Appliance Standards Awareness Project
National Consumer Law Center, on behalf of its low-income clients
Natural Resources Defense Council
New York State Energy Research and Development Authority

April 26, 2022

Mr. Jeremy Dommu
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 Number EERE–2020–BT–STD–0006/RIN 1904–AD87: Notification of a Webinar and Availability of the Preliminary Technical Support Document for Energy Conservation Standards for External Power Supplies

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), National Consumer Law Center, on behalf of its low-income clients (NCLC), Natural Resources Defense Council (NRDC), and New York State Energy Research and Development Authority (NYSERDA) on the preliminary technical support document (PTSD) for energy conservation standards for external power supplies (EPSs). 87 Fed. Reg. 10719 (February 25, 2022). We appreciate the opportunity to provide input to the Department.

DOE's preliminary analysis shows that amended energy conservation standards for AC-DC basic-voltage EPSs could save 1.5 quads of energy with positive net present value savings. Furthermore, we believe that improvements to DOE's analysis could uncover additional cost-effective savings opportunities. Specifically, we urge DOE to conduct additional product testing and teardowns for basic-voltage and low-voltage AC-DC EPSs to obtain more accurate costs. We also encourage DOE to interview manufacturers—in particular, relevant chip manufacturers—regarding cost estimates for AC-DC EPSs as there seem to be discrepancies between the DOE analysis and manufacturer-reported costs. We support the detailed comments submitted by the Northwest Energy Efficiency Alliance (NEEA) on this topic, which are referenced below. We encourage DOE to investigate how the analysis could reflect price learning for EPSs and to reevaluate the estimated lifetimes of AC-DC low-voltage EPSs. In addition, we encourage DOE to incorporate a 10% loading point into the active mode efficiency metric in order to help ensure that efficiency ratings are representative of real-world EPS operation. Below we provide our comments on these and other issues in the PTSD.

We support DOE's decision to evaluate direct and indirect power supplies together. Currently, EPSs are divided into seven product classes determined by various features, including whether

the product meets the definition of direct or indirect operation. The definitions of direct and indirect are based on how the end-use product is designed and used, and we believe the distinction between indirect and direct EPSs is unnecessary. Therefore, we support DOE's assessment that the evaluation of separate standards for indirect and direct operation EPSs is not needed.

We urge DOE to conduct additional product testing and teardowns on representative units for AC-DC basic-voltage and low-voltage product classes. In the preliminary analysis, DOE evaluated representative units for the AC-DC basic-voltage product class and found that the tested efficiencies for some of the chosen units did not match the certified values in the DOE Compliance Certification Database (CCD).[1] DOE decided to discard the test results for these units and to instead determine the costs for some of the candidate standards levels (CSLs) at each of the representative power levels by interpolating from the known costs of representative units above and below the corresponding CSL. In addition, for the 60 W power level, DOE evaluated each CSL by interpolating from other power levels. We are concerned about the accuracy of this method and urge DOE to conduct additional testing and teardowns for this product class to better understand the costs at all power level and CSL combinations.

Additionally, DOE extrapolated incremental cost results from the AC-DC basic-voltage analysis to establish costs for the other EPS product classes. DOE's rationale for this decision was that the basic-voltage product class makes up the majority of the units in the market.[2] However, DOE projects that 2023 shipments for AC-DC low-voltage EPSs will be about 60% greater than those in the basic-voltage product class (442 million units compared to 277 million units, respectively).[3] Because of the high shipments in the low-voltage product class and the distinctiveness of the two product classes, we urge DOE to conduct detailed testing and teardowns on representative units for the AC-DC low-voltage product class.

We urge DOE to conduct manufacturer interviews to help better estimate incremental costs for EPSs. As NEEA discusses in their comments on the PTSD, they obtained manufacturer-reported max-tech incremental cost data for basic-voltage AC-DC EPSs that differed significantly from the incremental costs that DOE estimated in the preliminary analysis. Specifically, DOE's analysis overestimates incremental costs for the max-tech levels of the AC-DC basic-voltage product class by 40-150% compared to the manufacturer-reported incremental costs depending on the power output. Furthermore, because DOE extrapolated costs from this product class to all other single-output-voltage product classes, this overestimation likely affects almost all product classes in the analysis. Therefore, we urge DOE to conduct manufacturer interviews—in particular, with relevant chip manufacturers—to help strengthen the analysis and obtain more accurate incremental cost estimates.

[1] https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0012. p. 5-19.
[2] Ibid. p. 5-2.
[3] Ibid. p. 9-3.

We encourage DOE to investigate how the analysis could reflect price learning associated with EPSs. At the public meeting on March 24, DOE stated that the Department did not address price learning at this stage of the analysis.[4] Without price learning incorporated into the analysis, we are concerned that DOE's analysis will result in overestimating the cost to achieve higher efficiency levels over the analysis period. We specifically encourage the Department to investigate learning rates associated with semiconductors.

We encourage DOE to reevaluate the expected lifetimes of AC-DC low-voltage EPSs. In the preliminary life-cycle cost (LCC) and payback period analysis, DOE used lifetime estimates of end-use applications to estimate the lifetimes of EPSs based on the assumption that a typical consumer will not continue to use an EPS once the end-use product has been discarded.[5] However, we do not believe this to be the case for many AC-DC low-voltage EPSs. It is increasingly common for low-voltage EPSs to be sold as stand-alone items that are independent from the end-use product. For example, Apple no longer includes a 5W USB power adapter in new iPhone packages and encourages consumers to re-use their existing power adapters that are compatible with iPhone models.[6] Similar methods are being used by numerous other companies selling electronic devices such as smartphones, Bluetooth headphones, and wireless speakers. Thus, we believe that the lifetimes of these EPSs likely exceed the lifetimes of their end-use applications, and that DOE may therefore be underestimating lifetimes for this product class. We encourage DOE to consider the lifetimes of low-voltage AC-DC EPSs independently of their end-use applications.

We encourage DOE to incorporate a 10% loading condition in the active mode efficiency metric. Currently, the active mode efficiency calculation averages measurements at the 25%, 50%, 75%, and 100% loading conditions. However, various end-use products that are coupled with an EPS spend a significant amount of time in low power modes, around the 10% loading point. In our comments on the request for information, we recommended that DOE require measurement and reporting of a 10% loading point.[7] In the PTSD, DOE stated that if a 10% loading condition were to be adopted, it would have to be integrated into the current active mode efficiency metric.[8] Thus, we encourage DOE to incorporate the 10% loading condition into the active mode efficiency calculation, giving the 10% loading condition equal weighting to the other measured loading conditions. We believe that this will result in efficiency ratings that are more representative of real-world EPS operation.

[4] https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0018. pp. 41-42.
[5] https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0012. p. 8-9.
[6] See https://www.apple.com/shop/buy-iphone/iphone-13 and https://www.apple.com/shop/product/MD810LL/A/apple-5w-usb-power-adapter.
[7] https://www.regulations.gov/comment/EERE-2020-BT-STD-0006-0006.
[8] https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0012. p. 2-17.

Thank you for considering these comments.

Sincerely,

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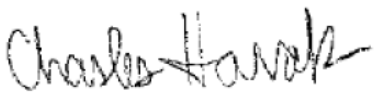
Appliance Standards Awareness Project



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