Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
National Consumer Law Center, on behalf of its low-income clients
New York State Energy Research and Development Authority
Southwest Energy Efficiency Project

May 15, 2023

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–0013/RIN 1904–AE50: Notice of Proposed Rulemaking for Energy Conservation Standards for Battery Chargers

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), National Consumer Law Center, on behalf of its low-income clients (NCLC), New York State Energy Research and Development Authority (NYSERDA), and Southwest Energy Efficiency Project (SWEEP) on the notice of proposed rulemaking (NOPR) for energy conservation standards for battery chargers. 88 Fed. Reg. 16112 (March 15, 2023). We appreciate the opportunity to provide input to the Department.

We support strengthening the energy conservation standards for battery chargers and are pleased that DOE is moving forward with proposed amended standards for wired battery chargers and new standards for wireless chargers. In the NOPR, DOE proposed to adopt Trial Standard Level (TSL) 2, which would result in 1.2 quads of energy savings and up to $7.5 billion in net present value savings for consumers over 30 years of sales. However, higher efficiency levels for low- and medium-energy wired battery chargers would achieve significantly greater energy and cost savings. Therefore, we encourage DOE to consider adopting higher efficiency levels for these product classes. We discuss these recommendations and other issues in further detail below.

We encourage DOE to consider adopting Efficiency Level (EL) 3 for low- and medium-energy wired battery chargers. In the NOPR, DOE proposed to adopt TSL 2, which represents EL 2 for all wired charger product classes. However, we encourage the Department to consider a modified TSL that would include EL 3 for product classes (PCs) 2a and 2b. DOE's analysis shows that relative to the proposed standards, this modified TSL would provide almost 50% greater energy savings and up to $1 billion more in net present value savings (see Table 1). Additionally,

the average lifecycle cost (LCC) savings are mostly positive, except for PCs 1a and 2a, which have slightly negative savings of -$0.03 and -$0.43, respectively.

Table 1. Comparison of benefits from a potential new TSL[1]

	TSL 2	Potential Modified TSL[2]
Full-Fuel Cycle NES (quads)	1.2	1.7
NPV @ 7% ($B)	3.7	3.9
NPV @ 3% ($B)	7.5	8.5

DOE has demonstrated that the proposed standards would not eliminate end-use applications that use lead acid batteries from the market. At the public meeting on April 27, 2023, some manufacturers expressed concerns that the proposed standards for high-energy wired chargers (PC 2c) would prevent lead acid batteries from being used in golf carts and other end-use applications. However, DOE's own testing showed that lead acid batteries and charger combinations can meet the proposed EL 2 standard levels.[3] DOE notes that while max-tech levels (EL 3) would result in greater energy savings than the proposed EL, lead acid battery and charger combinations would not be able to meet these levels for high-energy applications. By proposing EL 2 for PC 2c, DOE thus ensured that lead acid batteries would continue to be available for end-users.

We support DOE's proposed battery charger product classes. In the September 2022 battery charger test procedure final rule, DOE replaced the unit energy consumption (UEC) metric with a multi-metric approach where each mode of operation is independently regulated.[4] While the UEC equation required specific usage profiles by application to calculate the integrated metric, the multi-metric approach does not require usage profiles. In the NOPR, DOE proposed to remove the existing product classes for wired chargers and replace them with three sub-product classes based on battery energies.[5] We continue to support the updated metric and agree that with the multi-metric approach, it is unnecessary to maintain the existing product classes. Thus, we believe DOE's proposal to condense the wired battery chargers into three sub-product classes by associated battery energy is appropriate.

DOE's improved engineering analysis for the NOPR better reflects the incremental costs to achieve higher efficiency levels. In our comments on the 2022 preliminary technical support document (PTSD), we urged DOE to conduct additional product testing and teardowns for all product classes to better estimate incremental costs for battery chargers.[6] For the NOPR, DOE increased the number of teardowns across different product classes and battery energy ranges

[1] https://www.regulations.gov/document/EERE-2020-BT-STD-0013-0025. pp. 10-10 – 10-13.
[2] EL 1 for PCs 1a and 1b, EL 3 for PCs 2a and 2b, and EL 2 for PC 2c.
[3] 88 Fed. Reg. 16159. Both TSL 2 and TSL 3 represent EL 2 for PC 2c.
[4] 87 Fed. Reg. 55092 (September 8, 2022).
[5] 88 Fed. Reg. 16123.
[6] https://www.regulations.gov/comment/EERE-2020-BT-STD-0013-0019.

to improve the representativeness of the cost-efficiency curves.[7] Additionally, after the PTSD analysis, DOE conducted manufacturer interviews to receive more direct cost information and calibrate DOE's teardown results.[8] We believe these efforts resulted in more accurate estimates of incremental costs for all battery charger product classes.

We support DOE's decision to include a price trend associated with semiconductors. In the NOPR analysis, DOE incorporated a price trend based on the Producer Price Index for semiconductors, with an estimated price decline of about 6% per year.[9] DOE applied this price trend to 90% of the total incremental cost, which is the portion of battery chargers attributable to semiconductors. With price learning incorporated into the analysis, we believe that DOE's analysis better approximates the future costs associated with higher efficiency levels over the analysis period.

DOE may be underestimating future shipments of battery chargers. In the NOPR, DOE took a conservative approach to estimating the growth of battery chargers over time by assuming that the overall number of individual units that use battery chargers will grow according to the U.S. population growth rate.[10] However, this approximation may significantly underestimate future battery charger shipments, in particular for larger consumer devices. One manufacturer estimated that shipments of electric-powered lawn equipment increased by more than 75% from 2016 to 2020.[11] Shipments of electric lawn equipment will likely continue to increase significantly, in part due to state and local policies banning gas-powered lawn equipment. For example, a 2021 California law requires most new "small off-road engines" in the state, including leaf blowers and lawnmowers, to be zero-emission starting in 2024.[12] Thus, DOE may be underestimating future battery charger shipments and, therefore, potential energy savings from higher standard levels.

Thank you for considering these comments.

Sincerely,

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Appliance Standards Awareness Project

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[7] 88 Fed. Reg. 16130.
[8] Ibid.
[9] https://www.regulations.gov/document/EERE-2020-BT-STD-0013-0025. p. 8-6.
[10] https://www.regulations.gov/document/EERE-2020-BT-STD-0013-0025. p. 9-2.
[11] https://www.washingtonpost.com/climate-solutions/2021/10/12/california-newsom-law-equipment-pollution/.
[12] https://ww2.arb.ca.gov/news/carb-approves-updated-regulations-requiring-most-new-small-road-engines-be-zero-emission-2024.

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