Natural Resources Defense Council
Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
National Consumer Law Center
Consumer Federation of America
Northwest Energy Efficiency Alliance

Jan. 13, 2020

Dr. Stephanie Johnson
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-2J
1000 Independence Avenue SW
Washington, DC 20585

RE: Docket No. EERE-2017-BT-TP-0024: Energy Conservation Program: Test Procedure for Microwave Ovens; Notice of Proposed Rulemaking and Announcement of Public Meeting

Dear Dr. Johnson:

On behalf of the Natural Resources Defense Council, and its three million members and online activists; the Appliance Standards Awareness Project; the American Council for an Energy-Efficient Economy; the National Consumer Law Center, on behalf of its low-income clients; and the Northwest Energy Efficiency Alliance we submit the following comments regarding the Department of Energy's (DOE) recent Notice of Proposed Rulemaking (NOPR) concerning the test procedure for microwaves. We are grateful for the opportunity to comment.

Microwaves are a worthy product for the Department's attention. Over 90% of households have one.[1] Although the number of microwaves shipped per year has varied over the past several years, an estimated 13.45 million units were shipped in 2019.[2] Getting the test procedure right is essential to properly measuring the energy consumption of these devices as well as, in subsequent rulemakings, determining what the appropriate efficiency standard should be.

[1] Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Residential Microwave Oven Stand By Power at 3-23, available at https://www.regulations.gov/document?D=EERE-2011-BT-STD-0048-0021.
[2] https://www.statista.com/statistics/220122/unit-shipments-of-microwave-ovens/

We note that the present test procedure NOPR builds off of DOE's prior Request for Information (RFI) on this topic in January of 2018.[3] At that time, a number of the signatories (referred to by DOE as the "Joint Commenters" or "Joint Advocates" in the present NOPR) to this letter submitted comments to DOE. While we appreciate the Department's efforts on this topic, we are compelled to once again comment on this subject because the current NOPR has failed to appropriately and accurately respond to the issues raised in the Joint Advocates' RFI comments. Accordingly, we object to the NOPR as written and renew the points articulated in the prior Joint Advocate letter. In particular, we stress our objection to DOE's proposed treatment of active mode energy consumption and network energy use.

DOE Should Add Active Mode Energy to its Test Procedure

We are disappointed that DOE has refused to amend the microwave test procedure to measure active mode energy consumption. Microwaves consume energy both while heating food (active mode) as well as in standby mode. While not actively heating food, microwave energy consumption may be due to powering features such as clocks or displays or connecting the microwave to the internet. Currently, the DOE test procedure does not address active mode energy consumption or energy used for "connected" features like internet connectivity or integration with digital assistants like Alexa.

As demonstrated in the Joint Advocate letter, using DOE's own data it is clear that approximately 90% of a microwave's energy consumption comes from active mode use.[4] By the Department's own data, there is substantial variation in active mode energy use among models—in DOE testing discussed in the 2013 NOPR, the least efficient model used 32% more energy heating a test load than the most efficient.[5] As a result, capturing active mode energy use would provide valuable information to consumers on this variability and would allow them to meaningfully choose products on the basis of energy consumption.

Despite the existence of a well-known, representative, reproducible test, namely International Electrochemical Commission (IEC) 60705 Ed. 4.1, DOE blithely dismisses the points raised above. Instead, the Department has opted to credulously accept industry's allegations of undue testing burden that IEC 60705 would allegedly impose without any further investigation.

DOE should conduct tests using IEC 60705. This would allow the Department to 1) measure the testing time and estimate likely testing burdens if IEC 60705 were adopted

[3] 83 Fed. Reg. 2566 (Jan. 18 ,2018).
[4] Joint Advocate Letter at 2, available at https://appliance-standards.org/sites/default/files/Microwave%20Oven%20TP%20RFI%20Comments.pdf; Microwave Test Procedure Proposed Rule, 78 Fed. Reg. 7940, 7950 (Feb. 4, 2013) (discussing estimates of microwave energy consumption).
[5] Joint Advocate Letter at 2; 78 Fed. Reg. 7945 (discussing variability of energy consumption among models).

without changes; and 2) examine whether IEC 60705 could be modified, if needed, to produce an accurate, reproducible test with a smaller testing burden than the burdens alleged by industry.

We do not dispute that testing burden can be a real concern, and we do not wish to needlessly increase it. However, DOE's task is not to minimize all possible testing burdens irrespective of all other factors. It must also develop and use tests that are representative. Right now, presented with information that 1) active mode comprises the vast majority of a microwave's energy use, and 2) microwave active energy consumption varies substantially by product, DOE has, with virtually no rebuttal or analysis of its own, chosen to ignore these concerns.

In short, DOE's failure to incorporate active mode energy use means that DOE is choosing to continue with a test that is incapable of being representative of the energy use of these products. DOE must develop a test procedure that takes active mode energy consumption into account. If, after taking the time to thoroughly investigate industry assertions, DOE identifies unwarranted testing burdens with the IEC test procedure, then DOE should work with stakeholders to address them while still incorporating active mode energy use.

Unfortunately, DOE further compounds this issue in its approach to network connectivity energy use.

Test Method Should be Amended to Capture Additional Standby Power Use due to Internet Connectivity

DOE has proposed to exclude the energy use from "connected" functions, such as connecting to the internet over Wi-Fi or Bluetooth. In short, this approach needlessly denies consumers accurate information about the true energy use of their microwaves.

There is a growing trend of adding "connected" features to products. Frequently this takes the form of connecting a product to the internet and/or integrating it with a digital assistant such as Amazon's Alexa. In this case, the user gains the ability to control their microwave through voice commands like "Please run the microwave for 2 minutes." How much energy is consumed by these features can vary widely depending on how they are implemented.

For example, recent research from the Natural Resources Defense Council demonstrated that the standby energy use of TVs could substantially increase if features like integration with digital assistants were not implemented thoughtfully.[6] However, well-designed products with these features could implement them with minimal increases in energy use. In the extreme case, NRDC found that some TVs used up to 20

[6] https://www.nrdc.org/sites/default/files/gadget_report_r_19-07-b_13_locked.pdf.

Watts of power continuously in standby mode when connected to a smart speaker and awaiting a voice command to turn on the TV, vs other TVs that achieved the same performance for <1 Watt.

However, DOE has chosen to ignore this potentially sizable energy consumption. Not only does this, yet again, harm consumers, but it also harms manufacturers who will not receive proper credit for implementing these features effectively.

While DOE has sought information on connected products in the past, in this NOPR the Department over-relies on industry assertions without sufficient investigation to confirm or refute these claims. Yet DOE failed to make a serious attempt to examine models with these features to determine if sufficient information could be gathered. The Department also adopts industry's unsupported and vague assertions that including these connected features within the scope of the test would somehow "stifle innovation." DOE made no serious attempt to investigate the factual basis for these claims but rather took the regulated industry's assertions at face value.

We are disappointed by the Department's current approach given the fact that it has repeatedly demonstrated the ability to balance energy conservation and industry innovation in the past.

Conclusion

We appreciate the opportunity to comment on the Department's proposed test procedure for microwaves. Unfortunately, it is a profoundly lacking proposal, for the reasons discussed above as well as the further issues raised in the initial Joint Advocates letter. For these reasons, DOE should conduct testing and more in-depth investigation and subsequently issue a revised NOPR that addresses both active mode and connected modes.

We thank the Department for the opportunity for comment.

Sincerely,

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