

Appliance Standards Awareness Project  
American Council for an Energy-Efficient Economy  
Consumer Federation of America  
Natural Resources Defense Council

January 30, 2023

Ms. Julia Hegarty  
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–0031/RIN 1904–AF19: Notification of Availability of Preliminary Technical Support Document for Energy Conservation Standards for Oil, Electric, and Weatherized Gas Furnaces**

Dear Ms. Hegarty:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), Consumer Federation of America (CFA), and Natural Resources Defense Council (NRDC) on the preliminary technical support document (PTSD) for energy conservation standards for oil, electric, and weatherized gas furnaces. 87 Fed. Reg. 73259 (November 29, 2022). We appreciate the opportunity to provide input to the Department.

**DOE’s preliminary analysis demonstrates that condensing-level standards for non-weatherized oil furnaces (NWOs) are technologically feasible and could result in significant cost savings for consumers.** In the past, some manufacturers have commented on the inability to produce condensing NWOs due to the high quantity of sulfur content in heating oil.<sup>1</sup> However, fuel regulations in many northeastern states have helped to substantially reduce the sulfur content in heating oil,<sup>2</sup> resulting in condensing NWOs becoming technologically feasible and commercially available. In the preliminary analysis, DOE evaluated condensing NWOs with an annual fuel utilization efficiency (AFUE) of 96% as the maximum technologically feasible (“max-tech”) level.<sup>3</sup> After accounting for the additional installation costs associated with switching to condensing technology, the Department found that the max-tech level for this product class would provide average life-cycle cost (LCC) savings of around \$1,300 with 68% of

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<sup>1</sup> 76 Fed. Reg. 37514. (June 27, 2011).

<sup>2</sup> EIA, Sulfur content of heating oil to be reduced in northeastern states, <https://www.eia.gov/todayinenergy/detail.php?id=5890>.

<sup>3</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 2-17.

consumers experiencing a net benefit.<sup>4,5</sup> We also note that Adams Manufacturing commented on the 2022 request for information (RFI) in support of a 95% AFUE standard for NWOFs.<sup>6</sup>

**DOE has determined that condensing weatherized gas furnaces (WGFs) are technologically feasible and has thoroughly evaluated the associated installation costs in the preliminary analysis.** In the PTSD, DOE noted that manufacturers have had concerns with condensing WGFs due to the difficulties of burying the condensate line below the frost line, which is necessary to prevent condensate from freezing in colder climates.<sup>7</sup> However, DOE identified at least one WGF that uses a condensing heat exchanger and analyzed its product literature, which provided evidence that condensing WGFs can reliably operate in the field, even in colder climates. Thus, DOE has tentatively concluded that installing condensing WGFs is feasible, even in difficult installation scenarios and has evaluated a max-tech efficiency level of 95% AFUE for this product class.<sup>8</sup> The preliminary analysis provides a thorough evaluation of the installation adders needed to prevent condensate from freezing outdoors, such as heat tape, electrical outlet additions, and pipe insulation. In addition, DOE accounted for the costs associated with burying condensate lines below the frost line.<sup>9</sup> After considering all installation costs, DOE found that standards set at the max-tech level would result in average LCC savings of \$190, and 50% of consumers would experience a net benefit.<sup>10,11</sup>

**We encourage DOE to consider evaluating an intermediate condensing efficiency level (EL) for NWOFs.** In the preliminary analysis, DOE analyzed three efficiency levels for amended AFUE standards for NWOFs – 85%, 87%, and 96% AFUE. We strongly support DOE’s decision to include a max-tech efficiency level at 96% AFUE, which utilizes a condensing heat exchanger. However, in addition, DOE should consider evaluating an efficiency level between EL 2 (87% AFUE) and EL 3 (96% AFUE). We examined the DOE Compliance Certification Database (CCD) and found condensing models with AFUEs ranging from 89% to 96% (see Figure 1).<sup>12</sup> This suggests that condensing NWOFs are technologically feasible at AFUEs between EL 2 and EL 3. Therefore, we encourage DOE to consider an additional efficiency level for NWOFs below the current max-tech level that would also incorporate condensing technology.

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<sup>4</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 8-44.

<sup>5</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0012>.

<sup>6</sup> <https://www.regulations.gov/comment/EERE-2021-BT-STD-0031-0010>.

<sup>7</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 2-17.

<sup>8</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 2-18.

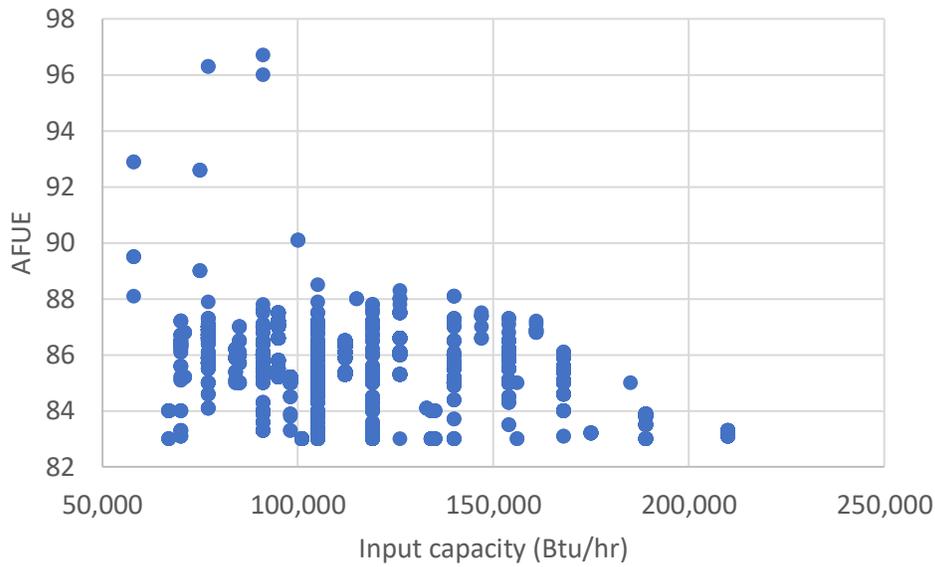
<sup>9</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 8C-28.

<sup>10</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>. p. 8C-44.

<sup>11</sup> <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0012>.

<sup>12</sup> Condensing models in the database were identified by the specifications listed in the product literature.

Figure 1. AFUEs of NWOFF models in the DOE CCD<sup>13</sup>



Thank you for considering these comments.

Sincerely,

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<sup>13</sup> Models listed in the DOE CCD as of December 28, 2022.