances.

Thank you for considering these comments.

Sincerely,

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[3] 86 Fed. Reg. 24543.
[4] 10 CFR § 429.32(b).
[5] 84 Fed. Reg. 51450.